

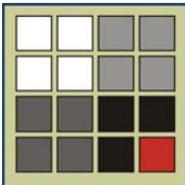
# **Social and Economic Assessment for Michigan's State Forests**

## **APPENDIX**

**Prepared for: Michigan Department of Natural Resources  
Forest, Mineral, and Fire Management Division**

**Lansing, Michigan**

**September 5, 2006**



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## Appendix

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## Chapter 1. Introduction

There are no appendix items for Chapter 1.

## Chapter 2. Demographic Patterns and Trends in Michigan

**Table A2.1. Total population, Michigan and eco-regions, 1790-2000**

| Year | Western Upper Peninsula | Eastern Upper Peninsula | Northern Lower Peninsula | Southern Lower Peninsula | Michigan  | United States |
|------|-------------------------|-------------------------|--------------------------|--------------------------|-----------|---------------|
|      | <b>persons</b>          |                         |                          |                          |           |               |
| 1790 |                         |                         |                          |                          |           | 3,929,214     |
| 1800 |                         | 551                     |                          | 3,206                    | 3,757     | 5,308,483     |
| 1810 |                         | 615                     |                          | 4,147                    | 4,762     | 7,239,881     |
| 1820 |                         | 819                     |                          | 6,633                    | 7,452     | 9,638,453     |
| 1830 |                         | 1,503                   |                          | 26,501                   | 28,004    | 12,860,702    |
| 1840 |                         | 1,457                   | 496                      | 210,314                  | 212,267   | 17,063,353    |
| 1850 | 1,233                   | 4,512                   | 903                      | 391,006                  | 397,654   | 23,191,876    |
| 1860 | 17,795                  | 3,619                   | 13,425                   | 713,299                  | 748,138   | 31,443,321    |
| 1870 | 39,496                  | 4,204                   | 53,894                   | 1,080,391                | 1,177,985 | 38,558,371    |
| 1880 | 75,305                  | 9,725                   | 152,866                  | 1,374,350                | 1,612,246 | 50,189,209    |
| 1890 | 151,163                 | 29,360                  | 259,705                  | 1,610,647                | 2,050,875 | 62,979,766    |
| 1900 | 215,581                 | 45,781                  | 351,673                  | 1,807,947                | 2,420,982 | 76,212,168    |
| 1910 | 271,547                 | 54,081                  | 385,609                  | 2,098,936                | 2,810,173 | 92,228,496    |
| 1920 | 273,603                 | 58,953                  | 332,837                  | 3,003,019                | 3,668,412 | 106,021,537   |
| 1930 | 260,540                 | 58,136                  | 297,318                  | 4,226,331                | 4,842,325 | 123,202,624   |
| 1940 | 259,185                 | 64,359                  | 334,343                  | 4,598,219                | 5,256,106 | 132,164,569   |
| 1950 | 236,463                 | 65,795                  | 358,788                  | 5,710,720                | 6,371,766 | 151,325,798   |
| 1960 | 236,414                 | 69,538                  | 390,260                  | 7,126,982                | 7,823,194 | 179,323,175   |
| 1970 | 238,692                 | 65,655                  | 457,534                  | 8,113,202                | 8,875,083 | 203,302,031   |
| 1980 | 256,091                 | 63,666                  | 590,593                  | 8,351,728                | 9,262,078 | 226,542,199   |
| 1990 | 245,600                 | 68,315                  | 636,523                  | 8,344,859                | 9,295,297 | 248,709,873   |
| 2000 | 241,341                 | 76,275                  | 749,768                  | 8,871,060                | 9,938,444 | 281,421,906   |

Data Source: US Census, 1790 – 2000.

**Table A2.1. Percentage of total Michigan population, by eco-region, 1800-2000**

| <b>Year</b> | <b>Western<br/>Upper<br/>Peninsula</b> | <b>Eastern<br/>Upper<br/>Peninsula</b> | <b>Northern<br/>Lower<br/>Peninsula</b> | <b>Southern<br/>Lower<br/>Peninsula</b> |
|-------------|--|--|---|---|
|             | <b>Percent of State population</b>     |  |   |   |
| 1800        |  | 14.7%                                  |   | 85.3%                                   |
| 1810        |  | 12.9%                                  |   | 87.1%                                   |
| 1820        |  | 11.0%                                  |   | 89.0%                                   |
| 1830        |  | 5.4%                                   |   | 94.6%                                   |
| 1840        |  | 0.7%                                   | 0.2%                                    | 99.1%                                   |
| 1850        | 0.3%                                   | 1.1%                                   | 0.2%                                    | 98.3%                                   |
| 1860        | 2.4%                                   | 0.5%                                   | 1.8%                                    | 95.3%                                   |
| 1870        | 3.4%                                   | 0.4%                                   | 4.6%                                    | 91.7%                                   |
| 1880        | 4.7%                                   | 0.6%                                   | 9.5%                                    | 85.2%                                   |
| 1890        | 7.4%                                   | 1.4%                                   | 12.7%                                   | 78.5%                                   |
| 1900        | 8.9%                                   | 1.9%                                   | 14.5%                                   | 74.7%                                   |
| 1910        | 9.7%                                   | 1.9%                                   | 13.7%                                   | 74.7%                                   |
| 1920        | 7.5%                                   | 1.6%                                   | 9.1%                                    | 81.9%                                   |
| 1930        | 5.4%                                   | 1.2%                                   | 6.1%                                    | 87.3%                                   |
| 1940        | 4.9%                                   | 1.2%                                   | 6.4%                                    | 87.5%                                   |
| 1950        | 3.7%                                   | 1.0%                                   | 5.6%                                    | 89.6%                                   |
| 1960        | 3.0%                                   | 0.9%                                   | 5.0%                                    | 91.1%                                   |
| 1970        | 2.7%                                   | 0.7%                                   | 5.2%                                    | 91.4%                                   |
| 1980        | 2.8%                                   | 0.7%                                   | 6.4%                                    | 90.2%                                   |
| 1990        | 2.6%                                   | 0.7%                                   | 6.8%                                    | 89.8%                                   |
| 2000        | 2.4%                                   | 0.8%                                   | 7.5%                                    | 89.3%                                   |

**Table A2.2. Population and percentage population change by U.S. Michigan, and eco-region for 1800, 1850, 1900, 1950, 1960, 1970, 1980, 1990 and 2000**

| Year                            | Western Upper Peninsula | Eastern Upper Peninsula | Northern Lower Peninsula | Southern Lower Peninsula | Michigan  | United States |
|---------------------------------|-------------------------|-------------------------|--------------------------|--------------------------|-----------|---------------|
| <b>Total Population</b>         |                         |                         |                          |                          |           |               |
| 1800                            |                         | 551                     |                          | 3,206                    | 3,757     | 5,308,483     |
| 1850                            | 1,233                   | 4,512                   | 903                      | 391,006                  | 397,654   | 23,191,876    |
| 1900                            | 215,581                 | 45,781                  | 351,673                  | 1,807,947                | 2,420,982 | 76,212,168    |
| 1950                            | 236,463                 | 65,795                  | 358,788                  | 5,710,720                | 6,371,766 | 151,325,798   |
| 1960                            | 236,414                 | 69,538                  | 390,260                  | 7,126,982                | 7,823,194 | 179,323,175   |
| 1970                            | 238,692                 | 65,655                  | 457,534                  | 8,113,202                | 8,875,083 | 203,302,031   |
| 1980                            | 256,091                 | 63,666                  | 590,593                  | 8,351,728                | 9,262,078 | 226,542,199   |
| 1990                            | 245,600                 | 68,315                  | 636,523                  | 8,344,859                | 9,295,297 | 248,709,873   |
| 2000                            | 241,341                 | 76,275                  | 749,768                  | 8,871,060                | 9,938,444 | 281,421,906   |
| <b>Percent Change (10-year)</b> |                         |                         |                          |                          |           |               |
| 1800                            |                         |                         |                          |                          |           | 35.1%         |
| 1850                            |                         | 209.7%                  | 82.1%                    | 85.9%                    | 87.3%     | 35.9%         |
| 1900                            | 42.6%                   | 55.9%                   | 35.4%                    | 12.2%                    | 18.0%     | 21.0%         |
| 1950                            | -8.8%                   | 2.2%                    | 7.3%                     | 24.2%                    | 21.2%     | 14.5%         |
| 1960                            | 0.0%                    | 5.7%                    | 8.8%                     | 24.8%                    | 22.8%     | 18.5%         |
| 1970                            | 1.0%                    | -5.6%                   | 17.2%                    | 13.8%                    | 13.4%     | 13.4%         |
| 1980                            | 7.3%                    | -3.0%                   | 29.1%                    | 2.9%                     | 4.4%      | 11.4%         |
| 1990                            | -4.1%                   | 7.3%                    | 7.8%                     | -0.1%                    | 0.4%      | 9.8%          |
| 2000                            | -1.7%                   | 11.7%                   | 17.8%                    | 6.3%                     | 6.9%      | 13.2%         |

Data Source: US Census, 1790 – 2000.

**Table A2.3. Age cohorts by eco-region and sex, 2000.**

| Age Cohort | EUP    |      | NLP    |       | WUP    |       |
|------------|--------|------|--------|-------|--------|-------|
|            | Female | Male | Female | Male  | Female | Male  |
| 0to4       | 1956   | 1986 | 21076  | 22160 | 6125   | 6486  |
| 5to14      | 4572   | 4739 | 51547  | 54883 | 14974  | 15763 |
| 15to24     | 4495   | 5917 | 43667  | 47971 | 16495  | 20071 |
| 25to34     | 3803   | 6301 | 40126  | 40788 | 12080  | 13573 |
| 35to44     | 5242   | 7200 | 57480  | 56673 | 17803  | 18264 |
| 45to54     | 4879   | 5840 | 52456  | 52413 | 16754  | 18128 |
| 55to64     | 3863   | 3989 | 43368  | 42338 | 11865  | 11911 |
| 65to74     | 3221   | 3061 | 35219  | 33729 | 10432  | 9424  |
| 75to84     | 2288   | 1633 | 23399  | 17479 | 9123   | 6204  |
| 85Plus     | 883    | 407  | 8917   | 4079  | 4011   | 1855  |

Data Source: US Census, 2000.

**Table A2.4. Age cohorts, in percent, by sex in Michigan and eco-regions, 2000**

| Age class (years) | Michigan | Western Upper Peninsula | Eastern Upper Peninsula | Northern Lower Peninsula |
|-------------------|----------|-------------------------|-------------------------|--------------------------|
| 0 to 4            | 7.6%     | 6.5%                    | 6.2%                    | 7.2%                     |
| 5 to 9            | 7.5%     | 7.3%                    | 7.2%                    | 7.8%                     |
| 10 to 13          | 5.8%     | 5.9%                    | 5.7%                    | 5.9%                     |
| 14 to 17          | 5.7%     | 5.5%                    | 5.6%                    | 5.6%                     |
| 18 to 24          | 10.7%    | 11.0%                   | 10.2%                   | 8.9%                     |
| 25 to 34          | 17.1%    | 14.6%                   | 16.2%                   | 14.8%                    |
| 35 to 44          | 15.2%    | 14.2%                   | 14.8%                   | 13.8%                    |
| 45 to 54          | 10.2%    | 9.5%                    | 9.4%                    | 10.1%                    |
| 55 to 59          | 4.2%     | 4.2%                    | 4.6%                    | 4.8%                     |
| 60 to 64          | 4.3%     | 4.7%                    | 5.2%                    | 5.5%                     |
| 65 to 74          | 7.1%     | 9.1%                    | 8.7%                    | 9.4%                     |
| 75 to 84          | 3.6%     | 6.0%                    | 4.9%                    | 4.9%                     |
| 85 or more        | 1.1%     | 1.6%                    | 1.4%                    | 1.4%                     |

**Table A2.5. People 17 years old and younger, 65 years old and older and percent dependent in the United States and Michigan and by eco-region, 2000**

| Impact Area              | Year | Population  | 0 to 17 years | 65 Plus    | Dependent |
|--------------------------|------|-------------|---------------|------------|-----------|
|                          |      | Number      | Number        | Number     | Percent   |
| Western Upper Peninsula  | 1980 | 256,091     | 70,436        | 35,982     | 41.6%     |
|                          | 1990 | 245,600     | 61,759        | 40,995     | 41.8%     |
|                          | 2000 | 241,341     | 54,184        | 41,049     | 39.5%     |
| Eastern Upper Peninsula  | 1980 | 63,666      | 18,319        | 8,566      | 42.2%     |
|                          | 1990 | 68,315      | 16,852        | 10,235     | 39.7%     |
|                          | 2000 | 76,275      | 16,422        | 11,493     | 36.6%     |
| Northern Lower Peninsula | 1980 | 590,593     | 172,958       | 79,552     | 42.8%     |
|                          | 1990 | 636,523     | 168,149       | 99,678     | 42.1%     |
|                          | 2000 | 749,768     | 184,102       | 122,822    | 40.9%     |
| Michigan                 | 1980 | 9,262,078   | 2,751,986     | 912,258    | 39.6%     |
|                          | 1990 | 9,295,297   | 2,461,723     | 1,107,018  | 38.4%     |
|                          | 2000 | 9,938,444   | 2,595,767     | 1,219,018  | 38.4%     |
| United States            | 1980 | 226,545,805 | 63,754,960    | 25,549,427 | 39.4%     |
|                          | 1990 | 248,709,873 | 63,606,544    | 31,195,275 | 38.1%     |
|                          | 2000 | 281,421,906 | 72,293,812    | 34,991,753 | 38.1%     |

Data Source: US Census, 1980, 1990, and 2000

**Table A2.6. Dependency by county, percentage of residents under 18 or 65 years old or older in Michigan, 2000**

| <b>Rank</b> | <b>County/State</b> | <b>Impact Area</b> | <b>Total<br/>Dependent<br/>Percent</b> | <b>Children<br/>Percent</b> | <b>Seniors<br/>Percent</b> |
|-------------|---------------------|--------------------|--|-----------------------------|----------------------------|
| 1           | Iron, MI            | WUP                | 45.8%                                  | 20.6%                       | 25.2%                      |
| 2           | Montmorency, MI     | NLP                | 44.2%                                  | 20.3%                       | 23.9%                      |
| 3           | Iosco, MI           | NLP                | 44.0%                                  | 22.4%                       | 21.6%                      |
| 4           | Roscommon, MI       | NLP                | 43.8%                                  | 20.0%                       | 23.8%                      |
| 5           | Huron, MI           | SLP                | 43.7%                                  | 24.2%                       | 19.4%                      |
| 6           | Oscoda, MI          | NLP                | 43.5%                                  | 23.3%                       | 20.2%                      |
| 7           | Alcona, MI          | NLP                | 43.5%                                  | 19.0%                       | 24.5%                      |
| 8           | Presque Isle, MI    | NLP                | 43.3%                                  | 20.9%                       | 22.3%                      |
| 9           | Dickinson, MI       | WUP                | 43.2%                                  | 25.1%                       | 18.1%                      |
| 10          | Gogebic, MI         | WUP                | 43.1%                                  | 20.4%                       | 22.6%                      |
| 11          | Keweenaw, MI        | WUP                | 42.8%                                  | 22.5%                       | 20.3%                      |
| 12          | Sanilac, MI         | SLP                | 42.3%                                  | 26.9%                       | 15.4%                      |
| 13          | Ogemaw, MI          | NLP                | 42.3%                                  | 23.5%                       | 18.8%                      |
| 14          | Oceana, MI          | NLP                | 42.2%                                  | 28.2%                       | 14.0%                      |
| 15          | Missaukee, MI       | NLP                | 41.9%                                  | 27.1%                       | 14.8%                      |
| 16          | Newaygo, MI         | NLP                | 41.9%                                  | 29.1%                       | 12.8%                      |
| 17          | Antrim, MI          | NLP                | 41.8%                                  | 24.4%                       | 17.5%                      |
| 18          | Leelanau, MI        | NLP                | 41.8%                                  | 24.4%                       | 17.4%                      |
| 19          | Ontonagon, MI       | WUP                | 41.8%                                  | 20.2%                       | 21.6%                      |
| 20          | Clare, MI           | NLP                | 41.7%                                  | 24.4%                       | 17.3%                      |
| 21          | Cheboygan, MI       | NLP                | 41.6%                                  | 23.7%                       | 17.9%                      |
| 22          | Lake, MI            | NLP                | 41.6%                                  | 21.9%                       | 19.7%                      |
| 23          | Gladwin, MI         | NLP                | 41.6%                                  | 23.2%                       | 18.3%                      |
| 24          | Schoolcraft, MI     | EUP                | 41.3%                                  | 22.8%                       | 18.6%                      |
| 25          | Osceola, MI         | NLP                | 41.3%                                  | 27.1%                       | 14.2%                      |
| 26          | Menominee, MI       | WUP                | 41.3%                                  | 24.0%                       | 17.3%                      |
| 27          | Crawford, MI        | NLP                | 41.1%                                  | 24.5%                       | 16.6%                      |
| 28          | Mason, MI           | NLP                | 41.0%                                  | 24.2%                       | 16.8%                      |
| 29          | Benzie, MI          | NLP                | 40.9%                                  | 23.4%                       | 17.5%                      |
| 30          | Charlevoix, MI      | NLP                | 40.8%                                  | 25.9%                       | 14.9%                      |
| 31          | Wexford, MI         | NLP                | 40.8%                                  | 26.8%                       | 14.0%                      |
| 32          | Delta, MI           | WUP                | 40.8%                                  | 23.8%                       | 17.0%                      |
| 33          | Alpena, MI          | NLP                | 40.8%                                  | 23.7%                       | 17.1%                      |
| 34          | Manistee, MI        | NLP                | 40.7%                                  | 22.6%                       | 18.1%                      |
| 35          | Otsego, MI          | NLP                | 40.5%                                  | 26.8%                       | 13.7%                      |
| 36          | St. Joseph, MI      | SLP                | 40.5%                                  | 27.5%                       | 13.0%                      |
| 37          | Berrien, MI         | SLP                | 40.5%                                  | 26.0%                       | 14.4%                      |
| 38          | Mackinac, MI        | EUP                | 40.4%                                  | 22.2%                       | 18.2%                      |
| 39          | Muskegon, MI        | SLP                | 40.4%                                  | 27.5%                       | 12.9%                      |
| 40          | Van Buren, MI       | SLP                | 40.4%                                  | 28.1%                       | 12.3%                      |

| Rank | County/State       | Impact Area | Total<br>Dependent | Children | Seniors |
|------|--------------------|-------------|--------------------|----------|---------|
|      |                    |             | Percent            | Percent  | Percent |
| 41   | Wayne, MI          | SLP         | 40.1%              | 28.0%    | 12.1%   |
| 42   | Saginaw, MI        | SLP         | 40.1%              | 26.6%    | 13.5%   |
| 43   | Allegan, MI        | SLP         | 40.0%              | 28.9%    | 11.1%   |
| 44   | Arenac, MI         | NLP         | 39.9%              | 23.3%    | 16.6%   |
| 45   | Calhoun, MI        | SLP         | 39.6%              | 26.0%    | 13.7%   |
| 46   | Emmet, MI          | NLP         | 39.6%              | 25.3%    | 14.3%   |
| 47   | Hillsdale, MI      | SLP         | 39.6%              | 26.3%    | 13.3%   |
| 48   | Tuscola, MI        | SLP         | 39.6%              | 26.8%    | 12.8%   |
| 49   | Kalkaska, MI       | NLP         | 39.3%              | 25.6%    | 13.7%   |
| 50   | Baraga, MI         | WUP         | 39.2%              | 22.9%    | 16.3%   |
| 51   | Montcalm, MI       | SLP         | 39.2%              | 27.1%    | 12.1%   |
| 52   | Bay, MI            | SLP         | 39.1%              | 24.5%    | 14.7%   |
| 53   | Cass, MI           | SLP         | 39.1%              | 25.5%    | 13.6%   |
| 54   | Genesee, MI        | SLP         | 39.0%              | 27.4%    | 11.6%   |
| 55   | St. Clair, MI      | SLP         | 39.0%              | 26.8%    | 12.2%   |
| 56   | Barry, MI          | SLP         | 39.0%              | 27.2%    | 11.8%   |
| 57   | Clinton, MI        | SLP         | 39.0%              | 28.1%    | 10.9%   |
| 58   | Midland, MI        | SLP         | 38.9%              | 26.9%    | 12.0%   |
| 59   | Ottawa, MI         | SLP         | 38.8%              | 28.7%    | 10.1%   |
| 60   | Shiawassee, MI     | SLP         | 38.8%              | 26.8%    | 12.0%   |
| 61   | Branch, MI         | SLP         | 38.7%              | 25.5%    | 13.1%   |
| 62   | Kent, MI           | SLP         | 38.6%              | 28.3%    | 10.4%   |
| 63   | Lenawee, MI        | SLP         | 38.6%              | 25.9%    | 12.7%   |
| 64   | Monroe, MI         | SLP         | 38.5%              | 27.4%    | 11.1%   |
| 65   | Jackson, MI        | SLP         | 38.5%              | 25.6%    | 12.9%   |
| 66   | Grand Traverse, MI | NLP         | 38.5%              | 25.4%    | 13.1%   |
|      | Michigan           | State       | 38.4%              | 26.1%    | 12.3%   |
|      | United States      | US          | 38.1%              | 25.7%    | 12.4%   |
| 67   | Macomb, MI         | SLP         | 37.7%              | 24.1%    | 13.7%   |
| 68   | Alger, MI          | EUP         | 37.7%              | 20.5%    | 17.2%   |
| 69   | Lapeer, MI         | SLP         | 37.5%              | 28.0%    | 9.6%    |
| 70   | Eaton, MI          | SLP         | 37.5%              | 26.1%    | 11.3%   |
| 71   | Houghton, MI       | WUP         | 37.3%              | 21.8%    | 15.5%   |
| 72   | Gratiot, MI        | SLP         | 37.3%              | 23.8%    | 13.5%   |
| 73   | Livingston, MI     | SLP         | 37.1%              | 28.8%    | 8.3%    |
| 74   | Ionia, MI          | SLP         | 36.9%              | 26.9%    | 10.0%   |
| 75   | Luce, MI           | EUP         | 36.8%              | 21.4%    | 15.4%   |
| 76   | Oakland, MI        | SLP         | 36.5%              | 25.2%    | 11.3%   |
| 77   | Mecosta, MI        | NLP         | 35.7%              | 22.5%    | 13.2%   |
| 78   | Kalamazoo, MI      | SLP         | 35.4%              | 24.1%    | 11.4%   |
| 79   | Marquette, MI      | WUP         | 34.9%              | 21.4%    | 13.5%   |
| 80   | Chippewa, MI       | EUP         | 34.0%              | 21.3%    | 12.7%   |
| 81   | Ingham, MI         | SLP         | 32.8%              | 23.4%    | 9.4%    |

| Rank | County/State  | Impact Area | Total Dependent | Children | Seniors |
|------|---------------|-------------|-----------------|----------|---------|
|      |               |             | Percent         | Percent  | Percent |
| 82   | Washtenaw, MI | SLP         | 30.2%           | 22.1%    | 8.1%    |
| 83   | Isabella, MI  | SLP         | 29.4%           | 20.3%    | 9.0%    |

Data Source: US Census, 2000

**Table A2.7. Counties with more than 4 percent minority population in 2000.**

| AreaName                 | Most Populous Race     | Minority | Hispanic | White | Black | American Indian | Asian-Pacific Islander | Multi-race |
|--------------------------|------------------------|----------|----------|-------|-------|-----------------|------------------------|------------|
| Western Upper Peninsula  |                        | Percent  |          |       |       |                 |                        |            |
| Baraga                   | American Indian        | 21.4     | 0.9      | 78.6  | 5.0   | 12.0            | 0.3                    | 4.1        |
| Gogebic                  | American Indian        | 5.8      | 0.9      | 94.2  | 1.8   | 2.2             | 0.2                    | 1.6        |
| Keweenaw                 | Black/African American | 5.0      | 0.8      | 95.0  | 3.5   | 0.1             | 0.1                    | 1.3        |
| Marquette                | Multiple Races/Other   | 4.9      | 0.7      | 95.1  | 1.3   | 1.5             | 0.5                    | 1.6        |
| Houghton                 | Asian-Pacific Islander | 4.5      | 0.7      | 95.5  | 0.9   | 0.5             | 1.8                    | 1.2        |
| Delta                    | American Indian        | 4.2      | 0.5      | 95.8  | 0.1   | 2.2             | 0.3                    | 1.5        |
| Eastern Upper Peninsula  |                        |          |          |       |       |                 |                        |            |
| Chippewa                 | American Indian        | 24.1     | 1.6      | 75.9  | 5.5   | 13.3            | 0.5                    | 4.8        |
| Mackinac                 | American Indian        | 19.9     | 0.9      | 80.1  | 0.2   | 14.2            | 0.3                    | 5.2        |
| Luce                     | Black/African American | 17.2     | 1.8      | 82.8  | 7.5   | 5.5             | 0.4                    | 3.7        |
| Alger                    | Black/African American | 12.2     | 1.0      | 87.8  | 6.1   | 3.3             | 0.4                    | 2.4        |
| Schoolcraft              | American Indian        | 11.3     | 0.9      | 88.7  | 1.6   | 6.1             | 0.4                    | 3.2        |
| Northern Lower Peninsula |                        |          |          |       |       |                 |                        |            |
| Lake                     | Black/African American | 15.3     | 1.7      | 84.7  | 11.2  | 1.0             | 0.2                    | 3.0        |
| Oceana                   | Multiple Races/Other   | 9.6      | 11.6     | 90.4  | 0.3   | 1.0             | 0.3                    | 8.0        |
| Mecosta                  | Black/African American | 7.3      | 1.3      | 92.7  | 3.6   | 0.6             | 0.9                    | 2.2        |
| Leelanau                 | American Indian        | 6.5      | 3.3      | 93.5  | 0.2   | 3.7             | 0.3                    | 2.3        |
| Manistee                 | Multiple Races/Other   | 5.8      | 2.6      | 94.2  | 1.6   | 1.3             | 0.4                    | 2.6        |
| Emmet                    | American Indian        | 5.7      | 0.9      | 94.3  | 0.5   | 3.1             | 0.5                    | 1.6        |
| Cheboygan                | American Indian        | 5.2      | 0.8      | 94.8  | 0.2   | 2.5             | 0.2                    | 2.2        |
| Newaygo                  | Multiple Races/Other   | 5.2      | 3.9      | 94.8  | 1.1   | 0.6             | 0.3                    | 3.1        |
| Arenac                   | Black/African American | 4.6      | 1.4      | 95.4  | 1.8   | 0.9             | 0.3                    | 1.5        |
| Mason                    | Multiple Races/Other   | 4.2      | 3.0      | 95.8  | 0.7   | 0.8             | 0.3                    | 2.4        |

**Table A2.8. Percent by race and percent non-white in the United States, Michigan, and eco-region, 2000**

| <b>Impact Area</b>       | <b>Year</b> | <b>American Indian or Alaska Native</b> | <b>Asian or Pacific Islander</b> | <b>African American or Black</b> | <b>Multiple Races</b> | <b>White</b> | <b>Non-White</b> |
|--------------------------|-------------|---|----------------------------------|----------------------------------|-----------------------|--------------|------------------|
| Western Upper Peninsula  | 1980        | 1.0%                                    | 0.3%                             | 0.6%                             | 0.3%                  | 97.8%        | 2.2%             |
|                          | 1990        | 1.6%                                    | 0.6%                             | 0.7%                             | 0.2%                  | 97.0%        | 3.0%             |
|                          | 2000        | 1.8%                                    | 0.6%                             | 0.9%                             | 1.5%                  | 95.2%        | 4.8%             |
| Eastern Upper Peninsula  | 1980        | 6.4%                                    | 0.2%                             | 0.7%                             | 0.2%                  | 92.5%        | 7.5%             |
|                          | 1990        | 9.8%                                    | 0.3%                             | 3.5%                             | 0.2%                  | 86.2%        | 13.8%            |
|                          | 2000        | 10.6%                                   | 0.4%                             | 4.5%                             | 4.3%                  | 80.2%        | 19.8%            |
| Northern Lower Peninsula | 1980        | 0.7%                                    | 0.2%                             | 0.7%                             | 0.4%                  | 98.0%        | 2.0%             |
|                          | 1990        | 1.0%                                    | 0.3%                             | 0.7%                             | 0.4%                  | 97.5%        | 2.5%             |
|                          | 2000        | 1.0%                                    | 0.4%                             | 0.8%                             | 1.9%                  | 95.9%        | 4.1%             |
| Michigan                 | 1980        | 0.4%                                    | 0.6%                             | 12.9%                            | 1.0%                  | 85.0%        | 15.0%            |
|                          | 1990        | 0.6%                                    | 1.1%                             | 13.9%                            | 0.9%                  | 83.5%        | 16.5%            |
|                          | 2000        | 0.6%                                    | 1.8%                             | 14.2%                            | 3.2%                  | 80.2%        | 19.8%            |
| United States            | 1980        | 0.6%                                    | 1.6%                             | 11.7%                            | 3.0%                  | 83.1%        | 16.9%            |
|                          | 1990        | 0.8%                                    | 2.9%                             | 12.0%                            | 3.9%                  | 80.3%        | 19.7%            |
|                          | 2000        | 0.9%                                    | 3.8%                             | 12.3%                            | 7.9%                  | 75.1%        | 24.9%            |

Data Source: US Census, 1980, 1990, and 2000

**Table A2.9. Total population, population of prisoners, and percent prisoners, 1990 and 2000**

| Ecoregion - county              | Total Population |         | Prisoners |       | Percent Prisoners |       |
|---------------------------------|------------------|---------|-----------|-------|-------------------|-------|
|                                 | 1990             | 2000    | 1990      | 2000  | 1990              | 2000  |
| <b>Western Upper Peninsula</b>  |                  |         |           |       |                   |       |
| Menominee, MI                   | 24,920           | 25,326  | 15        | 33    | 0.1%              | 0.1%  |
| Iron, MI                        | 13,175           | 13,138  | 13        | 268   | 0.1%              | 2.0%  |
| Dickinson, MI                   | 26,831           | 27,472  | 28        | 64    | 0.1%              | 0.2%  |
| Keweenaw, MI                    | 1,701            | 2,301   | 0         | 4     | 0.0%              | 0.2%  |
| Houghton, MI                    | 35,446           | 36,016  | 23        | 286   | 0.1%              | 0.8%  |
| Baraga, MI                      | 7,954            | 8,746   | 104       | 608   | 1.3%              | 7.0%  |
| Marquette, MI                   | 70,887           | 64,634  | 926       | 1,206 | 1.3%              | 1.9%  |
| Ontonagon, MI                   | 8,854            | 7,818   | 16        | 15    | 0.2%              | 0.2%  |
| Delta, MI                       | 37,780           | 38,520  | 31        | 60    | 0.1%              | 0.2%  |
| Gogebic, MI                     | 18,052           | 17,370  | 340       | 454   | 1.9%              | 2.6%  |
| WUP Total                       | 245,600          | 241,341 | 1,496     | 2,998 | 0.6%              | 1.2%  |
| <b>Eastern Upper Peninsula</b>  |                  |         |           |       |                   |       |
| Luce, MI                        | 5,763            | 7,024   | 0         | 937   | 0.0%              | 13.3% |
| Alger, MI                       | 8,972            | 9,862   | 359       | 845   | 4.0%              | 8.6%  |
| Chippewa, MI                    | 34,604           | 38,543  | 4,047     | 4,804 | 11.7%             | 12.5% |
| Schoolcraft, MI                 | 8,302            | 8,903   | 6         | 228   | 0.1%              | 2.6%  |
| Mackinac, MI                    | 10,674           | 11,943  | 7         | 17    | 0.1%              | 0.1%  |
| EUP Total                       | 68,315           | 76,275  | 4,419     | 6,831 | 6.5%              | 9.0%  |
| <b>Northern Lower Peninsula</b> |                  |         |           |       |                   |       |
| Antrim, MI                      | 18,185           | 23,110  | 26        | 48    | 0.1%              | 0.2%  |
| Presque Isle, MI                | 13,743           | 14,411  | 8         | 17    | 0.1%              | 0.1%  |
| Arenac, MI                      | 14,931           | 17,269  | 29        | 567   | 0.2%              | 3.3%  |
| Alpena, MI                      | 30,605           | 31,314  | 50        | 70    | 0.2%              | 0.2%  |
| Montmorency, MI                 | 8,936            | 10,315  | 0         | 0     | 0.0%              | 0.0%  |
| Wexford, MI                     | 26,360           | 30,484  | 41        | 41    | 0.2%              | 0.1%  |
| Oceana, MI                      | 22,454           | 26,873  | 49        | 55    | 0.2%              | 0.2%  |
| Roscommon, MI                   | 19,776           | 25,469  | 49        | 80    | 0.2%              | 0.3%  |
| Benzie, MI                      | 12,200           | 15,998  | 22        | 39    | 0.2%              | 0.2%  |
| Otsego, MI                      | 17,957           | 23,301  | 34        | 36    | 0.2%              | 0.2%  |
| Oscoda, MI                      | 7,842            | 9,418   | 0         | 0     | 0.0%              | 0.0%  |
| Mason, MI                       | 25,537           | 28,274  | 144       | 197   | 0.6%              | 0.7%  |
| Ogemaw, MI                      | 18,681           | 21,645  | 39        | 47    | 0.2%              | 0.2%  |
| Mecosta, MI                     | 37,308           | 40,553  | 61        | 8     | 0.2%              | 0.0%  |
| Osceola, MI                     | 20,146           | 23,197  | 27        | 91    | 0.1%              | 0.4%  |
| Crawford, MI                    | 12,260           | 14,273  | 445       | 295   | 3.6%              | 2.1%  |
| Emmet, MI                       | 25,040           | 31,437  | 195       | 202   | 0.8%              | 0.6%  |
| Newaygo, MI                     | 38,202           | 47,874  | 40        | 192   | 0.1%              | 0.4%  |
| Lake, MI                        | 8,583            | 11,333  | 22        | 178   | 0.3%              | 1.6%  |
| Cheboygan, MI                   | 21,398           | 26,448  | 22        | 74    | 0.1%              | 0.3%  |
| Iosco, MI                       | 30,209           | 27,339  | 58        | 45    | 0.2%              | 0.2%  |

|                                 |           |           |       |       |      |      |
|---------------------------------|-----------|-----------|-------|-------|------|------|
| Clare, MI                       | 24,952    | 31,252    | 52    | 175   | 0.2% | 0.6% |
| Manistee, MI                    | 21,265    | 24,527    | 89    | 756   | 0.4% | 3.1% |
| Missaukee, MI                   | 12,147    | 14,478    | 8     | 23    | 0.1% | 0.2% |
| Kalkaska, MI                    | 13,497    | 16,571    | 36    | 47    | 0.3% | 0.3% |
| Charlevoix, MI                  | 21,468    | 26,090    | 18    | 30    | 0.1% | 0.1% |
| Gladwin, MI                     | 21,896    | 26,023    | 49    | 62    | 0.2% | 0.2% |
| Leelanau, MI                    | 16,527    | 21,119    | 22    | 20    | 0.1% | 0.1% |
| Grand Traverse, MI              | 64,273    | 77,654    | 324   | 262   | 0.5% | 0.3% |
| Alcona, MI                      | 10,145    | 11,719    | 13    | 33    | 0.1% | 0.3% |
| NLP Total                       | 636,523   | 749,768   | 1,972 | 3,690 | 0.3% | 0.5% |
| <b>Southern Lower Peninsula</b> |           |           |       |       |      |      |
| Huron, MI                       | 34,951    | 36,079    | 64    | 62    | 0.2% | 0.2% |
| Bay, MI                         | 111,723   | 110,157   | 185   | 179   | 0.2% | 0.2% |
| Isabella, MI                    | 54,624    | 63,351    | 30    | 162   | 0.1% | 0.3% |
| Ionia, MI                       | 57,024    | 61,518    | 4,803 | 5,247 | 8.4% | 8.5% |
| St. Clair, MI                   | 145,607   | 164,235   | 178   | 246   | 0.1% | 0.1% |
| Saginaw, MI                     | 211,946   | 210,039   | 309   | 1,803 | 0.1% | 0.9% |
| Ottawa, MI                      | 187,768   | 238,314   | 205   | 282   | 0.1% | 0.1% |
| Oakland, MI                     | 1,083,592 | 1,194,156 | 1,297 | 2,035 | 0.1% | 0.2% |
| Muskegon, MI                    | 158,983   | 170,200   | 2,894 | 3,932 | 1.8% | 2.3% |
| Sanilac, MI                     | 39,928    | 44,547    | 40    | 90    | 0.1% | 0.2% |
| Lenawee, MI                     | 91,476    | 98,890    | 1,145 | 2,393 | 1.3% | 2.4% |
| Shiawassee, MI                  | 69,770    | 71,687    | 123   | 155   | 0.2% | 0.2% |
| Jackson, MI                     | 149,756   | 158,422   | 7,065 | 7,270 | 4.7% | 4.6% |
| Kalamazoo, MI                   | 223,411   | 238,603   | 649   | 562   | 0.3% | 0.2% |
| Kent, MI                        | 500,631   | 574,335   | 1,201 | 1,428 | 0.2% | 0.2% |
| Macomb, MI                      | 717,400   | 788,149   | 1,093 | 2,492 | 0.2% | 0.3% |
| Lapeer, MI                      | 74,768    | 87,904    | 699   | 1,080 | 0.9% | 1.2% |
| Livingston, MI                  | 115,645   | 156,951   | 347   | 413   | 0.3% | 0.3% |
| Montcalm, MI                    | 53,059    | 61,266    | 1,711 | 2,299 | 3.2% | 3.8% |
| Monroe, MI                      | 133,600   | 145,945   | 127   | 231   | 0.1% | 0.2% |
| Calhoun, MI                     | 135,982   | 137,985   | 191   | 686   | 0.1% | 0.5% |
| Hillsdale, MI                   | 43,431    | 46,527    | 0     | 61    | 0.0% | 0.1% |
| Allegan, MI                     | 90,509    | 105,665   | 603   | 170   | 0.7% | 0.2% |
| Gratiot, MI                     | 38,982    | 42,285    | 548   | 3,066 | 1.4% | 7.3% |
| Genesee, MI                     | 430,459   | 436,141   | 693   | 716   | 0.2% | 0.2% |
| Berrien, MI                     | 161,378   | 162,453   | 351   | 446   | 0.2% | 0.3% |
| Eaton, MI                       | 92,879    | 103,655   | 98    | 217   | 0.1% | 0.2% |
| St. Joseph, MI                  | 58,913    | 62,422    | 221   | 223   | 0.4% | 0.4% |
| Clinton, MI                     | 57,883    | 64,753    | 16    | 152   | 0.0% | 0.2% |
| Ingham, MI                      | 281,912   | 279,320   | 554   | 472   | 0.2% | 0.2% |
| Cass, MI                        | 49,477    | 51,104    | 63    | 138   | 0.1% | 0.3% |
| Barry, MI                       | 50,057    | 56,755    | 53    | 65    | 0.1% | 0.1% |
| Midland, MI                     | 75,651    | 82,874    | 72    | 85    | 0.1% | 0.1% |
| Wayne, MI                       | 2,111,687 | 2,061,162 | 3,411 | 6,874 | 0.2% | 0.3% |

|                 |           |           |        |        |      |      |
|-----------------|-----------|-----------|--------|--------|------|------|
| Washtenaw, MI   | 282,937   | 322,895   | 2,914  | 3,262  | 1.0% | 1.0% |
| Van Buren, MI   | 70,060    | 76,263    | 77     | 106    | 0.1% | 0.1% |
| Tuscola, MI     | 55,498    | 58,266    | 338    | 334    | 0.6% | 0.6% |
| Branch, MI      | 41,502    | 45,787    | 952    | 2,377  | 2.3% | 5.2% |
| SLP Total       | 8,344,859 | 8,871,060 | 35,320 | 51,811 | 0.4% | 0.6% |
| <b>Michigan</b> | 9,295,297 | 9,938,444 | 43,207 | 65,330 | 0.5% | 0.7% |

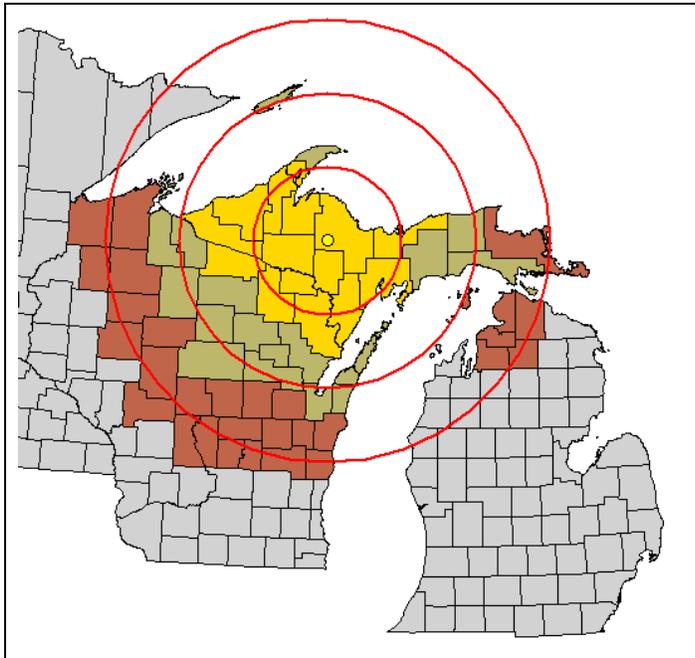
Data source: US Census, SF1 files, 1990 and 2000

**Table A2.10. Educational enrollment and educational achievement by county and eco-region, 2000**

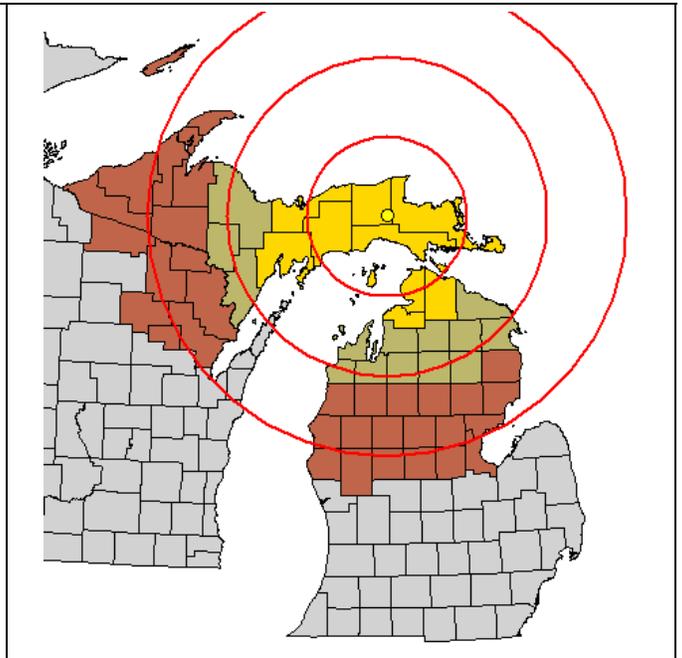
| Impact Area              | County         | Not enrolled in school and not HS graduate | Enrolled in college or graduate school | Less than ninth grade education | HS graduate or higher | BA/BS degree or higher | BA/BS degree or higher |
|--------------------------|----------------|--|--|---------------------------------|-----------------------|------------------------|------------------------|
|                          |                |  |  |                                 |                       |                        |                        |
| Western Upper Peninsula  | Baraga         | 8.5%                                       | 14.0%                                  | 6.5%                            | 80.6%                 | 10.9%                  | 10.8%                  |
|                          | Delta          | 3.7%                                       | 34.4%                                  | 4.8%                            | 86.1%                 | 17.1%                  | 19.3%                  |
|                          | Dickinson      | 4.6%                                       | 18.2%                                  | 3.0%                            | 88.8%                 | 16.7%                  | 19.6%                  |
|                          | Gogebic        | 7.8%                                       | 26.2%                                  | 4.5%                            | 85.5%                 | 15.8%                  | 14.3%                  |
|                          | Houghton       | 3.9%                                       | 73.8%                                  | 5.2%                            | 84.6%                 | 23.0%                  | 28.0%                  |
|                          | Iron           | 3.3%                                       | 11.6%                                  | 4.2%                            | 84.8%                 | 13.7%                  | 12.9%                  |
|                          | Keweenaw       | 5.3%                                       | 17.4%                                  | 5.7%                            | 83.7%                 | 19.1%                  | 14.2%                  |
|                          | Marquette      | 3.4%                                       | 59.0%                                  | 3.7%                            | 88.5%                 | 23.7%                  | 25.3%                  |
|                          | Menominee      | 4.9%                                       | 22.5%                                  | 5.8%                            | 83.5%                 | 11.0%                  | 12.1%                  |
|                          | Ontonagon      | 7.5%                                       | 18.0%                                  | 6.4%                            | 83.8%                 | 13.0%                  | 14.3%                  |
| Eastern Upper Peninsula  | Alger          | 5.7%                                       | 13.3%                                  | 6.0%                            | 81.5%                 | 14.7%                  | 14.5%                  |
|                          | Chippewa       | 8.2%                                       | 44.6%                                  | 5.1%                            | 82.4%                 | 15.0%                  | 15.8%                  |
|                          | Luce           | 18.3%                                      | 10.0%                                  | 7.6%                            | 75.5%                 | 11.8%                  | 8.6%                   |
|                          | Mackinac       | 11.5%                                      | 14.8%                                  | 5.6%                            | 82.5%                 | 14.9%                  | 14.4%                  |
|                          | Schoolcraft    | 10.4%                                      | 11.3%                                  | 5.7%                            | 79.4%                 | 11.3%                  | 11.1%                  |
| Northern Lower Peninsula | Alcona         | 10.5%                                      | 14.8%                                  | 5.6%                            | 79.7%                 | 10.9%                  | 5.9%                   |
|                          | Alpena         | 5.7%                                       | 31.0%                                  | 7.4%                            | 83.1%                 | 13.2%                  | 15.0%                  |
|                          | Antrim         | 7.7%                                       | 16.0%                                  | 3.3%                            | 84.6%                 | 19.4%                  | 15.3%                  |
|                          | Arenac         | 10.4%                                      | 19.0%                                  | 7.6%                            | 76.8%                 | 9.1%                   | 10.4%                  |
|                          | Benzie         | 6.6%                                       | 18.6%                                  | 3.5%                            | 85.4%                 | 20.0%                  | 19.5%                  |
|                          | Charlevoix     | 6.7%                                       | 15.4%                                  | 3.9%                            | 86.0%                 | 19.8%                  | 18.7%                  |
|                          | Cheboygan      | 7.5%                                       | 13.8%                                  | 5.6%                            | 81.9%                 | 13.9%                  | 14.3%                  |
|                          | Clare          | 9.7%                                       | 18.6%                                  | 6.4%                            | 76.1%                 | 8.8%                   | 10.1%                  |
|                          | Crawford       | 6.6%                                       | 16.6%                                  | 4.4%                            | 80.8%                 | 12.9%                  | 13.1%                  |
|                          | Emmet          | 7.2%                                       | 28.0%                                  | 3.1%                            | 89.0%                 | 26.2%                  | 25.0%                  |
|                          | Gladwin        | 12.2%                                      | 17.5%                                  | 6.8%                            | 78.3%                 | 9.2%                   | 12.5%                  |
|                          | Grand Traverse | 8.1%                                       | 28.9%                                  | 2.9%                            | 89.3%                 | 26.1%                  | 24.8%                  |
|                          | Iosco          | 11.3%                                      | 14.1%                                  | 5.3%                            | 77.9%                 | 11.3%                  | 12.1%                  |
|                          | Kalkaska       | 13.4%                                      | 12.6%                                  | 4.9%                            | 80.0%                 | 9.7%                   | 10.0%                  |
|                          | Lake           | 25.1%                                      | 10.1%                                  | 7.0%                            | 72.2%                 | 7.8%                   | 5.8%                   |
|                          | Leelanau       | 2.8%                                       | 28.1%                                  | 2.7%                            | 90.7%                 | 31.4%                  | 25.3%                  |
|                          | Manistee       | 9.6%                                       | 16.4%                                  | 5.0%                            | 81.4%                 | 14.2%                  | 13.7%                  |
|                          | Mason          | 10.1%                                      | 23.9%                                  | 5.2%                            | 82.7%                 | 15.9%                  | 17.9%                  |
|                          | Mecosta        | 5.1%                                       | 71.5%                                  | 5.2%                            | 83.8%                 | 19.1%                  | 18.5%                  |
|                          | Missaukee      | 10.0%                                      | 16.5%                                  | 5.9%                            | 78.6%                 | 10.2%                  | 11.6%                  |
| Montmorency              | 7.3%           | 16.5%                                      | 6.7%                                   | 74.8%                           | 8.2%                  | 12.4%                  |                        |

| Impact Area | County       | Not enrolled in school and not HS graduate | Enrolled in college or graduate school | Less than ninth grade education | HS graduate or higher | BA/BS degree or higher | BA/BS degree or higher |
|-------------|--------------|--|--|---------------------------------|-----------------------|------------------------|------------------------|
|             |              | 16-19 years                                |  | 18-24 years                     | 25 years or older     |                        | 25 to 34 year          |
|             | Newaygo      | 10.2%                                      | 17.2%                                  | 6.6%                            | 78.7%                 | 11.4%                  | 12.6%                  |
|             | Oceana       | 12.7%                                      | 14.7%                                  | 7.7%                            | 79.8%                 | 12.6%                  | 11.4%                  |
|             | Ogemaw       | 7.5%                                       | 20.6%                                  | 7.0%                            | 75.0%                 | 9.6%                   | 12.3%                  |
|             | Osceola      | 8.6%                                       | 16.8%                                  | 5.7%                            | 80.5%                 | 11.3%                  | 12.8%                  |
|             | Oscoda       | 16.1%                                      | 18.7%                                  | 7.9%                            | 73.7%                 | 8.0%                   | 5.0%                   |
|             | Otsego       | 4.3%                                       | 13.3%                                  | 3.8%                            | 85.5%                 | 17.4%                  | 19.5%                  |
|             | Presque Isle | 6.5%                                       | 24.1%                                  | 9.2%                            | 77.0%                 | 11.5%                  | 13.4%                  |
|             | Roscommon    | 8.2%                                       | 22.0%                                  | 4.4%                            | 79.5%                 | 10.9%                  | 11.8%                  |
|             | Wexford      | 11.2%                                      | 16.8%                                  | 4.6%                            | 82.0%                 | 15.3%                  | 16.2%                  |
| Michigan    | Michigan     | 8.7%                                       | 36.7%                                  | 4.7%                            | 83.4%                 | 21.8%                  | 26.0%                  |

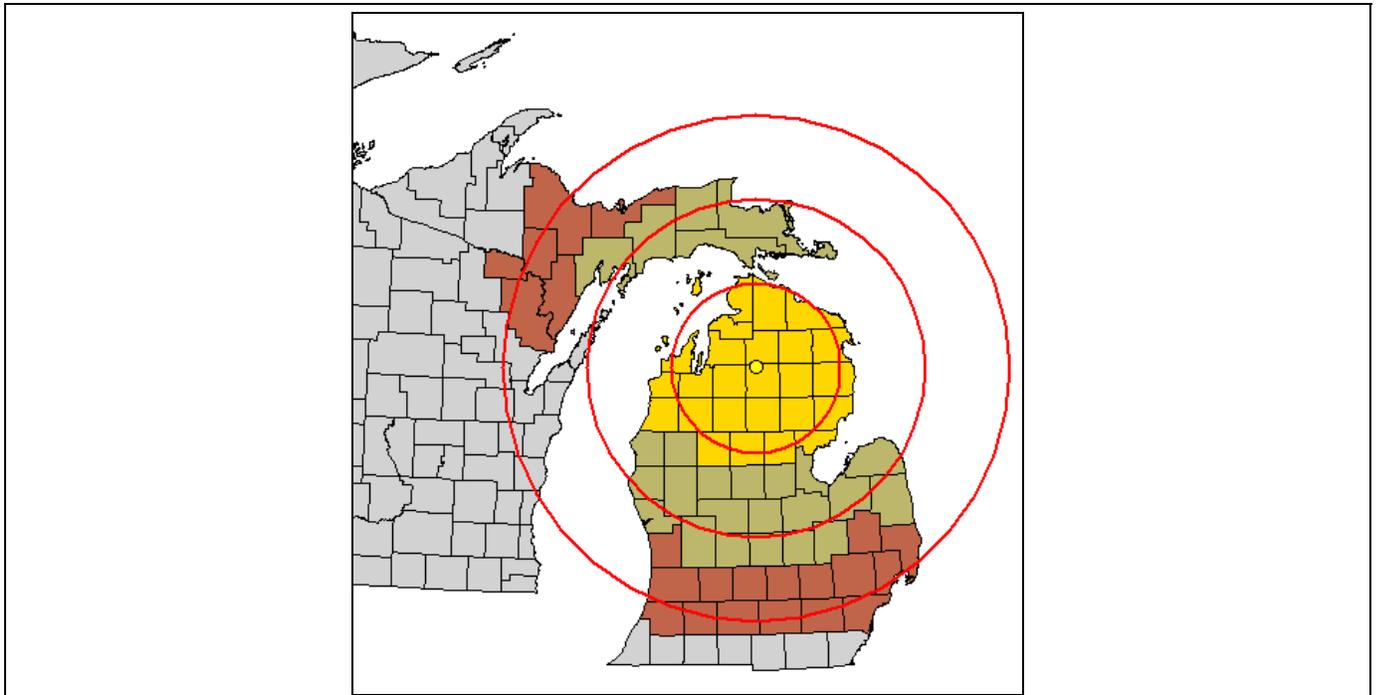
Data Source: US Census, 1980, 1990, and 2000



**Figure A2.1. Counties within 60, 120, and 180 miles of the state forests in the Western Upper Peninsula state forests.**



**Figure A2.2. Counties within 60, 120, and 180 miles of the state forests in the Eastern Upper Peninsula state forests.**



**Figure A2.3. Counties within 60, 120, and 180 miles of the state forests in the Northern Lower Peninsula state forests.**

## Chapter 3. MI DNR Relationships with Communities

Table A3.1. Communities of interest by eco-region (self reported)

| State-wide | WUP | EUP | NLP | Organization   |
|------------|-----|-----|-----|--|
|            |     |     |     | <b>Int'l Government</b>                                      |
| X          | X   | X   | X   | International Joint Commission - Great Lakes Regional Office |
|            |     |     |     | Federal Government   |
|            |     |     | X   | Camp Grayling  |
|            |     |     | X   | Farm Service Agency  |
|            | X   | X   |     | Hiawatha National Forest                                     |
|            |     |     | X   | Huron Manistee National Forest                               |
| X          | X   | X   | X   | Natural Resource Conservation Service                        |
|            |     |     | X   | Natural Resources Conservation Service                       |
|            | X   |     |     | Ottawa National Forest                                       |
| X          | X   | X   | X   | US Fish and Wildlife Service                                 |
| X          | X   | X   | X   | USDA Forest Service  |
|            |     |     | X   | USDI National Park Service                                   |
|            |     |     |     | <b>Multi-State Government</b>                                |
| X          | X   | X   | X   | Great Lakes Fishery Commission                               |
|            |     |     |     | State Government   |
| X          | X   | X   | X   | Governor's Office  |
| X          | X   | X   | X   | Michigan Department of Agriculture                           |
| X          | X   | X   | X   | Michigan Department of Environmental Quality                 |
| X          | X   | X   | X   | Michigan Department of Natural Resources Fisheries Division  |
|            |     |     | X   | Michigan Department of Transportation                        |
| X          | X   | X   | X   | Michigan Dept. of Agriculture                                |
| X          | X   | X   | X   | Michigan Economic Development Corporation                    |
| X          | X   | X   | X   | Michigan Sea Grant   |
| X          | X   | X   | X   | Michigan Water Resources Commission                          |
|            |     |     | X   | State Historic Preservation Office                           |
|            |     |     | X   | State senators and representatives                           |
|            |     |     |     | <b>Local Government</b>                                      |
|            |     |     | X   | Alcona County Road Commission                                |
|            |     |     | X   | Alpena County Road Commission                                |
|            |     |     | X   | Antrim County Road Commission                                |
|            |     |     | X   | Arenac County Road Commission                                |
|            |     |     | X   | Bay County Road Commission                                   |
|            |     |     | X   | Benzie County Road Commission                                |
|            |     |     | X   | Charlevoix County Road Commission                            |
|            |     |     | X   | Cheboygan County Road Commission                             |
|            |     | X   |     | Chippewa E Mackinac Cons District                            |
|            |     |     | X   | Clare County Road Commission                                 |
| X          | X   | X   | X   | County Conservation Districts                                |
| X          | X   | X   | X   | County Road Commissions                                      |

| <b>State-wide</b> | <b>WUP</b> | <b>EUP</b> | <b>NLP</b> | <b>Organization</b>                      |
|-------------------|------------|------------|------------|--|
|                   |            |            | X          | Crawford County Road Commission          |
|                   |            |            | X          | Emmet County Road Commission             |
|                   |            |            | X          | Gladwin Co. Rd. Comm.                    |
|                   |            |            | X          | Gladwin County Road Commission           |
|                   | X          |            |            | Gogebic County Forest                    |
|                   |            |            | X          | Grand Traverse County Road Commission    |
|                   |            |            | X          | Iosco County Road Commission             |
|                   |            |            | X          | Isabella County Road Commission          |
|                   |            |            | X          | Kalkaska County Road Commission          |
|                   |            |            | X          | Lake County Road Commission              |
|                   |            |            | X          | Leelanau County Road Commission          |
|                   |            | X          |            | Luce County Road Commission              |
|                   |            |            | X          | Manistee County Road Commission          |
|                   |            | X          |            | Marquette Conservation District          |
|                   |            |            | X          | Mason County Road Commission             |
|                   |            |            | X          | Mecosta County Road Commission           |
|                   |            |            | X          | Midland County Road Commission           |
|                   |            |            | X          | Missaukee County Road Commission         |
|                   |            |            | X          | Montmorency County Conservation District |
|                   |            |            | X          | Montmorency County Road Commission       |
|                   |            |            | X          | Newaygo County Road Commission           |
|                   |            | X          |            | Newberry Fire Dept                       |
|                   |            |            | X          | Oceana County Road Commission            |
|                   |            |            | X          | Ogemaw County Road Commission            |
|                   |            |            | X          | Osceola County Road Commission           |
|                   |            |            | X          | Oscoda County Road Commission            |
|                   |            |            | X          | Otsego Co Road Commission.               |
|                   |            |            | X          | Otsego County Road Commission            |
|                   |            |            | X          | Presque Isle County Road Commission      |
|                   |            |            | X          | Roscommon County Road Commission         |
|                   |            | X          |            | Tri-County Fire Department               |
|                   |            |            | X          | Tri-Township Fire Dept                   |
|                   |            |            | X          | Waverly Township (Cheboygan County)      |
|                   |            |            | X          | Wexford County Road Commission           |
|                   |            |            |            | Development/planning                     |
|                   |            |            | X          | Alpena Area Chamber of Commerce          |
|                   |            |            | X          | Boyne Area Chamber of Commerce           |
|                   |            |            | X          | Cadillac Area Chamber of Commerce        |
|                   |            |            | X          | Cadillac Visitor's Bureau                |
|                   |            |            | X          | Cadillac Winter Promo.                   |
|                   |            |            | X          | Charlevoix Area Chamber of Commerce      |
|                   |            |            | X          | Cheboygan Area Chamber of Commerce       |
|                   |            |            | X          | Clare Co. Planning Committee             |
|                   |            |            | X          | County Road Association of Michigan      |

| State-wide | WUP | EUP | NLP | Organization  |
|------------|-----|-----|-----|---|
|            |     |     | X   | East Central Michigan Planning & Development Comm                     |
|            |     |     | X   | Gaylord/Otsego County Chamber of Commerce                             |
|            |     |     | X   | Grayling Regional Chamber of Commerce                                 |
|            |     |     | X   | Higgins Lake - Roscommon Chamber of Commerce                          |
|            |     |     | X   | Houghton Lake Chamber of Commerce                                     |
|            |     |     | X   | Huron Pines RC&D  |
| X          | X   | X   | X   | Local Chambers of Commerce  |
|            |     |     | X   | Manistee Area Chamber of Commerce                                     |
|            |     |     | X   | Mecosta County Area Chamber of Commerce                               |
|            |     |     | X   | Michigan Association of Planning                                      |
|            |     |     | X   | Michigan Chamber of Commerce  |
|            |     |     | X   | Michigan Municipal League   |
|            |     |     | X   | Michigan Sheriffs Association   |
|            |     |     | X   | Michigan Sunrise Side Travel Association                              |
|            |     |     | X   | Michigan Township Association   |
|            |     |     | X   | NE Michigan Council of Governments                                    |
|            |     |     | X   | NW Michigan Council of Governments                                    |
|            |     |     | X   | Petoskey Regional Chamber of Commerce                                 |
|            |     |     | X   | Rural Development Council of Michigan                                 |
|            |     |     | X   | Traverse City Chamber of Commerce                                     |
|            |     |     | X   | West Michigan Shoreline Regional Development Commission               |
|            |     |     | X   | West Michigan Tourist Association                                     |
|            |     |     |     | <b>Tribal</b>   |
| X          | X   | X   | X   | Bay Mills Indian Community  |
| X          | X   | X   | X   | Burt Lake Band of Ottawa and Chippewa Indians                         |
| X          | X   | X   | X   | Grand River Band of Ottawa Indians                                    |
| X          | X   | X   | X   | Grand Traverse Band of Ottawa and Chippewa Indians                    |
| X          | X   | X   | X   | Great Lakes Indian Fish and Wildlife Commission (GLIFWC) – Odanah, WI |
| X          | X   | X   | X   | Hannahville Indian Community  |
| X          | X   | X   | X   | Huron Potawatomi Nation   |
| X          | X   | X   | X   | Keweenaw Bay Indian Community   |
| X          | X   | X   | X   | Lac Vieux Desert Band of Lake Superior Chippewa Indians               |
| X          | X   | X   | X   | Little River Band of Ottawa Indians                                   |
| X          | X   | X   | X   | Little Traverse Bay Bands of Odawa Indians                            |
| X          | X   | X   | X   | Match-e-be-nash-she-wish Band of Pottawatomis Indians                 |
| X          | X   | X   | X   | Michigan Agency Bureau of Indian Affairs                              |
| X          | X   | X   | X   | Pokagon Band of Potawatomi Indians                                    |
| X          | X   | X   | X   | Saginaw Chippewa Indian Tribe   |
| X          | X   | X   | X   | Sault Ste. Marie Tribe of Chippewa Indians                            |
| X          | X   | X   | X   | Swan Creek Black River Confederated Ojibwa Tribes                     |
|            |     |     |     | <b>Universities</b>   |
|            |     |     | X   | Alpena Community College  |
|            |     |     | X   | Baker College   |

| State-wide | WUP | EUP | NLP | Organization  |
|------------|-----|-----|-----|---|
|            |     |     | X   | Central Michigan University                                     |
|            |     |     | X   | Davenport University  |
|            |     |     | X   | Grand Valley State University                                   |
|            |     |     | X   | Kirtland Community College                                      |
|            |     | X   |     | Lake Superior State University                                  |
| X          | X   | X   | X   | Michigan State University                                       |
| X          | X   | X   | X   | Michigan Technological University                               |
|            |     |     | X   | Mid-Michigan Community College                                  |
|            |     |     | X   | North Central Michigan College                                  |
| X          | X   | X   | X   | University of Michigan  |
|            |     |     |     | <b>Research, Development, and Extension</b>                     |
| X          | X   | X   | X   | Annis Water Resources Institute - Grand Valley State University |
| X          | X   | X   | X   | Michigan Land Use Institute                                     |
| X          | X   | X   | X   | Michigan State University Extension                             |
|            |     |     |     | <b>Forestry</b>   |
|            |     |     | X   | Consulting foresters  |
| X          | X   | X   | X   | Forest Conservation Council                                     |
| X          | X   | X   | X   | Forest products industry  |
| X          | X   | X   | X   | Forestry consultants  |
| X          | X   | X   | X   | Great Lakes Forest Resource Alliance                            |
|            |     |     | X   | Lake States Lumber Association                                  |
| X          | X   | X   | X   | Logging Contractors   |
|            | X   |     |     | Marquette County Forestry Commission                            |
|            |     | X   |     | MI Assn of Timbermen  |
|            |     | X   |     | MI Forest Stewardship Advisory Comm                             |
| X          | X   | X   | X   | Michigan Association of Consulting Foresters                    |
| X          | X   | X   | X   | Michigan Association of Timbermen                               |
|            |     |     | X   | Michigan Christmas Tree Association                             |
| X          | X   | X   | X   | Michigan Forest Association                                     |
| X          | X   | X   | X   | Michigan Forest Products Council                                |
| X          | X   | X   | X   | Michigan Forest Resource Alliance                               |
|            |     |     | X   | Michigan Maple Syrup Association                                |
|            |     |     | X   | Michigan Professional Loggers Council                           |
| X          | X   | X   | X   | Michigan Society of American Foresters                          |
| X          | X   | X   | X   | Michigan Tree Farm System                                       |
|            |     |     | X   | Pigeon River Community Advisory Council                         |
|            |     |     | X   | Pigeon River County Association                                 |
| X          | X   | X   | X   | Society of American Foresters                                   |
|            | X   |     |     | Timber Investment Management Organizations (TIMOs)              |
| X          | X   | X   | X   | Timber Producers Association of Michigan and Wisconsin          |
| X          | X   | X   | X   | Timberland Resource Conservation and Development                |
|            |     |     |     | <b>Energy</b>   |
|            |     |     | X   | Energy companies  |
| X          | X   | X   | X   | Michigan Oil & Gas Association                                  |

| State-wide | WUP | EUP | NLP | Organization                                      |
|------------|-----|-----|-----|---|
|            |     |     |     | <b>Recreation</b>                                 |
|            |     |     | X   | Alpena Snowmobile Club                            |
| X          | X   | X   | X   | Boy Scout Organizations                           |
|            |     |     | X   | BSA Scenic Trails Council                         |
|            |     |     | X   | Cadillac Motorcycle Club                          |
|            |     |     | X   | Cadillac Pathway                                  |
| X          | X   | X   | X   | Cycle Conservation Club                           |
|            |     | X   |     | Drummond Island ORV Club                          |
| X          | X   | X   | X   | Girl Scout Organizations                          |
|            |     |     | X   | Girl Scouts Crooked Tree Council                  |
|            |     |     | X   | Girl Scouts of Mitten Bay                         |
|            |     | X   |     | Grand Marais Snowmobile Club                      |
|            |     |     | X   | Grand Traverse Area Snowmobile Council            |
|            |     | X   | X   | Great Lakes 4 Wheel Drive Association             |
|            | X   |     |     | Iron Range Trail Club Inc.                        |
|            |     |     | X   | Lansing Motorcycle Club                           |
|            | X   |     |     | MI ATV Association                                |
|            | X   |     |     | MI RV And Campers Association                     |
|            |     |     | X   | Mich Mt Biking Assoc                              |
|            |     |     | X   | Mich Trail Riders Assoc.                          |
|            |     |     | X   | Michigan Association of RV Campgrounds            |
|            |     |     | X   | Michigan Cycle Conservation Club                  |
|            |     |     | X   | Michigan Longbow Association                      |
|            |     |     | X   | Michigan Mountain Bike Association                |
|            |     |     | X   | Michigan Rails-to-Trails Conservancy              |
|            |     |     | X   | Michigan Recreation Canoe Association             |
|            |     |     | X   | Michigan Recreational Vehicles Riders Association |
|            |     |     | X   | Michigan Rifle & Pistol Association (NRA)         |
| X          | X   | X   | X   | Michigan Snowmobile Association                   |
|            |     |     | X   | Michigan Sport Rider                              |
|            |     |     | X   | Michigan Trail Riders Association                 |
|            |     |     | X   | Midland to Mackinaw Hiking Trail                  |
|            | X   |     | X   | North Country Trail Association                   |
|            |     |     | X   | Norway Ridge Ski/Hiking Trail                     |
|            | X   |     |     | ORV Advisory Committee                            |
|            |     |     | X   | Over the Hill 4 Wheelers                          |
|            |     | X   |     | Paradise Nightriders Snowmobile Club              |
|            |     | X   |     | Schoolcraft Snowmobile Assoc.                     |
|            |     |     | X   | So Michigan Rockcrawlers 4WD                      |
|            |     | X   |     | SORVA ORV Organization                            |
|            |     | X   |     | Tahquamenon Area Snomobile Association            |
|            |     |     | X   | Trails Program Advisory Board                     |
|            |     |     | X   | Two Trackers 4WD Club                             |
|            |     |     |     | Fish and Wildlife                                 |

