

**Proposed Old Growth and Biodiversity  
Stewardship Planning Process and Draft  
Criteria for Michigan's State Forests  
and Other State Owned Lands**



**A Report From The  
Michigan Department of Natural Resources**

**February 8, 2001**

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## Executive Summary

“Old growth” is an issue that has generated differences among Michigan outdoor users since the early 1980s, with no clear resolution. The Michigan Department of Natural Resources (MDNR) understands that people value forests for a variety of reasons. Therefore, it is the desire of the MDNR that differences among users be resolved carefully, respectfully and equitable – and when public land is involved, openly.

The Department is attempting, with this report, to bring clarity of purpose and policy to the old growth debate by beginning a process for establishing criteria and guidance for contemporary old growth and biodiversity management by the MDNR. A public participation process designed to capture the diverse viewpoints of users is included.

### *Definition*

The term “old growth” describes an ecological condition where trees in the mature stages of their life cycle generally dominate the forest vegetation. The term often conjures up images of a Pacific rain forest with dense closed canopies of redwoods or Douglas-fir, a fern-covered forest floor and large (even massive) moss-covered trees decaying on the ground.

In reality, that image does not fit Michigan’s forests, which cover more than half our land base. Our forest landscape is dramatically different than the use, application and concepts associated with old growth in the west – this an important distinction that often is lost when the debate over old growth management practices intensifies.

The key difference between “eastern” and “western” old growth is that old growth efforts in the west gravitate toward **preservation** of forested ecosystems while in the east old growth efforts are geared toward **restoration** of forested ecosystems.

Tree size and associated size of downed woody debris are dramatically different between the two regions; there are larger trees and more dense woody debris in the west while smaller trees on average and less woody debris density is found in Michigan.

Also, rates of human activity and intrusion onto and adjacent to the forested landscapes with respect to existing and potential old growth systems are conflicting. There is very little human exposure to western old growth stands, while in eastern states like Michigan, publicly owned lands often compete with fragmented private in-holdings, housing developments, highways, county roads and farms. The result is much higher rates of human activity.

Finally, while western old growth stands are often large tracts of western land, there is relatively little old growth in Michigan. According to the United State Forest Service, less than one half of one percent of Michigan’s original native forests – commonly referred to as “virgin forests” or “virgin old growth” – exist today. Virtually all of this land is in the Upper Peninsula; the remainder of Michigan’s original forest was largely destroyed due to logging, fire, agriculture or urban development within the last two centuries.

Given the strong public perception that all old growth in Michigan has western characteristics, the MDNR believes a careful and thorough approach both in planning and public participation is required with respect to designating “existing, potential or desired old growth” on state forest land.

The proposals for old growth management in this report are intended to **RESTORE** a representation of those native forested ecosystems and vegetation communities that were destroyed over a century or more ago. To this end, two key design documents have been developed to guide the Department in developing and implementing a statewide restoration effort on state forest and other state owned lands.

The first document proposes criteria containing eight design elements, including the use of land-type associations, species age, size and species scarcity.

The second document proposes the establishment of land use guidelines for MDNR land managers to:

- a) help answer questions on where to allocate specific parcels of land amidst relatively high levels of human activity that can occur on or adjacent to state forest land (e.g. gas wells and other utility rights-of-way, recreational trails, campgrounds);
- b) assist land managers on where they can help improve the overall functionality of the old growth system (e.g. connecting one block of old growth via a riparian corridor using a designated natural river or its related watershed).

Additionally, a public participation strategy is proposed that will allow the MDNR to seek extensive public input on how to best plan, design and implement a statewide old growth and biodiversity plan that restores a representative portion of Michigan’s original native forest vegetation communities, ecosystems and native biodiversity.

In an effort to appropriately balance the policy and public participation processes, the Department will create a Public Advisory Team to review policy recommendations and provide oversight on public participation initiatives. The MDNR also will conduct an extensive public input and review period, and after an appropriate time will begin the process of designating a statewide on-the-ground old growth and biodiversity network.

During this process, the Resource Management Deputy will meet with representatives of Michigan’s national forests to ensure that the MDNR and the national forests use and apply similar concepts during the development of their respective OG restoration systems.

Teams of MDNR professionals will be formed to work with local MDNR staff and interested parties to begin development of a statewide native old growth and biodiversity system. The MDNR intends to use Geographic Information System (GIS) mapping and modeling techniques extensively in this process. The maps and models will be available for public review prior to any final “old growth” designation by the MDNR.

This effort is expected to take two years to complete. During this period, MDNR field staff will continue to evaluate areas for potential old growth under its current processes. When a stand examiner (or someone else) during the annual operations inventory process suggests a stand as “potential old growth,” the stand is considered “suggested potential old growth” until the recommendation is approved during a compartment review or other Department planning process. The stand then becomes “approved potential old growth.” If the initial recommendation is not approved during the compartment review or a similar process, the stand is no longer considered “potential old growth.”

Many states have undertaken effort to review or explore strategies for conserving biodiversity within their states. Michigan, however, is one of the first states to formally develop a plan that seeks to restore native old growth forest conditions on its state forest lands as well as conserving biodiversity on state forest and other state owned lands. Further, Michigan has the largest dedicated state forest system in the United States. Consequently, patience and cooperation by all involved and interested parties will be helpful in determining an outcome which best meets the needs of the land, ecosystem function and the variety of demands made by Michigan’s citizenry.

## Introduction

Throughout the country, there is a great deal of variety in old growth forests. In the Pacific Northwest, the term “old growth” – especially as it applies to publicly owned lands – conjures up images of large and massive trees, large tree trunks lying on the ground, and very little if any, human disturbance. Other concepts include large, intact, near-wilderness, pre-European like ecosystems virtually untouched by modern man.

In Michigan, like most states east of the Mississippi River, the use, associations and pragmatic application of the term “old growth” are not so simple. Great difficulty often arises in the minds of citizens (and media) in understanding exactly what natural resource managers are referring to when they discuss “old growth.”

This is due partly to the fact that many view “old growth” in concepts and terms more appropriate for western forest ecology than Michigan’s forest ecology, where virtually all currently forested lands have been harvested and re-harvested as many as four times since European settlers first arrived.

In fact, much of Michigan’s current publicly owned state forest system was land initially cut for lumber between 1880 and 1920, cleared and farmed for agriculture, and finding the land unfertile for farming, abandoned by the owners. As a result, land was often reverted to state ownership for non-payment of property taxes.

Complicating the development and implementation of old growth management concepts is the fact that in the northern Lower Peninsula much of our publicly owned lands are fragmented private in-holdings that feature housing developments, highways, county roads, farms and other human activities. Appropriate old growth management is compounded dramatically by increasing population pressures and associated development.

In Michigan and other eastern states, where the typical layperson may look at a forest stand and proclaim, “Now that’s old growth!,” many experts in forest ecology have difficulty agreeing on the definition of old growth, either conceptually or practically, because of:

- 1) A lack of consensus as to which forest types occur in an old-growth condition
- 2) Much difficulty in selecting attributes and criteria by which to define old growth,
- 3) Variation in species and spacing due to site, soils, topography, or other geographic or local differences
- 4) A lack of available data to describe old-growth conditions (e.g. past descriptions written 200 years ago may not be considered scientifically accurate or useful today)
- 5) Questionable representation of remnant stands
- 6) Changes in forest structure due to human disturbance in European settlement
- 7) Influence of pollution, aggressive non-native species (e.g. purple loosestrife), forest fragmentation and extinction of plants and animals
- 8) The need to move beyond stand-level definitions (from tens to hundreds of acres) to that of looking at landscapes (usually ranging from hundreds to thousands of acres in size and may cross several administrative boundaries as well).

According to the United States Forest Service (USFS), less than one half of one percent of

natural eastern old growth exists today in Michigan. The USFS estimates there are between 60,000 and 70,000 acres of true, native “old growth” in Michigan’s 19.3 million acres of forests. The USFS estimated acreage was determined using a broad definition of forest cover types native to Michigan that include areas that are relatively old and relatively undisturbed (some minor logging or minor post-European human incursion may have occurred).

The vast majority of this acreage is located in the Porcupine Mountains State Park, the McCormick and Sylvania Wilderness Areas (located on the Ottawa National Forest in the Upper Peninsula) and the Huron Mountain Club, which is privately held property located in Marquette County.

The amount of native “old growth” acreage on Michigan’s state forest lands, using the USFS definition, is probably no more than 5,000 acres out of 3.9 million acres overall.

These native conditions in Michigan generally include more large trees, canopy layers, standing snags, native species, and dead organic material; involve more complex ecological processes, and undergo more gradual change than do young or intensively managed forests. Native forest conditions in Michigan also include ecologically important openings that are not forested, early successional states and extensive areas of catastrophic or frequent disturbance (e.g. fire or windthrow).”

### **Impetus for Developing An Old Growth and Biodiversity Stewardship Plan**

In the 1980s, natural resource managers recognized the need to move beyond the typical “multiple-use” perspective (recreation, timber, and game being the primary uses) that dominated forest management in the early 1960s. The key to this new awareness was driven by worldwide evidence that some plant and animal species, and the ecosystems they inhabited, were being threatened or destroyed at an ever increasing rate.

The term coined for this new way of thinking was “ecosystem management.” It implied that maintaining a biodiversity” of ecosystems, species and genetic material had become essential as well to being good resource managers. It was also in this new awareness that the relationship of “old growth ecosystems” to biodiversity goals and objectives moved to the forefront for many scientists, natural resources managers and interested members of the public.

