Chapter 2 – Forestwide Management Direction

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Chapter 2 – Forestwide Management Direction

Introduction

This chapter presents Forestwide Goals and Objectives followed by Forestwide Standards and Guidelines. These, in conjunction with the Management Area Direction found in Chapter 3 of this document, were developed to guide management of the Ottawa National Forest (the Ottawa).

Forestwide Goals and Objectives

Goals are broad statements describing conditions the Ottawa will strive to achieve through implementation of the 2006 Land and Resource Management Plan (2006 Forest Plan). Goals describe the ends to be achieved rather than the means of doing so. Goals should be considered when planning site-specific projects and activities, and management should move the Ottawa toward these desired conditions.

Objectives are steps taken to move towards the desired conditions described in the goals. Objectives are generally achieved by implementing a site-level project or activity. However, objectives are not "targets." Targets for outputs are measurable and are dependent upon budgets and may or may not reflect 2006 Forest Plan emphasis areas.

Described in this chapter are integrated Forest goals as well as resource specific goals presented in Forest Service file code designation order.

Forestwide Standards and Guidelines

Standards and guidelines are the technical direction for managing resources. They provide another link in moving toward the goals. Forestwide standards and guidelines apply on all of the NFS lands encompassed by the Ottawa, regardless of management area, unless more restrictive direction exists for a management area (See Chapter 3). This resource specific direction is also presented in Forest Service file code designation order.

Laws, regulations, and policies that apply to all NFS lands are not reiterated in the standards and guidelines. As a result, some management direction that was contained in the 1986 Forest Plan is no longer included in this document.

Standards are a required course of action that must be followed, or a level of attainment that must be reached, to achieve management goals and objectives. Deviations from standards during site-level project planning must be analyzed and documented in a Forest Plan amendment.

Guidelines are permissions and limitations that should be implemented in most situations. They are intended to move the Ottawa toward goals in a way that permits operational flexibility to respond to variations in conditions. Guidelines can be modified or not implemented if site-specific conditions warrant a deviation. Rationale for any deviations from guidelines must be documented in a project-level analysis and a signed decision, but these deviations do not require a Forest Plan amendment.

Forestwide Goals and Objectives

Integrated Ecosystem Goals and Objectives

1. **Provide a variety of ecological communities in order to maintain or enhance habitat conditions for plant and animal species, to provide for a natural buffer against invasive exotic organisms, and to provide for the long-term production of a mix of timber products.**

Objective(s):

a) Manage the northern hardwood type with a mixture of uneven-aged and even-aged management to provide a variety of northern hardwood communities (species, size structure, age class), which produce a full range of wildlife and recreation benefits and a sustained yield of timber products.

b) Spatially arrange aspen forests in a full range of age classes, which provide for a diversity of plant and animal communities, and contribute to species viability, social and economic benefits to the area, and a sustained yield of aspen timber products.

c) Maintain or increase components of long-lived and short-lived conifers to provide diversity for a variety of plant and animal communities.

d) Maintain and expand the white pine and hemlock components to provide for a diversity of plant and animal communities.

e) Locate old growth forests across the landscape in conjunction with other adjacent ownerships to maintain healthy, diverse, and productive ecosystems. Old growth areas contribute to species viability by providing ecosystem components, which are not present in younger forests. Old growth forests are available to provide recreational opportunities.

f) Locate permanent upland openings on suitable sites to maintain and restore diversity of, and viability for, plant and animal communities, and to provide for recreational experiences.

2. **Provide for ecosystems that are healthy, resilient, diverse, and functioning in a sustainable and productive manner.**

Objective(s):

a) Restore the eastern hemlock and white pine component to hardwood stands and on other suitable sites.

b) Seek to increase the number of large diameter standing dead trees across the Forest.

c) Seek to increase the volume of large woody debris across the Forest on appropriate sites.

d) Forest floor desiccation, soil compaction, extent of disturbance tolerant species (e.g., *Rubus*) and availability of coarse woody debris are manipulated at the project level as needed to contribute to viability of spring ephemerals and other understory native plants.

e) On suitable xeric sites, particularly frost pockets and kettles, maintain open areas or restore barrens or savannah.

f) Seek to maintain a representation of understory native plant guilds.

3. Lakes, streams, rivers, other water bodies, and wetlands are functioning appropriately and provide high quality habitat for plants and animals, as well as recreational opportunities. Water quality is high.

Objective(s):

a) Where aquatic or wetland function and quality are impaired, work towards restoring them.

b) Ground water upwelling and headwaters areas are identified and hydrologic function maintained or restored.

c) Eliminate user-developed motor boat/personal watercraft access points to improve riparian habitats.

d) Maintain and/or expand the quantity and ecological health of wild rice beds.

e) Restore aquatic organism passage at barriers created by road and trail stream crossing structures.

f) Limit the spread of aquatic non-native invasive species.

Resource Specific Goals and Objectives

1500 External Relations

4. Promote cooperative work and data sharing with land owners and land managers to protect, enhance, and restore physical and biological resources as well as social and economic values. Cooperators include tribal, state, county, and local governments, universities, volunteers, scientists, non-governmental organizations, user groups, local and corporate land owners, and other federal agencies.

Tribal Relations

5. Honor the U.S. Government trust responsibility and treaty obligations towards Native American tribes within a government to government relationship.

Objective(s):

a) Nothing in this Forest Plan or its implementation is intended to modify, abrogate, or otherwise adversely affect tribal reserved or treaty guaranteed rights applicable within the Ottawa.

b) Per the tribal Memorandum of Understanding, consult with Native American tribes and Great Lakes Indian Fish and Wildlife Commission on the effects of natural resource

management decisions on the ability of Native American tribes to exercise gathering rights.

c) Inform local Native American tribes about vegetative management projects, so they are aware of opportunities to gather special forest products.

1600 Information Services

6. Provide opportunities for public participation. Prepare written materials and disseminate public information, which enhances understanding and appreciation of natural, biological and social resources, and reduces conflict producing and resource damaging situations.

1800 Human and Community Development

7. Identify opportunities for the Ottawa to contribute to the social and economic vitality of local communities.

2080 Non-Native Invasive Species

8. Through implementation of appropriate prevention, control and eradication measures for non-native invasive species, maintain intact ecosystems to prevent the displacement, decreased viability, or extirpation of native species.

Objective(s):

a) Use early detection and rapid response to identify new and limit the spread of non-native invasive species infestations.

b) Use integrated pest management in containment, control, or eradication efforts.

c) Limit the spread of non-native invasive species, focusing on areas where these species have high potential for establishment and spread or for serious environmental effects.

d) Increase Forest Service and public awareness of non-native invasive species.

2300 Recreation Management

9. Promote diverse and quality recreation experiences within the capability of sustainable ecosystems, and consistent with the niche of the Ottawa, while minimizing impacts to natural resources.