| <b>State-wide</b> | <b>WUP</b> | <b>EUP</b> | <b>NLP</b> | <b>Organization</b>                                   |
|-------------------|------------|------------|------------|---|
|                   |            | X          |            | Alger Co. Sportsmen's Alliance                        |
|                   |            |            | X          | Alpena B.A.S.S. Club                                  |
| X                 | X          | X          | X          | American Fisheries Society - Michigan Chapter         |
|                   |            |            | X          | Anglers of the AuSable                                |
|                   |            |            | X          | Archery Bear Hunters of Michigan                      |
|                   |            |            | X          | Au Sable Institute                                    |
|                   |            |            | X          | Avid Bass Anglers of MI                               |
|                   | X          |            |            | Bay De Noc Gobblers, Delta County Chapter Of N.W.T.F. |
|                   |            |            | X          | Benzie Area Steelheaders                              |
|                   |            |            | X          | Benzie Fishery Coalition                              |
|                   | X          |            |            | CLK Sportsmen's Club                                  |
| X                 | X          | X          | X          | Ducks Unlimited                                       |
|                   | X          |            |            | Eastern Dickinson Co. Sportsmen Club                  |
|                   |            |            | X          | Elk-Skegemog Association                              |
|                   |            |            | X          | Elk-Skegemog Lake Association                         |
| X                 | X          | X          | X          | Federation of Fly Fishers                             |
|                   |            |            | X          | Gladwin Field Trial Area                              |
|                   | X          |            |            | Great Lakes Fur Harvesters                            |
|                   |            |            | X          | Grouse Unlimited                                      |
|                   |            | X          |            | Hiawatha Sportsman Club                               |
|                   | X          |            |            | Iron County Bowhunting Club                           |
|                   |            |            | X          | Isaac Walton League                                   |
| X                 | X          | X          | X          | Izaak Walton League - Michigan Division               |
|                   |            |            | X          | Lake Hurton Sport Fishing Association                 |
|                   |            |            | X          | Mackinaw Trail Fly Fishers                            |
|                   | X          |            |            | Menominee Woods & Stream Sportsmen                    |
|                   |            |            | X          | Mich Wild Turkey Federation                           |
| X                 | X          | X          | X          | Michigan Anglers Association                          |
|                   |            |            | X          | Michigan Bear Hunters Association                     |
| X                 | X          | X          | X          | Michigan Bow Hunter's Association                     |
|                   |            |            | X          | Michigan Bowhunters Association                       |
| X                 | X          | X          | X          | Michigan Duck Hunter's Association                    |
| X                 | X          | X          | X          | Michigan Fly Fishing Club                             |
|                   |            |            | X          | Michigan Hunting Dog Federation                       |
|                   |            |            | X          | Michigan Outdoors Habitat Brokerage                   |
|                   |            |            | X          | Michigan Sharptail Grouse Association                 |
| X                 | X          | X          | X          | Michigan Sharptailed Grouse Association               |
|                   |            |            | X          | Michigan Sportsmen's Congress                         |
|                   |            |            | X          | Michigan State United Coon Hunters Association        |
| X                 | X          | X          | X          | Michigan Steelhead and Salmon Fishermen's Association |
|                   |            |            | X          | Michigan Traditional Bowhunters Association           |
|                   |            |            | X          | Michigan Trail Fly Fishers                            |
| X                 | X          | X          | X          | Michigan Trappers Association                         |
|                   |            |            | X          | Michigan United Coonhunters Association               |

| <b>State-wide</b> | <b>WUP</b> | <b>EUP</b> | <b>NLP</b> | <b>Organization</b>                                     |
|-------------------|------------|------------|------------|---|
| X                 | X          | X          | X          | Michigan Wild Turkey Hunter's Association               |
|                   |            |            | X          | Michigan Wild Turkey Hunters Association                |
|                   | X          |            |            | Mid-County Sportsman's Club                             |
|                   |            |            | X          | Montmorency County Sportsmans Club                      |
| X                 | X          | X          | X          | National Wild Turkey Federation                         |
| X                 | X          | X          | X          | National Wildlife Federation                            |
|                   |            |            | X          | NE Michigan Houndsman Club                              |
|                   |            |            | X          | NE Michigan Hunt Clubs                                  |
|                   | X          |            |            | Normenco Sportsman's Club                               |
|                   |            |            | X          | Northland Sportsmen's Club                              |
|                   |            |            | X          | Northwest Michigan Hunting Dog Federation               |
|                   |            |            | X          | NWF-GL Natural Resource Center                          |
|                   | X          |            |            | Ottawa Sportsman's Club                                 |
|                   | X          |            |            | Otter Lake Sportsmen's Club                             |
| X                 | X          | X          | X          | Pheasants Forever                                       |
|                   | X          |            |            | Portage Lake Sportsmen, Inc.                            |
|                   |            |            | X          | Presque Isle Sportsmen Club                             |
|                   |            |            | X          | Quail Unlimited National Headquarters                   |
|                   |            |            | X          | Quality Deer Management                                 |
|                   |            | X          |            | Quality Deer Mgmt. Assoc.                               |
|                   |            |            | X          | Quality Whitetails                                      |
|                   |            |            | X          | Rocky Mountain Elk Foundation                           |
| X                 | X          | X          | X          | Ruffed Grouse Society                                   |
|                   |            |            | X          | Ruffed Grouse Society/Buttles Rd Ski Trail              |
|                   | X          |            | X          | Safari Club International                               |
|                   | X          |            |            | Sagola Twp. Sportsmen's Club                            |
|                   |            | X          |            | Sault Area Sportsmens Club                              |
|                   |            | X          |            | Schoolcraft Co. UP Whitetails Assoc.                    |
|                   |            |            | X          | Steelhead Anglers                                       |
| X                 | X          | X          | X          | Steelheaders Association                                |
|                   |            |            | X          | Sturgeons for Tomorrow                                  |
|                   | X          |            |            | Superior Deer Management Assoc                          |
| X                 | X          | X          | X          | The Wildlife Society - Michigan Chapter                 |
|                   |            |            | X          | Thunder Bay Steelheaders                                |
| X                 | X          | X          | X          | Trout Unlimited   |
|                   |            |            | X          | Trout Unlimited/Pine R.                                 |
|                   | X          |            |            | U.P. Bear Houndsmen Association                         |
|                   | X          |            |            | U.P. Boss Busters, Marquette County Chapter Of N.W.T.F. |
|                   | X          |            |            | U.P. Bow Hunters  |
|                   | X          |            |            | U.P. Long Beards, Dickinson County Chapter Of N.W.T.F.  |
|                   | X          |            |            | U.P. Sportsmen's Alliance                               |
|                   | X          |            |            | U.P. Trappers Association                               |
|                   | X          |            |            | U.P. Whitetails Assoc.                                  |
|                   | X          |            |            | U.P. Whitetails Of Marquette County                     |

| State-wide | WUP | EUP | NLP | Organization                                       |
|------------|-----|-----|-----|--|
|            | X   |     |     | United Bear Hunters                                |
|            | X   |     |     | UP Sportsman Assoc                                 |
|            | X   |     |     | UP Whitetails Of Dickinson County                  |
|            | X   | X   |     | Upper Peninsula Sport Fishermen's Association      |
|            |     | X   |     | Whitefish Township Fire Dept                       |
| X          | X   | X   | X   | Whitetails Unlimited                               |
|            | X   |     |     | Whitetails Unlimited - Ontonagon Co.               |
| X          | X   | X   | X   | Wild Turkey Hunters Association                    |
| X          | X   | X   | X   | Wildlife Society                                   |
|            | X   | X   |     | Wildlife Unlimited of Delta County, Michigan, Inc. |
|            | X   |     |     | Wildlife Unlimited Of Dickinson Co.                |
|            | X   |     |     | Wildlife Unlimited Of Iron County                  |
|            | X   |     | X   | Woodcock Limited                                   |
|            |     |     |     | Land Management                                    |
|            |     |     | X   | Charlevoix Conservancy                             |
|            |     | X   |     | Friends of the Pictured Rocks                      |
| X          | X   | X   | X   | Great Lakes Bioregional Land Conservancy           |
|            |     |     | X   | HeadWaters Land Conservancy                        |
|            |     |     | X   | Land Conservancy of West Michigan                  |
|            |     |     | X   | Leelanau Conservancy                               |
|            |     |     | X   | Little Forks Conservancy                           |
|            |     |     | X   | Little Traverse Conservancy                        |
|            |     |     | X   | Pigeon River Country Association                   |
|            |     |     | X   | PTS Betsie to Sable Conservancy                    |
|            |     |     | X   | Saginaw Basin Land Conservancy                     |
|            |     |     |     | <b>Conservation</b>                                |
|            |     |     | X   | American Land Conservancy                          |
|            |     |     | X   | Cadillac Area Land Conservancy                     |
|            |     |     | X   | Conservation Reserve Alliance                      |
|            |     |     | X   | Conservation Resource Alliance                     |
|            |     |     | X   | Elkland Senior Conservation Club                   |
|            |     |     | X   | Grand Traverse Regional Land Conservancy           |
|            |     |     | X   | Grass Lake Natural Area                            |
| X          | X   | X   | X   | Michigan Association of Conservation Districts     |
| X          | X   | X   | X   | Michigan Natural Features Inventory (MNFI)         |
| X          | X   | X   | X   | Michigan Nature Association                        |
| X          | X   | X   | X   | Michigan Resource Stewards                         |
| X          | X   | X   | X   | Michigan United Conservation Clubs                 |
|            |     |     | X   | Old Mission Conservancy                            |
|            |     |     | X   | Points Betsie to Sable Conservancy                 |
| X          | X   | X   | X   | The Nature Conservancy of Michigan                 |
|            |     |     | X   | The Wildflower Association of Michigan             |
|            |     |     |     | <b>Environmental</b>                               |
|            |     |     | X   | Friends of Northeast Michigan Ecosystems           |

| <b>State-wide</b> | <b>WUP</b> | <b>EUP</b> | <b>NLP</b> | <b>Organization</b>                               |
|-------------------|------------|------------|------------|---|
| X                 | X          | X          | X          | Greening of Detroit                               |
| X                 | X          | X          | X          | Michigan Environmental Council                    |
|                   |            |            | X          | Northern Michigan Environmental Action Council    |
| X                 | X          | X          | X          | Northwoods Wilderness Recovery                    |
| X                 | X          | X          | X          | The Sierra Club, Mackinac Chapter                 |
|                   | X          |            |            | Upper Peninsula Environmental Coalition           |
| X                 | X          | X          | X          | West Michigan Environmental Action Council        |
| X                 | X          | X          | X          | Wilderness Society                                |
|                   |            |            |            | <b>Water Resources</b>                            |
|                   |            |            | X          | Bear Creek Watershed Council                      |
|                   |            |            | X          | Black Lake Association                            |
|                   |            |            | X          | Boardman River Advisory Council                   |
|                   |            |            | X          | Boardman River Project                            |
|                   |            |            | X          | Boardman River Restoration and Protection Project |
|                   |            |            | X          | Cedar River Alliance                              |
|                   |            |            | X          | Chippewa Water Conservancy                        |
|                   |            |            | X          | Clean Water Action                                |
|                   |            |            | X          | Defenders of the Great Lakes                      |
|                   |            |            | X          | Friends of the Crystal River                      |
|                   |            |            | X          | Friends of the Jordan River Watershed             |
|                   |            |            | X          | Grand Traverse Bay Watershed Initiative           |
|                   |            |            | X          | Lake Michigan Federation                          |
|                   |            |            | X          | Michigan Association of Drain Commissioners       |
| X                 | X          | X          | X          | Michigan Audubon Society                          |
| X                 | X          | X          | X          | Michigan Wildlife Habitat Foundation              |
|                   |            |            | X          | N. Tittabawassee R. Task Force                    |
|                   |            |            | X          | North American Lake Mgmt Society                  |
|                   |            |            | X          | Pere Marquette Watershed Council                  |
|                   |            |            | X          | Pigeon River Habitat Initiative                   |
|                   |            |            | X          | Pine River Association                            |
|                   |            |            | X          | Thunder Bay River Watershed Council               |
|                   |            |            | X          | Tip of the Mitt Watershed Council                 |
|                   |            |            | X          | Upper Black River Watershed Rest. Committee       |
|                   |            |            | X          | Upper Manistee River Restoration Committee        |
|                   |            |            | X          | Walloon Lake Trust & Conservancy                  |
|                   |            |            |            | <b>NGOs-Other</b>                                 |
|                   |            | X          |            | Farm Bureau                                       |
|                   |            | X          |            | Mcmillan Township Supervisor                      |
|                   | X          |            |            | MI Farm Bureau                                    |
|                   |            |            | X          | Michigan 4-H Foundation                           |
|                   |            |            | X          | Michigan Association of Counties                  |
|                   |            |            | X          | Michigan Association of Realtors                  |
| X                 | X          | X          | X          | Michigan DNR Retirees Ethical Association         |
| X                 | X          | X          | X          | Michigan Farm Bureau                              |

| <b>State-wide</b> | <b>WUP</b> | <b>EUP</b> | <b>NLP</b> | <b>Organization</b>                        |
|-------------------|------------|------------|------------|--|
| <b>X</b>          | <b>X</b>   | <b>X</b>   | <b>X</b>   | Michigan Nursery and Landscape Association |
|                   |            |            | <b>X</b>   | Pigeon River Country Advisory Council      |
|                   |            |            | <b>X</b>   | Public Sector Consultants                  |
|                   |            |            | <b>X</b>   | Twin Bay Trail Riders                      |
|                   |            |            |            | <b>Media</b>                               |
|                   |            |            | <b>X</b>   | Michigan Outdoor Writers Association       |
| <b>X</b>          | <b>X</b>   | <b>X</b>   | <b>X</b>   | Print media                                |
|                   |            |            |            | <b>Unknown</b>                             |
|                   |            |            | <b>X</b>   | Camp Daggert                               |
|                   |            |            | <b>X</b>   | EC&S                                       |
|                   |            |            | <b>X</b>   | ENFIA                                      |
| <b>X</b>          | <b>X</b>   | <b>X</b>   | <b>X</b>   | FSA  |
|                   |            |            | <b>X</b>   | NMC  |
|                   |            |            | <b>X</b>   | Spirit of the Woods                        |
|                   |            |            | <b>X</b>   | We Love Smokey Society                     |

**Table A3.2. Number of DNR-issued citations by ecoregion and type, 1995 to 2004**

| Year                            | Total Citations | Wildlife | Fish  | Land and water | Snow-mobile | Marine | ORV   | Environmental | Gen. Criminal / Other |
|---------------------------------|-----------------|----------|-------|----------------|-------------|--------|-------|---------------|-----------------------|
| <b>Western Upper Peninsula</b>  |                 |          |       |                |             |        |       |               |                       |
| 1995                            | 1,713           | 403      | 419   | 156            | 366         | 131    | 213   | 4             | 21                    |
| 1996                            | 2,168           | 365      | 419   | 170            | 720         | 186    | 219   | 12            | 77                    |
| 1997                            | 2,099           | 338      | 425   | 184            | 634         | 171    | 257   | 9             | 81                    |
| 1998                            | 1,921           | 371      | 414   | 175            | 339         | 216    | 287   | 13            | 106                   |
| 1999                            | 1,900           | 309      | 421   | 169            | 450         | 203    | 238   | 13            | 97                    |
| 2000                            | 1,901           | 351      | 399   | 158            | 527         | 168    | 206   | 7             | 85                    |
| 2001                            | 1,697           | 331      | 337   | 178            | 362         | 144    | 250   | 5             | 90                    |
| 2002                            | 1,348           | 307      | 233   | 176            | 329         | 93     | 160   | 4             | 46                    |
| 2003                            | 1,387           | 308      | 225   | 115            | 318         | 106    | 246   | 5             | 64                    |
| 2004                            | 1,462           | 355      | 276   | 142            | 271         | 95     | 260   | 7             | 56                    |
| <b>Eastern Upper Peninsula</b>  |                 |          |       |                |             |        |       |               |                       |
| 1995                            | 1,137           | 240      | 175   | 121            | 338         | 110    | 135   | 4             | 14                    |
| 1996                            | 1,162           | 229      | 198   | 80             | 354         | 102    | 142   | 5             | 52                    |
| 1997                            | 1,268           | 271      | 208   | 80             | 416         | 107    | 118   | 5             | 63                    |
| 1998                            | 1,149           | 164      | 178   | 106            | 383         | 127    | 119   | 1             | 71                    |
| 1999                            | 1,153           | 157      | 189   | 66             | 443         | 103    | 142   | 7             | 46                    |
| 2000                            | 1,024           | 147      | 146   | 80             | 378         | 84     | 151   | 4             | 34                    |
| 2001                            | 905             | 166      | 156   | 101            | 201         | 86     | 144   | 1             | 50                    |
| 2002                            | 1,119           | 197      | 122   | 111            | 418         | 72     | 142   | 3             | 54                    |
| 2003                            | 897             | 152      | 103   | 51             | 392         | 47     | 114   | 3             | 35                    |
| 2004                            | 510             | 153      | 95    | 36             | 114         | 30     | 74    | 2             | 6                     |
| <b>Northern Lower Peninsula</b> |                 |          |       |                |             |        |       |               |                       |
| 1995                            | 7,302           | 1,491    | 1,983 | 700            | 783         | 409    | 1,789 | 61            | 86                    |
| 1996                            | 7,845           | 1,293    | 2,112 | 641            | 1,118       | 597    | 1,725 | 48            | 311                   |
| 1997                            | 8,733           | 1,385    | 1,895 | 788            | 1,574       | 598    | 2,093 | 60            | 340                   |
| 1998                            | 9,045           | 1,088    | 2,004 | 951            | 1,146       | 657    | 2,739 | 58            | 402                   |
| 1999                            | 8,187           | 1,112    | 2,188 | 683            | 767         | 641    | 2,397 | 52            | 347                   |
| 2000                            | 7,788           | 1,090    | 2,082 | 813            | 860         | 413    | 2,172 | 51            | 307                   |
| 2001                            | 8,305           | 1,219    | 2,230 | 702            | 692         | 514    | 2,523 | 49            | 376                   |
| 2002                            | 7,974           | 1,342    | 2,130 | 1,010          | 515         | 541    | 2,053 | 55            | 328                   |
| 2003                            | 8,534           | 1,552    | 1,957 | 1,655          | 796         | 427    | 1,735 | 48            | 364                   |
| 2004                            | 7,733           | 1,361    | 1,629 | 1,527          | 1,001       | 394    | 1,466 | 42            | 313                   |
| <b>Michigan</b>                 |                 |          |       |                |             |        |       |               |                       |
| 1995                            | 18,070          | 4,249    | 4,851 | 1,962          | 1,815       | 1,903  | 2,894 | 137           | 259                   |
| 1996                            | 19,115          | 3,714    | 5,075 | 1,762          | 2,607       | 2,146  | 2,885 | 96            | 830                   |
| 1997                            | 19,829          | 4,047    | 4,651 | 1,812          | 3,195       | 1,919  | 3,236 | 110           | 859                   |
| 1998                            | 19,466          | 3,344    | 4,837 | 2,048          | 2,060       | 2,239  | 3,849 | 105           | 984                   |
| 1999                            | 19,294          | 2,972    | 5,448 | 2,017          | 2,024       | 2,374  | 3,504 | 106           | 849                   |
| 2000                            | 19,309          | 2,930    | 5,588 | 2,155          | 2,432       | 1,902  | 3,352 | 89            | 861                   |
| 2001                            | 17,731          | 3,060    | 4,878 | 1,784          | 1,506       | 1,705  | 3,800 | 82            | 916                   |

| <b>Year</b> | <b>Total Citations</b> | <b>Wildlife</b> | <b>Fish</b> | <b>Land and water</b> | <b>Snow-mobile</b> | <b>Marine</b> | <b>ORV</b> | <b>Environmental</b> | <b>Gen. Criminal / Other</b> |
|-------------|------------------------|-----------------|-------------|-----------------------|--------------------|---------------|------------|----------------------|------------------------------|
| 2002        | 17,454                 | 3,376           | 4,591       | 2,091                 | 1,557              | 1,843         | 3,087      | 96                   | 813                          |
| 2003        | 17,707                 | 3,550           | 4,332       | 2,598                 | 1,901              | 1,353         | 3,005      | 89                   | 879                          |
| 2004        | 14,944                 | 2,900           | 3,774       | 2,193                 | 1,783              | 1,124         | 2,465      | 79                   | 626                          |

Includes all citations issued by DNR staff on all lands.

## Chapter 4. Economic Vitality and Natural Resource Dependence

**Table A4.1. Establishments by selected economic sectors, 2000 to 2005, Western Upper Peninsula.**

| <b>Western Upper Peninsula</b>       |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 261         | 264         | 261         | 231         | 228         | 228         |
| >>Forestry and logging               | 203         | 203         | 199         | 176         | 175         | 174         |
| >>Fishing, hunting and trapping      |             | 3           | 3           |             |             |             |
| >>Ag and forestry support activities | 17          | 18          | 19          | 13          | 9           | 7           |
| Mining                               | 6           | 7           | 11          | 9           | 10          | 11          |
| >>Mining, except oil and gas         | 5           | 6           | 10          | 8           | 8           | 7           |
| >>Support activities for mining      |             |             |             |             | 4           | 4           |
| Utilities                            | 17          | 20          | 20          | 22          | 22          | 19          |
| Construction                         | 850         | 881         | 895         | 888         | 897         | 880         |
| Manufacturing                        | 398         | 404         | 386         | 365         | 354         | 363         |
| >>Wood product manufacturing         | 73          | 81          | 72          | 61          | 59          | 64          |
| >>Paper manufacturing                |             | 3           | 3           | 3           | 3           | 3           |
| Wholesale trade                      | 242         | 244         | 247         | 240         | 225         | 219         |
| Retail trade                         | 1,197       | 1,210       | 1,173       | 1,125       | 1,122       | 1,096       |
| Transportation and warehousing       | 230         | 244         | 247         | 228         | 214         | 213         |
| Information                          | 101         | 94          | 94          | 91          | 105         | 105         |
| Finance and insurance                | 318         | 327         | 349         | 353         | 344         | 337         |
| Real estate and rental and leasing   | 157         | 165         | 181         | 180         | 189         | 188         |
| Professional and technical services  | 412         | 414         | 411         | 398         | 401         | 397         |
| Mgmt of companies and enterprises    | 6           | 7           | 9           | 6           | 6           | 6           |
| Administrative and waste services    | 236         | 224         | 223         | 218         | 222         | 227         |
| Educational services                 | 15          | 20          | 20          | 22          | 24          | 21          |
| Health care and social assistance    | 547         | 553         | 558         | 541         | 550         | 554         |
| Arts, entertainment, and recreation  | 117         | 118         | 115         | 112         | 104         | 102         |
| Accommodation and food services      | 775         | 774         | 750         | 720         | 723         | 723         |
| >>Accommodation                      | 156         | 158         | 154         | 147         | 144         | 137         |
| >>Food services and drinking places  | 609         | 614         | 594         | 571         | 577         | 583         |
| Other services, except public admin. | 693         | 688         | 694         | 671         | 670         | 672         |
| Total, All Industries                | 6,647       | 6,714       | 6,692       | 6,473       | 6,467       | 6,426       |
| Federal Government                   |             |             |             |             |             | 151         |
| State Government                     |             |             |             |             |             | 130         |
| Local Government                     |             |             |             |             |             | 333         |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.2. Establishments by selected economic sectors, 2000 to 2005, Eastern Upper Peninsula.**

| <b>Eastern Upper Peninsula</b>       |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 86          | 84          | 82          | 82          | 81          | 81          |
| >>Forestry and logging               | 59          | 57          | 55          | 55          | 55          | 55          |
| >>Fishing, hunting and trapping      | 15          | 14          | 15          | 13          | 12          | 12          |
| Mining                               | 9           | 8           | 8           | 6           | 8           | 8           |
| >>Mining, except oil and gas         | 9           | 8           | 8           | 6           | 8           | 8           |
| Utilities                            | 6           | 6           | 4           | 5           | 5           | 6           |
| Construction                         | 321         | 339         | 345         | 332         | 329         | 325         |
| Manufacturing                        | 81          | 77          | 72          | 71          | 64          | 59          |
| >> >>Wood product manufacturing      | 20          | 16          | 20          | 18          | 14          | 15          |
| Wholesale trade                      | 64          | 63          | 58          | 56          | 55          | 54          |
| Retail trade                         | 428         | 425         | 417         | 412         | 416         | 408         |
| Transportation and warehousing       | 70          | 71          | 77          | 77          | 77          | 78          |
| Information                          | 40          | 38          | 37          | 34          | 31          | 30          |
| Finance and insurance                | 97          | 99          | 103         | 97          | 93          | 97          |
| Real estate and rental and leasing   | 50          | 51          | 53          | 50          | 48          | 49          |
| Professional and technical services  | 100         | 108         | 104         | 103         | 107         | 106         |
| Administrative and waste services    | 54          | 56          | 57          | 51          | 51          | 47          |
| Educational services                 | 3           | 4           | 4           | 3           |             | 3           |
| Health care and social assistance    | 116         | 115         | 120         | 118         | 118         | 126         |
| Arts, entertainment, and recreation  | 17          | 40          | 38          | 34          | 36          | 39          |
| Accommodation and food services      | 428         | 423         | 416         | 403         | 394         | 370         |
| >>Accommodation                      | 175         | 178         | 169         | 154         | 151         | 142         |
| >>Food services and drinking places  | 253         | 245         | 248         | 249         | 243         | 228         |
| Other services, except public admin. | 169         | 173         | 176         | 166         | 161         | 155         |
| Total, All Industries                | 2,186       | 2,201       | 2,193       | 2,116       | 2,095       | 2,059       |
| Federal Government                   |             |             |             |             |             | 57          |
| State Government                     |             |             |             |             |             | 56          |
| Local Government                     |             |             |             |             |             | 137         |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.3. Establishments by selected economic sectors, 2000 to 2005, Northern Lower Peninsula.**

| <b>Northern Lower Peninsula</b>      |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 437         | 445         | 457         | 435         | 428         | 429         |
| >>Forestry and logging               | 112         | 113         | 111         | 107         | 91          | 91          |
| >>Fishing, hunting and trapping      | 9           | 9           | 8           | 9           | 7           | 8           |
| >>Ag and forestry support activities | 14          | 10          | 11          | 11          | 17          | 14          |
| Mining                               | 139         | 140         | 151         | 129         | 122         | 134         |
| >>Oil and gas extraction             | 28          | 29          | 31          | 24          | 22          | 25          |
| >>Mining, except oil and gas         | 11          | 10          | 10          | 8           | 6           | 9           |
| >>Support activities for mining      | 69          | 78          | 81          | 74          | 73          | 72          |
| Utilities                            | 38          | 40          | 38          | 42          | 43          | 46          |
| Construction                         | 3,427       | 3,685       | 3,815       | 3,665       | 3,668       | 3,624       |
| Manufacturing                        | 1,330       | 1,338       | 1,315       | 1,259       | 1,217       | 1,194       |
| >>Wood product manufacturing         | 154         | 145         | 144         | 128         | 118         | 119         |
| >>Paper manufacturing                | 9           | 7           | 5           | 6           | 5           | 5           |
| Wholesale trade                      | 665         | 672         | 669         | 657         | 650         | 643         |
| Retail trade                         | 3,703       | 3,715       | 3,612       | 3,483       | 3,497       | 3,463       |
| Transportation and warehousing       | 487         | 518         | 521         | 490         | 479         | 474         |
| Information                          | 282         | 277         | 297         | 286         | 279         | 277         |
| Finance and insurance                | 827         | 858         | 855         | 838         | 839         | 856         |
| Real estate and rental and leasing   | 634         | 665         | 659         | 665         | 684         | 700         |
| Professional and technical services  | 1,344       | 1,409       | 1,431       | 1,363       | 1,341       | 1,354       |
| Mgmt of companies and enterprises    | 11          | 11          | 13          | 14          | 13          | 10          |
| Administrative and waste services    | 817         | 863         | 884         | 852         | 871         | 899         |
| Educational services                 | 94          | 90          | 85          | 70          | 83          | 92          |
| Health care and social assistance    | 1,558       | 1,590       | 1,618       | 1,605       | 1,622       | 1,644       |
| Arts, entertainment, and recreation  | 436         | 452         | 455         | 454         | 458         | 475         |
| Accommodation and food services      | 2,148       | 2,138       | 2,105       | 2,071       | 2,092       | 2,083       |
| >>Accommodation                      | 449         | 462         | 461         | 456         | 449         | 439         |
| >>Food services and drinking places  | 1,666       | 1,645       | 1,603       | 1,586       | 1,613       | 1,615       |
| Other services, except public admin. | 1,930       | 1,928       | 1,915       | 1,831       | 1,822       | 1,843       |
| Unclassified                         |             |             |             |             |             | 3           |
| Total, All Industries                | 20,500      | 21,021      | 21,042      | 20,368      | 20,361      | 20,367      |
| Federal Government                   |             |             |             |             |             | 334         |
| State Government                     |             |             |             |             |             | 268         |
| Local Government                     |             |             |             |             |             | 884         |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.4. Establishments by selected economic sectors, 2000 to 2005, Michigan,**

| <b>State</b>                         |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 2,263       | 2,271       | 2,281       | 2,196       | 2,203       | 2,217       |
| >>Forestry and logging               | 448         | 439         | 432         | 397         | 380         | 378         |
| >>Fishing, hunting and trapping      | 53          | 51          | 50          | 48          | 42          | 41          |
| >>Ag and forestry support activities | 262         | 259         | 267         | 256         | 257         | 253         |
| Mining                               | 453         | 463         | 468         | 447         | 436         | 441         |
| >>Oil and gas extraction             | 82          | 78          | 79          | 76          | 76          | 77          |
| >>Mining, except oil and gas         | 205         | 214         | 212         | 201         | 197         | 198         |
| >>Support activities for mining      | 167         | 172         | 178         | 171         | 164         | 166         |
| Utilities                            | 346         | 359         | 379         | 410         | 432         | 406         |
| Construction                         | 28,688      | 29,565      | 30,525      | 29,279      | 29,306      | 28,859      |
| Manufacturing                        | 18,039      | 17,823      | 17,477      | 16,534      | 16,048      | 15,739      |
| >>Wood product manufacturing         | 696         | 677         | 645         | 602         | 569         | 557         |
| >>Paper manufacturing                | 285         | 282         | 281         | 268         | 259         | 257         |
| Wholesale trade                      | 16,349      | 16,523      | 17,140      | 16,495      | 16,008      | 15,622      |
| Retail trade                         | 37,520      | 36,911      | 36,460      | 35,172      | 35,256      | 35,001      |
| Transportation and warehousing       | 5,384       | 5,554       | 5,735       | 5,464       | 5,478       | 5,522       |
| Information                          | 3,577       | 3,682       | 3,975       | 3,771       | 3,688       | 3,585       |
| Finance and insurance                | 11,504      | 11,719      | 12,011      | 12,216      | 12,649      | 12,729      |
| Real estate and rental and leasing   | 7,664       | 7,612       | 7,813       | 7,746       | 7,914       | 7,961       |
| Professional and technical services  | 24,810      | 25,693      | 26,229      | 25,122      | 24,833      | 24,477      |
| Mgmt of companies and enterprises    | 788         | 748         | 788         | 765         | 759         | 765         |
| Administrative and waste services    | 12,928      | 13,094      | 13,568      | 13,197      | 13,203      | 13,070      |
| Educational services                 | 1,891       | 1,914       | 2,000       | 1,991       | 2,017       | 2,113       |
| Health care and social assistance    | 21,197      | 21,087      | 21,335      | 21,129      | 21,414      | 21,666      |
| Arts, entertainment, and recreation  | 3,741       | 3,717       | 3,772       | 3,727       | 3,790       | 3,784       |
| Accommodation and food services      | 18,393      | 18,164      | 18,416      | 18,160      | 18,569      | 18,651      |
| >>Accommodation                      | 1,961       | 1,951       | 1,946       | 1,876       | 1,884       | 1,847       |
| >>Food services and drinking places  | 16,432      | 16,213      | 16,470      | 16,284      | 16,685      | 16,804      |
| Other services, except public admin. | 22,864      | 22,460      | 22,403      | 21,508      | 21,364      | 21,291      |
| Total, All Industries                | 238,396     | 239,355     | 242,774     | 235,326     | 235,366     | 233,899     |
| Federal Government                   |             |             |             |             |             | 1,717       |
| State Government                     |             |             |             |             |             | 1,482       |
| Local Government                     |             |             |             |             |             | 4,946       |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.5. Total wages (million \$) by selected economic sectors, 2000 to 2005, Western Upper Peninsula.**

| <b>Western Upper Peninsula</b>       |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 22.9        | 23.7        | 22.0        | 22.6        | 27.7        | 29.0        |
| >>Forestry and logging               | 19.1        | 19.8        | 18.2        | 19.1        | 19.4        | 21.4        |
| >>Fishing, hunting and trapping      |             | 0.2         | 0.1         |             |             |             |
| >>Ag and forestry support activities | 0.8         | 0.8         | 0.8         | 0.5         | 0.5         | 0.3         |
| Mining                               | 102.3       | 88.7        | 75.0        | 82.5        | 84.8        | 87.9        |
| >>Mining, except oil and gas         | 102.1       | 88.6        | 74.6        | 82.3        | 81.7        | 87.4        |
| >>Support activities for mining      |             |             |             |             | 5.9         | 0.7         |
| Utilities                            | 11.8        | 14.5        | 16.8        | 18.2        | 20.1        | 15.4        |
| Construction                         | 174.2       | 164.5       | 171.9       | 175.9       | 177.8       | 177.1       |
| Manufacturing                        | 457.0       | 439.3       | 422.9       | 429.8       | 447.0       | 455.5       |
| >>Wood product manufacturing         | 55.5        | 61.8        | 54.5        | 57.7        | 57.4        | 58.8        |
| >>Paper manufacturing                |             | 12.1        | 12.6        | 13.3        | 12.7        | 13.5        |
| Wholesale trade                      | 67.0        | 56.9        | 55.4        | 59.6        | 62.4        | 62.5        |
| Retail trade                         | 212.2       | 210.6       | 214.3       | 217.3       | 226.5       | 220.4       |
| Transportation and warehousing       | 49.1        | 46.2        | 46.4        | 46.5        | 52.5        | 51.0        |
| Information                          | 26.1        | 27.8        | 41.4        | 42.1        | 43.2        | 41.4        |
| Finance and insurance                | 75.5        | 75.1        | 75.1        | 80.8        | 82.8        | 79.1        |
| Real estate and rental and leasing   | 10.4        | 10.8        | 13.1        | 13.1        | 14.6        | 16.4        |
| Professional and technical services  | 59.0        | 59.4        | 62.3        | 74.8        | 82.7        | 81.1        |
| Mgmt of companies and enterprises    | 1.2         | 2.9         | 7.0         | 1.2         | 1.3         | 1.4         |
| Administrative and waste services    | 38.2        | 36.9        | 39.5        | 40.1        | 39.9        | 41.9        |
| Educational services                 | 1.8         | 2.4         | 2.4         | 2.6         | 3.1         | 2.9         |
| Health care and social assistance    | 306.4       | 324.8       | 351.9       | 372.9       | 396.8       | 398.3       |
| Arts, entertainment, and recreation  | 9.5         | 10.2        | 10.5        | 11.6        | 11.5        | 12.9        |
| Accommodation and food services      | 99.6        | 80.5        | 84.3        | 74.7        | 78.0        | 79.6        |
| >>Accommodation                      | 22.8        | 24.2        | 24.4        | 16.0        | 16.2        | 16.8        |
| >>Food services and drinking places  | 54.0        | 56.1        | 59.7        | 58.4        | 61.4        | 62.2        |
| Other services, exc. public admin.   | 55.9        | 59.2        | 59.4        | 62.6        | 62.6        | 62.9        |
| Total, All Industries                | 1,829.9     | 1,781.8     | 1,815.7     | 1,878.6     | 1,966.4     | 1,972.0     |
| Federal Government                   |             |             |             |             |             | 79.1        |
| State Government                     |             |             |             |             |             | 229.3       |
| Local Government                     |             |             |             |             |             | 459.5       |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.6. Total wages (million \$) by selected economic sectors, 2000 to 2005, Eastern Upper Peninsula.**

| <b>Eastern Upper Peninsula</b>      |             |             |             |             |             |             |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>              | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting   | 6.0         | 5.8         | 5.5         | 5.4         | 6.3         | 7.1         |
| >>Forestry and logging              | 4.5         | 4.2         | 3.9         | 3.8         | 4.5         | 5.1         |
| >>Fishing, hunting and trapping     | 0.9         | 1.0         | 0.8         | 0.8         | 0.9         | 0.7         |
| Mining                              | 8.3         | 6.9         | 10.0        | 9.5         | 10.5        | 9.2         |
| >>Mining, except oil and gas        | 8.3         | 6.9         | 10.0        | 9.5         | 10.5        | 9.2         |
| Utilities                           | 7.0         | 7.2         | 6.4         | 6.8         | 7.0         | 6.8         |
| Construction                        | 32.5        | 33.2        | 33.9        | 33.2        | 33.0        | 30.7        |
| Manufacturing                       | 70.7        | 68.9        | 67.5        | 78.4        | 72.2        | 62.4        |
| >>Wood product manufacturing        | 7.9         | 4.3         | 14.4        | 14.1        | 4.0         | 4.8         |
| Wholesale trade                     | 7.2         | 7.3         | 7.5         | 9.1         | 10.9        | 11.4        |
| Retail trade                        | 56.7        | 59.2        | 60.7        | 60.4        | 61.3        | 59.4        |
| Transportation and warehousing      | 16.8        | 15.8        | 15.8        | 15.0        | 14.2        | 14.1        |
| Information                         | 7.3         | 8.1         | 7.0         | 6.0         | 6.5         | 6.7         |
| Finance and insurance               | 18.1        | 20.6        | 21.3        | 21.4        | 24.8        | 24.5        |
| Real estate and rental and leasing  | 2.7         | 3.0         | 3.0         | 3.6         | 2.0         | 2.1         |
| Professional and technical services | 9.4         | 10.2        | 7.4         | 7.4         | 10.2        | 11.0        |
| Administrative and waste services   | 5.2         | 5.4         | 15.6        | 6.4         | 7.0         | 6.6         |
| Educational services                | 1.3         | 1.3         | 1.3         | 1.3         |             | 1.9         |
| Health care and social assistance   | 27.5        | 28.9        | 29.8        | 31.4        | 32.7        | 30.1        |
| Arts, entertainment, and recreation | 11.8        | 5.9         | 5.7         | 5.2         | 4.8         | 5.0         |
| Accommodation and food services     | 50.0        | 49.2        | 41.6        | 49.4        | 49.2        | 50.8        |
| >>Accommodation                     | 27.2        | 27.7        | 17.9        | 25.8        | 25.8        | 26.6        |
| >>Food services and drinking places | 22.8        | 21.4        | 23.7        | 23.6        | 23.4        | 24.2        |
| Other services, exc. public admin.  | 8.3         | 8.5         | 8.9         | 8.9         | 9.0         | 8.2         |
| Total, All Industries               | 383.6       | 359.0       | 366.4       | 377.0       | 384.2       | 365.2       |
| Federal Government                  |             |             |             |             |             | 30.3        |
| State Government                    |             |             |             |             |             | 122.2       |
| Local Government                    |             |             |             |             |             | 232.7       |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.7. Total wages (million \$) by selected economic sectors, 2000 to 2005, Northern Lower Peninsula.**

| <b>Northern Lower Peninsula</b>      |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 66.9        | 66.7        | 64.2        | 71.3        | 73.4        | 73.3        |
| >>Forestry and logging               | 17.6        | 15.2        | 14.5        | 15.0        | 15.3        | 15.9        |
| >>Fishing, hunting and trapping      | 0.4         | 0.3         | 0.3         | 0.4         | 0.2         | 0.2         |
| >>Ag and forestry support activities | 7.5         | 2.0         | 2.1         | 2.1         | 4.1         | 3.3         |
| Mining                               | 82.4        | 68.6        | 69.9        | 60.7        | 64.5        | 69.9        |
| >>Oil and gas extraction             | 10.4        | 10.5        | 12.3        | 11.1        | 12.5        | 11.5        |
| >>Mining, except oil and gas         | 12.9        | 6.9         | 5.7         | 5.2         | 4.9         | 5.1         |
| >>Support activities for mining      | 34.5        | 37.1        | 32.9        | 27.7        | 29.8        | 35.4        |
| Utilities                            | 47.9        | 50.4        | 50.7        | 50.1        | 49.6        | 51.4        |
| Construction                         | 507.3       | 489.8       | 502.1       | 481.8       | 507.9       | 489.3       |
| Manufacturing                        | 1,497.0     | 1,378.9     | 1,353.7     | 1,374.5     | 1,418.1     | 1,403.1     |
| >>Wood product manufacturing         | 70.1        | 66.3        | 67.1        | 66.3        | 63.3        | 73.0        |
| >>Paper manufacturing                | 23.6        | 23.8        | 19.5        | 20.5        | 20.5        | 21.2        |
| Wholesale trade                      | 160.0       | 164.9       | 164.8       | 165.5       | 174.4       | 174.3       |
| Retail trade                         | 710.7       | 730.3       | 749.2       | 759.4       | 808.3       | 782.5       |
| Transportation and warehousing       | 146.7       | 135.4       | 131.4       | 129.1       | 134.5       | 144.7       |
| Information                          | 103.9       | 102.2       | 108.1       | 116.0       | 125.2       | 111.2       |
| Finance and insurance                | 191.9       | 202.4       | 224.9       | 250.7       | 266.1       | 262.8       |
| Real estate and rental and leasing   | 45.3        | 46.0        | 47.5        | 51.5        | 55.3        | 54.3        |
| Professional and technical services  | 215.5       | 219.6       | 226.4       | 242.3       | 247.1       | 225.9       |
| Mgmt of companies and enterprises    | 5.4         | 6.9         | 6.6         | 6.6         | 6.4         | 4.9         |
| Administrative and waste services    | 132.0       | 124.5       | 129.8       | 148.2       | 165.8       | 177.8       |
| Educational services                 | 25.9        | 28.1        | 31.9        | 28.2        | 33.2        | 39.5        |
| Health care and social assistance    | 721.3       | 791.6       | 859.9       | 905.2       | 965.2       | 950.3       |
| Arts, entertainment, and recreation  | 49.2        | 51.3        | 55.3        | 55.9        | 56.6        | 71.6        |
| Accommodation and food services      | 325.7       | 324.2       | 334.8       | 337.9       | 345.1       | 349.5       |
| >>Accommodation                      | 97.6        | 98.4        | 96.2        | 101.1       | 103.2       | 105.6       |
| >>Food services and drinking places  | 213.0       | 212.8       | 220.4       | 223.9       | 225.9       | 226.7       |
| Other services, exc. public admin.   | 141.2       | 143.0       | 151.1       | 151.5       | 155.9       | 157.5       |
| Unclassified                         |             |             |             |             |             | 0.2         |
| Total, All Industries                | 5,298.3     | 5,233.8     | 5,348.5     | 5,479.3     | 5,749.1     | 5,680.9     |
| Federal Government                   |             |             |             |             |             | 116.7       |
| State Government                     |             |             |             |             |             | 235.5       |
| Local Government                     |             |             |             |             |             | 1,263.7     |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.8. Total wages (million \$) by selected economic sectors, 2000 to 2005, Michigan.**

| <b>State</b>                         |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 433.7       | 459.5       | 459.4       | 483.0       | 515.9       | 521.2       |
| >>Forestry and logging               | 51.0        | 49.7        | 47.6        | 47.8        | 50.3        | 51.9        |
| >>Fishing, hunting and trapping      | 4.8         | 4.7         | 4.5         | 3.2         | 3.1         | 2.9         |
| >>Ag and forestry support activities | 44.5        | 48.2        | 39.6        | 43.7        | 51.3        | 50.0        |
| Mining                               | 346.3       | 334.6       | 303.6       | 307.2       | 328.8       | 346.7       |
| >>Oil and gas extraction             | 30.6        | 26.3        | 22.3        | 25.8        | 31.2        | 33.2        |
| >>Mining, except oil and gas         | 251.4       | 241.2       | 218.4       | 220.2       | 221.9       | 238.4       |
| >>Support activities for mining      | 64.3        | 67.1        | 62.9        | 61.2        | 75.7        | 75.1        |
| Utilities                            | 1,392.8     | 1,408.5     | 1,422.0     | 1,518.3     | 1,494.5     | 1,562.1     |
| Construction                         | 8,816.9     | 8,740.0     | 8,559.0     | 8,159.2     | 8,298.1     | 8,102.5     |
| Manufacturing                        | 44,312.7    | 40,759.2    | 39,592.9    | 39,820.8    | 39,015.9    | 37,956.6    |
| >>Wood product manufacturing         | 417.4       | 393.3       | 373.0       | 380.6       | 385.7       | 378.7       |
| >>Paper manufacturing                | 921.2       | 804.3       | 759.7       | 758.8       | 744.4       | 753.2       |
| Wholesale trade                      | 9,442.5     | 9,171.2     | 9,015.5     | 9,215.9     | 9,470.0     | 9,451.3     |
| Retail trade                         | 11,635.8    | 11,826.1    | 11,921.9    | 11,889.9    | 12,082.3    | 11,757.0    |
| Transportation and warehousing       | 4,198.2     | 4,167.3     | 4,228.9     | 4,287.7     | 4,461.7     | 4,424.7     |
| Information                          | 3,473.0     | 3,547.1     | 3,467.8     | 3,459.9     | 3,496.5     | 3,515.4     |
| Finance and insurance                | 6,764.3     | 7,298.7     | 7,653.5     | 8,107.3     | 8,237.1     | 8,470.2     |
| Real estate and rental and leasing   | 1,539.4     | 1,582.1     | 1,635.0     | 1,641.4     | 1,682.9     | 1,680.5     |
| Professional and technical services  | 16,865.8    | 16,260.3    | 15,603.7    | 15,683.6    | 15,875.8    | 15,867.8    |
| Mgmt of companies and enterprises    | 5,985.8     | 5,645.4     | 5,347.9     | 5,601.8     | 6,245.6     | 6,203.3     |
| Administrative and waste services    | 7,205.4     | 7,061.3     | 7,491.6     | 7,647.0     | 8,054.1     | 8,344.2     |
| Educational services                 | 1,150.7     | 1,229.8     | 1,333.7     | 1,438.9     | 1,562.5     | 1,696.6     |
| Health care and social assistance    | 14,434.9    | 15,212.3    | 16,240.0    | 16,972.4    | 17,853.5    | 18,166.4    |
| Arts, entertainment, and recreation  | 1,467.6     | 1,456.0     | 1,450.0     | 1,462.9     | 1,498.7     | 1,507.8     |
| Accommodation and food services      | 3,827.5     | 3,810.8     | 3,941.5     | 3,991.4     | 4,148.0     | 4,192.7     |
| >>Accommodation                      | 572.8       | 536.3       | 530.0       | 526.8       | 563.5       | 572.6       |
| >>Food services and drinking places  | 3,254.7     | 3,274.5     | 3,411.5     | 3,464.6     | 3,584.5     | 3,620.1     |
| Other services, exc. public admin.   | 3,172.0     | 3,325.1     | 3,277.6     | 3,235.5     | 3,296.6     | 3,256.6     |
| Total, All Industries                | 146,465.4   | 143,295.4   | 142,945.7   | 144,924.2   | 147,618.6   | 147,023.7   |
| Federal Government                   |             |             |             |             |             | 2,979.7     |
| State Government                     |             |             |             |             |             | 6,465.9     |
| Local Government                     |             |             |             |             |             | 16,143.0    |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.9. Average weekly wages, by selected economic sectors, 2000 to 2005, Western Upper Peninsula.**

| <b>Western Upper Peninsula</b>       |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | \$448       | \$466       | \$471       | \$482       | \$524       | \$541       |
| >>Forestry and logging               | \$501       | \$525       | \$521       | \$537       | \$562       | \$605       |
| >>Fishing, hunting and trapping      |             | \$447       | \$308       |             |             |             |
| >>Ag and forestry support activities | \$416       | \$424       | \$441       | \$499       | \$844       | \$458       |
| Mining                               | \$1,003     | \$911       | \$851       | \$1,001     | \$1,092     | \$1,088     |
| >>Mining, except oil and gas         | \$1,004     | \$911       | \$850       | \$1,002     | \$1,073     | \$1,087     |
| >>Support activities for mining      |             |             |             |             | \$2,172     | \$1,308     |
| Utilities                            | \$992       | \$1,053     | \$1,103     | \$1,178     | \$1,357     | \$1,251     |
| Construction                         | \$625       | \$632       | \$654       | \$669       | \$671       | \$689       |
| Manufacturing                        | \$692       | \$702       | \$719       | \$760       | \$793       | \$786       |
| >>Wood product manufacturing         | \$500       | \$538       | \$529       | \$566       | \$597       | \$606       |
| >>Paper manufacturing                |             | \$942       | \$977       | \$1,063     | \$1,052     | \$1,140     |
| Wholesale trade                      | \$669       | \$642       | \$610       | \$640       | \$650       | \$665       |
| Retail trade                         | \$294       | \$309       | \$321       | \$328       | \$337       | \$333       |
| Transportation and warehousing       | \$539       | \$543       | \$564       | \$583       | \$622       | \$609       |
| Information                          | \$482       | \$517       | \$518       | \$518       | \$523       | \$527       |
| Finance and insurance                | \$547       | \$558       | \$564       | \$596       | \$617       | \$598       |
| Real estate and rental and leasing   | \$342       | \$316       | \$316       | \$334       | \$349       | \$380       |
| Professional and technical services  | \$625       | \$647       | \$631       | \$630       | \$671       | \$649       |
| Mgmt of companies and enterprises    | \$852       | \$661       | \$542       | \$705       | \$738       | \$851       |
| Administrative and waste services    | \$397       | \$408       | \$424       | \$452       | \$461       | \$469       |
| Educational services                 | \$317       | \$333       | \$321       | \$320       | \$298       | \$271       |
| Health care and social assistance    | \$530       | \$552       | \$569       | \$591       | \$606       | \$598       |
| Arts, entertainment, and recreation  | \$188       | \$200       | \$201       | \$206       | \$223       | \$239       |
| Accommodation and food services      | \$184       | \$164       | \$166       | \$158       | \$164       | \$165       |
| >>Accommodation                      | \$205       | \$209       | \$219       | \$193       | \$193       | \$197       |
| >>Food services and drinking places  | \$148       | \$150       | \$151       | \$151       | \$157       | \$158       |
| Other services, exc. public admin.   | \$305       | \$320       | \$322       | \$339       | \$343       | \$338       |
| Total, All Industries                | \$474       | \$482       | \$488       | \$510       | \$527       | \$525       |
| Federal Government                   |             |             |             |             |             | \$855       |
| State Government                     |             |             |             |             |             | \$921       |
| Local Government                     |             |             |             |             |             | \$563       |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.10. Average weekly wages, by selected economic sectors, 2000 to 2005, Eastern Upper Peninsula.**

| <b>Eastern Upper Peninsula</b>      |             |             |             |             |             |             |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>              | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting   | \$408       | \$421       | \$422       | \$447       | \$466       | \$500       |
| >>Forestry and logging              | \$433       | \$447       | \$446       | \$463       | \$491       | \$509       |
| >>Fishing, hunting and trapping     | \$348       | \$358       | \$391       | \$458       | \$455       | \$518       |
| Mining                              | \$1,000     | \$1,071     | \$1,200     | \$1,397     | \$1,182     | \$1,170     |
| >>Mining, except oil and gas        | \$1,000     | \$1,071     | \$1,200     | \$1,397     | \$1,182     | \$1,170     |
| Utilities                           | \$1,018     | \$1,024     | \$1,084     | \$1,152     | \$1,192     | \$1,119     |
| Construction                        | \$506       | \$505       | \$552       | \$550       | \$547       | \$552       |
| Manufacturing                       | \$652       | \$674       | \$681       | \$709       | \$754       | \$731       |
| >>Wood product manufacturing        | \$541       | \$530       | \$531       | \$553       | \$428       | \$434       |
| Wholesale trade                     | \$524       | \$549       | \$552       | \$551       | \$595       | \$616       |
| Retail trade                        | \$313       | \$329       | \$341       | \$353       | \$367       | \$361       |
| Transportation and warehousing      | \$467       | \$473       | \$484       | \$502       | \$507       | \$467       |
| Information                         | \$453       | \$482       | \$449       | \$414       | \$442       | \$469       |
| Finance and insurance               | \$490       | \$522       | \$532       | \$578       | \$662       | \$651       |
| Real estate and rental and leasing  | \$439       | \$467       | \$467       | \$558       | \$347       | \$361       |
| Professional and technical services | \$524       | \$559       | \$508       | \$542       | \$616       | \$627       |
| Administrative and waste services   | \$383       | \$419       | \$559       | \$404       | \$404       | \$418       |
| Educational services                | \$551       | \$497       | \$542       | \$525       |             | \$489       |
| Health care and social assistance   | \$464       | \$486       | \$512       | \$516       | \$540       | \$485       |
| Arts, entertainment, and recreation | \$365       | \$381       | \$389       | \$400       | \$386       | \$370       |
| Accommodation and food services     | \$246       | \$248       | \$219       | \$250       | \$260       | \$262       |
| >>Accommodation                     | \$334       | \$343       | \$265       | \$343       | \$368       | \$364       |
| >>Food services and drinking places | \$188       | \$182       | \$194       | \$193       | \$196       | \$200       |
| Other services, exc. public admin.  | \$289       | \$289       | \$296       | \$290       | \$292       | \$274       |
| Total, All Industries               | \$412       | \$429       | \$440       | \$458       | \$475       | \$459       |
| Federal Government                  |             |             |             |             |             | \$955       |
| State Government                    |             |             |             |             |             | \$895       |
| Local Government                    |             |             |             |             |             | \$566       |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.11. Average weekly wages, by selected economic sectors, 2000 to 2005, Northern Lower Peninsula.**

| <b>Northern Lower Peninsula</b>      |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | \$355       | \$350       | \$345       | \$362       | \$373       | \$380       |
| >>Forestry and logging               | \$480       | \$467       | \$487       | \$517       | \$543       | \$561       |
| >>Fishing, hunting and trapping      | \$564       | \$557       | \$599       | \$611       | \$573       | \$708       |
| >>Ag and forestry support activities | \$366       | \$221       | \$249       | \$239       | \$313       | \$358       |
| Mining                               | \$852       | \$875       | \$859       | \$920       | \$970       | \$942       |
| >>Oil and gas extraction             | \$937       | \$873       | \$919       | \$938       | \$1,073     | \$1,010     |
| >>Mining, except oil and gas         | \$759       | \$757       | \$908       | \$857       | \$930       | \$914       |
| >>Support activities for mining      | \$821       | \$896       | \$839       | \$897       | \$966       | \$944       |
| Utilities                            | \$1,119     | \$1,142     | \$1,204     | \$1,255     | \$1,258     | \$1,262     |
| Construction                         | \$581       | \$586       | \$596       | \$599       | \$619       | \$614       |
| Manufacturing                        | \$643       | \$657       | \$690       | \$724       | \$742       | \$738       |
| >>Wood product manufacturing         | \$582       | \$620       | \$639       | \$645       | \$650       | \$654       |
| >>Paper manufacturing                | \$753       | \$783       | \$859       | \$882       | \$968       | \$1,033     |
| Wholesale trade                      | \$618       | \$640       | \$637       | \$666       | \$685       | \$675       |
| Retail trade                         | \$344       | \$356       | \$366       | \$380       | \$392       | \$389       |
| Transportation and warehousing       | \$603       | \$621       | \$626       | \$639       | \$645       | \$654       |
| Information                          | \$606       | \$630       | \$632       | \$644       | \$701       | \$680       |
| Finance and insurance                | \$621       | \$624       | \$646       | \$697       | \$723       | \$714       |
| Real estate and rental and leasing   | \$384       | \$384       | \$387       | \$408       | \$424       | \$406       |
| Professional and technical services  | \$628       | \$656       | \$670       | \$702       | \$718       | \$686       |
| Mgmt of companies and enterprises    | \$1,040     | \$1,399     | \$1,389     | \$1,164     | \$1,173     | \$1,257     |
| Administrative and waste services    | \$411       | \$436       | \$438       | \$466       | \$470       | \$459       |
| Educational services                 | \$402       | \$396       | \$401       | \$405       | \$424       | \$435       |
| Health care and social assistance    | \$534       | \$562       | \$588       | \$587       | \$626       | \$610       |
| Arts, entertainment, and recreation  | \$268       | \$275       | \$284       | \$278       | \$284       | \$305       |
| Accommodation and food services      | \$206       | \$212       | \$217       | \$220       | \$224       | \$227       |
| >>Accommodation                      | \$266       | \$272       | \$281       | \$280       | \$285       | \$289       |
| >>Food services and drinking places  | \$184       | \$189       | \$193       | \$197       | \$199       | \$202       |
| Other services, exc. public admin.   | \$351       | \$361       | \$376       | \$385       | \$391       | \$389       |
| Unclassified                         |             |             |             |             |             | \$1,718     |
| Total, All Industries                | \$475       | \$487       | \$500       | \$514       | \$532       | \$526       |
| Federal Government                   |             |             |             |             |             | \$818       |
| State Government                     |             |             |             |             |             | \$904       |
| Local Government                     |             |             |             |             |             | \$604       |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.12. Average weekly wages, by selected economic sectors, 2000 to 2005, Michigan.**

| State                                |         |         |         |         |         |         |
|--------------------------------------|---------|---------|---------|---------|---------|---------|
| Industry Sector                      | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    |
| Ag, forestry, fishing and hunting    | \$360   | \$366   | \$378   | \$391   | \$408   | \$402   |
| >>Forestry and logging               | \$485   | \$490   | \$496   | \$515   | \$541   | \$572   |
| >>Fishing, hunting and trapping      | \$415   | \$439   | \$463   | \$423   | \$427   | \$398   |
| >>Ag and forestry support activities | \$398   | \$374   | \$393   | \$421   | \$433   | \$419   |
| Mining                               | \$880   | \$858   | \$855   | \$914   | \$975   | \$986   |
| >>Oil and gas extraction             | \$1,007 | \$928   | \$889   | \$930   | \$1,058 | \$1,150 |
| >>Mining, except oil and gas         | \$898   | \$863   | \$869   | \$941   | \$981   | \$1,008 |
| >>Support activities for mining      | \$776   | \$815   | \$801   | \$824   | \$926   | \$873   |
| Utilities                            | \$1,262 | \$1,295 | \$1,334 | \$1,424 | \$1,406 | \$1,445 |
| Construction                         | \$811   | \$823   | \$827   | \$830   | \$841   | \$837   |
| Manufacturing                        | \$961   | \$955   | \$1,000 | \$1,057 | \$1,078 | \$1,076 |
| >>Wood product manufacturing         | \$601   | \$619   | \$624   | \$631   | \$655   | \$639   |
| >>Paper manufacturing                | \$881   | \$895   | \$895   | \$929   | \$966   | \$980   |
| Wholesale trade                      | \$983   | \$982   | \$992   | \$1,030 | \$1,073 | \$1,074 |
| Retail trade                         | \$403   | \$417   | \$432   | \$442   | \$453   | \$452   |
| Transportation and warehousing       | \$758   | \$768   | \$790   | \$824   | \$857   | \$837   |
| Information                          | \$888   | \$910   | \$904   | \$946   | \$989   | \$1,010 |
| Finance and insurance                | \$881   | \$938   | \$956   | \$989   | \$1,013 | \$1,036 |
| Real estate and rental and leasing   | \$532   | \$552   | \$567   | \$565   | \$577   | \$574   |
| Professional and technical services  | \$1,183 | \$1,171 | \$1,161 | \$1,208 | \$1,247 | \$1,236 |
| Mgmt of companies and enterprises    | \$1,657 | \$1,625 | \$1,493 | \$1,583 | \$1,767 | \$1,839 |
| Administrative and waste services    | \$482   | \$509   | \$539   | \$548   | \$570   | \$582   |
| Educational services                 | \$527   | \$538   | \$533   | \$533   | \$539   | \$549   |
| Health care and social assistance    | \$623   | \$648   | \$669   | \$682   | \$715   | \$710   |
| Arts, entertainment, and recreation  | \$420   | \$432   | \$455   | \$456   | \$471   | \$462   |
| Accommodation and food services      | \$219   | \$222   | \$226   | \$230   | \$235   | \$236   |
| >>Accommodation                      | \$289   | \$291   | \$299   | \$304   | \$318   | \$321   |
| >>Food services and drinking places  | \$210   | \$213   | \$218   | \$221   | \$226   | \$226   |
| Other services, exc. public admin.   | \$445   | \$471   | \$461   | \$471   | \$478   | \$471   |
| Total, All Industries                | \$716   | \$723   | \$734   | \$757   | \$777   | \$776   |
| Federal Government                   |         |         |         |         |         | \$1,051 |
| State Government                     |         |         |         |         |         | \$901   |
| Local Government                     |         |         |         |         |         | \$685   |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.13. Employment, by selected economic sectors, 2000 to 2005, Western Upper Peninsula.**

| <b>Western Upper Peninsula</b>       |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 983         | 978         | 897         | 903         | 1,017       | 1,032       |
| >>Forestry and logging               | 732         | 725         | 670         | 683         | 663         | 679         |
| >>Fishing, hunting and trapping      |             | 7           | 5           |             |             |             |
| >>Ag and forestry support activities | 38          | 37          | 36          | 21          | 12          | 13          |
| Mining                               | 1,960       | 1,873       | 1,695       | 1,586       | 1,493       | 1,554       |
| >>Mining, except oil and gas         | 1,956       | 1,869       | 1,689       | 1,579       | 1,464       | 1,546       |
| >>Support activities for mining      |             |             |             |             | 53          | 10          |
| Utilities                            | 229         | 265         | 293         | 298         | 285         | 236         |
| Construction                         | 5,365       | 5,008       | 5,057       | 5,057       | 5,096       | 4,945       |
| Manufacturing                        | 12,697      | 12,037      | 11,312      | 10,877      | 10,845      | 11,146      |
| >>Wood product manufacturing         | 2,134       | 2,207       | 1,979       | 1,961       | 1,849       | 1,864       |
| >>Paper manufacturing                |             | 248         | 248         | 241         | 232         | 227         |
| Wholesale trade                      | 1,928       | 1,706       | 1,748       | 1,792       | 1,846       | 1,806       |
| Retail trade                         | 13,871      | 13,108      | 12,837      | 12,732      | 12,917      | 12,733      |
| Transportation and warehousing       | 1,752       | 1,636       | 1,582       | 1,533       | 1,623       | 1,608       |
| Information                          | 1,043       | 1,034       | 1,538       | 1,566       | 1,591       | 1,511       |
| Finance and insurance                | 2,653       | 2,588       | 2,560       | 2,606       | 2,583       | 2,544       |
| Real estate and rental and leasing   | 587         | 660         | 797         | 755         | 806         | 833         |
| Professional and technical services  | 1,814       | 1,767       | 1,899       | 2,282       | 2,372       | 2,402       |
| Mgmt of companies and enterprises    | 27          | 86          | 250         | 34          | 35          | 31          |
| Administrative and waste services    | 1,853       | 1,742       | 1,791       | 1,706       | 1,664       | 1,714       |
| Educational services                 | 108         | 136         | 143         | 156         | 202         | 205         |
| Health care and social assistance    | 11,108      | 11,312      | 11,897      | 12,135      | 12,585      | 12,802      |
| Arts, entertainment, and recreation  | 971         | 978         | 1,001       | 1,083       | 996         | 1,039       |
| Accommodation and food services      | 10,438      | 9,443       | 9,750       | 9,089       | 9,164       | 9,288       |
| >>Accommodation                      | 2,139       | 2,229       | 2,143       | 1,594       | 1,617       | 1,642       |
| >>Food services and drinking places  | 7,033       | 7,189       | 7,587       | 7,461       | 7,511       | 7,576       |
| Other services, except public admin. | 3,524       | 3,555       | 3,551       | 3,549       | 3,512       | 3,581       |
| Total, All Industries                | 74,201      | 71,030      | 71,586      | 70,815      | 71,774      | 72,270      |
| Federal Government                   |             |             |             |             |             | 1,779       |
| State Government                     |             |             |             |             |             | 4,788       |
| Local Government                     |             |             |             |             |             | 15,690      |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.14. Employment, by selected economic sectors, 2000 to 2005, Eastern Upper Peninsula.**

| <b>Eastern Upper Peninsula</b>       |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 285         | 265         | 249         | 232         | 259         | 271         |
| >>Forestry and logging               | 202         | 182         | 169         | 159         | 176         | 192         |
| >>Fishing, hunting and trapping      | 51          | 52          | 37          | 35          | 38          | 27          |
| Mining                               | 159         | 125         | 160         | 131         | 171         | 152         |
| >>Mining, except oil and gas         | 159         | 125         | 160         | 131         | 171         | 152         |
| Utilities                            | 133         | 134         | 113         | 113         | 113         | 117         |
| Construction                         | 1,234       | 1,264       | 1,181       | 1,161       | 1,161       | 1,071       |
| Manufacturing                        | 2,085       | 1,966       | 1,906       | 2,129       | 1,843       | 1,643       |
| >>Wood product manufacturing         | 281         | 157         | 522         | 490         | 179         | 212         |
| Wholesale trade                      | 266         | 257         | 260         | 318         | 351         | 355         |
| Retail trade                         | 3,479       | 3,462       | 3,430       | 3,292       | 3,213       | 3,167       |
| Transportation and warehousing       | 690         | 640         | 627         | 575         | 540         | 581         |
| Information                          | 309         | 325         | 299         | 279         | 284         | 275         |
| Finance and insurance                | 709         | 760         | 769         | 713         | 720         | 724         |
| Real estate and rental and leasing   | 120         | 124         | 123         | 126         | 110         | 110         |
| Professional and technical services  | 345         | 351         | 280         | 263         | 319         | 336         |
| Administrative and waste services    | 261         | 246         | 536         | 306         | 333         | 306         |
| Educational services                 | 46          | 51          | 48          | 49          |             | 73          |
| Health care and social assistance    | 1,140       | 1,143       | 1,119       | 1,173       | 1,165       | 1,193       |
| Arts, entertainment, and recreation  | 622         | 297         | 281         | 252         | 239         | 262         |
| Accommodation and food services      | 3,905       | 3,814       | 3,649       | 3,797       | 3,646       | 3,728       |
| >>Accommodation                      | 1,564       | 1,554       | 1,296       | 1,446       | 1,349       | 1,406       |
| >>Food services and drinking places  | 2,341       | 2,260       | 2,352       | 2,351       | 2,297       | 2,322       |
| Other services, except public admin. | 556         | 563         | 579         | 593         | 596         | 574         |
| Total, All Industries                | 17,903      | 16,098      | 16,015      | 15,841      | 15,542      | 15,307      |
| Federal Government                   |             |             |             |             |             | 611         |
| State Government                     |             |             |             |             |             | 2,624       |
| Local Government                     |             |             |             |             |             | 7,910       |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.15. Employment, by selected economic sectors, 2000 to 2005, Northern Lower Peninsula.**

| <b>Northern Lower Peninsula</b>      |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 3,623       | 3,663       | 3,580       | 3,783       | 3,785       | 3,703       |
| >>Forestry and logging               | 703         | 626         | 571         | 557         | 542         | 545         |
| >>Fishing, hunting and trapping      | 13          | 9           | 11          | 12          | 7           | 6           |
| >>Ag and forestry support activities | 394         | 173         | 164         | 168         | 255         | 175         |
| Mining                               | 1,860       | 1,509       | 1,564       | 1,270       | 1,279       | 1,427       |
| >>Oil and gas extraction             | 214         | 231         | 257         | 227         | 223         | 219         |
| >>Mining, except oil and gas         | 326         | 175         | 121         | 118         | 101         | 107         |
| >>Support activities for mining      | 808         | 796         | 755         | 594         | 593         | 722         |
| Utilities                            | 823         | 849         | 810         | 768         | 758         | 783         |
| Construction                         | 16,796      | 16,070      | 16,194      | 15,460      | 15,770      | 15,321      |
| Manufacturing                        | 44,797      | 40,387      | 37,732      | 36,522      | 36,745      | 36,547      |
| >>Wood product manufacturing         | 2,317       | 2,057       | 2,020       | 1,976       | 1,872       | 2,148       |
| >>Paper manufacturing                | 603         | 583         | 436         | 446         | 407         | 395         |
| Wholesale trade                      | 4,981       | 4,953       | 4,976       | 4,779       | 4,892       | 4,964       |
| Retail trade                         | 39,732      | 39,415      | 39,398      | 38,465      | 39,623      | 38,635      |
| Transportation and warehousing       | 4,679       | 4,193       | 4,035       | 3,883       | 4,012       | 4,254       |
| Information                          | 3,297       | 3,116       | 3,291       | 3,464       | 3,433       | 3,146       |
| Finance and insurance                | 5,946       | 6,241       | 6,692       | 6,913       | 7,077       | 7,073       |
| Real estate and rental and leasing   | 2,270       | 2,304       | 2,360       | 2,429       | 2,509       | 2,571       |
| Professional and technical services  | 6,603       | 6,442       | 6,495       | 6,640       | 6,622       | 6,334       |
| Mgmt of companies and enterprises    | 100         | 94          | 92          | 108         | 105         | 75          |
| Administrative and waste services    | 6,171       | 5,497       | 5,696       | 6,111       | 6,782       | 7,444       |
| Educational services                 | 1,239       | 1,365       | 1,530       | 1,340       | 1,507       | 1,747       |
| Health care and social assistance    | 25,995      | 27,100      | 28,141      | 29,635      | 29,671      | 29,970      |
| Arts, entertainment, and recreation  | 3,532       | 3,579       | 3,747       | 3,863       | 3,832       | 4,519       |
| Accommodation and food services      | 30,357      | 29,402      | 29,628      | 29,493      | 29,592      | 29,596      |
| >>Accommodation                      | 7,058       | 6,947       | 6,587       | 6,936       | 6,969       | 7,026       |
| >>Food services and drinking places  | 22,272      | 21,615      | 21,983      | 21,807      | 21,782      | 21,593      |
| Other services, except public admin. | 7,740       | 7,611       | 7,720       | 7,572       | 7,677       | 7,777       |
| Unclassified                         |             |             |             |             |             | 2           |
| Total, All Industries                | 214,292     | 206,710     | 205,812     | 204,950     | 207,926     | 207,787     |
| Federal Government                   |             |             |             |             |             | 2,745       |
| State Government                     |             |             |             |             |             | 5,011       |
| Local Government                     |             |             |             |             |             | 40,241      |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.16. Employment, by selected economic sectors, 2000 to 2005, Michigan.**

| <b>State</b>                         |             |             |             |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Industry Sector</b>               | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Ag, forestry, fishing and hunting    | 23,172      | 24,137      | 23,397      | 23,746      | 24,340      | 24,955      |
| >>Forestry and logging               | 2,022       | 1,952       | 1,844       | 1,785       | 1,788       | 1,743       |
| >>Fishing, hunting and trapping      | 222         | 207         | 188         | 147         | 138         | 140         |
| >>Ag and forestry support activities | 2,151       | 2,474       | 1,941       | 1,998       | 2,280       | 2,293       |
| Mining                               | 7,565       | 7,502       | 6,827       | 6,461       | 6,488       | 6,759       |
| >>Oil and gas extraction             | 585         | 545         | 483         | 534         | 568         | 555         |
| >>Mining, except oil and gas         | 5,386       | 5,374       | 4,834       | 4,500       | 4,349       | 4,550       |
| >>Support activities for mining      | 1,594       | 1,584       | 1,510       | 1,427       | 1,572       | 1,654       |
| Utilities                            | 21,226      | 20,912      | 20,494      | 20,505      | 20,437      | 20,787      |
| Construction                         | 209,001     | 204,236     | 199,059     | 189,107     | 189,690     | 186,221     |
| Manufacturing                        | 886,659     | 820,785     | 761,045     | 724,535     | 695,885     | 678,346     |
| >>Wood product manufacturing         | 13,357      | 12,211      | 11,487      | 11,597      | 11,326      | 11,397      |
| >>Paper manufacturing                | 20,104      | 17,274      | 16,315      | 15,716      | 14,813      | 14,779      |
| Wholesale trade                      | 184,805     | 179,623     | 174,832     | 171,988     | 169,736     | 169,189     |
| Retail trade                         | 554,658     | 545,404     | 530,167     | 516,868     | 512,474     | 500,621     |
| Transportation and warehousing       | 106,572     | 104,404     | 102,937     | 100,089     | 100,137     | 101,624     |
| Information                          | 75,193      | 75,001      | 73,803      | 70,308      | 67,973      | 66,924      |
| Finance and insurance                | 147,688     | 149,573     | 153,966     | 157,721     | 156,375     | 157,190     |
| Real estate and rental and leasing   | 55,636      | 55,134      | 55,486      | 55,877      | 56,095      | 56,324      |
| Professional and technical services  | 274,254     | 267,080     | 258,354     | 249,750     | 244,858     | 246,864     |
| Mgmt of companies and enterprises    | 69,460      | 66,820      | 68,878      | 68,066      | 67,989      | 64,881      |
| Administrative and waste services    | 287,383     | 266,646     | 267,153     | 268,294     | 271,673     | 275,821     |
| Educational services                 | 41,958      | 43,961      | 48,154      | 51,885      | 55,774      | 59,387      |
| Health care and social assistance    | 445,910     | 451,496     | 466,515     | 478,726     | 480,330     | 491,726     |
| Arts, entertainment, and recreation  | 67,160      | 64,845      | 61,313      | 61,667      | 61,137      | 62,716      |
| Accommodation and food services      | 336,566     | 330,519     | 335,194     | 334,271     | 339,052     | 341,713     |
| >>Accommodation                      | 38,174      | 35,460      | 34,112      | 33,296      | 34,028      | 34,282      |
| >>Food services and drinking places  | 298,392     | 295,059     | 301,081     | 300,975     | 305,025     | 307,431     |
| Other services, except public admin. | 137,020     | 135,798     | 136,585     | 132,227     | 132,494     | 132,972     |
| Total, All Industries                | 3,931,883   | 3,813,873   | 3,744,158   | 3,682,088   | 3,652,935   | 3,645,020   |
| Federal Government                   |             |             |             |             |             | 54,529      |
| State Government                     |             |             |             |             |             | 138,063     |
| Local Government                     |             |             |             |             |             | 452,939     |

Data Source: Michigan Department of Labor and Economic Growth (<http://www.milmi.org/>)

Note: Sectors marked with ">>" are subsets of the more aggregate sector above.