Since 1980, Michigan has taken a number of steps regarding old growth and biodiversity stewardship (OG/BS). In 1982, the MDNR published the Statewide Forest Resources Plan (SFRP) and stated, “On public lands, the development of specific forest management plans will incorporate a sensitivity to protecting those natural values found within the forest boundaries...”

Ten years later, in 1992, The State of Michigan passed the Biological Diversity Conservation Act (now part 355, P.A. 451, 1994) which stated that “it is the goal of this

state to encourage the lasting conservation of biological diversity.”

About the same time, the Michigan Natural Features Inventory (MNFI) began to develop a map that would show the identity and location of native vegetation and forest cover before Europeans settled in large numbers in Michigan. The map, along with a corresponding report, was published in 1998 and serves as an aid today in identifying native ecosystems prior to widespread settlement and disturbance in Michigan. Additionally, MNFI Ecologist Dennis Albert developed a multi-state, multi-factor ecosystem classification system that helped further define Michigan’s ecosystems.

The MDNR revisited the Statewide Forest Resources Plan in 1991, and during the next three years developed an addendum to the plan that would serve as official Department guidance for managing, allocating and/or delineating old growth on state forest lands.

During 1994, the MDNR sponsored five public workshops across Michigan to obtain public comment on this issue. When the addendum was submitted to the Natural Resource Commission (NRC) information,” it included a draft strategy for implementing the Addendum with the intent that the strategy would “be further elaborated in subsequent rounds of review...” (See Appendix B).”

In December 1994, the addendum was approved and adopted by the NRC (See Appendix A).

As adopted, this addendum was divided into four parts:

1. A definition of old growth forests in Michigan, which included “ecologically important unforested openings, early successional stages, and extensive areas of catastrophic or frequent disturbance.”
2. The purpose and management of old growth forests (“most valuable ....as biotic habitat and gene pools....historic data bases, ecological reference points and aesthetic human environments”).
3. A landscape context of old growth (“integrated into the design of the larger landscape ecosystem”).
4. A process and means of designation for “Existing, potential and desired old-growth...on state forest land.”

### **MDNR Actions and Directives After NRC Adoption of the Old Growth Addendum**

In early 1995, Acting Deputy Director Herb Burns circulated a memorandum to Forest Management Division (FMD) and Wildlife Division (WD) personnel that reiterated and clarified the formal process used in classifying stands in the operations inventory and stand examination procedures with respect to old growth. The memo also clarified the difference between “suggested potential old growth” versus “approved potential old growth” (see Appendix C). Attached to the memo were copies of the NRC approved addendum and the draft implementation guidelines.

The memo stated that when a stand examiner (or someone else) during the annual

operations inventory process suggested a stand as “potential old growth,” the stand was considered “suggested potential old growth” until the recommendation was approved during a compartment review or other Department planning process. The stand then became “approved potential old growth.” If the initial recommendation was not approved during the compartment review or a similar process, the stand was no longer considered “potential old growth.”

In December 1996, State Forest Operations Section leader Ted Reuschel circulated a memo to foresters announcing the formation of an Old Growth Working Group. The memo also included a copy of the “draft strategy for implementing the Addendum” and noted that “while marked draft, it is the rationale, principles and guidelines which we intend to follow until revised or updated.” (See Appendix D)

The objective of the Old Growth Working Group was to develop a set of processes and tools for establishing a statewide old growth system and developing a base map of preliminary areas throughout the state managed for old growth. The MDNR Natural Heritage program provided a grant to the Working Group to assist in the development of a statewide old growth GIS old growth. One of the first actions of the Working Group was the determination that a GIS database and map of “potential old growth” on state forest land was needed before attempting to further develop an old growth management system.

In February 1997, a joint memo by Forest Management Division Chief Jerry Thiede and Wildlife Division Chief George Burgoyne directed area foresters and biologists to work together to map all “potential old growth” on forest areas approved in the compartment review process or wherever there was:

*“tentative agreement between Forest Management and Wildlife Division managers” to manage a stand, tract or parcel as old growth due to various conditions, or unique properties of said stand, tract or parcel.”*

The GIS application took approximately two years to complete, with delays caused primarily by:

- Difficulty in preparing hand-made maps by field staff
- The time required to hire the appropriate staff and then have that staff digitize all incoming maps and geo-reference these maps
- Submittals of incomplete mapping data from some forest areas which required additional follow-up
- Changes in organizational staff and structure within the Forest Management Division and the DNR in 1997-1999
- Uncertainty and/or confusion by many land managers as to how to best map OG areas within their respective forest areas (now known as forest management units)

This effort resulted in a statewide map showing distribution of “approved potential OG” as well as areas MDNR resource managers believed appropriate (circa 1998) for consideration when the MDNR constructed an OG/BS system.

Copies of these maps were broken down by forest management units (FMU) and distributed to the pertinent FMU. Also, copies of these maps have been made available to members of the public upon request. These maps are labeled:

*“POTENTIAL OLD GROWTH IDEAS AS MAPPED IN 1998*

*Includes: Some existing designated natural areas, preserves, etc.  
Potential old growth flagged in compartment reviews  
Informal concepts and suggestions”*

The purpose of this effort was to take one snapshot in time in which the MDNR could further refine policy and guidelines regarding old growth and biodiversity stewardship. This GIS was NOT intended to select or identify stands for OG designation.

In addition, this effort proved useful in identifying the technical and logistical difficulties that might arise in future when the MDNR began to develop a more formalized and permanent OG/BS system in the future.

### **Formation of New Old Growth Committee**

In April 1999, with the GIS maps and database completed, the Old Growth Working Group was renamed the “Old Growth Committee” and its membership increased to include a broader range of natural resource specialists and experts. Four subcommittees eventually were created and charged with the following tasks:

1. Name the statewide Old Growth system and subsystems
2. Develop data management objectives
3. Survey forest managers, forest planners and biologists to determine criteria used in developing Old Growth maps for their respective areas
4. Develop procedures and guidelines with respect to land use and Old Growth designation (always in draft form until final approval by the MDNR).

The field survey was completed first, and results showed forest managers and area biologists generally were not applying the NRC addendum or draft strategy when considering old growth designations. Instead, they used a combination of their own personal, intuitive sense with acquired knowledge of what they believed passed as old growth.

Additionally, the survey showed that virtually all the land managers who participated in the survey believed the addendum and draft strategy were difficult to understand and difficult to apply to on-the-ground determinations as “potential old growth” stands. In summary, the Committee learned there was no consistency in the standards used by planners and land managers/biologists across the state in recommending or approving stands for “potential old growth.”

The “Names” subcommittee report was addressed next, and the subcommittee stated that within the addendum the definition for old growth encompasses a wide variety of cover

types and ecosystems. Therefore, simply referring to the entire system as “old growth” might be inappropriate and confusing. The subcommittee suggested naming various parts of the old growth system based on management needs or actions that were necessary for a particular tract, stand or area.

The subcommittee recommended delineation of old growth subsystems based on three management options:

- no management action required or desired
- restoration of native forest conditions through the use of tree felling or prescribed burns
- areas that would require regular maintenance (e.g. prescribed burning) to maintain the biodiversity value of a particular subsystem (e.g. pine barrens) within the statewide old-growth network.

A fifth subcommittee was created to draft a set of old growth criteria once the Old Growth Committee realized the “draft strategy” and addendum were inadequate to meet the needs of field staff involved in designing a statewide old growth system. The Committee was seeking a more consistent and uniform means of selecting stands across the state and members believed that developing ecologically based criteria also would provide the needed justification and explanation to the public as to how and why the various “pieces of the OG puzzle” were put together by the DNR.

### **MDNR Recommendations**

The Old Growth Committee submitted a report in August 2000 to the MDNR Statewide Council that included a process designed to culminate in an old growth and biodiversity system plan for Michigan state-owned lands. The committee’s report was submitted to the DNR Management Team in August 2001. The MDNR reviewed the Committee report. A major change was made to broaden and expand opportunities for public input. The MDNR provided its report to the Natural Resources Commission in February 2001.

The plan also recommends a two-year process that includes public participation and further work by MDNR professionals prior to final adoption of an old growth and biodiversity stewardship system.

### **The Old Growth Criteria: The Basis for an Ecologically and Biologically Based Old Growth and Biodiversity Stewardship Plan**

Currently, eight old growth criteria remain “draft” and will continue to be “draft” until final approval by the MDNR. (See Appendix E).

As stated in Appendix E, “ these design criteria primarily refer to a design for potential old growth. Therefore, the emphasis is on ecological units rather than the current physical state of forest stands or groups of stands. While in some cases actual old growth may apply, the criteria need to be interpreted as tools to aid in the development of in light of a design for future old growth.”

It is important to note that the current draft design criteria and draft land use guidelines for allocating old growth are intended primarily for restoration of native forest conditions and native forest ecosystems on state forest and other state owned lands. The intent is to enhance, protect and restore various aspects of biological diversity within Michigan (see “Rationale” section in Appendix B, for further explanation of this point).

In some cases, the early stages of restoring old growth may be achieved and/or enhanced by some stand manipulation. Eventually, however, such manipulations may be conducted to maintain and meet old growth and biodiversity representation and goals.