Objective(s):

a) Maintain or increase opportunities for quiet and remote experiences in semi-primitive non-motorized areas and other areas as appropriate.

b) Opportunities for recreation use are clearly defined to the public.

c) Designated ATV recreational trail systems are established through connections to existing recreational trail systems.

d) Designated routes for OHV (including ATVs) are established on Forest roads.

Wilderness

10. Protect and perpetuate wilderness characteristics and values.

Objective(s):

a) Maintain wilderness essentially unhindered and relatively free from modern human control or manipulation.

b) Provide ecological systems that are substantially free from the effects of modern civilization.

c) Provide outstanding opportunities for people to experience solitude or primitive and unconfined recreation.

Special Interest Areas

11. Manage Special interest areas (SIAs) for conservation and enhancement of the unusual or special characteristics for which the areas are designated.

Objective(s):

a) Provide opportunities for interpretation and public education.

2360 Heritage Resources

12. Provide a diversity of historical, archaeological and ethnographic resources considered irreplaceable and nonrenewable. These resources enrich the visitor's experience of our National Forests by creating opportunities to discover the Forest's unique past.

Objective(s):

a) Heritage resources are identified and protected during project planning and implementation.

b) In consultation with local Native American tribes and Tribal Historical Preservation Officers (THPO), provide opportunities for protection, restoration, and enhancement of culturally significant features.

1. Manage and protect the Lac Vieux Desert - L'Anse Trail Corridor through consultation and cooperation with Tribal governments.

c) Resources representing the cultural history of the area are evaluated and interpreted for the public.

1. Promote preservation and local economic development through heritage tourism.
2. Provide for non-damaging use of heritage resources for educational, scientific, recreational, and other public purposes.

2400 Timber Management

13. Restore and maintain Great Lakes forested ecosystems using timber management and silvicultural practices as tools, and to enhance values associated with the Great Lakes Ecosystem (E.O. 13340).

14. Provide a sustained yield of timber while meeting integrated resource management objectives consistent with land capabilities.

Objective(s):

a) Provide a mix of timber sale sizes and species/products, which are consistent with the range of purchaser demands and are efficient to prepare and administer.

b) Recover timber volume, in alignment with MA prescriptions, from trees killed or damaged by insects, disease, or other disturbance events.

15. Manage northern hardwoods based on the capability of the ecosystem units where they are located, while providing for a mix of uneven-aged and even-aged conditions.

Objective(s):

a) Accelerate the process to restore the northern hardwood forests to a resilient, more complex, mature forest through silvicultural treatments such as periodic selection and improvement harvests.

b) Promote uneven-aged management of hardwoods Forestwide, particularly in semi-primitive areas and areas of high visual resource sensitivity.

c) Even-aged management of hardwoods is practiced to maintain or increase diversity of tree species and to provide a broad diversity of wildlife habitat on sites (ELTPs) that have the biological and physical capability to maintain mid-tolerant tree species.

d) Conduct intermediate even-aged treatments to maintain health, vigor, and species composition of immature stands.

e) Regenerate a modest amount of mature stands through even-aged management to promote mid-tolerant species and to improve the age class structure in the long-term.

16. Provide for a mix of age classes within the aspen/paper birch vegetation type to support conservation, economic and social objectives associated with early successional habitats.

Objective(s):

a) Emphasize regeneration harvests of mature and over mature aspen within the next 10 to 20 years to ensure the aspen type is maintained within the desired vegetation composition range for the management area.

b) Emphasize regeneration harvests of paper birch on appropriate sites to assure paper birch is maintained on the landscape.

17. Increase the acreage of long-lived conifers at a modest rate. Maintain the acreage of short-lived conifers where appropriate.

18. Emphasize natural regeneration over artificial reforestation.

Objective(s):

a) Favor natural regeneration to regenerate northern hardwoods, northern red oak, aspen, paper birch, jack pine, white spruce, balsam fir, and hemlock.

b) Favor planting when natural regeneration success is not expected, to introduce species on ecosystems where they once occurred and a seed source is lacking, and to introduce disease resistant trees.

19. Maintain or enhance the long-term viability and yield of special forest products while meeting integrated resource management objectives consistent with land capabilities.

2500 Soil, Water and Air

20. Provide for ecologically healthy watersheds, soils, riparian areas, and streams to support viable populations of native and desired non-native species, and to restore and enhance values associated with the Great Lakes System (E.O. 13340).

Objective(s):

a) Maintain soil productivity.

b) Manage riparian corridors, habitats, and associated communities for diversity in composition and structure; and to support native and desired non-native species appropriate to site potential, soil, and hydrologic characteristics.

c) Manage riparian corridors to serve as connectors between the aquatic and terrestrial portions of the ecosystem.

d) Manage riparian corridors to filter runoff, absorb nutrients, sediments, and water from upslope.

e) Manage rivers, streams, and natural lakes to mimic natural flow patterns.

f) Maintain the physical integrity and hydrologic connectivity of seasonal ponds.

21. Floodplains are able to store and transmit floodwaters, fulfill their natural role in regulating water quality, and present minimum risk to human safety and property.

22. Wetlands should be managed to prevent the impairment of water quality, fish, wildlife and plant habitat, and aesthetic values.

23. Water in lakes, rivers, streams, and wetlands meets or exceeds state water quality requirements.

24. Impoundments that provide a variety of uses and values are managed within the capability of sustainable ecosystems.

Objective(s):

a) Work collaboratively to manage impoundments to provide an appropriate quantity, quality, and timing of water flow sufficient to maintain channel integrity and support aquatic biota.

b) Manage impoundments to mimic natural elevations and fluctuation patterns, similar to natural lakes.

c) Hydrologic connectivity of aquatic ecosystems and wetlands is maintained or restored to assure passage of water, sediment, nutrients, wood, and aquatic organisms.

25. Conduct forest management activities in a manner that meets air quality standards defined in Chapter 3 of the FEIS.

2600 Wildlife, Fish and Sensitive Plants

Wildlife

26. Promote landscape conditions and habitat diversity to support viable populations of native and desired non-native animal and plant species.

Objective(s):

a) Maintain or enhance early- and late-successional conifer habitats for species needing these conditions, consistent with land capability.

b) Meet the habitat needs for threatened, endangered, and sensitive species, while supporting sustainable recreational, commercial, and subsistence uses.

c) Restore and maintain composition, structure, function, and genetic diversity of native plant communities.

d) Provide a variety of recreational wildlife-based and nature watching opportunities.

e) Promote the use and availability of local native plant materials for restoration, rehabilitation, and revegetation projects.

f) Maintain selected old fields, historic grassland ecosystems, old logging camps, old homesteads, orchards, and other clearings greater than ½ acre in size such that the dominant vegetation is understory shrubs or herbs.