**Table A4.17. Labor force and unemployment data by eco-region, 1990 to 2005.**

| Year                            | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|---------------------------------|----------------------|------------|--------------|-------------------|
| <b>Western Upper Peninsula</b>  |                      |            |              |                   |
| 1990                            | 108,647              | 99,926     | 8,721        | 8.0%              |
| 1991                            | 108,821              | 98,778     | 10,043       | 9.2%              |
| 1992                            | 111,974              | 100,386    | 11,588       | 10.3%             |
| 1993                            | 114,406              | 104,185    | 10,221       | 8.9%              |
| 1994                            | 117,277              | 107,386    | 9,891        | 8.4%              |
| 1995                            | 116,171              | 106,592    | 9,579        | 8.2%              |
| 1996                            | 115,375              | 107,199    | 8,176        | 7.1%              |
| 1997                            | 116,797              | 109,319    | 7,478        | 6.4%              |
| 1998                            | 116,439              | 110,084    | 6,355        | 5.5%              |
| 1999                            | 117,832              | 111,657    | 6,175        | 5.2%              |
| 2000                            | 120,574              | 114,770    | 5,804        | 4.8%              |
| 2001                            | 121,448              | 114,300    | 7,148        | 5.9%              |
| 2002                            | 119,375              | 111,149    | 8,226        | 6.9%              |
| 2003                            | 121,306              | 112,594    | 8,712        | 7.2%              |
| 2004                            | 123,111              | 114,729    | 8,382        | 6.8%              |
| 2005                            | 125,078              | 117,239    | 7,839        | 6.3%              |
| <b>Eastern Upper Peninsula</b>  |                      |            |              |                   |
| Year                            | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
| 1990                            | 30,944               | 27,194     | 3,750        | 12.1%             |
| 1991                            | 31,082               | 27,151     | 3,931        | 12.6%             |
| 1992                            | 32,259               | 27,727     | 4,532        | 14.0%             |
| 1993                            | 33,531               | 29,523     | 4,008        | 12.0%             |
| 1994                            | 35,131               | 30,996     | 4,135        | 11.8%             |
| 1995                            | 35,656               | 31,907     | 3,749        | 10.5%             |
| 1996                            | 35,878               | 32,781     | 3,097        | 8.6%              |
| 1997                            | 36,490               | 33,447     | 3,043        | 8.3%              |
| 1998                            | 36,021               | 33,220     | 2,801        | 7.8%              |
| 1999                            | 36,418               | 33,817     | 2,601        | 7.1%              |
| 2000                            | 35,401               | 33,068     | 2,333        | 6.6%              |
| 2001                            | 35,519               | 32,836     | 2,683        | 7.6%              |
| 2002                            | 34,777               | 31,914     | 2,863        | 8.2%              |
| 2003                            | 35,235               | 32,093     | 3,142        | 8.9%              |
| 2004                            | 35,505               | 32,303     | 3,202        | 9.0%              |
| 2005                            | 35,732               | 32,646     | 3,086        | 8.6%              |
| <b>Northern Lower Peninsula</b> |                      |            |              |                   |
| Year                            | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
| 1990                            | 292,282              | 264,851    | 27,431       | 9.4%              |
| 1991                            | 293,482              | 261,071    | 32,411       | 11.0%             |
| 1992                            | 305,550              | 268,793    | 36,757       | 12.0%             |
| 1993                            | 316,439              | 283,609    | 32,830       | 10.4%             |

| 1994            | 329,575                     | 296,865           | 32,710              | 9.9%                     |
|-----------------|-----------------------------|-------------------|---------------------|--------------------------|
| 1995            | 329,590                     | 299,569           | 30,021              | 9.1%                     |
| 1996            | 331,143                     | 305,925           | 25,218              | 7.6%                     |
| 1997            | 341,243                     | 318,463           | 22,780              | 6.7%                     |
| 1998            | 343,410                     | 322,693           | 20,717              | 6.0%                     |
| 1999            | 350,666                     | 330,823           | 19,843              | 5.7%                     |
| 2000            | 366,935                     | 348,725           | 18,210              | 5.0%                     |
| 2001            | 367,901                     | 343,436           | 24,465              | 6.6%                     |
| 2002            | 363,900                     | 336,092           | 27,808              | 7.6%                     |
| 2003            | 369,552                     | 338,547           | 31,005              | 8.4%                     |
| 2004            | 375,816                     | 345,202           | 30,614              | 8.1%                     |
| 2005            | 380,386                     | 351,954           | 28,432              | 7.5%                     |
| <b>Michigan</b> |                             |                   |                     |                          |
| <b>Year</b>     | <b>Civilian Labor Force</b> | <b>Employment</b> | <b>Unemployment</b> | <b>Unemployment Rate</b> |
| 1990            | 4,619,988                   | 4,262,409         | 357,579             | 7.7%                     |
| 1991            | 4,588,881                   | 4,162,074         | 426,807             | 9.3%                     |
| 1992            | 4,661,696                   | 4,234,783         | 426,913             | 9.2%                     |
| 1993            | 4,711,598                   | 4,364,545         | 347,053             | 7.4%                     |
| 1994            | 4,804,463                   | 4,508,900         | 295,563             | 6.2%                     |
| 1995            | 4,834,939                   | 4,576,521         | 258,418             | 5.3%                     |
| 1996            | 4,888,192                   | 4,647,116         | 241,076             | 4.9%                     |
| 1997            | 4,963,077                   | 4,748,691         | 214,386             | 4.3%                     |
| 1998            | 5,007,953                   | 4,809,503         | 198,450             | 4.0%                     |
| 1999            | 5,089,421                   | 4,897,144         | 192,277             | 3.8%                     |
| 2000            | 5,143,916                   | 4,953,421         | 190,495             | 3.7%                     |
| 2001            | 5,143,869                   | 4,876,338         | 267,531             | 5.2%                     |
| 2002            | 5,049,238                   | 4,733,812         | 315,426             | 6.2%                     |
| 2003            | 5,054,902                   | 4,696,338         | 358,564             | 7.1%                     |
| 2004            | 5,073,174                   | 4,717,152         | 356,022             | 7.0%                     |
| 2005            | 5,097,457                   | 4,753,822         | 343,635             | 6.7%                     |

Data Source: Bureau of Labor Statistics

**Table A4.18. Labor force and unemployment data by ecoregion and county, 1990 to 2005.**

| County                         | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|--------------------------------|------|----------------------|------------|--------------|-------------------|
| <b>Western Upper Peninsula</b> |      |                      |            |              |                   |
| Baraga, MI                     | 1990 | 3,350                | 2,998      | 352          | 10.5%             |
|                                | 1991 | 3,229                | 2,784      | 445          | 13.8%             |
|                                | 1992 | 3,238                | 2,740      | 498          | 15.4%             |
|                                | 1993 | 3,520                | 3,106      | 414          | 11.8%             |
|                                | 1994 | 3,828                | 3,431      | 397          | 10.4%             |
|                                | 1995 | 3,981                | 3,581      | 400          | 10.0%             |
|                                | 1996 | 4,012                | 3,655      | 357          | 8.9%              |
|                                | 1997 | 4,186                | 3,888      | 298          | 7.1%              |
|                                | 1998 | 4,290                | 4,010      | 280          | 6.5%              |
|                                | 1999 | 4,360                | 4,088      | 272          | 6.2%              |
|                                | 2000 | 4,119                | 3,854      | 265          | 6.4%              |
|                                | 2001 | 4,012                | 3,661      | 351          | 8.7%              |
|                                | 2002 | 3,841                | 3,474      | 367          | 9.6%              |
|                                | 2003 | 3,911                | 3,527      | 384          | 9.8%              |
|                                | 2004 | 4,039                | 3,580      | 459          | 11.4%             |
|                                | 2005 | 4,168                | 3,717      | 451          | 10.8%             |
| Delta, MI                      | 1990 | 16,975               | 15,396     | 1,579        | 9.3%              |
|                                | 1991 | 17,228               | 15,170     | 2,058        | 11.9%             |
|                                | 1992 | 17,565               | 15,094     | 2,471        | 14.1%             |
|                                | 1993 | 17,815               | 15,761     | 2,054        | 11.5%             |
|                                | 1994 | 18,160               | 16,225     | 1,935        | 10.7%             |
|                                | 1995 | 18,051               | 16,317     | 1,734        | 9.6%              |
|                                | 1996 | 18,337               | 16,915     | 1,422        | 7.8%              |
|                                | 1997 | 18,769               | 17,444     | 1,325        | 7.1%              |
|                                | 1998 | 18,911               | 17,752     | 1,159        | 6.1%              |
|                                | 1999 | 19,141               | 18,029     | 1,112        | 5.8%              |
|                                | 2000 | 19,809               | 18,775     | 1,034        | 5.2%              |
|                                | 2001 | 20,009               | 18,743     | 1,266        | 6.3%              |
|                                | 2002 | 19,725               | 18,281     | 1,444        | 7.3%              |
|                                | 2003 | 20,099               | 18,427     | 1,672        | 8.3%              |
|                                | 2004 | 20,432               | 18,828     | 1,604        | 7.9%              |
|                                | 2005 | 20,614               | 19,177     | 1,437        | 7.0%              |
| Dickinson, MI                  | 1990 | 12,495               | 11,555     | 940          | 7.5%              |
|                                | 1991 | 12,675               | 11,505     | 1,170        | 9.2%              |
|                                | 1992 | 12,899               | 11,616     | 1,283        | 9.9%              |
|                                | 1993 | 13,155               | 12,098     | 1,057        | 8.0%              |
|                                | 1994 | 13,546               | 12,542     | 1,004        | 7.4%              |
|                                | 1995 | 13,693               | 12,756     | 937          | 6.8%              |
|                                | 1996 | 13,882               | 13,128     | 754          | 5.4%              |
|                                | 1997 | 14,049               | 13,258     | 791          | 5.6%              |
|                                | 1998 | 14,059               | 13,410     | 649          | 4.6%              |

| County       | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|--------------|------|----------------------|------------|--------------|-------------------|
|              | 1999 | 14,196               | 13,516     | 680          | 4.8%              |
|              | 2000 | 14,000               | 13,431     | 569          | 4.1%              |
|              | 2001 | 14,193               | 13,503     | 690          | 4.9%              |
|              | 2002 | 14,106               | 13,261     | 845          | 6.0%              |
|              | 2003 | 14,207               | 13,253     | 954          | 6.7%              |
|              | 2004 | 14,471               | 13,556     | 915          | 6.3%              |
|              | 2005 | 14,593               | 13,792     | 801          | 5.5%              |
| Gogebic, MI  | 1990 | 7,278                | 6,682      | 596          | 8.2%              |
|              | 1991 | 7,399                | 6,760      | 639          | 8.6%              |
|              | 1992 | 7,793                | 7,008      | 785          | 10.1%             |
|              | 1993 | 8,150                | 7,364      | 786          | 9.6%              |
|              | 1994 | 8,367                | 7,625      | 742          | 8.9%              |
|              | 1995 | 8,384                | 7,549      | 835          | 10.0%             |
|              | 1996 | 8,244                | 7,346      | 898          | 10.9%             |
|              | 1997 | 8,169                | 7,433      | 736          | 9.0%              |
|              | 1998 | 7,951                | 7,373      | 578          | 7.3%              |
|              | 1999 | 7,964                | 7,464      | 500          | 6.3%              |
|              | 2000 | 7,719                | 7,244      | 475          | 6.2%              |
|              | 2001 | 7,965                | 7,419      | 546          | 6.9%              |
|              | 2002 | 7,835                | 7,243      | 592          | 7.6%              |
|              | 2003 | 7,894                | 7,241      | 653          | 8.3%              |
|              | 2004 | 7,869                | 7,260      | 609          | 7.7%              |
|              | 2005 | 7,879                | 7,298      | 581          | 7.4%              |
| Houghton, MI | 1990 | 14,608               | 13,520     | 1,088        | 7.4%              |
|              | 1991 | 14,521               | 13,287     | 1,234        | 8.5%              |
|              | 1992 | 15,108               | 13,597     | 1,511        | 10.0%             |
|              | 1993 | 15,738               | 14,378     | 1,360        | 8.6%              |
|              | 1994 | 16,412               | 15,104     | 1,308        | 8.0%              |
|              | 1995 | 16,340               | 15,084     | 1,256        | 7.7%              |
|              | 1996 | 16,509               | 15,459     | 1,050        | 6.4%              |
|              | 1997 | 16,997               | 16,067     | 930          | 5.5%              |
|              | 1998 | 17,243               | 16,373     | 870          | 5.0%              |
|              | 1999 | 17,315               | 16,587     | 728          | 4.2%              |
|              | 2000 | 17,121               | 16,294     | 827          | 4.8%              |
|              | 2001 | 17,056               | 16,049     | 1,007        | 5.9%              |
|              | 2002 | 16,892               | 15,755     | 1,137        | 6.7%              |
|              | 2003 | 17,124               | 15,941     | 1,183        | 6.9%              |
|              | 2004 | 17,334               | 16,250     | 1,084        | 6.3%              |
|              | 2005 | 17,662               | 16,573     | 1,089        | 6.2%              |
| Iron, MI     | 1990 | 5,298                | 4,827      | 471          | 8.9%              |
|              | 1991 | 5,262                | 4,700      | 562          | 10.7%             |
|              | 1992 | 5,383                | 4,751      | 632          | 11.7%             |
|              | 1993 | 5,532                | 4,925      | 607          | 11.0%             |
|              | 1994 | 5,597                | 4,949      | 648          | 11.6%             |

| County        | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|---------------|------|----------------------|------------|--------------|-------------------|
|               | 1995 | 5,510                | 4,997      | 513          | 9.3%              |
|               | 1996 | 5,524                | 5,086      | 438          | 7.9%              |
|               | 1997 | 5,635                | 5,247      | 388          | 6.9%              |
|               | 1998 | 5,538                | 5,205      | 333          | 6.0%              |
|               | 1999 | 5,565                | 5,223      | 342          | 6.1%              |
|               | 2000 | 5,654                | 5,335      | 319          | 5.6%              |
|               | 2001 | 5,735                | 5,377      | 358          | 6.2%              |
|               | 2002 | 5,686                | 5,291      | 395          | 6.9%              |
|               | 2003 | 5,850                | 5,427      | 423          | 7.2%              |
|               | 2004 | 5,956                | 5,517      | 439          | 7.4%              |
|               | 2005 | 5,937                | 5,517      | 420          | 7.1%              |
| Keweenaw, MI  | 1990 | 606                  | 516        | 90           | 14.9%             |
|               | 1991 | 617                  | 505        | 112          | 18.2%             |
|               | 1992 | 638                  | 527        | 111          | 17.4%             |
|               | 1993 | 689                  | 583        | 106          | 15.4%             |
|               | 1994 | 729                  | 632        | 97           | 13.3%             |
|               | 1995 | 746                  | 653        | 93           | 12.5%             |
|               | 1996 | 786                  | 694        | 92           | 11.7%             |
|               | 1997 | 815                  | 736        | 79           | 9.7%              |
|               | 1998 | 849                  | 773        | 76           | 9.0%              |
|               | 1999 | 870                  | 802        | 68           | 7.8%              |
|               | 2000 | 1,049                | 985        | 64           | 6.1%              |
|               | 2001 | 1,050                | 967        | 83           | 7.9%              |
|               | 2002 | 1,012                | 921        | 91           | 9.0%              |
|               | 2003 | 1,052                | 944        | 108          | 10.3%             |
|               | 2004 | 1,072                | 948        | 124          | 11.6%             |
|               | 2005 | 1,079                | 967        | 112          | 10.4%             |
| Marquette, MI | 1990 | 32,124               | 29,552     | 2,572        | 8.0%              |
|               | 1991 | 32,007               | 29,448     | 2,559        | 8.0%              |
|               | 1992 | 32,884               | 30,087     | 2,797        | 8.5%              |
|               | 1993 | 33,181               | 30,674     | 2,507        | 7.6%              |
|               | 1994 | 33,695               | 31,149     | 2,546        | 7.6%              |
|               | 1995 | 32,509               | 29,933     | 2,576        | 7.9%              |
|               | 1996 | 31,503               | 29,634     | 1,869        | 5.9%              |
|               | 1997 | 31,925               | 30,097     | 1,828        | 5.7%              |
|               | 1998 | 31,775               | 30,268     | 1,507        | 4.7%              |
|               | 1999 | 32,518               | 30,854     | 1,664        | 5.1%              |
|               | 2000 | 34,183               | 32,704     | 1,479        | 4.3%              |
|               | 2001 | 34,497               | 32,633     | 1,864        | 5.4%              |
|               | 2002 | 33,675               | 31,382     | 2,293        | 6.8%              |
|               | 2003 | 34,270               | 32,029     | 2,241        | 6.5%              |
|               | 2004 | 34,889               | 32,789     | 2,100        | 6.0%              |
|               | 2005 | 35,892               | 33,895     | 1,997        | 5.6%              |
| Menominee, MI | 1990 | 12,033               | 11,213     | 820          | 6.8%              |

| County                         | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|--------------------------------|------|----------------------|------------|--------------|-------------------|
|                                | 1991 | 11,984               | 10,977     | 1,007        | 8.4%              |
|                                | 1992 | 12,466               | 11,385     | 1,081        | 8.7%              |
|                                | 1993 | 12,714               | 11,732     | 982          | 7.7%              |
|                                | 1994 | 13,044               | 12,124     | 920          | 7.1%              |
|                                | 1995 | 13,087               | 12,232     | 855          | 6.5%              |
|                                | 1996 | 13,026               | 12,294     | 732          | 5.6%              |
|                                | 1997 | 13,006               | 12,301     | 705          | 5.4%              |
|                                | 1998 | 12,762               | 12,106     | 656          | 5.1%              |
|                                | 1999 | 12,894               | 12,329     | 565          | 4.4%              |
|                                | 2000 | 13,272               | 12,728     | 544          | 4.1%              |
|                                | 2001 | 13,379               | 12,655     | 724          | 5.4%              |
|                                | 2002 | 13,105               | 12,299     | 806          | 6.2%              |
|                                | 2003 | 13,375               | 12,554     | 821          | 6.1%              |
|                                | 2004 | 13,456               | 12,679     | 777          | 5.8%              |
|                                | 2005 | 13,616               | 12,921     | 695          | 5.1%              |
| <b>Ontonagon, MI</b>           | 1990 | 3,880                | 3,667      | 213          | 5.5%              |
|                                | 1991 | 3,899                | 3,642      | 257          | 6.6%              |
|                                | 1992 | 4,000                | 3,581      | 419          | 10.5%             |
|                                | 1993 | 3,912                | 3,564      | 348          | 8.9%              |
|                                | 1994 | 3,899                | 3,605      | 294          | 7.5%              |
|                                | 1995 | 3,870                | 3,490      | 380          | 9.8%              |
|                                | 1996 | 3,552                | 2,988      | 564          | 15.9%             |
|                                | 1997 | 3,246                | 2,848      | 398          | 12.3%             |
|                                | 1998 | 3,061                | 2,814      | 247          | 8.1%              |
|                                | 1999 | 3,009                | 2,765      | 244          | 8.1%              |
|                                | 2000 | 3,648                | 3,420      | 228          | 6.3%              |
|                                | 2001 | 3,552                | 3,293      | 259          | 7.3%              |
|                                | 2002 | 3,498                | 3,242      | 256          | 7.3%              |
|                                | 2003 | 3,524                | 3,251      | 273          | 7.7%              |
|                                | 2004 | 3,593                | 3,322      | 271          | 7.5%              |
|                                | 2005 | 3,638                | 3,382      | 256          | 7.0%              |
| <b>Eastern Upper Peninsula</b> |      |                      |            |              |                   |
| <b>Alger, MI</b>               | 1990 | 3,814                | 3,462      | 352          | 9.2%              |
|                                | 1991 | 3,869                | 3,458      | 411          | 10.6%             |
|                                | 1992 | 3,940                | 3,484      | 456          | 11.6%             |
|                                | 1993 | 4,008                | 3,600      | 408          | 10.2%             |
|                                | 1994 | 4,133                | 3,750      | 383          | 9.3%              |
|                                | 1995 | 4,242                | 3,871      | 371          | 8.7%              |
|                                | 1996 | 4,208                | 3,913      | 295          | 7.0%              |
|                                | 1997 | 4,273                | 4,003      | 270          | 6.3%              |
|                                | 1998 | 4,298                | 4,080      | 218          | 5.1%              |
|                                | 1999 | 4,403                | 4,169      | 234          | 5.3%              |
|                                | 2000 | 4,374                | 4,142      | 232          | 5.3%              |
|                                | 2001 | 4,425                | 4,156      | 269          | 6.1%              |

| County       | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|--------------|------|----------------------|------------|--------------|-------------------|
|              | 2002 | 4,402                | 4,092      | 310          | 7.0%              |
|              | 2003 | 4,449                | 4,104      | 345          | 7.8%              |
|              | 2004 | 4,421                | 4,076      | 345          | 7.8%              |
|              | 2005 | 4,418                | 4,095      | 323          | 7.3%              |
| Chippewa, MI | 1990 | 14,653               | 12,990     | 1,663        | 11.3%             |
|              | 1991 | 14,755               | 13,025     | 1,730        | 11.7%             |
|              | 1992 | 15,615               | 13,593     | 2,022        | 12.9%             |
|              | 1993 | 16,552               | 14,697     | 1,855        | 11.2%             |
|              | 1994 | 17,361               | 15,417     | 1,944        | 11.2%             |
|              | 1995 | 17,443               | 15,759     | 1,684        | 9.7%              |
|              | 1996 | 17,640               | 16,215     | 1,425        | 8.1%              |
|              | 1997 | 17,829               | 16,437     | 1,392        | 7.8%              |
|              | 1998 | 17,452               | 16,117     | 1,335        | 7.6%              |
|              | 1999 | 17,692               | 16,531     | 1,161        | 6.6%              |
|              | 2000 | 17,467               | 16,359     | 1,108        | 6.3%              |
|              | 2001 | 17,465               | 16,174     | 1,291        | 7.4%              |
|              | 2002 | 17,021               | 15,670     | 1,351        | 7.9%              |
|              | 2003 | 17,373               | 15,847     | 1,526        | 8.8%              |
|              | 2004 | 17,569               | 16,016     | 1,553        | 8.8%              |
|              | 2005 | 17,745               | 16,271     | 1,474        | 8.3%              |
| Luce, MI     | 1990 | 2,422                | 2,200      | 222          | 9.2%              |
|              | 1991 | 2,422                | 2,101      | 321          | 13.3%             |
|              | 1992 | 2,368                | 1,982      | 386          | 16.3%             |
|              | 1993 | 2,372                | 2,003      | 369          | 15.6%             |
|              | 1994 | 2,462                | 2,115      | 347          | 14.1%             |
|              | 1995 | 2,592                | 2,321      | 271          | 10.5%             |
|              | 1996 | 2,715                | 2,514      | 201          | 7.4%              |
|              | 1997 | 2,815                | 2,571      | 244          | 8.7%              |
|              | 1998 | 2,712                | 2,508      | 204          | 7.5%              |
|              | 1999 | 2,620                | 2,424      | 196          | 7.5%              |
|              | 2000 | 2,754                | 2,589      | 165          | 6.0%              |
|              | 2001 | 2,853                | 2,668      | 185          | 6.5%              |
|              | 2002 | 2,895                | 2,684      | 211          | 7.3%              |
|              | 2003 | 2,905                | 2,681      | 224          | 7.7%              |
|              | 2004 | 2,888                | 2,672      | 216          | 7.5%              |
|              | 2005 | 2,872                | 2,658      | 214          | 7.5%              |
| Mackinac, MI | 1990 | 6,236                | 5,343      | 893          | 14.3%             |
|              | 1991 | 6,304                | 5,353      | 951          | 15.1%             |
|              | 1992 | 6,436                | 5,369      | 1,067        | 16.6%             |
|              | 1993 | 6,662                | 5,824      | 838          | 12.6%             |
|              | 1994 | 7,063                | 6,184      | 879          | 12.4%             |
|              | 1995 | 7,274                | 6,411      | 863          | 11.9%             |
|              | 1996 | 7,224                | 6,501      | 723          | 10.0%             |
|              | 1997 | 7,330                | 6,623      | 707          | 9.6%              |

| County                          | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|---------------------------------|------|----------------------|------------|--------------|-------------------|
|                                 | 1998 | 7,314                | 6,653      | 661          | 9.0%              |
|                                 | 1999 | 7,402                | 6,758      | 644          | 8.7%              |
|                                 | 2000 | 6,881                | 6,368      | 513          | 7.5%              |
|                                 | 2001 | 6,873                | 6,279      | 594          | 8.6%              |
|                                 | 2002 | 6,624                | 6,012      | 612          | 9.2%              |
|                                 | 2003 | 6,582                | 5,961      | 621          | 9.4%              |
|                                 | 2004 | 6,574                | 5,926      | 648          | 9.9%              |
|                                 | 2005 | 6,590                | 5,938      | 652          | 9.9%              |
| Schoolcraft, MI                 | 1990 | 3,819                | 3,199      | 620          | 16.2%             |
|                                 | 1991 | 3,732                | 3,214      | 518          | 13.9%             |
|                                 | 1992 | 3,900                | 3,299      | 601          | 15.4%             |
|                                 | 1993 | 3,937                | 3,399      | 538          | 13.7%             |
|                                 | 1994 | 4,112                | 3,530      | 582          | 14.2%             |
|                                 | 1995 | 4,105                | 3,545      | 560          | 13.6%             |
|                                 | 1996 | 4,091                | 3,638      | 453          | 11.1%             |
|                                 | 1997 | 4,243                | 3,813      | 430          | 10.1%             |
|                                 | 1998 | 4,245                | 3,862      | 383          | 9.0%              |
|                                 | 1999 | 4,301                | 3,935      | 366          | 8.5%              |
|                                 | 2000 | 3,925                | 3,610      | 315          | 8.0%              |
|                                 | 2001 | 3,903                | 3,559      | 344          | 8.8%              |
|                                 | 2002 | 3,835                | 3,456      | 379          | 9.9%              |
|                                 | 2003 | 3,926                | 3,500      | 426          | 10.9%             |
|                                 | 2004 | 4,053                | 3,613      | 440          | 10.9%             |
|                                 | 2005 | 4,107                | 3,684      | 423          | 10.3%             |
| <b>Northern Lower Peninsula</b> |      |                      |            |              |                   |
| Alcona, MI                      | 1990 | 3,934                | 3,419      | 515          | 13.1%             |
|                                 | 1991 | 3,906                | 3,343      | 563          | 14.4%             |
|                                 | 1992 | 4,123                | 3,447      | 676          | 16.4%             |
|                                 | 1993 | 4,455                | 3,835      | 620          | 13.9%             |
|                                 | 1994 | 4,838                | 4,231      | 607          | 12.5%             |
|                                 | 1995 | 4,866                | 4,370      | 496          | 10.2%             |
|                                 | 1996 | 4,941                | 4,517      | 424          | 8.6%              |
|                                 | 1997 | 5,077                | 4,671      | 406          | 8.0%              |
|                                 | 1998 | 4,992                | 4,655      | 337          | 6.8%              |
|                                 | 1999 | 4,957                | 4,601      | 356          | 7.2%              |
|                                 | 2000 | 4,465                | 4,167      | 298          | 6.7%              |
|                                 | 2001 | 4,315                | 3,890      | 425          | 9.8%              |
|                                 | 2002 | 4,146                | 3,711      | 435          | 10.5%             |
|                                 | 2003 | 4,206                | 3,711      | 495          | 11.8%             |
|                                 | 2004 | 4,211                | 3,758      | 453          | 10.8%             |
|                                 | 2005 | 4,225                | 3,799      | 426          | 10.1%             |
| Alpena, MI                      | 1990 | 14,329               | 12,864     | 1,465        | 10.2%             |
|                                 | 1991 | 14,332               | 12,589     | 1,743        | 12.2%             |
|                                 | 1992 | 14,789               | 12,694     | 2,095        | 14.2%             |

| County     | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|------------|------|----------------------|------------|--------------|-------------------|
|            | 1993 | 14,900               | 12,971     | 1,929        | 12.9%             |
|            | 1994 | 15,453               | 13,537     | 1,916        | 12.4%             |
|            | 1995 | 15,319               | 13,726     | 1,593        | 10.4%             |
|            | 1996 | 15,533               | 14,163     | 1,370        | 8.8%              |
|            | 1997 | 15,901               | 14,694     | 1,207        | 7.6%              |
|            | 1998 | 16,054               | 14,999     | 1,055        | 6.6%              |
|            | 1999 | 16,028               | 15,085     | 943          | 5.9%              |
|            | 2000 | 15,536               | 14,687     | 849          | 5.5%              |
|            | 2001 | 15,687               | 14,489     | 1,198        | 7.6%              |
|            | 2002 | 15,204               | 13,916     | 1,288        | 8.5%              |
|            | 2003 | 15,279               | 13,891     | 1,388        | 9.1%              |
|            | 2004 | 15,356               | 14,066     | 1,290        | 8.4%              |
|            | 2005 | 15,144               | 14,030     | 1,114        | 7.4%              |
| Antrim, MI | 1990 | 8,889                | 7,991      | 898          | 10.1%             |
|            | 1991 | 8,814                | 7,714      | 1,100        | 12.5%             |
|            | 1992 | 8,954                | 7,779      | 1,175        | 13.1%             |
|            | 1993 | 9,208                | 8,239      | 969          | 10.5%             |
|            | 1994 | 9,357                | 8,432      | 925          | 9.9%              |
|            | 1995 | 9,390                | 8,615      | 775          | 8.3%              |
|            | 1996 | 9,576                | 8,939      | 637          | 6.7%              |
|            | 1997 | 10,060               | 9,513      | 547          | 5.4%              |
|            | 1998 | 10,235               | 9,638      | 597          | 5.8%              |
|            | 1999 | 10,541               | 9,944      | 597          | 5.7%              |
|            | 2000 | 11,603               | 11,078     | 525          | 4.5%              |
|            | 2001 | 11,648               | 10,921     | 727          | 6.2%              |
|            | 2002 | 11,613               | 10,800     | 813          | 7.0%              |
|            | 2003 | 11,714               | 10,738     | 976          | 8.3%              |
|            | 2004 | 12,111               | 11,164     | 947          | 7.8%              |
|            | 2005 | 12,259               | 11,368     | 891          | 7.3%              |
| Arenac, MI | 1990 | 6,178                | 5,621      | 557          | 9.0%              |
|            | 1991 | 6,096                | 5,474      | 622          | 10.2%             |
|            | 1992 | 6,190                | 5,474      | 716          | 11.6%             |
|            | 1993 | 6,430                | 5,748      | 682          | 10.6%             |
|            | 1994 | 6,585                | 5,817      | 768          | 11.7%             |
|            | 1995 | 6,651                | 6,014      | 637          | 9.6%              |
|            | 1996 | 6,768                | 6,155      | 613          | 9.1%              |
|            | 1997 | 6,880                | 6,317      | 563          | 8.2%              |
|            | 1998 | 6,885                | 6,400      | 485          | 7.0%              |
|            | 1999 | 6,967                | 6,510      | 457          | 6.6%              |
|            | 2000 | 7,648                | 7,211      | 437          | 5.7%              |
|            | 2001 | 7,673                | 7,090      | 583          | 7.6%              |
|            | 2002 | 7,507                | 6,838      | 669          | 8.9%              |
|            | 2003 | 7,704                | 6,959      | 745          | 9.7%              |
|            | 2004 | 7,933                | 7,161      | 772          | 9.7%              |

| County         | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|----------------|------|----------------------|------------|--------------|-------------------|
|                | 2005 | 8,026                | 7,312      | 714          | 8.9%              |
| Benzie, MI     | 1990 | 6,072                | 5,361      | 711          | 11.7%             |
|                | 1991 | 6,098                | 5,276      | 822          | 13.5%             |
|                | 1992 | 6,294                | 5,529      | 765          | 12.2%             |
|                | 1993 | 6,604                | 5,914      | 690          | 10.4%             |
|                | 1994 | 6,853                | 6,242      | 611          | 8.9%              |
|                | 1995 | 7,067                | 6,431      | 636          | 9.0%              |
|                | 1996 | 7,148                | 6,655      | 493          | 6.9%              |
|                | 1997 | 7,534                | 7,068      | 466          | 6.2%              |
|                | 1998 | 7,656                | 7,226      | 430          | 5.6%              |
|                | 1999 | 7,873                | 7,480      | 393          | 5.0%              |
|                | 2000 | 8,391                | 8,017      | 374          | 4.5%              |
|                | 2001 | 8,420                | 7,933      | 487          | 5.8%              |
|                | 2002 | 8,410                | 7,841      | 569          | 6.8%              |
|                | 2003 | 8,792                | 8,108      | 684          | 7.8%              |
|                | 2004 | 8,988                | 8,327      | 661          | 7.4%              |
|                | 2005 | 9,222                | 8,542      | 680          | 7.4%              |
| Charlevoix, MI | 1990 | 11,293               | 10,349     | 944          | 8.4%              |
|                | 1991 | 11,573               | 10,379     | 1,194        | 10.3%             |
|                | 1992 | 11,970               | 10,334     | 1,636        | 13.7%             |
|                | 1993 | 12,350               | 10,938     | 1,412        | 11.4%             |
|                | 1994 | 12,587               | 11,329     | 1,258        | 10.0%             |
|                | 1995 | 12,728               | 11,669     | 1,059        | 8.3%              |
|                | 1996 | 13,180               | 12,345     | 835          | 6.3%              |
|                | 1997 | 13,679               | 12,953     | 726          | 5.3%              |
|                | 1998 | 13,855               | 13,190     | 665          | 4.8%              |
|                | 1999 | 14,269               | 13,602     | 667          | 4.7%              |
|                | 2000 | 13,819               | 13,207     | 612          | 4.4%              |
|                | 2001 | 13,841               | 13,032     | 809          | 5.8%              |
|                | 2002 | 13,712               | 12,735     | 977          | 7.1%              |
|                | 2003 | 13,836               | 12,719     | 1,117        | 8.1%              |
|                | 2004 | 14,286               | 13,195     | 1,091        | 7.6%              |
|                | 2005 | 14,552               | 13,517     | 1,035        | 7.1%              |
| Cheboygan, MI  | 1990 | 10,523               | 9,258      | 1,265        | 12.0%             |
|                | 1991 | 10,359               | 8,823      | 1,536        | 14.8%             |
|                | 1992 | 10,725               | 9,197      | 1,528        | 14.2%             |
|                | 1993 | 10,861               | 9,572      | 1,289        | 11.9%             |
|                | 1994 | 11,702               | 10,289     | 1,413        | 12.1%             |
|                | 1995 | 11,923               | 10,452     | 1,471        | 12.3%             |
|                | 1996 | 11,853               | 10,598     | 1,255        | 10.6%             |
|                | 1997 | 12,144               | 10,925     | 1,219        | 10.0%             |
|                | 1998 | 12,477               | 11,256     | 1,221        | 9.8%              |
|                | 1999 | 12,502               | 11,313     | 1,189        | 9.5%              |
|                | 2000 | 12,943               | 11,903     | 1,040        | 8.0%              |

| County       | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|--------------|------|----------------------|------------|--------------|-------------------|
|              | 2001 | 12,986               | 11,775     | 1,211        | 9.3%              |
|              | 2002 | 12,574               | 11,288     | 1,286        | 10.2%             |
|              | 2003 | 12,787               | 11,515     | 1,272        | 9.9%              |
|              | 2004 | 12,975               | 11,763     | 1,212        | 9.3%              |
|              | 2005 | 13,349               | 12,190     | 1,159        | 8.7%              |
| Clare, MI    | 1990 | 9,278                | 8,285      | 993          | 10.7%             |
|              | 1991 | 9,399                | 8,252      | 1,147        | 12.2%             |
|              | 1992 | 9,817                | 8,494      | 1,323        | 13.5%             |
|              | 1993 | 10,105               | 9,017      | 1,088        | 10.8%             |
|              | 1994 | 10,467               | 9,285      | 1,182        | 11.3%             |
|              | 1995 | 10,330               | 9,200      | 1,130        | 10.9%             |
|              | 1996 | 9,884                | 9,050      | 834          | 8.4%              |
|              | 1997 | 10,285               | 9,493      | 792          | 7.7%              |
|              | 1998 | 10,423               | 9,656      | 767          | 7.4%              |
|              | 1999 | 10,812               | 10,054     | 758          | 7.0%              |
|              | 2000 | 13,028               | 12,332     | 696          | 5.3%              |
|              | 2001 | 12,906               | 12,000     | 906          | 7.0%              |
|              | 2002 | 12,763               | 11,747     | 1,016        | 8.0%              |
|              | 2003 | 13,043               | 11,856     | 1,187        | 9.1%              |
|              | 2004 | 13,514               | 12,216     | 1,298        | 9.6%              |
|              | 2005 | 13,629               | 12,362     | 1,267        | 9.3%              |
| Crawford, MI | 1990 | 5,375                | 5,015      | 360          | 6.7%              |
|              | 1991 | 5,548                | 5,071      | 477          | 8.6%              |
|              | 1992 | 5,585                | 5,026      | 559          | 10.0%             |
|              | 1993 | 5,530                | 4,957      | 573          | 10.4%             |
|              | 1994 | 5,675                | 5,096      | 579          | 10.2%             |
|              | 1995 | 5,561                | 5,069      | 492          | 8.8%              |
|              | 1996 | 5,427                | 5,048      | 379          | 7.0%              |
|              | 1997 | 5,576                | 5,210      | 366          | 6.6%              |
|              | 1998 | 5,521                | 5,204      | 317          | 5.7%              |
|              | 1999 | 5,678                | 5,343      | 335          | 5.9%              |
|              | 2000 | 6,703                | 6,398      | 305          | 4.6%              |
|              | 2001 | 6,747                | 6,382      | 365          | 5.4%              |
|              | 2002 | 6,629                | 6,179      | 450          | 6.8%              |
|              | 2003 | 6,700                | 6,195      | 505          | 7.5%              |
|              | 2004 | 6,869                | 6,367      | 502          | 7.3%              |
|              | 2005 | 6,853                | 6,392      | 461          | 6.7%              |
| Emmet, MI    | 1990 | 14,156               | 12,823     | 1,333        | 9.4%              |
|              | 1991 | 14,500               | 12,806     | 1,694        | 11.7%             |
|              | 1992 | 14,986               | 13,006     | 1,980        | 13.2%             |
|              | 1993 | 15,230               | 13,467     | 1,763        | 11.6%             |
|              | 1994 | 15,790               | 13,919     | 1,871        | 11.8%             |
|              | 1995 | 15,949               | 14,235     | 1,714        | 10.7%             |
|              | 1996 | 16,202               | 14,748     | 1,454        | 9.0%              |

| County             | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|--------------------|------|----------------------|------------|--------------|-------------------|
|                    | 1997 | 17,008               | 15,705     | 1,303        | 7.7%              |
|                    | 1998 | 17,273               | 16,065     | 1,208        | 7.0%              |
|                    | 1999 | 18,080               | 16,937     | 1,143        | 6.3%              |
|                    | 2000 | 18,057               | 17,077     | 980          | 5.4%              |
|                    | 2001 | 18,250               | 17,147     | 1,103        | 6.0%              |
|                    | 2002 | 18,426               | 17,127     | 1,299        | 7.0%              |
|                    | 2003 | 19,130               | 17,681     | 1,449        | 7.6%              |
|                    | 2004 | 19,956               | 18,376     | 1,580        | 7.9%              |
|                    | 2005 | 20,352               | 18,809     | 1,543        | 7.6%              |
| Gladwin, MI        | 1990 | 8,106                | 7,321      | 785          | 9.7%              |
|                    | 1991 | 8,100                | 7,101      | 999          | 12.3%             |
|                    | 1992 | 8,195                | 7,045      | 1,150        | 14.0%             |
|                    | 1993 | 8,405                | 7,460      | 945          | 11.2%             |
|                    | 1994 | 8,858                | 7,925      | 933          | 10.5%             |
|                    | 1995 | 8,870                | 8,074      | 796          | 9.0%              |
|                    | 1996 | 8,974                | 8,301      | 673          | 7.5%              |
|                    | 1997 | 9,221                | 8,536      | 685          | 7.4%              |
|                    | 1998 | 9,125                | 8,446      | 679          | 7.4%              |
|                    | 1999 | 9,037                | 8,438      | 599          | 6.6%              |
|                    | 2000 | 10,963               | 10,392     | 571          | 5.2%              |
|                    | 2001 | 11,034               | 10,286     | 748          | 6.8%              |
|                    | 2002 | 10,974               | 10,092     | 882          | 8.0%              |
|                    | 2003 | 11,207               | 10,167     | 1,040        | 9.3%              |
|                    | 2004 | 11,202               | 10,057     | 1,145        | 10.2%             |
|                    | 2005 | 11,055               | 9,981      | 1,074        | 9.7%              |
| Grand Traverse, MI | 1990 | 36,055               | 33,601     | 2,454        | 6.8%              |
|                    | 1991 | 36,176               | 33,296     | 2,880        | 8.0%              |
|                    | 1992 | 38,326               | 35,130     | 3,196        | 8.3%              |
|                    | 1993 | 39,848               | 37,326     | 2,522        | 6.3%              |
|                    | 1994 | 41,390               | 39,031     | 2,359        | 5.7%              |
|                    | 1995 | 41,838               | 39,472     | 2,366        | 5.7%              |
|                    | 1996 | 42,733               | 40,802     | 1,931        | 4.5%              |
|                    | 1997 | 44,497               | 42,769     | 1,728        | 3.9%              |
|                    | 1998 | 44,804               | 43,274     | 1,530        | 3.4%              |
|                    | 1999 | 45,428               | 43,941     | 1,487        | 3.3%              |
|                    | 2000 | 45,570               | 44,028     | 1,542        | 3.4%              |
|                    | 2001 | 45,710               | 43,599     | 2,111        | 4.6%              |
|                    | 2002 | 45,553               | 43,031     | 2,522        | 5.5%              |
|                    | 2003 | 46,795               | 43,944     | 2,851        | 6.1%              |
|                    | 2004 | 47,800               | 44,759     | 3,041        | 6.4%              |
|                    | 2005 | 48,656               | 45,913     | 2,743        | 5.6%              |
| Iosco, MI          | 1990 | 11,172               | 10,227     | 945          | 8.5%              |
|                    | 1991 | 11,175               | 10,082     | 1,093        | 9.8%              |
|                    | 1992 | 11,433               | 10,117     | 1,316        | 11.5%             |

| County       | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|--------------|------|----------------------|------------|--------------|-------------------|
|              | 1993 | 10,757               | 9,361      | 1,396        | 13.0%             |
|              | 1994 | 10,930               | 9,694      | 1,236        | 11.3%             |
|              | 1995 | 11,133               | 10,105     | 1,028        | 9.2%              |
|              | 1996 | 11,265               | 10,373     | 892          | 7.9%              |
|              | 1997 | 11,601               | 10,704     | 897          | 7.7%              |
|              | 1998 | 11,634               | 10,858     | 776          | 6.7%              |
|              | 1999 | 11,588               | 10,736     | 852          | 7.4%              |
|              | 2000 | 11,603               | 10,867     | 736          | 6.3%              |
|              | 2001 | 11,071               | 10,067     | 1,004        | 9.1%              |
|              | 2002 | 10,719               | 9,660      | 1,059        | 9.9%              |
|              | 2003 | 10,624               | 9,556      | 1,068        | 10.1%             |
|              | 2004 | 10,704               | 9,684      | 1,020        | 9.5%              |
|              | 2005 | 10,751               | 9,790      | 961          | 8.9%              |
| Kalkaska, MI | 1990 | 6,146                | 5,541      | 605          | 9.8%              |
|              | 1991 | 6,300                | 5,548      | 752          | 11.9%             |
|              | 1992 | 6,560                | 5,766      | 794          | 12.1%             |
|              | 1993 | 6,939                | 6,132      | 807          | 11.6%             |
|              | 1994 | 7,119                | 6,432      | 687          | 9.7%              |
|              | 1995 | 7,170                | 6,555      | 615          | 8.6%              |
|              | 1996 | 7,419                | 6,863      | 556          | 7.5%              |
|              | 1997 | 7,609                | 7,132      | 477          | 6.3%              |
|              | 1998 | 7,621                | 7,145      | 476          | 6.2%              |
|              | 1999 | 7,691                | 7,263      | 428          | 5.6%              |
|              | 2000 | 8,551                | 8,156      | 395          | 4.6%              |
|              | 2001 | 8,600                | 7,984      | 616          | 7.2%              |
|              | 2002 | 8,498                | 7,850      | 648          | 7.6%              |
|              | 2003 | 8,689                | 7,984      | 705          | 8.1%              |
|              | 2004 | 8,762                | 8,085      | 677          | 7.7%              |
|              | 2005 | 8,939                | 8,294      | 645          | 7.2%              |
| Lake, MI     | 1990 | 2,733                | 2,406      | 327          | 12.0%             |
|              | 1991 | 2,774                | 2,409      | 365          | 13.2%             |
|              | 1992 | 3,059                | 2,624      | 435          | 14.2%             |
|              | 1993 | 3,245                | 2,799      | 446          | 13.7%             |
|              | 1994 | 3,277                | 2,859      | 418          | 12.8%             |
|              | 1995 | 3,149                | 2,741      | 408          | 13.0%             |
|              | 1996 | 3,093                | 2,769      | 324          | 10.5%             |
|              | 1997 | 3,086                | 2,824      | 262          | 8.5%              |
|              | 1998 | 3,233                | 2,988      | 245          | 7.6%              |
|              | 1999 | 3,442                | 3,189      | 253          | 7.4%              |
|              | 2000 | 4,456                | 4,207      | 249          | 5.6%              |
|              | 2001 | 4,467                | 4,139      | 328          | 7.3%              |
|              | 2002 | 4,457                | 4,088      | 369          | 8.3%              |
|              | 2003 | 4,506                | 4,069      | 437          | 9.7%              |
|              | 2004 | 4,487                | 4,025      | 462          | 10.3%             |

| County       | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|--------------|------|----------------------|------------|--------------|-------------------|
|              | 2005 | 4,499                | 4,075      | 424          | 9.4%              |
| Leelanau, MI | 1990 | 8,779                | 8,229      | 550          | 6.3%              |
|              | 1991 | 8,814                | 8,136      | 678          | 7.7%              |
|              | 1992 | 9,408                | 8,661      | 747          | 7.9%              |
|              | 1993 | 9,933                | 9,289      | 644          | 6.5%              |
|              | 1994 | 10,327               | 9,744      | 583          | 5.6%              |
|              | 1995 | 10,282               | 9,714      | 568          | 5.5%              |
|              | 1996 | 10,404               | 9,943      | 461          | 4.4%              |
|              | 1997 | 10,980               | 10,557     | 423          | 3.9%              |
|              | 1998 | 11,018               | 10,667     | 351          | 3.2%              |
|              | 1999 | 11,129               | 10,797     | 332          | 3.0%              |
|              | 2000 | 11,325               | 10,983     | 342          | 3.0%              |
|              | 2001 | 11,145               | 10,741     | 404          | 3.6%              |
|              | 2002 | 11,001               | 10,485     | 516          | 4.7%              |
|              | 2003 | 11,382               | 10,757     | 625          | 5.5%              |
|              | 2004 | 11,574               | 10,969     | 605          | 5.2%              |
|              | 2005 | 11,818               | 11,252     | 566          | 4.8%              |
| Manistee, MI | 1990 | 9,399                | 8,398      | 1,001        | 10.7%             |
|              | 1991 | 9,318                | 8,159      | 1,159        | 12.4%             |
|              | 1992 | 9,716                | 8,319      | 1,397        | 14.4%             |
|              | 1993 | 9,899                | 8,622      | 1,277        | 12.9%             |
|              | 1994 | 10,206               | 8,985      | 1,221        | 12.0%             |
|              | 1995 | 10,211               | 9,024      | 1,187        | 11.6%             |
|              | 1996 | 10,059               | 9,067      | 992          | 9.9%              |
|              | 1997 | 10,255               | 9,457      | 798          | 7.8%              |
|              | 1998 | 10,288               | 9,629      | 659          | 6.4%              |
|              | 1999 | 10,911               | 10,317     | 594          | 5.4%              |
|              | 2000 | 11,830               | 11,208     | 622          | 5.3%              |
|              | 2001 | 12,041               | 11,285     | 756          | 6.3%              |
|              | 2002 | 11,913               | 11,027     | 886          | 7.4%              |
|              | 2003 | 11,916               | 10,885     | 1,031        | 8.7%              |
|              | 2004 | 11,874               | 10,853     | 1,021        | 8.6%              |
|              | 2005 | 12,115               | 11,187     | 928          | 7.7%              |
| Mason, MI    | 1990 | 12,199               | 11,185     | 1,014        | 8.3%              |
|              | 1991 | 12,563               | 11,267     | 1,296        | 10.3%             |
|              | 1992 | 13,407               | 11,720     | 1,687        | 12.6%             |
|              | 1993 | 13,943               | 12,436     | 1,507        | 10.8%             |
|              | 1994 | 14,418               | 12,910     | 1,508        | 10.5%             |
|              | 1995 | 14,153               | 12,760     | 1,393        | 9.8%              |
|              | 1996 | 13,672               | 12,526     | 1,146        | 8.4%              |
|              | 1997 | 14,013               | 13,027     | 986          | 7.0%              |
|              | 1998 | 13,918               | 13,074     | 844          | 6.1%              |
|              | 1999 | 14,229               | 13,437     | 792          | 5.6%              |
|              | 2000 | 14,731               | 14,028     | 703          | 4.8%              |

| County          | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|-----------------|------|----------------------|------------|--------------|-------------------|
|                 | 2001 | 15,427               | 14,025     | 1,402        | 9.1%              |
|                 | 2002 | 15,358               | 13,662     | 1,696        | 11.0%             |
|                 | 2003 | 15,367               | 13,669     | 1,698        | 11.0%             |
|                 | 2004 | 15,281               | 13,867     | 1,414        | 9.3%              |
|                 | 2005 | 15,352               | 14,205     | 1,147        | 7.5%              |
| Mecosta, MI     | 1990 | 16,469               | 15,146     | 1,323        | 8.0%              |
|                 | 1991 | 16,344               | 14,869     | 1,475        | 9.0%              |
|                 | 1992 | 16,255               | 14,832     | 1,423        | 8.8%              |
|                 | 1993 | 17,111               | 15,859     | 1,252        | 7.3%              |
|                 | 1994 | 17,328               | 16,172     | 1,156        | 6.7%              |
|                 | 1995 | 17,143               | 16,230     | 913          | 5.3%              |
|                 | 1996 | 17,283               | 16,424     | 859          | 5.0%              |
|                 | 1997 | 17,567               | 16,789     | 778          | 4.4%              |
|                 | 1998 | 17,769               | 17,096     | 673          | 3.8%              |
|                 | 1999 | 17,948               | 17,277     | 671          | 3.7%              |
|                 | 2000 | 18,923               | 18,119     | 804          | 4.2%              |
|                 | 2001 | 19,103               | 18,081     | 1,022        | 5.3%              |
|                 | 2002 | 19,083               | 17,949     | 1,134        | 5.9%              |
|                 | 2003 | 19,865               | 18,548     | 1,317        | 6.6%              |
|                 | 2004 | 20,051               | 18,654     | 1,397        | 7.0%              |
|                 | 2005 | 20,181               | 18,783     | 1,398        | 6.9%              |
| Missaukee, MI   | 1990 | 5,388                | 4,820      | 568          | 10.5%             |
|                 | 1991 | 5,354                | 4,761      | 593          | 11.1%             |
|                 | 1992 | 5,519                | 4,965      | 554          | 10.0%             |
|                 | 1993 | 5,810                | 5,297      | 513          | 8.8%              |
|                 | 1994 | 6,247                | 5,749      | 498          | 8.0%              |
|                 | 1995 | 6,186                | 5,664      | 522          | 8.4%              |
|                 | 1996 | 6,175                | 5,773      | 402          | 6.5%              |
|                 | 1997 | 6,242                | 5,855      | 387          | 6.2%              |
|                 | 1998 | 6,420                | 6,046      | 374          | 5.8%              |
|                 | 1999 | 6,946                | 6,584      | 362          | 5.2%              |
|                 | 2000 | 7,000                | 6,691      | 309          | 4.4%              |
|                 | 2001 | 6,756                | 6,301      | 455          | 6.7%              |
|                 | 2002 | 6,718                | 6,235      | 483          | 7.2%              |
|                 | 2003 | 6,657                | 6,137      | 520          | 7.8%              |
|                 | 2004 | 6,781                | 6,253      | 528          | 7.8%              |
|                 | 2005 | 6,842                | 6,358      | 484          | 7.1%              |
| Montmorency, MI | 1990 | 3,243                | 2,753      | 490          | 15.1%             |
|                 | 1991 | 3,162                | 2,602      | 560          | 17.7%             |
|                 | 1992 | 3,535                | 2,844      | 691          | 19.5%             |
|                 | 1993 | 3,520                | 2,949      | 571          | 16.2%             |
|                 | 1994 | 3,564                | 2,952      | 612          | 17.2%             |
|                 | 1995 | 3,461                | 2,923      | 538          | 15.5%             |
|                 | 1996 | 3,330                | 2,926      | 404          | 12.1%             |

| County      | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|-------------|------|----------------------|------------|--------------|-------------------|
|             | 1997 | 3,461                | 3,072      | 389          | 11.2%             |
|             | 1998 | 3,523                | 3,135      | 388          | 11.0%             |
|             | 1999 | 3,544                | 3,174      | 370          | 10.4%             |
|             | 2000 | 4,083                | 3,760      | 323          | 7.9%              |
|             | 2001 | 4,151                | 3,742      | 409          | 9.9%              |
|             | 2002 | 4,233                | 3,790      | 443          | 10.5%             |
|             | 2003 | 4,295                | 3,798      | 497          | 11.6%             |
|             | 2004 | 4,363                | 3,843      | 520          | 11.9%             |
|             | 2005 | 4,319                | 3,823      | 496          | 11.5%             |
| Newaygo, MI | 1990 | 17,293               | 15,626     | 1,667        | 9.6%              |
|             | 1991 | 17,730               | 15,652     | 2,078        | 11.7%             |
|             | 1992 | 18,462               | 16,175     | 2,287        | 12.4%             |
|             | 1993 | 19,573               | 17,554     | 2,019        | 10.3%             |
|             | 1994 | 20,303               | 18,161     | 2,142        | 10.6%             |
|             | 1995 | 19,958               | 17,985     | 1,973        | 9.9%              |
|             | 1996 | 20,064               | 18,211     | 1,853        | 9.2%              |
|             | 1997 | 20,216               | 18,660     | 1,556        | 7.7%              |
|             | 1998 | 20,510               | 19,140     | 1,370        | 6.7%              |
|             | 1999 | 20,645               | 19,334     | 1,311        | 6.4%              |
|             | 2000 | 23,002               | 21,944     | 1,058        | 4.6%              |
|             | 2001 | 23,302               | 21,867     | 1,435        | 6.2%              |
|             | 2002 | 22,861               | 21,053     | 1,808        | 7.9%              |
|             | 2003 | 22,844               | 20,849     | 1,995        | 8.7%              |
|             | 2004 | 23,178               | 21,372     | 1,806        | 7.8%              |
|             | 2005 | 23,677               | 21,975     | 1,702        | 7.2%              |
| Oceana, MI  | 1990 | 11,302               | 10,065     | 1,237        | 10.9%             |
|             | 1991 | 11,082               | 9,734      | 1,348        | 12.2%             |
|             | 1992 | 11,492               | 9,821      | 1,671        | 14.5%             |
|             | 1993 | 11,965               | 10,404     | 1,561        | 13.0%             |
|             | 1994 | 13,278               | 11,546     | 1,732        | 13.0%             |
|             | 1995 | 12,987               | 11,515     | 1,472        | 11.3%             |
|             | 1996 | 13,318               | 11,976     | 1,342        | 10.1%             |
|             | 1997 | 13,855               | 12,809     | 1,046        | 7.5%              |
|             | 1998 | 13,872               | 12,907     | 965          | 7.0%              |
|             | 1999 | 14,217               | 13,272     | 945          | 6.6%              |
|             | 2000 | 13,217               | 12,446     | 771          | 5.8%              |
|             | 2001 | 13,463               | 12,514     | 949          | 7.0%              |
|             | 2002 | 13,425               | 12,283     | 1,142        | 8.5%              |
|             | 2003 | 13,570               | 12,301     | 1,269        | 9.4%              |
|             | 2004 | 13,991               | 12,821     | 1,170        | 8.4%              |
|             | 2005 | 14,494               | 13,360     | 1,134        | 7.8%              |
| Ogemaw, MI  | 1990 | 7,222                | 6,509      | 713          | 9.9%              |
|             | 1991 | 7,147                | 6,350      | 797          | 11.2%             |
|             | 1992 | 7,467                | 6,516      | 951          | 12.7%             |

| County      | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|-------------|------|----------------------|------------|--------------|-------------------|
|             | 1993 | 7,823                | 6,974      | 849          | 10.9%             |
|             | 1994 | 8,335                | 7,395      | 940          | 11.3%             |
|             | 1995 | 8,322                | 7,471      | 851          | 10.2%             |
|             | 1996 | 8,397                | 7,627      | 770          | 9.2%              |
|             | 1997 | 8,573                | 7,908      | 665          | 7.8%              |
|             | 1998 | 8,522                | 7,943      | 579          | 6.8%              |
|             | 1999 | 8,815                | 8,260      | 555          | 6.3%              |
|             | 2000 | 9,600                | 9,089      | 511          | 5.3%              |
|             | 2001 | 9,692                | 8,991      | 701          | 7.2%              |
|             | 2002 | 9,665                | 8,874      | 791          | 8.2%              |
|             | 2003 | 9,700                | 8,818      | 882          | 9.1%              |
|             | 2004 | 9,890                | 9,051      | 839          | 8.5%              |
|             | 2005 | 9,979                | 9,252      | 727          | 7.3%              |
| Osceola, MI | 1990 | 8,802                | 7,805      | 997          | 11.3%             |
|             | 1991 | 8,884                | 7,800      | 1,084        | 12.2%             |
|             | 1992 | 9,437                | 8,441      | 996          | 10.6%             |
|             | 1993 | 10,245               | 9,258      | 987          | 9.6%              |
|             | 1994 | 10,632               | 9,715      | 917          | 8.6%              |
|             | 1995 | 10,593               | 9,697      | 896          | 8.5%              |
|             | 1996 | 10,675               | 9,991      | 684          | 6.4%              |
|             | 1997 | 10,953               | 10,263     | 690          | 6.3%              |
|             | 1998 | 10,797               | 10,178     | 619          | 5.7%              |
|             | 1999 | 10,720               | 10,171     | 549          | 5.1%              |
|             | 2000 | 11,176               | 10,674     | 502          | 4.5%              |
|             | 2001 | 11,155               | 10,411     | 744          | 6.7%              |
|             | 2002 | 10,955               | 10,199     | 756          | 6.9%              |
|             | 2003 | 10,890               | 10,018     | 872          | 8.0%              |
|             | 2004 | 10,544               | 9,639      | 905          | 8.6%              |
|             | 2005 | 10,461               | 9,697      | 764          | 7.3%              |
| Oscoda, MI  | 1990 | 2,927                | 2,688      | 239          | 8.2%              |
|             | 1991 | 2,975                | 2,678      | 297          | 10.0%             |
|             | 1992 | 3,153                | 2,831      | 322          | 10.2%             |
|             | 1993 | 3,390                | 3,056      | 334          | 9.9%              |
|             | 1994 | 3,599                | 3,224      | 375          | 10.4%             |
|             | 1995 | 3,636                | 3,283      | 353          | 9.7%              |
|             | 1996 | 3,418                | 3,094      | 324          | 9.5%              |
|             | 1997 | 3,408                | 3,128      | 280          | 8.2%              |
|             | 1998 | 3,411                | 3,157      | 254          | 7.4%              |
|             | 1999 | 3,639                | 3,378      | 261          | 7.2%              |
|             | 2000 | 3,894                | 3,660      | 234          | 6.0%              |
|             | 2001 | 3,871                | 3,540      | 331          | 8.6%              |
|             | 2002 | 3,764                | 3,359      | 405          | 10.8%             |
|             | 2003 | 3,807                | 3,377      | 430          | 11.3%             |
|             | 2004 | 3,892                | 3,466      | 426          | 10.9%             |

| County           | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|------------------|------|----------------------|------------|--------------|-------------------|
|                  | 2005 | 3,950                | 3,545      | 405          | 10.3%             |
| Otsego, MI       | 1990 | 9,369                | 8,787      | 582          | 6.2%              |
|                  | 1991 | 9,634                | 8,773      | 861          | 8.9%              |
|                  | 1992 | 10,231               | 9,249      | 982          | 9.6%              |
|                  | 1993 | 10,955               | 10,107     | 848          | 7.7%              |
|                  | 1994 | 11,825               | 11,012     | 813          | 6.9%              |
|                  | 1995 | 12,130               | 11,378     | 752          | 6.2%              |
|                  | 1996 | 12,280               | 11,673     | 607          | 4.9%              |
|                  | 1997 | 12,861               | 12,303     | 558          | 4.3%              |
|                  | 1998 | 13,073               | 12,529     | 544          | 4.2%              |
|                  | 1999 | 13,345               | 12,779     | 566          | 4.2%              |
|                  | 2000 | 12,354               | 11,846     | 508          | 4.1%              |
|                  | 2001 | 12,356               | 11,638     | 718          | 5.8%              |
|                  | 2002 | 12,233               | 11,344     | 889          | 7.3%              |
|                  | 2003 | 12,344               | 11,341     | 1,003        | 8.1%              |
|                  | 2004 | 12,758               | 11,800     | 958          | 7.5%              |
|                  | 2005 | 13,135               | 12,252     | 883          | 6.7%              |
| Presque Isle, MI | 1990 | 6,063                | 5,352      | 711          | 11.7%             |
|                  | 1991 | 6,147                | 5,238      | 909          | 14.8%             |
|                  | 1992 | 6,253                | 5,199      | 1,054        | 16.9%             |
|                  | 1993 | 6,365                | 5,301      | 1,064        | 16.7%             |
|                  | 1994 | 6,479                | 5,316      | 1,163        | 18.0%             |
|                  | 1995 | 6,273                | 5,267      | 1,006        | 16.0%             |
|                  | 1996 | 6,167                | 5,368      | 799          | 13.0%             |
|                  | 1997 | 6,251                | 5,541      | 710          | 11.4%             |
|                  | 1998 | 6,137                | 5,496      | 641          | 10.4%             |
|                  | 1999 | 6,223                | 5,618      | 605          | 9.7%              |
|                  | 2000 | 6,497                | 5,966      | 531          | 8.2%              |
|                  | 2001 | 6,611                | 6,002      | 609          | 9.2%              |
|                  | 2002 | 6,458                | 5,797      | 661          | 10.2%             |
|                  | 2003 | 6,562                | 5,833      | 729          | 11.1%             |
|                  | 2004 | 6,405                | 5,686      | 719          | 11.2%             |
|                  | 2005 | 6,305                | 5,629      | 676          | 10.7%             |
| Roscommon, MI    | 1990 | 7,156                | 6,505      | 651          | 9.1%              |
|                  | 1991 | 6,929                | 6,206      | 723          | 10.4%             |
|                  | 1992 | 7,405                | 6,524      | 881          | 11.9%             |
|                  | 1993 | 7,779                | 6,967      | 812          | 10.4%             |
|                  | 1994 | 8,022                | 7,133      | 889          | 11.1%             |
|                  | 1995 | 8,186                | 7,342      | 844          | 10.3%             |
|                  | 1996 | 7,973                | 7,251      | 722          | 9.1%              |
|                  | 1997 | 8,130                | 7,477      | 653          | 8.0%              |
|                  | 1998 | 7,982                | 7,416      | 566          | 7.1%              |
|                  | 1999 | 8,141                | 7,584      | 557          | 6.8%              |
|                  | 2000 | 10,371               | 9,817      | 554          | 5.3%              |

| County          | Year | Civilian Labor Force | Employment | Unemployment | Unemployment Rate |
|-----------------|------|----------------------|------------|--------------|-------------------|
|                 | 2001 | 10,439               | 9,775      | 664          | 6.4%              |
|                 | 2002 | 10,441               | 9,653      | 788          | 7.5%              |
|                 | 2003 | 10,700               | 9,805      | 895          | 8.4%              |
|                 | 2004 | 11,310               | 10,376     | 934          | 8.3%              |
|                 | 2005 | 11,380               | 10,487     | 893          | 7.8%              |
| Wexford, MI     | 1990 | 12,432               | 10,901     | 1,531        | 12.3%             |
|                 | 1991 | 12,249               | 10,683     | 1,566        | 12.8%             |
|                 | 1992 | 12,804               | 11,034     | 1,770        | 13.8%             |
|                 | 1993 | 13,261               | 11,800     | 1,461        | 11.0%             |
|                 | 1994 | 14,131               | 12,733     | 1,398        | 9.9%              |
|                 | 1995 | 14,125               | 12,588     | 1,537        | 10.9%             |
|                 | 1996 | 13,932               | 12,749     | 1,183        | 8.5%              |
|                 | 1997 | 14,320               | 13,103     | 1,217        | 8.5%              |
|                 | 1998 | 14,382               | 13,280     | 1,102        | 7.7%              |
|                 | 1999 | 15,321               | 14,405     | 916          | 6.0%              |
|                 | 2000 | 15,596               | 14,767     | 829          | 5.3%              |
|                 | 2001 | 15,034               | 13,789     | 1,245        | 8.3%              |
|                 | 2002 | 14,607               | 13,479     | 1,128        | 7.7%              |
|                 | 2003 | 14,641               | 13,318     | 1,323        | 9.0%              |
|                 | 2004 | 14,770               | 13,549     | 1,221        | 8.3%              |
|                 | 2005 | 14,867               | 13,775     | 1,092        | 7.3%              |
| <b>Michigan</b> |      |                      |            |              |                   |
|                 | 1990 | 4,619,988            | 4,262,409  | 357,579      | 7.7%              |
|                 | 1991 | 4,588,881            | 4,162,074  | 426,807      | 9.3%              |
|                 | 1992 | 4,661,696            | 4,234,783  | 426,913      | 9.2%              |
|                 | 1993 | 4,711,598            | 4,364,545  | 347,053      | 7.4%              |
|                 | 1994 | 4,804,463            | 4,508,900  | 295,563      | 6.2%              |
|                 | 1995 | 4,834,939            | 4,576,521  | 258,418      | 5.3%              |
|                 | 1996 | 4,888,192            | 4,647,116  | 241,076      | 4.9%              |
|                 | 1997 | 4,963,077            | 4,748,691  | 214,386      | 4.3%              |
|                 | 1998 | 5,007,953            | 4,809,503  | 198,450      | 4.0%              |
|                 | 1999 | 5,089,421            | 4,897,144  | 192,277      | 3.8%              |
|                 | 2000 | 5,143,916            | 4,953,421  | 190,495      | 3.7%              |
|                 | 2001 | 5,143,869            | 4,876,338  | 267,531      | 5.2%              |
|                 | 2002 | 5,049,238            | 4,733,812  | 315,426      | 6.2%              |
|                 | 2003 | 5,054,902            | 4,696,338  | 358,564      | 7.1%              |
|                 | 2004 | 5,073,174            | 4,717,152  | 356,022      | 7.0%              |
|                 | 2005 | 5,097,457            | 4,753,822  | 343,635      | 6.7%              |