The eight design elements and their associated criteria are:

- Representative of ecological type (“element 1”)

Criteria: Strive to have at least one potential old growth area for each land-type association (LTA). (Note: LTA is an ecological term applied when delineating an area on a map based on its relation to surface geology, soil parent materials, drainage and vegetation)

- Connectivity/linkages between blocks

Criteria: Corridors are to be developed through large-scale landscape-level considerations. The minimum width of corridors should be determined based on the use requirements for the species (singular or plural) of concern in that area. Species of concern should be determined by the local biologist in conjunction with the local forester. When possible, corridors should be both riparian and upland.

- Block size

Criteria: Attempt to concentrate LTA representation in large blocks.

- Distribution across the landscape

Criteria: It is preferable to have old growth areas distributed in like LTAs across a landscape (subsection or Sub-subsection) rather than concentrated within one LTA patch. In other words, where the same LTA exists in more than one patch within an ecological Subsection or sub-subsection, and there will be several old growth areas within the LTA, attempt to distribute the old growth areas in several LTA patches rather than having them all occur within the same LTA patch. Attempt to lump parts of different LTAs (or similar potential vegetation for the LTAs of the UP) into potential old growth blocks.

- Amount

Criteria: Specific acres or percentages are not given; old growth system functionality is to be the driving criterion in recommending potential old growth areas. In general, LTAs that comprise a smaller proportion of the total landscape should have a larger percentage of their area in old growth.

- Scarce and special species, communities, cover types

Criteria: Choose scarce, rather than more common, species and communities when selecting LTA representation.

- Age of stand

Criteria: Choose older, rather than younger, stands of the same species.

- Landscape context

Criteria: Choose a landscape context in which the functioning of the potential old growth system is not significantly impaired.

### **Other Uses of State Land and Old Growth Designation Guidelines**

The draft document “Other Uses of State Land and Old Growth Designation” (Appendix F) is intended to provide forest unit managers, area biologists and other state forest land management staff a set of considerations to use when allocating specific stands or parcels for old growth designation.

The guidelines, submitted by the Old Growth Procedures and Guidelines Subcommittee of the Old Growth Committee, address the following:

1. Site-specific activities (e.g. campgrounds, trails)
2. Land use designations (oil and gas)
3. Generic land types (riparian corridors), that occur on state forest lands (and often other state owned lands as well) whose existence may benefit or impair the design and/or function of the statewide old growth and biodiversity stewardship system.

The 18 general categories in the “Other Uses of State Lands and Old Growth Designation” document are as follows:

1. Timber Harvest and Silvicultural Work: Guidance regarding recent silvicultural work prior to designation and also guidance on future silvicultural activity in OG/BS areas.
2. Oil, Gas & Minerals: Emphasis to land managers on considering the long-term benefits of a parcel to the OG/BS system regardless of current development.
3. Microwave Towers: Guidance on tower compatibility and OG/BS with respect to function of a particular tract of designated land.
4. Roads and Motorized Trails: Guidance regarding placement of OG/BS areas with respect to motorized trails.
5. Non Motorized Trails: Guidance regarding impacts these trails and their uses may have on function of OG/BS system for purposes of preserving or restoring native vegetation or natural features.
6. State Forest Campgrounds: Guidance regarding placement of OG/BS areas with respect to the type and intensity of use of a given campground.
7. Kirtland’s Warbler Management Units: Guidance and illustration on where small portions of units may be desirable for inclusion into the OG/BS system.
8. Designated or Proposed Natural Areas: Emphasis on the compatibility of the two programs, and how various goals and objectives complement or parallel one another.
9. Areas Adjacent or Near Natural Areas: Guidance on how designation may improve overall system function and goals, as well as enhance integrity of adjacent natural area(s).
10. Stands Identified and Approved as having Special Management Area Potential: Refers to Operations Inventory field manual, provides guidance on how these areas may aid

- or improve function of the OG/BS system.
11. Deer Yards, Forest Openings and Other Areas Having High Game Management Value: Provides guidance on inclusion of these areas into the OG/BS system.
  12. Military Lands: Generally off limits to designation, except in unique circumstances.
  13. Cultural Resources: Reference to those areas having high cultural or archaeological value.
  14. Utility Rights-of-Way: Recommends not to include these areas for a variety of reasons.
  15. Proximity to Private Lands: Lists variety of factors, considerations and preferences if considering OG/BS designation adjacent to private lands.
  16. Non-Forested Wetlands: Brings attention to the high biodiversity and ecological value and function these areas possess and guidance as to what areas are best suited for including in the OG/BS system.
  17. Natural Rivers: Emphasis that the goals and objectives of Natural Rivers and OG/BS are similar and complement one another and recommends these areas for serious consideration for inclusion in the statewide OG/BS system.
  18. Riparian Corridors, Watersheds, and Aquatic Habitat Protection: Similar language as to what is stated for “Natural Rivers.”

### **Public Participation and the Designation of Potential Old Growth**

Since 1994, the MDNR has provided the opportunity for public comment as part of its annual Operations Inventory/Compartment Review. Each year, the MDNR inventories one-tenth of the state forest system. Additionally, MNFI reviews each compartment inventoried by the MDNR for a given year for the presence of threatened, endangered and sensitive species and communities. MNFI then notifies all appropriate staff of the presence of said entities and what can be done to aid in maintaining the viability of these species or communities (see Appendix G for an abridged example).

As previously noted, a stand examiner may suggest a stand or area, within a given compartment, for the designation of “potential old growth” and provide a write-up on other recommendations (e.g. timber harvesting, prescribed burning, road repairs, etc) for a given compartment. For old growth considerations, the stand is temporarily coded an “8,” which is the code used for “potential old growth” in the operations inventory database system.

Prior to the actual compartment review, each forest management unit holds an “Open House” in which advance notice is given to interested parties on specific mailing lists and via general press releases. The purpose of an open house is to provide information and allow public comment regarding proposed forest management treatments, including the determination of whether a stand suggested for potential old growth should be approved for designation. Also, interested persons can request and receive copies of a given compartment review, along with the proposed treatments, prior to the open house or compartment review.

During the formal compartment review, official presentations are given by MDNR stand examiners on proposed forest management treatments and stand designations for “suggested potential old growth” within a given compartment. Examiners also provide general information on the compartment itself. Following the presentation, all pertinent

division and department representatives discuss proposed treatments and designations, taking into consideration the comments provided during the public comment period.

As before, a stand will be considered “approved potential old growth” only if approved through the compartment review process. Similarly, stands previously designated as “approved potential old growth” within a given compartment may be removed from the “approved potential old growth” category if it is agreed that these stands do not fit or meet the most current draft guidance or standards for OG designation.

During the process described below, the existing process will continue using the most current draft guidance available.

### **Recommendations For Public Participation And Review**

The first recommendation is the formation of an Old Growth Public Advisory Team (PAT) to review and comment on the MDNR report and the associated public participation process, the draft criteria and draft land use guidelines. The MDNR recognizes the importance of providing all interested parties an opportunity to participate in the establishment of an old growth and biodiversity stewardship plan; therefore, formal criteria have been identified to assist in choosing PAT members.

PAT membership will be based primarily on an organization’s statewide membership base and whether it has expressed a strong and continued interest in old growth and biodiversity stewardship activities and related issues on Michigan’s state forests and other state owned lands.

The MDNR sought assistance from the Minnesota Department of Natural Resources in determining minimum qualifications for PAT membership. The Minnesota DNR created a similar advisory team when it developed a statewide, voluntary sustainable forest management guidelines and determined that certain attributes were deemed highly desirable for advisory team members. This effort included five public advisory groups and over 20 organizations.

The Michigan DNR has determined that each PAT member should:

- Be able to commit adequate time.
- Be able to find solutions and common ground.
- Be able and enabled to speak directly for group they are representing.
- Be willing to propose and accept compromise.
- Make honest and sincere effort to attend all meetings.
- Be able to work well with disparate interests.
- Have a sense of humor (seriously, folks!).

Additionally, the MDNR recommends a trained and neutral facilitator be present to facilitate productive discussion at all PAT meetings.

Once a potential PAT member is identified, the MDNR will provide him/her with:

- An explanation of the purpose and function of the PAT and why said organization was chosen for membership
- A list of PAT member qualifications
- An overview and history of events regarding the OG/BS system
- An explanation of the public participation process regarding the OG/BS system
- An explanation of the MDNR report, the proposed public participation process and the proposed draft criteria and land use guidelines
- A request that his/her organization respond, in writing, by a specific date, stating whether or not they wish to participate, and submitting the name of the person they wish to represent them.
- A request that his/her organization be prepared to have its representative bring written comments representing the organization's initial reaction to the MDNR OG/BS report to first PAT meeting

The PAT will be given 120 days from the date of its first meeting to provide written comments to the MDNR Statewide Council regarding draft criteria and draft land use guidelines. The Statewide Council will determine if any changes to the draft criteria or draft land use guidelines are warranted. If changes are made, the MDNR will communicate those changes with PAT members. During this period, initial public comments will be provided to the PAT for consideration.

### **Public Comment Period**

Following completion of the PAT objectives and approval by Statewide Council, the MDNR will contact stakeholder groups and interested citizens and provide an attachment containing the most recent edition of the draft criteria and land use guidelines. This letter will seek input on the PAT-reviewed criteria and guidelines.

The DNR will then determine how best to respond to all responses received. (The level of response will correspond to the level of interest and intensity of response received by a particular group or person.)