Management Indicator Species

27. Provide adequate habitat for Management Indicator Species: American marten, ruffed grouse, cutleaf toothwort, and mayfly-stonefly-caddisfly suite.

Objective:

a) Maintain at least 12,000 acres of 0-9 year aspen/paper birch regeneration, for ruffed grouse habitat, well-distributed on lands suited for timber production.

Species of Viability Concern

28. Manage Kirtland's warbler jack pine habitat using ecosystem management principles that mimic/resemble historic conditions and disturbance regimes. Develop habitat by designing and configuring treatment blocks that mimic the regeneration effects of stand replacing wildfires.

Objective(s):

a) Manage approximately 4,000 to 5,000 acres of jack pine for Kirtland's warbler (and other jack pine-associated species) in Management Areas 4.1a and 4.2a. Manage for Kirtland's warbler breeding habitat primarily in the Baraga Plains area, and seek opportunities to manage for Kirtland's warbler on the Kenton Ranger District.

b) Regenerate 1 to 3 treatment blocks of jack pine in patches of 300 to 550 acres for Kirtland's warbler every 10 years.

29. Maintain sufficient habitat connectivity to allow Canada lynx to disperse between management areas on National Forest System land.

Objective(s):

a) Manage vegetation to retain or develop habitat characteristics suitable for snowshoe hare and important alternate prey in amounts and distributions available to dispersing lynx.

30. Promote the conservation, restoration, and recovery of populations of species of viability concern.

Objective(s):

a) Reduce herbivory impacts on viability of native species.

b) Restore species where monitoring shows that natural re-colonization rates and processes are unsuccessful in establishing well distributed, viable populations.

31. Manage the Remote Habitat Area (RHA) to provide habitat for species that require some degree of remoteness from human activity, including gray wolf, American marten, goshawk, red-shouldered hawk and others.

Objective(s):

a) Maintain the RHA, which is comprised of parts of several management areas in the southern part of the Ottawa, totaling about 256,000 acres.

b) Maintain an average, open road density in the RHA of less than or equal to 1 mile of road open to passenger vehicles (2- and 4-wheel drive) per square mile of National Forest System land ($\leq$1 mi/mi^2).

Fisheries and Aquatic Resources

32. Provide for fish populations that are productive and support sustainable recreational, subsistence, and commercial fisheries while meeting the needs of fish-dependent threatened, endangered, or sensitive wildlife species.

Objective(s):

a) Maintain or restore the diversity and abundance of native aquatic flora and fauna in streams and lakes in a manner that is consistent with the capability of the water body.

33. Provide for a variety of recreational fishing opportunities in terms of fish species, harvest, access, and remoteness.

Objective(s):

a) To the extent practical, maintain or restore desired fish populations through habitat and access management.

34. Provide improved habitat conditions for aquatic species through increased emphasis on the health, quality and ecological function of aquatic ecosystems.

Objective(s):

a) Enhance, or restore habitat quality for species of viability concern in all occupied sites, stream reaches and breeding locations.

35. Native fish and aquatic species populations are viable and well-distributed.

Objective(s):

a) Reduce or eliminate the risk of extirpation from watersheds within their native range.

b) Aquatic species of viability concern and their habitat are priority areas for proactive management.

c) Reduce or eliminate disturbance associated with management activities and maintain physical habitat characteristics associated with freshwater mussel beds and lake sturgeon spawning areas.

2800 Minerals and Geology

36. Provide mineral resources to support economic growth through environmentally sound development on National Forest System lands.

3400 Forest Pest Management

37. Reduce risk of insect and disease outbreaks through application of integrated pest management principles.

Objective(s):

a) Promote a diversity of forest types, age classes, and spatial arrangements.

b) Consider using shorter rotations on forest types such as jack pine, paper birch, and aspen that have historically been prone to insect and disease outbreaks in older stands.

c) Minimize the impacts of non-native invasive forest pests by monitoring for and responding to new introductions.

4060 Research Natural Areas

38. Provide quality examples of dominant vegetation types and special features that occur on National Forest System lands through the reference area network for the Ottawa to furnish valuable ecological information to the Forest Service and society. Reference areas include established research natural areas (RNAs), candidate RNAs, as well as RNA-equivalents.

Objective(s):

a) Maintain these areas in their natural states, including natural disturbance processes, to continue to be representative of the ecosystems they were established to represent.

b) Carry the Sturgeon River Gorge forward as a candidate RNA.

5100 Fire Management

39. Wildland fire suppression, wildland fire use (naturally occurring and prescribed) and mechanical fuel treatments will be used to enhance ecosystem resiliency and function, lower hazardous fuel levels, protect public and private resources and values, and provide for public and firefighter safety.

Objective(s):

a) Manage fuels consistent with fire regime group while maintaining condition classes I and II.

b) Reduce hazardous fuels in the wildland-urban interface and intermix areas.

c) Use fire as a tool to establish or re-establish natural processes, to treat non-native invasive species, or to achieve other specific pre-stated resource objectives.

d) Integrate hazardous fuels projects with other programs to achieve multiple resource objectives.

e) Allow fires from natural ignitions (e.g., lightning) to burn as part of a natural disturbance regime where appropriate.

5400 Landownership

40. Adjust land ownership to facilitate restoration, protection, and management of resources; and to provide for recreation opportunities.

7700 Transportation System

41. Design and maintain a safe, efficient, and effective transportation system that supports both public and administrative uses of National Forest System Lands.

Forestwide Standards and Guidelines

1500 External Relations

Tribal Relations

Guideline(s):
Gathering of special forest products by tribal members is guided by the Memorandum of Understanding with Native American tribes.

1600 Information Services

Guideline(s):
Coordinate information activities with nearby national forests, other federal agencies, tribal governments, user groups, and other public and private organizations.

1800 Human and Community Development

Guideline(s):
Identify opportunities in which individual and volunteer organizations can assist in the management of the Ottawa.

2080 Non-native Invasive Species

Guideline(s):
When treating non-native invasive species infestations, use permissible, appropriate, and effective methods, including manual, mechanical, fire, chemical, cultural, and biological control methods, in such a manner as to minimize undesired environmental effects.

Maintain a prioritized Forestwide list of non-native invasive species of concern. Candidates for listing may include species listed federally or by the States of Michigan or Wisconsin as noxious weeds, prohibited animals (including insects) or pathogens, aquatic nuisance species, or pests on the Exotic Forest Pest Information System, as well as other species. Use criteria such as the species biology, persistence, and reproductive (spread) potential; impacts the species is known to have on natural systems; the values of the infested areas; current extent of infestations; feasibility of control; and other factors as appropriate to determine ranking.

Determine treatment priorities based on invader species; infestation and site conditions, scientific research (e.g., on species biology as well as on treatment methods and containment approaches) and Forest strategies. Generally, the first priority will be to prevent new infestations and treat new satellite/isolated infestations. Containing and controlling established infestations will be lower priority.