**Table A4.19. Unemployment rate (percent), by month and ecoregion, 1990 – 2006.**

| <b>Western Upper Peninsula</b>  |            |            |            |            |            |            |            |            |             |            |            |            |
|---------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|------------|------------|
| <b>Year</b>                     | <b>Jan</b> | <b>Feb</b> | <b>Mar</b> | <b>Apr</b> | <b>May</b> | <b>Jun</b> | <b>Jul</b> | <b>Aug</b> | <b>Sept</b> | <b>Oct</b> | <b>Nov</b> | <b>Dec</b> |
| 1990                            | 6.4        | 8.1        | 9.1        | 9.2        | 8.0        | 8.0        | 7.7        | 7.3        | 7.3         | 7.7        | 8.7        | 8.7        |
| 1991                            | 9.5        | 10.2       | 10.0       | 10.4       | 9.5        | 9.3        | 8.8        | 7.9        | 8.0         | 8.4        | 8.7        | 10.1       |
| 1992                            | 11.4       | 12.3       | 12.3       | 12.3       | 11.2       | 11.3       | 10.4       | 8.8        | 8.7         | 7.5        | 8.5        | 9.6        |
| 1993                            | 11.0       | 10.3       | 10.0       | 9.9        | 9.3        | 9.7        | 8.7        | 7.4        | 7.4         | 7.0        | 7.9        | 8.7        |
| 1994                            | 10.6       | 10.7       | 10.1       | 9.9        | 8.5        | 8.7        | 8.0        | 7.4        | 7.1         | 6.4        | 6.6        | 7.1        |
| 1995                            | 9.1        | 9.1        | 9.9        | 10.4       | 8.8        | 8.4        | 7.1        | 6.8        | 6.3         | 6.8        | 8.3        | 7.8        |
| 1996                            | 9.1        | 8.7        | 8.2        | 8.6        | 8.3        | 7.4        | 6.5        | 5.6        | 5.3         | 4.8        | 6.1        | 6.6        |
| 1997                            | 8.3        | 8.0        | 8.0        | 7.6        | 6.5        | 7.4        | 5.8        | 5.0        | 4.8         | 4.4        | 5.3        | 5.9        |
| 1998                            | 7.1        | 7.1        | 7.8        | 5.9        | 5.4        | 5.9        | 3.8        | 4.2        | 4.1         | 4.1        | 4.7        | 5.4        |
| 1999                            | 6.5        | 6.5        | 6.5        | 6.1        | 5.2        | 5.5        | 4.2        | 4.3        | 4.8         | 4.6        | 4.1        | 4.8        |
| 2000                            | 5.7        | 5.2        | 6.0        | 4.6        | 4.6        | 5.0        | 4.8        | 4.3        | 3.9         | 3.5        | 5.0        | 5.2        |
| 2001                            | 6.6        | 6.4        | 6.8        | 6.2        | 5.6        | 6.5        | 5.1        | 4.9        | 4.4         | 4.4        | 6.1        | 7.3        |
| 2002                            | 8.8        | 8.3        | 8.9        | 8.0        | 7.1        | 7.5        | 6.6        | 5.6        | 5.0         | 4.7        | 5.8        | 6.5        |
| 2003                            | 8.3        | 8.1        | 8.1        | 7.4        | 7.8        | 8.4        | 7.1        | 6.3        | 6.1         | 5.4        | 6.5        | 6.8        |
| 2004                            | 8.1        | 7.9        | 8.6        | 7.2        | 7.0        | 6.8        | 6.8        | 5.7        | 5.4         | 5.0        | 6.2        | 7.0        |
| 2005                            | 7.9        | 7.8        | 7.7        | 7.0        | 6.6        | 6.2        | 6.0        | 5.2        | 4.9         | 4.3        | 5.5        | 6.1        |
| 2006                            | 6.7        | 7.6        | 8.0        | 7.6        |            |            |            |            |             |            |            |            |
| <b>Eastern Upper Peninsula</b>  |            |            |            |            |            |            |            |            |             |            |            |            |
| <b>Year</b>                     | <b>Jan</b> | <b>Feb</b> | <b>Mar</b> | <b>Apr</b> | <b>May</b> | <b>Jun</b> | <b>Jul</b> | <b>Aug</b> | <b>Sept</b> | <b>Oct</b> | <b>Nov</b> | <b>Dec</b> |
| 1990                            | 15.6       | 18.6       | 19.0       | 16.6       | 10.8       | 8.8        | 8.2        | 7.2        | 7.3         | 7.0        | 12.5       | 15.5       |
| 1991                            | 17.5       | 18.5       | 17.9       | 16.2       | 10.2       | 9.8        | 8.5        | 7.4        | 7.7         | 7.8        | 14.7       | 18.0       |
| 1992                            | 21.4       | 21.9       | 21.0       | 18.0       | 12.1       | 11.1       | 9.9        | 8.3        | 8.9         | 8.3        | 13.3       | 16.8       |
| 1993                            | 19.3       | 18.2       | 16.9       | 14.0       | 10.1       | 9.8        | 8.4        | 7.1        | 7.4         | 7.6        | 11.9       | 15.1       |
| 1994                            | 19.0       | 18.6       | 17.7       | 15.4       | 10.3       | 8.9        | 8.1        | 7.4        | 7.4         | 7.2        | 10.3       | 12.9       |
| 1995                            | 16.7       | 15.9       | 16.2       | 14.5       | 9.5        | 8.2        | 6.4        | 6.2        | 5.9         | 5.6        | 10.4       | 12.2       |
| 1996                            | 14.9       | 13.6       | 12.2       | 11.7       | 7.8        | 6.6        | 5.4        | 4.8        | 4.7         | 4.4        | 8.8        | 10.6       |
| 1997                            | 13.3       | 12.7       | 12.4       | 10.5       | 6.5        | 6.6        | 4.9        | 5.0        | 5.3         | 5.1        | 8.8        | 10.5       |
| 1998                            | 13.1       | 12.5       | 12.4       | 8.8        | 6.3        | 6.2        | 3.8        | 4.5        | 4.5         | 4.2        | 8.0        | 10.2       |
| 1999                            | 11.2       | 11.8       | 11.0       | 9.5        | 6.1        | 5.8        | 4.1        | 3.5        | 3.6         | 3.5        | 7.8        | 9.2        |
| 2000                            | 9.7        | 9.1        | 9.7        | 7.1        | 5.4        | 5.6        | 5.3        | 4.6        | 4.3         | 3.8        | 7.1        | 8.3        |
| 2001                            | 11.1       | 10.7       | 11.1       | 9.3        | 6.5        | 6.0        | 4.8        | 4.6        | 4.4         | 4.4        | 8.7        | 10.5       |
| 2002                            | 12.4       | 12.0       | 12.5       | 11.0       | 7.4        | 7.3        | 6.0        | 5.0        | 4.7         | 4.5        | 7.7        | 9.5        |
| 2003                            | 12.3       | 12.0       | 12.3       | 10.6       | 8.3        | 8.0        | 7.1        | 6.1        | 6.1         | 5.6        | 9.0        | 10.8       |
| 2004                            | 12.8       | 12.5       | 13.5       | 10.5       | 8.1        | 7.4        | 6.9        | 5.8        | 5.7         | 5.6        | 9.3        | 11.4       |
| 2005                            | 12.9       | 12.9       | 12.6       | 10.6       | 8.1        | 6.9        | 6.6        | 5.5        | 5.5         | 5.1        | 8.3        | 10.0       |
| 2006                            | 11.3       | 12.4       | 12.6       | 11.2       |            |            |            |            |             |            |            |            |
| <b>Northern Lower Peninsula</b> |            |            |            |            |            |            |            |            |             |            |            |            |
| <b>Year</b>                     | <b>Jan</b> | <b>Feb</b> | <b>Mar</b> | <b>Apr</b> | <b>May</b> | <b>Jun</b> | <b>Jul</b> | <b>Aug</b> | <b>Sept</b> | <b>Oct</b> | <b>Nov</b> | <b>Dec</b> |
| 1990                            | 11.1       | 12.7       | 12.2       | 10.9       | 8.8        | 8.3        | 8.3        | 7.5        | 7.3         | 6.7        | 8.7        | 10.4       |
| 1991                            | 13.0       | 14.0       | 14.0       | 12.5       | 10.3       | 10.1       | 9.4        | 8.7        | 8.8         | 8.7        | 10.8       | 12.6       |
| 1992                            | 15.8       | 16.2       | 15.8       | 13.9       | 11.8       | 11.9       | 11.1       | 9.2        | 9.3         | 8.5        | 10.1       | 11.4       |

|      |      |      |      |      |      |      |     |     |     |     |     |      |
|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|------|
| 1993 | 13.5 | 13.0 | 12.5 | 11.2 | 10.1 | 10.1 | 9.5 | 7.7 | 8.4 | 8.4 | 9.8 | 10.7 |
| 1994 | 13.8 | 13.7 | 13.3 | 11.5 | 9.1  | 9.4  | 9.0 | 7.7 | 7.7 | 7.3 | 8.2 | 8.9  |
| 1995 | 12.3 | 12.0 | 12.2 | 11.2 | 8.9  | 9.0  | 8.1 | 6.6 | 6.4 | 6.1 | 8.0 | 8.7  |
| 1996 | 11.2 | 10.5 | 9.7  | 9.2  | 7.5  | 7.0  | 6.9 | 5.2 | 5.4 | 5.0 | 6.8 | 7.5  |
| 1997 | 9.8  | 9.4  | 9.1  | 7.6  | 5.9  | 5.8  | 5.6 | 4.6 | 5.0 | 4.6 | 6.2 | 6.9  |
| 1998 | 9.1  | 8.7  | 8.7  | 5.7  | 5.2  | 5.5  | 4.1 | 4.3 | 4.4 | 4.3 | 5.9 | 6.7  |
| 1999 | 8.2  | 8.6  | 8.1  | 6.3  | 5.2  | 5.3  | 4.7 | 3.6 | 3.7 | 3.7 | 5.2 | 5.8  |
| 2000 | 6.6  | 6.3  | 6.5  | 4.5  | 4.4  | 4.6  | 4.8 | 3.9 | 3.8 | 3.5 | 5.1 | 5.8  |
| 2001 | 8.7  | 8.3  | 8.6  | 6.8  | 5.9  | 5.9  | 5.6 | 5.0 | 5.0 | 5.1 | 7.1 | 8.1  |
| 2002 | 10.0 | 9.7  | 10.4 | 8.5  | 7.1  | 7.3  | 7.2 | 5.8 | 5.5 | 5.4 | 7.0 | 8.1  |
| 2003 | 10.2 | 10.2 | 10.4 | 8.7  | 8.2  | 8.4  | 8.3 | 6.9 | 6.8 | 6.4 | 7.9 | 8.6  |
| 2004 | 10.5 | 10.2 | 10.9 | 8.1  | 7.8  | 7.6  | 8.0 | 6.2 | 6.2 | 5.9 | 7.7 | 8.8  |
| 2005 | 10.1 | 10.1 | 9.9  | 8.0  | 7.2  | 6.6  | 7.1 | 5.6 | 5.6 | 5.2 | 6.9 | 7.7  |
| 2006 | 8.7  | 9.7  | 9.9  | 8.5  |      |      |     |     |     |     |     |      |

**Michigan**

| Year | Jan  | Feb  | Mar  | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|------|------|------|------|-----|-----|-----|-----|-----|------|-----|-----|-----|
| 1990 | 9.3  | 8.5  | 8.1  | 7.4 | 7.2 | 7.3 | 7.8 | 7.4 | 7.1  | 7.1 | 7.7 | 8.0 |
| 1991 | 9.6  | 10.1 | 10.4 | 9.5 | 9.2 | 9.6 | 9.5 | 8.7 | 8.7  | 8.5 | 8.7 | 9.1 |
| 1992 | 10.6 | 10.6 | 10.3 | 9.2 | 9.1 | 9.8 | 9.9 | 8.7 | 8.5  | 7.7 | 7.6 | 7.7 |
| 1993 | 8.7  | 8.4  | 7.9  | 7.2 | 7.2 | 7.7 | 7.9 | 6.8 | 6.8  | 6.7 | 6.7 | 6.8 |
| 1994 | 8.3  | 7.9  | 7.5  | 6.4 | 5.8 | 6.2 | 6.7 | 5.7 | 5.3  | 5.0 | 4.6 | 4.6 |
| 1995 | 6.2  | 5.9  | 6.1  | 5.6 | 5.3 | 5.8 | 6.1 | 5.0 | 4.7  | 4.4 | 4.6 | 4.6 |
| 1996 | 6.0  | 5.5  | 5.6  | 4.8 | 4.9 | 5.1 | 5.6 | 4.4 | 4.4  | 4.1 | 4.3 | 4.5 |
| 1997 | 5.7  | 5.2  | 5.0  | 4.2 | 3.9 | 4.4 | 4.7 | 3.7 | 3.9  | 3.6 | 3.7 | 3.8 |
| 1998 | 5.0  | 4.6  | 4.6  | 3.2 | 3.4 | 4.1 | 4.8 | 3.6 | 3.6  | 3.5 | 3.5 | 3.8 |
| 1999 | 4.8  | 4.7  | 4.4  | 3.7 | 3.6 | 4.0 | 4.2 | 3.1 | 3.2  | 3.1 | 3.3 | 3.2 |
| 2000 | 4.1  | 3.8  | 4.0  | 3.1 | 3.5 | 3.9 | 4.7 | 3.7 | 3.4  | 3.1 | 3.6 | 3.7 |
| 2001 | 5.5  | 5.1  | 5.4  | 4.5 | 4.7 | 5.1 | 5.5 | 5.0 | 4.9  | 5.1 | 5.7 | 5.9 |
| 2002 | 7.3  | 6.6  | 7.0  | 6.0 | 6.1 | 6.6 | 7.0 | 5.7 | 5.4  | 5.3 | 5.8 | 6.1 |
| 2003 | 7.6  | 7.4  | 7.6  | 6.8 | 7.1 | 7.8 | 8.1 | 6.9 | 6.7  | 6.4 | 6.4 | 6.4 |
| 2004 | 7.7  | 7.3  | 7.8  | 6.3 | 6.8 | 7.2 | 7.9 | 6.6 | 6.5  | 6.4 | 6.8 | 6.9 |
| 2005 | 7.8  | 7.8  | 7.6  | 6.6 | 6.7 | 6.8 | 7.3 | 6.1 | 6.0  | 5.6 | 6.2 | 6.3 |
| 2006 | 7.1  | 7.2  | 7.5  | 6.8 | 5.8 |     |     |     |      |     |     |     |

Data Source: Bureau of Labor Statistics

**Table A4.20. Employment and firms in the forest products industries by county and ecoregion, 2005.**

| Region/County                   | Estimated Employees | Logging/<br>Trucking<br>Firms | Primary<br>Manufacturing<br>Firms | Secondary<br>Manufacturing<br>Firms |
|---------------------------------|---------------------|-------------------------------|-----------------------------------|-------------------------------------|
| <b>Western Upper Peninsula</b>  |                     |                               |                                   |                                     |
| Baraga                          | 198                 | 25                            | 5                                 | 1                                   |
| Delta                           | 4,031               | 47                            | 13                                | 18                                  |
| Dickinson                       | 2,090               | 31                            | 5                                 | 5                                   |
| Gogebic                         | 388                 | 18                            | 5                                 | 5                                   |
| Houghton                        | 549                 | 31                            | 4                                 | 7                                   |
| Iron                            | 483                 | 59                            | 5                                 | 9                                   |
| Keweenaw                        | 39                  | 5                             |                                   | 4                                   |
| Marquette                       | 678                 | 41                            | 6                                 | 13                                  |
| Menominee                       | 1,513               | 55                            | 17                                | 22                                  |
| Ontonagon                       | 428                 | 23                            | 1                                 | 3                                   |
| <b>WUP total</b>                | <b>10,397</b>       | <b>335</b>                    | <b>61</b>                         | <b>87</b>                           |
| <b>Eastern Upper Peninsula</b>  |                     |                               |                                   |                                     |
| Alger                           | 781                 | 17                            | 4                                 | 4                                   |
| Chippewa                        | 334                 | 25                            | 5                                 | 5                                   |
| Luce                            | 339                 | 24                            | 3                                 | 2                                   |
| Mackinac                        | 173                 | 19                            | 5                                 | 7                                   |
| Schoolcraft                     | 349                 | 26                            | 2                                 | 3                                   |
| <b>EUP Total</b>                | <b>1,976</b>        | <b>111</b>                    | <b>19</b>                         | <b>21</b>                           |
| <b>Northern Lower Peninsula</b> |                     |                               |                                   |                                     |
| Alcona                          | 204                 | 15                            | 7                                 | 4                                   |
| Alpena                          | 770                 | 21                            | 9                                 | 15                                  |
| Antrim                          | 189                 | 6                             | 4                                 | 7                                   |
| Arenac                          | 86                  | 3                             | 5                                 | 3                                   |
| Benzie                          | 82                  | 9                             | 2                                 | 2                                   |
| Charlevoix                      | 482                 | 4                             | 3                                 | 6                                   |
| Cheboygan                       | 240                 | 11                            | 6                                 | 9                                   |
| Clare                           | 163                 | 4                             | 9                                 | 6                                   |
| Crawford                        | 652                 | 6                             | 6                                 | 7                                   |
| Emmet                           | 467                 | 4                             | 6                                 | 8                                   |
| Gladwin                         | 90                  | 8                             | 7                                 | 4                                   |
| Grand Traverse                  | 347                 | 6                             | 1                                 | 21                                  |
| Iosco                           | 216                 | 7                             | 4                                 | 6                                   |
| Kalkaska                        | 39                  | 6                             | 1                                 | 2                                   |
| Lake                            | 211                 | 10                            | 2                                 | 1                                   |
| Leelanau                        | 68                  | 6                             | 1                                 | 7                                   |
| Manistee                        | 373                 | 9                             | 3                                 | 1                                   |
| Mason                           | 359                 | 5                             | 2                                 | 8                                   |
| Mecosta                         | 122                 | 9                             | 4                                 | 4                                   |
| Missaukee                       | 318                 | 20                            | 5                                 | 3                                   |
| Montmorency                     | 157                 | 16                            | 4                                 | 2                                   |

| Region/County    | Estimated Employees | Logging/<br>Trucking<br>Firms | Primary<br>Manufacturing<br>Firms | Secondary<br>Manufacturing<br>Firms |
|------------------|---------------------|-------------------------------|-----------------------------------|-------------------------------------|
| Newaygo          | 113                 | 11                            | 5                                 | 5                                   |
| Oceana           | 118                 | 8                             | 6                                 | 5                                   |
| Ogemaw           | 151                 | 21                            | 7                                 | 6                                   |
| Osceola          | 86                  | 6                             | 6                                 | 2                                   |
| Oscoda           | 160                 | 8                             | 15                                | 9                                   |
| Otsego           | 414                 | 9                             | 4                                 | 4                                   |
| Presque Isle     | 229                 | 16                            | 9                                 | 7                                   |
| Roscommon        | 31                  | 8                             |                                   | 2                                   |
| Wexford          | 155                 | 15                            | 4                                 | 3                                   |
| <b>NLP Total</b> | <b>7,092</b>        | <b>287</b>                    | <b>147</b>                        | <b>169</b>                          |
| <b>Michigan</b>  | <b>88,774</b>       | <b>840</b>                    | <b>339</b>                        | <b>1,291</b>                        |

Data Source: Data compiled by Jack Pilon, Michigan DNR, Gaylord, MI.

Notes: Data are generally based on 2005 information. Primary companies use products directly from the woods; secondary companies add value to primary products. Some companies may have primary and secondary operations and do their own logging. In some cases, employment numbers are estimated and based on the employee range reported by firms.

**Table A4.21. Tourism-related spending by county and ecoregion, 1995, 1997, and 2000.**

| Ecoregion/<br>County            | Spending,<br>1995 | Spending,<br>1997 | Spending,<br>2000 | Change,<br>1997-2000 | Change,<br>1997-2000 | State<br>Market<br>Share, 2000 |
|---------------------------------|-------------------|-------------------|-------------------|----------------------|----------------------|--------------------------------|
|                                 | Million dollars   |                   |                   |                      | percent              |                                |
| <b>Western Upper Peninsula</b>  |                   |                   |                   |                      |                      |                                |
| Baraga                          | \$11.8            | \$12.0            | \$14.1            | \$2.1                | 14.9%                | 0.2%                           |
| Delta                           | \$41.7            | \$51.0            | \$46.9            | -\$4.1               | -8.7%                | 0.5%                           |
| Dickinson                       | \$22.8            | \$28.0            | \$26.6            | -\$1.4               | -5.3%                | 0.3%                           |
| Gogebic                         | \$29.1            | \$34.0            | \$45.3            | \$11.3               | 24.9%                | 0.5%                           |
| Houghton                        | \$43.4            | \$50.0            | \$62.0            | \$12.0               | 19.4%                | 0.7%                           |
| Iron                            | \$17.8            | \$22.0            | \$24.1            | \$2.1                | 8.7%                 | 0.3%                           |
| Keweenaw                        | \$10.2            | \$11.0            | \$17.8            | \$6.8                | 38.2%                | 0.2%                           |
| Marquette                       | \$79.6            | \$73.0            | \$82.7            | \$9.7                | 11.7%                | 0.9%                           |
| Menominee                       | \$16.1            | \$19.0            | \$23.5            | \$4.5                | 19.1%                | 0.3%                           |
| Ontonagon                       | \$20.6            | \$22.0            | \$15.7            | -\$6.3               | -40.1%               | 0.2%                           |
| WUP Region                      | \$293.1           | \$322.0           | \$358.7           | \$36.7               | 10.2%                | 4.0%                           |
| <b>Eastern Upper Peninsula</b>  |                   |                   |                   |                      |                      |                                |
| Alger                           | \$32.6            | \$36.0            | \$28.1            | -\$7.9               | -28.1%               | 0.3%                           |
| Chippewa                        | \$86.2            | \$101.0           | \$97.9            | -\$3.1               | -3.2%                | 1.1%                           |
| Luce                            | \$15.7            | \$16.0            | \$17.7            | \$1.7                | 9.6%                 | 0.2%                           |
| Mackinac                        | \$130.2           | \$178.0           | \$175.2           | -\$2.8               | -1.6%                | 2.0%                           |
| Schoolcraft                     | \$34.8            | \$31.0            | \$24.7            | -\$6.3               | -25.5%               | 0.3%                           |
| EUP Region                      | \$299.5           | \$362.0           | \$343.6           | -\$18.4              | -5.4%                | 3.9%                           |
| <b>Northern Lower Peninsula</b> |                   |                   |                   |                      |                      |                                |
| Alcona                          | \$37.1            | \$35.0            | \$34.2            | -\$0.8               | -2.3%                | 0.4%                           |

|                 |           |           |           |           |        |        |
|-----------------|-----------|-----------|-----------|-----------|--------|--------|
| Alpena          | \$33.6    | \$34.0    | \$34.3    | \$0.3     | 0.9%   | 0.4%   |
| Antrim          | \$74.2    | \$64.0    | \$67.8    | \$3.8     | 5.6%   | 0.8%   |
| Arenac          | \$21.5    | \$22.0    | \$22.6    | \$0.6     | 2.7%   | 0.3%   |
| Benzie          | \$44.0    | \$71.0    | \$58.8    | -\$12.2   | -20.7% | 0.7%   |
| Charlevoix      | \$69.2    | \$86.0    | \$90.1    | \$4.1     | 4.6%   | 1.0%   |
| Cheboygan       | \$56.7    | \$59.0    | \$61.3    | \$2.3     | 3.8%   | 0.7%   |
| Clare           | \$56.0    | \$58.0    | \$66.3    | \$8.3     | 12.5%  | 0.7%   |
| Crawford        | \$48.2    | \$44.0    | \$45.1    | \$1.1     | 2.4%   | 0.5%   |
| Emmet           | \$120.7   | \$149.0   | \$121.9   | -\$27.1   | -22.2% | 1.4%   |
| Gladwin         | \$36.0    | \$36.0    | \$38.9    | \$2.9     | 7.5%   | 0.4%   |
| Grand Traverse  | \$225.1   | \$209.0   | \$234.0   | \$25.0    | 10.7%  | 2.6%   |
| Iosco           | \$64.5    | \$65.0    | \$60.4    | -\$4.6    | -7.6%  | 0.7%   |
| Kalkaska        | \$23.7    | \$25.0    | \$28.6    | \$3.6     | 12.6%  | 0.3%   |
| Lake            | \$34.5    | \$39.0    | \$43.7    | \$4.7     | 10.8%  | 0.5%   |
| Leelanau        | \$56.2    | \$62.0    | \$63.7    | \$1.7     | 2.7%   | 0.7%   |
| Manistee        | \$35.9    | \$39.0    | \$42.1    | \$3.1     | 7.4%   | 0.5%   |
| Mason           | \$44.3    | \$48.0    | \$62.3    | \$14.3    | 23.0%  | 0.7%   |
| Mecosta         | \$38.5    | \$49.0    | \$46.9    | -\$2.1    | -4.5%  | 0.5%   |
| Missaukee       | \$18.2    | \$18.0    | \$21.8    | \$3.8     | 17.4%  | 0.2%   |
| Montmorency     | \$31.5    | \$31.0    | \$29.7    | -\$1.3    | -4.4%  | 0.3%   |
| Newaygo         | \$38.9    | \$41.0    | \$41.6    | \$0.6     | 1.4%   | 0.5%   |
| Oceana          | \$31.6    | \$38.0    | \$43.1    | \$5.1     | 11.8%  | 0.5%   |
| Ogemaw          | \$41.2    | \$41.0    | \$46.7    | \$5.7     | 12.2%  | 0.5%   |
| Osceola         | \$25.2    | \$26.0    | \$27.7    | \$1.7     | 6.1%   | 0.3%   |
| Oscoda          | \$28.2    | \$28.0    | \$30.6    | \$2.6     | 8.5%   | 0.3%   |
| Otsego          | \$54.9    | \$78.0    | \$78.9    | \$0.9     | 1.1%   | 0.9%   |
| Presque Isle    | \$22.6    | \$22.0    | \$24.6    | \$2.6     | 10.6%  | 0.3%   |
| Roscommon       | \$72.4    | \$71.0    | \$77.7    | \$6.7     | 8.6%   | 0.9%   |
| Wexford         | \$44.2    | \$46.0    | \$50.1    | \$4.1     | 8.2%   | 0.6%   |
| NLP Region      | \$1,528.5 | \$1,634.0 | \$1,695.5 | \$61.5    | 3.6%   | 19.1%  |
| <b>Michigan</b> |           |           |           |           |        |        |
| Michigan        | \$6,378.0 | \$7,230.0 | \$8,891.0 | \$1,661.0 | 18.7%  | 100.0% |

Note: Excludes air-related travel expenditures in counties with major airports.

Data Source: Stynes, D. Michigan county-level tourism spending estimates by lodging segments, 1995, <http://www.msu.edu/course/prr/840/econimpact/michigan/Mltsm95.htm>;  
1997, <http://www.msu.edu/course/prr/840/econimpact/michigan/michtsm97.htm>;  
2000, <http://www.prr.msu.edu/miteim/michtsm00.htm>.

**Table A4.22. DNR employment trends by county and eco-region, 1995-2005**

| <b>Region/County</b> | <b>1995</b> | <b>1996</b> | <b>1997</b> | <b>1998</b> | <b>1999</b> | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Baraga               | 54          | 54          | 49          | 52          | 80          | 93          | 80          | 61          | 45          | 48          | 41          |
| Delta                | 50          | 53          | 47          | 58          | 56          | 50          | 45          | 49          | 37          | 40          | 39          |
| Dickinson            | 19          | 17          | 22          | 20          | 18          | 16          | 15          | 16          | 12          | 10          | 10          |
| Gogebic              | 14          | 9           | 10          | 10          | 10          | 13          | 13          | 12          | 8           | 6           | 6           |
| Houghton             | 18          | 28          | 23          | 30          | 32          | 26          | 29          | 30          | 27          | 28          | 27          |
| Iron                 | 40          | 36          | 31          | 37          | 34          | 33          | 36          | 35          | 26          | 30          | 26          |
| Keweenaw             | 10          | 25          | 23          | 26          | 21          | 22          | 24          | 29          | 22          | 21          | 22          |
| Marquette            | 243         | 158         | 185         | 110         | 116         | 110         | 104         | 110         | 88          | 102         | 102         |
| Menominee            | 26          | 26          | 23          | 29          | 26          | 30          | 55          | 31          | 21          | 21          | 25          |
| Ontonagon            | 28          | 36          | 35          | 20          | 42          | 44          | 44          | 42          | 32          | 43          | 38          |
| WUP Total            | 502         | 442         | 448         | 392         | 435         | 437         | 445         | 415         | 318         | 349         | 336         |
| <b>Region/County</b> | <b>1995</b> | <b>1996</b> | <b>1997</b> | <b>1998</b> | <b>1999</b> | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Alger                | 14          | 17          | 19          | 17          | 19          | 19          | 14          | 16          | 15          | 14          | 14          |
| Chippewa             | 49          | 62          | 60          | 60          | 62          | 58          | 57          | 65          | 57          | 63          | 66          |
| Luce                 | 56          | 62          | 58          | 59          | 63          | 59          | 62          | 60          | 55          | 60          | 54          |
| Mackinac             | 79          | 86          | 74          | 76          | 77          | 74          | 76          | 45          | 42          | 42          | 44          |
| Schoolcraft          | 51          | 56          | 46          | 45          | 45          | 43          | 41          | 41          | 41          | 45          | 40          |
| EUP Total            | 249         | 283         | 257         | 257         | 266         | 253         | 250         | 227         | 210         | 224         | 218         |
| <b>Region/County</b> | <b>1995</b> | <b>1996</b> | <b>1997</b> | <b>1998</b> | <b>1999</b> | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Alcona               | 18          | 16          | 17          | 20          | 22          | 20          | 21          | 24          | 17          | 20          | 17          |
| Alpena               | 14          | 16          | 15          | 19          | 22          | 20          | 20          | 18          | 17          | 15          | 13          |
| Antrim               | 3           | 3           | 2           | 3           | 4           | 4           | 2           | 3           | 1           | 2           | 1           |
| Arenac               | 4           | 4           | 4           | 4           | 11          | 8           | 11          | 6           | 1           | 1           | 0           |
| Benzie               | 24          | 30          | 26          | 19          | 18          | 11          | 15          | 16          | 15          | 14          | 12          |
| Charlevoix           | 63          | 70          | 71          | 71          | 69          | 69          | 76          | 86          | 84          | 82          | 76          |
| Cheboygan            | 86          | 88          | 98          | 87          | 90          | 87          | 98          | 68          | 74          | 75          | 73          |
| Clare                | 33          | 28          | 34          | 28          | 30          | 30          | 26          | 24          | 23          | 23          | 22          |
| Crawford             | 137         | 140         | 122         | 133         | 129         | 129         | 124         | 115         | 110         | 134         | 123         |
| Emmet                | 61          | 50          | 52          | 46          | 47          | 51          | 48          | 48          | 49          | 53          | 50          |
| Gladwin              | 14          | 19          | 21          | 18          | 18          | 23          | 22          | 19          | 13          | 16          | 16          |
| Grand Traverse       | 56          | 68          | 65          | 76          | 68          | 70          | 69          | 67          | 60          | 64          | 62          |
| Iosco                | 64          | 49          | 52          | 52          | 47          | 49          | 51          | 48          | 39          | 39          | 43          |
| Kalkaska             | 11          | 13          | 15          | 13          | 13          | 24          | 11          | 11          | 8           | 8           | 8           |
| Lake                 | 19          | 22          | 19          | 24          | 22          | 24          | 22          | 21          | 14          | 18          | 18          |
| Leelanau             | 6           | 8           | 6           | 7           | 9           | 7           | 10          | 10          | 6           | 9           | 6           |
| Manistee             | 16          | 16          | 12          | 16          | 17          | 16          | 16          | 15          | 14          | 16          | 16          |
| Mason                | 45          | 46          | 42          | 44          | 44          | 42          | 46          | 40          | 39          | 42          | 40          |
| Missaukee            | 1           | 2           | 2           | 1           | 2           | 2           | 3           | 3           | 0           | 0           | 0           |
| Montmorency          | 41          | 45          | 38          | 43          | 38          | 43          | 42          | 39          | 34          | 35          | 30          |
| Newaygo              | 3           | 3           | 6           | 6           | 8           | 7           | 7           | 7           | 5           | 5           | 5           |
| Oceana               | 58          | 51          | 52          | 51          | 50          | 56          | 59          | 67          | 68          | 62          | 60          |
| Ogemaw               | 28          | 34          | 34          | 40          | 24          | 30          | 26          | 26          | 20          | 24          | 24          |
| Osceola              | 9           | 9           | 8           | 10          | 11          | 10          | 10          | 10          | 3           | 2           | 2           |

| <b>Region/County</b> | <b>1995</b> | <b>1996</b> | <b>1997</b> | <b>1998</b> | <b>1999</b> | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Oscoda               | 33          | 22          | 20          | 20          | 21          | 19          | 20          | 12          | 10          | 8           | 6           |
| Otsego               | 98          | 70          | 66          | 103         | 115         | 109         | 114         | 78          | 73          | 82          | 76          |
| Presque Isle         | 25          | 22          | 23          | 25          | 24          | 27          | 30          | 27          | 21          | 24          | 25          |
| Roscommon            | 180         | 162         | 188         | 110         | 116         | 117         | 100         | 98          | 90          | 90          | 93          |
| Wexford              | 93          | 54          | 59          | 72          | 72          | 76          | 82          | 84          | 78          | 85          | 76          |
| <b>NLP Total</b>     | <b>1243</b> | <b>1160</b> | <b>1169</b> | <b>1161</b> | <b>1161</b> | <b>1180</b> | <b>1181</b> | <b>1090</b> | <b>986</b>  | <b>1048</b> | <b>993</b>  |

Data Source: E. Wehrwein, DNR Human Resources Staff, May 2006.

Note: Counts are based on PP 15 (July 4) for all years. The payroll processing system changed in 2001, so Full Time/Other classifications changed for some employees. Mecosta County data not included.

**Table A4.23. MiDNR employment by eco-region, by employee type, 1995 to 2005.**

| Region/Year                     | Total Employees | Full Time Employees | Other Employees | Full Time Employees |
|---------------------------------|-----------------|---------------------|-----------------|---------------------|
|                                 | Number          | Number              | Number          | Percent             |
| <b>Western Upper Peninsula</b>  |                 |                     |                 |                     |
| 1995                            | 502             | 293                 | 209             | 58.4%               |
| 1996                            | 442             | 256                 | 186             | 57.9%               |
| 1997                            | 448             | 233                 | 215             | 52.0%               |
| 1998                            | 392             | 227                 | 165             | 57.9%               |
| 1999                            | 435             | 233                 | 202             | 53.6%               |
| 2000                            | 437             | 234                 | 203             | 53.5%               |
| 2001                            | 445             | 195                 | 250             | 43.8%               |
| 2002                            | 415             | 192                 | 223             | 46.3%               |
| 2003                            | 318             | 148                 | 170             | 46.5%               |
| 2004                            | 349             | 156                 | 193             | 44.7%               |
| 2005                            | 336             | 154                 | 182             | 45.8%               |
| <b>Eastern Upper Peninsula</b>  |                 |                     |                 |                     |
| 1995                            | 249             | 148                 | 101             | 59.4%               |
| 1996                            | 283             | 144                 | 139             | 50.9%               |
| 1997                            | 257             | 128                 | 129             | 49.8%               |
| 1998                            | 257             | 130                 | 127             | 50.6%               |
| 1999                            | 266             | 135                 | 131             | 50.8%               |
| 2000                            | 253             | 135                 | 118             | 53.4%               |
| 2001                            | 250             | 96                  | 154             | 38.4%               |
| 2002                            | 227             | 93                  | 134             | 41.0%               |
| 2003                            | 210             | 81                  | 129             | 38.6%               |
| 2004                            | 224             | 84                  | 140             | 37.5%               |
| 2005                            | 218             | 84                  | 134             | 38.5%               |
| <b>Northern Lower Peninsula</b> |                 |                     |                 |                     |
| 1995                            | 1,243           | 687                 | 556             | 55.3%               |
| 1996                            | 1,160           | 585                 | 575             | 50.4%               |
| 1997                            | 1,169           | 537                 | 632             | 45.9%               |
| 1998                            | 1,161           | 542                 | 619             | 46.7%               |
| 1999                            | 1,161           | 558                 | 603             | 48.1%               |
| 2000                            | 1,180           | 589                 | 591             | 49.9%               |
| 2001                            | 1,181           | 414                 | 767             | 35.1%               |
| 2002                            | 1,090           | 391                 | 699             | 35.9%               |
| 2003                            | 986             | 313                 | 673             | 31.7%               |
| 2004                            | 1,048           | 324                 | 724             | 30.9%               |
| 2005                            | 993             | 319                 | 674             | 32.1%               |

Data Source: E. Wehrwein, DNR Human Resources Staff, May 2006.

Note: Counts are based on PP 15 (July 4) for all years. The payroll processing system changed in 2001, so Full Time/Other classifications changed for some employees. Mecosta County data not included.

**Table A4.24. MI DNR payments to counties in lieu of taxes by county and eco-region, 2004**

| Region/County                   | Total County Acres | DNR Acres        | Percent DNR  | Percent Swampland | Total DNR Payment  | Payment per acre |
|---------------------------------|--------------------|------------------|--------------|-------------------|--------------------|------------------|
| <b>Western Upper Peninsula</b>  |                    |                  |              |                   |                    |                  |
| Baraga                          | 583,806            | 78,313           | 13.0%        | 93.0%             | \$175,281          | \$2.24           |
| Delta                           | 748,915            | 67,867           | 9.0%         | 96.0%             | \$147,344          | \$2.17           |
| Dickinson                       | 491,925            | 223,246          | 45.0%        | 89.0%             | \$475,604          | \$2.13           |
| Gogebic                         | 712,033            | 11,766           | 2.0%         | 29.0%             | \$65,427           | \$5.56           |
| Houghton                        | 647,466            | 45,937           | 7.0%         | 91.0%             | \$101,102          | \$2.20           |
| Iron                            | 760,143            | 84,637           | 11.0%        | 92.0%             | \$187,236          | \$2.21           |
| Keweenaw                        | 348,468            | 11,196           | 3.0%         | 25.0%             | \$161,653          | \$14.44          |
| Marquette                       | 1,182,581          | 261,599          | 22.0%        | 74.0%             | \$572,995          | \$2.19           |
| Menominee                       | 670,297            | 97,819           | 15.0%        | 92.0%             | \$203,555          | \$2.08           |
| Ontonagon                       | 844,754            | 67,883           | 8.0%         | 50.0%             | \$273,610          | \$4.03           |
| <b>WUP Totals</b>               | <b>6,990,389</b>   | <b>950,264</b>   | <b>13.6%</b> | <b>82.1%</b>      | <b>2,363,807</b>   | <b>\$2.49</b>    |
| <b>Eastern Upper Peninsula</b>  |                    |                  |              |                   |                    |                  |
| Alger                           | 589,949            | 97,440           | 17.0%        | 95.0%             | \$199,131          | \$2.04           |
| Chippewa                        | 999,960            | 217,315          | 22.0%        | 66.0%             | \$451,942          | \$2.08           |
| Luce                            | 582,654            | 297,727          | 51.0%        | 88.0%             | \$575,740          | \$1.93           |
| Mackinac                        | 650,255            | 214,496          | 33.0%        | 94.0%             | \$468,328          | \$2.18           |
| Schoolcraft                     | 758,096            | 288,445          | 38.0%        | 86.0%             | \$546,588          | \$1.89           |
| <b>EUP Totals</b>               | <b>3,580,914</b>   | <b>1,115,423</b> | <b>31.1%</b> | <b>85.0%</b>      | <b>\$2,241,728</b> | <b>\$2.01</b>    |
| <b>Northern Lower Peninsula</b> |                    |                  |              |                   |                    |                  |
| Alcona                          | 435,247            | 8,990            | 2.0%         | 79.0%             | \$67,350           | \$7.49           |
| Alpena                          | 371,153            | 49,460           | 13.0%        | 77.0%             | \$163,279          | \$3.30           |
| Antrim                          | 305,558            | 44,859           | 15.0%        | 73.0%             | \$160,524          | \$3.58           |
| Arenac                          | 235,098            | 31,251           | 13.0%        | 84.0%             | \$92,971           | \$2.98           |
| Benzie                          | 204,192            | 62,224           | 30.0%        | 92.0%             | \$172,483          | \$2.77           |
| Charlevoix                      | 266,225            | 58,500           | 22.0%        | 70.0%             | \$218,211          | \$3.73           |
| Cheboygan                       | 462,440            | 184,914          | 40.0%        | 93.0%             | \$445,819          | \$2.41           |
| Clare                           | 364,757            | 53,259           | 15.0%        | 78.0%             | \$136,021          | \$2.55           |
| Crawford                        | 359,846            | 178,550          | 50.0%        | 91.0%             | \$466,887          | \$2.61           |
| Emmet                           | 300,855            | 76,443           | 25.0%        | 86.0%             | \$339,065          | \$4.44           |
| Gladwin                         | 330,665            | 86,704           | 26.0%        | 88.0%             | \$197,579          | \$2.28           |
| Grand Traverse                  | 299,278            | 68,265           | 23.0%        | 82.0%             | \$362,053          | \$5.30           |
| Iosco                           | 354,822            | 25,052           | 7.0%         | 93.0%             | \$84,851           | \$3.39           |
| Kalkaska                        | 359,699            | 158,781          | 44.0%        | 81.0%             | \$490,397          | \$3.09           |
| Lake                            | 365,394            | 61,216           | 17.0%        | 88.0%             | \$164,540          | \$2.69           |
| Leelanau                        | 220,234            | 8,407            | 4.0%         | 59.0%             | \$140,552          | \$16.72          |
| Manistee                        | 350,101            | 24,195           | 7.0%         | 69.0%             | \$83,199           | \$3.44           |
| Mason                           | 315,527            | 6,617            | 2.0%         | 61.0%             | \$162,295          | \$24.53          |
| Mecosta                         | 362,779            | 14,539           | 4.0%         | 25.0%             | \$77,815           | \$5.35           |

| Region/County     | Total County Acres | DNR Acres        | Percent DNR  | Percent Swampland | Total DNR Payment   | Payment per acre |
|-------------------|--------------------|------------------|--------------|-------------------|---------------------|------------------|
| Missaukee         | 363,290            | 104,289          | 29.0%        | 66.0%             | \$294,448           | \$2.82           |
| Montmorency       | 355,529            | 137,520          | 39.0%        | 79.0%             | \$365,231           | \$2.66           |
| Newaygo           | 542,741            | 7,186            | 1.0%         | 22.0%             | \$59,445            | \$8.27           |
| Oceana            | 345,416            | 5,770            | 2.0%         | 75.0%             | \$40,476            | \$7.01           |
| Ogemaw            | 366,811            | 76,512           | 21.0%        | 89.0%             | \$224,941           | \$2.94           |
| Osceola           | 367,337            | 19,345           | 5.0%         | 45.0%             | \$80,812            | \$4.18           |
| Oscoda            | 364,769            | 56,366           | 15.0%        | 94.0%             | \$141,375           | \$2.51           |
| Otsego            | 334,273            | 98,556           | 29.0%        | 79.0%             | \$279,288           | \$2.83           |
| Presque Isle      | 428,875            | 88,686           | 21.0%        | 92.0%             | \$232,200           | \$2.62           |
| Roscommon         | 338,315            | 202,789          | 60.0%        | 86.0%             | \$529,746           | \$2.61           |
| Wexford           | 366,676            | 54,162           | 15.0%        | 71.0%             | \$263,373           | \$4.86           |
| <b>NLP Totals</b> | <b>10,437,902</b>  | <b>2,053,405</b> | <b>19.7%</b> | <b>82.6%</b>      | <b>6,537,225</b>    | <b>\$3.18</b>    |
| <b>Michigan</b>   | <b>36,337,095</b>  | <b>4,556,233</b> | <b>13.0%</b> | <b>78.0%</b>      | <b>\$17,028,568</b> | <b>\$3.74</b>    |

**Table A4.25. Households and household income by county and eco-region, 2000**

| <b>Western Upper Peninsula</b>  |                  |            |  |       |                                       |       |   |      |
|---------------------------------|------------------|------------|--|-------|---------------------------------------|-------|---|------|
| Region - County                 | Median HH Income | Households | Households, less than \$10,000 income number/percent |       | Households, less than \$25,000 income |       | Households, greater than \$100,000 income |      |
| Baraga                          | \$33,673         | 3,371      | 329  | 9.8%  | 1,244                                 | 36.9% | 127                                       | 3.8% |
| Delta                           | \$35,511         | 15,820     | 1,584  | 10.0% | 5,357                                 | 33.9% | 941                                       | 5.9% |
| Dickinson                       | \$34,825         | 11,407     | 1,151  | 10.1% | 4,002                                 | 35.1% | 655                                       | 5.7% |
| Gogebic                         | \$27,405         | 7,401      | 1,088  | 14.7% | 3,384                                 | 45.7% | 288                                       | 3.9% |
| Houghton                        | \$28,817         | 13,793     | 2,163  | 15.7% | 6,022                                 | 43.7% | 612                                       | 4.4% |
| Iron                            | \$28,560         | 5,734      | 718  | 12.5% | 2,524                                 | 44.0% | 162                                       | 2.8% |
| Keweenaw                        | \$28,140         | 1,012      | 139  | 13.7% | 416                                   | 41.1% | 48  | 4.7% |
| Marquette                       | \$35,548         | 25,738     | 2,700  | 10.5% | 8,878                                 | 34.5% | 1320                                      | 5.1% |
| Menominee                       | \$32,888         | 10,541     | 1,209  | 11.5% | 3,873                                 | 36.7% | 349                                       | 3.3% |
| Ontonagon                       | \$29,552         | 3,443      | 383  | 11.1% | 1,444                                 | 41.9% | 127                                       | 3.7% |
| <b>Eastern Upper Peninsula</b>  |                  |            |  |       |                                       |       |   |      |
| Region - County                 | Median HH Income | Households | Households, less than \$10,000 income number/percent |       | Households, less than \$25,000 income |       | Households, greater than \$100,000 income |      |
| Alger                           | \$35,892         | 3,797      | 383  | 10.1% | 1,233                                 | 32.5% | 169                                       | 4.5% |
| Chippewa                        | \$34,464         | 13,491     | 1,608  | 11.9% | 4,994                                 | 37.0% | 529                                       | 3.9% |
| Luce                            | \$32,031         | 2,486      | 297  | 11.9% | 946                                   | 38.1% | 74  | 3.0% |
| Mackinac                        | \$33,356         | 5,072      | 502  | 9.9%  | 1,797                                 | 35.4% | 227                                       | 4.5% |
| Schoolcraft                     | \$31,140         | 3,616      | 431  | 11.9% | 1,474                                 | 40.8% | 161                                       | 4.5% |
| <b>Northern Lower Peninsula</b> |                  |            |  |       |                                       |       |   |      |
| Region - County                 | Median HH Income | Households | Households, less than \$10,000                       |       | Households, less than \$25,000        |       | Households, greater than \$100,000        |      |

|                    | Income                 |                 | income<br>number/percent                                      |       | income                                      |       | income  |       |
|--------------------|------------------------|-----------------|---|-------|---|-------|---|-------|
| Alcona             | \$31,362               | 5,114           | 608   | 11.9% | 1,927                                       | 37.7% | 210   | 4.1%  |
| Alpena             | \$34,177               | 12,877          | 1,326   | 10.3% | 4,661                                       | 36.2% | 530   | 4.1%  |
| Antrim             | \$38,107               | 9,254           | 687   | 7.4%  | 2,745                                       | 29.7% | 629   | 6.8%  |
| Arenac             | \$32,805               | 6,732           | 742   | 11.0% | 2,650                                       | 39.4% | 332   | 4.9%  |
| Benzie             | \$37,350               | 6,498           | 437   | 6.7%  | 1,936                                       | 29.8% | 361   | 5.6%  |
| Charlevoix         | \$39,788               | 10,373          | 803   | 7.7%  | 2,839                                       | 27.4% | 818   | 7.9%  |
| Cheboygan          | \$33,417               | 10,841          | 1,132   | 10.4% | 3,856                                       | 35.6% | 620   | 5.7%  |
| Clare              | \$28,845               | 12,739          | 1,750   | 13.7% | 5,393                                       | 42.3% | 568   | 4.5%  |
| Crawford           | \$33,364               | 5,628           | 504   | 9.0%  | 1,884                                       | 33.5% | 291   | 5.2%  |
| Emmet              | \$40,222               | 12,542          | 980   | 7.8%  | 3,540                                       | 28.2% | 1188  | 9.5%  |
| Gladwin            | \$32,019               | 10,565          | 1,095   | 10.4% | 3,995                                       | 37.8% | 561   | 5.3%  |
| Grand Traverse     | \$43,169               | 30,486          | 1,652   | 5.4%  | 7,162                                       | 23.5% | 3182  | 10.4% |
| Iosco              | \$31,321               | 11,755          | 1,301   | 11.1% | 4,484                                       | 38.1% | 498   | 4.2%  |
| Kalkaska           | \$36,072               | 6,397           | 542   | 8.5%  | 1,999                                       | 31.2% | 273   | 4.3%  |
| Lake               | \$26,622               | 4,682           | 821   | 17.5% | 2,195                                       | 46.9% | 167   | 3.6%  |
| Leelanau           | \$47,062               | 8,458           | 397   | 4.7%  | 1,779                                       | 21.0% | 1004  | 11.9% |
| Manistee           | \$34,208               | 9,829           | 968   | 9.8%  | 3,441                                       | 35.0% | 449   | 4.6%  |
| Mason              | \$34,704               | 11,436          | 1,030   | 9.0%  | 4,162                                       | 36.4% | 677   | 5.9%  |
| Mecosta            | \$33,849               | 14,898          | 1,860   | 12.5% | 5,489                                       | 36.8% | 919   | 6.2%  |
| Missaukee          | \$35,224               | 5,467           | 485   | 8.9%  | 1,764                                       | 32.3% | 235   | 4.3%  |
| Montmorency        | \$30,005               | 4,477           | 515   | 11.5% | 1,813                                       | 40.5% | 161   | 3.6%  |
| Newaygo            | \$37,130               | 17,639          | 1,635   | 9.3%  | 5,620                                       | 31.9% | 837   | 4.7%  |
| Oceana             | \$35,307               | 9,826           | 947   | 9.6%  | 3,286                                       | 33.4% | 426   | 4.3%  |
| Ogemaw             | \$30,474               | 8,843           | 1,024   | 11.6% | 3,599                                       | 40.7% | 334   | 3.8%  |
| Osceola            | \$34,102               | 8,863           | 898   | 10.1% | 3,062                                       | 34.5% | 345   | 3.9%  |
| Oscoda             | \$28,228               | 3,934           | 473   | 12.0% | 1,691                                       | 43.0% | 129   | 3.3%  |
| Otsego             | \$40,876               | 8,993           | 540   | 6.0%  | 2,334                                       | 26.0% | 722   | 8.0%  |
| Presque Isle       | \$31,656               | 6,172           | 643   | 10.4% | 2,321                                       | 37.6% | 239   | 3.9%  |
| Roscommon          | \$30,029               | 11,264          | 1,205   | 10.7% | 4,560                                       | 40.5% | 482   | 4.3%  |
| Wexford            | \$35,363               | 11,793          | 1,103   | 9.4%  | 3,895                                       | 33.0% | 714   | 6.1%  |
| <b>Michigan</b>    |                        |                 |   |       |   |       |   |       |
| Region -<br>County | Median<br>HH<br>Income | House-<br>holds | Households, less<br>than \$10,000<br>income<br>number/percent |       | Households, less<br>than \$25,000<br>income |       | Households, greater<br>than \$100,000<br>income |       |
| Michigan           | \$44,667               | 3,788,780       | 313,905   | 8.3%  | 1,002,138                                   | 26.5% | 480,461   | 12.7% |

Source: US Census 2000.

**Table A4.26. Per capita personal income, 1970 to 2004**

| <b>Western Upper Peninsula</b>  |             |             |             |             |             |                            |
|---------------------------------|-------------|-------------|-------------|-------------|-------------|----------------------------|
| <b>Ecoregion/county</b>         | <b>1970</b> | <b>1980</b> | <b>1990</b> | <b>2000</b> | <b>2004</b> | <b>Change, 2000 - 2004</b> |
| Menominee                       | \$2,925     | \$7,708     | \$14,748    | \$21,945    | \$23,592    | \$1,647                    |
| Iron                            | \$2,856     | \$8,120     | \$13,643    | \$20,344    | \$24,264    | \$3,920                    |
| Dickinson                       | \$3,544     | \$9,554     | \$17,464    | \$25,257    | \$29,021    | \$3,764                    |
| Keweenaw                        | \$2,573     | \$6,797     | \$14,189    | \$20,900    | \$24,399    | \$3,499                    |
| Houghton                        | \$2,808     | \$6,928     | \$12,864    | \$19,436    | \$22,064    | \$2,628                    |
| Baraga                          | \$3,168     | \$7,233     | \$12,312    | \$18,917    | \$20,702    | \$1,785                    |
| Marquette                       | \$3,272     | \$8,288     | \$14,951    | \$22,315    | \$25,676    | \$3,361                    |
| Ontonagon                       | \$3,108     | \$7,560     | \$13,906    | \$20,887    | \$23,860    | \$2,973                    |
| Delta                           | \$3,232     | \$7,950     | \$14,554    | \$23,121    | \$26,077    | \$2,956                    |
| Gogebic                         | \$3,226     | \$7,206     | \$13,036    | \$20,033    | \$22,801    | \$2,768                    |
| <b>Eastern Upper Peninsula</b>  |             |             |             |             |             |                            |
| <b>Ecoregion/county</b>         | <b>1970</b> | <b>1980</b> | <b>1990</b> | <b>2000</b> | <b>2004</b> | <b>Change, 2000 - 2004</b> |
| Luce                            | \$2,715     | \$8,334     | \$15,328    | \$17,184    | \$19,605    | \$2,421                    |
| Chippewa                        | \$3,019     | \$6,970     | \$11,774    | \$18,620    | \$20,776    | \$2,156                    |
| Schoolcraft                     | \$2,929     | \$7,431     | \$13,707    | \$20,337    | \$22,878    | \$2,541                    |
| Alger                           | \$2,622     | \$6,189     | \$12,278    | \$18,683    | \$20,919    | \$2,236                    |
| Mackinac                        | \$2,873     | \$7,343     | \$14,958    | \$24,558    | \$27,182    | \$2,624                    |
| <b>Northern Lower Peninsula</b> |             |             |             |             |             |                            |
| <b>Ecoregion/county</b>         | <b>1970</b> | <b>1980</b> | <b>1990</b> | <b>2000</b> | <b>2004</b> | <b>Change, 2000 - 2004</b> |
| Roscommon                       | \$3,271     | \$7,528     | \$13,981    | \$19,765    | \$22,476    | \$2,711                    |
| Presque Isle                    | \$2,739     | \$7,751     | \$13,422    | \$20,105    | \$22,004    | \$1,899                    |
| Arenac                          | \$3,250     | \$7,817     | \$13,876    | \$20,513    | \$23,102    | \$2,589                    |
| Alpena                          | \$3,267     | \$8,283     | \$15,162    | \$23,334    | \$26,461    | \$3,127                    |
| Montmorency                     | \$2,653     | \$6,966     | \$11,776    | \$18,142    | \$20,904    | \$2,762                    |
| Oceana                          | \$3,285     | \$7,748     | \$13,662    | \$19,234    | \$22,696    | \$3,462                    |
| Antrim                          | \$3,159     | \$8,320     | \$14,735    | \$24,431    | \$27,703    | \$3,272                    |
| Benzie                          | \$3,383     | \$7,722     | \$14,483    | \$23,648    | \$25,963    | \$2,315                    |
| Otsego                          | \$3,334     | \$8,181     | \$15,688    | \$24,365    | \$25,410    | \$1,045                    |
| Oscoda                          | \$2,509     | \$6,577     | \$10,474    | \$15,552    | \$18,238    | \$2,686                    |
| Osceola                         | \$2,967     | \$6,552     | \$12,203    | \$19,446    | \$21,775    | \$2,329                    |
| Mason                           | \$3,324     | \$7,845     | \$14,647    | \$22,678    | \$25,078    | \$2,400                    |
| Wexford                         | \$3,003     | \$7,140     | \$13,825    | \$22,168    | \$23,920    | \$1,752                    |
| Mecosta                         | \$2,520     | \$6,314     | \$11,674    | \$18,548    | \$20,920    | \$2,372                    |
| Ogemaw                          | \$2,808     | \$6,470     | \$11,636    | \$18,035    | \$20,709    | \$2,674                    |
| Crawford                        | \$3,255     | \$6,484     | \$11,965    | \$19,683    | \$21,650    | \$1,967                    |
| Emmet                           | \$3,696     | \$9,063     | \$18,898    | \$27,459    | \$32,709    | \$5,250                    |
| Newaygo                         | \$3,289     | \$7,561     | \$13,518    | \$21,123    | \$22,697    | \$1,574                    |

|                         |             |             |             |             |             |                                    |
|-------------------------|-------------|-------------|-------------|-------------|-------------|------------------------------------|
| Lake                    | \$2,909     | \$6,081     | \$11,279    | \$18,596    | \$21,013    | \$2,417                            |
| Cheboygan               | \$2,990     | \$7,597     | \$13,696    | \$21,468    | \$24,580    | \$3,112                            |
| Iosco                   | \$3,459     | \$7,698     | \$15,123    | \$19,900    | \$21,555    | \$1,655                            |
| Clare                   | \$2,865     | \$6,857     | \$12,485    | \$19,083    | \$22,179    | \$3,096                            |
| Manistee                | \$3,227     | \$8,009     | \$14,378    | \$21,881    | \$24,165    | \$2,284                            |
| Missaukee               | \$2,725     | \$6,532     | \$12,527    | \$19,296    | \$20,710    | \$1,414                            |
| Kalkaska                | \$3,342     | \$6,712     | \$12,456    | \$18,350    | \$20,131    | \$1,781                            |
| Charlevoix              | \$3,142     | \$8,256     | \$15,967    | \$26,070    | \$30,453    | \$4,383                            |
| Gladwin                 | \$3,104     | \$7,118     | \$12,748    | \$19,933    | \$21,965    | \$2,032                            |
| Leelanau                | \$3,688     | \$8,982     | \$17,813    | \$27,981    | \$34,429    | \$6,448                            |
| Grand Traverse          | \$3,886     | \$9,158     | \$18,115    | \$28,912    | \$31,600    | \$2,688                            |
| Alcona                  | \$2,907     | \$7,140     | \$13,614    | \$20,195    | \$22,236    | \$2,041                            |
| <b>Michigan</b>         |             |             |             |             |             |                                    |
| <b>Ecoregion/county</b> | <b>1970</b> | <b>1980</b> | <b>1990</b> | <b>2000</b> | <b>2004</b> | <b>Change,<br/>2000 -<br/>2004</b> |
| Michigan                | \$4,198     | \$10,314    | \$18,922    | \$29,552    | \$32,079    | \$2,527                            |

**Table A4.27. Household sources of income**

| <b>Western Upper Peninsula</b>  |            |        |                              |                             |                                   |                               |                        |
|---------------------------------|------------|--------|------------------------------|-----------------------------|-----------------------------------|-------------------------------|------------------------|
|                                 | 1999       | 2000   | With Earnings income         | With Social Security Income | With Supplemental Security Income | With Public Assistance Income | With Retirement Income |
| <b>Ecoregion</b>                | Households |        | Percent of Households (1999) |                             |                                   |                               |                        |
| Baraga                          | 3,371      | 3,353  | 72.9%                        | 35.3%                       | 4.4%                              | 4.1%                          | 23.4%                  |
| Delta                           | 15,820     | 15,836 | 73.0%                        | 34.0%                       | 4.4%                              | 2.5%                          | 21.7%                  |
| Dickinson                       | 11,407     | 11,386 | 72.3%                        | 34.5%                       | 4.0%                              | 2.9%                          | 22.7%                  |
| Gogebic                         | 7,401      | 7,425  | 65.1%                        | 41.6%                       | 4.9%                              | 4.1%                          | 26.0%                  |
| Houghton                        | 13,793     | 13,793 | 72.6%                        | 33.1%                       | 3.3%                              | 3.7%                          | 20.6%                  |
| Iron                            | 5,734      | 5,748  | 64.1%                        | 44.4%                       | 4.4%                              | 4.0%                          | 28.6%                  |
| Keweenaw                        | 1,012      | 998    | 66.9%                        | 40.6%                       | 2.9%                              | 3.7%                          | 28.2%                  |
| Marquette                       | 25,738     | 25,767 | 77.2%                        | 27.8%                       | 3.4%                              | 2.8%                          | 23.0%                  |
| Menominee                       | 10,541     | 10,529 | 74.7%                        | 32.2%                       | 3.6%                              | 3.3%                          | 18.1%                  |
| Ontonagon                       | 3,443      | 3,456  | 66.9%                        | 39.6%                       | 4.3%                              | 3.6%                          | 29.4%                  |
| WUP Ecoregion                   | 98,260     | 98,291 | 72.8%                        | 33.6%                       | 3.9%                              | 3.2%                          | 22.7%                  |
| <b>Eastern Upper Peninsula</b>  |            |        |                              |                             |                                   |                               |                        |
|                                 | 1999       | 2000   | With Earnings income         | With Social Security Income | With Supplemental Security Income | With Public Assistance Income | With Retirement Income |
| <b>Ecoregion</b>                | Households |        | Percent of Households (1999) |                             |                                   |                               |                        |
| Alger                           | 3,797      | 3,785  | 72.3%                        | 35.6%                       | 4.2%                              | 2.2%                          | 27.9%                  |
| Chippewa                        | 13,491     | 13,474 | 76.3%                        | 29.7%                       | 4.3%                              | 3.9%                          | 22.5%                  |
| Luce                            | 2,486      | 2,481  | 69.9%                        | 36.2%                       | 5.6%                              | 4.0%                          | 28.5%                  |
| Mackinac                        | 5,072      | 5,067  | 73.2%                        | 35.5%                       | 4.2%                              | 2.8%                          | 25.0%                  |
| Schoolcraft                     | 3,616      | 3,606  | 69.2%                        | 38.3%                       | 4.2%                              | 3.7%                          | 26.1%                  |
| EUP Ecoregion                   | 28,462     | 28,413 | 73.8%                        | 33.2%                       | 4.3%                              | 3.5%                          | 24.6%                  |
| <b>Northern Lower Peninsula</b> |            |        |                              |                             |                                   |                               |                        |
|                                 | 1999       | 2000   | With Earnings income         | With Social Security Income | With Supplemental Security Income | With Public Assistance Income | With Retirement Income |
| <b>Ecoregion</b>                | Households |        | Percent of Households (1999) |                             |                                   |                               |                        |
| Alcona                          | 5,114      | 5,132  | 57.9%                        | 46.7%                       | 4.2%                              | 3.4%                          | 37.0%                  |
| Alpena                          | 12,877     | 12,818 | 72.7%                        | 34.9%                       | 5.5%                              | 3.8%                          | 24.2%                  |
| Antrim                          | 9,254      | 9,222  | 74.8%                        | 35.1%                       | 3.6%                              | 2.5%                          | 26.4%                  |
| Arenac                          | 6,732      | 6,710  | 68.7%                        | 36.3%                       | 5.7%                              | 4.3%                          | 26.5%                  |
| Benzie                          | 6,498      | 6,500  | 74.6%                        | 34.6%                       | 3.7%                              | 2.0%                          | 25.7%                  |
| Charlevoix                      | 10,373     | 10,400 | 79.2%                        | 30.6%                       | 3.5%                              | 2.0%                          | 21.3%                  |
| Cheboygan                       | 10,841     | 10,835 | 72.5%                        | 36.4%                       | 4.9%                              | 3.1%                          | 25.6%                  |
| Clare                           | 12,739     | 12,686 | 67.3%                        | 38.2%                       | 6.7%                              | 5.0%                          | 27.3%                  |

|                  |             |             |                              |                                    |  |                                      |                               |
|------------------|-------------|-------------|------------------------------|------------------------------------|--|--------------------------------------|-------------------------------|
| Crawford         | 5,628       | 5,625       | 72.7%                        | 35.6%                              | 5.8%                                     | 4.0%                                 | 28.5%                         |
| Emmet            | 12,542      | 12,577      | 80.9%                        | 28.2%                              | 3.1%                                     | 1.9%                                 | 17.8%                         |
| Gladwin          | 10,565      | 10,561      | 65.5%                        | 38.9%                              | 5.5%                                     | 3.5%                                 | 32.7%                         |
| Grand Traverse   | 30,486      | 30,396      | 82.6%                        | 25.3%                              | 2.5%                                     | 2.0%                                 | 18.7%                         |
| Iosco            | 11,755      | 11,727      | 64.1%                        | 41.7%                              | 4.9%                                     | 4.1%                                 | 33.0%                         |
| Kalkaska         | 6,397       | 6,428       | 77.3%                        | 30.4%                              | 5.1%                                     | 3.4%                                 | 24.0%                         |
| Lake             | 4,682       | 4,704       | 63.5%                        | 41.3%                              | 8.4%                                     | 6.3%                                 | 26.0%                         |
| Leelanau         | 8,458       | 8,436       | 78.3%                        | 32.8%                              | 2.3%                                     | 1.5%                                 | 23.4%                         |
| Manistee         | 9,829       | 9,860       | 71.9%                        | 36.8%                              | 5.1%                                     | 3.5%                                 | 23.0%                         |
| Mason            | 11,436      | 11,406      | 74.6%                        | 33.2%                              | 4.6%                                     | 3.6%                                 | 20.0%                         |
| Mecosta          | 14,898      | 14,915      | 75.2%                        | 30.4%                              | 5.1%                                     | 3.6%                                 | 22.1%                         |
| Missaukee        | 5,467       | 5,450       | 74.7%                        | 32.6%                              | 4.7%                                     | 4.3%                                 | 20.8%                         |
| Montmorency      | 4,477       | 4,455       | 60.2%                        | 45.3%                              | 5.5%                                     | 3.6%                                 | 35.2%                         |
| Newaygo          | 17,639      | 17,599      | 77.2%                        | 30.5%                              | 4.8%                                     | 3.8%                                 | 19.8%                         |
| Oceana           | 9,826       | 9,778       | 76.9%                        | 32.7%                              | 5.4%                                     | 4.9%                                 | 21.0%                         |
| Ogemaw           | 8,843       | 8,842       | 66.3%                        | 38.3%                              | 6.2%                                     | 4.0%                                 | 27.0%                         |
| Osceola          | 8,863       | 8,861       | 74.8%                        | 32.2%                              | 5.7%                                     | 3.8%                                 | 21.4%                         |
| Oscoda           | 3,934       | 3,921       | 62.7%                        | 42.1%                              | 6.0%                                     | 4.6%                                 | 31.4%                         |
| Otsego           | 8,993       | 8,995       | 78.9%                        | 30.1%                              | 3.1%                                     | 3.4%                                 | 22.8%                         |
| Presque Isle     | 6,172       | 6,155       | 64.0%                        | 41.1%                              | 5.1%                                     | 3.0%                                 | 28.7%                         |
| Roscommon        | 11,264      | 11,250      | 60.3%                        | 44.4%                              | 5.6%                                     | 3.4%                                 | 35.8%                         |
| Wexford          | 11,793      | 11,824      | 76.7%                        | 30.6%                              | 5.2%                                     | 4.2%                                 | 21.2%                         |
| NLP Ecoregion    | 298,375     | 298,068     | 73.2%                        | 34.1%                              | 4.7%                                     | 3.4%                                 | 24.5%                         |
| <b>State</b>     |             |             |                              |                                    |  |                                      |                               |
|                  | <b>1999</b> | <b>2000</b> | <b>With Earnings income</b>  | <b>With Social Security Income</b> | <b>With Supplemental Security Income</b> | <b>With Public Assistance Income</b> | <b>With Retirement Income</b> |
| <b>Ecoregion</b> | Households  |             | Percent of Households (1999) |                                    |  |                                      |                               |
| Michigan         | 3,788,780   | 3,785,661   | 80.2%                        | 26.2%                              | 4.2%                                     | 3.6%                                 | 19.2%                         |