Additionally, the MDNR will provide all stakeholder organizations, groups or members of the general public an opportunity to comment on how the approved criteria and land use guidelines will be applied by assigned MDNR staff. GIS maps and databases, along with any other appropriate documentation, will be made available to the public to show: 1) location of those areas recommended and designated  
 2) current vegetation of those areas  
 3) landtype associations represented  
 4) other information used by MDNR staff when developing their recommendation for a statewide old growth and biodiversity stewardship network.

### **Implementation of the Statewide Old Growth and Biodiversity Stewardship Plan**

Once the final design criteria and land use guidelines are approved by the Statewide Council, two design teams will be formed – one for the Upper Peninsula and one for the

northern Lower Peninsula. Team members will be charged with working in concert with MDNR forest unit managers to applying the approved old growth criteria and land use guidelines. The design teams also will determine the best process to assure continued public participation.

Each design team will be structured in the following manner:

- 1) where possible, members will have experience sitting on the Old Growth Committee
- 2) designate co-chairpersons by the region's respective FMD planners
- 3) include one area wildlife biologist from that region, one state park interpreter working for a key state park within that region, and a fisheries biologist. Additionally, a GIS specialist from the Spatial Information Resources Center (SIRC) staff will be assigned to work with both design teams.

The design teams will work at both the landscape and forest management unit levels to insure the best "fit" and design on the ground. The teams will use existing GIS information and operations inventory information regarding "potential old growth" on state forest lands and other state owned lands. The use of GIS will be an essential tool to aid design teams in applying criteria and guidelines. GIS will serve as an aid in visualizing changes across landscapes and management boundaries of various scales and types in applying OG criteria and guidelines.

Since this is one of the first attempts of this type of process in the nation, flexibility and the ability to adapt to changing scenarios will be required. Modifications to the finalized plan may be necessary to ensure that the ecological functions and objectives of the network (e.g. restoration of native forest habitat for biodiversity purposes) are met over time. Many of these natural systems are adjacent to man-made infrastructures and development (e.g. roads, buildings, homes) and will be impacted by changes in these structures and activities. All changes will be required to meet public participation objectives.

#### **Future Tasks: Identifying Management Needs After Designation**

It is important to recognize that the MDNR's work regarding old growth is not complete with the release of this report. The MDNR believes that at least one other committee be formed to develop documentation and recommendations to the Statewide Council on how to "manage" various areas identified within the OG/BS plan.

The Department has identified three potential management options for areas within the OG/BS Plan:

1. Areas at a stage where no human involvement is required or desired. The MDNR will let natural processes will take place; over time native forested systems will return to "Old Growth Conditions."
2. Areas important to the Plan at current state of development (e.g. pine barrens or old growth hemlock) which will require regular stewardship activities to mimic natural

disturbance or processes such as prescribed burning (pine barrens or deer fencing (for hemlock) to improve regeneration success in an effort to maintain overall ecological and biodiversity integrity of the statewide system.

3. Native forested systems that would benefit the statewide system and goals by use of restoration techniques such as a combination of tree cutting, prescribed burning and soil scarification (e.g. red pine plantations, to hasten the process of insure a returning certain plantations to native conditions) or conifer underplanting in hardwood dominated areas.

### **Working with Non-State Land Owners**

Much work remains with federal landowners in Michigan who have developed, or are developing, their own old growth plans (e.g. the Huron Manistee National Forest). The objective is to help connect old growth areas and work together to manage lands for similar purposes where feasible.

### **Working with Private Land Conservancies**

Where possible, the MDNR also will work with private land conservancies to establish cooperative agreements to manage state forest and other state owned lands within the OG/BS network for similar purposes where state lands are adjacent to conservancy properties.

### **Conclusions**

The process in planning and designing an old growth system is complex and must be subject to regular review (i.e. once every 5 years). This will ensure the system is meeting its desired biotic and ecological functions, is managed according to the latest and best scientific knowledge and that the public participation process encompasses stakeholder groups and the general public.

Old growth forests are most valuable in the landscape as biotic habitats and gene pools, but also provide historic data bases, ecological reference points, and aesthetic human environments. These values can be conserved by controlling disturbances in existing old growth or by allowing disturbed stands to return to an old growth condition.

Plans for management may include protection from detrimental uses and disturbances, and/or allowing others to occur with the intent of promoting natural processes and conditions. Natural forces will dominate long-term development, disruption, and recovery of existing or desired old growth conditions, unless other means are necessary to restore and/or maintain native conditions. Specific objectives and management activities for conserving old-growth values should be identified and evaluated in State Forest plans, compartment reviews and stand prescriptions.

The DNR also believes that old growth is most valuable when integrated into the design of the larger landscape ecosystem. The value of old growth may be enhanced by complementary stands such as linking corridors (which may also be old-growth), buffers

managed for this purpose (perhaps on modified rotations or with light selection harvests), or other landscape components. The significance and desirability of specific old growth conditions should be determined in the context of other lands and with the cooperation of other willing landowners. Cooperative support of private and corporate landholders will be solicited, without infringing on or regulating private property rights.

Natural systems design requires that the MDNR not be fixed into specific acreage or percentages for a given forest species or vegetation type, due to the natural flux and flow of acreage numbers and percentages over time due to natural processes and unforeseen disturbances. Therefore, existing, potential, and desired old growth conditions on State-owned forest land should be designated (or undesignated) by:

- ❑ Identifying them in State Forest plans, compartment reviews, and operations inventory
- ❑ Evaluating them for possible consideration under Section 4 of the 1972 Wilderness and Natural Areas Act
- ❑ Coordinating with the Michigan Natural Features Inventory, species recovery plans, broad biological diversity goals, and other programs as appropriate
- ❑ And reviewing plans with the public.

Natural systems design requires that the MDNR not be fixed into specific acreage or percentages for a given forest species or vegetation type, due to the natural flux and flow of acreage numbers and percentages over time due to natural processes and unforeseen disturbances.

## Appendix A

### OLD GROWTH ON STATE FOREST LANDS An Addendum to the Statewide Forest Resource Plan

DEFINITION - Old-growth forests are those that approximate the structure, composition, and functions of native forests. These native conditions generally include more large trees, canopy layers, standing snags, native species, and dead organic material, involve more complex ecological processes, and undergo more gradual change than do young or intensively managed forests. Native forest conditions in Michigan also included ecologically important unforested openings, early successional stages, and extensive areas of catastrophic or frequent disturbance.

PURPOSE AND MANAGEMENT - Old-growth forests are most valuable in the landscape as biotic habitats and gene pools, but also provide historic data bases, ecological reference points, and aesthetic human environments. These values can be conserved by controlling disturbances in existing old-growth or by allowing disturbed stands to return to an old-growth condition. Plans for management may include protection from detrimental uses and disturbances, and/or allowing others to occur with the intent of promoting natural processes and conditions. Natural forces will dominate long-term development, disruption, and recovery of existing or desired old-growth conditions, unless other means are necessary to restore and/or maintain native conditions. Specific objectives and management activities for conserving old-growth values should be identified and evaluated in State Forest plans, compartment reviews, and stand prescriptions.

LANDSCAPE CONTEXT - Old-growth is most valuable when integrated into the design of the larger landscape ecosystem. The value of old-growth may be enhanced by complementary stands such as linking corridors (which may also be old-growth), buffers managed for this purpose (perhaps on modified rotations or with light selection harvests), or other landscape components. The significance and desirability of specific old-growth conditions should be determined in the context of other lands and with the cooperation of other willing landowners. Cooperative support of private and corporate landholders will be solicited, without infringing on or regulating private property rights.

DESIGNATION - Existing, potential, and desired old-growth conditions on State-owned forest land should be designated (or undesignated) by: identifying them in State Forest plans, compartment reviews, and operations inventory; evaluating them for possible consideration under Section 4 of the 1972 Wilderness and Natural Areas Act; coordinating with the Michigan Natural Features Inventory, species recovery plans, broad biological diversity goals, and other programs as appropriate; and reviewing plans with the public.

## Appendix B

### A DRAFT STRATEGY FOR CONSERVING OLD GROWTH ON STATE FOREST LANDS

This State Forest old-growth conservation strategy is presented in three parts:

- A RATIONALE FOR RESTORING AND CONSERVING OLD-GROWTH AND OTHER NATIVE ECOSYSTEMS, explaining the purpose and assumptions guiding the strategy, which we feel is fairly complete,
- PRINCIPLES FOR OLD-GROWTH PLANNING, outlining general thinking on how to proceed with old-growth designation, which are in an intermediate stage of completeness and which will guide the development of guidelines, and
- derived from these principles, GUIDELINES FOR OLD-GROWTH DESIGNATION PLANS, which are still in formulation.

In addition, a list of references is provided.

#### RATIONALE FOR RESTORING AND CONSERVING OLD-GROWTH AND OTHER NATIVE ECOSYSTEMS

- R1. People value forests for a variety of uses. It is a common desire that differences among users be resolved carefully, peacefully, and equitably and, when public lands are involved, openly. This strategy is intended to serve this value.
- R2. As one of these uses, society's general policy guidance to conserve biological diversity (as in state and federal endangered species acts and Michigan's Biological Diversity Conservation Act) will likely remain in effect. This guidance, however, is widely recognized as needing to take a more comprehensive approach to habitat protection to avoid species endangerment than has been used in the past.
- R3. Growing human demands on land and its natural resources will put increasing pressure on habitat for the rarer species, and will likely add more species to "threatened and endangered" lists than will be removed due to recovery.
- R4. Biological diversity in Michigan is threatened by a loss of habitats that support sensitive species. These species benefit from various habitat characteristics, including those associated with native forests. Given the uncertainty, variety, and complexity of habitat requirements (especially for unknown or lesser-known species), these characteristics can be provided more efficiently and completely by providing a range of habitats than by expanding and overlaying a multitude of individual species management plans. This efficiency results from more economical use of information, staff, time, and land.
- R5. Certain habitat characteristics may be provided in a number of ways, but some of the ecological structure, processes, and function of native forests may have differed in important, but unknown ways from those of existing forests. This uncertainty implies that some ecosystems should be managed with native forest conditions as their primary management objectives. Because the

significance of many of these conditions is not known, they should be the focus of additional research and monitoring.