Maintain intact native plant communities as far as practical, to better resist non-native invasive species.

Utilize and promote a variety of appropriate prevention practices such as equipment cleaning, minimizing soil disturbance, draining live wells on land, avoiding travel through heavily infested areas and others to avoid starting new infestations.

Provide non-native invasive species information to Ottawa employees, contractors, visitors, partners, and the public using a variety of venues and media. Collaborate with, and encourage agencies, tribes, states, counties, and other partners in education efforts.

As much as practical, ensure all plant materials, mulches, erosion control devices, and gravel or fill materials used in construction, reconstruction, restoration, or revegetation, are free of priority non-native invasive species propagules (seeds, eggs, spores, fragments, etc.) and pathogens.

Focus public awareness on the risk of introducing invasive species via the transporting and storing of firewood on or near the Forest.

Freshly disturbed soil areas, such as landings and unsurfaced roads beds, may be left to revegetate naturally or revegetated as follows:

- Seed where non-native invasive species are expected to be primary colonizers.
- If non-native colonization potential is low, avoid seeding to favor natural regeneration of native herbs and shrubs.
- Any seeding should use a native seed mix or a non-native, non-persistent seed mix appropriate to the site.

In order to maintain suitable habitat for duff-dependent plants and animals in stands of hardwoods and other forest types (where remoteness or natural barriers have prevented establishment of exotic earthworms), design management activities to avoid earthworm introduction.

2300 Recreation Management

Recreation Opportunities

Guideline(s):
Forest management activities will generally reflect recreation objectives while minimizing conflicts with recreation uses.

Recreation facility rehabilitation should be undertaken in the following priority: 1) to correct health and safety problems; 2) to protect the environment; 3) to protect investments in existing facilities; and 4) to complement or enhance recreation opportunities consistent with the designated recreation opportunity spectrum (ROS) class.

Utilize the following criteria when evaluating developed sites for closure: 1) high operating costs; 2) high deferred maintenance costs; 3) low use; 4) public concerns; 5) able to satisfy demand at alternative locations; and 6) resource damage.

Generally, no new developed recreation sites (i.e., campgrounds, boat launches) will be constructed. Rehabilitation, improvement, and maintenance of existing recreation development will be given priority.

Generally, no improvements will be provided at dispersed recreation sites except as needed for health and safety, or resource protection.

Manage and maintain the Potawatomi-Gorge Falls, State Line Mile Post Zero and Agonikak National Recreation Trails in accordance with their designation.

Non-Motorized Trails

Standard(s):
Manage the North Country National Scenic Trail and National Recreation Trails under visual management system Sensitivity Level I.

Guideline(s):
New non-motorized additions to the National Forest Trail system, or relocation of existing non-motorized trails, will generally be considered as they address special user needs, ensure resource protections, and are compatible with other resource management direction.

Manage and maintain the North Country National Scenic Trail primarily for hiking and backpacking.

Manage the North Country National Scenic Trail consistent with the "North Country Trail Comprehensive Plan for Management and Use"(USDI National Park Service, 1982 as amended and/or updated) and "North Country National Scenic Trail - A Handbook for Trail Design, Construction, and Maintenance" (USDI National Park Service, 1996 as amended and/or updated).

Grooming of cross-country ski trails generally will be accomplished by cooperators.

Motorized Trails

Standard(s):
Allow off-highway vehicles (OHVs) within motorized ROS classes only on Forest Service roads and trails that are designated for their specific use.

Manage OHV and snowmobile use to provide for resource protection, public health and safety, to minimize user conflict, and for motorized recreation and access.

Travel of OHVs off designated trails and routes (cross-country) is prohibited except for administrative use or under written authorizations.

Guideline(s):
Designated roads and trails may be limited or closed to specific kinds of uses.

OHV Road Route Access:
OHV use is generally prohibited on OML 4 and OML 5 roads.

Designation of OML 1, 2, and 3 roads is considered where conflicts with other user needs and resource protection issues are minimal.

Designated ATV Recreation Trails:

1. Provide connections to existing designated public roads and trails
2. Utilize existing corridors when feasible before considering new trail construction

Snowmobile:
Snowmobile use is prohibited on plowed National Forest System roads unless the road is posted as a designated trail.

Cross-country snowmobile use within motorized ROS classes is generally allowed unless prohibitions or restrictions are needed for resource protection or to meet management objectives. Cross-country snowmobile use is not allowed in semi-primitive non-motorized ROS designated areas.

Allow administrative use of snowmobiles in areas closed to this use.

Within the Remote Habitat Area, limit new snowmobile trail designations, and seek opportunities to reroute existing designated snowmobile trails out of RHA.

Allow snowmobile use only on designated snowmobile trails after March 1 each year in areas east of M-64 and south of M-28.

Recreation Special Uses

Standard(s):
New recreation residences will not be approved.

In the event the primary structure of the recreation residence permit is destroyed, the permit will be terminated.

Heritage Resources

Guideline(s):
Review of archaeological sites will be conducted on a regular schedule to ensure protection.

The Forest Service will consult with state and tribal agencies to determine archaeological resources eligibility under the standards and guidelines for historic preservation. Archaeological resources may be determined ineligible under the following:

1. Sites threatened by disturbance, deterioration, vandalism or forest use.
2. Sites that do not contribute to the Secretary of the Interior's most recent standards and guidelines for archaeological preservation.
3. Sites eligible/ineligible that do not contribute to the Ottawa's niche.

2400 Timber Management

Appendix C, Table C-1 displays the harvest cutting methods considered appropriate for regeneration or conversion to each of the major forest types on the Ottawa.

Guideline(s):
Manage timber stands to feature selected inclusions of hemlock, white pine, oak, cedar, paper birch, yellow birch, black cherry, and aspen. Also, consider reserving individual trees of these species.

Generally manage forest types within the rotation age ranges as specified in Table 2-1 below:

Table 2-1. Rotation Age Ranges (in years) by Forest Type

Forest Type	Rotation Age Range
Aspen	40-90
Balsam Fir	50-90
Jack Pine	50-90
Northern Hardwoods	60-180
Northern Red Oak	75-120
Paper Birch	40-90
Red Pine	50-220
White Pine	50-220
White Spruce	50-220

Note: These rotation age ranges may be waived for stands that have been significantly affected by fire, windthrow, insect, or disease attack or other similar natural disturbance. Some stands may also be harvested before minimum or after the age range shown when site capability and/or site specific analysis indicates it is necessary to meet overall multiple use objectives.

Aspen

Guideline(s):
Regenerate existing aspen, or convert another forest type to aspen by clearcutting.

Generally, commercial thinning of aspen will not be practiced.

Favor natural regeneration of sucker-origin stands.

