
MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
DNR
MICHIGAN
2015 - 2025
YOUNG FORESTS
Wildlife Action Plan
Today's Priorities, Tomorrow's Wildlife

WHAT ARE YOUNG FORESTS?

Young forests are generally under 20 years old and are found across Michigan. They are dominated by trees and shrubs that are fast growing, intolerant of shade, and spread rapidly; shrublands are also part of this forest type. Young Forests are often dominated by shorter lived species such as aspen, birch, alder, willow, and dogwoods. They primarily have greater than 50% shrubs, seedlings (live trees < 1 inch diameter at breast height), and sapling-sized trees (live trees ~1 - 5 inch diameter at breast height); and often have 450 or more woody stems per acre. Historically, Young Forests were created by natural disturbance such as fires, floods, windstorms, insect infestations or diseases. Today they are often created through commercial or non-commercial timber harvest.

PLAN CONTRIBUTORS

Grand Traverse Band of Ottawa and Chippewa Indians, Department of Natural Resources

Michigan Department of Natural Resources

Michigan State University

National Audubon Society

National Wild Turkey Federation

Ruffed Grouse Society

American Woodcock Society

Upper Great Lakes Young Forest Initiative

Snowshoe Hare

Elk

Golden-winged Warbler

American Woodcock

WHAT USES YOUNG FORESTS?

WHY ARE YOUNG FORESTS IMPORTANT?

Young forests can only be saved by being destroyed. They are a transitional habitat, somewhere between grasslands and mature forest, and will disappear if outside forces don't act to reset their cycle of succession and change. These forests are highly productive as the trees in them compete for space and light in a race to the top of the forest canopy. For people, this means a steady supply of biomass fuel, timber, and wood pulp; it means crisp fall days hunting deer, bear, grouse, and woodcock; it means birdwatchers prowling spring thickets raucous with the songs of warblers returning on migration; it means family outings to harvest raspberries and morels; and it means blazing streaks of color for fall sightseeing. For wildlife, young forests are rich feeding locations for migrating wildlife as well as those who stay year-round; they are dense with the foliage of small trees that provides cover from predators and structure for nesting; and their soils support a variety of flowering and fruiting plants and shrubs which host diverse and abundant insect life. But because these forests are so dependent on outside forces to retain their vitality – fire, windthrow, ice, flood, and clearcut or shelterwood harvesting – they are also uniquely vulnerable to loss through lack of management. Wise management incorporates harvests that create long term sustainable young forests which fuel local economies with wood, wildlife, and the wonder that comes of connecting with nature.

WHAT IS THE HEALTH OF YOUNG FORESTS?

Statewide, aspen-birch communities currently make up the second largest forest type (3.2 million acres), following northern hardwoods (5 million acres). Aspen-birch forests now cover a much larger proportion of the landscape than their circa 1800s extent, increasing from less than 1% to over 16 % of the landscape. Historically, aspen was a minor component of many forest communities. Early land surveyors were less likely to encounter small stands, so this forest type is no doubt underrepresented in the reconstructed maps of that period. In any case, most of the large increase in acreage resulted when extensive areas of the state repeatedly burned in the late 19th and 20th centuries, thereby favoring these early successional species. Contemporary forest management practices are used to perpetuate the aspen-birch community. Still, as natural succession to more diverse late-successional community types proceeds, the aspen-birch type has declined. Left unmanaged, aspen-birch forests mature over the course of 50 – 70 years, then naturally senesce leading to mixed stands that eventually succeed to other forest types.

– Adapted from Price (2010)

In the northern Lower Peninsula, aspen forest types make up approximately 24% of all land cover types. Aspen has been intensely managed for wood products and wildlife habitat since the 1970s, and, as a result, much of the aspen is in younger age classes (DNR 2013a). In the western Upper Peninsula, aspen forest consists of big-tooth aspen and quaking aspen, and it is the largest cover type in terms of acres. These aspen communities were heavily harvested in the 1970s and 1980s. As a result, the majority of aspen in the region is young, up to forty years old (DNR 2013b). From 1988 to 2005, acres of aspen type increased by about 6% in the western Upper Peninsula (DNR 2013b).