**Table A4.28. Housing units and median value by county and eco-region, 2000**

| <b>Western Upper Peninsula</b>  |                            |                 |                       |                        |                       |                    |                          |
|---------------------------------|----------------------------|-----------------|-----------------------|------------------------|-----------------------|--------------------|--------------------------|
| <b>Region/ county</b>           | <b>Total Housing Units</b> | <b>Seasonal</b> | <b>Owner Occupied</b> | <b>Renter Occupied</b> | <b>Heat with Wood</b> | <b>Median Rent</b> | <b>Median Home Value</b> |
| Baraga                          | 4,631                      | 21.9%           | 56.3%                 | 16.2%                  | 9.3%                  | \$339              | \$67,100                 |
| Delta                           | 19,223                     | 12.1%           | 65.6%                 | 16.8%                  | 4.7%                  | \$383              | \$80,000                 |
| Dickinson                       | 13,702                     | 11.5%           | 66.6%                 | 16.5%                  | 2.8%                  | \$417              | \$64,600                 |
| Gogebic                         | 10,839                     | 20.8%           | 54.0%                 | 14.5%                  | 4.3%                  | \$340              | \$39,700                 |
| Houghton                        | 17,748                     | 14.9%           | 55.5%                 | 22.2%                  | 5.6%                  | \$368              | \$54,800                 |
| Iron                            | 8,772                      | 27.1%           | 54.0%                 | 11.5%                  | 5.6%                  | \$346              | \$47,500                 |
| Keweenaw                        | 2,327                      | 50.5%           | 38.1%                 | 4.8%                   | 5.6%                  | \$263              | \$44,100                 |
| Marquette                       | 32,877                     | 12.9%           | 54.7%                 | 23.7%                  | 2.9%                  | \$398              | \$77,200                 |
| Menominee                       | 13,639                     | 17.4%           | 61.4%                 | 15.8%                  | 6.4%                  | \$353              | \$63,400                 |
| Ontonagon                       | 5,404                      | 27.5%           | 54.4%                 | 9.6%                   | 9.3%                  | \$321              | \$41,400                 |
| WUP Region                      | 129,162                    | 16.6%           | 58.0%                 | 18.1%                  | 4.8%                  | \$378              | \$64,700                 |
| <b>Eastern Upper Peninsula</b>  |                            |                 |                       |                        |                       |                    |                          |
| <b>Region/ county</b>           | <b>Total Housing Units</b> | <b>Seasonal</b> | <b>Owner Occupied</b> | <b>Renter Occupied</b> | <b>Heat with Wood</b> | <b>Median Rent</b> | <b>Median Home Value</b> |
| Alger                           | 5,964                      | 30.9%           | 52.3%                 | 11.1%                  | 8.4%                  | \$376              | \$75,900                 |
| Chippewa                        | 19,430                     | 24.6%           | 51.3%                 | 18.1%                  | 4.2%                  | \$426              | \$77,300                 |
| Luce                            | 4,008                      | 31.3%           | 49.7%                 | 12.2%                  | 8.0%                  | \$430              | \$67,800                 |
| Mackinac                        | 9,413                      | 41.9%           | 42.6%                 | 11.2%                  | 6.4%                  | \$429              | \$91,800                 |
| Schoolcraft                     | 5,700                      | 30.2%           | 51.9%                 | 11.4%                  | 6.7%                  | \$345              | \$64,900                 |
| EUP Region                      | 44,515                     | 30.4%           | 49.5%                 | 14.3%                  | 5.9%                  | \$413              | \$77,219                 |
| <b>Northern Lower Peninsula</b> |                            |                 |                       |                        |                       |                    |                          |
| <b>Region/ county</b>           | <b>Total Housing Units</b> | <b>Seasonal</b> | <b>Owner Occupied</b> | <b>Renter Occupied</b> | <b>Heat with Wood</b> | <b>Median Rent</b> | <b>Median Home Value</b> |
| Alcona                          | 10,584                     | 47.9%           | 43.6%                 | 4.9%                   | 6.0%                  | \$411              | \$83,700                 |
| Alpena                          | 15,289                     | 10.8%           | 66.4%                 | 17.5%                  | 5.0%                  | \$370              | \$78,100                 |
| Antrim                          | 15,090                     | 34.1%           | 51.9%                 | 9.3%                   | 4.6%                  | \$460              | \$110,000                |
| Arenac                          | 9,563                      | 23.8%           | 59.4%                 | 10.8%                  | 5.0%                  | \$399              | \$77,700                 |
| Benzie                          | 10,312                     | 30.8%           | 54.0%                 | 9.0%                   | 4.7%                  | \$486              | \$107,400                |
| Charlevoix                      | 15,370                     | 28.6%           | 54.9%                 | 12.8%                  | 4.5%                  | \$470              | \$112,700                |
| Cheboygan                       | 16,583                     | 28.8%           | 54.1%                 | 11.3%                  | 3.8%                  | \$440              | \$94,500                 |
| Clare                           | 22,229                     | 38.6%           | 47.0%                 | 10.1%                  | 3.6%                  | \$397              | \$70,500                 |
| Crawford                        | 10,042                     | 40.9%           | 46.4%                 | 9.7%                   | 4.0%                  | \$453              | \$79,500                 |
| Emmet                           | 18,554                     | 27.2%           | 51.2%                 | 16.6%                  | 4.7%                  | \$513              | \$131,500                |
| Gladwin                         | 16,828                     | 33.2%           | 53.8%                 | 9.0%                   | 3.9%                  | \$395              | \$86,800                 |
| Grand Traverse                  | 34,842                     | 8.7%            | 67.5%                 | 19.7%                  | 1.9%                  | \$614              | \$130,400                |
| Iosco                           | 20,432                     | 33.0%           | 47.1%                 | 10.3%                  | 3.0%                  | \$416              | \$77,100                 |
| Kalkaska                        | 10,822                     | 35.4%           | 50.5%                 | 8.9%                   | 6.0%                  | \$468              | \$85,100                 |
| Lake                            | 13,498                     | 61.0%           | 28.9%                 | 5.9%                   | 5.0%                  | \$387              | \$61,300                 |

|                       |                            |                 |                       |                        |                       |                    |                          |
|-----------------------|----------------------------|-----------------|-----------------------|------------------------|-----------------------|--------------------|--------------------------|
| Leelanau              | 13,297                     | 30.9%           | 53.7%                 | 9.8%                   | 4.6%                  | \$565              | \$165,400                |
| Manistee              | 14,272                     | 24.4%           | 56.1%                 | 12.9%                  | 5.1%                  | \$424              | \$77,400                 |
| Mason                 | 16,063                     | 23.5%           | 55.7%                 | 15.3%                  | 4.4%                  | \$425              | \$81,500                 |
| Mecosta               | 19,593                     | 18.4%           | 56.1%                 | 20.1%                  | 4.4%                  | \$470              | \$90,100                 |
| Missaukee             | 8,621                      | 32.9%           | 52.9%                 | 10.3%                  | 6.2%                  | \$460              | \$78,700                 |
| Montmorency           | 9,238                      | 47.5%           | 41.5%                 | 6.7%                   | 4.3%                  | \$431              | \$76,900                 |
| Newaygo               | 23,202                     | 18.9%           | 64.0%                 | 11.8%                  | 6.1%                  | \$447              | \$88,700                 |
| Oceana                | 15,009                     | 27.7%           | 53.9%                 | 11.3%                  | 4.7%                  | \$427              | \$82,500                 |
| Ogemaw                | 15,404                     | 37.8%           | 48.6%                 | 8.8%                   | 5.9%                  | \$432              | \$72,900                 |
| Osceola               | 12,853                     | 26.2%           | 56.2%                 | 12.8%                  | 6.0%                  | \$409              | \$70,000                 |
| Oscoda                | 8,690                      | 48.0%           | 38.7%                 | 6.4%                   | 7.1%                  | \$393              | \$67,300                 |
| Otsego                | 13,375                     | 28.4%           | 55.0%                 | 12.3%                  | 3.3%                  | \$540              | \$102,500                |
| Presque Isle          | 9,910                      | 33.1%           | 53.1%                 | 9.0%                   | 6.3%                  | \$345              | \$77,800                 |
| Roscommon             | 23,109                     | 48.0%           | 41.8%                 | 6.8%                   | 1.8%                  | \$420              | \$78,900                 |
| Wexford               | 14,872                     | 14.8%           | 63.0%                 | 16.5%                  | 5.2%                  | \$451              | \$79,900                 |
| NLP Region            | 457,546                    | 29.8%           | 53.2%                 | 11.9%                  | 4.4%                  | \$464              | \$92,971                 |
| <b>Michigan</b>       |                            |                 |                       |                        |                       |                    |                          |
| <b>Region/ county</b> | <b>Total Housing Units</b> | <b>Seasonal</b> | <b>Owner Occupied</b> | <b>Renter Occupied</b> | <b>Heat with Wood</b> | <b>Median Rent</b> | <b>Median Home Value</b> |
| Michigan              | 4,234,279                  | 5.5%            | 66.0%                 | 23.4%                  | 1.3%                  | \$546              | \$115,600                |

Data Source: Census 2000

**Table A4.29. Percent of total county earnings from wildland based industries, direct and indirect effects with and without related government.**

| AreaName                        | Wildland w/ Government |                              | Wildland w/o Government |                              |
|---------------------------------|------------------------|------------------------------|-------------------------|------------------------------|
|                                 | Percent Direct         | Percent Direct plus Indirect | Percent Direct          | Percent Direct plus Indirect |
| <b>Western Upper Peninsula</b>  |                        |                              |                         |                              |
| Baraga, MI                      | 7.0                    | 14.6                         | 6.7                     | 14.3                         |
| Delta, MI                       | 24.0                   | 57.9                         | 23.6                    | 56.2                         |
| Dickinson, MI                   | 11.0                   | 26.6                         | 11.3                    | 26.6                         |
| Gogebic, MI                     | 23.0                   | 48.4                         | 19.8                    | 41.1                         |
| Houghton, MI                    | 7.0                    | 14.8                         | 6.3                     | 12.8                         |
| Iron, MI                        | 16.0                   | 30.3                         | 15.0                    | 29.0                         |
| Keweenaw, MI                    | 35.0                   | 65.6                         | 23.6                    | 43.0                         |
| Marquette, MI                   | 13.0                   | 26.0                         | 12.5                    | 25.5                         |
| Menominee, MI                   | 14.0                   | 31.8                         | 13.8                    | 31.8                         |
| Ontonagon, MI                   | 50.0                   | 106.0                        | 48.7                    | 104.3                        |
| <b>Eastern Upper Peninsula</b>  |                        |                              |                         |                              |
| Alger, MI                       | 49.0                   | 114.6                        | 46.8                    | 110.6                        |
| Chippewa, MI                    | 10.0                   | 19.8                         | 7.7                     | 14.2                         |
| Luce, MI                        | 18.0                   | 38.7                         | 17.9                    | 38.7                         |
| Mackinac, MI                    | 24.0                   | 44.0                         | 23.1                    | 42.1                         |
| Schoolcraft, MI                 | 31.0                   | 67.2                         | 29.1                    | 64.0                         |
| <b>Northern Lower Peninsula</b> |                        |                              |                         |                              |
| Alcona, MI                      | 9.0                    | 15.8                         | 7.8                     | 13.4                         |
| Alpena, MI                      | 11.0                   | 24.2                         | 10.7                    | 24.1                         |
| Antrim, MI                      | 9.0                    | 16.8                         | 9.0                     | 16.1                         |
| Arenac, MI                      | 12.0                   | 21.1                         | 12.1                    | 20.6                         |
| Benzie, MI                      | 9.0                    | 15.7                         | 8.7                     | 15.7                         |
| Charlevoix, MI                  | 5.0                    | 9.2                          | 5.0                     | 9.2                          |
| Cheboygan, MI                   | 16.0                   | 33.1                         | 15.9                    | 32.9                         |
| Clare, MI                       | 10.0                   | 16.8                         | 10.2                    | 16.8                         |
| Crawford, MI                    | 25.0                   | 53.5                         | 24.7                    | 52.6                         |
| Emmet, MI                       | 7.0                    | 12.7                         | 6.7                     | 12.6                         |
| Gladwin, MI                     | 7.0                    | 13.6                         | 7.4                     | 13.5                         |
| Grand Traverse, MI              | 6.0                    | 10.8                         | 5.8                     | 10.7                         |
| Iosco, MI                       | 5.0                    | 8.5                          | 4.3                     | 8.0                          |
| Kalkaska, MI                    | 27.0                   | 50.3                         | 26.6                    | 50.3                         |
| Lake, MI                        | 15.0                   | 28.3                         | 13.7                    | 25.4                         |
| Leelanau, MI                    | 18.0                   | 33.0                         | 16.3                    | 29.5                         |
| Manistee, MI                    | 15.0                   | 32.8                         | 14.4                    | 32.3                         |
| Mason, MI                       | 4.0                    | 7.3                          | 3.4                     | 6.7                          |
| Mecosta, MI                     | 2.0                    | 4.2                          | 2.2                     | 4.0                          |
| Missaukee, MI                   | 10.0                   | 21.4                         | 10.2                    | 21.0                         |
| Montmorency, MI                 | 30.0                   | 55.2                         | 29.8                    | 55.1                         |
| Newaygo, MI                     | 2.0                    | 4.3                          | 2.1                     | 3.8                          |

|                  |      |      |      |      |
|------------------|------|------|------|------|
| Oceana, MI       | 8.0  | 15.4 | 7.5  | 15.3 |
| Ogemaw, MI       | 9.0  | 16.4 | 8.7  | 16.1 |
| Osceola, MI      | 5.0  | 10.8 | 5.3  | 10.7 |
| Oscoda, MI       | 14.0 | 26.0 | 12.5 | 22.9 |
| Otsego, MI       | 13.0 | 25.6 | 12.6 | 24.9 |
| Presque Isle, MI | 30.0 | 60.0 | 29.3 | 59.4 |
| Roscommon, MI    | 16.0 | 27.7 | 15.7 | 27.7 |
| Wexford, MI      | 11.0 | 23.6 | 10.4 | 21.8 |

Source: E. Schuster, USDA Forest Service, unpublished data, 1993.

## Chapter 5. Natural Resources Production

Table A5.1. Land cover percent by ecoregion and county, 1980 and 2000.

| Western Upper Peninsula  |      |                   |             |        |                    |            |        |               |
|--------------------------|------|-------------------|-------------|--------|--------------------|------------|--------|---------------|
| County                   | Year | Urban or Built-up | Agriculture | Forest | Nonforest wetlands | Open water | Barren | Forest Change |
| Baraga                   | 1980 | 0.1%              | 2.7%        | 96.2%  | 0.2%               | 0.7%       | 0.0%   |               |
|                          | 2000 | 0.3%              | 3.7%        | 94.8%  | 0.2%               | 0.7%       | 0.3%   | -1.5%         |
| Delta                    | 1980 | 1.3%              | 11.5%       | 86.6%  | 0.4%               | 0.2%       | 0.0%   |               |
|                          | 2000 | 1.4%              | 9.3%        | 88.7%  | 0.4%               | 0.2%       | 0.0%   | 2.0%          |
| Dickinson                | 1980 | 1.3%              | 3.9%        | 93.5%  | 0.2%               | 0.5%       | 0.5%   |               |
|                          | 2000 | 1.4%              | 10.8%       | 86.5%  | 0.2%               | 0.5%       | 0.5%   | -6.9%         |
| Gogebic                  | 1980 | 0.4%              | 0.9%        | 95.9%  | 0.3%               | 2.3%       | 0.1%   |               |
|                          | 2000 | 0.4%              | 0.8%        | 96.0%  | 0.3%               | 2.3%       | 0.1%   | 0.1%          |
| Houghton                 | 1980 | 0.6%              | 9.7%        | 88.3%  | 0.4%               | 0.9%       | 0.1%   |               |
|                          | 2000 | 0.9%              | 3.4%        | 94.2%  | 0.4%               | 0.9%       | 0.2%   | 5.9%          |
| Iron                     | 1980 | 0.2%              | 2.3%        | 95.1%  | 0.3%               | 2.0%       | 0.1%   |               |
|                          | 2000 | 0.3%              | 3.4%        | 93.4%  | 0.8%               | 2.0%       | 0.2%   | -1.7%         |
| Keweenaw                 | 1980 | 5.3%              | 0.0%        | 92.0%  | 0.0%               | 2.7%       | 0.1%   |               |
|                          | 2000 | 5.5%              | 1.9%        | 89.5%  | 0.0%               | 2.7%       | 0.4%   | -2.5%         |
| Marquette                | 1980 | 1.1%              | 1.5%        | 94.7%  | 0.6%               | 1.4%       | 0.7%   |               |
|                          | 2000 | 1.6%              | 1.0%        | 94.5%  | 0.6%               | 1.4%       | 0.9%   | -0.2%         |
| Menominee                | 1980 | 0.6%              | 16.6%       | 82.0%  | 0.5%               | 0.3%       | 0.0%   |               |
|                          | 2000 | 0.9%              | 14.7%       | 83.6%  | 0.5%               | 0.3%       | 0.0%   | 1.5%          |
| Ontonagon                | 1980 | 1.1%              | 5.6%        | 92.2%  | 0.1%               | 1.0%       | 0.0%   |               |
|                          | 2000 | 1.1%              | 7.0%        | 90.7%  | 0.1%               | 1.0%       | 0.1%   | -1.5%         |
| WUP Total                | 1980 | 1.0%              | 5.5%        | 91.8%  | 0.3%               | 1.2%       | 0.2%   |               |
|                          | 2000 | 1.2%              | 5.3%        | 91.6%  | 0.4%               | 1.2%       | 0.3%   | -0.2%         |
| Eastern Upper Peninsula  |      |                   |             |        |                    |            |        |               |
| County                   | Year | Urban or Built-up | Agriculture | Forest | Nonforest wetlands | Open water | Barren | Forest Change |
| Alger                    | 1980 | 0.0%              | 6.7%        | 91.9%  | 0.3%               | 0.7%       | 0.4%   |               |
|                          | 2000 | 0.0%              | 2.3%        | 96.2%  | 0.3%               | 0.7%       | 0.4%   | 4.3%          |
| Chippewa                 | 1980 | 1.0%              | 14.0%       | 81.2%  | 3.0%               | 0.7%       | 0.1%   |               |
|                          | 2000 | 1.2%              | 16.1%       | 78.8%  | 3.0%               | 0.7%       | 0.3%   | -2.4%         |
| Luce                     | 1980 | 0.3%              | 2.3%        | 87.1%  | 8.8%               | 1.6%       | 0.0%   |               |
|                          | 2000 | 0.4%              | 0.3%        | 89.0%  | 8.8%               | 1.6%       | 0.1%   | 1.8%          |
| Mackinac                 | 1980 | 0.2%              | 4.8%        | 89.9%  | 1.4%               | 3.2%       | 0.6%   |               |
|                          | 2000 | 0.3%              | 4.5%        | 90.0%  | 1.3%               | 3.2%       | 0.6%   | 0.2%          |
| Schoolcraft              | 1980 | 0.2%              | 4.4%        | 81.2%  | 11.9%              | 2.1%       | 0.2%   |               |
|                          | 2000 | 0.2%              | 0.8%        | 85.2%  | 11.5%              | 2.1%       | 0.2%   | 4.0%          |
| EUP Total                | 1980 | 0.4%              | 7.2%        | 85.5%  | 5.1%               | 1.6%       | 0.2%   |               |
|                          | 2000 | 0.5%              | 5.8%        | 86.8%  | 5.0%               | 1.6%       | 0.3%   | 1.2%          |
| Northern Lower Peninsula |      |                   |             |        |                    |            |        |               |
| County                   | Year | Urban or Built-up | Agriculture | Forest | Nonforest wetlands | Open water | Barren | Forest Change |

|                |      |      |       |       |      |      |      |        |
|----------------|------|------|-------|-------|------|------|------|--------|
| Alcona         | 1980 | 0.3% | 15.8% | 79.7% | 0.2% | 2.4% | 1.6% |        |
|                | 2000 | 0.5% | 16.7% | 78.5% | 0.2% | 2.4% | 1.7% | -1.2%  |
| Alpena         | 1980 | 2.0% | 28.8% | 65.6% | 0.7% | 2.6% | 0.3% |        |
|                | 2000 | 3.0% | 14.8% | 78.3% | 0.7% | 2.6% | 0.6% | 12.7%  |
| Antrim         | 1980 | 1.2% | 29.2% | 60.1% | 0.0% | 8.0% | 1.4% |        |
|                | 2000 | 2.3% | 9.0%  | 79.3% | 0.0% | 8.0% | 1.5% | 19.1%  |
| Arenac         | 1980 | 0.5% | 50.4% | 46.3% | 2.0% | 0.0% | 0.8% |        |
|                | 2000 | 1.5% | 34.1% | 60.7% | 2.0% | 0.0% | 1.8% | 14.3%  |
| Benzie         | 1980 | 0.6% | 15.3% | 77.2% | 0.1% | 6.4% | 0.4% |        |
|                | 2000 | 0.6% | 15.1% | 77.4% | 0.1% | 6.4% | 0.4% | 0.2%   |
| Charlevoix     | 1980 | 1.3% | 33.2% | 58.2% | 0.0% | 7.0% | 0.3% |        |
|                | 2000 | 2.2% | 11.6% | 78.8% | 0.0% | 7.0% | 0.4% | 20.6%  |
| Cheboygan      | 1980 | 0.7% | 16.1% | 73.3% | 0.3% | 9.3% | 0.2% |        |
|                | 2000 | 2.2% | 14.0% | 73.3% | 0.4% | 9.3% | 0.7% | 0.0%   |
| Clare          | 1980 | 1.7% | 24.3% | 71.1% | 1.2% | 0.2% | 1.5% |        |
|                | 2000 | 1.7% | 28.6% | 66.7% | 1.2% | 0.2% | 1.6% | -4.3%  |
| Crawford       | 1980 | 1.6% | 3.0%  | 93.6% | 0.7% | 0.5% | 0.5% |        |
|                | 2000 | 1.6% | 0.8%  | 95.2% | 1.2% | 0.5% | 0.7% | 1.6%   |
| Emmet          | 1980 | 2.0% | 27.8% | 66.4% | 0.0% | 3.3% | 0.5% |        |
|                | 2000 | 3.1% | 19.8% | 72.8% | 0.5% | 3.3% | 0.5% | 6.4%   |
| Gladwin        | 1980 | 1.0% | 31.6% | 64.9% | 1.0% | 0.6% | 0.9% |        |
|                | 2000 | 1.0% | 29.1% | 67.0% | 1.3% | 0.6% | 0.9% | 2.1%   |
| Grand Traverse | 1980 | 3.6% | 28.5% | 63.5% | 0.1% | 4.1% | 0.2% |        |
|                | 2000 | 3.7% | 23.0% | 68.9% | 0.1% | 4.1% | 0.2% | 5.4%   |
| Iosco          | 1980 | 2.3% | 18.7% | 75.2% | 0.8% | 1.9% | 1.1% |        |
|                | 2000 | 2.7% | 22.8% | 70.7% | 0.8% | 1.9% | 1.1% | -4.5%  |
| Kalkaska       | 1980 | 0.5% | 13.7% | 84.6% | 0.4% | 0.8% | 0.0% |        |
|                | 2000 | 0.5% | 6.0%  | 92.1% | 0.5% | 0.8% | 0.1% | 7.5%   |
| Lake           | 1980 | 0.3% | 9.4%  | 89.2% | 0.0% | 0.3% | 0.8% |        |
|                | 2000 | 0.3% | 24.7% | 73.9% | 0.0% | 0.3% | 0.8% | -15.3% |
| Leelanau       | 1980 | 1.5% | 28.4% | 62.2% | 0.3% | 6.5% | 1.2% |        |
|                | 2000 | 2.4% | 17.9% | 71.7% | 0.4% | 6.5% | 1.2% | 9.5%   |
| Manistee       | 1980 | 1.2% | 21.3% | 75.8% | 0.3% | 1.3% | 0.0% |        |
|                | 2000 | 1.2% | 23.9% | 73.3% | 0.3% | 1.3% | 0.0% | -2.6%  |
| Mason          | 1980 | 1.4% | 35.3% | 60.1% | 0.2% | 1.8% | 1.1% |        |
|                | 2000 | 1.4% | 35.4% | 60.0% | 0.2% | 1.8% | 1.1% | -0.1%  |
| Mecosta        | 1980 | 0.9% | 61.0% | 35.9% | 0.3% | 0.9% | 0.9% |        |
|                | 2000 | 1.9% | 43.2% | 52.5% | 0.3% | 0.9% | 1.1% | 16.6%  |
| Missaukee      | 1980 | 0.3% | 30.7% | 65.1% | 2.9% | 0.9% | 0.0% |        |
|                | 2000 | 0.6% | 9.8%  | 85.4% | 3.3% | 0.9% | 0.0% | 20.2%  |
| Montmorency    | 1980 | 0.7% | 8.1%  | 88.2% | 0.0% | 1.8% | 1.2% |        |
|                | 2000 | 0.8% | 1.3%  | 94.1% | 0.2% | 1.8% | 1.9% | 5.9%   |
| Newaygo        | 1980 | 0.6% | 36.8% | 61.1% | 0.0% | 1.3% | 0.2% |        |
|                | 2000 | 0.8% | 31.4% | 66.3% | 0.0% | 1.3% | 0.2% | 5.2%   |
| Oceana         | 1980 | 1.0% | 43.3% | 54.2% | 0.2% | 0.6% | 0.6% |        |
|                | 2000 | 1.0% | 48.8% | 48.8% | 0.2% | 0.6% | 0.6% | -5.4%  |

|                      |             |                              |                          |               |                               |                       |               |                          |
|----------------------|-------------|------------------------------|--------------------------|---------------|-------------------------------|-----------------------|---------------|--------------------------|
| Ogemaw               | 1980        | 1.3%                         | 27.6%                    | 69.5%         | 0.5%                          | 0.9%                  | 0.2%          |                          |
|                      | 2000        | 1.3%                         | 23.2%                    | 73.9%         | 0.5%                          | 0.9%                  | 0.3%          | 4.4%                     |
| Osceola              | 1980        | 0.8%                         | 49.3%                    | 48.2%         | 0.1%                          | 0.2%                  | 1.4%          |                          |
|                      | 2000        | 0.7%                         | 48.4%                    | 49.1%         | 0.1%                          | 0.2%                  | 1.4%          | 0.9%                     |
| Oscoda               | 1980        | 0.5%                         | 5.9%                     | 90.2%         | 0.3%                          | 0.2%                  | 2.8%          |                          |
|                      | 2000        | 0.5%                         | 5.9%                     | 89.4%         | 0.3%                          | 0.2%                  | 3.7%          | -0.9%                    |
| Otsego               | 1980        | 1.4%                         | 14.4%                    | 81.3%         | 0.1%                          | 0.8%                  | 2.0%          |                          |
|                      | 2000        | 1.4%                         | 11.8%                    | 82.6%         | 0.4%                          | 0.8%                  | 3.0%          | 1.3%                     |
| Presque Isle<br>Isle | 1980        | 0.8%                         | 25.5%                    | 67.2%         | 1.8%                          | 3.1%                  | 1.7%          |                          |
|                      | 2000        | 2.8%                         | 9.2%                     | 80.8%         | 1.8%                          | 3.1%                  | 2.4%          | 13.6%                    |
| Roscommon            | 1980        | 2.1%                         | 2.6%                     | 78.8%         | 6.4%                          | 9.4%                  | 0.7%          |                          |
|                      | 2000        | 2.3%                         | 5.9%                     | 75.2%         | 6.5%                          | 9.4%                  | 0.7%          | -3.6%                    |
| Wexford              | 1980        | 1.3%                         | 18.1%                    | 78.7%         | 0.1%                          | 1.7%                  | 0.1%          |                          |
|                      | 2000        | 1.4%                         | 15.6%                    | 81.0%         | 0.1%                          | 1.7%                  | 0.1%          | 2.3%                     |
| NLP Total            | 1980        | 1.2%                         | 24.8%                    | 69.9%         | 0.7%                          | 2.6%                  | 0.8%          |                          |
|                      | 2000        | 1.6%                         | 20.0%                    | 74.1%         | 0.8%                          | 2.6%                  | 1.0%          | 4.1%                     |
| <b>State</b>         |             |                              |                          |               |                               |                       |               |                          |
| <b>County</b>        | <b>Year</b> | <b>Urban or<br/>Built-up</b> | <b>Agri-<br/>culture</b> | <b>Forest</b> | <b>Nonforest<br/>wetlands</b> | <b>Open<br/>water</b> | <b>Barren</b> | <b>Forest<br/>Change</b> |
| State Total          | 1980        | 3.5%                         | 42.2%                    | 51.5%         | 1.0%                          | 1.4%                  | 0.4%          |                          |
|                      | 2000        | 4.6%                         | 38.9%                    | 53.7%         | 1.0%                          | 1.4%                  | 0.5%          | 2.1%                     |

**Table A5.2. Forest area (thousand acres) by land class for all owner groups, by ecoregion and county, 1980, 1993, and 2004.**

| County                         | Year        | Total Land        | Timber-land        | Reserved Timber-land        | Other Forest Land        | Non-forest Land        | Total Forest        | Percent Forest        |
|--------------------------------|-------------|-------------------|--------------------|-----------------------------|--------------------------|------------------------|---------------------|-----------------------|
| <b>Western Upper Peninsula</b> |             |                   |                    |                             |                          |                        |                     |                       |
| Baraga                         | 1980        | 606               | 513                | 29                          | 5                        | 58                     | 548                 | 90.4%                 |
|                                | 1993        | 579               | 487                | 19                          | 2                        | 70                     | 508                 | 87.8%                 |
|                                | 2004        | 592               | 520                | 10                          | 5                        | 56                     | 535                 | 90.5%                 |
| Delta                          | 1980        | 715               | 575                | 0                           | 10                       | 131                    | 584                 | 81.7%                 |
|                                | 1993        | 749               | 596                | 2                           | 5                        | 147                    | 602                 | 80.4%                 |
|                                | 2004        | 746               | 592                | 0                           | 8                        | 146                    | 600                 | 80.4%                 |
| Dickinson                      | 1980        | 455               | 375                | 2                           | 2                        | 77                     | 378                 | 83.1%                 |
|                                | 1993        | 491               | 398                | 0                           | 0                        | 92                     | 398                 | 81.2%                 |
|                                | 2004        | 473               | 407                | 0                           | 0                        | 66                     | 407                 | 86.0%                 |
| Gogebic                        | 1980        | 712               | 620                | 36                          | 0                        | 56                     | 656                 | 92.1%                 |
|                                | 1993        | 705               | 608                | 27                          | 0                        | 70                     | 635                 | 90.1%                 |
|                                | 2004        | 720               | 616                | 34                          | 6                        | 64                     | 656                 | 91.1%                 |
| Houghton                       | 1980        | 634               | 514                | 10                          | 7                        | 104                    | 530                 | 83.7%                 |
|                                | 1993        | 648               | 529                | 10                          | 2                        | 107                    | 540                 | 83.5%                 |
|                                | 2004        | 655               | 516                | 17                          | 0                        | 123                    | 533                 | 81.3%                 |
| Iron                           | 1980        | 741               | 656                | 0                           | 5                        | 80                     | 661                 | 89.2%                 |
|                                | 1993        | 747               | 658                | 0                           | 4                        | 84                     | 662                 | 88.7%                 |
|                                | 2004        | 752               | 659                | 0                           | 9                        | 85                     | 667                 | 88.7%                 |
| Keweenaw                       | 1980        | 353               | 207                | 126                         | 0                        | 19                     | 333                 | 94.5%                 |
|                                | 1993        | 346               | 199                | 112                         | 1                        | 34                     | 312                 | 90.1%                 |
|                                | 2004        | 350               | 199                | 110                         | 16                       | 25                     | 324                 | 92.8%                 |
| Marquette                      | 1980        | 1,140             | 977                | 20                          | 24                       | 120                    | 1,020               | 89.5%                 |
|                                | 1993        | 1,166             | 1,005              | 14                          | 8                        | 138                    | 1,027               | 88.1%                 |
|                                | 2004        | 1,154             | 993                | 15                          | 19                       | 127                    | 1,027               | 89.0%                 |
| Menominee                      | 1980        | 637               | 495                | 1                           | 2                        | 139                    | 498                 | 78.1%                 |
|                                | 1993        | 668               | 523                | 1                           | 0                        | 143                    | 525                 | 78.5%                 |
|                                | 2004        | 639               | 514                | 0                           | 2                        | 123                    | 516                 | 80.8%                 |
| Ontonagon                      | 1980        | 813               | 675                | 47                          | 0                        | 91                     | 722                 | 88.8%                 |
|                                | 1993        | 839               | 706                | 47                          | 0                        | 87                     | 753                 | 89.6%                 |
|                                | 2004        | 837               | 670                | 55                          | 16                       | 96                     | 741                 | 88.5%                 |
| Western Upper Peninsula Total  | 1980        | 6,806             | 5,606              | 271                         | 54                       | 875                    | 5,930               | 87.1%                 |
|                                | 1993        | 6,937             | 5,708              | 232                         | 23                       | 973                    | 5,963               | 86.0%                 |
|                                | 2004        | 6,917             | 5,686              | 240                         | 80                       | 911                    | 6,006               | 86.8%                 |
| <b>County</b>                  | <b>Year</b> | <b>Total Land</b> | <b>Timber-land</b> | <b>Reserved Timber-land</b> | <b>Other Forest Land</b> | <b>Non-forest Land</b> | <b>Total Forest</b> | <b>Percent Forest</b> |
| <b>Eastern Upper Peninsula</b> |             |                   |                    |                             |                          |                        |                     |                       |
| Alger                          | 1980        | 589               | 492                | 41                          | 3                        | 53                     | 536                 | 91.0%                 |
|                                | 1993        | 588               | 471                | 54                          | 7                        | 56                     | 532                 | 90.5%                 |

| County                          | Year        | Total Land        | Timberland        | Reserved Timberland        | Other Forest Land        | Non-forest Land        | Total Forest        | Percent Forest        |
|---------------------------------|-------------|-------------------|-------------------|----------------------------|--------------------------|------------------------|---------------------|-----------------------|
| <b>Western Upper Peninsula</b>  |             |                   |                   |                            |                          |                        |                     |                       |
|                                 | 2004        | 593               | 524               | 7                          | 7                        | 56                     | 537                 | 90.5%                 |
| Chippewa                        | 1980        | 965               | 706               | 30                         | 18                       | 212                    | 753                 | 78.1%                 |
|                                 | 1993        | 999               | 708               | 27                         | 14                       | 250                    | 749                 | 75.0%                 |
|                                 | 2004        | 1,035             | 784               | 2                          | 20                       | 229                    | 806                 | 77.9%                 |
| Luce                            | 1980        | 586               | 468               | 11                         | 17                       | 90                     | 496                 | 84.7%                 |
|                                 | 1993        | 578               | 463               | 3                          | 6                        | 105                    | 473                 | 81.8%                 |
|                                 | 2004        | 559               | 477               | 5                          | 12                       | 65                     | 494                 | 88.4%                 |
| Mackinac                        | 1980        | 647               | 524               | 22                         | 8                        | 92                     | 555                 | 85.8%                 |
|                                 | 1993        | 654               | 522               | 26                         | 7                        | 98                     | 555                 | 84.9%                 |
|                                 | 2004        | 676               | 560               | 9                          | 14                       | 93                     | 583                 | 86.2%                 |
| Schoolcraft                     | 1980        | 739               | 543               | 39                         | 11                       | 146                    | 593                 | 80.3%                 |
|                                 | 1993        | 754               | 525               | 8                          | 7                        | 214                    | 541                 | 71.7%                 |
|                                 | 2004        | 751               | 559               | 6                          | 12                       | 174                    | 577                 | 76.8%                 |
| Eastern Upper Peninsula Total   | 1980        | 3,526             | 2,734             | 144                        | 57                       | 592                    | 2,935               | 83.2%                 |
|                                 | 1993        | 3,572             | 2,690             | 118                        | 41                       | 723                    | 2,849               | 79.8%                 |
|                                 | 2004        | 3,613             | 2,903             | 29                         | 65                       | 617                    | 2,996               | 82.9%                 |
| <b>County</b>                   | <b>Year</b> | <b>Total Land</b> | <b>Timberland</b> | <b>Reserved Timberland</b> | <b>Other Forest Land</b> | <b>Non-forest Land</b> | <b>Total Forest</b> | <b>Percent Forest</b> |
| <b>Northern Lower Peninsula</b> |             |                   |                   |                            |                          |                        |                     |                       |
| Alcona                          | 1980        | 425               | 306               | 2                          | 10                       | 107                    | 319                 | 74.9%                 |
|                                 | 1993        | 432               | 322               | 9                          | 2                        | 99                     | 333                 | 77.1%                 |
|                                 | 2004        | 405               | 317               | 0                          | 3                        | 84                     | 320                 | 79.2%                 |
| Alcona                          | 1980        | 352               | 218               | 2                          | 3                        | 130                    | 223                 | 63.2%                 |
|                                 | 1993        | 368               | 233               | 3                          | 0                        | 131                    | 236                 | 64.3%                 |
|                                 | 2004        | 388               | 261               | 0                          | 4                        | 123                    | 265                 | 68.3%                 |
| Antrim                          | 1980        | 309               | 157               | 3                          | 0                        | 149                    | 160                 | 51.8%                 |
|                                 | 1993        | 305               | 190               | 0                          | 0                        | 116                    | 190                 | 62.2%                 |
|                                 | 2004        | 310               | 183               | 0                          | 0                        | 127                    | 183                 | 59.1%                 |
| Arenac                          | 1980        | 227               | 93                | 0                          | 2                        | 133                    | 94                  | 41.6%                 |
|                                 | 1993        | 235               | 121               | 0                          | 0                        | 114                    | 121                 | 51.6%                 |
|                                 | 2004        | 230               | 103               | 0                          | 2                        | 124                    | 105                 | 45.9%                 |
| Benzie                          | 1980        | 200               | 119               | 12                         | 0                        | 70                     | 131                 | 65.1%                 |
|                                 | 1993        | 206               | 137               | 10                         | 0                        | 59                     | 147                 | 71.3%                 |
|                                 | 2004        | 206               | 133               | 6                          | 0                        | 68                     | 139                 | 67.2%                 |
| Charlevoix                      | 1980        | 265               | 139               | 1                          | 0                        | 126                    | 139                 | 52.6%                 |
|                                 | 1993        | 267               | 170               | 2                          | 0                        | 95                     | 172                 | 64.5%                 |
|                                 | 2004        | 273               | 174               | 0                          | 0                        | 100                    | 174                 | 63.6%                 |
| Cheboygan                       | 1980        | 495               | 367               | 1                          | 15                       | 112                    | 383                 | 77.4%                 |
|                                 | 1993        | 458               | 340               | 10                         | 1                        | 108                    | 350                 | 76.5%                 |
|                                 | 2004        | 473               | 363               | 0                          | 6                        | 105                    | 369                 | 77.9%                 |
| Clare                           | 1980        | 359               | 216               | 0                          | 4                        | 139                    | 220                 | 61.2%                 |

| County                         | Year | Total Land | Timberland | Reserved Timberland | Other Forest Land | Non-forest Land | Total Forest | Percent Forest |
|--------------------------------|------|------------|------------|---------------------|-------------------|-----------------|--------------|----------------|
| <b>Western Upper Peninsula</b> |      |            |            |                     |                   |                 |              |                |
|                                | 1993 | 363        | 246        | 0                   | 0                 | 117             | 246          | 67.7%          |
|                                | 2004 | 333        | 191        | 0                   | 0                 | 142             | 191          | 57.4%          |
| Crawford                       | 1980 | 355        | 273        | 32                  | 0                 | 51              | 304          | 85.7%          |
|                                | 1993 | 357        | 290        | 18                  | 0                 | 49              | 308          | 86.3%          |
|                                | 2004 | 356        | 291        | 0                   | 11                | 54              | 302          | 84.9%          |
| Emmet                          | 1980 | 314        | 195        | 7                   | 0                 | 112             | 202          | 64.4%          |
|                                | 1993 | 300        | 198        | 8                   | 2                 | 91              | 208          | 69.5%          |
|                                | 2004 | 315        | 216        | 2                   | 0                 | 97              | 218          | 69.1%          |
| Gladwin                        | 1980 | 322        | 193        | 0                   | 0                 | 129             | 193          | 59.9%          |
|                                | 1993 | 324        | 187        | 0                   | 0                 | 138             | 187          | 57.6%          |
|                                | 2004 | 309        | 192        | 2                   | 0                 | 114             | 194          | 63.0%          |
| Grand Traverse                 | 1980 | 308        | 154        | 4                   | 0                 | 150             | 159          | 51.5%          |
|                                | 1993 | 298        | 171        | 3                   | 2                 | 122             | 176          | 59.1%          |
|                                | 2004 | 312        | 167        | 1                   | 6                 | 138             | 175          | 55.9%          |
| Iosco                          | 1980 | 349        | 225        | 0                   | 3                 | 121             | 228          | 65.4%          |
|                                | 1993 | 352        | 243        | 0                   | 2                 | 107             | 244          | 69.5%          |
|                                | 2004 | 353        | 251        | 0                   | 6                 | 96              | 257          | 72.7%          |
| Kalkaska                       | 1980 | 359        | 253        | 27                  | 2                 | 76              | 282          | 78.7%          |
|                                | 1993 | 359        | 267        | 4                   | 0                 | 88              | 271          | 75.5%          |
|                                | 2004 | 371        | 287        | 0                   | 8                 | 77              | 295          | 79.4%          |
| Lake                           | 1980 | 365        | 300        | 0                   | 0                 | 65              | 300          | 82.2%          |
|                                | 1993 | 363        | 315        | 0                   | 0                 | 48              | 315          | 86.8%          |
|                                | 2004 | 377        | 306        | 0                   | 0                 | 72              | 306          | 81.0%          |
| Leelanau                       | 1980 | 187        | 76         | 18                  | 0                 | 93              | 94           | 50.3%          |
|                                | 1993 | 223        | 88         | 39                  | 0                 | 96              | 127          | 56.9%          |
|                                | 2004 | 245        | 114        | 25                  | 0                 | 105             | 140          | 57.2%          |
| Manistee                       | 1980 | 335        | 225        | 0                   | 0                 | 109             | 226          | 67.4%          |
|                                | 1993 | 348        | 249        | 4                   | 0                 | 95              | 253          | 72.8%          |
|                                | 2004 | 349        | 242        | 0                   | 2                 | 105             | 244          | 69.8%          |
| Mason                          | 1980 | 301        | 148        | 8                   | 0                 | 146             | 156          | 51.7%          |
|                                | 1993 | 317        | 157        | 13                  | 3                 | 144             | 173          | 54.5%          |
|                                | 2004 | 331        | 173        | 4                   | 2                 | 153             | 178          | 53.9%          |
| Mecosta                        | 1980 | 350        | 120        | 0                   | 2                 | 227             | 123          | 35.1%          |
|                                | 1993 | 356        | 163        | 0                   | 0                 | 192             | 163          | 45.9%          |
|                                | 2004 | 315        | 128        | 0                   | 2                 | 185             | 130          | 41.2%          |
| Missaukee                      | 1980 | 375        | 204        | 10                  | 2                 | 158             | 217          | 57.9%          |
|                                | 1993 | 363        | 229        | 7                   | 2                 | 125             | 238          | 65.6%          |
|                                | 2004 | 372        | 226        | 0                   | 3                 | 143             | 229          | 61.5%          |
| Montmorency                    | 1980 | 364        | 302        | 0                   | 0                 | 62              | 302          | 83.0%          |
|                                | 1993 | 351        | 294        | 0                   | 0                 | 57              | 294          | 83.8%          |
|                                | 2004 | 361        | 290        | 0                   | 8                 | 63              | 298          | 82.6%          |

| County                         | Year | Total Land | Timberland | Reserved Timberland | Other Forest Land | Non-forest Land | Total Forest | Percent Forest |
|--------------------------------|------|------------|------------|---------------------|-------------------|-----------------|--------------|----------------|
| <b>Western Upper Peninsula</b> |      |            |            |                     |                   |                 |              |                |
| Newaygo                        | 1980 | 535        | 310        | 4                   | 3                 | 219             | 316          | 59.1%          |
|                                | 1993 | 539        | 330        | 1                   | 0                 | 208             | 332          | 61.5%          |
|                                | 2004 | 534        | 317        | 0                   | 0                 | 217             | 317          | 59.3%          |
| Oceana                         | 1980 | 329        | 148        | 12                  | 4                 | 165             | 164          | 49.9%          |
|                                | 1993 | 346        | 182        | 5                   | 0                 | 159             | 187          | 54.0%          |
|                                | 2004 | 354        | 175        | 0                   | 4                 | 174             | 179          | 50.6%          |
| Ogemaw                         | 1980 | 373        | 220        | 6                   | 9                 | 137             | 235          | 63.1%          |
|                                | 1993 | 361        | 229        | 1                   | 0                 | 132             | 229          | 63.4%          |
|                                | 2004 | 367        | 222        | 2                   | 0                 | 143             | 224          | 61.0%          |
| Osceola                        | 1980 | 370        | 157        | 3                   | 0                 | 210             | 160          | 43.3%          |
|                                | 1993 | 362        | 186        | 0                   | 0                 | 177             | 186          | 51.2%          |
|                                | 2004 | 346        | 163        | 0                   | 0                 | 183             | 163          | 47.1%          |
| Oscoda                         | 1980 | 367        | 307        | 0                   | 2                 | 57              | 310          | 84.4%          |
|                                | 1993 | 362        | 308        | 9                   | 0                 | 44              | 317          | 87.7%          |
|                                | 2004 | 369        | 296        | 2                   | 18                | 54              | 315          | 85.4%          |
| Otsego                         | 1980 | 343        | 261        | 2                   | 0                 | 80              | 263          | 76.8%          |
|                                | 1993 | 329        | 240        | 0                   | 0                 | 90              | 240          | 72.8%          |
|                                | 2004 | 330        | 250        | 0                   | 2                 | 79              | 251          | 76.0%          |
| Presque Isle                   | 1980 | 412        | 267        | 3                   | 8                 | 135             | 278          | 67.3%          |
|                                | 1993 | 422        | 299        | 2                   | 11                | 111             | 311          | 73.7%          |
|                                | 2004 | 426        | 314        | 0                   | 5                 | 108             | 318          | 74.7%          |
| Roscommon                      | 1980 | 336        | 247        | 0                   | 6                 | 83              | 253          | 75.3%          |
|                                | 1993 | 334        | 255        | 2                   | 2                 | 76              | 258          | 77.3%          |
|                                | 2004 | 334        | 266        | 0                   | 6                 | 63              | 272          | 81.3%          |
| Wexford                        | 1980 | 380        | 250        | 22                  | 0                 | 108             | 272          | 71.6%          |
|                                | 1993 | 362        | 259        | 22                  | 0                 | 80              | 282          | 77.8%          |
|                                | 2004 | 356        | 260        | 0                   | 2                 | 95              | 261          | 73.3%          |
| Northern Lower Peninsula Total | 1980 | 10,361     | 6,449      | 180                 | 77                | 3,656           | 6,706        | 64.7%          |
|                                | 1993 | 10,360     | 6,896      | 170                 | 27                | 3,267           | 7,093        | 68.5%          |
|                                | 2004 | 10,402     | 6,870      | 44                  | 98                | 3,390           | 7,012        | 67.4%          |

| County       | Year | Total Land | Timberland | Reserved Timberland | Other Forest Land | Non-forest Land | Total Forest | Percent Forest |
|--------------|------|------------|------------|---------------------|-------------------|-----------------|--------------|----------------|
| <b>State</b> |      |            |            |                     |                   |                 |              |                |
| State        | 1980 | 36,126     | 17,493     | 682                 | 194               | 17,757          | 18,369       | 50.8%          |
|              | 1993 | 36,358     | 18,616     | 575                 | 90                | 17,077          | 19,281       | 53.0%          |
|              | 2004 | 36,408     | 18,746     | 321                 | 245               | 17,096          | 19,312       | 53.0%          |

Data Source: 1980 and 1993 data are derived from the Eastwide Forest Inventory datasets. 2004 data are derived from the 2004 FIA Snapshot dataset (<http://www.ncrs2.fs.fed.us/FIADatamart/fiadatamart.aspx>) which includes plots taken in 2000 to 2004.

**Table A5.3. Merchantable timber volume and growth on timberland, all owners, by ecoregion and county, 2004.**

| Ecoregion/ County               | State<br>Timberland | Merch.<br>volume,<br>growing<br>stock trees | Merch.<br>volume, all<br>live trees | Net annual<br>growth,<br>growing<br>stock trees | Volume per<br>acre,<br>growing<br>stock trees |
|---------------------------------|---------------------|---|-------------------------------------|---|---|
|                                 | Thousand<br>Acres   | Million cubic feet                          |                                     |   | Cubic feet                                    |
| <b>Western Upper Peninsula</b>  |                     |   |                                     |   |   |
| Baraga                          | 69.3                | 104.7                                       | 110.4                               | 2.7   | 1,510   |
| Delta                           | 63.4                | 66.8  | 70.3                                | 3.4   | 1,053   |
| Dickinson                       | 193.9               | 254.2                                       | 261.9                               | 12.3  | 1,311   |
| Houghton                        | 46.4                | 105.3                                       | 107.1                               | 0.5   | 2,272   |
| Iron                            | 83.0                | 105.2                                       | 108.9                               | 6.7   | 1,266   |
| Keweenaw                        | 2.0                 | 2.2   | 2.2                                 | 0.0   | 1,118   |
| Marquette                       | 249.5               | 350.2                                       | 367.1                               | 9.5   | 1,404   |
| Menominee                       | 93.9                | 137.3                                       | 142.1                               | 4.9   | 1,462   |
| Ontonagon                       | 21.6                | 42.3  | 44.4                                | 0.0   | 1,956   |
| WUP Total                       | 823.1               | 1,168.2                                     | 1,214.4                             | 40.0  | 1,419   |
| <b>Eastern Upper Peninsula</b>  |                     |   |                                     |   |   |
| Alger                           | 109.1               | 174.3                                       | 183.8                               | 4.6   | 1,599   |
| Chippewa                        | 218.8               | 292.8                                       | 312.9                               | 4.1   | 1,338   |
| Luce                            | 246.8               | 338.3                                       | 358.1                               | 13.2  | 1,371   |
| Mackinac                        | 198.5               | 254.1                                       | 270.4                               | 10.4  | 1,280   |
| Schoolcraft                     | 204.3               | 190.7                                       | 204.7                               | 3.3   | 933   |
| EUP total                       | 977.5               | 1,250.2                                     | 1,329.8                             | 35.6  | 1,279   |
| <b>Northern Lower Peninsula</b> |                     |   |                                     |   |   |
| Alcona                          | 3.0                 | 5.2   | 6.8                                 | 0.1   | 1,745   |
| Alpena                          | 42.9                | 47.2  | 57.4                                | 0.3   | 1,100   |
| Antrim                          | 39.8                | 64.2  | 72.6                                | 1.7   | 1,615   |
| Arenac                          | 22.7                | 23.5  | 24.3                                | 0.8   | 1,033   |
| Benzie                          | 65.2                | 85.1  | 90.7                                | 1.4   | 1,304   |
| Charlevoix                      | 52.9                | 94.8  | 101.8                               | 3.2   | 1,792   |
| Cheboygan                       | 162.0               | 199.1                                       | 213.8                               | 10.7  | 1,229   |
| Clare                           | 45.4                | 52.2  | 53.6                                | 4.3   | 1,152   |
| Crawford                        | 161.5               | 139.5                                       | 151.4                               | 4.1   | 864   |
| Emmet                           | 72.6                | 126.8                                       | 134.2                               | 0.3   | 1,747   |
| Gladwin                         | 79.2                | 50.7  | 54.9                                | 2.4   | 640   |
| Grand Traverse                  | 60.7                | 72.9  | 78.8                                | 3.7   | 1,201   |
| Iosco                           | 20.1                | 23.3  | 25.8                                | 0.3   | 1,162   |
| Kalkaska                        | 159.0               | 194.3                                       | 205.5                               | 6.1   | 1,222   |
| Lake                            | 56.5                | 66.7  | 67.6                                | 1.4   | 1,180   |
| Leelanau                        | 9.9                 | 16.4  | 17.0                                | 0.0   | 1,658   |
| Manistee                        | 19.8                | 41.6  | 44.0                                | 1.6   | 2,106   |
| Mason                           | 8.3                 | 14.9  | 16.2                                | 0.0   | 1,793   |

|              |         |         |         |       |       |
|--------------|---------|---------|---------|-------|-------|
| Mecosta      | 13.2    | 26.8    | 27.3    | 0.3   | 2,038 |
| Missaukee    | 99.0    | 125.9   | 133.7   | 3.8   | 1,273 |
| Montmorency  | 131.0   | 175.5   | 186.1   | 4.5   | 1,340 |
| Newaygo      | 6.1     | 9.9     | 10.0    | 1.1   | 1,629 |
| Oceana       | 6.1     | 5.5     | 6.6     | 0.0   | 898   |
| Ogemaw       | 72.8    | 46.6    | 50.2    | 4.7   | 640   |
| Osceola      | 21.7    | 33.4    | 34.3    | 1.5   | 1,541 |
| Oscoda       | 54.4    | 44.0    | 46.4    | 1.5   | 809   |
| Otsego       | 84.1    | 101.7   | 108.9   | 3.0   | 1,210 |
| Presque Isle | 87.8    | 93.9    | 101.1   | -0.5  | 1,069 |
| Roscommon    | 176.0   | 153.1   | 171.3   | -3.5  | 870   |
| Wexford      | 53.5    | 75.5    | 81.1    | 2.5   | 1,413 |
| NLP Total    | 1,886.7 | 2,210.1 | 2,373.1 | 61.2  | 1,171 |
| SLP Total    | 339.4   | 512.0   | 560.1   | 26.7  | 1,508 |
| State        | 4,026.7 | 5,140.5 | 5,477.5 | 163.5 | 1,277 |

Data Source: FIA Snapshot inventory, 2000-2004

**Table A5.4. Forest area (thousand acres) by land class for State ownership, by ecoregion and county, 1980, 1993, and 2004.**

| County                           | Year | Timberland | Reserved<br>Timberland | Other Forest<br>Land | Total Forest<br>Land |
|----------------------------------|------|------------|------------------------|----------------------|----------------------|
| <b>Western Upper Peninsula</b>   |      |            |                        |                      |                      |
| Baraga                           | 1980 | 66         | 7                      | 1                    | 74                   |
|                                  | 1993 | 58         | 8                      | 1                    | 67                   |
|                                  | 2004 | 69         | 0                      | 0                    | 69                   |
| Delta                            | 1980 | 63         | 0                      | 2                    | 66                   |
|                                  | 1993 | 62         | 2                      | 1                    | 65                   |
|                                  | 2004 | 63         | 0                      | 2                    | 66                   |
| Dickinson                        | 1980 | 183        | 2                      | 0                    | 185                  |
|                                  | 1993 | 196        | 0                      | 0                    | 196                  |
|                                  | 2004 | 194        | 0                      | 0                    | 194                  |
| Gogebic                          | 1980 | 0          | 10                     | 0                    | 10                   |
|                                  | 1993 | 3          | 11                     | 0                    | 14                   |
|                                  | 2004 | 0          | 17                     | 0                    | 17                   |
| Houghton                         | 1980 | 44         | 0                      | 0                    | 44                   |
|                                  | 1993 | 40         | 0                      | 0                    | 40                   |
|                                  | 2004 | 46         | 0                      | 0                    | 46                   |
| Iron                             | 1980 | 90         | 0                      | 0                    | 90                   |
|                                  | 1993 | 74         | 0                      | 2                    | 76                   |
|                                  | 2004 | 83         | 0                      | 0                    | 83                   |
| Keweenaw                         | 1980 | 3          | 0                      | 0                    | 3                    |
|                                  | 1993 | 1          | 0                      | 0                    | 1                    |
|                                  | 2004 | 2          | 0                      | 0                    | 2                    |
| Marquette                        | 1980 | 218        | 3                      | 9                    | 230                  |
|                                  | 1993 | 225        | 1                      | 4                    | 230                  |
|                                  | 2004 | 249        | 0                      | 2                    | 252                  |
| Menominee                        | 1980 | 79         | 0                      | 0                    | 80                   |
|                                  | 1993 | 73         | 0                      | 0                    | 73                   |
|                                  | 2004 | 94         | 0                      | 0                    | 94                   |
| Ontonagon                        | 1980 | 16         | 47                     | 0                    | 64                   |
|                                  | 1993 | 20         | 47                     | 0                    | 67                   |
|                                  | 2004 | 22         | 53                     | 0                    | 75                   |
| Western Upper<br>Peninsula Total | 1980 | 763        | 69                     | 12                   | 844                  |
|                                  | 1993 | 751        | 69                     | 8                    | 828                  |
|                                  | 2004 | 823        | 70                     | 5                    | 898                  |

Data Source: 1980 and 1993 data are derived from the Eastwide Forest Inventory datasets. 2004 data are derived from the 2004 FIA Snapshot dataset (<http://www.ncrs2.fs.fed.us/FIADatamart/fiadatamart.aspx>) which includes plots taken in 2000 to 2004.

| County                           | Year | Timberland | Reserved<br>Timberland | Other Forest<br>Land | Total Forest<br>Land |
|----------------------------------|------|------------|------------------------|----------------------|----------------------|
| <b>Eastern Upper Peninsula</b>   |      |            |                        |                      |                      |
| Alger                            | 1980 | 91         | 1                      | 2                    | 93                   |
|                                  | 1993 | 81         | 2                      | 0                    | 84                   |
|                                  | 2004 | 109        | 0                      | 0                    | 109                  |
| Chippewa                         | 1980 | 169        | 24                     | 8                    | 201                  |
|                                  | 1993 | 156        | 16                     | 7                    | 179                  |
|                                  | 2004 | 219        | 0                      | 1                    | 220                  |
| Luce                             | 1980 | 209        | 11                     | 17                   | 238                  |
|                                  | 1993 | 215        | 3                      | 4                    | 222                  |
|                                  | 2004 | 247        | 3                      | 4                    | 254                  |
| Mackinac                         | 1980 | 167        | 21                     | 5                    | 193                  |
|                                  | 1993 | 165        | 7                      | 4                    | 175                  |
|                                  | 2004 | 199        | 0                      | 9                    | 208                  |
| Schoolcraft                      | 1980 | 198        | 0                      | 2                    | 199                  |
|                                  | 1993 | 185        | 0                      | 5                    | 190                  |
|                                  | 2004 | 204        | 0                      | 3                    | 207                  |
| Eastern Upper<br>Peninsula Total | 1980 | 834        | 56                     | 34                   | 924                  |
|                                  | 1993 | 803        | 28                     | 19                   | 849                  |
|                                  | 2004 | 978        | 3                      | 17                   | 998                  |

| County                          | Year | Timberland | Reserved<br>Timberland | Other Forest<br>Land | Total Forest<br>Land |
|---------------------------------|------|------------|------------------------|----------------------|----------------------|
| <b>Northern Lower Peninsula</b> |      |            |                        |                      |                      |
| Alcona                          | 1980 | 2          | 0                      | 0                    | 2                    |
|                                 | 1993 | 2          | 0                      | 0                    | 2                    |
|                                 | 2004 | 3          | 0                      | 1                    | 4                    |
| Alcona<br>Peninsulaena          | 1980 | 27         | 0                      | 0                    | 27                   |
|                                 | 1993 | 37         | 3                      | 0                    | 40                   |
|                                 | 2004 | 43         | 0                      | 0                    | 43                   |
| Antrim                          | 1980 | 40         | 0                      | 0                    | 40                   |
|                                 | 1993 | 51         | 0                      | 0                    | 51                   |
|                                 | 2004 | 40         | 0                      | 0                    | 40                   |
| Arenac                          | 1980 | 25         | 0                      | 2                    | 27                   |
|                                 | 1993 | 34         | 0                      | 0                    | 34                   |
|                                 | 2004 | 23         | 0                      | 2                    | 25                   |
| Benzie                          | 1980 | 57         | 0                      | 0                    | 57                   |
|                                 | 1993 | 67         | 0                      | 0                    | 67                   |
|                                 | 2004 | 65         | 0                      | 0                    | 65                   |
| Charlevoix                      | 1980 | 48         | 0                      | 0                    | 48                   |
|                                 | 1993 | 62         | 2                      | 0                    | 64                   |
|                                 | 2004 | 53         | 0                      | 0                    | 53                   |
| Cheboygan                       | 1980 | 186        | 0                      | 4                    | 191                  |
|                                 | 1993 | 168        | 2                      | 0                    | 171                  |
|                                 | 2004 | 162        | 0                      | 6                    | 168                  |
| Clare                           | 1980 | 53         | 0                      | 0                    | 53                   |
|                                 | 1993 | 53         | 0                      | 0                    | 53                   |
|                                 | 2004 | 45         | 0                      | 0                    | 45                   |
| Crawford                        | 1980 | 127        | 0                      | 0                    | 127                  |
|                                 | 1993 | 152        | 16                     | 0                    | 168                  |
|                                 | 2004 | 161        | 0                      | 5                    | 167                  |
| Emmet                           | 1980 | 78         | 0                      | 0                    | 78                   |
|                                 | 1993 | 75         | 8                      | 2                    | 86                   |
|                                 | 2004 | 73         | 2                      | 0                    | 75                   |
| Gladwin                         | 1980 | 73         | 0                      | 0                    | 73                   |
|                                 | 1993 | 75         | 0                      | 0                    | 75                   |
|                                 | 2004 | 79         | 2                      | 0                    | 81                   |
| Grand Traverse                  | 1980 | 69         | 0                      | 0                    | 69                   |
|                                 | 1993 | 71         | 0                      | 2                    | 73                   |
|                                 | 2004 | 61         | 0                      | 2                    | 63                   |
| Iosco                           | 1980 | 16         | 0                      | 0                    | 16                   |
|                                 | 1993 | 15         | 0                      | 0                    | 15                   |
|                                 | 2004 | 20         | 0                      | 2                    | 22                   |
| Kalkaska                        | 1980 | 144        | 0                      | 2                    | 147                  |

| County                          | Year | Timberland | Reserved<br>Timberland | Other Forest<br>Land | Total Forest<br>Land |
|---------------------------------|------|------------|------------------------|----------------------|----------------------|
| <b>Northern Lower Peninsula</b> |      |            |                        |                      |                      |
|                                 | 1993 | 144        | 0                      | 0                    | 144                  |
|                                 | 2004 | 159        | 0                      | 6                    | 165                  |
| Lake                            | 1980 | 57         | 0                      | 0                    | 57                   |
|                                 | 1993 | 64         | 0                      | 0                    | 64                   |
|                                 | 2004 | 57         | 0                      | 0                    | 57                   |
| Leelanau                        | 1980 | 5          | 3                      | 0                    | 7                    |
|                                 | 1993 | 6          | 2                      | 0                    | 8                    |
|                                 | 2004 | 10         | 0                      | 0                    | 10                   |
| Manistee                        | 1980 | 15         | 0                      | 0                    | 15                   |
|                                 | 1993 | 15         | 0                      | 0                    | 15                   |
|                                 | 2004 | 20         | 0                      | 0                    | 20                   |
| Mason                           | 1980 | 5          | 0                      | 0                    | 5                    |
|                                 | 1993 | 7          | 1                      | 0                    | 8                    |
|                                 | 2004 | 8          | 2                      | 0                    | 10                   |
| Mecosta                         | 1980 | 22         | 0                      | 0                    | 22                   |
|                                 | 1993 | 21         | 0                      | 0                    | 21                   |
|                                 | 2004 | 13         | 0                      | 2                    | 15                   |
| Missaukee                       | 1980 | 89         | 0                      | 0                    | 89                   |
|                                 | 1993 | 107        | 0                      | 2                    | 108                  |
|                                 | 2004 | 99         | 0                      | 3                    | 101                  |
| Montmorency                     | 1980 | 151        | 0                      | 0                    | 151                  |
|                                 | 1993 | 148        | 0                      | 0                    | 148                  |
|                                 | 2004 | 131        | 0                      | 2                    | 133                  |
| Newaygo                         | 1980 | 3          | 0                      | 0                    | 3                    |
|                                 | 1993 | 4          | 0                      | 0                    | 4                    |
|                                 | 2004 | 6          | 0                      | 0                    | 6                    |
| Oceana                          | 1980 | 0          | 0                      | 0                    | 0                    |
|                                 | 1993 | 2          | 0                      | 0                    | 2                    |
|                                 | 2004 | 6          | 0                      | 0                    | 6                    |
| Ogemaw                          | 1980 | 61         | 0                      | 2                    | 64                   |
|                                 | 1993 | 66         | 1                      | 0                    | 67                   |
|                                 | 2004 | 73         | 0                      | 0                    | 73                   |
| Osceola                         | 1980 | 24         | 0                      | 0                    | 24                   |
|                                 | 1993 | 21         | 0                      | 0                    | 21                   |
|                                 | 2004 | 22         | 0                      | 0                    | 22                   |
| Oscoda                          | 1980 | 44         | 0                      | 0                    | 44                   |
|                                 | 1993 | 42         | 0                      | 0                    | 42                   |
|                                 | 2004 | 54         | 0                      | 2                    | 56                   |
| Otsego                          | 1980 | 96         | 0                      | 0                    | 96                   |
|                                 | 1993 | 82         | 0                      | 0                    | 82                   |
|                                 | 2004 | 84         | 0                      | 1                    | 85                   |

| County                            | Year | Timberland | Reserved<br>Timberland | Other Forest<br>Land | Total Forest<br>Land |
|-----------------------------------|------|------------|------------------------|----------------------|----------------------|
| <b>Northern Lower Peninsula</b>   |      |            |                        |                      |                      |
| Presque Isle                      | 1980 | 65         | 2                      | 0                    | 67                   |
|                                   | 1993 | 66         | 1                      | 2                    | 69                   |
|                                   | 2004 | 88         | 0                      | 2                    | 90                   |
| Roscommon                         | 1980 | 161        | 0                      | 1                    | 162                  |
|                                   | 1993 | 168        | 2                      | 0                    | 170                  |
|                                   | 2004 | 176        | 0                      | 6                    | 182                  |
| Wexford                           | 1980 | 45         | 0                      | 0                    | 45                   |
|                                   | 1993 | 61         | 0                      | 0                    | 61                   |
|                                   | 2004 | 53         | 0                      | 2                    | 55                   |
| Northern Lower<br>Peninsula Total | 1980 | 1,788      | 5                      | 12                   | 1,805                |
|                                   | 1993 | 1,886      | 38                     | 8                    | 1,932                |
|                                   | 2004 | 1,887      | 6                      | 42                   | 1,934                |

| County       | Year | Timberland | Reserved<br>Timberland | Other Forest<br>Land | Total Forest<br>Land |
|--------------|------|------------|------------------------|----------------------|----------------------|
| <b>State</b> |      |            |                        |                      |                      |
| State        | 1980 | 3,571      | 141                    | 61                   | 3,773                |
|              | 1993 | 3,728      | 182                    | 35                   | 3,946                |
|              | 2004 | 4,027      | 82                     | 64                   | 4,172                |

Data Source: 1980 and 1993 data are derived from the Eastwide Forest Inventory datasets. 2004 data are derived from the 2004 FIA Snapshot dataset (<http://www.ncrs2.fs.fed.us/FIADatamart/fiadatamart.aspx>) which includes plots taken in 2000 to 2004.