Utilize non-commercial regeneration of aspen can be done where aspen is desired for other resource benefits and commercial operation is not feasible.

Schedule site preparation when necessary to encourage aspen suckering.

Balsam Fir

Guideline(s):
Regenerate existing balsam fir stands or convert other types to balsam fir by clearcut, shelterwood, or selection methods. Uneven-aged management may be used for special aesthetic, wildlife, or other values and will only make up a small proportion of managed balsam fir forests.

Favor shorter rotations to reduce the risk of spruce budworm outbreaks.

Favor natural regeneration to balsam fir and other species without site preparation.

A balsam fir-aspen mixture is acceptable and common in the regeneration of balsam fir stands. Where budworm resistance is a concern or where retention of aspen is desired, favor a balsam fir-aspen mixture.

Balsam fir in mixture with white spruce, hemlock, white pine, cedar, and/or tamarack is also acceptable. If an evaluation of the site, seed source, and type and degree of competition expected indicates that these other conifer species could be increased in the stand, site preparation should generally occur. Snow-free harvesting operations season may accomplish adequate site preparation.

Supplement natural regeneration of balsam fir by planting white spruce, tamarack, jack pine, or white pine when necessary to achieve desired stocking levels.

Generally, release or pre-commercial thinning will not be done in balsam fir stands, except for fuels hazard reduction.

Hemlock

Guideline(s):
Manage hemlock on a limited case-by-case basis to maintain or expand the type. Hemlock will not be managed for timber production, but to meet other resource objectives.

Regeneration is usually done with the two-cut or three-cut shelterwood method. Site preparation may be needed to prepare an adequate seed bed.

Intermediate cuts may be applied on a case-by-case basis to maintain stand health, vigor, and improve species composition.

Supplemental seeding or planting of hemlock may be used in areas being regenerated to hemlock.

Plantings of hemlock, yellow birch, and white pine may occur on sites where the species is a member of the successional pathway and is needed for other resource concerns.

Fencing or other protective measures may be necessary to protect seedlings from deer browsing until trees reach sufficient height.

Cleaning and weeding may be used during the seedling and sapling stage to favor desirable species.

Jack Pine

Guideline(s):
Regenerate existing jack pine stands or convert other types to jack pine by clearcutting. Frequency of entry is usually once each rotation.

A single commercial thinning may be done on a limited basis between 25 to 35 years of age.

Favor shorter rotation in areas of high risk for jack pine budworm, or for species conservation.

In general, jack pine on sites with site index 55 or better may be converted to species appropriate for the site. Jack pine may be retained as needed on these sites if:

- needed to obtain composition objectives for the management prescription
- needed for wildlife habitat or species viability requirements; or
- needed for spatial arrangement within the management area.

Favor natural regeneration of jack pine where a sufficient quantity and quality seed source is present. Site preparation may be necessary to prepare an adequate seed bed.

Direct seeding or planting of jack pine may be done.

Generally, release of jack pine is not necessary to achieve reforestation. Release will be scheduled if evaluation of the stocking of planted species and the type and degree of competition indicates the need for release.

Generally, pre-commercial thinning of jack pine is not needed.

Lowland Conifer

Guideline(s):
Manage lowland conifers, including cedar, on a limited case-by-case basis to maintain or expand the type. Lowland conifer will not be managed for timber production, but to meet other resource objectives.

Intermediate cuts may be used to maintain or enhance riparian values.

Favor natural regeneration.

Planting of species appropriate to the site may be done on a limited basis.

Generally release or pre-commercial thinning will not be done.

Lowland Hardwoods

Guideline(s):
Manage lowland hardwoods on a limited case-by-case basis to maintain or expand the type. Lowland hardwoods will generally not be managed for timber production, but to meet other resource objectives.

Regenerate using the two-cut shelterwood method.

Favor natural regeneration of seed-origin stands.

Planting of species appropriate to the site may be done on a limited basis.

Generally, avoid release and pre-commercial thinning.

Northern Hardwoods

Guideline(s):
Regenerate existing northern hardwood stands or convert another type to northern hardwood stands with either uneven-aged or even-aged management methods.

Uneven-aged management may be favored:

- In management areas that emphasize late-successional community types,
- In visual resource areas of high sensitivity; or
- Where limitations exist for even-aged management harvest methods.

Even-aged management may be favored:

- When the trees in the stand are at risk for disease and insect infestations or have limited genetic integrity; or
- When the site has the potential to establish and maintain mid-tolerant species.
- In areas where uneven-aged management may not be successful due to heavy browsing.

Hardwood stands managed even-aged should generally use the two-cut or three-cut shelterwood method.

Northern hardwood stands managed uneven-aged should generally use the individual tree selection practice on a 10- to 20-year cutting cycle. Work toward the desired stand structure over two or more cuts. Create canopy gaps to encourage natural regeneration of tree species and to increase within-stand diversity.

Maintain a conifer component in northern hardwood stands where desired for species diversity.

For stands managed even-aged, intermediate cuts to upgrade the stand and increase tree growth should:

- Normally, thin at 10- to 20-year intervals, beginning as soon as the stand is operable.
- Favor retention of acceptable growing stock of desirable species during thinning.

Favor natural regeneration of seed-origin stands with both uneven-aged and even-aged management.

Favor natural regeneration of mid-tolerant or other desirable species.

Site preparation should reduce undesirable species competition and prepare a mineral-soil seedbed.

Where desired for tree species diversity or other resource needs, plantings of hemlock, yellow birch, red oak, and white pine may occur if the species is a member of the successional pathway.

Cleaning and weeding of northern hardwood seedling and sapling stands should generally occur where heavy competition from undesirable species is present, or where needed to maintain mid-tolerant and other desirable species.

Pre-commercial thinning should generally not be done in northern hardwood stands if there is a market for hardwood pulp.

Northern Red Oak

Guideline(s):
Regenerate northern red oak stands using the two-cut or three-cut shelterwood method.

Reduce gypsy moth impacts by avoiding the development of pure red oak stands.

Emphasize opportunities to maintain and regenerate oak on appropriate suitable sites.

Intermediate cuts to upgrade the stand and increase tree growth should:

- Normally, thin at 10- to 20-year intervals, beginning as soon as the stand is operable.
- Avoid thinning between April 15 and June 30 to reduce risk of oak wilt infections.
- Favor retention of acceptable growing stock of desirable species during thinning.

Favor natural regeneration of seed-origin stands.

Site preparation should reduce undesirable species competition and prepare a mineral-soil seedbed.

Planting may be done on appropriate sites.

Cleaning and weeding of northern red oak seedling and sapling stands should generally occur where heavy competition from undesirable species is present.

Pre-commercial thinning is generally not done.

Paper Birch

Guideline(s):
Regenerate existing paper birch stands or convert other types to paper birch using the two-cut shelterwood method.