Young Forests less than 20 years old provide biomass products for a commercial market that is currently small. Often these forests need to mature: aspen can be harvested as commercially marketable pulpwood at ages 45 - 50 years, and as sawtimber at ages 55 - 60 years.

GOALS

- Increase the number of Young Forest projects completed annually using best management practices for Golden-winged Warbler. [GWW]
- Maintain or increase Young Forest habitat. [DNRa; DNRb; ESH; JV; RG; WC; WC2]

WHAT ARE THE YOUNG FOREST FOCAL SPECIES?

Where we are now and what we think we can realistically achieve over the next 10 years.

Golden-winged Warbler
(Vermivora chrysoptera)
Special Concern

The Golden-winged Warbler is a small songbird with a silver gray body, a strong black and white face, a yellow crown, and large yellow patches on its wings (Cornell University 2015). Historically found scattered across transitional habitats in southern lower Michigan, Golden-winged Warblers expanded their range into the northern part of the state in the 20th century as logged over pine forests were converted to young deciduous growth. Now found statewide, the southern edge of the species' range has been contracting northward for several decades. The population estimate in Michigan for Golden-winged Warbler is 20,000 (Partners in Flight Science Committee 2013). Currently the Great Lakes population is estimated to represent 95% of the global breeding population (Roth et al. 2012). Golden-winged Warblers use Young Forest habitats for breeding and require landscapes with 50 - 70% deciduous forest and less than 20% conifers. Further, they use clearcuts that are 2 - 10 years old with 10 - 15 residual live trees per acre and shrub wetlands with appropriate habitat components for breeding; structure is important. After chicks fledge, they move to mature forests to raise their young, therefore a mosaic of habitats is needed across the landscape (Cornell University 2015).

GOALS

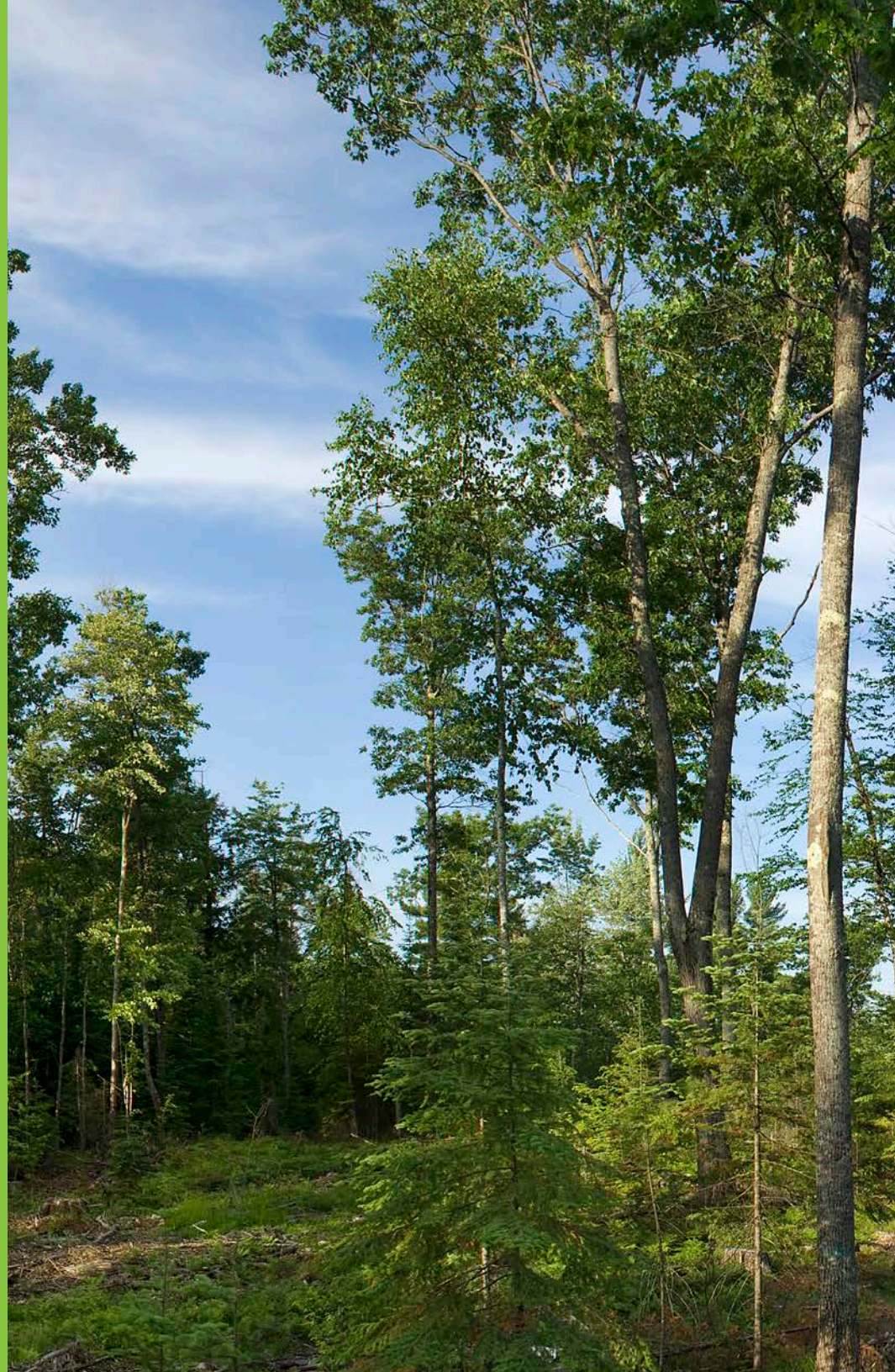
- Stabilize population trend. [GWW; JV; PIF; PIF2]