**Table A5.5. Area (thousand acres) of softwood forest types for all owners, 1980, 1993, and 2004.**

| Year                            | Balsam fir | Black spruce | Jack pine | Northern white-cedar | Red pine | Tamarack | White Pine | White spruce | Other Softwoods |
|---------------------------------|------------|--------------|-----------|----------------------|----------|----------|------------|--------------|-----------------|
| <b>Western Upper Peninsula</b>  |            |              |           |                      |          |          |            |              |                 |
| 1980                            | 378        | 258          | 113       | 525                  | 81       | 60       | 53         | 82           | 2               |
| 1993                            | 355        | 263          | 103       | 542                  | 130      | 70       | 57         | 72           | 1               |
| 2004                            | 186        | 243          | 100       | 527                  | 115      | 95       | 67         | 72           | 110             |
| <b>Eastern Upper Peninsula</b>  |            |              |           |                      |          |          |            |              |                 |
| 1980                            | 142        | 163          | 209       | 387                  | 85       | 25       | 62         | 44           | 1               |
| 1993                            | 146        | 177          | 176       | 382                  | 127      | 33       | 58         | 42           | 3               |
| 2004                            | 114        | 183          | 185       | 423                  | 123      | 59       | 70         | 33           | 60              |
| <b>Northern Lower Peninsula</b> |            |              |           |                      |          |          |            |              |                 |
| 1980                            | 57         | 29           | 525       | 365                  | 386      | 32       | 67         | 13           | 67              |
| 1993                            | 63         | 25           | 439       | 417                  | 589      | 38       | 95         | 25           | 78              |
| 2004                            | 76         | 26           | 361       | 350                  | 557      | 38       | 115        | 29           | 116             |
| <b>Southern Lower Peninsula</b> |            |              |           |                      |          |          |            |              |                 |
| 1980                            | 0          | 0            | 12        | 17                   | 37       | 4        | 17         | 3            | 36              |
| 1993                            | 0          | 0            | 14        | 8                    | 52       | 8        | 25         | 9            | 34              |
| 2004                            | 0          | 0            | 8         | 7                    | 54       | 5        | 25         | 6            | 57              |
| <b>State</b>                    |            |              |           |                      |          |          |            |              |                 |
| 1980                            | 578        | 450          | 859       | 1,294                | 589      | 122      | 199        | 140          | 105             |
| 1993                            | 563        | 465          | 731       | 1,349                | 897      | 149      | 234        | 147          | 115             |
| 2004                            | 376        | 453          | 654       | 1,306                | 850      | 197      | 278        | 139          | 343             |

Data Source: 1980 and 1993 data are derived from the Eastwide Forest Inventory datasets. 2004 data are derived from the 2004 FIA Snapshot dataset (<http://www.ncrs2.fs.fed.us/FIADatamart/fiadatamart.aspx>) which includes plots taken in 2000 to 2004.

**Table A5.6. Area (thousand acres) of softwood forest types for State ownership, 1980, 1993, and 2004.**

| Year                            | Balsam fir | Black spruce | Jack pine | Northern white-cedar | Red pine | Tamarack | White Pine | White spruce | Other Soft-woods |
|---------------------------------|------------|--------------|-----------|----------------------|----------|----------|------------|--------------|------------------|
| <b>Western Upper Peninsula</b>  |            |              |           |                      |          |          |            |              |                  |
| 1980                            | 68         | 60           | 27        | 88                   | 9        | 17       | 13         | 8            | 0                |
| 1993                            | 54         | 53           | 26        | 105                  | 16       | 17       | 8          | 11           | 1                |
| 2004                            | 32         | 58           | 25        | 136                  | 15       | 29       | 12         | 10           | 5                |
| <b>Eastern Upper Peninsula</b>  |            |              |           |                      |          |          |            |              |                  |
| 1980                            | 44         | 78           | 105       | 140                  | 36       | 19       | 32         | 8            | 0                |
| 1993                            | 37         | 80           | 93        | 127                  | 43       | 12       | 24         | 10           | 0                |
| 2004                            | 28         | 82           | 93        | 143                  | 51       | 33       | 34         | 13           | 21               |
| <b>Northern Lower Peninsula</b> |            |              |           |                      |          |          |            |              |                  |
| 1980                            | 11         | 13           | 230       | 105                  | 104      | 12       | 24         | 0            | 0                |
| 1993                            | 22         | 10           | 207       | 131                  | 166      | 12       | 31         | 4            | 0                |
| 2004                            | 22         | 7            | 161       | 127                  | 165      | 14       | 26         | 7            | 5                |
| <b>Southern Lower Peninsula</b> |            |              |           |                      |          |          |            |              |                  |
| 1980                            | 0          | 0            | 3         | 0                    | 11       | 0        | 0          | 0            | 0                |
| 1993                            | 0          | 0            | 4         | 0                    | 14       | 0        | 0          | 0            | 3                |
| 2004                            | 0          | 0            | 0         | 0                    | 4        | 0        | 1          | 0            | 3                |
| <b>State</b>                    |            |              |           |                      |          |          |            |              |                  |
| 1980                            | 122        | 151          | 365       | 333                  | 160      | 48       | 70         | 16           | 0                |
| 1993                            | 113        | 143          | 329       | 363                  | 240      | 41       | 63         | 26           | 4                |
| 2004                            | 82         | 147          | 278       | 406                  | 235      | 76       | 74         | 30           | 32               |

Data Source: 1980 and 1993 data are derived from the Eastwide Forest Inventory datasets. 2004 data are derived from the 2004 FIA Snapshot dataset (<http://www.ncrs2.fs.fed.us/FIADatamart/fiadatamart.aspx>) which includes plots taken in 2000 to 2004.

**Table A5.7. Area (thousand acres) of hardwood forest types for all owners, 1980, 1993, and 2004.**

| Year                            | Aspen | Balsam poplar | Elm-Ash-Cottonwood | Maple-Beech-Birch | Oak Hickory | Paper birch | Other Hardwoods | Oak Pine | Non-stocked |
|---------------------------------|-------|---------------|--------------------|-------------------|-------------|-------------|-----------------|----------|-------------|
| <b>Western Upper Peninsula</b>  |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 852   | 62            | 282                | 2,637             | 41          | 166         | NA              | NA       | 15          |
| 1993                            | 835   | 75            | 287                | 2,743             | 43          | 127         | NA              | NA       | 8           |
| 2004                            | 817   | 104           | 224                | 2,750             | 63          | 125         | 0               | 60       | 28          |
| <b>Eastern Upper Peninsula</b>  |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 372   | 66            | 129                | 943               | 9           | 72          | NA              | NA       | 26          |
| 1993                            | 302   | 53            | 123                | 987               | 24          | 51          | NA              | NA       | 7           |
| 2004                            | 302   | 68            | 101                | 978               | 12          | 110         | 4               | 48       | 28          |
| <b>Northern Lower Peninsula</b> |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 1,576 | 60            | 423                | 1,683             | 1,022       | 118         | NA              | NA       | 27          |
| 1993                            | 1,312 | 54            | 474                | 2,048             | 1,126       | 99          | NA              | NA       | 17          |
| 2004                            | 1,233 | 81            | 435                | 1,798             | 1,179       | 67          | 11              | 342      | 56          |
| <b>Southern Lower Peninsula</b> |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 281   | 7             | 588                | 980               | 690         | 13          | NA              | NA       | 19          |
| 1993                            | 227   | 7             | 744                | 1,384             | 790         | 15          | NA              | NA       | 7           |
| 2004                            | 174   | 0             | 686                | 777               | 1,316       | 16          | 49              | 66       | 39          |
| <b>State</b>                    |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 3,081 | 194           | 1,421              | 6,243             | 1,762       | 369         | NA              | NA       | 87          |
| 1993                            | 2,676 | 190           | 1,627              | 7,161             | 1,982       | 292         | NA              | NA       | 39          |
| 2004                            | 2,527 | 254           | 1,447              | 6,304             | 2,571       | 317         | 64              | 517      | 151         |

Data Source: 1980 and 1993 data are derived from the Eastwide Forest Inventory datasets. 2004 data are derived from the 2004 FIA Snapshot dataset (<http://www.ncrs2.fs.fed.us/FIADatamart/fiadatamart.aspx>) which includes plots taken in 2000 to 2004.

**Table A5.8. Area (thousand acres) of hardwood forest types for State ownership, 1980, 1993, and 2004.**

| Year                            | Aspen | Balsam poplar | Elm-Ash-Cottonwood | Maple-Beech-Birch | Oak Hickory | Paper birch | Other Hardwoods | Oak Pine | Non-stocked |
|---------------------------------|-------|---------------|--------------------|-------------------|-------------|-------------|-----------------|----------|-------------|
| <b>Western Upper Peninsula</b>  |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 144   | 9             | 49                 | 235               | 8           | 27          | NA              | NA       | 2           |
| 1993                            | 146   | 13            | 36                 | 232               | 7           | 24          | NA              | NA       | 2           |
| 2004                            | 168   | 10            | 28                 | 252               | 13          | 15          | 0               | 12       | 5           |
| <b>Eastern Upper Peninsula</b>  |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 112   | 11            | 24                 | 184               | 2           | 27          | NA              | NA       | 14          |
| 1993                            | 89    | 7             | 36                 | 210               | 3           | 28          | NA              | NA       | 6           |
| 2004                            | 119   | 11            | 43                 | 228               | 5           | 38          | 2               | 22       | 13          |
| <b>Northern Lower Peninsula</b> |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 501   | 7             | 76                 | 398               | 272         | 25          | NA              | NA       | 11          |
| 1993                            | 391   | 8             | 103                | 473               | 302         | 18          | NA              | NA       | 8           |
| 2004                            | 416   | 5             | 92                 | 380               | 314         | 18          | 3               | 108      | 18          |
| <b>Southern Lower Peninsula</b> |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 30    | 0             | 36                 | 48                | 55          | 2           | NA              | NA       | 2           |
| 1993                            | 45    | 0             | 51                 | 54                | 110         | 6           | NA              | NA       | 0           |
| 2004                            | 22    | 0             | 71                 | 56                | 165         | 1           | 7               | 8        | 1           |
| <b>State</b>                    |       |               |                    |                   |             |             |                 |          |             |
| 1980                            | 786   | 26            | 184                | 865               | 336         | 81          | NA              | NA       | 29          |
| 1993                            | 671   | 28            | 226                | 969               | 422         | 75          | NA              | NA       | 16          |
| 2004                            | 725   | 26            | 234                | 915               | 497         | 72          | 13              | 149      | 36          |

Data Source: 1980 and 1993 data are derived from the Eastwide Forest Inventory datasets. 2004 data are derived from the 2004 FIA Snapshot dataset (<http://www.ncrs2.fs.fed.us/FIADatamart/fiadatamart.aspx>) which includes plots taken in 2000 to 2004.

Table Notes: The 1980 and 1993 inventories did not use type classifications of Oak Pine and Other Hardwoods.

**Table A5.9. Volume of all live trees (million cubic feet) on timberland, all ownerships, by forest type group and ecoregion, 2004.**

| <b>Forest type group</b> | <b>EUP</b>   | <b>NLP</b>    | <b>SLP</b>   | <b>WUP</b>   | <b>State</b>  |
|--------------------------|--------------|---------------|--------------|--------------|---------------|
| Aspen                    | 335          | 1,462         | 212          | 832          | 2,841         |
| Balsam fir               | 97           | 60            |              | 176          | 332           |
| Balsam poplar            | 78           | 73            |              | 64           | 215           |
| Black spruce             | 155          | 22            | 0            | 212          | 389           |
| Elm-Ash-Cottonwood       | 99           | 539           | 1,151        | 282          | 2,071         |
| Jack pine                | 170          | 289           | 7            | 94           | 560           |
| Maple-Beech-Birch        | 1,747        | 3,164         | 1,309        | 5,308        | 11,529        |
| Nonstocked               | 2            | 3             | 3            | 3            | 10            |
| Northern white-cedar     | 824          | 650           | 9            | 1,032        | 2,515         |
| Oak Hickory              | 15           | 1,672         | 2,395        | 93           | 4,174         |
| Oak Pine                 | 39           | 462           | 82           | 76           | 658           |
| Other Hardwoods          | 10           | 14            | 87           |              | 111           |
| Other Softwoods          | 147          | 139           | 96           | 250          | 632           |
| Paper birch              | 144          | 104           | 7            | 168          | 424           |
| Red pine                 | 209          | 1,272         | 131          | 242          | 1,853         |
| Tamarack                 | 44           | 28            | 1            | 89           | 162           |
| White Pine               | 143          | 240           | 65           | 179          | 627           |
| White spruce             | 48           | 28            | 14           | 91           | 181           |
| <b>Total</b>             | <b>4,303</b> | <b>10,221</b> | <b>5,568</b> | <b>9,191</b> | <b>29,283</b> |

**Table A5.10. Volume of all live trees (million cubic feet) on timberland, State ownership, by forest type group and ecoregion, 2004.**

| <b>Forest type group</b> | <b>EUP</b>   | <b>NLP</b>   | <b>SLP</b> | <b>WUP</b>   | <b>State</b> |
|--------------------------|--------------|--------------|------------|--------------|--------------|
| Aspen                    | 128          | 346          | 20         | 135          | 629          |
| Balsam fir               | 23           | 21           |            | 19           | 63           |
| Balsam poplar            | 11           | 4            |            | 6            | 21           |
| Black spruce             | 61           | 3            |            | 51           | 114          |
| Elm-Ash-Cottonwood       | 48           | 106          | 114        | 38           | 306          |
| Jack pine                | 87           | 122          | 0          | 22           | 230          |
| Maple-Beech-Birch        | 427          | 628          | 89         | 490          | 1,634        |
| Nonstocked               | 1            | 1            |            | 1            | 3            |
| Northern white-cedar     | 231          | 235          | 0          | 255          | 721          |
| Oak Hickory              | 5            | 326          | 285        | 24           | 641          |
| Oak Pine                 | 13           | 98           | 9          | 7            | 127          |
| Other Hardwoods          | 5            | 3            | 17         |              | 25           |
| Other Softwoods          | 47           | 3            | 2          | 12           | 64           |
| Paper birch              | 50           | 26           |            | 24           | 100          |
| Red pine                 | 86           | 386          | 17         | 41           | 530          |
| Tamarack                 | 31           | 9            |            | 36           | 76           |
| White Pine               | 59           | 44           | 5          | 38           | 146          |
| White spruce             | 18           | 11           |            | 17           | 46           |
| <b>Total</b>             | <b>1,330</b> | <b>2,373</b> | <b>560</b> | <b>1,214</b> | <b>5,477</b> |

**Table A5.11. Timberland, growing stock volume, growth and removals from State-owned land as a percent of all ownerships, 2004.**

| <b>Forest Type</b>   | <b>Timberland</b> | <b>Volume</b> | <b>Growth</b> | <b>Removals</b> |
|----------------------|-------------------|---------------|---------------|-----------------|
| Jack pine            | 43%               | 41%           | 52%           | 74%             |
| Tamarack             | 39%               | 47%           | 39%           | 0%              |
| Black spruce         | 32%               | 29%           | 28%           | 18%             |
| Northern white-cedar | 31%               | 29%           | 14%           | 0%              |
| Oak Pine             | 29%               | 19%           | 15%           | 70%             |
| Aspen                | 29%               | 22%           | 32%           | 31%             |
| Red pine             | 28%               | 29%           | 22%           | 24%             |
| White Pine           | 27%               | 23%           | 19%           | 42%             |
| Nonstocked           | 24%               | 33%           | 71%           | 78%             |
| Paper birch          | 23%               | 24%           | 6%            | 0%              |
| Balsam fir           | 22%               | 19%           | 7%            | 81%             |
| White spruce         | 22%               | 26%           | 32%           | 0%              |
| All Types            | 21%               | 19%           | 18%           | 20%             |
| Oak Hickory          | 19%               | 15%           | 12%           | 26%             |
| Elm-Ash-Cottonwood   | 16%               | 15%           | 8%            | 7%              |
| Maple-Beech-Birch    | 15%               | 14%           | 15%           | 15%             |
| Balsam poplar        | 10%               | 10%           | 23%           | 0%              |

Data source: USDA Forest Service 2004 FIA inventory.

**Table A5.12. Pulpwood production (thousand cords) by species group and ecoregion, 1980 to 2004.**

| <b>Western Upper Peninsula</b> |              |              |             |                   |                       |                       |                     |
|--------------------------------|--------------|--------------|-------------|-------------------|-----------------------|-----------------------|---------------------|
| <b>Year</b>                    | <b>Aspen</b> | <b>Birch</b> | <b>Pine</b> | <b>Hard Maple</b> | <b>Mixed Hardwood</b> | <b>Mixed Softwood</b> | <b>Total Volume</b> |
| 1980                           | 302          | 38           | 59          | 98                | 155                   | 173                   | 826                 |
| 1981                           | 279          | 41           | 47          | 70                | 134                   | 158                   | 730                 |
| 1982                           | 298          | 37           | 63          | 57                | 133                   | 203                   | 791                 |
| 1983                           | 330          | 59           | 75          | 77                | 140                   | 193                   | 874                 |
| 1984                           | 298          | 43           | 94          | 87                | 173                   | 181                   | 875                 |
| 1985                           | 340          | 45           | 78          | 67                | 148                   | 216                   | 895                 |
| 1986                           | 338          | 103          | 81          | 182               | 260                   | 222                   | 1,185               |
| 1987                           | 274          | 112          | 79          | 178               | 266                   | 236                   | 1,145               |
| 1988                           | 402          | 122          | 113         | 185               | 274                   | 197                   | 1,293               |
| 1989                           | 459          | 121          | 76          | 201               | 293                   | 251                   | 1,400               |
| 1990                           | 513          | 107          | 124         | 191               | 247                   | 163                   | 1,344               |
| 1991                           | 503          | 100          | 123         | 242               | 226                   | 154                   | 1,347               |
| 1992                           | 490          | 98           | 152         | 239               | 234                   | 141                   | 1,353               |
| 1993                           | 491          | 99           | 142         | 221               | 223                   | 145                   | 1,321               |
| 1994                           | 476          | 94           | 117         | 255               | 281                   | 162                   | 1,386               |
| 1995                           | 474          | 81           | 129         | 285               | 262                   | 156                   | 1,386               |
| 1996                           | 415          | 109          | 125         | 289               | 302                   | 168                   | 1,407               |
| 1997                           | 413          | 80           | 112         | 306               | 302                   | 136                   | 1,349               |
| 1998                           | 387          | 50           | 90          | 244               | 358                   | 151                   | 1,281               |
| 1999                           | 364          | 38           | 99          | 276               | 385                   | 152                   | 1,315               |
| 2000                           | 380          | 87           | 92          | 246               | 362                   | 156                   | 1,323               |
| 2001                           | 368          | 57           | 84          | 197               | 285                   | 164                   | 1,154               |
| 2002                           | 336          | 52           | 57          | 227               | 283                   | 149                   | 1,104               |
| 2003                           | 364          | 56           | 46          | 206               | 307                   | 153                   | 1,132               |
| 2004                           | 364          | 60           | 55          | 240               | 316                   | 173                   | 1,208               |
| <b>Eastern Upper Peninsula</b> |              |              |             |                   |                       |                       |                     |
| <b>Year</b>                    | <b>Aspen</b> | <b>Birch</b> | <b>Pine</b> | <b>Hard Maple</b> | <b>Mixed Hardwood</b> | <b>Mixed Softwood</b> | <b>Total Volume</b> |
| 1980                           | 36           | 6            | 48          | 18                | 28                    | 73                    | 210                 |
| 1981                           | 36           | 13           | 34          | 16                | 42                    | 59                    | 201                 |
| 1982                           | 33           | 6            | 47          | 10                | 30                    | 62                    | 188                 |
| 1983                           | 55           | 11           | 56          | 13                | 37                    | 73                    | 245                 |
| 1984                           | 62           | 12           | 67          | 18                | 45                    | 66                    | 270                 |
| 1985                           | 77           | 11           | 62          | 23                | 54                    | 76                    | 304                 |
| 1986                           | 53           | 20           | 63          | 41                | 98                    | 87                    | 362                 |
| 1987                           | 45           | 17           | 50          | 61                | 85                    | 85                    | 342                 |
| 1988                           | 55           | 26           | 48          | 58                | 96                    | 93                    | 376                 |
| 1989                           | 103          | 31           | 32          | 50                | 93                    | 103                   | 412                 |
| 1990                           | 132          | 25           | 52          | 46                | 73                    | 64                    | 392                 |
| 1991                           | 135          | 24           | 62          | 70                | 82                    | 84                    | 458                 |
| 1992                           | 149          | 26           | 88          | 61                | 73                    | 72                    | 469                 |

|      |     |    |     |     |     |    |     |
|------|-----|----|-----|-----|-----|----|-----|
| 1993 | 132 | 25 | 106 | 74  | 86  | 84 | 507 |
| 1994 | 126 | 30 | 80  | 97  | 98  | 97 | 527 |
| 1995 | 136 | 22 | 113 | 100 | 97  | 68 | 537 |
| 1996 | 118 | 38 | 101 | 82  | 88  | 63 | 490 |
| 1997 | 91  | 29 | 108 | 99  | 100 | 49 | 476 |
| 1998 | 111 | 17 | 86  | 68  | 104 | 54 | 440 |
| 1999 | 118 | 10 | 78  | 73  | 105 | 50 | 433 |
| 2000 | 92  | 24 | 81  | 59  | 95  | 42 | 393 |
| 2001 | 96  | 23 | 87  | 70  | 112 | 62 | 451 |
| 2002 | 112 | 24 | 51  | 81  | 135 | 54 | 458 |
| 2003 | 100 | 24 | 43  | 78  | 132 | 46 | 424 |
| 2004 | 94  | 22 | 44  | 77  | 128 | 55 | 420 |

**Northern Lower Peninsula**

| Year | Aspen | Birch | Pine | Hard Maple | Mixed Hardwood | Mixed Softwood | Total Volume |
|------|-------|-------|------|------------|----------------|----------------|--------------|
| 1980 | 364   | 34    | 122  | 7          | 187            | 9              | 723          |
| 1981 | 339   | 24    | 117  | 13         | 171            | 7              | 671          |
| 1982 | 317   | 19    | 115  | 4          | 118            | 5              | 579          |
| 1983 | 516   | 25    | 101  | 5          | 132            | 8              | 787          |
| 1984 | 614   | 24    | 104  | 38         | 205            | 4              | 989          |
| 1985 | 563   | 19    | 146  | 33         | 171            | 2              | 934          |
| 1986 | 585   | 29    | 142  | 10         | 219            | 7              | 992          |
| 1987 | 572   | 33    | 139  | 15         | 186            | 4              | 950          |
| 1988 | 541   | 36    | 111  | 22         | 189            | 7              | 906          |
| 1989 | 533   | 51    | 130  | 28         | 210            | 6              | 958          |
| 1990 | 492   | 41    | 113  | 29         | 221            | 6              | 901          |
| 1991 | 481   | 39    | 110  | 30         | 218            | 7              | 885          |
| 1992 | 444   | 34    | 109  | 26         | 147            | 5              | 765          |
| 1993 | 521   | 50    | 115  | 39         | 246            | 5              | 976          |
| 1994 | 514   | 47    | 131  | 49         | 253            | 5              | 999          |
| 1995 | 410   | 39    | 107  | 35         | 209            | 4              | 805          |
| 1996 | 394   | 33    | 139  | 47         | 206            | 5              | 824          |
| 1997 | 512   | 34    | 161  | 113        | 298            | 5              | 1,123        |
| 1998 | 382   | 31    | 118  | 51         | 220            | 5              | 808          |
| 1999 | 357   | 28    | 105  | 58         | 202            | 10             | 760          |
| 2000 | 358   | 40    | 105  | 62         | 230            | 9              | 804          |
| 2001 | 360   | 28    | 104  | 56         | 203            | 8              | 759          |
| 2002 | 392   | 26    | 72   | 63         | 250            | 6              | 810          |
| 2003 | 406   | 23    | 97   | 56         | 246            | 17             | 846          |
| 2004 | 396   | 26    | 147  | 64         | 250            | 25             | 909          |

**State**

| Year | Aspen | Birch | Pine | Hard Maple | Mixed Hardwood | Mixed Softwood | Total Volume |
|------|-------|-------|------|------------|----------------|----------------|--------------|
| 1980 | 724   | 79    | 250  | 124        | 383            | 256            | 1,815        |
| 1981 | 683   | 80    | 217  | 99         | 369            | 224            | 1,672        |
| 1982 | 664   | 63    | 243  | 72         | 318            | 269            | 1,630        |

|      |       |     |     |     |     |     |       |
|------|-------|-----|-----|-----|-----|-----|-------|
| 1983 | 929   | 96  | 240 | 95  | 350 | 274 | 1,984 |
| 1984 | 999   | 79  | 267 | 145 | 465 | 251 | 2,208 |
| 1985 | 1,010 | 76  | 287 | 124 | 421 | 294 | 2,213 |
| 1986 | 1,010 | 152 | 287 | 234 | 617 | 316 | 2,614 |
| 1987 | 926   | 163 | 268 | 255 | 580 | 326 | 2,518 |
| 1988 | 1,043 | 185 | 272 | 265 | 602 | 296 | 2,663 |
| 1989 | 1,136 | 204 | 238 | 280 | 636 | 360 | 2,853 |
| 1990 | 1,176 | 173 | 290 | 266 | 580 | 233 | 2,717 |
| 1991 | 1,158 | 163 | 296 | 343 | 559 | 244 | 2,763 |
| 1992 | 1,109 | 159 | 349 | 327 | 488 | 217 | 2,649 |
| 1993 | 1,184 | 177 | 363 | 342 | 609 | 234 | 2,909 |
| 1994 | 1,153 | 175 | 329 | 402 | 690 | 264 | 3,013 |
| 1995 | 1,057 | 145 | 349 | 424 | 630 | 228 | 2,834 |
| 1996 | 971   | 182 | 366 | 424 | 650 | 236 | 2,828 |
| 1997 | 1,082 | 146 | 384 | 530 | 769 | 189 | 3,099 |
| 1998 | 930   | 99  | 298 | 368 | 757 | 211 | 2,662 |
| 1999 | 889   | 78  | 284 | 417 | 753 | 212 | 2,632 |
| 2000 | 868   | 152 | 279 | 378 | 748 | 209 | 2,633 |
| 2001 | 855   | 109 | 278 | 327 | 643 | 234 | 2,446 |
| 2002 | 866   | 104 | 183 | 374 | 714 | 210 | 2,451 |
| 2003 | 906   | 104 | 187 | 344 | 738 | 217 | 2,497 |
| 2004 | 894   | 110 | 250 | 388 | 762 | 254 | 2,658 |

**Table A5.13. Pulpwood volume sold from DNR lands and average bid price, by species group and region, 1986 to 2005.**

| <b>Aspen</b>       |                                    |            |            |            |                                   |            |            |            |
|--------------------|------------------------------------|------------|------------|------------|-----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b> | <b>Pulpwood volume sold, Cords</b> |            |            |            | <b>Average bid price, \$/cord</b> |            |            |            |
|                    | <b>State</b>                       | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                      | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986               | 170,887                            | 8,383      | 112,582    | 49,921     | \$10.40                           | \$3.83     | \$12.48    | \$6.81     |
| 1987               | 171,215                            | 15,603     | 103,650    | 51,962     | \$8.83                            | \$4.94     | \$10.75    | \$6.18     |
| 1988               | 300,764                            | 13,325     | 163,633    | 123,806    | \$9.63                            | \$4.16     | \$12.06    | \$7.01     |
| 1989               | 215,908                            | 14,627     | 109,592    | 91,688     | \$10.02                           | \$5.07     | \$11.85    | \$8.64     |
| 1990               | 194,690                            | 17,952     | 87,114     | 89,625     | \$11.38                           | \$5.54     | \$12.99    | \$10.98    |
| 1991               | 174,529                            | 12,700     | 92,256     | 69,573     | \$12.74                           | \$8.14     | \$13.18    | \$13.00    |
| 1992               | 187,443                            | 20,643     | 87,806     | 78,994     | \$13.59                           | \$8.07     | \$14.43    | \$14.11    |
| 1993               | 189,662                            | 16,747     | 104,826    | 68,089     | \$15.76                           | \$12.45    | \$15.59    | \$16.83    |
| 1994               | 157,348                            | 14,525     | 77,634     | 65,188     | \$21.32                           | \$17.83    | \$21.74    | \$21.59    |
| 1995               | 169,831                            | 25,347     | 80,118     | 64,366     | \$22.73                           | \$18.69    | \$22.11    | \$25.11    |
| 1996               | 175,027                            | 15,640     | 97,422     | 61,964     | \$21.46                           | \$18.70    | \$19.88    | \$24.66    |
| 1997               | 156,060                            | 11,588     | 87,981     | 56,491     | \$23.53                           | \$19.80    | \$21.00    | \$28.25    |
| 1998               | 173,219                            | 26,057     | 83,195     | 63,967     | \$23.69                           | \$17.75    | \$21.43    | \$29.04    |
| 1999               | 143,142                            | 10,318     | 76,385     | 56,440     | \$22.37                           | \$15.70    | \$20.84    | \$25.67    |
| 2000               | 138,179                            | 10,076     | 84,294     | 43,809     | \$23.73                           | \$17.82    | \$22.05    | \$28.32    |
| 2001               | 121,881                            | 7,090      | 68,868     | 45,923     | \$26.04                           | \$19.52    | \$24.34    | \$29.59    |
| 2002               | 135,863                            | 8,129      | 66,203     | 61,531     | \$26.16                           | \$21.56    | \$24.28    | \$28.78    |
| 2003               | 120,577                            | 11,176     | 62,942     | 46,460     | \$24.52                           | \$25.38    | \$23.13    | \$26.19    |
| 2004               | 130,410                            | 10,923     | 75,433     | 44,055     | \$26.21                           | \$22.44    | \$21.97    | \$34.40    |
| 2005               | 160,585                            | 11,897     | 81,546     | 67,143     | \$34.23                           | \$34.42    | \$26.86    | \$43.16    |

| <b>Red Pine</b>    |                                    |            |            |            |                                   |            |            |            |
|--------------------|------------------------------------|------------|------------|------------|-----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b> | <b>Pulpwood volume sold, Cords</b> |            |            |            | <b>Average bid price, \$/cord</b> |            |            |            |
|                    | <b>State</b>                       | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                      | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986               | 12,121                             | 2,104      | 9,507      | 510        | \$8.21                            | \$14.78    | \$6.51     | \$12.72    |
| 1987               | 26,273                             | 2,748      | 23,334     | 191        | \$8.03                            | \$13.53    | \$7.41     | \$4.50     |
| 1988               | 20,872                             | 5,907      | 14,952     | 14         | \$11.44                           | \$12.14    | \$11.16    | \$8.59     |
| 1989               | 26,374                             | 6,214      | 19,856     | 304        | \$11.77                           | \$15.97    | \$10.50    | \$8.65     |
| 1990               | 21,537                             | 5,815      | 15,105     | 617        | \$13.12                           | \$17.38    | \$11.36    | \$15.93    |
| 1991               | 28,614                             | 2,003      | 25,591     | 1,020      | \$14.61                           | \$14.63    | \$14.41    | \$19.40    |
| 1992               | 27,475                             | 2,864      | 23,874     | 737        | \$18.51                           | \$15.56    | \$18.76    | \$21.69    |
| 1993               | 29,539                             | 2,300      | 25,795     | 1,443      | \$20.70                           | \$12.69    | \$21.57    | \$18.00    |
| 1994               | 42,073                             | 10,002     | 31,623     | 449        | \$29.05                           | \$35.42    | \$27.09    | \$24.83    |
| 1995               | 29,576                             | 2,521      | 26,745     | 310        | \$32.81                           | \$31.37    | \$33.15    | \$15.22    |
| 1996               | 39,281                             | 3,175      | 32,221     | 3,885      | \$28.02                           | \$28.02    | \$27.29    | \$34.10    |
| 1997               | 43,143                             | 2,958      | 37,297     | 2,888      | \$32.40                           | \$29.42    | \$31.87    | \$42.30    |
| 1998               | 44,074                             | 8,674      | 34,527     | 873        | \$38.41                           | \$39.64    | \$38.09    | \$38.98    |
| 1999               | 42,376                             | 4,265      | 36,717     | 1,394      | \$38.82                           | \$36.71    | \$39.03    | \$39.65    |
| 2000               | 46,480                             | 7,942      | 37,253     | 1,285      | \$47.06                           | \$51.86    | \$46.21    | \$42.07    |
| 2001               | 46,091                             | 5,459      | 38,371     | 2,261      | \$55.15                           | \$56.51    | \$54.91    | \$55.88    |

|      |        |        |        |       |         |         |         |         |
|------|--------|--------|--------|-------|---------|---------|---------|---------|
| 2002 | 43,156 | 3,485  | 36,291 | 3,380 | \$52.32 | \$64.29 | \$50.79 | \$56.42 |
| 2003 | 48,108 | 4,088  | 43,615 | 405   | \$47.33 | \$61.63 | \$46.06 | \$40.49 |
| 2004 | 53,894 | 10,713 | 41,035 | 2,145 | \$57.99 | \$67.09 | \$56.02 | \$50.22 |
| 2005 | 62,266 | 11,169 | 48,527 | 2,571 | \$63.84 | \$73.95 | \$61.80 | \$58.41 |

| <b>Jack Pine</b>   |                                    |            |            |            |                                   |            |            |            |
|--------------------|------------------------------------|------------|------------|------------|-----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b> | <b>Pulpwood volume sold, Cords</b> |            |            |            | <b>Average bid price, \$/cord</b> |            |            |            |
|                    | <b>State</b>                       | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                      | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986               | 94,044                             | 24,357     | 60,746     | 8,941      | \$8.44                            | \$7.82     | \$7.69     | \$15.23    |
| 1987               | 91,445                             | 33,875     | 44,478     | 13,092     | \$8.13                            | \$7.40     | \$6.82     | \$14.43    |
| 1988               | 119,929                            | 40,557     | 59,828     | 19,544     | \$9.34                            | \$7.71     | \$8.52     | \$15.25    |
| 1989               | 105,761                            | 31,106     | 61,722     | 12,932     | \$11.07                           | \$10.86    | \$9.54     | \$18.85    |
| 1990               | 77,557                             | 31,172     | 31,570     | 14,815     | \$12.93                           | \$13.68    | \$9.25     | \$19.17    |
| 1991               | 93,898                             | 13,681     | 64,767     | 15,450     | \$12.02                           | \$13.58    | \$9.70     | \$20.34    |
| 1992               | 126,099                            | 41,927     | 58,586     | 25,586     | \$14.80                           | \$16.01    | \$10.59    | \$22.47    |
| 1993               | 128,949                            | 36,350     | 76,623     | 15,975     | \$14.93                           | \$18.31    | \$10.16    | \$30.12    |
| 1994               | 111,724                            | 29,208     | 64,931     | 17,585     | \$22.42                           | \$28.96    | \$15.95    | \$35.46    |
| 1995               | 104,820                            | 40,478     | 47,233     | 17,109     | \$26.37                           | \$32.30    | \$16.34    | \$40.02    |
| 1996               | 117,869                            | 40,299     | 59,023     | 18,546     | \$25.31                           | \$33.37    | \$15.48    | \$39.11    |
| 1997               | 142,018                            | 55,347     | 67,690     | 18,982     | \$31.83                           | \$43.48    | \$18.49    | \$45.39    |
| 1998               | 129,906                            | 54,249     | 58,567     | 17,090     | \$32.50                           | \$39.31    | \$21.67    | \$47.99    |
| 1999               | 67,580                             | 18,013     | 40,513     | 9,054      | \$27.20                           | \$39.50    | \$17.32    | \$46.99    |
| 2000               | 112,084                            | 35,099     | 68,740     | 8,245      | \$34.16                           | \$48.34    | \$24.87    | \$51.28    |
| 2001               | 80,390                             | 25,562     | 48,030     | 6,799      | \$37.45                           | \$57.55    | \$24.15    | \$55.85    |
| 2002               | 127,881                            | 29,388     | 82,231     | 16,262     | \$37.89                           | \$60.49    | \$25.58    | \$59.34    |
| 2003               | 82,105                             | 25,082     | 47,454     | 9,569      | \$39.93                           | \$58.38    | \$26.44    | \$58.45    |
| 2004               | 114,217                            | 32,071     | 68,959     | 13,187     | \$40.07                           | \$55.24    | \$28.76    | \$62.31    |
| 2005               | 112,201                            | 38,854     | 63,447     | 9,901      | \$48.43                           | \$67.25    | \$32.01    | \$79.72    |

| <b>Mixed Hardwood</b> |                                    |            |            |            |                                   |            |            |            |
|-----------------------|------------------------------------|------------|------------|------------|-----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b>    | <b>Pulpwood volume sold, Cords</b> |            |            |            | <b>Average bid price, \$/cord</b> |            |            |            |
|                       | <b>State</b>                       | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                      | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986                  | 181,933                            | 15,579     | 125,700    | 40,653     | \$9.80                            | \$3.36     | \$12.24    | \$4.71     |
| 1987                  | 175,195                            | 24,855     | 104,838    | 45,502     | \$8.58                            | \$4.83     | \$11.05    | \$4.93     |
| 1988                  | 277,659                            | 19,793     | 179,304    | 78,562     | \$9.14                            | \$5.46     | \$11.05    | \$5.72     |
| 1989                  | 180,660                            | 15,415     | 111,677    | 53,568     | \$9.61                            | \$4.73     | \$11.44    | \$7.21     |
| 1990                  | 172,214                            | 14,852     | 91,334     | 66,028     | \$9.75                            | \$5.40     | \$10.76    | \$9.34     |
| 1991                  | 183,165                            | 18,747     | 98,973     | 65,444     | \$10.50                           | \$6.45     | \$11.13    | \$10.70    |
| 1992                  | 179,034                            | 16,279     | 96,443     | 66,311     | \$12.16                           | \$7.95     | \$13.23    | \$11.64    |
| 1993                  | 196,853                            | 19,310     | 111,154    | 66,389     | \$13.71                           | \$10.17    | \$14.70    | \$13.09    |
| 1994                  | 179,092                            | 16,000     | 106,815    | 56,277     | \$19.19                           | \$16.50    | \$18.05    | \$22.12    |
| 1995                  | 185,035                            | 27,047     | 102,144    | 55,844     | \$18.65                           | \$17.87    | \$16.81    | \$22.40    |
| 1996                  | 186,369                            | 21,312     | 104,564    | 60,493     | \$15.91                           | \$15.29    | \$14.20    | \$19.09    |
| 1997                  | 193,639                            | 17,300     | 115,490    | 60,849     | \$16.04                           | \$15.42    | \$13.48    | \$21.07    |
| 1998                  | 201,020                            | 33,336     | 106,442    | 61,243     | \$15.84                           | \$14.65    | \$13.64    | \$20.33    |

|      |         |        |         |        |         |         |         |         |
|------|---------|--------|---------|--------|---------|---------|---------|---------|
| 1999 | 200,981 | 27,687 | 120,064 | 53,230 | \$13.03 | \$10.97 | \$11.66 | \$17.20 |
| 2000 | 217,804 | 28,147 | 131,346 | 58,311 | \$15.65 | \$11.91 | \$15.86 | \$16.98 |
| 2001 | 172,800 | 22,349 | 101,469 | 48,982 | \$17.19 | \$13.02 | \$16.48 | \$20.58 |
| 2002 | 203,861 | 15,128 | 114,306 | 74,427 | \$15.12 | \$10.48 | \$14.59 | \$16.89 |
| 2003 | 180,871 | 21,837 | 91,196  | 67,838 | \$15.43 | \$14.36 | \$14.07 | \$17.60 |
| 2004 | 206,866 | 37,696 | 122,382 | 46,788 | \$17.98 | \$18.46 | \$15.96 | \$22.86 |
| 2005 | 226,380 | 27,023 | 121,310 | 78,046 | \$27.17 | \$30.95 | \$24.63 | \$29.80 |

| <b>Mixed Softwood</b> |                                    |            |            |            |                                   |            |            |            |
|-----------------------|------------------------------------|------------|------------|------------|-----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b>    | <b>Pulpwood volume sold, Cords</b> |            |            |            | <b>Average bid price, \$/cord</b> |            |            |            |
|                       | <b>State</b>                       | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                      | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986                  | 52,639                             | 8,095      | 8,730      | 35,814     | \$6.14                            | \$4.65     | \$4.66     | \$6.83     |
| 1987                  | 59,349                             | 14,631     | 8,111      | 36,608     | \$5.64                            | \$5.26     | \$3.93     | \$6.17     |
| 1988                  | 73,515                             | 12,484     | 12,616     | 48,415     | \$5.99                            | \$5.41     | \$4.77     | \$6.45     |
| 1989                  | 59,348                             | 8,863      | 12,284     | 38,201     | \$6.94                            | \$5.21     | \$6.58     | \$7.46     |
| 1990                  | 70,245                             | 11,210     | 18,983     | 40,053     | \$7.37                            | \$6.85     | \$4.16     | \$9.03     |
| 1991                  | 52,342                             | 9,678      | 10,609     | 32,054     | \$9.39                            | \$7.79     | \$7.40     | \$10.53    |
| 1992                  | 61,211                             | 17,041     | 7,845      | 36,325     | \$9.97                            | \$10.32    | \$6.65     | \$10.52    |
| 1993                  | 55,599                             | 12,562     | 12,770     | 30,267     | \$11.93                           | \$12.02    | \$6.84     | \$14.05    |
| 1994                  | 50,181                             | 11,089     | 10,186     | 28,906     | \$16.86                           | \$18.62    | \$13.37    | \$17.41    |
| 1995                  | 49,934                             | 18,458     | 6,821      | 24,654     | \$20.44                           | \$21.05    | \$10.94    | \$22.62    |
| 1996                  | 54,534                             | 17,332     | 10,414     | 26,788     | \$18.98                           | \$17.78    | \$17.32    | \$20.40    |
| 1997                  | 43,202                             | 11,646     | 6,261      | 25,296     | \$20.39                           | \$25.49    | \$7.72     | \$21.17    |
| 1998                  | 49,281                             | 21,160     | 5,384      | 22,737     | \$21.37                           | \$22.14    | \$8.94     | \$23.59    |
| 1999                  | 33,276                             | 7,534      | 5,961      | 19,781     | \$17.54                           | \$15.66    | \$9.58     | \$20.65    |
| 2000                  | 34,171                             | 10,407     | 6,239      | 17,525     | \$19.96                           | \$15.27    | \$15.20    | \$24.44    |
| 2001                  | 45,398                             | 12,336     | 9,581      | 23,481     | \$25.25                           | \$26.94    | \$12.87    | \$29.40    |
| 2002                  | 44,224                             | 8,095      | 9,669      | 26,460     | \$23.07                           | \$24.83    | \$15.39    | \$25.33    |
| 2003                  | 36,066                             | 9,498      | 8,087      | 18,481     | \$23.82                           | \$31.14    | \$10.97    | \$25.69    |
| 2004                  | 39,512                             | 11,383     | 10,830     | 17,300     | \$26.73                           | \$29.84    | \$13.02    | \$33.26    |
| 2005                  | 42,579                             | 11,569     | 10,157     | 20,853     | \$37.84                           | \$38.50    | \$12.51    | \$49.82    |

Pulpwood species are grouped as follows for this report: aspen (quaking aspen, bigtooth aspen, mixed aspen, and balsam poplar), mixed hardwoods (red maple, butternut, white oak, basswood, sugar maple, paper birch, mixed oak, mixed hardwood, red oak, white ash, willow, black cherry, red elm, yellow birch, black ash, beech, american elm, ironwood, and cottonwood), mixed softwoods (white pine, european larch, norway spruce, austrian pine, mixed softwood, mixed pine, balsam fir, black spruce, northern white cedar, white spruce, hemlock, tamarack, and scotch pine). Red pine and jack pine are reported separately.

**Table A5.14. Sawlog volume sold from DNR lands and average bid price, by species group and region, 1986 to 2005.**

| <b>Aspen</b>       |                                |            |            |            |                                  |            |            |            |
|--------------------|--------------------------------|------------|------------|------------|----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b> | <b>Sawlog volume sold, MBF</b> |            |            |            | <b>Average bid price, \$/MBF</b> |            |            |            |
|                    | <b>State</b>                   | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                     | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986               | 7,861                          | 7          | 7,800      | 54         | \$40.93                          | \$12.00    | \$41.17    | \$8.95     |
| 1987               | 7,487                          |            | 7,415      | 72         | \$34.19                          |            | \$34.42    | \$10.38    |
| 1988               | 16,639                         |            | 16,473     | 166        | \$34.33                          |            | \$34.45    | \$21.71    |
| 1989               | 11,651                         | 2          | 11,367     | 282        | \$34.82                          | \$9.00     | \$35.13    | \$22.65    |
| 1990               | 7,382                          | 1          | 7,313      | 68         | \$44.94                          | \$15.00    | \$45.18    | \$19.65    |
| 1991               | 8,759                          |            | 8,405      | 355        | \$38.14                          |            | \$38.54    | \$28.62    |
| 1992               | 9,048                          | 17         | 8,735      | 297        | \$39.20                          | \$23.76    | \$39.38    | \$34.54    |
| 1993               | 9,410                          | 27         | 8,884      | 499        | \$49.96                          | \$31.56    | \$52.22    | \$10.83    |
| 1994               | 6,112                          | 13         | 6,031      | 69         | \$91.33                          | \$24.00    | \$92.03    | \$43.00    |
| 1995               | 7,017                          | 6          | 7,008      | 3          | \$106.46                         | \$23.46    | \$106.57   | \$35.74    |
| 1996               | 11,202                         | 0          | 11,106     | 95         | \$89.63                          | \$17.00    | \$90.03    | \$43.09    |
| 1997               | 9,470                          | 4          | 9,440      | 26         | \$89.39                          | \$33.00    | \$89.50    | \$60.95    |
| 1998               | 10,378                         |            | 10,330     | 47         | \$98.00                          |            | \$98.26    | \$40.63    |
| 1999               | 11,183                         |            | 11,183     |            | \$97.14                          |            | \$97.14    |            |
| 2000               | 10,833                         |            | 10,806     | 27         | \$99.05                          |            | \$99.19    | \$40.00    |
| 2001               | 8,076                          |            | 8,076      |            | \$122.44                         |            | \$122.44   |            |
| 2002               | 6,389                          |            | 6,389      |            | \$105.72                         |            | \$105.72   |            |
| 2003               | 7,254                          |            | 7,254      |            | \$104.80                         |            | \$104.80   |            |
| 2004               | 11,825                         |            | 11,825     |            | \$97.77                          |            | \$97.77    |            |
| 2005               | 9,013                          |            | 9,013      |            | \$116.89                         |            | \$116.89   |            |

| <b>Basswood</b>    |                                |            |            |            |                                  |            |            |            |
|--------------------|--------------------------------|------------|------------|------------|----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b> | <b>Sawlog volume sold, MBF</b> |            |            |            | <b>Average bid price, \$/MBF</b> |            |            |            |
|                    | <b>State</b>                   | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                     | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986               | 580                            | 1          | 499        | 80         | \$96.20                          | \$26.29    | \$99.23    | \$78.43    |
| 1987               | 650                            | 5          | 517        | 129        | \$76.44                          | \$34.92    | \$77.74    | \$72.81    |
| 1988               | 532                            | 1          | 336        | 196        | \$88.93                          | \$27.00    | \$86.07    | \$94.02    |
| 1989               | 880                            | 2          | 726        | 152        | \$92.75                          | \$31.57    | \$88.98    | \$111.66   |
| 1990               | 750                            | 1          | 686        | 64         | \$113.18                         | \$16.00    | \$112.36   | \$123.56   |
| 1991               | 1,177                          | 8          | 651        | 519        | \$127.62                         | \$56.29    | \$119.21   | \$139.28   |
| 1992               | 966                            | 17         | 604        | 346        | \$131.25                         | \$52.40    | \$112.75   | \$167.38   |
| 1993               | 867                            | 41         | 589        | 238        | \$160.40                         | \$126.14   | \$157.67   | \$173.06   |
| 1994               | 1,390                          | 19         | 959        | 412        | \$229.98                         | \$177.01   | \$215.01   | \$267.28   |
| 1995               | 1,139                          | 28         | 741        | 371        | \$206.19                         | \$178.39   | \$186.82   | \$247.03   |
| 1996               | 1,409                          | 66         | 1,020      | 324        | \$155.83                         | \$180.85   | \$133.98   | \$219.57   |
| 1997               | 2,194                          | 9          | 1,595      | 590        | \$161.39                         | \$147.36   | \$147.70   | \$198.59   |
| 1998               | 1,938                          | 110        | 1,108      | 721        | \$162.92                         | \$155.32   | \$131.89   | \$211.80   |
| 1999               | 2,217                          | 62         | 1,583      | 573        | \$143.96                         | \$193.47   | \$132.73   | \$169.64   |
| 2000               | 2,358                          | 37         | 1,989      | 332        | \$170.04                         | \$105.01   | \$166.17   | \$200.44   |

|      |       |     |       |       |          |          |          |          |
|------|-------|-----|-------|-------|----------|----------|----------|----------|
| 2001 | 1,815 | 58  | 1,483 | 274   | \$158.55 | \$92.99  | \$152.64 | \$204.43 |
| 2002 | 2,938 | 6   | 2,027 | 905   | \$157.67 | \$86.51  | \$143.15 | \$190.64 |
| 2003 | 2,465 | 50  | 1,766 | 649   | \$138.79 | \$118.28 | \$129.53 | \$165.54 |
| 2004 | 2,162 | 360 | 1,201 | 601   | \$130.08 | \$128.51 | \$113.87 | \$163.43 |
| 2005 | 2,955 | 17  | 1,789 | 1,150 | \$149.99 | \$114.58 | \$134.94 | \$173.92 |

| <b>Black Cherry</b> |                         |     |     |     |                           |          |          |          |
|---------------------|-------------------------|-----|-----|-----|---------------------------|----------|----------|----------|
| Fiscal Year         | Sawlog volume sold, MBF |     |     |     | Average bid price, \$/MBF |          |          |          |
|                     | State                   | EUP | NLP | WUP | State                     | EUP      | NLP      | WUP      |
| 1986                | 101                     | 68  | 19  | 14  | \$41.61                   | \$40.85  | \$43.70  | \$42.41  |
| 1987                | 36                      | 24  | 12  |     | \$73.55                   | \$63.06  | \$94.58  |          |
| 1988                | 54                      | 23  | 30  | 1   | \$63.78                   | \$82.10  | \$50.12  | \$35.42  |
| 1989                | 50                      | 35  | 12  | 3   | \$103.28                  | \$57.91  | \$255.68 | \$32.24  |
| 1990                | 27                      | 4   | 15  | 8   | \$44.53                   | \$53.16  | \$45.55  | \$38.76  |
| 1991                | 123                     | 53  | 30  | 40  | \$65.51                   | \$65.98  | \$43.52  | \$81.46  |
| 1992                | 33                      | 17  | 7   | 9   | \$85.09                   | \$62.94  | \$152.54 | \$70.84  |
| 1993                | 76                      | 54  | 6   | 17  | \$111.75                  | \$122.07 | \$167.88 | \$56.75  |
| 1994                | 148                     | 24  | 100 | 23  | \$158.31                  | \$123.64 | \$181.77 | \$92.61  |
| 1995                | 171                     | 87  | 48  | 36  | \$178.65                  | \$181.15 | \$202.90 | \$140.77 |
| 1996                | 302                     | 44  | 233 | 25  | \$438.51                  | \$174.99 | \$519.04 | \$151.82 |
| 1997                | 406                     | 72  | 256 | 78  | \$333.51                  | \$410.56 | \$296.06 | \$385.46 |
| 1998                | 277                     | 141 | 63  | 74  | \$228.63                  | \$230.61 | \$202.08 | \$247.64 |
| 1999                | 133                     | 61  | 35  | 37  | \$261.96                  | \$212.34 | \$346.88 | \$264.74 |
| 2000                | 200                     | 45  | 116 | 39  | \$269.10                  | \$240.77 | \$278.21 | \$275.01 |
| 2001                | 141                     | 54  | 72  | 14  | \$352.00                  | \$394.80 | \$315.00 | \$375.95 |
| 2002                | 114                     | 11  | 56  | 47  | \$382.58                  | \$188.67 | \$548.64 | \$231.05 |
| 2003                | 281                     | 17  | 174 | 89  | \$275.05                  | \$153.51 | \$270.58 | \$307.16 |
| 2004                | 239                     | 148 | 62  | 28  | \$551.73                  | \$577.34 | \$660.59 | \$175.14 |
| 2005                | 320                     | 51  | 200 | 69  | \$382.20                  | \$419.65 | \$328.98 | \$507.85 |

| <b>Oaks</b> |                         |     |        |     |                           |         |          |          |
|-------------|-------------------------|-----|--------|-----|---------------------------|---------|----------|----------|
| Fiscal Year | Sawlog volume sold, MBF |     |        |     | Average bid price, \$/MBF |         |          |          |
|             | State                   | EUP | NLP    | WUP | State                     | EUP     | NLP      | WUP      |
| 1986        | 8,770                   |     | 8,766  | 4   | \$77.13                   |         | \$77.09  | \$140.00 |
| 1987        | 6,352                   |     | 6,345  | 6   | \$65.99                   |         | \$66.00  | \$61.00  |
| 1988        | 11,623                  |     | 11,558 | 65  | \$73.61                   |         | \$73.26  | \$135.46 |
| 1989        | 7,235                   |     | 7,226  | 9   | \$84.62                   |         | \$84.61  | \$88.91  |
| 1990        | 5,579                   |     | 5,432  | 147 | \$105.06                  |         | \$103.67 | \$156.30 |
| 1991        | 6,189                   |     | 6,142  | 47  | \$126.76                  |         | \$125.23 | \$328.60 |
| 1992        | 7,229                   |     | 7,217  | 12  | \$111.14                  |         | \$110.70 | \$376.95 |
| 1993        | 8,145                   | 0   | 8,092  | 53  | \$166.99                  | \$16.00 | \$166.53 | \$237.76 |
| 1994        | 8,346                   |     | 8,231  | 115 | \$199.19                  |         | \$196.07 | \$423.23 |
| 1995        | 8,113                   |     | 8,108  | 5   | \$228.07                  |         | \$227.96 | \$396.67 |
| 1996        | 7,077                   |     | 7,047  | 30  | \$169.06                  |         | \$168.56 | \$286.61 |

|      |        |    |        |     |          |          |          |          |
|------|--------|----|--------|-----|----------|----------|----------|----------|
| 1997 | 9,421  |    | 9,401  | 20  | \$160.92 |          | \$160.66 | \$280.20 |
| 1998 | 10,062 | 25 | 9,993  | 43  | \$164.21 | \$130.51 | \$163.87 | \$263.01 |
| 1999 | 10,867 |    | 10,731 | 135 | \$176.42 |          | \$173.42 | \$414.39 |
| 2000 | 12,454 |    | 12,410 | 44  | \$220.64 |          | \$220.16 | \$358.05 |
| 2001 | 9,195  | 24 | 9,096  | 76  | \$257.44 | \$300.12 | \$254.16 | \$638.87 |
| 2002 | 9,161  |    | 9,037  | 124 | \$265.03 |          | \$258.90 | \$711.18 |
| 2003 | 8,605  |    | 8,338  | 267 | \$262.23 |          | \$257.35 | \$414.93 |
| 2004 | 12,858 |    | 12,742 | 117 | \$267.95 |          | \$265.78 | \$505.50 |
| 2005 | 10,546 |    | 10,481 | 66  | \$357.27 |          | \$357.66 | \$294.44 |

| <b>Paper Birch</b> |                         |     |     |     |                           |          |          |          |
|--------------------|-------------------------|-----|-----|-----|---------------------------|----------|----------|----------|
| Fiscal Year        | Sawlog volume sold, MBF |     |     |     | Average bid price, \$/MBF |          |          |          |
|                    | State                   | EUP | NLP | WUP | State                     | EUP      | NLP      | WUP      |
| 1986               | 244                     | 37  | 181 | 26  | \$21.42                   | \$43.28  | \$15.30  | \$33.41  |
| 1987               | 299                     | 153 | 90  | 57  | \$43.65                   | \$50.32  | \$42.10  | \$28.15  |
| 1988               | 353                     | 23  | 306 | 24  | \$20.49                   | \$48.29  | \$17.73  | \$28.81  |
| 1989               | 418                     | 57  | 235 | 126 | \$27.72                   | \$44.45  | \$19.26  | \$35.92  |
| 1990               | 427                     | 81  | 217 | 128 | \$38.93                   | \$50.17  | \$19.58  | \$64.63  |
| 1991               | 346                     | 42  | 182 | 122 | \$50.56                   | \$47.87  | \$46.96  | \$56.87  |
| 1992               | 456                     | 48  | 113 | 295 | \$63.10                   | \$43.24  | \$26.19  | \$80.42  |
| 1993               | 438                     | 43  | 70  | 325 | \$93.95                   | \$94.42  | \$26.59  | \$108.44 |
| 1994               | 560                     | 80  | 194 | 287 | \$130.03                  | \$167.14 | \$84.00  | \$150.80 |
| 1995               | 564                     | 169 | 102 | 293 | \$150.87                  | \$207.86 | \$50.33  | \$152.98 |
| 1996               | 806                     | 138 | 159 | 508 | \$119.69                  | \$121.84 | \$61.66  | \$137.30 |
| 1997               | 468                     | 59  | 42  | 368 | \$122.14                  | \$128.55 | \$32.48  | \$131.28 |
| 1998               | 286                     | 65  | 42  | 180 | \$107.89                  | \$102.16 | \$44.80  | \$124.52 |
| 1999               | 562                     | 14  | 225 | 323 | \$87.03                   | \$90.48  | \$44.42  | \$116.55 |
| 2000               | 259                     | 33  | 49  | 177 | \$238.46                  | \$55.41  | \$716.59 | \$141.73 |
| 2001               | 375                     | 63  | 72  | 239 | \$127.22                  | \$64.72  | \$97.52  | \$152.63 |
| 2002               | 699                     | 17  | 141 | 541 | \$147.24                  | \$88.90  | \$46.41  | \$175.41 |
| 2003               | 663                     | 154 | 37  | 472 | \$141.24                  | \$79.24  | \$35.88  | \$169.70 |
| 2004               | 235                     | 27  | 59  | 149 | \$193.25                  | \$86.41  | \$46.03  | \$270.21 |
| 2005               | 379                     | 53  | 40  | 286 | \$635.77                  | \$175.27 | \$61.24  | \$802.34 |

| <b>Red Maple</b> |                         |     |       |     |                           |         |         |         |
|------------------|-------------------------|-----|-------|-----|---------------------------|---------|---------|---------|
| Fiscal Year      | Sawlog volume sold, MBF |     |       |     | Average bid price, \$/MBF |         |         |         |
|                  | State                   | EUP | NLP   | WUP | State                     | EUP     | NLP     | WUP     |
| 1986             | 1,273                   | 485 | 678   | 109 | \$47.21                   | \$56.69 | \$36.00 | \$74.66 |
| 1987             | 1,654                   | 513 | 897   | 244 | \$43.22                   | \$50.62 | \$34.06 | \$61.28 |
| 1988             | 2,366                   | 351 | 1,852 | 164 | \$42.84                   | \$58.24 | \$38.40 | \$60.00 |
| 1989             | 1,926                   | 198 | 1,630 | 98  | \$38.54                   | \$46.30 | \$34.67 | \$87.18 |
| 1990             | 1,899                   | 160 | 1,633 | 106 | \$35.42                   | \$57.55 | \$32.39 | \$48.92 |
| 1991             | 2,462                   | 566 | 1,666 | 230 | \$54.27                   | \$86.85 | \$39.62 | \$80.16 |
| 1992             | 1,877                   | 196 | 1,552 | 129 | \$47.13                   | \$80.11 | \$41.10 | \$69.53 |

|      |       |     |       |     |          |          |          |          |
|------|-------|-----|-------|-----|----------|----------|----------|----------|
| 1993 | 2,195 | 499 | 1,476 | 221 | \$76.78  | \$148.01 | \$49.20  | \$100.32 |
| 1994 | 1,600 | 334 | 935   | 331 | \$99.62  | \$123.56 | \$73.05  | \$150.41 |
| 1995 | 2,134 | 397 | 1,272 | 465 | \$133.16 | \$148.65 | \$127.60 | \$135.14 |
| 1996 | 2,983 | 220 | 2,369 | 394 | \$84.34  | \$160.21 | \$69.78  | \$129.49 |
| 1997 | 3,162 | 381 | 2,289 | 493 | \$114.43 | \$171.19 | \$97.26  | \$150.30 |
| 1998 | 2,659 | 457 | 1,743 | 459 | \$226.26 | \$175.38 | \$264.12 | \$133.24 |
| 1999 | 3,506 | 778 | 2,285 | 442 | \$128.08 | \$143.38 | \$122.70 | \$128.94 |
| 2000 | 2,741 | 322 | 1,920 | 500 | \$159.11 | \$157.62 | \$157.62 | \$165.80 |
| 2001 | 2,685 | 388 | 1,917 | 379 | \$154.62 | \$131.88 | \$161.07 | \$145.32 |
| 2002 | 3,665 | 224 | 2,750 | 692 | \$174.97 | \$136.22 | \$182.28 | \$158.43 |
| 2003 | 3,501 | 199 | 2,464 | 838 | \$151.63 | \$112.28 | \$155.58 | \$149.37 |
| 2004 | 4,159 | 653 | 2,918 | 588 | \$184.79 | \$154.66 | \$188.26 | \$201.04 |
| 2005 | 3,844 | 492 | 2,475 | 877 | \$215.24 | \$205.28 | \$213.33 | \$226.23 |

| <b>Sugar Maple</b> |                                |            |            |            |                                  |            |            |            |
|--------------------|--------------------------------|------------|------------|------------|----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b> | <b>Sawlog volume sold, MBF</b> |            |            |            | <b>Average bid price, \$/MBF</b> |            |            |            |
|                    | <b>State</b>                   | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                     | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986               | 1,466                          | 422        | 484        | 561        | \$87.33                          | \$98.42    | \$67.68    | \$95.94    |
| 1987               | 2,045                          | 563        | 468        | 1,013      | \$87.41                          | \$107.56   | \$48.57    | \$94.15    |
| 1988               | 1,946                          | 228        | 623        | 1,095      | \$121.74                         | \$112.79   | \$53.31    | \$162.57   |
| 1989               | 1,479                          | 307        | 405        | 767        | \$137.63                         | \$111.88   | \$83.16    | \$176.70   |
| 1990               | 1,324                          | 50         | 267        | 1,007      | \$184.89                         | \$96.53    | \$74.20    | \$218.64   |
| 1991               | 1,928                          | 333        | 384        | 1,211      | \$165.46                         | \$151.20   | \$94.84    | \$191.75   |
| 1992               | 1,616                          | 173        | 380        | 1,063      | \$180.29                         | \$169.47   | \$136.50   | \$197.69   |
| 1993               | 1,805                          | 408        | 314        | 1,084      | \$227.19                         | \$279.06   | \$209.54   | \$212.79   |
| 1994               | 2,021                          | 133        | 908        | 980        | \$291.97                         | \$189.03   | \$307.15   | \$291.91   |
| 1995               | 3,105                          | 920        | 589        | 1,596      | \$339.63                         | \$372.96   | \$242.56   | \$356.21   |
| 1996               | 3,020                          | 1,264      | 716        | 1,040      | \$407.16                         | \$523.14   | \$342.68   | \$310.61   |
| 1997               | 3,582                          | 921        | 978        | 1,683      | \$412.35                         | \$597.64   | \$249.68   | \$405.56   |
| 1998               | 3,118                          | 1,099      | 588        | 1,430      | \$426.22                         | \$648.84   | \$212.11   | \$343.17   |
| 1999               | 4,075                          | 1,142      | 1,134      | 1,800      | \$467.48                         | \$666.32   | \$250.05   | \$478.30   |
| 2000               | 3,842                          | 521        | 1,133      | 2,188      | \$573.50                         | \$663.23   | \$407.66   | \$637.97   |
| 2001               | 2,788                          | 609        | 1,368      | 811        | \$603.55                         | \$817.03   | \$468.02   | \$671.76   |
| 2002               | 3,979                          | 442        | 1,433      | 2,104      | \$664.04                         | \$800.80   | \$528.97   | \$727.35   |
| 2003               | 4,459                          | 457        | 1,821      | 2,181      | \$595.05                         | \$993.73   | \$480.56   | \$607.11   |
| 2004               | 3,880                          | 1,445      | 969        | 1,466      | \$853.22                         | \$1,134.59 | \$515.33   | \$799.27   |
| 2005               | 5,658                          | 1,283      | 1,744      | 2,631      | \$1,012.43                       | \$1,153.29 | \$650.51   | \$1,183.65 |

| <b>Yellow Birch</b> |                                |            |            |            |                                  |            |            |            |
|---------------------|--------------------------------|------------|------------|------------|----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b>  | <b>Sawlog volume sold, MBF</b> |            |            |            | <b>Average bid price, \$/MBF</b> |            |            |            |
|                     | <b>State</b>                   | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                     | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986                | 286                            | 112        | 21         | 154        | \$105.83                         | \$116.78   | \$10.05    | \$111.02   |
| 1987                | 527                            | 157        | 105        | 265        | \$80.54                          | \$94.19    | \$27.24    | \$93.52    |
| 1988                | 323                            | 46         | 128        | 148        | \$95.47                          | \$98.35    | \$26.09    | \$154.55   |

|      |     |     |    |     |          |          |          |          |
|------|-----|-----|----|-----|----------|----------|----------|----------|
| 1989 | 204 | 58  | 48 | 98  | \$90.05  | \$76.10  | \$33.35  | \$125.79 |
| 1990 | 162 | 36  | 29 | 97  | \$100.72 | \$100.14 | \$26.90  | \$123.20 |
| 1991 | 311 | 60  |    | 251 | \$147.29 | \$134.14 |          | \$150.42 |
| 1992 | 134 | 43  | 5  | 85  | \$92.55  | \$123.96 | \$24.02  | \$80.70  |
| 1993 | 357 | 102 | 2  | 254 | \$201.06 | \$193.49 | \$21.67  | \$205.16 |
| 1994 | 193 | 20  | 15 | 159 | \$234.66 | \$156.75 | \$104.56 | \$256.27 |
| 1995 | 424 | 89  | 0  | 335 | \$236.72 | \$270.90 | \$27.00  | \$227.83 |
| 1996 | 356 | 49  | 6  | 301 | \$209.65 | \$176.69 | \$42.52  | \$218.25 |
| 1997 | 392 | 137 |    | 255 | \$299.64 | \$431.87 |          | \$228.72 |
| 1998 | 285 | 93  | 4  | 187 | \$239.37 | \$357.98 | \$100.00 | \$183.23 |
| 1999 | 280 | 99  |    | 181 | \$210.35 | \$235.15 |          | \$196.85 |
| 2000 | 335 | 63  | 1  | 271 | \$206.66 | \$206.13 | \$55.00  | \$207.34 |
| 2001 | 233 | 68  |    | 165 | \$177.46 | \$163.14 |          | \$183.34 |
| 2002 | 219 | 17  |    | 202 | \$508.06 | \$149.02 |          | \$538.53 |
| 2003 | 237 | 14  | 1  | 221 | \$362.89 | \$114.92 | \$145.00 | \$380.41 |
| 2004 | 260 | 99  | 3  | 158 | \$347.07 | \$225.35 | \$97.20  | \$427.66 |
| 2005 | 248 | 42  |    | 206 | \$333.75 | \$234.16 |          | \$354.05 |