Commercial thinning at 40- to 50-years of age on sites with site index of 56 or greater for paper birch is suggested.

Favor natural regeneration using the shelterwood method. Site preparation may be necessary to prepare an adequate seed bed.

Use supplemental seeding as needed to ensure an adequate amount of regeneration.

Plant paper birch on a limited basis, primarily for visual resource enhancement, or in cooperation with local Native American tribes.

Generally, pre-commercial thinning is not used.

Release of paper birch may be needed to enhance the visual resource and/or promote establishment, growth and survival.

Red Pine

Guideline(s):
Regenerate existing red pine stands or convert other types to red pine by clearcutting, seed tree and shelterwood.

Clearcutting is usually the preferred regeneration method.

Shelterwood and seed tree methods can be used if the sirococcus shoot blight disease is not present in the area. In general, red pine seed trees should be removed within 5 years after regeneration is established unless desired for other resource reasons.

Generally, commercial thinnings should occur at 10- to 15-year intervals, beginning at 25- to 40-years of age.

Maintain red pine plantations with natural inclusions of other species where needed to meet other resource objectives.

Avoid planting on sites that have a high risk of insects and diseases. Avoid planting red pine on sites that may have a high amount of competition from hardwood and shrub species.

Site preparation should be accomplished as needed to reduce slash, to control shrubs and other competition, or to expose mineral soil.

Generally, one or more release treatments may be needed to release red pine plantations from competition.

Pre-commercial thinning or pruning will generally not be done.

White Pine

Guideline(s):
Regenerate existing white pine stands or convert other types to white pine, usually by a two-cut or three-cut shelterwood method.

Intermediate cuts may be scheduled at 10- to 15-year intervals, beginning at about 40-years of age.

Favor natural regeneration to white pine and other conifers when regenerating existing white pine stands.

Conduct site preparation as needed to reduce slash, to control shrubs and other competition, and to expose mineral soil.

Underplant white pine under partial shade (to limit the damage from blister rust and white pine weevil) on sites ecologically suited to the establishment and growth of white pine.

Favor planting on drier sites, which have less competition, and are a lower risk for blister rust.

Mechanical or hand site preparation will be the primary method for controlling understory competition.

Pre-commercial thinning can be done to reduce stand densities, and to remove trees damaged by insect or disease agents.

Release of white pine may be done if evaluation of the stocking of planted trees and the type and degree of competition indicates the need.

In areas of high risk of blister rust, conduct pathological pruning as needed.

Where there is white pine weevil damage, corrective pruning of terminal buds may be needed to correct the injury to the tree and reduce the local weevil population for the following year.

White Spruce

Guideline(s):
Regenerate existing white spruce stands or convert other types to white spruce by clearcut, shelterwood, or selection methods. Uneven-aged management may be used for special aesthetic, wildlife, or other values and will only make up a small proportion of managed spruce-fir forests.

Intermediate cuts should generally occur at 10- to 20-year intervals, beginning at 30- to 40-years of age.

Favor natural regeneration using the shelterwood method.

Where natural regeneration of white spruce is not practical, consider site preparation and planting to white spruce or mixtures thereof with tamarack or other suitable species. Generally avoid planting pure stands of white spruce because of insect and disease concerns.

Supplemental seeding of white pine or a mix of white spruce, black spruce, and tamarack may also be done on a limited basis.

Conduct release of white spruce plantations if evaluation of the stocking of planted trees and the type and degree of competition indicates the need.

Pre-commercial thinning of white spruce generally is not done.

Temporary Openings Created by the Application of Even-aged Silviculture

Standard(s):
Temporary openings will be 40 acres or less, except:

- On a case-by-case basis after 60 days public notice and review by the Regional Forester;
- In MAs 4.1a and 4.2a to create Kirtland's warbler habitat; or
- When the size of the area harvested is the result of a natural catastrophic condition such as fire, insect and disease attack, or windstorm.

In Kirtland's warbler habitat in MAs 4.1a and 4.2a, the maximum opening size should not exceed 550 acres.

Guideline(s):
A stand of at least the minimum stand size, normally 10 acres, should separate openings that are greater than 40 acres.

An opening may be comprised of one or more adjacent stands.

An opening will no longer be considered an opening when the re-established stand has reached a height that is 20% of the surrounding trees.

Stands Adjacent to Old Growth

Guideline(s):
Northern hardwood stands that are immediately adjacent to classified old growth blocks will generally be managed using uneven-aged management practices. In other forest types adjacent to old growth, consider maintaining a component of long-lived species.

Old Growth Management

Guideline(s):
Classify stands as old growth in patterns and arrangements that provide for the desired spatial arrangement within the management area and across the landscape.

Select stands that are currently in an old growth condition or have the ecological potential to become old growth.

Maintain a representation of all forest types.

Classifications should be based on landscape percentages by management area and not on a specific project area scale.

Consider the following when classifying old growth stands:

- Providing effective blocks for old growth dependent plant and animal species.
- Providing for connectivity.
- Enhancing or maintaining outstandingly remarkable values of Wild and Scenic Rivers.
- Land considered unsuited for timber production.
- Where access is poor for vegetation management.
- Where visual quality objectives are emphasized.
- In water-influenced landscapes including riparian areas.
- In recreation use areas other than developed sites.

Classification of individual stands may be reviewed and changed on a limited basis during project level analysis, if new information suggests a change would better meet old growth objectives of the management area.

Generally, do not conduct timber harvest in classified old growth stands except as salvage harvest in the following situations:

- There is a threat to human life, old growth resources, or structures.
- There is a threat to adjacent lands.
- The area no longer retains the characteristics for which it was classified.

Within the general forest matrix (suitable acres), manage some stands not classified as old growth for structural complexity such as large trees, multiple vegetation layers, snags and cavity trees, and coarse woody debris.

The table below describes minimum old growth characteristics. Existing old growth stands should generally contain the large tree component and at least three other characteristics.

Table 2-2. Old Growth Stand Characteristics

Canopy Layer and Characteristics	Forest Type Group					
	Aspen Paper Birch	**Red or White Pine White Spruce**	**Hemlock**	**Jack Pine/ Balsam Fir**	**Lowland Conifer**	**Northern Hardwoods**
Supra Layer Desired number per acre	1-2	1-2	1-2	1-2	1-2	1-2
Main Layer						
A. Large tree component only						
Minimum dbh for large tree (inches)	10	20	20	10	10	20
Minimum basal area (sq. ft/acre)	40	50	50	50	50	30
Number per acre (approximate only)	70	20	20	100	100	12
B. All trees in main layer						
Minimum number of snags/acre	5 or more					
Minimum dbh for snags (inches)	8	10	10	8	8	10
Culls (desired sq. ft/acre)	15	10	10	5	5	10
Midstory Layer Minimum crown cover (percent)	45	45	45	45	45	45
Shrub Layers Minimum canopy cover (percent)	10-30	10-30	10-30	10-30	10-30	10-30
Down woody debris greater than 10-inches in diameter and 8-feet in length (piece/acre)	20					

Special Forest Products

Guideline(s):

Permits will generally be required for commercial gathering or scientific use of selected forest products from trees (such as boughs, Christmas trees, and firewood), or other vegetation (such as berries, sheet moss). A free use permit for gathering of small amounts of minor products for personal use such as cones, mushrooms, or berries is not required.