HOW VULNERABLE ARE FOCAL SPECIES TO CLIMATE CHANGE?

Hoving et al. (2013) determined climate vulnerabilities for focal species, and Handler et al. (2014) determined climate vulnerabilities for habitats. Golden-winged Warblers are predicted to increase, however they may move north out of Michigan; aspen is also likely to move out of Michigan.

Climate vulnerabilities are based on projected changes in the abundance or range of a species by 2050 - moderate = likely decrease.

	Climate Vulnerability
Golden-winged Warbler	Increase
Aspen-Birch	Moderate



MANAGING FOR WILDLIFE

American Woodcock, Ruffed Grouse, and Golden-winged Warbler along with numerous other neotropical migrant songbirds all need similar Young Forest habitats. Many times when managing for one of these birds, on-the-ground actions can be tweaked to help more than one species at a time. By working together we can continue to have great wildlife-based recreational opportunities in Michigan like upland game bird hunting and bird-watching!

DO CLEAR-CUTS REALLY HELP WILDLIFE?

Yes! Many wildlife species have evolved to take advantage of habitats that result from large and frequently disturbed areas. In the past, these disturbances came from natural and human-set wildfires, tornados, straight line winds, beaver floodings, and disease outbreaks in the forest. These days we manage forests for timber and all sorts of associated products, and clearcutting is one forest management technique that is used. When done following best management practices, these areas provide great habitat for an abundance of different wildlife even within a year after they are cut. Some species, like the Golden-winged Warbler, Ruffed Grouse, and American Woodcock, require these areas during all or part of their life cycle. Recent research also has demonstrated that many mature forest breeding songbirds nest in older forests but use young growth during the post-fledgling stage and during migration.

WHAT ARE THE CONSERVATION THREATS & ACTIONS?

Major threats that need to be addressed and key actions that need to be implemented over the next 10 years.

THREATS to Habitat

Invasive & Other Problematic Species, Genes & Diseases

- Invasive species, such as buckthorn and garlic mustard, can degrade forest habitats.

Natural Systems Modifications

- Lack of high-quality breeding and migration stopover habitat that contain the right structure (Roth et al. 2012).
- Declining regeneration of northern hardwoods and oaks.
- Loss of a variety of disturbance types (e.g., fire, changes in hydrology, wind, etc.); climate change and deer herbivory can simplify diversity within habitat (Roth et al. 2012).