| <b>Ash</b>         |                                |            |            |            |                                  |            |            |            |
|--------------------|--------------------------------|------------|------------|------------|----------------------------------|------------|------------|------------|
| <b>Fiscal Year</b> | <b>Sawlog volume sold, MBF</b> |            |            |            | <b>Average bid price, \$/MBF</b> |            |            |            |
|                    | <b>State</b>                   | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> | <b>State</b>                     | <b>EUP</b> | <b>NLP</b> | <b>WUP</b> |
| 1986               | 322                            |            | 321        | 1          | \$96.82                          |            | \$96.91    | \$60.00    |
| 1987               | 103                            | 2          | 101        |            | \$70.16                          | \$35.61    | \$70.95    |            |
| 1988               | 217                            |            | 215        | 1          | \$43.12                          |            | \$42.82    | \$90.00    |
| 1989               | 363                            | 1          | 361        | 1          | \$57.67                          | \$20.74    | \$57.59    | \$110.00   |
| 1990               | 336                            | 0          | 312        | 24         | \$74.93                          | \$25.00    | \$78.90    | \$25.04    |
| 1991               | 404                            | 5          | 378        | 21         | \$120.18                         | \$72.21    | \$122.05   | \$97.36    |
| 1992               | 327                            | 2          | 258        | 66         | \$166.59                         | \$79.79    | \$160.86   | \$191.85   |
| 1993               | 156                            |            | 143        | 13         | \$162.14                         |            | \$167.81   | \$101.29   |
| 1994               | 507                            | 12         | 467        | 28         | \$350.40                         | \$266.00   | \$358.44   | \$250.52   |
| 1995               | 361                            | 5          | 293        | 64         | \$286.42                         | \$258.70   | \$299.56   | \$228.31   |
| 1996               | 569                            | 25         | 515        | 29         | \$196.17                         | \$201.70   | \$195.81   | \$198.03   |
| 1997               | 436                            | 20         | 372        | 44         | \$177.91                         | \$200.00   | \$177.22   | \$173.54   |
| 1998               | 337                            | 18         | 279        | 40         | \$158.41                         | \$178.22   | \$155.82   | \$167.64   |
| 1999               | 447                            | 21         | 361        | 65         | \$151.07                         | \$156.38   | \$154.43   | \$130.77   |
| 2000               | 367                            | 4          | 336        | 27         | \$163.50                         | \$155.62   | \$170.07   | \$82.64    |
| 2001               | 532                            | 26         | 466        | 40         | \$151.54                         | \$121.60   | \$157.90   | \$96.87    |
| 2002               | 364                            | 3          | 220        | 142        | \$129.89                         | \$135.52   | \$127.29   | \$133.83   |
| 2003               | 560                            | 23         | 334        | 204        | \$121.21                         | \$86.00    | \$119.78   | \$127.47   |
| 2004               | 391                            | 54         | 261        | 77         | \$377.70                         | \$106.35   | \$472.38   | \$246.78   |
| 2005               | 336                            | 3          | 278        | 55         | \$82.48                          | \$96.93    | \$81.37    | \$87.36    |

| <b>White Pine</b> |                                |                                  |
|-------------------|--------------------------------|----------------------------------|
| <b>Fiscal</b>     | <b>Sawlog volume sold, MBF</b> | <b>Average bid price, \$/MBF</b> |

| Year | State | EUP   | NLP   | WUP   | State    | EUP      | NLP      | WUP      |
|------|-------|-------|-------|-------|----------|----------|----------|----------|
| 1986 | 2,132 | 646   | 847   | 639   | \$56.11  | \$45.03  | \$67.07  | \$52.77  |
| 1987 | 2,134 | 580   | 773   | 781   | \$54.93  | \$52.66  | \$61.55  | \$50.06  |
| 1988 | 2,684 | 918   | 776   | 990   | \$65.91  | \$61.28  | \$73.04  | \$64.61  |
| 1989 | 1,909 | 364   | 822   | 723   | \$75.68  | \$63.51  | \$80.04  | \$76.83  |
| 1990 | 2,601 | 1,203 | 833   | 565   | \$71.73  | \$74.91  | \$67.97  | \$70.50  |
| 1991 | 1,497 | 393   | 687   | 418   | \$77.45  | \$68.81  | \$85.74  | \$71.94  |
| 1992 | 2,800 | 975   | 688   | 1,138 | \$74.28  | \$73.65  | \$90.83  | \$64.82  |
| 1993 | 2,200 | 1,048 | 782   | 370   | \$92.59  | \$105.90 | \$77.30  | \$87.24  |
| 1994 | 1,595 | 447   | 559   | 590   | \$134.30 | \$198.15 | \$82.13  | \$135.37 |
| 1995 | 1,379 | 756   | 343   | 280   | \$161.20 | \$200.72 | \$93.76  | \$136.98 |
| 1996 | 2,368 | 1,004 | 1,163 | 201   | \$128.57 | \$174.52 | \$88.11  | \$133.09 |
| 1997 | 1,537 | 290   | 920   | 327   | \$114.99 | \$171.01 | \$74.94  | \$177.98 |
| 1998 | 1,327 | 700   | 523   | 103   | \$121.24 | \$145.38 | \$78.64  | \$173.52 |
| 1999 | 745   | 319   | 315   | 111   | \$118.51 | \$111.14 | \$109.22 | \$166.03 |
| 2000 | 1,055 | 292   | 572   | 190   | \$117.07 | \$103.21 | \$116.76 | \$139.24 |
| 2001 | 1,402 | 424   | 611   | 368   | \$174.76 | \$150.35 | \$134.04 | \$270.55 |
| 2002 | 1,884 | 294   | 1,267 | 322   | \$120.93 | \$160.18 | \$95.49  | \$185.10 |
| 2003 | 1,025 | 165   | 685   | 175   | \$99.95  | \$142.37 | \$81.96  | \$130.38 |
| 2004 | 1,006 | 259   | 688   | 58    | \$86.48  | \$116.34 | \$73.99  | \$101.12 |
| 2005 | 1,395 | 354   | 827   | 214   | \$243.25 | \$172.67 | \$95.71  | \$929.99 |

| Red Pine    |                         |       |        |     |                           |          |          |            |
|-------------|-------------------------|-------|--------|-----|---------------------------|----------|----------|------------|
| Fiscal Year | Sawlog volume sold, MBF |       |        |     | Average bid price, \$/MBF |          |          |            |
|             | State                   | EUP   | NLP    | WUP | State                     | EUP      | NLP      | WUP        |
| 1986        | 4,443                   | 896   | 3,033  | 514 | \$79.01                   | \$48.95  | \$90.65  | \$62.80    |
| 1987        | 4,817                   | 920   | 3,466  | 430 | \$76.55                   | \$59.79  | \$83.18  | \$59.00    |
| 1988        | 6,972                   | 2,266 | 4,208  | 497 | \$84.70                   | \$64.04  | \$98.75  | \$59.92    |
| 1989        | 5,811                   | 842   | 4,479  | 490 | \$103.16                  | \$66.78  | \$113.44 | \$71.68    |
| 1990        | 6,801                   | 1,300 | 4,926  | 575 | \$90.41                   | \$82.15  | \$94.04  | \$78.00    |
| 1991        | 5,869                   | 928   | 4,382  | 560 | \$107.64                  | \$94.44  | \$112.74 | \$89.56    |
| 1992        | 6,303                   | 2,101 | 3,671  | 531 | \$102.52                  | \$94.70  | \$109.54 | \$84.89    |
| 1993        | 6,146                   | 936   | 4,836  | 374 | \$111.54                  | \$109.31 | \$113.11 | \$96.81    |
| 1994        | 5,400                   | 669   | 4,445  | 286 | \$175.76                  | \$190.79 | \$176.81 | \$124.23   |
| 1995        | 5,369                   | 1,119 | 4,036  | 214 | \$182.18                  | \$208.08 | \$177.68 | \$131.63   |
| 1996        | 7,519                   | 1,595 | 5,676  | 248 | \$185.40                  | \$216.35 | \$179.20 | \$128.47   |
| 1997        | 5,341                   | 893   | 3,978  | 470 | \$175.94                  | \$218.23 | \$168.96 | \$154.70   |
| 1998        | 13,449                  | 1,976 | 11,254 | 219 | \$230.58                  | \$193.33 | \$238.47 | \$161.15   |
| 1999        | 7,954                   | 974   | 6,686  | 294 | \$218.46                  | \$164.02 | \$228.46 | \$171.54   |
| 2000        | 10,410                  | 1,521 | 8,592  | 298 | \$233.78                  | \$202.52 | \$241.60 | \$167.91   |
| 2001        | 9,952                   | 1,702 | 7,539  | 711 | \$234.78                  | \$234.71 | \$237.09 | \$210.41   |
| 2002        | 9,737                   | 607   | 8,682  | 449 | \$258.51                  | \$229.11 | \$264.14 | \$189.11   |
| 2003        | 20,554                  | 1,093 | 19,332 | 129 | \$211.14                  | \$236.61 | \$210.05 | \$158.64   |
| 2004        | 10,905                  | 1,384 | 9,336  | 185 | \$221.83                  | \$297.89 | \$208.71 | \$314.75   |
| 2005        | 14,391                  | 1,409 | 12,856 | 126 | \$270.39                  | \$314.83 | \$257.06 | \$1,130.89 |

| Jack Pine   |                         |     |       |     |                           |         |          |         |
|-------------|-------------------------|-----|-------|-----|---------------------------|---------|----------|---------|
| Fiscal Year | Sawlog volume sold, MBF |     |       |     | Average bid price, \$/MBF |         |          |         |
|             | State                   | EUP | NLP   | WUP | State                     | EUP     | NLP      | WUP     |
| 1986        | 1,238                   |     | 1,232 | 6   | \$23.30                   |         | \$23.19  | \$45.00 |
| 1987        | 1,350                   |     | 1,350 |     | \$24.92                   |         | \$24.92  |         |
| 1988        | 2,524                   |     | 2,524 |     | \$24.42                   |         | \$24.42  |         |
| 1989        | 3,692                   |     | 3,692 |     | \$31.65                   |         | \$31.65  |         |
| 1990        | 1,367                   |     | 1,367 |     | \$45.31                   |         | \$45.31  |         |
| 1991        | 2,953                   |     | 2,953 |     | \$50.06                   |         | \$50.06  |         |
| 1992        | 3,338                   | 3   | 3,335 |     | \$55.96                   | \$50.00 | \$55.97  |         |
| 1993        | 4,299                   |     | 4,299 |     | \$57.27                   |         | \$57.27  |         |
| 1994        | 3,377                   |     | 3,377 |     | \$81.80                   |         | \$81.80  |         |
| 1995        | 1,791                   |     | 1,791 |     | \$90.92                   |         | \$90.92  |         |
| 1996        | 2,174                   |     | 2,174 |     | \$81.58                   |         | \$81.58  |         |
| 1997        | 3,554                   |     | 3,554 |     | \$99.15                   |         | \$99.15  |         |
| 1998        | 4,430                   |     | 4,430 |     | \$94.22                   |         | \$94.22  |         |
| 1999        | 2,047                   |     | 2,047 |     | \$78.58                   |         | \$78.58  |         |
| 2000        | 3,610                   |     | 3,610 |     | \$126.01                  |         | \$126.01 |         |
| 2001        | 2,536                   |     | 2,536 |     | \$217.63                  |         | \$217.63 |         |
| 2002        | 4,389                   |     | 4,389 |     | \$159.00                  |         | \$159.00 |         |
| 2003        | 2,754                   |     | 2,754 |     | \$104.99                  |         | \$104.99 |         |
| 2004        | 3,571                   |     | 3,571 |     | \$108.21                  |         | \$108.21 |         |
| 2005        | 3,755                   |     | 3,755 |     | \$161.50                  |         | \$161.50 |         |

| Northern white cedar |                         |     |     |     |                           |         |         |          |
|----------------------|-------------------------|-----|-----|-----|---------------------------|---------|---------|----------|
| Fiscal Year          | Sawlog volume sold, MBF |     |     |     | Average bid price, \$/MBF |         |         |          |
|                      | State                   | EUP | NLP | WUP | State                     | EUP     | NLP     | WUP      |
| 1986                 | 45                      | 2   | 40  | 3   | \$20.53                   | \$20.00 | \$20.40 | \$23.00  |
| 1987                 | 130                     | 9   | 58  | 63  | \$21.34                   | \$21.61 | \$24.50 | \$18.44  |
| 1988                 | 183                     |     | 179 | 3   | \$32.84                   |         | \$33.12 | \$16.50  |
| 1989                 | 211                     |     | 199 | 11  | \$28.46                   |         | \$28.56 | \$26.70  |
| 1990                 | 129                     |     | 93  | 37  | \$30.89                   |         | \$35.17 | \$20.13  |
| 1991                 | 222                     |     | 151 | 70  | \$31.90                   |         | \$36.23 | \$22.60  |
| 1992                 | 113                     | 7   | 107 |     | \$44.77                   | \$16.62 | \$46.51 |          |
| 1993                 | 122                     |     | 93  | 29  | \$35.63                   |         | \$38.41 | \$26.69  |
| 1994                 | 87                      | 6   | 62  | 19  | \$131.83                  | \$8.40  | \$56.33 | \$415.72 |
| 1995                 | 98                      |     | 98  | 0   | \$27.39                   |         | \$27.42 | \$18.00  |
| 1996                 | 242                     | 12  | 229 | 0   | \$21.42                   | \$30.96 | \$20.92 | \$11.00  |
| 1997                 | 107                     |     | 101 | 6   | \$22.07                   |         | \$21.88 | \$25.20  |
| 1998                 | 11                      | 4   | 5   | 2   | \$47.10                   | \$57.00 | \$41.28 | \$40.00  |
| 1999                 | 1                       |     |     | 1   | \$12.00                   |         |         | \$12.00  |
| 2000                 | 0                       |     |     | 0   | \$16.00                   |         |         | \$16.00  |
| 2001                 | 96                      |     | 9   | 87  | \$78.31                   |         | \$35.00 | \$82.78  |
| 2002                 | 0                       |     |     | 0   | \$25.00                   |         |         | \$25.00  |

|      |    |   |   |   |          |         |         |          |
|------|----|---|---|---|----------|---------|---------|----------|
| 2003 | 2  | 2 |   |   | \$73.00  | \$73.00 |         |          |
| 2004 | 4  |   | 4 |   | \$18.00  |         | \$18.00 |          |
| 2005 | 10 |   | 6 | 4 | \$113.70 |         | \$63.80 | \$200.00 |

| <b>Mixed Hardwood</b> |                         |     |       |     |                           |          |          |          |
|-----------------------|-------------------------|-----|-------|-----|---------------------------|----------|----------|----------|
| Fiscal Year           | Sawlog volume sold, MBF |     |       |     | Average bid price, \$/MBF |          |          |          |
|                       | State                   | EUP | NLP   | WUP | State                     | EUP      | NLP      | WUP      |
| 1986                  | 2,188                   | 310 | 1,623 | 254 | \$39.38                   | \$38.55  | \$38.68  | \$44.85  |
| 1987                  | 1,915                   | 198 | 1,419 | 298 | \$35.85                   | \$39.97  | \$33.96  | \$42.09  |
| 1988                  | 3,670                   | 179 | 3,187 | 304 | \$43.87                   | \$43.22  | \$42.61  | \$57.43  |
| 1989                  | 1,761                   | 84  | 1,302 | 375 | \$51.95                   | \$30.82  | \$32.94  | \$122.69 |
| 1990                  | 1,746                   | 63  | 1,034 | 648 | \$70.83                   | \$40.39  | \$58.01  | \$94.25  |
| 1991                  | 1,969                   | 134 | 1,278 | 558 | \$53.14                   | \$51.10  | \$40.44  | \$82.74  |
| 1992                  | 2,323                   | 67  | 1,696 | 561 | \$57.38                   | \$46.16  | \$45.38  | \$95.02  |
| 1993                  | 2,355                   | 160 | 1,609 | 586 | \$83.36                   | \$148.59 | \$74.17  | \$90.78  |
| 1994                  | 2,067                   | 68  | 1,417 | 582 | \$187.27                  | \$104.39 | \$209.17 | \$143.70 |
| 1995                  | 1,592                   | 167 | 1,115 | 310 | \$102.54                  | \$126.91 | \$93.94  | \$120.35 |
| 1996                  | 2,478                   | 105 | 1,637 | 736 | \$90.50                   | \$108.33 | \$67.37  | \$139.36 |
| 1997                  | 2,402                   | 189 | 1,729 | 484 | \$93.99                   | \$118.78 | \$74.78  | \$152.95 |
| 1998                  | 1,808                   | 173 | 1,213 | 423 | \$89.94                   | \$92.92  | \$84.20  | \$105.22 |
| 1999                  | 2,105                   | 115 | 1,586 | 404 | \$90.16                   | \$89.30  | \$83.82  | \$115.31 |
| 2000                  | 1,497                   | 52  | 896   | 550 | \$92.30                   | \$70.10  | \$81.07  | \$112.69 |
| 2001                  | 1,408                   | 96  | 855   | 457 | \$119.81                  | \$64.98  | \$92.52  | \$182.46 |
| 2002                  | 1,724                   | 170 | 936   | 618 | \$134.65                  | \$65.21  | \$83.27  | \$231.67 |
| 2003                  | 1,294                   | 67  | 797   | 430 | \$111.90                  | \$63.06  | \$94.16  | \$152.40 |
| 2004                  | 1,415                   | 197 | 985   | 233 | \$116.09                  | \$77.54  | \$119.83 | \$132.89 |
| 2005                  | 1,179                   | 185 | 535   | 460 | \$167.84                  | \$99.85  | \$78.54  | \$299.02 |

| <b>Mixed Softwood</b> |                         |     |     |     |                           |         |          |         |
|-----------------------|-------------------------|-----|-----|-----|---------------------------|---------|----------|---------|
| Fiscal Year           | Sawlog volume sold, MBF |     |     |     | Average bid price, \$/MBF |         |          |         |
|                       | State                   | EUP | NLP | WUP | State                     | EUP     | NLP      | WUP     |
| 1986                  | 741                     | 188 | 312 | 240 | \$46.04                   | \$26.55 | \$66.41  | \$34.82 |
| 1987                  | 679                     | 201 | 172 | 307 | \$30.07                   | \$22.54 | \$27.26  | \$36.58 |
| 1988                  | 1,190                   | 42  | 977 | 171 | \$56.58                   | \$34.31 | \$61.62  | \$33.26 |
| 1989                  | 870                     | 164 | 495 | 211 | \$62.80                   | \$21.17 | \$89.13  | \$33.40 |
| 1990                  | 1,121                   | 39  | 903 | 179 | \$71.73                   | \$48.05 | \$82.68  | \$21.68 |
| 1991                  | 750                     | 17  | 645 | 87  | \$72.98                   | \$26.01 | \$79.19  | \$36.26 |
| 1992                  | 693                     | 31  | 428 | 233 | \$52.34                   | \$22.83 | \$54.64  | \$52.09 |
| 1993                  | 640                     | 49  | 425 | 166 | \$79.14                   | \$34.75 | \$99.72  | \$39.63 |
| 1994                  | 372                     | 6   | 247 | 119 | \$73.00                   | \$27.31 | \$76.77  | \$67.44 |
| 1995                  | 1,035                   | 56  | 834 | 146 | \$100.45                  | \$66.43 | \$110.36 | \$56.78 |
| 1996                  | 672                     | 78  | 360 | 234 | \$64.22                   | \$55.65 | \$68.82  | \$60.00 |
| 1997                  | 490                     | 10  | 325 | 154 | \$66.11                   | \$51.41 | \$70.18  | \$58.45 |
| 1998                  | 397                     | 33  | 227 | 138 | \$64.19                   | \$42.31 | \$72.56  | \$55.66 |

|      |     |     |     |     |          |         |          |         |
|------|-----|-----|-----|-----|----------|---------|----------|---------|
| 1999 | 473 | 60  | 235 | 177 | \$105.53 | \$46.12 | \$160.00 | \$53.30 |
| 2000 | 841 | 58  | 134 | 650 | \$67.54  | \$46.39 | \$76.69  | \$67.53 |
| 2001 | 451 | 52  | 69  | 330 | \$48.94  | \$36.77 | \$117.94 | \$36.36 |
| 2002 | 722 | 37  | 296 | 389 | \$52.35  | \$39.34 | \$68.20  | \$41.49 |
| 2003 | 454 | 113 | 207 | 134 | \$59.79  | \$50.90 | \$76.44  | \$41.57 |
| 2004 | 180 | 20  | 137 | 24  | \$56.38  | \$24.00 | \$65.64  | \$29.78 |
| 2005 | 403 |     | 155 | 248 | \$69.70  |         | \$76.09  | \$65.73 |

Sawlog species are grouped as follows for this report: aspen (quaking aspen, bigtooth aspen, mixed aspen, and balsam poplar), mixed hardwoods (mixed hardwood, willow, red elm, american elm, ironwood, butternut, cottonwood, and beech), mixed softwoods (white spruce, mixed pine, balsam fir, austrian pine, mixed softwood, norway spruce, tamarack, european larch, scotch pine, hemlock, and black spruce) oaks (red oak, white oak, mixed oak), ash (white and black ash), the following species are reported separately: basswood, black cherry, paper birch, red maple, sugar maple, yellow birch, white pine, red pine, jack pine, and northern white cedar.

**Table A5.15. Michigan oil production (thousand barrels, including natural gas liquids and condensate) on all lands, by ecoregion and county, 1990 to 2005.**

| Ecoregion/<br>county            | 1990             | 1991   | 1992   | 1993   | 1994  | 1995  | 1996  | 1997   |
|---------------------------------|------------------|--------|--------|--------|-------|-------|-------|--------|
|                                 | Thousand Barrels |        |        |        |       |       |       |        |
| <b>Northern Lower Peninsula</b> |                  |        |        |        |       |       |       |        |
| Alcona                          | 0                | 0      | 0      | 0      | 0     | 0     | 0     | 0      |
| Alpena                          | 63               | 58     | 79     | 57     | 44    | 62    | 21    | 18     |
| Antrim                          | 72               | 49     | 47     | 43     | 39    | 26    | 20    | 26     |
| Arenac                          | 69               | 196    | 714    | 513    | 405   | 418   | 283   | 359    |
| Benzie                          | 383              | 367    | 367    | 324    | 302   | 362   | 472   | 310    |
| Charlevoix                      | 0                | 0      | 0      | 0      | 0     | 0     | 0     | 0      |
| Cheboygan                       | 174              | 128    | 123    | 98     | 80    | 71    | 69    | 63     |
| Clare                           | 39               | 33     | 26     | 23     | 19    | 17    | 22    | 249    |
| Crawford                        | 528              | 403    | 309    | 174    | 160   | 230   | 282   | 676    |
| Gladwin                         | 11               | 11     | 11     | 9      | 22    | 20    | 10    | 260    |
| Grand Traverse                  | 1,788            | 1,625  | 1,466  | 1,119  | 889   | 709   | 722   | 771    |
| Iosco                           | 11               | 5      | 170    | 230    | 214   | 187   | 154   | 167    |
| Kalkaska                        | 1,275            | 1,098  | 995    | 859    | 749   | 710   | 705   | 1,033  |
| Lake                            | 0                | 0      | 0      | 0      | 0     | 0     | 0     | 17     |
| Manistee                        | 2,889            | 2,570  | 2,257  | 1,976  | 1,699 | 1,687 | 1,610 | 1,538  |
| Mason                           | 174              | 136    | 175    | 181    | 127   | 59    | 41    | 42     |
| Mecosta                         | 92               | 107    | 64     | 43     | 37    | 37    | 32    | 38     |
| Missaukee                       | 76               | 52     | 24     | 12     | 8     | 8     | 33    | 517    |
| Montmorency                     | 176              | 153    | 151    | 93     | 63    | 95    | 60    | 55     |
| Newaygo                         | 154              | 132    | 103    | 84     | 64    | 35    | 25    | 34     |
| Oceana                          | 126              | 66     | 45     | 32     | 26    | 24    | 22    | 71     |
| Ogemaw                          | 0                | 73     | 552    | 427    | 397   | 391   | 263   | 527    |
| Osceola                         | 34               | 42     | 284    | 277    | 235   | 196   | 154   | 246    |
| Oscoda                          | 53               | 64     | 68     | 52     | 42    | 142   | 113   | 102    |
| Otsego                          | 2,308            | 1,857  | 1,603  | 1,512  | 1,428 | 1,301 | 1,248 | 1,205  |
| Presque Isle                    | 795              | 640    | 640    | 503    | 398   | 398   | 326   | 295    |
| Roscommon                       | 0                | 0      | 0      | 0      | 0     | 0     | 0     | 477    |
| Wexford                         | 37               | 31     | 22     | 16     | 12    | 11    | 12    | 11     |
| NLP Total                       | 11,327           | 9,896  | 10,295 | 8,657  | 7,459 | 7,196 | 6,699 | 9,107  |
| <b>State</b>                    | 14,292           | 13,043 | 12,718 | 10,722 | 9,236 | 8,991 | 8,631 | 11,926 |

| Ecoregion/<br>county            | 1998             | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---------------------------------|------------------|------|------|------|------|------|------|------|
|                                 | Thousand Barrels |      |      |      |      |      |      |      |
| <b>Northern Lower Peninsula</b> |                  |      |      |      |      |      |      |      |
| Alcona                          | 0                | 0    | 1    | 1    | 5    | 5    | 1    | 0    |
| Alpena                          | 17               | 17   | 15   | 11   | 10   | 9    | 9    | 7    |
| Antrim                          | 24               | 17   | 13   | 9    | 13   | 15   | 11   | 7    |
| Arenac                          | 278              | 249  | 245  | 265  | 221  | 184  | 168  | 130  |
| Benzie                          | 211              | 175  | 117  | 79   | 60   | 50   | 50   | 46   |

|                  |               |              |              |              |              |              |              |              |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Charlevoix       | 0             | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| Cheboygan        | 65            | 54           | 84           | 92           | 91           | 74           | 57           | 65           |
| Clare            | 224           | 164          | 195          | 180          | 179          | 178          | 169          | 159          |
| Crawford         | 472           | 532          | 459          | 428          | 391          | 388          | 404          | 419          |
| Gladwin          | 233           | 100          | 130          | 128          | 129          | 117          | 110          | 97           |
| Grand Traverse   | 818           | 625          | 601          | 558          | 538          | 490          | 444          | 495          |
| Iosco            | 162           | 198          | 181          | 179          | 113          | 95           | 72           | 46           |
| Kalkaska         | 895           | 864          | 784          | 708          | 626          | 584          | 558          | 581          |
| Lake             | 26            | 20           | 23           | 11           | 12           | 16           | 19           | 32           |
| Manistee         | 1,494         | 1,239        | 1,266        | 1,228        | 1,132        | 956          | 942          | 967          |
| Mason            | 34            | 30           | 40           | 26           | 34           | 71           | 46           | 37           |
| Mecosta          | 41            | 37           | 43           | 40           | 27           | 24           | 25           | 27           |
| Missaukee        | 392           | 495          | 540          | 501          | 486          | 443          | 434          | 398          |
| Montmorency      | 43            | 59           | 73           | 80           | 74           | 68           | 62           | 97           |
| Newaygo          | 18            | 21           | 27           | 32           | 33           | 35           | 38           | 42           |
| Oceana           | 66            | 113          | 107          | 116          | 126          | 260          | 227          | 136          |
| Ogemaw           | 506           | 383          | 364          | 336          | 310          | 266          | 250          | 247          |
| Osceola          | 198           | 175          | 165          | 144          | 129          | 116          | 123          | 107          |
| Oscoda           | 88            | 72           | 79           | 76           | 67           | 59           | 51           | 47           |
| Otsego           | 1,152         | 982          | 923          | 802          | 669          | 618          | 551          | 632          |
| Presque Isle     | 269           | 327          | 363          | 303          | 247          | 193          | 166          | 156          |
| Roscommon        | 290           | 421          | 468          | 443          | 437          | 394          | 381          | 348          |
| Wexford          | 9             | 9            | 15           | 27           | 59           | 35           | 29           | 25           |
| <b>NLP Total</b> | <b>8,025</b>  | <b>7,378</b> | <b>7,321</b> | <b>6,803</b> | <b>6,218</b> | <b>5,743</b> | <b>5,397</b> | <b>5,350</b> |
| <b>State</b>     | <b>10,336</b> | <b>9,306</b> | <b>9,249</b> | <b>8,875</b> | <b>8,300</b> | <b>7,716</b> | <b>7,089</b> | <b>6,909</b> |

Data Source: Mi DEQ database, [http://www.michigan.gov/deq/0,1607,7-135-3311\\_4111\\_4231---,00.html](http://www.michigan.gov/deq/0,1607,7-135-3311_4111_4231---,00.html)

**Table A5.16. Michigan gas production (million cubic feet) on all lands, by ecoregion and county, 1990 to 2005.**

| Ecoregion/<br>county            | 1990               | 1991    | 1992    | 1993    | 1994    | 1995    | 1996    | 1997    |
|---------------------------------|--------------------|---------|---------|---------|---------|---------|---------|---------|
|                                 | Million Cubic Feet |         |         |         |         |         |         |         |
| <b>Northern Lower Peninsula</b> |                    |         |         |         |         |         |         |         |
| Alcona                          | 0                  | 0       | 0       | 0       | 0       | 0       | 1,250   | 3,735   |
| Alpena                          | 1,518              | 1,180   | 1,748   | 1,330   | 902     | 933     | 7,798   | 20,034  |
| Antrim                          | 775                | 521     | 1,323   | 3,010   | 4,053   | 3,253   | 8,954   | 17,891  |
| Arenac                          | 2,932              | 2,704   | 5,098   | 4,621   | 3,578   | 3,698   | 2,829   | 1,930   |
| Benzie                          | 271                | 207     | 234     | 270     | 312     | 331     | 629     | 595     |
| Charlevoix                      | 0                  | 0       | 0       | 141     | 145     | 9       | 5       | 382     |
| Cheboygan                       | 186                | 187     | 185     | 160     | 118     | 84      | 47      | 52      |
| Clare                           | 3,448              | 2,474   | 1,768   | 1,641   | 1,263   | 1,123   | 1,155   | 1,293   |
| Crawford                        | 2,342              | 10,216  | 8,142   | 7,562   | 6,321   | 5,299   | 4,637   | 5,842   |
| Gladwin                         | 630                | 787     | 995     | 875     | 1,470   | 1,616   | 1,138   | 696     |
| Grand Traverse                  | 12,573             | 10,421  | 11,211  | 8,555   | 6,907   | 5,406   | 4,994   | 5,104   |
| Iosco                           | 342                |         | 245     | 374     | 432     | 593     | 698     | 854     |
| Kalkaska                        | 10,397             | 15,796  | 16,803  | 15,154  | 17,130  | 14,804  | 13,288  | 10,366  |
| Lake                            | 0                  | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Manistee                        | 23,174             | 21,888  | 22,142  | 18,579  | 15,534  | 15,989  | 16,444  | 15,809  |
| Mason                           | 2,187              | 1,493   | 1,871   | 2,449   | 1,558   | 1,236   | 980     | 980     |
| Mecosta                         | 5,407              | 5,802   | 3,764   | 2,762   | 2,322   | 1,807   | 1,165   | 847     |
| Missaukee                       | 1,583              | 1,445   | 1,046   | 702     | 462     | 525     | 430     | 968     |
| Montmorency                     | 6,215              | 5,161   | 8,402   | 10,977  | 24,705  | 53,542  | 62,858  | 82,294  |
| Newaygo                         | 11,434             | 9,768   | 6,704   | 5,182   | 3,780   | 2,419   | 1,657   | 1,318   |
| Oceana                          | 9                  | 0       | 0       | 0       | 0       | 0       | 0       | 1,684   |
| Ogemaw                          | 7,715              | 7,535   | 8,527   | 6,852   | 6,005   | 5,638   | 4,705   | 4,606   |
| Osceola                         | 6,733              | 3,908   | 4,084   | 4,008   | 3,987   | 3,583   | 3,244   | 2,665   |
| Oscoda                          | 5,158              | 6,632   | 6,413   | 5,596   | 6,281   | 8,177   | 8,200   | 8,359   |
| Otsego                          | 35,469             | 48,059  | 65,589  | 79,898  | 73,625  | 72,191  | 72,131  | 81,464  |
| Presque Isle                    | 2,211              | 2,396   | 2,600   | 2,337   | 1,159   | 1,110   | 2,494   | 1,779   |
| Roscommon                       | 192                | 181     | 146     | 0       | 0       | 0       | 0       | 666     |
| Wexford                         | 634                | 431     | 218     | 165     | 145     | 123     | 104     | 88      |
| NLP Total                       | 143,536            | 159,192 | 179,257 | 183,199 | 182,195 | 203,491 | 221,834 | 272,300 |
| SLP Total                       | 16,387             | 21,952  | 17,632  | 12,721  | 13,316  | 12,428  | 16,363  | 18,762  |
| State                           | 159,923            | 181,144 | 196,889 | 195,920 | 195,511 | 215,919 | 238,197 | 291,062 |

| Ecoregion/<br>county            | 1998               | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   |
|---------------------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|
|                                 | Million Cubic Feet |        |        |        |        |        |        |        |
| <b>Northern Lower Peninsula</b> |                    |        |        |        |        |        |        |        |
| Alcona                          | 5,684              | 7,955  | 9,050  | 8,794  | 8,141  | 7,466  | 7,065  | 6,613  |
| Alpena                          | 23,068             | 22,359 | 21,209 | 18,501 | 16,663 | 14,957 | 14,421 | 13,979 |
| Antrim                          | 18,258             | 17,517 | 18,306 | 20,213 | 21,100 | 22,692 | 23,347 | 23,534 |
| Arenac                          | 1,083              | 789    | 804    | 1,230  | 751    | 510    | 383    | 286    |

|                |         |         |         |         |         |         |         |         |
|----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Benzie         | 644     | 1,131   | 990     | 1,040   | 1,168   | 665     | 476     | 296     |
| Charlevoix     | 689     | 924     | 1,116   | 1,462   | 1,495   | 1,279   | 1,284   | 2,316   |
| Cheboygan      | 70      | 45      | 58      | 65      | 62      | 57      | 48      | 49      |
| Clare          | 935     | 1,021   | 953     | 851     | 670     | 790     | 910     | 775     |
| Crawford       | 4,766   | 4,374   | 3,879   | 3,381   | 3,299   | 3,272   | 3,475   | 3,768   |
| Gladwin        | 641     | 543     | 496     | 499     | 343     | 256     | 100     | 38      |
| Grand Traverse | 5,243   | 4,737   | 4,763   | 4,085   | 3,648   | 3,038   | 2,960   | 2,879   |
| Iosco          | 695     | 1,078   | 1,160   | 1,161   | 824     | 584     | 443     | 166     |
| Kalkaska       | 13,795  | 13,336  | 10,483  | 9,766   | 9,850   | 8,859   | 7,433   | 6,868   |
| Lake           | 0       | 0       | 0       | 0       | 0       | 14      | 400     | 852     |
| Manistee       | 15,064  | 13,737  | 13,259  | 12,878  | 11,463  | 10,348  | 9,753   | 10,020  |
| Mason          | 768     | 474     | 477     | 381     | 1,195   | 602     | 318     | 164     |
| Mecosta        | 603     | 549     | 797     | 655     | 579     | 578     | 573     | 725     |
| Missaukee      | 330     | 272     | 241     | 217     | 170     | 67      | 69      | 79      |
| Montmorency    | 81,634  | 77,175  | 71,451  | 65,535  | 60,002  | 54,385  | 52,469  | 48,370  |
| Newaygo        | 408     | 322     | 262     | 272     | 287     | 315     | 461     | 476     |
| Oceana         | 4,342   | 5,596   | 3,001   | 2,498   | 2,671   | 2,683   | 2,119   | 833     |
| Ogemaw         | 3,619   | 3,002   | 2,551   | 2,110   | 1,708   | 1,331   | 1,318   | 1,252   |
| Osceola        | 2,569   | 2,432   | 2,227   | 2,082   | 1,822   | 1,576   | 1,675   | 1,797   |
| Oscoda         | 8,840   | 9,486   | 8,804   | 8,543   | 8,156   | 7,934   | 8,413   | 8,265   |
| Otsego         | 77,907  | 72,813  | 70,216  | 67,196  | 64,175  | 58,139  | 53,693  | 49,943  |
| Presque Isle   | 862     | 510     | 627     | 654     | 515     | 316     | 247     | 181     |
| Roscommon      | 46      | 70      | 41      | 55      | 33      | 21      | 39      | 40      |
| Wexford        | 95      | 107     | 125     | 145     | 161     | 202     | 182     | 150     |
| NLP Total      | 272,658 | 262,354 | 247,346 | 234,269 | 220,948 | 202,938 | 194,076 | 184,714 |
| SLP Total      | 14,470  | 10,819  | 9,797   | 10,550  | 8,590   | 8,676   | 7,409   | 5,953   |
| State          | 287,128 | 273,173 | 257,144 | 244,819 | 229,538 | 211,614 | 201,485 | 190,667 |

**Table A5.17. Distribution of Michigan lands and oil and gas wells by ecoregion and county, 2005.**

| Ecoregion/<br>county            | County<br>Land Area | State-<br>owned<br>Land Area | State<br>Forest<br>Land Area | Wells on<br>Private.<br>Land | Wells<br>on<br>State<br>Land | State Oil-<br>Gas Wells  | State<br>Land<br>Area |
|---------------------------------|---------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------------------|-----------------------|
|                                 | Acres               |                              |                              | Wells                        |                              | Percent of Area<br>Total |                       |
| <b>Western Upper Peninsula</b>  |                     |                              |                              |                              |                              |                          |                       |
| Menominee                       | 667,853             | 98,289                       | 97,591                       | 0                            | 0                            | 0.0%                     | 14.7%                 |
| Ontonagon                       | 839,379             | 69,259                       | 16,898                       | 0                            | 0                            | 0.0%                     | 8.3%                  |
| Dickinson                       | 490,458             | 230,594                      | 230,594                      | 0                            | 0                            | 0.0%                     | 47.0%                 |
| Baraga                          | 578,560             | 78,474                       | 69,372                       | 0                            | 0                            | 0.0%                     | 13.6%                 |
| Keweenaw                        | 346,221             | 12,361                       | 11,622                       | 0                            | 0                            | 0.0%                     | 3.6%                  |
| Delta                           | 748,819             | 68,885                       | 68,102                       | 0                            | 0                            | 0.0%                     | 9.2%                  |
| Houghton                        | 647,501             | 44,261                       | 43,652                       | 0                            | 0                            | 0.0%                     | 6.8%                  |
| Marquette                       | 1,165,472           | 262,873                      | 261,846                      | 0                            | 0                            | 0.0%                     | 22.6%                 |
| Iron                            | 746,470             | 83,967                       | 83,660                       | 0                            | 0                            | 0.0%                     | 11.2%                 |
| Gogebic                         | 705,190             | 11,933                       | 0                            | 0                            | 0                            | 0.0%                     | 1.7%                  |
| WUP total                       | 6,935,923           | 960,895                      | 883,338                      | 0                            | 0                            | 0.0%                     | 13.9%                 |
| <b>Eastern Upper Peninsula</b>  |                     |                              |                              |                              |                              |                          |                       |
| Luce                            | 577,971             | 306,474                      | 292,087                      | 0                            | 0                            | 0.0%                     | 53.0%                 |
| Mackinac                        | 653,811             | 210,614                      | 210,426                      | 0                            | 0                            | 0.0%                     | 32.2%                 |
| Chippewa                        | 999,078             | 213,093                      | 181,316                      | 0                            | 0                            | 0.0%                     | 21.3%                 |
| Schoolcraft                     | 753,990             | 290,187                      | 289,257                      | 0                            | 0                            | 0.0%                     | 38.5%                 |
| Alger                           | 587,411             | 96,332                       | 93,783                       | 0                            | 0                            | 0.0%                     | 16.4%                 |
| EUP total                       | 3,572,262           | 1,116,699                    | 1,066,870                    | 0                            | 0                            | 0.0%                     | 31.3%                 |
| <b>Northern Lower Peninsula</b> |                     |                              |                              |                              |                              |                          |                       |
| Charlevoix                      | 266,778             | 49,134                       | 45,598                       | 149                          | 20                           | 11.8%                    | 18.4%                 |
| Lake                            | 363,162             | 59,301                       | 59,301                       | 8                            | 7                            | 46.7%                    | 16.3%                 |
| Montmorency                     | 350,483             | 138,183                      | 137,888                      | 1,220                        | 1,024                        | 45.6%                    | 39.4%                 |
| Iosco                           | 351,430             | 22,752                       | 22,622                       | 6                            | 6                            | 50.0%                    | 6.5%                  |
| Missaukee                       | 362,720             | 102,250                      | 102,250                      | 369                          | 15                           | 3.9%                     | 28.2%                 |
| Clare                           | 362,752             | 51,479                       | 51,443                       | 239                          | 24                           | 9.1%                     | 14.2%                 |
| Mecosta                         | 355,642             | 13,067                       | 0                            | 38                           | 1                            | 2.6%                     | 3.7%                  |
| Manistee                        | 347,910             | 25,160                       | 20,129                       | 581                          | 182                          | 23.9%                    | 7.2%                  |
| Crawford                        | 357,197             | 206,191                      | 197,775                      | 162                          | 376                          | 69.9%                    | 57.7%                 |
| Grand Traverse                  | 297,645             | 69,572                       | 68,239                       | 293                          | 134                          | 31.4%                    | 23.4%                 |
| Kalkaska                        | 359,053             | 174,879                      | 174,879                      | 284                          | 256                          | 47.4%                    | 48.7%                 |
| Emmet                           | 299,405             | 77,212                       | 66,309                       | 0                            | 0                            | 0.0%                     | 25.8%                 |
| Leelanau                        | 223,021             | 6,816                        | 5,085                        | 0                            | 0                            | 0.0%                     | 3.1%                  |
| Gladwin                         | 324,352             | 85,495                       | 85,175                       | 192                          | 57                           | 22.9%                    | 26.4%                 |
| Alcona                          | 431,635             | 10,093                       | 8,200                        | 301                          | 44                           | 12.8%                    | 2.3%                  |
| Wexford                         | 361,914             | 53,551                       | 53,291                       | 23                           | 11                           | 32.4%                    | 14.8%                 |
| Mason                           | 316,909             | 4,657                        | 0                            | 36                           | 1                            | 2.7%                     | 1.5%                  |
| Roscommon                       | 333,696             | 202,438                      | 201,078                      | 136                          | 85                           | 38.5%                    | 60.7%                 |

|                                 |            |           |           |        |       |       |       |
|---------------------------------|------------|-----------|-----------|--------|-------|-------|-------|
| Alpena                          | 367,456    | 49,429    | 47,506    | 656    | 148   | 18.4% | 13.5% |
| Antrim                          | 305,242    | 44,285    | 44,232    | 1,150  | 404   | 26.0% | 14.5% |
| Arenac                          | 234,778    | 31,628    | 28,495    | 241    | 18    | 6.9%  | 13.5% |
| Cheboygan                       | 457,984    | 182,339   | 180,921   | 4      | 13    | 76.5% | 39.8% |
| Benzie                          | 205,638    | 62,771    | 62,093    | 10     | 21    | 67.7% | 30.5% |
| Newaygo                         | 539,117    | 6,344     | 0         | 65     | 9     | 12.2% | 1.2%  |
| Presque Isle                    | 422,445    | 86,201    | 80,578    | 41     | 33    | 44.6% | 20.4% |
| Ogemaw                          | 361,152    | 77,636    | 73,113    | 519    | 232   | 30.9% | 21.5% |
| Oscoda                          | 361,600    | 56,679    | 56,679    | 168    | 197   | 54.0% | 15.7% |
| Osceola                         | 362,227    | 18,461    | 18,461    | 201    | 4     | 2.0%  | 5.1%  |
| Otsego                          | 329,306    | 100,343   | 100,288   | 2,961  | 1,207 | 29.0% | 30.5% |
| Oceana                          | 345,894    | 5,544     | 0         | 103    | 0     | 0.0%  | 1.6%  |
| NLP                             | 10,358,541 | 2,073,890 | 1,991,626 | 10,156 | 4,529 | 30.8% | 20.0% |
| <b>Southern Lower Peninsula</b> |            |           |           |        |       |       |       |
| Ingham                          | 357,882    | 4,978     | 0         | 154    | 6     | 3.8%  | 1.4%  |
| Huron                           | 535,373    | 14,360    | 0         | 1      | 0     | 0.0%  | 2.7%  |
| Hillsdale                       | 383,258    | 3,306     | 0         | 348    | 0     | 0.0%  | 0.9%  |
| Gratiot                         | 364,883    | 16,650    | 0         | 17     | 0     | 0.0%  | 4.6%  |
| Allegan                         | 529,574    | 50,819    | 0         | 193    | 0     | 0.0%  | 9.6%  |
| Cass                            | 314,995    | 4,226     | 0         | 61     | 0     | 0.0%  | 1.3%  |
| Berrien                         | 365,440    | 3,279     | 0         | 0      | 0     | 0.0%  | 0.9%  |
| Bay                             | 284,320    | 5,990     | 0         | 524    | 10    | 1.9%  | 2.1%  |
| Genesee                         | 409,370    | 0         | 0         | 27     | 0     | 0.0%  | 0.0%  |
| Calhoun                         | 453,581    | 0         | 0         | 385    | 0     | 0.0%  | 0.0%  |
| Clinton                         | 365,734    | 10,852    | 0         | 0      | 0     | 0.0%  | 3.0%  |
| Eaton                           | 368,902    | 791       | 0         | 79     | 0     | 0.0%  | 0.2%  |
| Branch                          | 324,742    | 405       | 0         | 0      | 0     | 0.0%  | 0.1%  |
| Barry                           | 355,930    | 25,931    | 0         | 21     | 0     | 0.0%  | 7.3%  |
| Midland                         | 333,562    | 43,150    | 43,150    | 248    | 15    | 5.7%  | 12.9% |
| Wayne                           | 393,056    | 2,266     | 0         | 1      | 6     | 85.7% | 0.6%  |
| Washtenaw                       | 454,362    | 15,540    | 0         | 3      | 0     | 0.0%  | 3.4%  |
| Van Buren                       | 390,950    | 771       | 0         | 8      | 0     | 0.0%  | 0.2%  |
| Tuscola                         | 519,955    | 31,887    | 0         | 124    | 0     | 0.0%  | 6.1%  |
| Shiawassee                      | 344,787    | 933       | 0         | 5      | 0     | 0.0%  | 0.3%  |
| Sanilac                         | 616,832    | 10,284    | 0         | 0      | 0     | 0.0%  | 1.7%  |
| St. Joseph                      | 322,381    | 2,214     | 0         | 0      | 0     | 0.0%  | 0.7%  |
| St. Clair                       | 463,597    | 19,516    | 0         | 167    | 0     | 0.0%  | 4.2%  |
| Saginaw                         | 517,715    | 17,285    | 0         | 54     | 1     | 1.8%  | 3.3%  |
| Ottawa                          | 362,016    | 3,326     | 0         | 176    | 0     | 0.0%  | 0.9%  |
| Oakland                         | 558,406    | 28,723    | 0         | 55     | 3     | 5.2%  | 5.1%  |
| Muskegon                        | 325,837    | 12,289    | 0         | 12     | 0     | 0.0%  | 3.8%  |
| Monroe                          | 352,704    | 4,857     | 0         | 7      | 0     | 0.0%  | 1.4%  |
| Ionia                           | 366,854    | 11,153    | 0         | 0      | 0     | 0.0%  | 3.0%  |
| Lenawee                         | 480,320    | 4,197     | 0         | 2      | 0     | 0.0%  | 0.9%  |
| Isabella                        | 367,533    | 2,742     | 2,384     | 286    | 10    | 3.4%  | 0.7%  |

|                 |            |           |           |        |       |       |       |
|-----------------|------------|-----------|-----------|--------|-------|-------|-------|
| Jackson         | 452,224    | 17,050    | 0         | 147    | 0     | 0.0%  | 3.8%  |
| Kalamazoo       | 359,590    | 6,261     | 0         | 0      | 0     | 0.0%  | 1.7%  |
| Kent            | 547,949    | 8,311     | 0         | 175    | 0     | 0.0%  | 1.5%  |
| Montcalm        | 453,146    | 13,636    | 0         | 38     | 0     | 0.0%  | 3.0%  |
| Lapeer          | 418,688    | 13,019    | 0         | 98     | 0     | 0.0%  | 3.1%  |
| Livingston      | 363,776    | 17,905    | 0         | 91     | 4     | 4.2%  | 4.9%  |
| Macomb          | 307,482    | 1,044     | 0         | 59     | 3     | 4.8%  | 0.3%  |
| SLP Total       | 15,487,706 | 429,943   | 45,533    | 3,566  | 58    | 1.6%  | 2.8%  |
| <b>Michigan</b> |            |           |           |        |       |       |       |
| State Total     | 30,123,699 | 3,632,465 | 3,104,029 | 13,722 | 4,587 | 25.1% | 12.1% |

**Table A5.18. Mineral occurrences by commodity group, development status, ecoregion and county.**

| Ecoregion/<br>County           | Development<br>Status | Clay | Stone | Sand<br>And<br>Gravel | Other<br>Non-<br>metallic | Iron | Copper | Gold/<br>Silver | Other<br>Metallic |
|--------------------------------|-----------------------|------|-------|-----------------------|---------------------------|------|--------|-----------------|-------------------|
| <b>Western Upper Peninsula</b> |                       |      |       |                       |                           |      |        |                 |                   |
| Baraga                         | Past Producer         |      | 1     | 5                     | 6                         | 19   |        |                 |                   |
|                                | Producer              |      |       | 2                     | 2                         |      |        |                 |                   |
|                                | Occurrence            |      |       |                       |                           |      |        |                 | 4                 |
|                                | Prospect              |      |       |                       | 1                         | 1    |        | 8               | 1                 |
| Delta                          | Past Producer         | 2    | 3     | 1                     | 1                         |      |        |                 |                   |
|                                | Producer              |      | 2     | 11                    | 1                         |      |        |                 |                   |
| Dickinson                      | Past Producer         | 1    | 1     |                       |                           | 64   |        |                 | 1                 |
|                                | Producer              |      | 3     | 11                    | 1                         |      |        |                 |                   |
|                                | Plant                 |      |       |                       |                           | 1    |        |                 |                   |
|                                | Prospect              |      |       |                       |                           | 7    |        |                 |                   |
| Gogebic                        | Past Producer         |      | 1     | 2                     |                           | 52   |        |                 |                   |
|                                | Producer              |      |       | 8                     |                           |      | 1      |                 |                   |
|                                | Occurrence            |      |       |                       |                           | 41   | 1      |                 |                   |
|                                | Prospect              | 1    |       |                       | 1                         | 2    | 1      | 2               |                   |
|                                | Unknown               |      |       | 1                     |                           |      |        |                 |                   |
| Houghton                       | Past Producer         | 1    | 5     |                       |                           |      | 90     | 2               |                   |
|                                | Producer              |      | 5     | 8                     |                           |      |        |                 |                   |
|                                | Prospect              |      | 1     |                       |                           |      | 32     |                 | 1                 |
| Iron                           | Past Producer         |      | 1     |                       | 1                         | 182  |        |                 | 1                 |
|                                | Producer              |      |       | 14                    |                           | 2    |        |                 |                   |
|                                | Occurrence            |      |       |                       |                           | 82   |        |                 |                   |
|                                | Prospect              |      |       |                       | 1                         | 624  |        |                 | 1                 |
|                                | Unknown               |      |       |                       |                           | 1    |        |                 |                   |
| Keweenaw                       | Past Producer         |      |       |                       |                           |      | 98     | 1               | 2                 |
|                                | Producer              |      |       | 5                     |                           |      | 6      |                 |                   |
|                                | Occurrence            |      |       |                       |                           |      | 4      |                 |                   |
|                                | Prospect              |      |       |                       |                           |      | 33     |                 |                   |
| Marquette                      | Past Producer         |      | 1     |                       | 6                         | 194  | 1      | 2               |                   |
|                                | Producer              |      | 1     | 9                     |                           | 12   | 1      | 2               |                   |
|                                | Plant                 |      |       |                       |                           | 7    |        | 1               |                   |
|                                | Occurrence            |      |       |                       |                           | 4    | 33     | 22              | 20                |
|                                | Prospect              |      |       |                       |                           | 28   |        | 30              |                   |
| Menominee                      | Producer              |      |       | 12                    |                           |      |        |                 |                   |
| Ontonagon                      | Past Producer         |      | 1     | 1                     |                           |      | 76     | 8               |                   |
|                                | Producer              |      | 2     | 3                     |                           |      | 2      |                 |                   |
|                                | Plant                 |      |       |                       |                           |      | 2      |                 |                   |
|                                | Occurrence            |      |       |                       |                           |      |        | 2               |                   |
|                                | Prospect              |      |       |                       |                           |      | 8      | 2               |                   |

| Ecoregion/<br>County           | Development<br>Status | Clay | Stone | Sand<br>And<br>Gravel | Other<br>Non-<br>metallic | Iron | Copper | Gold/<br>Silver | Other<br>Metallic |
|--------------------------------|-----------------------|------|-------|-----------------------|---------------------------|------|--------|-----------------|-------------------|
| <b>Eastern Upper Peninsula</b> |                       |      |       |                       |                           |      |        |                 |                   |
| Alger                          | Past Producer         | 1    | 1     | 2                     |                           |      |        |                 |                   |
|                                | Producer              |      |       | 3                     |                           |      |        |                 |                   |
| Chippewa                       | Past Producer         | 4    |       |                       |                           |      |        |                 |                   |
|                                | Producer              |      | 1     | 13                    | 2                         |      |        |                 | 1                 |
| Luce                           | Past Producer         |      | 2     |                       |                           |      |        |                 |                   |
|                                | Producer              |      |       | 6                     |                           |      |        |                 |                   |
| Mackinac                       | Past Producer         | 1    | 3     |                       |                           |      |        |                 |                   |
|                                | Producer              |      | 2     | 19                    | 2                         |      |        |                 | 1                 |
|                                | Prospect              |      | 2     |                       |                           |      |        |                 |                   |
| Schoolcraft                    | Past Producer         |      |       |                       | 1                         |      |        |                 |                   |
|                                | Producer              |      | 1     | 6                     | 3                         |      |        |                 |                   |

| Ecoregion/<br>County            | Development<br>Status | Clay | Stone | Sand<br>And<br>Gravel | Other<br>Non-<br>metallic | Iron | Copper | Gold/<br>Silver | Other<br>Metallic |
|---------------------------------|-----------------------|------|-------|-----------------------|---------------------------|------|--------|-----------------|-------------------|
| <b>Northern Lower Peninsula</b> |                       |      |       |                       |                           |      |        |                 |                   |
| Alcona                          | Past Producer         | 1    |       | 2                     |                           |      |        |                 |                   |
|                                 | Producer              |      |       | 3                     |                           |      |        |                 |                   |
| Alpena                          | Past Producer         | 1    | 1     | 4                     | 1                         |      |        |                 | 1                 |
|                                 | Producer              |      | 1     | 2                     | 1                         |      |        |                 |                   |
|                                 | Plant                 |      | 1     |                       |                           |      |        |                 |                   |
| Antrim                          | Past Producer         | 4    |       | 1                     |                           |      |        |                 |                   |
|                                 | Producer              | 1    |       | 7                     |                           |      |        |                 |                   |
|                                 | Prospect              | 2    |       |                       |                           |      |        |                 |                   |
| Arenac                          | Past Producer         | 3    | 3     |                       | 2                         |      |        |                 |                   |
|                                 | Producer              |      | 4     | 1                     |                           |      |        |                 |                   |
| Benzie                          | Producer              |      |       | 1                     |                           |      |        |                 | 1                 |
| Charlevoix                      | Past Producer         | 4    | 1     |                       |                           |      |        |                 |                   |
|                                 | Producer              |      | 2     | 5                     | 1                         |      |        |                 |                   |
|                                 | Prospect              | 2    |       |                       |                           |      |        |                 |                   |
| Cheboygan                       | Past Producer         | 1    | 4     | 2                     |                           |      |        |                 |                   |
|                                 | Producer              |      |       | 3                     |                           |      |        |                 |                   |
|                                 | Prospect              | 6    | 1     |                       |                           |      |        |                 |                   |
| Clare                           | Past Producer         | 1    |       | 1                     |                           |      |        |                 |                   |
|                                 | Producer              |      |       | 5                     |                           |      |        |                 |                   |
|                                 | Prospect              | 1    |       |                       |                           |      |        |                 |                   |
|                                 | Unknown               |      |       | 1                     |                           |      |        |                 |                   |
| Crawford                        | Past Producer         |      |       | 1                     |                           |      |        |                 |                   |
|                                 | Producer              |      |       | 1                     |                           |      |        |                 |                   |
| Emmet                           | Past Producer         | 1    | 5     |                       |                           |      |        |                 |                   |
|                                 | Producer              |      |       | 9                     |                           |      |        |                 |                   |

| Ecoregion/<br>County | Development<br>Status | Clay | Stone | Sand<br>And<br>Gravel | Other<br>Non-<br>metallic | Iron | Copper | Gold/<br>Silver | Other<br>Metallic |
|----------------------|-----------------------|------|-------|-----------------------|---------------------------|------|--------|-----------------|-------------------|
|                      | Prospect              | 1    |       |                       |                           |      |        |                 |                   |
| Gladwin              | Past Producer         | 1    |       |                       |                           |      |        |                 |                   |
|                      | Producer              |      |       | 1                     |                           |      |        |                 |                   |
|                      | Prospect              | 2    |       |                       |                           |      |        |                 |                   |
| Grand Traverse       | Producer              |      |       | 8                     |                           | 1    |        |                 |                   |
|                      | Prospect              | 2    |       |                       |                           |      |        |                 |                   |
| Iosco                | Past Producer         | 2    |       |                       | 2                         |      |        |                 |                   |
|                      | Producer              |      |       | 1                     | 6                         |      |        |                 |                   |
| Kalkaska             | Producer              |      |       | 2                     |                           |      |        |                 |                   |
| Lake                 | Past Producer         | 1    |       |                       |                           |      |        |                 |                   |
|                      | Producer              |      |       | 7                     |                           |      |        |                 |                   |
| Leelanau             | Past Producer         | 1    |       |                       |                           |      |        |                 |                   |
|                      | Producer              |      |       | 5                     |                           |      |        |                 |                   |
| Manistee             | Past Producer         | 3    |       |                       | 1                         |      |        |                 |                   |
|                      | Producer              |      |       | 4                     | 1                         |      |        |                 | 5                 |
| Mason                | Past Producer         | 2    |       | 1                     |                           |      |        |                 | 1                 |
|                      | Producer              |      |       | 3                     | 1                         |      |        |                 |                   |
|                      | Plant                 |      |       |                       |                           |      |        |                 | 1                 |
| Mecosta              | Past Producer         | 1    |       |                       |                           |      |        |                 |                   |
|                      | Producer              |      |       | 10                    |                           |      |        |                 |                   |
|                      | Prospect              |      |       |                       | 1                         |      |        |                 |                   |
| Missaukee            | Past Producer         | 2    |       |                       |                           |      |        |                 |                   |
|                      | Producer              |      |       | 5                     |                           |      |        |                 |                   |
| Montmorency          | Past Producer         | 1    |       |                       |                           |      |        |                 |                   |
|                      | Producer              |      |       | 7                     |                           |      |        |                 |                   |
|                      | Prospect              | 1    |       |                       |                           |      |        |                 |                   |
| Newaygo              | Past Producer         | 1    |       | 2                     |                           |      |        |                 |                   |
|                      | Producer              |      |       | 10                    |                           |      |        |                 |                   |
|                      | Prospect              | 1    |       |                       |                           |      |        |                 |                   |
| Oceana               | Past Producer         | 3    |       | 1                     |                           |      |        |                 |                   |
|                      | Producer              |      |       | 8                     |                           |      |        |                 |                   |
| Ogemaw               | Past Producer         | 1    |       | 3                     |                           |      |        |                 |                   |
|                      | Producer              |      |       | 9                     |                           |      |        |                 |                   |
| Osceola              | Producer              |      |       | 3                     | 1                         |      |        |                 |                   |
|                      | Past Producer         | 1    |       | 1                     |                           |      |        |                 |                   |
|                      | Producer              |      |       | 3                     |                           |      |        |                 |                   |
| Otsego               | Past Producer         | 1    |       | 1                     |                           |      |        |                 |                   |
|                      | Producer              |      |       | 12                    |                           |      |        |                 |                   |
| Presque Isle         | Past Producer         |      |       |                       | 1                         |      |        |                 |                   |
|                      | Producer              |      | 2     | 8                     | 3                         |      |        |                 |                   |
|                      | Prospect              | 3    |       |                       | 2                         |      |        |                 |                   |
| Roscommon            | Past Producer         |      |       | 3                     |                           |      |        |                 |                   |

| Ecoregion/<br>County | Development<br>Status | Clay | Stone | Sand<br>And<br>Gravel | Other<br>Non-<br>metallic | Iron | Copper | Gold/<br>Silver | Other<br>Metallic |
|----------------------|-----------------------|------|-------|-----------------------|---------------------------|------|--------|-----------------|-------------------|
|                      | Producer              |      |       | 7                     |                           |      |        |                 |                   |
|                      | Prospect              | 2    |       |                       |                           |      |        |                 |                   |
| Wexford              | Past Producer         | 1    |       |                       |                           |      |        |                 |                   |
|                      | Producer              |      |       | 6                     |                           |      |        |                 | 2                 |
|                      | Prospect              | 1    |       |                       |                           |      |        |                 |                   |

| Ecoregion/<br>County | Development<br>Status | Clay | Stone | Sand<br>And<br>Gravel | Other<br>Non-<br>metallic | Iron | Copper | Gold/<br>Silver | Other<br>Metallic |
|----------------------|-----------------------|------|-------|-----------------------|---------------------------|------|--------|-----------------|-------------------|
| <b>Michigan</b>      |                       |      |       |                       |                           |      |        |                 |                   |
| State                | Past Producer         | 148  | 43    | 136                   | 51                        | 511  | 266    | 13              | 20                |
|                      | Producer              | 7    | 38    | 694                   | 50                        | 19   | 10     | 2               | 30                |
|                      | Plant                 |      | 1     | 1                     |                           | 8    | 2      | 1               | 3                 |
|                      | Occurrence            |      |       |                       |                           | 127  | 38     | 24              | 24                |
|                      | Prospect              | 42   | 4     | 2                     | 7                         | 662  | 74     | 42              | 3                 |
|                      | Unknown               |      |       |                       | 6                         | 1    | 1      |                 |                   |

Data source: U.S. Geological Survey, 2005, Mineral Resources Data System: U.S. Geological Survey, Reston, Virginia. (<http://tin.er.usgs.gov/mrds/>)

**Table A5.19. Area (thousand acres) of State-owned land, by ownership rights, ecoregion, and county.**

| <b>Ecoregion/<br/>County</b>    | <b>Surface</b> | <b>Mineral<br/>and<br/>Surface</b> | <b>Minerals</b> | <b>Mixed<br/>Ownership</b> | <b>Other<br/>Rights</b> |
|---------------------------------|----------------|------------------------------------|-----------------|----------------------------|-------------------------|
| <b>Western Upper Peninsula</b>  |                |                                    |                 |                            |                         |
| Baraga                          | 13             | 64                                 | 61              | 2                          | 6                       |
| Delta                           | 3              | 64                                 | 152             | 1                          | 0                       |
| Dickinson                       | 30             | 191                                | 52              | 5                          | 0                       |
| Gogebic                         | 7              | 5                                  | 98              | 1                          | 11                      |
| Houghton                        | 5              | 40                                 | 55              | 3                          | 0                       |
| Iron                            | 11             | 72                                 | 91              | 5                          | 1                       |
| Keweenaw                        | 7              | 4                                  | 4               | 0                          | 0                       |
| Marquette                       | 48             | 211                                | 97              | 5                          | 0                       |
| Menominee                       | 7              | 90                                 | 72              | 2                          | 0                       |
| Ontonagon                       | 26             | 39                                 | 121             | 3                          | 18                      |
| WUP Total                       | 158            | 780                                | 804             | 27                         | 37                      |
| <b>Eastern Upper Peninsula</b>  |                |                                    |                 |                            |                         |
| Alger                           | 5              | 92                                 | 59              | 2                          | 47                      |
| Chippewa                        | 45             | 173                                | 155             | 4                          | 0                       |
| Luce                            | 9              | 281                                | 19              | 8                          | 0                       |
| Mackinac                        | 12             | 187                                | 133             | 9                          | 0                       |
| Schoolcraft                     | 27             | 262                                | 69              | 2                          | 22                      |
| EUP Total                       | 97             | 996                                | 435             | 25                         | 70                      |
| <b>Northern Lower Peninsula</b> |                |                                    |                 |                            |                         |
| Alcona                          | 1              | 8                                  | 100             | 0                          | 0                       |
| Alpena                          | 4              | 44                                 | 29              | 2                          | 0                       |
| Antrim                          | 2              | 42                                 | 20              | 2                          | 1                       |
| Arenac                          | 1              | 29                                 | 18              | 2                          | 0                       |
| Benzie                          | 2              | 58                                 | 16              | 3                          | 1                       |
| Charlevoix                      | 4              | 54                                 | 16              | 1                          | 0                       |
| Cheboygan                       | 4              | 176                                | 41              | 5                          | 0                       |
| Clare                           | 10             | 42                                 | 11              | 2                          | 0                       |
| Crawford                        | 11             | 164                                | 19              | 5                          | 8                       |
| Emmet                           | 2              | 75                                 | 24              | 2                          | 0                       |
| Gladwin                         | 2              | 83                                 | 23              | 2                          | 0                       |
| Grand Traverse                  | 3              | 64                                 | 13              | 4                          | 1                       |
| Iosco                           | 1              | 23                                 | 64              | 1                          | 0                       |
| Kalkaska                        | 28             | 127                                | 29              | 5                          | 2                       |
| Lake                            | 3              | 57                                 | 44              | 2                          | 1                       |
| Leelanau                        | 0              | 8                                  | 12              | 0                          | 0                       |
| Manistee                        | 1              | 22                                 | 46              | 2                          | 0                       |
| Mason                           | 0              | 6                                  | 21              | 0                          |                         |
| Mecosta                         | 1              | 12                                 | 11              | 2                          | 0                       |
| Missaukee                       | 15             | 87                                 | 18              | 2                          | 1                       |
| Montmorency                     | 8              | 128                                | 27              | 2                          | 1                       |

|              |     |       |       |     |     |
|--------------|-----|-------|-------|-----|-----|
| Newaygo      | 3   | 3     | 53    | 1   | 0   |
| Oceana       | 0   | 5     | 30    | 0   | 0   |
| Ogemaw       | 7   | 68    | 37    | 2   | 0   |
| Osceola      | 1   | 18    | 21    | 1   | 0   |
| Oscoda       | 4   | 49    | 74    | 3   | 1   |
| Otsego       | 1   | 96    | 28    | 5   | 1   |
| Presque Isle | 4   | 84    | 30    | 2   | 0   |
| Roscommon    | 10  | 187   | 8     | 6   | 0   |
| Wexford      | 13  | 40    | 57    | 2   | 1   |
| NLP Total    | 146 | 1,860 | 940   | 70  | 19  |
| <b>State</b> | 465 | 3,983 | 2,247 | 150 | 130 |

Data Source: Compiled from Statewide DNR ownership GIS shapefile database.