Permits will specify allowable sale quantities and collection restrictions designed to protect and maintain ecological and cultural resource values and prey security habitat.

Commercial peat mining and sphagnum moss collection are generally prohibited.

Forest product removal is generally not permitted in wilderness, Forest Service administrative sites, and developed recreation sites.

2500 Soil, Water, and Air

Note: Refer to 2600 Wildlife, Fish and Rare Plants, Management Indicator Species, Mayfly-Stonefly, Caddisfly suite for more applicable guidelines.

Guideline(s):
Protect super canopy trees when present in riparian areas.

The width of riparian corridors will be based on the factors such as ecological function, type of aquatic feature being protected, and adjacent Ecological Landtype Phase (ELTP) characteristics.

New facilities built within wetlands, riparian areas, or floodplains should be discouraged.

Facilities, when built in riparian areas and floodplains, should be constructed and maintained in a way that minimizes adverse impacts to the ecological function of the area.

Avoid new road and/or landing construction within riparian corridors.

Locate skid trails to route activities outside of riparian corridors.

Emphasize harvesting methods that leave slash scattered evenly on Landtype Associations 212JB05, Jc22, Jc24, Jc25, Jo01, Jo03, Jo04, Jo05, Sn11, Sn13, Sn14, Xb01 ,Xb02, Xb03, Xc02, and Xc11, even if it requires some operators to haul and scatter slash back onto the harvest area.

Generally, timber sale seasonal operating restrictions will be based on ELTP level information and transportation system limitations.

Discourage the removal of coarse woody debris, existing snags and live cavity trees from riparian corridors and streams and lakes unless they present a hazard to people or structures. Restrict removal to the minimum amount necessary to assure safety.

Within the riparian area, vegetative manipulation should generally maintain or enhance riparian function. Long-lived tree species should generally be favored; however, other species may be favored if desired to provide habitat for specific plant or animal species. Infrequent small openings (both grassy openings and temporary openings regenerated to young forest) may be created and maintained.

Within the upland portion of the riparian corridor, generally favor management for extended rotation of tree species suitable for the site. More frequent and larger openings (both grassy openings and temporary openings regenerating to young forest) may be created and maintained in this area. Where feasible, locate openings such that they transition to areas of young forest outside of the riparian corridor.

Heavy equipment should generally not be permitted within seasonal ponds in order to protect habitat and the ability of the pond to retain water.

Generally, do not use heavy equipment that would cause long-term degradation of soil productivity in areas dominated by poorly drained or very poorly drained soils, or steep slopes.

In general, do not dispose of logging woody debris within seasonal ponds.

Discourage the construction of new dams and when practical, remove existing dams.

2600 Wildlife, Fish and Sensitive Plants

Species of Viability Concern

Species of Viability Concern (SVC) for the Ottawa include several different categories, with differing legal requirements, objectives, and levels of protection and concern. This section includes guidelines for all of these. These categories are as follows:

1. Taxa listed by the USDI Fish and Wildlife Service as endangered, threatened, or proposed.
2. Regional Forester's Sensitive Species (RFSS).
3. Species Viability Evaluation (SVE) Taxa.

This list was developed jointly by the three Michigan National Forests to represent a range of species and habitats whose viability was evaluated as part of the revision process. This list includes all taxa in category 1 above, some (but not all) taxa in category 2 above, and some additional species that may have state listing or be of concern for other reasons.

Guideline(s):
Protect known occurrences of SVC and their zones of influence. Continue protection until population or habitat objectives are defined and met.

Conduct inventories for SVC taxa at and above the project level where appropriate given existing habitat.

To provide habitat for SVC plants needing open, non-rocky lakeshores/beaches, avoid disruption of natural vegetation, water regime, and substrate conditions by placement of new swimming beaches, boat launches, and other recreation points.

Provide habitat for possible population growth and expansion for species of viability concern, where practical.

Determine occurrence protection needs for delisted taxa on a case-by-case basis.

When appropriate to Forest ecosystem and conditions, implement actions recommended in approved plans for species recovery.

Consider various measures designed to reduce browsing by deer in areas where there are plant species of management or viability concern.

Where practical do not right tip-ups, in order to provide habitat for certain species of concern (e.g., goblin gold), low competition germination sites, and contribute to pit and mound microtopography.

Threatened and Endangered Species

Bald Eagle
Standard(s):
Do not clearcut, clear land or perform major construction within 660 feet of an eagle nest.

Thinning stands, habitat enhancement projects, and maintenance of existing improvements are not permitted during the nesting season (March 1 to August 31) between 330 feet and 660 feet of an eagle nest.

Allow snowmobile use only on designated snowmobile trails after March 1 each year in areas east of M-64 and south of M-28.

Guideline(s):
Generally avoid Forest Service management activities, except those necessary to protect the nest area, and public access within 330 feet of all bald eagle nests at any time of the year.

During the nesting season (March 1 to August 31), generally close roads and trails between approximately 330 feet and 660 feet of an eagle nest.

Restrict Forest Service management practices that result in adverse disturbance to nesting birds when the activities occur within 1,320 feet of an eagle nest during the nesting season (March 1 to August 31).

Identify and manage existing or potential nest trees, striving for four to six white pine, hemlock, or yellow birch trees in an area of 320 acres around each active bald eagle nesting area. These trees should be taller than surrounding trees or at the edge of the forest, and there should be clear flight paths to them.

Three or more super-canopy trees (preferably dead or with dead tops) should be identified and preserved within one-quarter mile of each nest as roosting and perching trees.

Gray Wolf
Standard(s):
Restrict use of the area within 330 feet of a wolf den or rendezvous sites (verified by Forest Service biologists) that have been used within the last two years.

Guideline(s):
Restrict land use activities within the zone of 330 to 2,640 feet around the den or rendezvous site from March 1 to July 31. Existing activities within this zone should be evaluated on a case-by- case basis and activities restricted as necessary. This restriction does not apply to major public travelways or town, county, state or federal highways.

Canada Lynx
Management area prescriptions vary in degree of opportunity and emphasis to provide for lynx foraging and denning habitat and connectivity of these habitats. All management prescriptions will contribute to conservation of Canada lynx or lynx habitat on the Ottawa. Management prescriptions that would have the most emphasis and likely provide the best opportunities for lynx habitat conditions are within MAs 1.1a, 3.1a, 4.1a, and 4.2a.