Residential and Commerical Development

- Subdividing forest tracts into smaller parcels for housing or commercial development can fragment breeding habitat and provide pathways for invasive species (Dessecker et al. 2006; Roth et al. 2012).

Agriculture & Aquaculture

- Current management practices may not provide the preferred size (≥5 acres) and configuration of clearcut areas for Golden-winged Warbler. Further, current practices of single tree selection do not open the canopy enough to provide the preferred structure for breeding habitat (Roth et al. 2012).
- Shifting markets for timber, especially aspen, could restrict management options in the future (Dessecker et al. 2006).

Human Intrusions & Disturbance

- Loss of winter habitat for Golden-winged Warbler due to agricultural and urban expansion in Central and South America (Roth et al. 2012).
- Negative public perceptions of intensive forest management, including clearcuts (Dessecker et al. 2006; Roth et al. 2012).

Climate Change & Severe Weather

- Conflicting predictions of the future climate leads to large uncertainty for managers.
- Aspen is moderately to highly vulnerable to climate warming. Climate stress is likely to manifest as an increased susceptibility to disease and pests.

Conservation ACTIONS for Habitat

Land & Water Management

H1. Work with private landowners to manage shrub wetlands, especially those dominated by tag alder, willow, and dogwoods. [GWW; ESH; JV; RG]

H2. Implement and promote invasive species best management practices. [CC-1.4, 7.3; TIS]

H3. Implement invasive species decontamination and prevention protocols. [CC-1.4; TIS]

Conservation Designation & Planning

H4. Look for opportunities to create Young Forests to address forest health issues.

H5. Conduct scenario planning workshops with land managers to better incorporate climate change uncertainty into management. [CC-4.2]

Raising Awareness

H6. Conduct outreach and education on the value of Young Forests within a diverse forest landscape and forest management practices. [GWW; RG]

H7. Promote voluntary best management practices for recreational users, researchers, and industry to help stop the introduction and spread of invasive species. [TIS]

H8. Promote and use the Wildlife Management Institute's habitat management tracker at www.wmitracker.appspot.com/.

Institutional Development

H9. Build partnerships around Young Forests in Michigan and the Great Lakes region to better collaborate and learn from each other.

Research & Monitoring

H10. Work with wetlands inventory efforts to develop accurately classified shrub wetland data.

H11. Determine effective methods for regenerating mesic northern hardwood and oak forest types to inform management and best practices.

BEST PRACTICES

- Implement Green-Tree retention in harvest units where there are opportunities during harvest; if these areas are adjacent to occupied habitat, be creative with management practices to approximate preferred breeding habitat structure.
- When feasible, leave tops of trees and drumming logs on the forest floor; also leave mast producing trees and shrubs after harvest.
- Promote tree and shrub diversity in forest management.

THREATS to Golden-winged Warbler

Transportation & Service Corridors

- Collisions with buildings and communication structures (especially tall towers); Golden-winged Warblers appear to have higher mortality through these collisions than most other migratory birds, relative to population size.

Climate Change & Severe Weather

- Climate change appears to be shifting the range of Golden-winged Warblers north-west, and hybridization and competition is increasing as Blue-winged Warblers move into the Golden-winged Warbler historical habitats.

Conservation ACTIONS for Golden-winged Warbler

Land & Water Management

GW1. Work with private landowners to implement Golden-winged Warbler best management practices. [GWW; ESH; PIF]

Conservation Designation & Planning

GW2. Develop a dynamic map that can be continually updated with Golden-winged Warbler locations to aid management and planning activities; look to existing efforts and data management systems.

GW3. Integrate the Golden-winged Warbler Conservation Plan into other planning and management efforts. Consider current and future projected range shifts of Golden-winged Warbler when prioritizing efforts. [GWW; CC-1.1]

Species Management

GW4. Implement the Golden-winged Warbler Conservation Plan. [GWW; ESH]

Raising Awareness

GW5. Support and participate in the Midwest Landbird Migration Monitoring Network (midwestbirdmonitoring.ning.com/).