- R6. Old growth in a carefully-designed landscape contributes to biological diversity by providing:
- a. habitat for some rare, threatened, and endangered species;
  - b. reservoirs of gene pool diversity;
  - c. the long-term context in which evolving ecological relationships can develop; and
  - d. sources and channels for species to shift geographic ranges in response to changing conditions.
- R7. It is not too late for restored old-growth to provide these contributions, because some factors responsible for the decline of individual species take considerable time before they result in species extinctions or extirpations from the state, and they can be reversed.
- R8. The "native" or "pre-European" standard for defining old-growth is based on the assumption that some species are particularly suited to the relatively stable ecological relations that existed in North America before the introduction of new, energy-intensive, and rapidly evolving European technology and culture. Care must be taken in defining this standard, however, due to the facts that:
- a. local occurrences of storms, fires, insects, and disease often caused abrupt and drastic habitat changes and maintained other habitats;
  - b. native conditions in mid-tolerant and, especially, intolerant forest types may be characterized by young, open, or early successional stages not commonly thought of as "old-growth";
  - c. long-term natural climatic variation has always kept the forest in continuous flux, and would have continued to produce changes in forest conditions even without Native American disturbance or European settlement;
  - d. Native American technologies, population sizes, cultures, and activities varied by group and changed through time, and their effects on the landscape changed as groups migrated, merged, and displaced one another; and
  - e. at first, European influence spread gradually through the less obvious and more indirect forces of trapping and trading relations, disease introductions, and long-range ripple-effects on Native American migration.

Recognition of these factors, however, should not cause us to lose sight of the fact that the rates of habitat change and species loss accelerated significantly following European settlement. In addition, we must recognize that many pervasive influences of modern technology are difficult to identify and cannot be excluded fully from even the largest and most remote old-growth tracts.

- R9. Planning for biological diversity will be most effective if it proceeds in the context of broader multiple-use planning. In fact, two state forest plans have made provisions for old-growth designation, and require some form of state-level guidance to complete these designations. In addition, old-growth is an issue in compartment reviews on other state forests, and these forests also need guidance regarding old-growth designation and management.
- R10. Old-growth is an integral component of broad landscape diversity, which serves both biological diversity and human uses of wildlands. The functional values of old-growth depend on both its own characteristics and overall landscape composition. Effective overall landscape design is expected to be more successful than habitat-by-habitat management for maintaining biological diversity. However, known habitat requirements of rare, threatened, endangered, and sensitive species can help to guide overall design.
- R11. Broader landscape considerations will provide the long-range context for old-growth planning, but a more comprehensive landscape approach will take more time to refine. The long time required to restore some old-growth conditions suggests that potential tracts be identified early on in the landscape planning process. This is particularly true given the likelihood of increased harvest levels in hardwoods and the need to make decisions soon regarding mature aspen and jack pine. Early delineation of old-growth (and a few other landscape components like wetlands and openings) also will provide information on important cores for the more general landscape planning work that may follow.

#### PRINCIPLES FOR OLD-GROWTH PLANNING

- P1. Since "old-growth forests are those that approximate the structure, composition, and functions of native forests", the term "old-growth" should be used only for tracts currently in or to be managed to enhance native conditions. For want of a better term, "old-growth" should be applied even to approximations of native conditions in mid-tolerant or intolerant forest types, and even when those conditions may not be characterized by old trees. Forest treatments in old-growth or potential old-growth should be limited to those that will maintain or enhance native characteristics.
- P2. Although the other values of old-growth are also important, the most important purpose for designating state forest old-growth is to contribute to a statewide system of diverse habitats to support viable populations of native species and the communities in which they occur.
- P3. Many forest uses and management designations already made (including federal and state wildernesses) preclude timber harvesting or limit use. They can and do serve many purposes including, notably, recreation. Such areas should be inventoried and evaluated at an early date for their ability to be part of a native habitat or old-growth system.
- P4. Where additional areas are needed, stands with potential for developing into old-growth should be identified based primarily on broad site characteristics, and secondarily on current stand condition.

- P5. A balance must be maintained between lumping and dispersal of old-growth. A large lumped tract minimizes undesirable edge effects; several small dispersed tracts provide broader representation and replication of diverse ecosystems and spread risk more broadly. Generally, minimum desired tract size is roughly proportional to the size of native disturbance events.
- P6. "Old-growth" does not mean "free of disturbance", so tract-specific objectives need to be stated and some manipulation may be desired:
- a. Area dominated by shade-tolerant species like northern hardwoods will generally undergo little manipulation, but species reintroductions and other ecosystem restoration techniques may be desired.
  - b. Areas dominated by mid-tolerance species like oak and red pine may need prescribed fire or other practices if the objective is to maintain the type. (This may not be the objective for stands naturally succeeding to other species.)
  - c. Shade-intolerant areas or inclusions, especially those of aspen and jack pine, should be large or scattered enough to provide for natural or simulated disturbance mosaic patterns, part of which could be provided by complementary stands subject to planned manipulation. Manipulation of complementary associated (adjacent or interspersed) stands should specify whether modified rotations or temporary transitions to other types would be allowed. Because maintenance of native conditions in these types may require intensive management, old-growth designation may not be the most effective means of providing these conditions.

In any or all of these types, a "rotating old-growth" approach may be necessary to maintain native disturbance patterns and native ecosystem conditions.

- P7. Management plans may explicitly consider the alternative of "no manipulation allowed" if the clearly stated objective of this alternative is habitat or research related.
- P8. Old-growth designation, restoration, and management plans should recognize and provide for the contingency that funds may not be forthcoming for restoration and management. Timber sales in old-growth will be allowed if they are the most effective way of maintaining or restoring native conditions.
- P9. Forest stands managed on long rotations or modified selection harvests are also important components of a diverse landscape, and can complement old-growth. Stands could grow to larger diameters with more uneven spacing on longer rotations or cutting cycles. Inclusions of varied species and stand structure could be encouraged. Snags, den trees, and downed woody material could also contribute important old-growth characteristics. Although such stands are not in themselves old-growth, planning for these and other landscape components should be considered.
- P10. Other innovative management regimes (such as alternating rotations of naturally succeeding types) also should be considered to increase landscape productivity, health, and diversity.

- P11. Roads and motorized trails should generally not lie within old-growth, or should cross at points where their impact is minimized. Even non-motorized trails within old-growth are not encouraged; a notable exception would be for well-defined and coordinated educational purposes. Facilities like campgrounds, vehicle access sites, and hydrocarbon development should be avoided in old-growth.
- P12. Old-growth designation is not synonymous with formal Natural Area designation under Public act 241 of 1972, although Natural Areas should be considered for inclusion in the old-growth system and some old-growth areas may be considered for possible Natural Areas designation.

#### GUIDELINES FOR OLD-GROWTH DESIGNATION PLANS

- G1. Specific plans for old-growth designation should be a part of State Forest plans and cooperative interagency ecosystem management plans. Draft old-growth designation plans should move ahead independent of State Forest or cooperative ecosystem planning in DNR Districts that lack such plans (completed or in process). All old-growth plans must be approved by the Deputy Director for Resource Management
- G2. Such plans should identify the forest type and site combinations that need to be represented and the landscape level at which such representation is desired. As a result, these plans should be coordinated with plans for adjacent areas.

Generally, all significant combinations of forest types and site qualities native to an ecological subdistrict should be represented by significant old-growth areas in some ownership in that subdistrict. (See "Regional Landscape Ecosystems of Michigan," Albert, Denton, and Barnes, 1986.)

- G3. Plans should identify the degree to which representation needs are met by other landowners, and the potential that exists for additional representation by these willing owners via such means as technical assistance and conservation easements.
- G4. Plans should identify the plant and animal species and communities expected to benefit significantly from old-growth designations and their population viability needs, and choose important indicator species and communities from this inventory for evaluation and monitoring alternative habitat designs.
- G5. Stands on State lands nominated through compartment review or other Department planning process should be coded in the Operations Inventory data base. Use code "8" under "Stand Condition" for both old-growth and potential old-growth. (The printout will read "pot old grwt").
- G6. Any treatment of such nominated stands on State land before a final old-growth designation plan is adopted requires normal Department compartment review, public review, and approval of the appropriate Regional Supervisors of the Forest Management and Wildlife Divisions before field work begins. Fire suppression is allowed, but disturbance by suppression activities should be minimized.

- G7. As means of determining the desired amount of old-growth, designation plans may identify the most important nominated stands and compare the resulting representation to that secured by adding the next most important stands. Such a "sensitivity analysis" should also consider the effects on other resources, uses, and values.

#### USEFUL REFERENCES

(Biological Diversity). *Journal of Forestry*, several feature articles, March, 1990.

Biological Diversity in Michigan. Joint position of the Michigan Society of American Foresters and the Michigan Chapter of The Wildlife Society, October, 1992.