**Table A5.20. Per-capita water use and per-acre withdrawals from ground and surface water, by ecoregion and county, 2000.**

| Ecoregion/<br>County            | Total pop-<br>ulation   | Per-<br>capita<br>use | Land<br>area          | Total<br>water<br>use | Ground-<br>water<br>with-<br>drawals | Ground-<br>water<br>with-<br>drawals | Surface<br>water<br>with-<br>drawals | Total<br>with-<br>drawals |
|---------------------------------|-------------------------|-----------------------|-----------------------|-----------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------|
|                                 | Thousan<br>d<br>persons | Gal/Day               | Thousan<br>d<br>Acres | Gal/Acre/<br>Day      | Gal/Acre/<br>Day                     | Million<br>Gal/Day                   | Million<br>Gal/Day                   | Million<br>Gal/Day        |
| <b>Western Upper Peninsula</b>  |                         |                       |                       |                       |                                      |                                      |                                      |                           |
| Baraga                          | 8,750                   | 237                   | 578.6                 | 3.58                  | 0.71                                 | 0.41                                 | 1.66                                 | 2.07                      |
| Delta                           | 38,520                  | 1,678                 | 748.8                 | 86.31                 | 3.15                                 | 2.36                                 | 62.27                                | 64.63                     |
| Dickinson                       | 27,470                  | 799                   | 490.5                 | 44.75                 | 8.09                                 | 3.97                                 | 17.98                                | 21.95                     |
| Gogebic                         | 17,370                  | 147                   | 705.2                 | 3.63                  | 3.63                                 | 2.56                                 | 0                                    | 2.56                      |
| Houghton                        | 36,020                  | 136                   | 647.5                 | 7.55                  | 7.51                                 | 4.86                                 | 0.03                                 | 4.89                      |
| Iron                            | 13,140                  | 197                   | 746.5                 | 3.47                  | 3.22                                 | 2.4                                  | 0.19                                 | 2.59                      |
| Keweenaw                        | 2,300                   | 96                    | 346.2                 | 0.64                  | 0.58                                 | 0.2                                  | 0.02                                 | 0.22                      |
| Marquette                       | 64,630                  | 4,548                 | 1,165.5               | 252.20                | 3.99                                 | 4.65                                 | 289.28                               | 293.93                    |
| Menominee                       | 25,330                  | 209                   | 667.9                 | 7.94                  | 2.41                                 | 1.61                                 | 3.69                                 | 5.3                       |
| Ontonagon                       | 7,820                   | 2,515                 | 839.4                 | 23.43                 | 0.52                                 | 0.44                                 | 19.23                                | 19.67                     |
| WUP                             | 241                     | 1,731                 | 6,936                 | 60.2                  | 3.4                                  | 23.5                                 | 394.4                                | 417.8                     |
| <b>Eastern Upper Peninsula</b>  |                         |                       |                       |                       |                                      |                                      |                                      |                           |
| Alger                           | 9,860                   | 690                   | 587.4                 | 11.58                 | 2.42                                 | 1.42                                 | 5.38                                 | 6.8                       |
| Chippewa                        | 38,540                  | 139                   | 999.1                 | 5.35                  | 2.41                                 | 2.41                                 | 2.94                                 | 5.35                      |
| Luce                            | 7,020                   | 161                   | 578.0                 | 1.96                  | 1.96                                 | 1.13                                 | 0                                    | 1.13                      |
| Mackinac                        | 11,940                  | 861                   | 653.8                 | 15.72                 | 1.30                                 | 0.85                                 | 9.43                                 | 10.28                     |
| Schoolcraft                     | 8,900                   | 1,300                 | 754.0                 | 15.35                 | 0.73                                 | 0.55                                 | 11.02                                | 11.57                     |
| EUP                             | 76                      | 461                   | 3,572                 | 9.8                   | 1.8                                  | 6.4                                  | 28.8                                 | 35.1                      |
| <b>Northern Lower Peninsula</b> |                         |                       |                       |                       |                                      |                                      |                                      |                           |
| Alcona                          | 11,720                  | 108                   | 431.6                 | 2.92                  | 2.80                                 | 1.21                                 | 0.05                                 | 1.26                      |
| Alpena                          | 31,310                  | 4,117                 | 367.5                 | 350.79                | 5.17                                 | 1.9                                  | 127                                  | 128.9                     |
| Antrim                          | 23,110                  | 194                   | 305.2                 | 14.71                 | 14.35                                | 4.38                                 | 0.11                                 | 4.49                      |
| Arenac                          | 17,270                  | 2,195                 | 234.8                 | 161.43                | 5.58                                 | 1.31                                 | 36.59                                | 37.9                      |
| Benzie                          | 16,000                  | 156                   | 205.6                 | 12.16                 | 12.11                                | 2.49                                 | 0.01                                 | 2.5                       |
| Charlevoix                      | 26,090                  | 1,737                 | 266.8                 | 169.92                | 48.28                                | 12.88                                | 32.45                                | 45.33                     |
| Cheboygan                       | 26,450                  | 148                   | 458.0                 | 8.56                  | 7.88                                 | 3.61                                 | 0.31                                 | 3.92                      |
| Clare                           | 31,250                  | 133                   | 362.8                 | 11.47                 | 9.65                                 | 3.5                                  | 0.66                                 | 4.16                      |
| Crawford                        | 14,270                  | 170                   | 357.2                 | 6.80                  | 6.58                                 | 2.35                                 | 0.08                                 | 2.43                      |
| Emmet                           | 31,440                  | 192                   | 299.4                 | 20.21                 | 20.21                                | 6.05                                 | 0                                    | 6.05                      |
| Gladwin                         | 26,020                  | 93                    | 324.4                 | 7.49                  | 7.40                                 | 2.4                                  | 0.03                                 | 2.43                      |
| Grand<br>Traverse               | 77,650                  | 151                   | 297.6                 | 39.31                 | 22.17                                | 6.6                                  | 5.1                                  | 11.7                      |
| Iosco                           | 27,340                  | 117                   | 351.4                 | 9.08                  | 4.84                                 | 1.7                                  | 1.49                                 | 3.19                      |
| Kalkaska                        | 16,570                  | 237                   | 359.1                 | 10.92                 | 10.19                                | 3.66                                 | 0.26                                 | 3.92                      |
| Lake                            | 11,330                  | 103                   | 363.2                 | 3.22                  | 3.14                                 | 1.14                                 | 0.03                                 | 1.17                      |
| Leelanau                        | 21,120                  | 164                   | 223.0                 | 15.56                 | 15.07                                | 3.36                                 | 0.11                                 | 3.47                      |

|              |        |       |        |        |       |       |         |         |
|--------------|--------|-------|--------|--------|-------|-------|---------|---------|
| Manistee     | 24,530 | 1,764 | 347.9  | 124.40 | 13.51 | 4.7   | 38.58   | 43.28   |
| Mason        | 28,270 | 815   | 316.9  | 72.73  | 8.52  | 2.7   | 20.35   | 23.05   |
| Mecosta      | 40,550 | 167   | 355.6  | 19.06  | 14.14 | 5.03  | 1.75    | 6.78    |
| Missaukee    | 14,480 | 159   | 362.7  | 6.34   | 6.04  | 2.19  | 0.11    | 2.3     |
| Montmorency  | 10,320 | 120   | 350.5  | 3.54   | 3.00  | 1.05  | 0.19    | 1.24    |
| Newaygo      | 47,870 | 161   | 539.1  | 14.26  | 13.08 | 7.05  | 0.64    | 7.69    |
| Oceana       | 26,870 | 207   | 345.9  | 16.05  | 14.08 | 4.87  | 0.68    | 5.55    |
| Ogemaw       | 21,640 | 116   | 361.2  | 6.92   | 6.56  | 2.37  | 0.13    | 2.5     |
| Osceola      | 23,200 | 229   | 362.2  | 14.66  | 14.16 | 5.13  | 0.18    | 5.31    |
| Oscoda       | 9,420  | 140   | 361.6  | 3.65   | 2.99  | 1.08  | 0.24    | 1.32    |
| Otsego       | 23,300 | 167   | 329.3  | 11.84  | 11.69 | 3.85  | 0.05    | 3.9     |
| Presque Isle | 14,410 | 553   | 422.4  | 18.87  | 6.65  | 2.81  | 5.16    | 7.97    |
| Roscommon    | 25,470 | 104   | 333.7  | 7.94   | 7.91  | 2.64  | 0.01    | 2.65    |
| Wexford      | 30,480 | 274   | 361.9  | 23.07  | 22.74 | 8.23  | 0.12    | 8.35    |
| NLP          | 8,871  | 1,033 | 15,488 | 591.5  | 38.2  | 592.2 | 8,568.8 | 9,161.0 |
| <b>State</b> | 9,938  | 1,006 | 36,354 | 275.0  | 20.2  | 734.3 | 9,264.3 | 9,998.6 |

## Chapter 6. Outdoor Recreation Uses and Values

There are no appendix items for Chapter 6.

## Chapter 7. Other forest uses and values

There are no appendix items for Chapter 7.

## Chapter 8. Assessment Summary

There are no appendix items for Chapter 8.

### Descriptions of Selected NAICS Sectors

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| <b>11: Sector 11-- Agriculture, Forestry, Fishing and Hunting</b> | <p>The Agriculture, Forestry, Fishing and Hunting sector comprises establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats.</p> <p>The establishments in this sector are often described as farms, ranches, dairies, greenhouses, nurseries, orchards, or hatcheries. A farm may consist of a single tract of land or a number of separate tracts which may be held under different tenures. For example, one tract may be owned by the farm operator and another rented. It may be operated by the operator alone or with the assistance of members of the household or hired employees, or it may be operated by a partnership, corporation, or other type of organization. When a landowner has one or more tenants, renters, croppers, or managers, the land operated by each is considered a farm.</p> <p>The sector distinguishes two basic activities: agricultural production and agricultural support activities. Agricultural production includes establishments performing the complete farm or ranch operation, such as farm owner-operators, tenant farm operators, and sharecroppers. Agricultural support activities include establishments that perform one or more activities associated with farm operation, such as soil preparation, planting, harvesting, and management, on a contract or fee basis.</p> <p>Excluded from the Agriculture, Forestry, Hunting and Fishing sector are establishments primarily engaged in agricultural research and establishments primarily engaged in administering programs for regulating and conserving land, mineral, wildlife, and forest use. These establishments are classified in Industry 54171, Research and Development in the Physical, Engineering, and Life Sciences; and Industry 92412, Administration of Conservation Programs, respectively.</p> |
| <b>113: Forestry and Logging</b>                                  | <p>Industries in the Forestry and Logging subsector grow and harvest timber on a long production cycle (i.e., of 10 years or more). Long production cycles use different production processes than short production cycles, which require more horticultural interventions prior to harvest, resulting in processes more similar to those found in the Crop Production subsector. Consequently, Christmas tree production and other production involving production cycles of less than 10 years, are classified in the Crop Production subsector.</p> <p>Industries in this subsector specialize in different stages of the production cycle. Reforestation requires production of seedlings in specialized nurseries. Timber production requires natural forest or suitable areas of land that are available for a long duration. The maturation time for timber depends upon the species of tree, the climatic conditions of the region, and the intended purpose of the timber. The harvesting of timber (except when</p>  |

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|   | done on an extremely small scale) requires specialized machinery unique to the industry. Establishments gathering forest products, such as gums, barks, balsam needles, rhizomes, fibers, Spanish moss, and ginseng and truffles, are also included in this subsector.  |
| <b>114: Fishing, Hunting and Trapping</b>                   | <p>Industries in the Fishing, Hunting, and Trapping subsector harvest fish and other wild animals from their natural habitats and are dependent upon a continued supply of the natural resource. The harvesting of fish is the predominant economic activity of this subsector and it usually requires specialized vessels that, by the nature of their size, configuration and equipment, are not suitable for any other type of production, such as transportation.</p> <p>Hunting and trapping activities utilize a wide variety of production processes and are classified in the same subsector as fishing because the availability of resources and the constraints imposed, such as conservation requirements and proper habitat maintenance, are similar.</p>   |
| <b>115: Support Activities for Agriculture and Forestry</b> | Industries in the Support Activities for Agriculture and Forestry subsector provide support services that are an essential part of agricultural and forestry production. These support activities may be performed by the agriculture or forestry producing establishment or conducted independently as an alternative source of inputs required for the production process for a given crop, animal, or forestry industry. Establishments that primarily perform these activities independent of the agriculture or forestry producing establishment are in this subsector.  |
| <b>21: Sector 21-- Mining</b>                               | <p>The Mining sector comprises establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas. The term mining is used in the broad sense to include quarrying, well operations, beneficiating (e.g., crushing, screening, washing, and flotation), and other preparation customarily performed at the mine site, or as a part of mining activity.</p> <p>The Mining sector distinguishes two basic activities: mine operation and mining support activities. Mine operation includes establishments operating mines, quarries, or oil and gas wells on their own account or for others on a contract or fee basis. Mining support activities include establishments that perform exploration (except geophysical surveying) and/or other mining services on a contract or fee basis (except mine site preparation and construction of oil/gas pipelines).</p> <p>Establishments in the Mining sector are grouped and classified according to the natural resource mined or to be mined. Industries include establishments that develop the mine site, extract the natural resources, and/or those that beneficiate (i.e., prepare) the mineral mined. Beneficiation is the process whereby the extracted material is reduced to particles that can be separated into mineral and waste, the former suitable for further processing or direct use. The operations that take place in beneficiation are primarily mechanical, such as grinding, washing, magnetic separation, and centrifugal separation. In contrast, manufacturing operations primarily use chemical and electrochemical processes, such as electrolysis and distillation. However, some treatments, such as heat treatments, take place in both the beneficiation and the manufacturing (i.e., smelting/refining) stages. The range of preparation activities varies by mineral and the purity of any given ore deposit. While some minerals, such as petroleum and natural gas, require little or no preparation, others are washed and screened, while yet others, such as gold and silver, can be transformed into bullion before leaving the mine site.</p> <p>Mining, beneficiating, and manufacturing activities often occur in a single location. Separate receipts will be collected for these activities whenever possible. When receipts cannot be broken out between mining and manufacturing, establishments that mine or quarry nonmetallic minerals, beneficiate the nonmetallic minerals into more finished manufactured products are classified based on the primary activity of the establishment. A mine that manufactures a small amount of finished products will be classified in Sector 21, Mining. An establishment that mines whose primary output is a more finished manufactured product</p> |

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|   | will be classified in Sector 31-33, Manufacturing.  |
| <b>211: Oil and Gas Extraction</b>        | <p>Industries in the Oil and Gas Extraction subsector operate and/or develop oil and gas field properties. Such activities may include exploration for crude petroleum and natural gas; drilling, completing, and equipping wells; operating separators, emulsion breakers, desilting equipment, and field gathering lines for crude petroleum and natural gas; and all other activities in the preparation of oil and gas up to the point of shipment from the producing property. This subsector includes the production of crude petroleum, the mining and extraction of oil from oil shale and oil sands, and the production of natural gas, sulfur recovery from natural gas, and recovery of hydrocarbon liquids.</p> <p>Establishments in this subsector include those that operate oil and gas wells on their own account or for others on a contract or fee basis. Establishments primarily engaged in providing support services, on a fee or contract basis, required for the drilling or operation of oil and gas wells (except geophysical surveying and mapping, mine site preparation, and construction of oil/gas pipelines) are classified in Subsector 213, Support Activities for Mining.</p>  |
| <b>212: Mining (except Oil and Gas)</b>   | <p>Industries in the Mining (except Oil and Gas) subsector primarily engage in mining, mine site development, and beneficiating (i.e., preparing) metallic minerals and nonmetallic minerals, including coal. The term "mining" is used in the broad sense to include ore extraction, quarrying, and beneficiating (e.g., crushing, screening, washing, sizing, concentrating, and flotation), customarily done at the mine site.</p> <p>Beneficiation is the process whereby the extracted material is reduced to particles which can be separated into mineral and waste, the former suitable for further processing or direct use. The operations that take place in beneficiation are primarily mechanical, such as grinding, washing, magnetic separation, centrifugal separation, and so on. In contrast, manufacturing operations primarily use chemical and electrochemical processes, such as electrolysis, distillation, and so on. However some treatments, such as heat treatments, take place in both stages: the beneficiation and the manufacturing (i.e., smelting/refining) stages. The range of preparation activities varies by mineral and the purity of any given ore deposit. While some minerals, such as petroleum and natural gas, require little or no preparation, others are washed and screened, while yet others, such as gold and silver, can be transformed into bullion before leaving the mine site.</p> <p>Establishments in the Mining (except Oil and Gas) subsector include those that have complete responsibility for operating mines and quarries (except oil and gas wells) and those that operate mines and quarries (except oil and gas wells) for others on a contract or fee basis. Establishments primarily engaged in providing support services, on a contract or fee basis, required for the mining and quarrying of minerals are classified in Subsector 213, Support Activities for Mining.</p> |
| <b>213: Support Activities for Mining</b> | <p>Industries in the Support Activities for Mining subsector group establishments primarily providing support services, on a contract or fee basis, required for the mining and quarrying of minerals and for the extraction of oil and gas. Establishments performing exploration (except geophysical surveying and mapping) for minerals, on a contract or fee basis, are included in this subsector. Exploration includes traditional prospecting methods, such as taking core samples and making geological observations at prospective sites.</p> <p>The activities performed on a contract or fee basis by establishments in the Support Activities for Mining subsector are also often performed in-house by mining operators. These activities include: taking core samples, making geological observations at prospective sites, excavating slush pits and cellars, and such oil and gas operations as spudding in, drilling in, re-drilling, directional drilling, well surveying; running, cutting, and pulling casings, tubes and rods; cementing wells, shooting wells; perforating well casings; acidizing and chemically treating wells; and cleaning out, bailing, and swabbing wells.</p>  |

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| <p><b>22: Sector 22--<br/>Utilities</b></p>    | <p>The Utilities sector comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal. Within this sector, the specific activities associated with the utility services provided vary by utility: electric power includes generation, transmission, and distribution; natural gas includes distribution; steam supply includes provision and/or distribution; water supply includes treatment and distribution; and sewage removal includes collection, treatment, and disposal of waste through sewer systems and sewage treatment facilities. Excluded from this sector are establishments primarily engaged in waste management services classified in Subsector 562, Waste Management and Remediation Services. These establishments also collect, treat, and dispose of waste materials; however, they do not use sewer systems or sewage treatment facilities.</p>  |
| <p><b>23: Sector 23--<br/>Construction</b></p> | <p>The construction sector comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale as building sites also are included in this sector.</p> <p>Construction work done may include new work, additions, alterations, or maintenance and repairs. Activities of these establishments generally are managed at a fixed place of business, but they usually perform construction activities at multiple project sites. Production responsibilities for establishments in this sector are usually specified in (1) contracts with the owners of construction projects (prime contracts) or (2) contracts with other construction establishments (subcontracts).</p> <p>Establishments primarily engaged in contracts that include responsibility for all aspects of individual construction projects are commonly known as general contractors, but also may be known as design-builders, construction managers, turnkey contractors, or (in cases where two or more establishments jointly secure a general contract) joint-venture contractors. Construction managers that provide oversight and scheduling only (i.e., agency) as well as construction managers that are responsible for the entire project (i.e., at risk) are included as general contractor type establishments. Establishments of the "general contractor type" frequently arrange construction of separate parts of their projects through subcontracts with other construction establishments.</p> <p>Establishments primarily engaged in activities to produce a specific component (e.g., masonry, painting, and electrical work) of a construction project are commonly known as specialty trade contractors. Activities of specialty trade contractors are usually subcontracted from other construction establishments but, especially in remodeling and repair construction, the work may be done directly for the owner of the property.</p> <p>Establishments primarily engaged in activities to construct buildings to be sold on sites that they own are known as operative builders, but also may be known as speculative builders or merchant builders. Operative builders produce buildings in a manner similar to general contractors, but their production processes also include site acquisition and securing of financial backing. Operative builders are most often associated with the construction of residential buildings. Like general contractors, they may subcontract all or part of the actual construction work on their buildings.</p> <p>There are substantial differences in the types of equipment, work force skills, and other inputs required by establishments in this sector. To highlight these differences and variations in the underlying production functions, this sector is divided into three subsectors.</p> <p>Subsector 236, Construction of Buildings, comprises establishments of the general contractor type and operative builders involved in the construction of buildings. Subsector 237, Heavy and Civil Engineering Construction, comprises establishments involved in the construction of engineering projects. Subsector 238, Specialty Trade Contractors, comprises establishments engaged in specialty trade activities generally needed in the construction of all types of buildings.</p> <p>Force account construction is construction work performed by an enterprise primarily</p> |

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|  | <p>engaged in some business other than construction for its own account and use, using employees of the enterprise. This activity is not included in the construction sector unless the construction work performed is the primary activity of a separate establishment of the enterprise. The installation and the ongoing repair and maintenance of telecommunications and utility networks is excluded from construction when the establishments performing the work are not independent contractors. Although a growing proportion of this work is subcontracted to independent contractors in the Construction Sector, the operating units of telecommunications and utility companies performing this work are included with the telecommunications or utility activities.</p>  |
| <p><b>31: Sector 31-33--<br/>Manufacturing</b></p> | <p>The Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified in Sector 23, Construction. Establishments in the Manufacturing sector are often described as plants, factories, or mills and characteristically use power-driven machines and materials-handling equipment. However, establishments that transform materials or substances into new products by hand or in the worker's home and those engaged in selling to the general public products made on the same premises from which they are sold, such as bakeries, candy stores, and custom tailors, may also be included in this sector. Manufacturing establishments may process materials or may contract with other establishments to process their materials for them. Both types of establishments are included in manufacturing.</p> <p>The materials, substances, or components transformed by manufacturing establishments are raw materials that are products of agriculture, forestry, fishing, mining, or quarrying as well as products of other manufacturing establishments. The materials used may be purchased directly from producers, obtained through customary trade channels, or secured without recourse to the market by transferring the product from one establishment to another, under the same ownership.</p> <p>The new product of a manufacturing establishment may be finished in the sense that it is ready for utilization or consumption, or it may be semifinished to become an input for an establishment engaged in further manufacturing. For example, the product of the alumina refinery is the input used in the primary production of aluminum; primary aluminum is the input to an aluminum wire drawing plant; and aluminum wire is the input for a fabricated wire product manufacturing establishment.</p> <p>The subsectors in the Manufacturing sector generally reflect distinct production processes related to material inputs, production equipment, and employee skills. In the machinery area, where assembling is a key activity, parts and accessories for manufactured products are classified in the industry of the finished manufactured item when they are made for separate sale. For example, a replacement refrigerator door would be classified with refrigerators and an attachment for a piece of metal working machinery would be classified with metal working machinery. However, components, input from other manufacturing establishments, are classified based on the production function of the component manufacturer. For example, electronic components are classified in Subsector 334, Computer and Electronic Product Manufacturing and stampings are classified in Subsector 332, Fabricated Metal Product Manufacturing.</p> <p>Manufacturing establishments often perform one or more activities that are classified outside the Manufacturing sector of NAICS. For instance, almost all manufacturing has some captive research and development or administrative operations, such as accounting, payroll, or management. These captive services are treated the same as captive manufacturing activities. When the services are provided by separate establishments, they are classified to the NAICS sector where such services are primary, not in manufacturing. The boundaries of manufacturing and the other sectors of the classification system can be somewhat blurry. The establishments in the manufacturing sector are engaged in the transformation of materials into new products. Their output is a new product. However, the definition of what constitutes a new product can be somewhat subjective. As clarification,</p> |

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|   | <p>the following activities are considered manufacturing in NAICS:<br/> Milk bottling and pasteurizing; Grinding of lenses to prescription;<br/> Water bottling and processing; Wood preserving;<br/> Fresh fish packaging (oyster shucking, Electroplating, plating, metal heat fish filleting); treating, and polishing for the trade;<br/> Apparel jobbing (assigning of materials Lapidary work for the trade;<br/> to contract factories or shops for Fabricating signs and advertising displays;<br/> fabrication or other contract operations) Rebuilding or remanufacturing<br/> as well as contracting on materials owned by others; machinery (i.e., automotive parts)<br/> Printing and related activities; Ship repair and renovation;<br/> Ready-mixed concrete production; Machine shops; and<br/> Leather converting; Tire retreading.</p> <p>Conversely, there are activities that are sometimes considered manufacturing, but which for NAICS are classified in another sector (i.e., not classified as manufacturing). They include:</p> <ol style="list-style-type: none"> <li>1. Logging, classified in Sector 11, Agriculture, Forestry, Fishing and Hunting is considered a harvesting operation;</li> <li>2. The beneficiating of ores and other minerals, classified in Sector 21, Mining, is considered part of the activity of mining;</li> <li>3. The construction of structures and fabricating operations performed at the site of construction by contractors, is classified in Sector 23, Construction;</li> <li>4. Establishments engaged in breaking of bulk and redistribution in smaller lots, including packaging, repackaging, or bottling products, such as liquors or chemicals; the customized assembly of computers; sorting of scrap; mixing paints to customer order; and cutting metals to customer order, classified in Sector 42, Wholesale Trade or Sector 44-45, Retail Trade, produce a modified version of the same product, not a new product; and</li> <li>5. Publishing and the combined activity of publishing and printing, classified in Sector 51, Information, perform the transformation of information into a product where as the value of the product to the consumer lies in the information content, not in the format in which it is distributed (i.e., the book or software diskette).</li> </ol> |
| <p><b>321: Wood Product Manufacturing</b></p> | <p>Industries in the Wood Product Manufacturing subsector manufacture wood products, such as lumber, plywood, veneers, wood containers, wood flooring, wood trusses, manufactured homes (i.e., mobile home), and prefabricated wood buildings. The production processes of the Wood Product Manufacturing subsector include sawing, planing, shaping, laminating, and assembling of wood products starting from logs that are cut into bolts, or lumber that then may be further cut, or shaped by lathes or other shaping tools. The lumber or other transformed wood shapes may also be subsequently planed or smoothed, and assembled into finished products, such as wood containers. The Wood Product Manufacturing subsector includes establishments that make wood products from logs and bolts that are sawed and shaped, and establishments that purchase sawed lumber and make wood products. With the exception of sawmills and wood preservation establishments, the establishments are grouped into industries mainly based on the specific products manufactured.</p>   |
| <p><b>322: Paper Manufacturing</b></p>        | <p>Industries in the Paper Manufacturing subsector make pulp, paper, or converted paper products. The manufacturing of these products is grouped together because they constitute a series of vertically connected processes. More than one is often carried out in a single establishment. There are essentially three activities. The manufacturing of pulp involves separating the cellulose fibers from other impurities in wood or used paper. The manufacturing of paper involves matting these fibers into a sheet. Converted paper products are made from paper and other materials by various cutting and shaping techniques and includes coating and laminating activities.</p> <p>The Paper Manufacturing subsector is subdivided into two industry groups, the first for the manufacturing of pulp and paper and the second for the manufacturing of converted paper</p>  |

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|   | <p>products. Paper making is treated as the core activity of the subsector. Therefore, any establishment that makes paper (including paperboard), either alone or in combination with pulp manufacturing or paper converting, is classified as a paper or paperboard mill. Establishments that make pulp without making paper are classified as pulp mills. Pulp mills, paper mills and paperboard mills comprise the first industry group.</p> <p>Establishments that make products from purchased paper and other materials make up the second industry group, Converted Paper Product Manufacturing. This general activity is then subdivided based, for the most part, on process distinctions. Paperboard container manufacturing uses corrugating, cutting, and shaping machinery to form paperboard into containers. Paper bag and coated and treated paper manufacturing establishments cut and coat paper and foil. Stationery product manufacturing establishments make a variety of paper products used for writing, filing, and similar applications. Other converted paper product manufacturing includes, in particular, the conversion of sanitary paper stock into such things as tissue paper and disposable diapers.</p> <p>An important process used in the Paper Bag and Coated and Treated Paper Manufacturing industry is lamination, often combined with coating. Lamination and coating makes a composite material with improved properties of strength, impermeability, and so on. The laminated materials may be paper, metal foil, or plastics film. While paper is often one of the components, it is not always. Lamination of plastics film to plastics film is classified in the NAICS Subsector 326, Plastics and Rubber Products Manufacturing, because establishments that do this often first make the film. The same situation holds with respect to bags. The manufacturing of bags from plastics only, whether or not laminated, is classified in Subsector 326, Plastics and Rubber Products Manufacturing, but all other bag manufacturing is classified in this subsector.</p> <p>Excluded from this subsector are photosensitive papers. These papers are chemically treated and are classified in Industry 32599, All Other Chemical Product and Preparation Manufacturing.</p>  |
| <p><b>42: Sector 42-- Wholesale Trade</b></p> | <p>The Wholesale Trade sector comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The merchandise described in this sector includes the outputs of agriculture, mining, manufacturing, and certain information industries, such as publishing. The wholesaling process is an intermediate step in the distribution of merchandise. Wholesalers are organized to sell or arrange the purchase or sale of (a) goods for resale (i.e., goods sold to other wholesalers or retailers), (b) capital or durable nonconsumer goods, and (c) raw and intermediate materials and supplies used in production.</p> <p>Wholesalers sell merchandise to other businesses and normally operate from a warehouse or office. These warehouses and offices are characterized by having little or no display of merchandise. In addition, neither the design nor the location of the premises is intended to solicit walk-in traffic. Wholesalers do not normally use advertising directed to the general public. Customers are generally reached initially via telephone, in-person marketing, or by specialized advertising that may include Internet and other electronic means. Follow-up orders are either vendor-initiated or client-initiated, generally based on previous sales, and typically exhibit strong ties between sellers and buyers. In fact, transactions are often conducted between wholesalers and clients that have long-standing business relationships. This sector comprises two main types of wholesalers: merchant wholesalers that sell goods on their own account and business to business electronic markets, agents, and brokers that arrange sales and purchases for others generally for a commission or fee.</p> <p>(1) Establishments that sell goods on their own account are known as wholesale merchants, distributors, jobbers, drop shippers, and import/export merchants. Also included as wholesale merchants are sales offices and sales branches (but not retail stores) maintained by manufacturing, refining, or mining enterprises apart from their plants or mines for the purpose of marketing their products. Merchant wholesale establishments typically maintain their own warehouse, where they receive and handle goods for their customers. Goods are generally sold without transformation, but may include integral</p> |

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|   | <p>functions, such as sorting, packaging, labeling, and other marketing services.</p> <p>(2) Establishments arranging for the purchase or sale of goods owned by others or purchasing goods, generally on a commission basis are known as business to business electronic markets, agents and brokers, commission merchants, import/export agents and brokers, auction companies, and manufacturers' representatives. These establishments operate from offices and generally do not own or handle the goods they sell.</p> <p>Some wholesale establishments may be connected with a single manufacturer and promote and sell the particular manufacturers' products to a wide range of other wholesalers or retailers. Other wholesalers may be connected to a retail chain, or limited number of retail chains, and only provide a variety of products needed by that particular retail operation(s). These wholesalers may obtain the products from a wide range of manufacturers. Still other wholesalers may not take title to the goods, but act as agents and brokers for a commission.</p> <p>Although, in general, wholesaling normally denotes sales in large volumes, durable nonconsumer goods may be sold in single units. Sales of capital or durable nonconsumer goods used in the production of goods and services, such as farm machinery, medium and heavy duty trucks, and industrial machinery, are always included in wholesale trade.</p>   |
| <p><b>44: Sector 44-45--<br/>Retail Trade</b></p> | <p>The Retail Trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.</p> <p>The retailing process is the final step in the distribution of merchandise; retailers are, therefore, organized to sell merchandise in small quantities to the general public. This sector comprises two main types of retailers: store and nonstore retailers.</p> <p>1. Store retailers operate fixed point-of-sale locations, located and designed to attract a high volume of walk-in customers. In general, retail stores have extensive displays of merchandise and use mass-media advertising to attract customers. They typically sell merchandise to the general public for personal or household consumption, but some also serve business and institutional clients. These include establishments, such as office supply stores, computer and software stores, building materials dealers, plumbing supply stores, and electrical supply stores. Catalog showrooms, gasoline services stations, automotive dealers, and mobile home dealers are treated as store retailers.</p> <p>In addition to retailing merchandise, some types of store retailers are also engaged in the provision of after-sales services, such as repair and installation. For example, new automobile dealers, electronic and appliance stores, and musical instrument and supply stores often provide repair services. As a general rule, establishments engaged in retailing merchandise and providing after-sales services are classified in this sector.</p> <p>The first eleven subsectors of retail trade are store retailers. The establishments are grouped into industries and industry groups typically based on one or more of the following criteria:</p> <p>(a) The merchandise line or lines carried by the store; for example, specialty stores are distinguished from general-line stores.</p> <p>(b) The usual trade designation of the establishments. This criterion applies in cases where a store type is well recognized by the industry and the public, but difficult to define strictly in terms of commodity lines carried; for example, pharmacies, hardware stores, and department stores.</p> <p>(c) Capital requirements in terms of display equipment; for example, food stores have equipment requirements not found in other retail industries.</p> <p>(d) Human resource requirements in terms of expertise; for example, the staff of an automobile dealer requires knowledge in financing, registering, and licensing issues that are not necessary in other retail industries.</p> <p>2. Nonstore retailers, like store retailers, are organized to serve the general public, but their retailing methods differ. The establishments of this subsector reach customers and market merchandise with methods, such as the broadcasting of "infomercials," the broadcasting</p> |

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|   | <p>and publishing of direct-response advertising, the publishing of paper and electronic catalogs, door-to-door solicitation, in-home demonstration, selling from portable stalls (street vendors, except food), and distribution through vending machines. Establishments engaged in the direct sale (nonstore) of products, such as home heating oil dealers and home delivery newspaper routes are included here.</p> <p>The buying of goods for resale is a characteristic of retail trade establishments that particularly distinguishes them from establishments in the agriculture, manufacturing, and construction industries. For example, farms that sell their products at or from the point of production are not classified in retail, but rather in agriculture. Similarly, establishments that both manufacture and sell their products to the general public are not classified in retail, but rather in manufacturing. However, establishments that engage in processing activities incidental to retailing are classified in retail. This includes establishments, such as optical goods stores that do in-store grinding of lenses, and meat and seafood markets.</p> <p>Wholesalers also engage in the buying of goods for resale, but they are not usually organized to serve the general public. They typically operate from a warehouse or office and neither the design nor the location of these premises is intended to solicit a high volume of walk-in traffic. Wholesalers supply institutional, industrial, wholesale, and retail clients; their operations are, therefore, generally organized to purchase, sell, and deliver merchandise in larger quantities. However, dealers of durable nonconsumer goods, such as farm machinery and heavy duty trucks, are included in wholesale trade even if they often sell these products in single units.</p>  |
| <p><b>48: Sector 48-49--<br/>Transportation<br/>and Warehousing</b></p> | <p>The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. The type of equipment depends on the mode of transportation. The modes of transportation are air, rail, water, road, and pipeline.</p> <p>The Transportation and Warehousing sector distinguishes three basic types of activities: subsectors for each mode of transportation, a subsector for warehousing and storage, and a subsector for establishments providing support activities for transportation. In addition, there are subsectors for establishments that provide passenger transportation for scenic and sightseeing purposes, postal services, and courier services.</p> <p>A separate subsector for support activities is established in the sector because, first, support activities for transportation are inherently multimodal, such as freight transportation arrangement, or have multimodal aspects. Secondly, there are production process similarities among the support activity industries.</p> <p>One of the support activities identified in the support activity subsector is the routine repair and maintenance of transportation equipment (e.g., aircraft at an airport, railroad rolling stock at a railroad terminal, or ships at a harbor or port facility). Such establishments do not perform complete overhauling or rebuilding of transportation equipment (i.e., periodic restoration of transportation equipment to original design specifications) or transportation equipment conversion (i.e., major modification to systems). An establishment that primarily performs factory (or shipyard) overhauls, rebuilding, or conversions of aircraft, railroad rolling stock, or a ship is classified in Subsector 336, Transportation Equipment Manufacturing according to the type of equipment.</p> <p>Many of the establishments in this sector often operate on networks, with physical facilities, labor forces, and equipment spread over an extensive geographic area.</p> <p>Warehousing establishments in this sector are distinguished from merchant wholesaling in that the warehouse establishments do not sell the goods.</p> <p>Excluded from this sector are establishments primarily engaged in providing travel agent services that support transportation and other establishments, such as hotels, businesses, and government agencies. These establishments are classified in Sector 56, Administrative and Support and Waste Management and Remediation Services. Also, establishments primarily engaged in providing rental and leasing of transportation equipment without</p> |

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|                                    | operator are classified in Subsector 532, Rental and Leasing Services.   |
| <b>51: Sector 51-- Information</b> | <p>The Information sector comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data.</p> <p>The main components of this sector are the publishing industries, including software publishing, and both traditional publishing and publishing exclusively on the Internet; the motion picture and sound recording industries; the broadcasting industries, including traditional broadcasting and those broadcasting exclusively over the Internet; the telecommunications industries; the industries known as Internet service providers and web search portals, data processing industries, and the information services industries.</p> <p>The expressions "information age" and "global information economy" are used with considerable frequency today. The general idea of an "information economy" includes both the notion of industries primarily producing, processing, and distributing information, as well as the idea that every industry is using available information and information technology to reorganize and make themselves more productive.</p> <p>For the purpose of developing NAICS, it is the transformation of information into a commodity that is produced and distributed by a number of growing industries that is at issue. The Information sector groups three types of establishments: (1) those engaged in producing and distributing information and cultural products; (2) those that provide the means to transmit or distribute these products as well as data or communications; and (3) those that process data. Cultural products are those that directly express attitudes, opinions, ideas, values, and artistic creativity; provide entertainment; or offer information and analysis concerning the past and present. Included in this definition are popular, mass-produced, products as well as cultural products that normally have a more limited audience, such as poetry books, literary magazines, or classical records.</p> <p>The unique characteristics of information and cultural products, and of the processes involved in their production and distribution, distinguish the Information sector from the goods-producing and service-producing sectors. Some of these characteristics are:</p> <ol style="list-style-type: none"> <li>1. Unlike traditional goods, an "information or cultural product," such as a newspaper on-line or television program, does not necessarily have tangible qualities, nor is it necessarily associated with a particular form. A movie can be shown at a movie theater, on a television broadcast, through video-on-demand or rented at a local video store. A sound recording can be aired on radio, embedded in multimedia products, or sold at a record store.</li> <li>2. Unlike traditional services, the delivery of these products does not require direct contact between the supplier and the consumer.</li> <li>3. The value of these products to the consumer lies in their informational, educational, cultural, or entertainment content, not in the format in which they are distributed. Most of these products are protected from unlawful reproduction by copyright laws.</li> <li>4. The intangible property aspect of information and cultural products makes the processes involved in their production and distribution very different from goods and services. Only those possessing the rights to these works are authorized to reproduce, alter, improve, and distribute them. Acquiring and using these rights often involves significant costs. In addition, technology is revolutionizing the distribution of these products. It is possible to distribute them in a physical form, via broadcast, or on-line.</li> <li>5. Distributors of information and cultural products can easily add value to the products they distribute. For instance, broadcasters add advertising not contained in the original product. This capacity means that unlike traditional distributors, they derive revenue not from sale of the distributed product to the final consumer, but from those who pay for the privilege of adding information to the original product. Similarly, a directory and mailing list publisher can acquire the rights to thousands of previously published newspaper and periodical articles and add new value by providing search and software and organizing the information in a way that facilitates research and retrieval. These products often command a much higher price than the original information.</li> </ol> |

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|   | <p>The distribution modes for information commodities may either eliminate the necessity for traditional manufacture, or reverse the conventional order of manufacture-distribute: A newspaper distributed on-line, for example, can be printed locally or by the final consumer. Similarly, it is anticipated that packaged software, which today is mainly bought through the traditional retail channels, will soon be available mainly on-line. The NAICS Information sector is designed to make such economic changes transparent as they occur, or to facilitate designing surveys that will monitor the new phenomena and provide data to analyze the changes.</p> <p>Many of the industries in the NAICS Information sector are engaged in producing products protected by copyright law, or in distributing them (other than distribution by traditional wholesale and retail methods). Examples are traditional publishing industries, software and directory and mailing list publishing industries, and film and sound industries. Broadcasting and telecommunications industries and information providers and processors are also included in the Information sector, because their technologies are so closely linked to other industries in the Information sector.</p>  |
| <p><b>52: Sector 52--<br/>Finance and<br/>Insurance</b></p> | <p>The Finance and Insurance sector comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions. Three principal types of activities are identified:</p> <ol style="list-style-type: none"> <li>1. Raising funds by taking deposits and/or issuing securities and, in the process, incurring liabilities. Establishments engaged in this activity use raised funds to acquire financial assets by making loans and/or purchasing securities. Putting themselves at risk, they channel funds from lenders to borrowers and transform or repackage the funds with respect to maturity, scale, and risk. This activity is known as financial intermediation.</li> <li>2. Pooling of risk by underwriting insurance and annuities. Establishments engaged in this activity collect fees, insurance premiums, or annuity considerations; build up reserves; invest those reserves; and make contractual payments. Fees are based on the expected incidence of the insured risk and the expected return on investment.</li> <li>3. Providing specialized services facilitating or supporting financial intermediation, insurance, and employee benefit programs.</li> </ol> <p>In addition, monetary authorities charged with monetary control are included in this sector. The subsectors, industry groups, and industries within the NAICS Finance and Insurance sector are defined on the basis of their unique production processes. As with all industries, the production processes are distinguished by their use of specialized human resources and specialized physical capital. In addition, the way in which these establishments acquire and allocate financial capital, their source of funds, and the use of those funds provides a third basis for distinguishing characteristics of the production process. For instance, the production process in raising funds through deposit-taking is different from the process of raising funds in bond or money markets. The process of making loans to individuals also requires different production processes than does the creation of investment pools or the underwriting of securities.</p> <p>Most of the Finance and Insurance subsectors contain one or more industry groups of (1) intermediaries with similar patterns of raising and using funds and (2) establishments engaged in activities that facilitate, or are otherwise related to, that type of financial or insurance intermediation. Industries within this sector are defined in terms of activities for which a production process can be specified, and many of these activities are not exclusive to a particular type of financial institution. To deal with the varied activities taking place within existing financial institutions, the approach is to split these institutions into components performing specialized services. This requires defining the units engaged in providing those services and developing procedures that allow for their delineation. These units are the equivalents for finance and insurance of the establishments defined for other industries.</p> <p>The output of many financial services, as well as the inputs and the processes by which they are combined, cannot be observed at a single location and can only be defined at a</p> |

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|  | <p>higher level of the organizational structure of the enterprise. Additionally, a number of independent activities that represent separate and distinct production processes may take place at a single location belonging to a multilocation financial firm. Activities are more likely to be homogeneous with respect to production characteristics than are locations, at least in financial services. The classification defines activities broadly enough that it can be used both by those classifying by location and by those employing a more top-down approach to the delineation of the establishment.</p> <p>Establishments engaged in activities that facilitate, or are otherwise related to, the various types of intermediation have been included in individual subsectors, rather than in a separate subsector dedicated to services alone because these services are performed by intermediaries, as well as by specialist establishments, the extent to which the activity of the intermediaries can be separately identified is not clear.</p> <p>The Finance and Insurance sector has been defined to encompass establishments primarily engaged in financial transactions; that is, transactions involving the creation, liquidation, change in ownership of financial assets; or in facilitating financial transactions. Financial industries are extensive users of electronic means for facilitating the verification of financial balances, authorizing transactions, transferring funds to and from transactors' accounts, notifying banks (or credit card issuers) of the individual transactions, and providing daily summaries. Since these transaction processing activities are integral to the production of finance and insurance services, establishments that principally provide a financial transaction processing service are classified to this sector, rather than to the data processing industry in the Information sector.</p> <p>Legal entities that hold portfolios of assets on behalf of others are significant and data on them are required for a variety of purposes. Thus for NAICS, these funds, trusts, and other financial vehicles are the fifth subsector of the Finance and Insurance sector. These entities earn interest, dividends, and other property income, but have little or no employment and no revenue from the sale of services. Separate establishments and employees devoted to the management of funds are classified in Industry Group 5239, Other Financial Investment Activities.</p> |
| <p><b>53: Sector 53--<br/>Real Estate and<br/>Rental and<br/>Leasing</b></p> | <p>The Real Estate and Rental and Leasing sector comprises establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services. The major portion of this sector comprises establishments that rent, lease, or otherwise allow the use of their own assets by others. The assets may be tangible, as is the case of real estate and equipment, or intangible, as is the case with patents and trademarks.</p> <p>This sector also includes establishments primarily engaged in managing real estate for others, selling, renting and/or buying real estate for others, and appraising real estate. These activities are closely related to this sector's main activity, and it was felt that from a production basis they would best be included here. In addition, a substantial proportion of property management is self-performed by lessors.</p> <p>The main components of this sector are the real estate lessors industries; equipment lessors industries (including motor vehicles, computers, and consumer goods); and lessors of nonfinancial intangible assets (except copyrighted works).</p> <p>Excluded from this sector are real estate investment trusts (REITS) and establishments primarily engaged in renting or leasing equipment with operators. REITS are classified in Subsector 525, Funds, Trusts, and Other Financial Vehicles, because they are considered investment vehicles. Establishments renting or leasing equipment with operators are classified in various subsectors of NAICS depending on the nature of the services provided (e.g., transportation, construction, agriculture). These activities are excluded from this sector because the client is paying for the expertise and knowledge of the equipment operator, in addition to the rental of the equipment. In many cases, such as the rental of heavy construction equipment, the operator is essential to operate the equipment.</p>   |
| <p><b>54: Sector 54--</b></p>  | <p>The Professional, Scientific, and Technical Services sector comprises establishments that</p>  |

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| <p><b>Professional, Scientific, and Technical Services</b></p>   | <p>specialize in performing professional, scientific, and technical activities for others. These activities require a high degree of expertise and training. The establishments in this sector specialize according to expertise and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: legal advice and representation; accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; photographic services; translation and interpretation services; veterinary services; and other professional, scientific, and technical services.</p> <p>This sector excludes establishments primarily engaged in providing a range of day-to-day office administrative services, such as financial planning, billing and recordkeeping, personnel, and physical distribution and logistics. These establishments are classified in Sector 56, Administrative and Support and Waste Management and Remediation Services.</p>   |
| <p><b>55: Sector 55-- Management of Companies and Enterprises</b></p>                                  | <p>The Management of Companies and Enterprises sector comprises (1) establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or (2) establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decisionmaking role of the company or enterprise. Establishments that administer, oversee, and manage may hold the securities of the company or enterprise.</p> <p>Establishments in this sector perform essential activities that are often undertaken, in-house, by establishments in many sectors of the economy. By consolidating the performance of these activities of the enterprise at one establishment, economies of scale are achieved.</p> <p>Government establishments primarily engaged in administering, overseeing, and managing governmental programs are classified in Sector 92, Public Administration. Establishments primarily engaged in providing a range of day-to-day office administrative services, such as financial planning, billing and recordkeeping, personnel, and physical distribution and logistics are classified in Industry 56111, Office Administrative Services.</p>   |
| <p><b>56: Sector 56-- Administrative and Support and Waste Management and Remediation Services</b></p> | <p>The Administrative and Support and Waste Management and Remediation Services sector comprises establishments performing routine support activities for the day-to-day operations of other organizations. These essential activities are often undertaken in-house by establishments in many sectors of the economy. The establishments in this sector specialize in one or more of these support activities and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.</p> <p>The administrative and management activities performed by establishments in this sector are typically on a contract or fee basis. These activities may also be performed by establishments that are part of the company or enterprise. However, establishments involved in administering, overseeing, and managing other establishments of the company or enterprise, are classified in Sector 55, Management of Companies and Enterprises. These establishments normally undertake the strategic and organizational planning and decision making role of the company or enterprise. Government establishments engaged in administering, overseeing, and managing governmental programs are classified in Sector 92, Public Administration.</p> |
| <p><b>61: Sector 61-- Educational Services</b></p>   | <p>The Educational Services sector comprises establishments that provide instruction and training in a wide variety of subjects. This instruction and training is provided by specialized establishments, such as schools, colleges, universities, and training centers. These establishments may be privately owned and operated for profit or not for profit, or they may</p>  |

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|   | <p>be publicly owned and operated. They may also offer food and accommodation services to their students.</p> <p>Educational services are usually delivered by teachers or instructors that explain, tell, demonstrate, supervise, and direct learning. Instruction is imparted in diverse settings, such as educational institutions, the workplace, or the home through correspondence, television, or other means. It can be adapted to the particular needs of the students, for example sign language can replace verbal language for teaching students with hearing impairments. All industries in the sector share this commonality of process, namely, labor inputs of instructors with the requisite subject matter expertise and teaching ability.</p>   |
| <p><b>62: Sector 62--<br/>Health Care and<br/>Social Assistance</b></p>       | <p>The Health Care and Social Assistance sector comprises establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. The industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finally finishing with those providing only social assistance. The services provided by establishments in this sector are delivered by trained professionals. All industries in the sector share this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry.</p> <p>Excluded from this sector are aerobic classes in Subsector 713, Amusement, Gambling and Recreation Industries and nonmedical diet and weight reducing centers in Subsector 812, Personal and Laundry Services. Although these can be viewed as health services, these services are not typically delivered by health practitioners.</p>   |
| <p><b>71: Sector 71--<br/>Arts,<br/>Entertainment,<br/>and Recreation</b></p> | <p>The Arts, Entertainment, and Recreation sector includes a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons. This sector comprises (1) establishments that are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) establishments that preserve and exhibit objects and sites of historical, cultural, or educational interest; and (3) establishments that operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.</p> <p>Some establishments that provide cultural, entertainment, or recreational facilities and services are classified in other sectors. Excluded from this sector are: (1) establishments that provide both accommodations and recreational facilities, such as hunting and fishing camps and resort and casino hotels are classified in Subsector 721, Accommodation; (2) restaurants and night clubs that provide live entertainment in addition to the sale of food and beverages are classified in Subsector 722, Food Services and Drinking Places; (3) motion picture theaters, libraries and archives, and publishers of newspapers, magazines, books, periodicals, and computer software are classified in Sector 51, Information; and (4) establishments using transportation equipment to provide recreational and entertainment services, such as those operating sightseeing buses, dinner cruises, or helicopter rides are classified in Subsector 487, Scenic and Sightseeing Transportation.</p> |
| <p><b>72: Sector 72--<br/>Accommodation<br/>and Food<br/>Services</b></p>     | <p>The Accommodation and Food Services sector comprises establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption. The sector includes both accommodation and food services establishments because the two activities are often combined at the same establishment.</p> <p>Excluded from this sector are civic and social organizations; amusement and recreation parks; theaters; and other recreation or entertainment facilities providing food and beverage services.</p>  |

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| <p><b>721: Accommodation</b></p>  | <p>Industries in the Accommodation subsector provide lodging or short-term accommodations for travelers, vacationers, and others. There is a wide range of establishments in these industries. Some provide lodging only; while others provide meals, laundry services, and recreational facilities, as well as lodging. Lodging establishments are classified in this subsector even if the provision of complementary services generates more revenue. The types of complementary services provided vary from establishment to establishment. The subsector is organized into three industry groups: (1) traveler accommodation, (2) recreational accommodation, and (3) rooming and boarding houses. The Traveler Accommodation industry group includes establishments that primarily provide traditional types of lodging services. This group includes hotels, motels, and bed and breakfast inns. In addition to lodging, these establishments may provide a range of other services to their guests. The RV (Recreational Vehicle) Parks and Recreational Camps industry group includes establishments that operate lodging facilities primarily designed to accommodate outdoor enthusiasts. Included are travel trailer campsites, recreational vehicle parks, and outdoor adventure retreats. The Rooming and Boarding Houses industry group includes establishments providing temporary or longer-term accommodations, which for the period of occupancy, may serve as a principal residence. Board (i.e., meals) may be provided but is not essential.</p> <p>Establishments that manage short-stay accommodation establishments (e.g., hotels and motels) on a contractual basis are classified in this subsector if they both manage the operation and provide the operating staff. Such establishments are classified based on the type of facility managed and operated.</p> |
| <p><b>722: Food Services and Drinking Places</b></p>                        | <p>Industries in the Food Services and Drinking Places subsector prepare meals, snacks, and beverages to customer order for immediate on-premises and off-premises consumption. There is a wide range of establishments in these industries. Some provide food and drink only; while others provide various combinations of seating space, waiter/waitress services and incidental amenities, such as limited entertainment. The industries in the subsector are grouped based on the type and level of services provided. The industry groups are full-service restaurants; limited-service eating places; special food services, such as food service contractors, caterers, and mobile food services; and drinking places.</p> <p>Food services and drink activities at hotels and motels; amusement parks, theaters, casinos, country clubs, and similar recreational facilities; and civic and social organizations are included in this subsector only if these services are provided by a separate establishment primarily engaged in providing food and beverage services.</p> <p>Excluded from this subsector are establishments operating dinner cruises. These establishments are classified in Subsector 487, Scenic and Sightseeing Transportation because those establishments utilize transportation equipment to provide scenic recreational entertainment.</p>  |
| <p><b>81: Sector 81-- Other Services (except Public Administration)</b></p> | <p>The Other Services (except Public Administration) sector comprises establishments engaged in providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities, such as equipment and machinery repairing, promoting or administering religious activities, grantmaking, advocacy, and providing drycleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.</p> <p>Private households that engage in employing workers on or about the premises in activities primarily concerned with the operation of the household are included in this sector.</p> <p>Excluded from this sector are establishments primarily engaged in retailing new equipment and also performing repairs and general maintenance on equipment. These establishments are classified in Sector 44-45, Retail Trade.</p>  |
| <p><b>92: Sector 92--</b></p>   | <p>The Public Administration sector consists of establishments of federal, state, and local</p>  |

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| <p><b>Public Administration</b></p> | <p>government agencies that administer, oversee, and manage public programs and have executive, legislative, or judicial authority over other institutions within a given area. These agencies also set policy, create laws, adjudicate civil and criminal legal cases, provide for public safety and for national defense. In general, government establishments in the Public Administration sector oversee governmental programs and activities that are not performed by private establishments. Establishments in this sector typically are engaged in the organization and financing of the production of public goods and services, most of which are provided for free or at prices that are not economically significant.</p> <p>Government establishments also engage in a wide range of productive activities covering not only public goods and services but also individual goods and services similar to those produced in sectors typically identified with private-sector establishments. In general, ownership is not a criterion for classification in NAICS. Therefore, government establishments engaged in the production of private-sector-like goods and services should be classified in the same industry as private-sector establishments engaged in similar activities.</p> <p>As a practical matter, it is difficult to identify separate establishment detail for many government agencies. To the extent that separate establishment records are available, the administration of governmental programs is classified in Sector 92, Public Administration, while the operation of that same governmental program is classified elsewhere in NAICS based on the activities performed. For example, the governmental administrative authority for an airport is classified in Industry 92612, Regulation and Administration of Transportation Programs, while operating the airport is classified in Industry 48811, Airport Operations. When separate records are not available to distinguish between the administration of a governmental program and the operation of it, the establishment is classified in Sector 92, Public Administration.</p> <p>Examples of government-provided goods and services that are classified in sectors other than Public Administration include: schools, classified in Sector 61, Educational Services; hospitals, classified in Subsector 622, Hospitals; establishments operating transportation facilities, classified in Sector 48-49, Transportation and Warehousing; the operation of utilities, classified in Sector 22, Utilities; and the Government Printing Office, classified in Subsector 323, Printing and Related Support Activities.</p> |
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## Glossary of selected forest inventory terms

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| <b>Annual mortality</b>                | The average annual volume of sound wood in growing-stock trees that died from natural causes during the period between inventories.  |
| <b>Annual removals</b>                 | The net volume of growing stock trees removed from the inventory during a specified year by harvesting, cultural operations such as timber stand improvement, or land clearing.  |
| <b>Bureau of Land Management (BLM)</b> | An ownership class of Federal lands administered by the Bureau of Land Management, U.S. Department of the Interior.  |
| <b>Commercial species</b>              | Tree species suitable for industrial wood products.  |
| <b>County and municipal</b>            | An ownership class of public lands owned by counties or local public agencies, or lands leased by these governmental units for more than 50 years.   |
| <b>Cull tree</b>                       | A live tree, 5.0 inches in diameter at breast height (d.b.h.) or larger, that is unmerchantable for saw logs now or prospectively because of rot, roughness, or species. (See definitions for rotten and rough trees.)   |
| <b>Diameter class</b>                  | A classification of trees based on diameter outside bark measured at breast height (4-1/2 feet above ground). D.b.h. is the common abbreviation for diameter at breast height. With 2-inch diameter classes, the 6-inch class, for example, includes trees 5.0 through 6.9 inches d.b.h.   |
| <b>Federal</b>                         | An ownership class of public lands owned by the U.S. Government.   |
| <b>Fiber products</b>                  | Products derived from wood and bark residues, such as pulp, composition board products, and wood chips for export.   |
| <b>Forest industry</b>                 | An ownership class of private lands owned by companies or individuals operating wood-using plants.   |
| <b>Forest land</b>                     | Land at least 10 percent stocked by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10 percent stocked with forest trees and forest areas adjacent to urban and built-up lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of trees must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 120 feet wide. |
| <b>Forest type</b>                     | A classification of forest land based on the species presently forming a plurality of the live-tree stocking.  |
| <b>Forest type group</b>               | A combination of forest types that share closely associated species or site requirements and are generally combined for brevity of reporting.  |
| <b>White-red-jack pine</b>             | Forests in which eastern white pine, red pine, or jack pine, singly or in combination, comprise a plurality of the stocking. Common associates include hemlock, aspen, birch, and maple.   |
| <b>Spruce-fir</b>                      | Forests in which spruce or true firs, singly or in combination, comprise a plurality of the stocking. Common associates include white cedar, tamarack, maple, birch, and hemlock.  |
| <b>Longleaf-slash pine</b>             | Forests in which longleaf or slash pine, singly or in combination, comprise a plurality of the stocking. Common associates include other southern pines, oak, and gum.   |
| <b>Loblolly-shortleaf pine</b>         | Forests in which loblolly pine, shortleaf pine, or southern 13 yellow pines, except longleaf or slash pine, singly or in combination, comprise a plurality of the stocking. Common associates include oak, hickory, and gum.   |
| <b>Oak-pine</b>                        | Forests in which hardwoods (usually upland oaks) comprise a plurality of the stocking, but in which pine or eastern redcedar comprises 25-50 percent of the stocking. Common associates include gum, hickory, and yellow-poplar.   |

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| <b>Oak-hickory</b>              | Forests in which upland oaks or hickory, singly or in combination, comprise a plurality of the stocking except where pines comprise 25-50 percent, in which case the stand is classified as oak-pine. Common associates include yellow-poplar, elm, maple, and black walnut.  |
| <b>Oak-gum-cypress</b>          | Bottomland forests in which tupelo, blackgum, sweetgum, oaks, or southern cypress, singly or in combination, comprise a plurality of the stocking except where pines comprise 25-50 percent, in which case the stand is classified as oak-pine. Common associates include cottonwood, willow, ash, elm, hackberry, and maple.   |
| <b>Elm-ash-cottonwood</b>       | Forests in which elm, ash, or cottonwood, singly or in combination, comprise a plurality of the stocking. Common associates include willow, sycamore, beech, and maple.   |
| <b>Maple-beech-birch</b>        | Forests in which maple, beech, or yellow birch, singly or in combination, comprise a plurality of the stocking. Common associates include hemlock, elm, basswood, and white pine.   |
| <b>Aspen-birch</b>              | Forests in which aspen, balsam poplar, paper birch, or gray birch, singly or in combination, comprise a plurality of the stocking. Common associates include maple and balsam fir.  |
| <b>Other softwoods</b>          | Forests in which other softwood species not mentioned above comprise a plurality of the stocking. These are primarily black spruce forests in interior Alaska.  |
| <b>Fuelwood</b>                 | Wood used for conversion to some form of energy, primarily in residential use.  |
| <b>Growing stock</b>            | A classification of timber inventory that includes live trees of commercial species meeting specified standards of quality or vigor. Cull trees are excluded. When associated with volume, includes only trees 5.0 inches d.b.h. and larger.  |
| <b>Hardwood</b>                 | A dicotyledonous tree, usually broad-leaved and deciduous.  |
| <b>Industrial wood</b>          | All commercial roundwood products except fuelwood.  |
| <b>Land area</b>                | The area of dry land and land temporarily or partly covered by water, such as marshes, swamps, and river flood plains; streams, sloughs, estuaries, and canals less than 200 feet wide; and lakes, reservoirs, and ponds less than 4.5 acres in area.   |
| <b>Live cull</b>                | A classification that includes live cull trees. When associated with volume, it is the net volume in live cull trees that are 5.0 inches d.b.h. and larger.   |
| <b>Logging residues</b>         | The unused portions of growing-stock and non-growing-stock trees cut or killed by logging and left in the woods (footnote on table 40).   |
| <b>Lowland forest types</b>     | Generally refers to the elm-ash-cottonwood and oak-gum-cypress forest types.  |
| <b>National forest</b>          | An ownership class of Federal lands, designated by Executive order or statute as national forests or purchase units, and other lands under the administration of the Forest Service including experimental areas and Bankhead-Jones Title III lands.  |
| <b>Native American land</b>     | (a) Lands held in trust by the United States or individual States for Native American tribes or individual Native Americans; (b) Lands owned in fee by Native American tribes whether subject to Federal or State restrictions against alienation or not.   |
| <b>Net annual growth</b>        | The average annual net increase in the volume of trees during the period between inventories. Components include the increment in net volume of trees at the beginning of the specific year surviving to its end, plus the net volume of trees reaching the minimum size class during the year, minus the volume of trees that died during the year, and minus the net volume of trees that became cull trees during the year.                          |
| <b>Net volume in cubic feet</b> | The gross volume in cubic feet less deductions for rot, roughness, and poor form. Volume is computed for the central stem from a 1-foot stump to a minimum 4.0-inch top diameter outside bark, or to the point where the central stem breaks into limbs.  |
| <b>Noncommercial species</b>    | Tree species of typically small size, poor form, or inferior quality, which normally do not develop into trees suitable for industrial wood products.   |
| <b>Nonforest land</b>           | Land that has never supported forests and lands formerly forested where use of timber management is precluded by development for other uses. (Note: Includes area used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 4.5-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved |

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|                                | roads and nonforest strips must be more than 120 feet wide, and clearings, etc., must be more than 1 acre in area, to qualify as nonforest land.)  |
| <b>Nonindustrial private</b>   | An ownership class of private lands where the owner does not operate wood-using plants.  |
| <b>Nonstocked areas</b>        | Timberland less than 10 percent stocked with all live trees.   |
| <b>Other Federal</b>           | An ownership class of Federal lands other than those administered by the Forest Service or the Bureau of Land Management. This category includes the National Park Service, Fish and Wildlife Service, Departments of Defense and Energy, and miscellaneous Federal ownerships.  |
| <b>Other forest land</b>       | Forest land other than timberland and reserved forest land. It includes available forest land, which is incapable of annually producing 20 cubic feet per acre of industrial wood under natural conditions because of adverse site conditions such as sterile soils, dry climate, poor drainage, high elevation, steepness, or rockiness.                                      |
| <b>Other land</b>              | Nonforest land less the area in streams, sloughs, estuaries, and canals between 120 and 200 feet wide and lakes, reservoirs, and ponds between 1 and 4.5 acres in area.  |
| <b>Other private</b>           | An ownership class of private lands that are not owned by forest industry or farmers.  |
| <b>Other products</b>          | A miscellaneous category of roundwood products that includes such items as cooperage, pilings, poles, posts, shakes, shingles, board mills, charcoal, and export logs.   |
| <b>Other public</b>            | An ownership class that includes all public lands except national forests. This category generally includes State, county, and municipal ownerships.   |
| <b>Other red oaks</b>          | A group of species in the genus <i>Quercus</i> that includes scarlet oak, northern pin oak, southern red oak, bear oak, shingle oak, laurel oak, blackjack oak, water oak, pin oak, willow oak, and black oak.   |
| <b>Other removals</b>          | Unutilized wood volume from cut or otherwise killed growing stock, from cultural operations such as precommercial thinnings, or from timberland clearing. Does not include volume removed from inventory through reclassification of timberland to productive reserved forest land.  |
| <b>Other sources</b>           | Sources of roundwood products that are not growing stock. These include salvable dead trees, rough and rotten trees, trees of noncommercial species, trees less than 5.0 inches d.b.h., tops, and roundwood harvested from nonforest land (for example, fence rows).   |
| <b>Other white oaks</b>        | A group of species in the genus <i>Quercus</i> that includes overcup oak, chestnut oak, and post oak.  |
| <b>Ownership</b>               | The property owned by one ownership unit, including all parcels of land in the United States.  |
| <b>Ownership unit</b>          | A classification of ownership encompassing all types of legal entities having an ownership interest in land, regardless of the number of people involved. A unit may be an individual; a combination of persons; a legal entity such as a corporation, partnership, club, or trust; or a public agency. An ownership unit has control of a parcel or group of parcels of land. |
| <b>Poletimber trees</b>        | Live trees at least 5.0 inches in d.b.h. but smaller than sawtimber trees.   |
| <b>Primary wood-using mill</b> | A mill that converts roundwood products into other wood products. Common examples are sawmills that convert saw logs into lumber and pulpmills that convert pulpwood into wood pulp.   |
| <b>Productivity class</b>      | A classification of forest land in terms of potential annual cubic-foot volume growth per acre at culmination of mean annual increment in fully stocked natural stands.  |
| <b>Pulpwood</b>                | Roundwood, whole-tree chips, or wood residues that are used for the production of wood pulp.   |
| <b>Reserved forest land</b>    | Forest land withdrawn from timber utilization through statute, administrative regulation, or designation without regard to productive status.  |
| <b>Residues</b>                | Bark and woody materials that are generated in primary wood-using mills when roundwood products are converted to other products. Examples are slabs, edgings, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and pulp screenings. Includes bark  |

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|                                | residues and wood residues (both coarse and fine materials) but excludes logging residues.  |
| <b>Rotten tree</b>             | A live tree of commercial species that does not contain a saw log now or prospectively primarily because of rot (that is, when rot accounts for more than 50 percent of the total cull volume).   |
| <b>Rough tree</b>              | (a) A live tree of commercial species that does not contain a saw log now or prospectively primarily because of roughness (that is, when sound cull due to such factors as poor form, splits, or cracks accounts for more than 50 percent of the total cull volume) or (b) a live tree of noncommercial species.  |
| <b>Roundwood products</b>      | Logs, bolts, and other round timber generated from harvesting trees for industrial or consumer use.   |
| <b>Salvable dead tree</b>      | A downed or standing dead tree that is considered currently or potentially merchantable by regional standards.  |
| <b>Saplings</b>                | Live trees 1.0 inch through 4.9 inches d.b.h.   |
| <b>Saw log</b>                 | A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight, and with a minimum diameter inside bark of 6 inches for softwoods and 8 inches for hardwoods, or meeting other combinations of size and defect specified by regional standards.   |
| <b>Seedlings</b>               | Live trees less than 1.0 inch d.b.h. and at least 1 foot in height.   |
| <b>Select red oaks</b>         | A group of species in the genus <i>Quercus</i> that includes cherrybark oak, northern red oak, and Shumard oak.   |
| <b>Select white oaks</b>       | A group of species in the genus <i>Quercus</i> that includes white oak, swamp white oak, bur oak, swamp chestnut oak, and chinkapin oak.  |
| <b>Softwood</b>                | A coniferous tree, usually evergreen, having needles or scale-like leaves.  |
| <b>Sound dead</b>              | The net volume in salvable dead trees.  |
| <b>Stand-size class</b>        | A classification of forest land based on the size class of all live trees in the area. The classes include:   |
| <b>Nonstocked stands</b>       | Forest land that is stocked with less than 10 percent of full stocking with all live trees. Examples are recently cut-over areas or recently reverted agricultural fields.  |
| <b>Seedling-sapling stands</b> | Forest land that is stocked with at least 10 percent of full stocking with all live trees with half or more of such stocking in seedlings or saplings or both.  |
| <b>Poletimber stands</b>       | Forest land that is stocked with at least 10 percent of full stocking with all live trees with half or more of such stocking in poletimber or sawtimber trees or both, and in which the stocking of poletimber exceeds that of sawtimber.   |
| <b>Sawtimber stands</b>        | Forest land that is stocked with at least 10 percent of full stocking with all live trees with half or more of such stocking in poletimber or sawtimber trees or both, and in which the stocking of sawtimber is at least equal to that of poletimber.  |
| <b>State</b>                   | An ownership class of public lands owned by States or lands leased by States for more than 50 years.  |
| <b>Stocking</b>                | The degree of occupancy of land by trees, measured by basal area or number of trees by size and spacing, or both, compared to a stocking standard; that is, the basal area or number of trees, or both, required to fully utilize the growth potential of the land.   |
| <b>Timberland</b>              | Forest land that is producing or is capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. (Note: Areas qualifying as timberland are capable of producing in excess of 20 cubic feet per acre per year of industrial wood in natural stands. Currently inaccessible and inoperable areas are included.) |
| <b>Tops</b>                    | The wood of a tree above the merchantable height (or above the point on the stem 4.0 inches diameter outside bark [d.o.b.]). It includes the usable material in the uppermost stem.   |
| <b>Unreserved forest</b>       | Forest land that is not withdrawn from harvest by statute or administrative regulation.   |

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| <b>land</b>       | Includes forest lands that are not capable of producing in excess of 20 cubic feet per acre per year of industrial wood in natural stands.          |
| <b>Veneer log</b> | A roundwood product from which veneer is sliced or sawn and that usually meets certain standards of minimum diameter and length and maximum defect. |
| <b>Weight</b>     | The weight of wood and bark, oven-dry basis (approximately 12 percent moisture content).  |

Source: Smith, W. Brad; Miles, Patrick D.; Vissage, John S.; Pugh, Scott A. 2003. Forest Resources of the United States, 2002. Gen. Tech. Rep. NC-241. St. Paul, MN: USDA-Forest Service, North Central Research Station. 137 p.