GW6. Support and promote the Southern Wings Program, a partnership conserving state-priority birds on their wintering grounds in Mexico, Central America, South America, and the Caribbean. [ESH]

GW7. Continue to educate foresters and private land owners on Golden-winged Warbler ecology, best management practices, and resources available to aid in management. [GWW; ESH]

GW8. Support and expand programs that reduce migratory landbird collisions with manmade structures. For example, expand Project Safe Passage: Great Lakes to safeguard migratory birds in the urban environment.

Research & Monitoring

GW9. Determine key population bottlenecks and fill demographic gaps (e.g., nesting success, overwinter survival, and migration survival). [GWW]

GW10. Use new technologies, such as geolocators, to identify priority stopover and winter habitats for Golden-winged Warbler.

GW11. Work with partners to develop and implement a new range-wide survey protocol to better track population trends than the Breeding Bird Survey. [GWW]

GW12. Evaluate Golden-winged Warbler response to specific management practices to inform management. [GWW; PIF]

GW13. Continue to evaluate best management practices for Golden-winged Warbler and update as needed. [GWW]

GW14. Explore options to link with other survey groups (e.g., USFWS American Woodcock Singing-ground Survey, DNR Ruffed Grouse and Woodcock cooperator program, Ruffed Grouse Drumming Survey, and Audubon Society chapters/ volunteers) to get more people engaged in survey efforts for Golden-winged Warbler and other Young Forest birds.

GW15. Conduct Golden-winged Warbler genetic analysis across the breeding range in Michigan to help inform where management should occur; focus management in areas where hybridization with Blue-winged Warbler is not a concern.

WHERE ARE THERE PLACES FOR PARTNERSHIP?

This map was designed by partners to help them connect around important places for focal species. Working together on conservation actions on a voluntary basis provides great benefits to wildlife and people.

Priority areas for conservation actions

This map is based on the Golden-winged Warbler Breeding Season Conservation Plan (Roth et al. 2012).

HOW WILL WE MONITOR?

Assessing status and measuring progress towards goals.

HABITAT

- Use a variety of sources to monitor Young Forests, such as: Michigan Forest Inventory, the U.S. Forest Service Forest Inventory and Analysis, and Wildlife Management Institute's land management online database (www.wmitracker.appspot.com). [ESH]
- Use existing monitoring efforts for other species as indicators for quality Young Forest habitat creation and trends, including: American Woodcock singing ground surveys, Ruffed Grouse surveys, and North American breeding bird surveys. [ESH; WC; RG]

GOLDEN-WINGED WARBLER

- Continue North American Breeding Bird Survey, and work towards completing all Michigan routes annually. [ESH; GWW; JV]
- Implement new range-wide survey protocol that provides high confidence in population trends.

HOW DOES THIS PLAN LINK WITH OTHER CONSERVATION PLANS?

There has been a multitude of relevant planning efforts across the state and country over the past ten years. Bracketed superscripts throughout the Wildlife Action Plan indicate where the conservation action, goal, or monitoring strategy aligns with those from another plan. For conservation plans with distinct objectives, the objective or strategy number is also included. This linking of plans is meant to facilitate the expansion of partnerships.

[JV] Upper Mississippi River and Great Lakes Region Joint Venture Landbird Habitat Conservation Strategy (Potter et al. 2007)

[DNRa] Northern Lower Peninsula regional state forest management plan (DNRa 2013)

[DNRb] Western Upper Peninsula regional state forest management plan (DNRb 2013)

[ESH] Business plan for conservation of birds of early successional habitats: a 10-year plan to secure a keystone habitat (AWTF et al. 2008)

[GWW] Golden-winged Warbler breeding season conservation plan (2012)

[PIF] Partners in Flight North American Landbird Conservation Plan (Rich et al. 2004)

[PIF2] Partners in Flight Bird Conservation Plan for The Boreal Hardwood Transition (Matteson et al. 2009)

[RG] Ruffed Grouse conservation plan (Dessecker et al. 2006)

[TIS] Michigan Terrestrial Invasive Species State Management Plan (DNR draft)

[WC] American Woodcock Conservation Plan: a summary of and recommendations for woodcock conservation in North America (Kelley et al. 2008)

[WC2] Stepping down the habitat goals of the American Woodcock conservation plan for the Upper Great Lakes Woodcock and young forest initiative (Cooper 2008)

FOR MORE INFORMATION/REFERENCES

Alianza Alas Doradas (Golden-winged Warbler Wintering Group). Available: https://griffingroups.com/groups/profile/16595/golden-winged-warbler-wintering-group-alianza-alas-doradas. (Accessed September 1, 2015).