The Biological Diversity of Missouri: Definition, Status, and Recommendations for its Conservation. Conservation Commission of the State of Missouri, 1992.

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Biological Diversity and Silvicultural Systems. Thomas Crow, National Silvicultural Workshop, Petersburg, Alaska, July, 1989.

Biological Diversity in Forest Ecosystems. Society of American Foresters Task Force Report, 1991.

Biological Diversity on Federal Lands. The Keystone Center, April, 1991.

The Challenge of Biological Diversity. David Trauger and Russel Hall. Presentation to the 1992 North American Wildlife and Conservation Conference.

Challenges in the Conservation of Biological Resources: A Practitioner's Guide. Ed. by Daniel Decker, Marianne Krasny, Gary Goff, Charles Smith, and David Gross, Westview Press, 1991.

The Conservation of Biological Diversity on State and Private Lands. National Association of State Foresters Report, April, 1993.

Conserving the World's Biological Diversity. IUCN, World Resources Institute, Conservation International, and the World Bank, 1990.

Conserving Biological Diversity. *American Forests*, March/April, 1992, pp. 37-44.

The Endangered Species Act. *Journal of Forestry*, several feature articles, August, 1992.

Global Biodiversity Strategy. World Resources Institute, World Conservation Union, & United Nations Environmental Program, 1992.

Management of Old-Growth Ecosystems - Conference Proceedings. Ottawa National Forest, August, 1991.

## Appendix C

### MICHIGAN DEPARTMENT OF NATURAL RESOURCES

#### Interoffice Communication

March 15, 1995

TO: All Forest Management and Wildlife Division Offices  
FROM: Herbert Burns, Acting Deputy Director  
SUBJECT: Identifying Potential Old Growth In Operations Inventory

Now that the attached State Forest old growth addendum has received formal approval by the NRC, it is important to clarify precise procedures to be used in identifying stands as "potential old growth" (stand condition 8) in the Operations Inventory.

The process begins when a stand examiner (or some other Department planning process), perhaps in agreement with a public nomination, suggests a stand as "potential old growth", that is, as a stand with special characteristics or location qualifying it for further consideration for inclusion in the old growth system. At this point, stand condition 8 (field 13 in column 22) can be entered into the OI data base, but this is still only the stand examiner's (or planning) recommendation. If approved in the compartment review (or other planning process), this "suggested potential old growth" becomes "approved potential old growth". Until the completion and approval of a final plan that specifies appropriate stand treatments, no treatment will be done after this step unless approvals are given by the Area, District, and Regional Forest Managers, the Habitat and District Wildlife Biologists, and the Regional Wildlife Supervisor.

Such a stand may or may not actually become designated old growth when the final determinations are made at some future date. At present, this formal designation is expected to occur in the context of a plan for each State Forest (in other words, at the DNR District level), with some coordination at the State and Regional levels and with adequate public review. The development of more specific procedures for such designation will soon be underway within the Department and with the public.

If the initial recommendation for potential old growth is not approved at the compartment review or in a similar process, or when it is officially decided that a stand will not be designated as old growth (as discussed above), the stand condition 8 identifier in the OI record is to be removed.



Attachment

cc: Deputy Directors  
Resource Management Chiefs

## Appendix D

### MICHIGAN DEPARTMENT OF NATURAL RESOURCES

#### INTEROFFICE COMMUNICATION

December 13, 1996

TO: Field Operations Supervisor  
State Silviculturist  
District Forest Managers  
District Inventory and Planning Specialists  
District Timber Management Specialists  
Area Forest Managers  
Section Leaders

FROM: Ted Reuschel, Section Leader, State Forest Operations

SUBJECT: Designation and Management for Old Growth

After the old growth presentation by Bill Mahalak at our October staff/field meeting, I promised to follow up with several actions to update the direction and guidance for this program. Most Areas or Districts are already approaching this from one perspective or another, but we need to pick up our pace, and fix our aim. In addition, while there is probably no "best approach" to old growth designation, and we encourage units to continue to pursue whatever means they can, we also recognize that some degree of uniformity, and additional guidance will be beneficial.

Let's begin by sharing with all parties several documents on old growth. The first you should already have on hand, but just to make sure I am enclosing a copy of the official old growth addendum to the Statewide Forest Resources Plan, adopted by the NRC in December of 1994. It also includes a "strategy for conserving old growth on state forest lands." While marked "draft," it is the rationale, principles and guidelines which we intend to follow until revised or updated. Both of these documents were forwarded to the field (FMD and WD) as an official directive by Herb Burns as acting Deputy Director. A copy of that March 15, 1995, memo is also attached.

Secondly, I am enclosing a summary of Bill Mahalak's comments at our staff/field meeting. It re-emphasizes these points and our official FMD commitment to representative old growth on state (in association with other) lands. Note that we do have a process identified for "suggesting" potential old growth as a result of O.I. observations. Be assured that this identification is not a committal; it merely gives notice to reviewers that here is a stand(s) which has special

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December 13, 1996

potential if the compartment review wishes to so designate it. Only then does it reach a status whereby approvals are required up through the Field Operations Supervisors to reverse the proposal. It does not become fully official until approval as part of some subsequent broader plan.

Third, I will enclose a copy of the MNFI review of the Ishpeming Forest Area 1997 YOE compartments. This Forest Area in their O.I. and draft compartment plan included proposals for several potential old growth units, which we are happy to see. I am sharing MNFI comments on these particular proposals only because this is one of the more elaborate and helpful discussions MNFI has provided to enhance local proposals to the best benefit of old growth and biodiversity values.

As the final action, and the most significant, we have established an old growth working group, with the intention of getting to all planners and managers the basic tools, maps and data necessary to bring this project to fruition. Bill Mahalak has outlined some ways in which the working group might approach this. The group may look at others.

We would like to get as much of this under our belt as possible before Bill becomes a threatened and endangered species (retirement), so we will be getting started very soon. Bill will act as chairman, and Frank Sapio as co-chairman, and chairman after Bill retires. Working group members will include Pat Comer (MNFI), Mike Mang, Les Homan, Ron Balcerak, Martin Nelson, Lynn Mohr, and a Wildlife Division representative (to be announced). Others may be added later at the group's discretion. Obviously others may also be brought in or consulted on an "as needed" basis as the work proceeds. Bill will be in contact with group members shortly regarding an initial meeting date.



TR:ks  
Enclosures  
cc: Dr. Gerald J. Thiede, DNR

## Appendix E

### DRAFT---Old Growth Criteria---DRAFT

(Notes prepared by M. Mang, Planner, Forest Management Division, MDNR)

[Note: It must be remembered that these design criteria primarily refer to a design for potential old growth. Therefore, the emphasis is on ecological units, rather than the current physical state of forest stands or groups of stands. When using the criteria, although in some cases actual old growth may apply, they need to be interpreted in light of a design for future old growth.

The definition of old growth as approved by the Natural Resources Commission on 12/8/94, is what is meant by old growth in the subcommittee's discussions. That definition follows:

Old-growth forests are those that approximate the structure, composition, and functions of native forests. These native conditions generally include more large trees, canopy layers, standing snags, native species, and dead organic material, involve more complex ecological processes, and undergo more gradual change than do young or intensively managed forests. Native forest conditions in Michigan also included ecologically important unforested openings, early successional stages, and extensive areas of catastrophic or frequent disturbance.]

**Elements** of an overall old growth design were first identified. These are numbered 1 through 8. Old growth **design criteria** were then developed for the various elements. Listed below, by element, are the criteria. Explanatory comments on the criteria follow.

#### 1. Representative of ecological type

##### **Criteria**

- Strive to have at least one potential old growth area for each landtype association (LTA).

##### **Comments**

- The main point to keep in mind is that there be an attempt to capture ecological representativeness.
- LTAs were defined differently in the UP and NLP. Those in the NLP are capable of being repeated on the landscape and are identified at a finer scale than those in the UP. Therefore, LTAs as given by the second descriptive digit (which is somewhat analogous to the UP LTAs) will be used in the NLP for the purpose of meeting this criterion. However, since finer-scale information is available in the

NLP, it may be used for additional designation where significant differences between LTAs at the second-digit level are perceived.

- Develop this criterion with respect to potential old growth areas identified by other land owners (i.e. USFS, State and National Parks, private landowners).
- See **4. Distribution across the landscape** below.

## **2 Connectivity/linkages between blocks**

### **Criteria**

- Corridors are to be developed through large-scale landscape-level considerations.
- The minimum width of corridors should be determined based on the use requirements for the species (sing. or pl.) of concern in that area. Species of concern should be determined by the local biologist in conjunction with the local forester.
- When possible, corridors should be both riparian and upland.

### **Comments**

- In some cases corridors may be discontinuous as long as they provide “stepping stones” for the species of concern.
- Corridors along waterways are especially useful because of the many ecological values riparian areas provide.
- In most cases, corridors are to be considered as part of the actual old growth system.
- Biodiversity is best provided when wetlands are linked to uplands.

## **3 Block size**

### **Criteria**

- Attempt to concentrate LTA representation in large blocks.

### **Comments**

- Larger blocks are better because they are more functionally intact at bigger scales and are less common than smaller blocks.
- Consider the risk of loss due to catastrophic events to a single unique large block.