American Woodcock Task Force (AWTF), Golden-winged Warbler Working Group, National Fish and Wildlife Foundation. 2008. Business plan for conservation of birds of early successional habitats: a 10-year plan to secure a keystone habitat. 18 pp.

Cooper, T. 2008. Stepping down the habitat goals of the American Woodcock conservation plan for the Upper Great Lakes Woodcock and young forest initiative. U.S. Fish and Wildlife Service.

Cornell University. 2015. All about birds (www.allaboutbirds.org).

Dessecker, D.R., G.W. Norman, S.J. Williamson. 2006. Ruffed Grouse conservation plan. Association of Fish & Wildlife Agencies: resident game bird working group. 94 pp.

Golden-winged Warbler Working Group (D.A. Buehler, chair). 2012. Golden-winged Warbler full life cycle conservation strategy. In Roth, A.M., R.W. Rohrbaugh, T. Will, and D.A. Buehler, editors. Golden-winged Warbler Status Review and Conservation Plan. Available www.gwwa.org/

Handler, S., M.J. Duveneck, L. Iverson, E. Peters, R.M. Scheller, K.R. Wythers, L. Brandt, P. Butler, M. Janowiak, P.D. Shannon, C. Swanston, A.C. Eagle, J. G. Cohen, R. Corner, P.B. Reich, T. Baker, S. Chhin, E. Clark, D. Fehringer, J. Fosgitt, J. Gries, C. Hall, K.R. Hall, R. Heyd, C.L. Hoving, I. Ibáñez, D. Kuhr, S. Matthews, J. Muladore, K. Nadelhoffer, D. Neumann, M. Peters, A. Prasad, M. Sands, R. Swaty, L. Wonch, J. Daley, M. Davenport, M.R. Emery, G. Johnson, L. Johnson, D. Neitzel, A. Rissman, C. Rittenhouse, and R. Ziel. 2014. Michigan forest ecosystem vulnerability assessment and synthesis: a report from the Northwoods Climate Change Response Framework Project. Gen. Tech. Rep. NRS-129. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 229 pp.

Hoving, C.L., Y. Lee, P.J. Badra, and B.J. Klatt. 2013. Changing climate, changing wildlife: a vulnerability assessment of 400 species of greatest conservation need and game species in Michigan. Wildlife Division Report No. 3564. Lansing, Michigan. 82 pp.

Kelley, J.R., S.J. Williamson, and T.R. Cooper (editors). 2008. American Woodcock conservation plan: a summary of and recommendations for woodcock conservation in North America. Compiled by the Woodcock Task Force, Migratory Shore and Upland Game Bird Working Group, Association of Fish and Wildlife Agencies. Wildlife Management Institute, Washington, D.C. 162 pp. Available online at: www.timberdoodle.org.

Matteson, S., K. Kreitinger, G. Bartelt, G. Butcher, D. Sample, and T. Will. 2009. Partners in Flight bird conservation plan for the boreal hardwood transition (bird conservation region 12 — U.S. Portion). Version 1.0. Partners in Flight. www.partnersinflight.org. Online at www.partnersinflight.org/bcps/plan/BCR%2012-US%20Plan.pdf

Michigan Department of Natural Resources (DNR). 2013a. Northern Lower Peninsula regional state forest management plan. Michigan Department of Natural Resources, Lansing, Michigan.

Michigan Department of Natural Resources (DNR). 2013b. Western Upper Peninsula regional state forest management plan. Michigan Department of Natural Resources, Lansing, Michigan.