## **4. Distribution across the landscape**

### **Criteria**

- For the NLP, try to have two or three replicates by LTA (at the two-digit level) distributed over the sub-subsection.
- For the UP, try to have two or three locations with similar potential vegetation distributed over each LTA.
- It is preferable to have old growth areas distributed in like LTAs across a landscape (Subsection or Sub-subsection) than concentrated within one LTA patch. In other words, where the same LTA exists in more than one patch within an ecological

Subsection or Sub-subsection, and there will be several old growth areas within the LTA, attempt to distribute the old growth areas in several LTA patches rather than having them all occur within the same LTA patch.

- Attempt to lump parts of different LTAs (or similar potential vegetation for the LTAs of the UP) into potential old growth blocks.

### **Comments**

- Develop these criteria with respect to potential old growth areas identified by other land owners (i.e. USFS, State and National Parks, private landowners).
- Try to avoid “putting all the eggs in one basket” if possible.
- It is assumed that the biological functioning of an patch area of old growth is enhanced as the number of LTAs (or similar potential vegetation for the LTAs of the UP) within the patch area is increased.
- For full understanding, maps and definitions of the various ecological landform classifications must be available to field personnel.

## **5. Amount**

### **Criteria**

- Specific acres or percentages are not given; old growth system functionality is to be the driving criterion in recommending potential old growth areas.
- In general, LTAs that comprise a smaller proportion of the total landscape should have a larger percentage of their area in old growth.

### **Comments**

- LTA proportion is to attempt to achieve functional representation of rarer ecosystems in the total old growth design.
- Numbers of acres or percentage of some base were not chosen as criteria. Old growth significance lies in its qualitative ability to provide native ecosystem biodiversity, not in some arbitrary quantitative approach.
- “Function” is defined as the natural or proper action for which an organism or habitat or behavior has evolved.

## **6. scarce and special species, communities, cover types**

### **Criteria**

- Choose scarce, rather than more common, species and communities when selecting LTA representation.

### **Comments**

- These species and communities may be endangered, threatened, rare, edge-of-range or disjunct.

- The Nature Conservancy (TNC) has mapped portfolio areas judged to be critical to the conservation of biodiversity. Specific information exists pertaining to these areas.
- The Michigan Natural Features Inventory (MNFI) has location-specific information on rare species and communities.
- Local knowledge (from individuals and organizations) may also be sources of information.

## **7. Age of stand**

### **Criteria**

- Choose older, rather than younger, stands of the same species. Choose those stands that are relatively old for the species, when possible.

### **Comments**

- This criteria does not need to apply to stands which are part of ecosystems which experienced natural disturbances at a rate more frequent than the life expectancy of the species. For example, stands within a fire-dominated jack pine ecosystem may be of various ages.

## **8. Landscape context**

### **Criteria**

- Choose a landscape context in which the functioning of the potential old growth system is not significantly impaired.

### **Comments**

- Look at the surrounding landscape and determine if the values for which a proposed potential old growth area has been selected are significantly impaired by the context in which it occurs. For example, a small isolated block of old trees surrounded by gas wells and roads may not be a functional old growth system.

## Appendix F

### Other Uses of State Forest Land with Respect to Old Growth-*Draft*

Note: The intent of this document is to provide forest unit managers, biologists and other state forest land management staff with a set of considerations and ideas that to use when allocating specific stands or parcels within a forest management unit for OG management with respect to other uses of state forest land.

#### **Timber Harvest and Silvicultural Work**

Recently completed timber sales and silvicultural work do not preclude these areas from inclusion into the old growth system. Subsequent to designation, “active” management (including harvesting) will only be the exception. Active management will only occur for biodiversity or ecological restoration purposes, except in unusual circumstances, such as imminent widespread forest health problems.

#### **Oil, Gas & Minerals**

Much of Michigan’s state forest lands have been classified with respect to mineral extraction in the last 5 years. At times, this such classification may result in apparent conflicts with desired OG objectives and design for a particular area or landscape. Where conflicts do arise with mineral extraction, managers should keep in mind that they are creating a system to meet long-term OG and biodiversity goals. Consequently, managers and planners should consider adding parcels based on their long term potential to benefit the OG system even if said parcels are currently classified for development, have undergone development or where mineral rights are severed.

Please note that once a parcel or portion of that parcel has been approved for OG designation, the manager or other staff should seek to get the parcel reclassified as non-leasable or non-development land.

#### **Microwave Towers**

For lands currently used for towers, managers should consider whether or not whether the OG system would benefit in the long-term for by having said parcel allocated for old growth management. Ideally, managers should try to designate and delineate OG areas that contain few, if any towers. Compatibility of towers with respect to OG depends on: **1)** tower site location (e.g. on the edge or in the middle of an OG corridor or block) with towers located on the edge being preferred, **2)** habitat and specie (s)sensitivity to tower operations, and **3)** height of tower and amount of land needed for tower construction and maintenance (e.g. ½ acre to 10 acres, smaller is preferred) and, **4)** placement of tower with respect to flight paths of migrating birds. Managers should note that towers can prove harmful to migrating bird species, such as neotropical song birds. These birds which can be can be seriously injured or killed hitting these towers during migrating flights.

### **Roads and Motorized Trails**

People often associate old growth designated areas as being relatively free from the noise and sounds of every day urban and modern life as well as places of solitude and wild beauty. Hence, OG areas free from motorized traffic, urban noise and fragmentation from trails from trails are preferred. However, managers should realized that old growth is not necessarily synonymous with wilderness. . While managers should consider how the impacts (sound levels, intensity and duration of activity) the affect the overall function an area provides to the old growth network, areas containing ORV trails can be considered for inclusion in the OG system.

Where inclusion of an area into the OG system is highly desirable, managers, managers may seek to minimize motorized impacts by relocating roads and motorized trails around a designated OG area.

### **Non- Motorized Trails**

Where non-motorized trails overlap with desired parcels, managers may consider what affects, if any, trail use may have on the unique natural features that make a parcel desirable for OG designation. While non-motorized uses may generally have little impact, managers should consider removing trails from OG areas if trail use harms the natural features that make this parcel important to the OG system.

### **State Forest Campgrounds**

Managers should consider the type and intensity of use a particular campground receives in determining whether it should be included in or immediately adjacent to OG areas. In general, a campground where use is light and dispersed (such as those used by backpackers) would be considerably more desirable for inclusion with an OG area than those campgrounds where use is heavy and concentrated and/or is frequently used by persons involved in motorized recreation (e.g. ORV groups, motorhomes). In areas where an OG corridor is highly desirable and located adjacent to an intensively used campground, managers may consider widening the corridor in such a way to minimize impacts of these campgrounds.

### **Kirtland's Warbler Management Units**

The formation of Kirtland's Warbler Management Units (KWMUs) is the response of the DNR to comply with the Michigan and Federal Endangered Species Acts and in turn, the associated recovery plan (as developed by the United States Fish and Wildlife Service Recovery Teams). The DNR complies with the laws by maintaining a certain amount of acreage of juvenile jack pine in areas dictated by the Kirtland's Warbler Recovery Plan. In initial reviews, managers may consider an KWMU incompatible with the OG network. However, not all of a KWMU is actively managed for jack pine. It is these areas that managers may consider for inclusion in the OG system. Inclusion of these areas may be desirable for a variety of reasons, including eco-type or landscape representativeness, as well as helping maintain the continuity of an OG corridor or for natural area dedication.

### **Designated or Proposed Natural Areas**

The goals and management objectives of natural areas often parallel or complement OG objectives as well. Hence, natural areas (designated or proposed) should receive serious consideration for inclusion in the OG system. . Note: non-motorized uses of motorized vehicles are prohibited in designated or proposed natural areas.

### **Areas Adjacent to or Near Natural Areas**

With respect to designating lands adjacent to or near natural areas, managers should consider the following factors: 1) the extent that designation will help meet overall OG design criteria, such as connectivity and block size of an OG management unit and biodiversity goals, 2) the extent to which designation may protect or enhance the ecological and biological integrity of an adjacent natural area.

### **Stands Identified in OI Operations Inventory (OI) as Having Special Management Area Potential (SMAP)**

As defined in Chapter 3, page 21 in the OI field manual, stands, stands or areas having SMAP include those stands having unusual scenic, botanical, historical or geological value, as well as value for the protection of endangered and threatened species. These stands may often have qualities desirable and beneficial to the OG system. In considering the inclusion of SMAP's into the OG network, managers should consider how inclusion meets OG criteria and adds or improves to the design and/or function of the OG network. For example, consider if the SMAP provides representation of an certain ecological type and/or connects to other OG blocks. Managers should carefully review the OI database for the location of these stands and determine whether the type of benefits or values that a SMAP stand has will be beneficial to the OG network.

### **Deeryards, Forest Openings And Other Areas Having High Game Management Value**

Generally speaking, areas having a high priority for game management are less desirable for inclusion in the OG network and managers may consider leaving these areas out of the landbase being reviewed for the OG network. When determining whether to include these areas in the OG network, managers should consider the following factors:

1. The current type of vegetation (non-native versus native). Areas and landscapes dominated by non-native vegetation (e.g. autumn olive, rye grasses) have relatively low potential or desirability for restoration to native plant conditions. Therefore, these areas are generally not desirable to include in the OG network. *Preference is to include those areas dominated by native vegetation* (i.e. the Oscoda Pine Barrens) or *those areas having high potential or desirability for restoration to native conditions.*
2. The type of, the potential need for, and the potential frequency of vegetation management required to maintain habitat desirable for a given game specie(s).

Generally, areas having high priority for game management are less desirable for inclusion in the OG network.

3. The importance of area/stand to meet game management objectives.
4. The benefits that OG designation will have to the OG system and in meeting OG objectives or goals. For example, an area having high game value may still be included in the OG system if representation of a given landtype association, within an ecological section or region, is missing and that particular game area provides that the missing piece which that cannot be duplicated elsewhere.
5. The importance of an area for maintaining early successional habitat within a regional and/or local landscape. . For example, a juvenile aspen stand's importance may depend on the acreage, juxtaposition and distribution of other juvenile and mature aspen acreage within a given wildlife corridor, watershed, county or multi-county region.

### **Military Lands**

In general, managers should consider military lands off limits to OG designation. However, a given parcel may be considered depending on its ecological importance to the OG system and whether or not the land is owned by the military or leased from the DNR.

### **Cultural Resources**

Managers may consider including areas having high cultural or archaeological value. Examples include Native American burial mounds, remnants, left by early European settlers and other places having unique historical, anthropological, and or cultural significance.

### **Utility Rights-of-Way**

By themselves, ROW's should not be included in the OG network. They are frequently disturbed and often contain high amounts of non-native vegetation, as well as being subject to frequent motorized traffic. However, an area having a ROW running through a portion of or, or adjacent to, a desired area should not necessarily preclude a manager from including this area in the OG network.

### **Proximity to Private Lands**

When considering designating OG adjacent or near private lands, the following should be considered: **1)** the benefits that this area would bring to the OG network, **2)** the adjacent landowner's stewardship or management objectives for organizational perspective towards future use of the property, **3)** the potential for acquisition of the adjacent private land by the State of Michigan and **4)** the current intensity of land use.

In general, preference should be for the following:

1. Private lands in a wild or forested state.
2. Those private lands are owned with the purpose of keeping the land in a wild or relatively undisturbed state (e.g. The Nature Conservancy or other land conservancies).
3. Lands in which acquisition by the State of Michigan seems a viable and likely possibility (e.g. Consumer Power lands).
4. Those lands where a conservation easement has been purchased to keep the land from being developed for an indefinite period of time.
5. Lands providing a unique contribution to the OG network and OG goals that cannot be easily duplicated elsewhere in local or regional landscapes.

Overall, managers should give lower preference may be given to those lands where intensive or intrusive development has or is likely to occur.

### **Non-Forested Wetlands**

Non-forested wetlands are a crucial part of ensuring landtype and ecological representativeness. Examples include, peatlands, marshes, bogs, fens, grassy open-water wetlands with emergent vegetation and leatherleaf bogs. Non-forested wetlands often have high amounts of biodiversity. While woody vegetation is relatively sparse (e.g. buttonbush or tag alder), managers should give strong consideration to including these areas into the OG network because of the natural and native biodiversity habitat they provide, including species and to wide variety of plants, animals and communities, especially those considered rare, threatened or endangered.

In addition to landtype association representativeness, managers should give preference to those areas that: **1)** are connected to or a part of OG corridors, **2)** fairly large in size (and therefore less likely to be impacted by adjacent activities), **3)** are appropriately distributed across the landscape, **4)** highly desired for their biodiversity, and **5)** of a type or function that is not duplicated on other public lands within a given landscape.

### **Natural Rivers**

The goals and management objectives of the Natural Rivers Program often parallel or complement OG objectives as well. Hence, natural river areas on state forest land should receive serious consideration for inclusion into the OG system.

### **Riparian Corridors, Watersheds and Aquatic Habitat Protection**

The goals and management objectives of protecting riparian corridors, watersheds, aquatic species and habitat often parallel or complement OG objectives, as well as meeting other resource objectives within the DNR as well. Hence, riparian, riparian/stream areas and/or along streams and next to lakes on state forest land corridors on state forest land should receive serious consideration for inclusion into the OG system.

### **The Natural Rivers Program**

The goals and management objectives of the Natural Rivers Program often parallel or complement OG objectives. Hence, managers should strongly consider including designated natural river systems into the overall OG system.

## Appendix G

### MEMORANDUM

**DATE:** November 17, 1999

**TO:** Bill Brondyke, Mike Koss

**FROM:** Yu Man Lee, Zoologist, Michigan Natural Features Inventory

**SUBJECT:** Gwinn Forest Management Unit, 2000 Y.O.E. Compartment Review

**cc:** FMD: Ted Reuschel, Rich Hausler, Nemah Hussain, Laurie Marzolo, Bernie Hubbard, Lee Evison  
Wildlife: John Hendrickson, Jim Hammill  
MNFI: Judy Soule, Mary Rabe, Dennis Albert

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As requested in your memo, we have reviewed the Gwinn Forest Management Unit's 2000 Y.O.E. compartments, which accompanied your memo (compartments 01, 09, 18, 36, 45, 58, 63, 72, 84, 207, 217, 227, 237, 247, 257, 267, 277, 287, 297).

The following compartments have no known occurrences of special natural features, and MNFI has no concerns with the proposed treatments: 207, 237, 297.

The following compartments have **known occurrences** or **high potential for occurrences** of special natural features, or there are more **general comments** we would like for you to consider:

*Compartment 1:* Potential for nesting red-shouldered hawks in this compartment is high. The following stands have potential for nesting red-shouldered hawks and have been prescribed for timber harvesting: 16, 20, 23, 24, 25, 36, 37, 42, 44, 55, 59, 62, 66, 81, 86, 91, 93, and 94. Recent evaluation of red-shouldered hawk nest locations by MNFI zoologists showed that 76% of known nest sites were located on a ridge (e.g. drumlin, moraine, or ice-contact), and that most of the nests were located in close proximity to wetlands (usually within 0.25 to 0.50 mi.). Most nests (77%) occur in well-stocked pole or sawtimber northern hardwood stands (M6/M9) but about 10% of the known locations occur in larger diameter aspen (A5/6, A8/9). Red-shouldered hawk nests also have been documented in medium to well-stocked pole or sawtimber oak, birch, swamp hardwood, and balsam poplar and swamp aspen stands. Red-shouldered hawks often return to the same nest tree or alternate among several suitable nest sites within the same nesting area from year to year.

Forest treatments that significantly reduce canopy closure (i.e., to below 70%) (e.g., final harvest, group selection, seed tree, and heavy thinning) could adversely impact nesting red-shouldered hawks by increasing the potential for competitive displacement by red-tailed hawks and predation by great-horned owls. Red-shouldered hawks also can be sensitive to disturbances in the immediate nesting area during the breeding and nesting seasons (March 1 to August 31). We recommend that individuals working in this compartment be observant for stick nests and/or territorial birds during all phases of timber harvest operations.

## Appendix H

### OG Committee Members (Past And Present) And Associated Specialties

#### Current Members

Committee Chair – Rich Hausler, Michigan Department of Natural Resources, Forest Management Division (MDNR-FMD), Program Leader-Environmental Forest Management, Lansing

Past Chair, project advisor- Frank Sapio, MDNR-FMD, Project Leader- IFMAP, Lansing

Brian Mastenbrook, Michigan Department of Natural Resources, Wildlife Division (MDNR-WD), Area Biologist, Gaylord

Terry Minzey, MDNR-WD, Area Biologist, Cusino Research Station

Kim Herman, MDNR-WD, Program Leader, Natural Areas, Lansing

Ray Fahlsing, Michigan Department of Natural Resources, Parks & Recreation Bureau, Program Leader, State Parks Stewardship, Lansing

Mike Mang, MDNR-FMD, Planner, Gaylord

Lee Evison, MDNR-FMD, Planner, Escanaba

Roger Hoeksema, MDNR-FMD, Planner, Cadillac

Don Torchia, MDNR-FMD, Forest Unit Manager, Roscommon

Marty Nelson, MDNR-FMD, Forest Unit Manager, Baraga

Jon Spiels, MDNR-Parks & Recreation Bureau, State Parks Interpreter, Tahquamenon Falls State Park

Ann Stephens, MDNR-Parks & Recreation Bureau, State Parks Interpreter, Hartwick Pines State Park

Mary Rabe, Michigan Natural Features Inventory, Senior Zoologist, Lansing

Doug Pearsall, The Nature Conservancy, Conservation Planning Coordinator, East Lansing

Pat Fowler, Huron-Manistee National Forest, Ecologist, Cadillac

Jim Mudd, Pacific Meridian Resources, Geographic Information Systems (GIS) Analyst, Roscommon

Dr. Georgia Peterson, Michigan State University Extension, Natural Resources Agent & Liaison to MDNR-FMD, East Lansing

#### Past Members

Rich Corner, Michigan Natural Features Inventory, Ecologist, Lansing (currently with MDEQ)

Robyn Oliver, Pacific Meridian Resources, GIS Analyst (currently with MSU Extension)

Mark Zweifler, Pacific Meridian Resources, GIS Analyst, Lansing

Bill Mahalak, MDNR-FMD, State Silviculturist, Roscommon, (retired)

Jim Bielecki, MDNR-FMD, Silviculturist, Gaylord

Lynn Mohr, MDNR-FMD, Forest Area Manager, Baldwin (retired)

Ron Balcerak, MDNR-FMD, District Forest Manager, Escanaba (retired)

Bob Heyd, MDNR-FMD, Forest Health Specialist, Marquette

Les Homan, MDNR-FMD, Unit Manager, Newberry (formerly planner for FMD)

# Appendix I

The Proposed Process for Public Participation, Internal Review, Designation and Timeline for the **Old Growth and Biodiversity Stewardship Plan for Michigan's State Forests and Other State Owned Lands**, as presented by the Michigan Department of Natural Resources.