Michigan Department of Natural Resources. (Draft). Michigan terrestrial invasive species state management plan. Lansing, Michigan. Manuscript in preparation.

Partners in Flight Science Committee. 2013. Population estimates database, version 2013. Available at rmbo.org/pifpopestimates. Accessed on <28July2015>.

Potter, B.A., G.J. Soulliere, D.N. Ewert, M.G. Knutson, W.E. Thogmartin, J.S. Castrale, and M.J. Roell. 2007. Upper Mississippi River and Great Lakes Region Joint Venture landbird habitat conservation strategy. U.S. Fish and Wildlife Service, Fort Snelling, Minnesota. 124 pp.

Price, D.L., ed. 2010. Michigan forest resource assessment and strategy. Michigan Department of Natural Ressources – Forest Management Division. Lansing, Michigan. 124 pp.

Rich, T.D., C.J. Beardmore, H. Berlanga, P.J. Blancher, M.S. W. Bradstreet, G.S. Butcher, D.W. Demarest, E.H. Dunn, W.C. Hunter, E.E. Iñigo-Elias, J.A. Kennedy, A.M. Martell, A.O. Panjabi, D.N. Pashley, K.V. Rosenberg, C.M. Rustay, J.S. Wendt, T.C. Will. 2004. Partners in Flight North American landbird conservation plan. Cornell Lab of Ornithology. Ithaca, New York. Partners in Flight website. www.partnersinflight.org/cont_plan/ (VERSION: March 2005).

Roth, A.M., R.W. Rohrbaugh, K. Aldinger, M.H. Bakermans, S. Barker Swarthout, D.A. Buehler, J.L. Confer, D. Crawford, C. Friis, R.M. Fowlds, J.L. Larkin, J. Loegering , J.D. Lowe, M. Piorkowski, K.V. Rosenberg, C. Smalling, T.M. Terhune, R. Vallender, T. Will, and P.B. Wood. 2012. Golden-winged Warbler breeding season conservation plan. In Roth, A.M., R.W. Rohrbaugh, T. Will, and D.A. Buehler, editors. Golden-winged Warbler Status Review and Conservation Plan. Available www.gwwa.org/

Photo Credits

Habitat (Front Cover, Pages 6, 7, 9, 13) – Laurie Smaglick Johnson

Habitat (pages 2-3) - Amber Roth

Golden-winged Warbler (all but page 11) - Laurie Smaglick Johnson

Golden-winged Warbler (page 11) Roger Eriksson

Wood Turtle (page 2) - Pierce Cedar Creek Institute

Ruffed Grouse (page 2) - Brad Silet

Eastern Whip-poor-will (page 2) - Laurie Smaglick Johnson

Snowshoe Hare (page 3) - Brad Silet

American Woodcock (page 3) - Laurie Smaglick Johnson

Recommended Citation

Derosier, A.L., S.K. Hanshue, K.E. Wehrly, J.K. Farkas, and M.J. Nichols. 2015. Michigan's Wildlife Action Plan. Michigan Department of Natural Resources, Lansing, MI. www.michigan.gov/dnrwildlifeactionplan

ABOUT THE WILDLIFE ACTION PLAN

Today's Priorities, Tomorrow's Wildlife

Every state has a Wildlife Action Plan, which taken together create a national conservation strategy for safeguarding wildlife and their habitats for current and future generations. Each state's action plan is uniquely designed to serve the needs of that state. These plans provide a framework for proactive conservation and management of fish and wildlife before they become imperiled, which is more straightforward, cost-efficient, and effective.

Michigan's Wildlife Action Plan was developed by conservation partners across the state. It provides information about those species in greatest conservation need. The plan is organized by chapters or mini-plans. Each mini-plan outlines priorities for the next 10 years. The mini-plans detail priority habitats and focal species of greatest conservation need, status of species and habitats, critical threats, needed conservation actions, places for partnerships, monitoring needs, and goals. This is one of 15 mini-plans. For more information about how the plan was built and to read other mini-plans, please visit: www.michigan.gov/dnrwildlifeactionplan.