Standard(s):
Implement den site protection measures when active den sites are found.

Reputable reports of lynx presence in the boundary will be investigated via Ottawa protocol.

Guideline(s):
Ensure conifer regeneration has stocking levels suitable for lynx prey.

From suited acres, maintain approximately 90,000 acres of aspen for foraging habitat, and 25% of this acreage in the 5- to 20-year age class. Within the 90,000-acre figure, strive to promote the conifer component wherever feasible so that regenerated stands are the aspen-birch-white spruce-balsam fir forest type.

From suited acres, maintain approximately 10,000 acres of jack pine foraging habitat, and 30% in the 10- to 30-year age class. Where opportunities exist, seek to regenerate this important habitat type on unsuited lands.

From the unsuited land base, maintain at least 91,000 acres of lowland conifer types as lynx foraging habitat. In addition, 34,000 acres of short-lived conifer types currently exist on unsuited lands, and serve as lynx foraging habitat. Where opportunities exist, seek to regenerate short-lived conifer types on unsuited lands.

From suited acres maintain approximately 10,000 acres of spruce/fir-aspen forest type for foraging habitat and maintain approximately 30% in the 10- to 40-year age class. Where opportunities exist, seek to regenerate this important habitat type on unsuited lands.

Manage for fir/spruce/aspen/birch regeneration at stocking densities of >6000 stems/acre.

Manage for aspen and aspen mix regeneration at stocking densities of >10,000 stems/acre.

Maintain approximately 10% of lynx habitat as denning habitat in patches generally larger than 5 acres.

Provide denning habitat in proximity to foraging habitat.

Vegetation management projects in aspen, aspen/birch/white spruce/balsam fir, and upland black spruce forest types should promote an increase in suitable snowshoe hare habitat and retain/enhance habitat conditions for important alternate prey where practical. Overstory harvest treatments that retain or enhance existing softwood understories are encouraged.

Regenerate conifer types, such as jack pine, white spruce, and balsam fir to create stands of young conifer vegetation with dense horizontal conifer cover for snowshoe hare.

Precommercial thinning, including fuel reduction treatments, in lynx habitat should be delayed until stands no longer provide snowshoe hare habitat (e.g., self-pruning processes have eliminated snowshoe hare cover and forage availability during winter conditions with average snowpack).

Timber stand improvement should be used in softwoods or aspen-spruce-fir and spruce-fir-aspen stands to enhance or maintain softwood regeneration.

Kirtland's Warbler
Guideline(s):
Patch size, age class distribution and distance to other jack pine stands should be taken into consideration when managing jack pine to benefit conifer-dependent species such as Kirtland's warbler, spruce grouse, black-backed woodpecker, snowshoe hare, dwarf bilberry, northern blue butterfly and others.

Work with adjacent landowners, particularly in the Baraga Plains area, to benefit species dependent upon large contiguous patches of jack pine.

Other Species of Concern

American Woodcock
Guideline(s):
Create or maintain small grassy openings (0.25 to 3.0 acres) adjacent to aspen regeneration and moist soil areas.

When creating or maintaining openings for woodcock foraging habitat, the openings should be 0.25 acres or larger, located in areas with moist soils, and close to suitable woodcock nesting habitat.

Raptors
Guideline(s):
Protect active goshawk and red-shouldered hawk nesting territories. Protection from disturbance (noise, human intrusion) as well as habitat protection measures should be considered. Specific measures may vary on a case-by-case basis.

Management Indicator Species

American Marten
Guideline(s):
In areas considered potential marten denning or foraging habitat, natural disturbances (blowdown, fire, insect, etc.) ≤5 acres are usually left intact to contribute coarse woody debris.

Expand the existing component of white pine, white spruce, or hemlock in northern hardwood stands, on ecologically appropriate sites, where they represent less than 10% of existing component.

Ruffed Grouse
Guideline(s):
When regenerating aspen, desired aspen sucker densities should be >10,000 stems per acre in order to result in a densely stocked aspen stand on most stands.

Cutleaf Toothwort
Guideline(s):
In northern hardwoods harvest units, provide for live tree retention for recruitment of forest woody debris and tip-up habitat.

Create downed coarse woody debris, where lacking and appropriate to site conditions, to provide habitat and microclimate.

Mayfly-Stonefly-Caddisfly
Note: The guidelines contained here for the Mayfly-Stonefly-Caddisfly index apply across all applicable water features of the Ottawa not only to those specific coldwater habitats where this index can be applied. Refer to 2500 Soil, Water and Air for additional applicable direction.

Guideline(s):
When removing beaver dams or other channel obstructions from streams, or during dam maintenance, reconstruction, or decommissioning, control hydrologic discharge to minimize the potential for downstream flooding, sedimentation, and associated impacts on channel morphology or aquatic organisms.

Management activities involving crossing (by road, trail, temporary road or skid trail) of any stream or drainway, or operations on the immediate shoreline of any lake or wetland, will be designed and conducted in a way that should consider:

1. The number of crossing locations kept to the minimum needed to conduct the activity;
2. Maintenance of channel stability (dimension, pattern and profile) or shoreline stability in the affected or connected waters;
3. Seasonal closures;
4. Wetland water quality and the quantity and timing of flow.

Within riparian areas, avoid activities that may destabilize soils or add sediment to the water, where practical.

Generally remove road fill material from streams, wetlands, and drainways when decommissioning roads if resource conditions will benefit.

In order to maintain stream stability (streamflow, sedimentation, and channel erosion), management actions on National Forest System land should be completed so that the total acreage of temporary openings (<16 years old) and upland openings do not exceed 60% of the total area of any 6th level watershed.

Where practicable, manage existing dams to maintain natural flow regimes conducive to sensitive species and their habitats, trout habitat, and recreational values.

Terrestrial Ecosystems

Guideline(s):
Use management activities to emulate natural disturbance and to maintain fire-prone ecosystems (terrestrial and wetland), where feasible.

When natural large disturbance events (over 100 acres) occur within forested areas, a portion of damaged vegetation should be retained to provide additional site level structure and coarse woody debris.

As appropriate when implementing projects, retain live cavity trees and snags, favoring large diameter trees. If lacking, create by girdling or other methods. Favor locations 150 feet or more from roads and landings.

Allow vegetation treatment on National Forest System lands excluded from the suitable timber base, as needed to maintain or enhance species viability.

Upland Conifer
Guideline(s):
When managing red pine plantations, use techniques, which favor natural successional pathways.

Pine Barrens
Guideline(s):
Continue active restoration of dwarf bilberry and northern blue butterfly, on suitable sites.

Lowland Conifer
Guideline(s):
Use silvicultural practices that favor conifer regeneration over hardwoods in lowland conifer stands.

Boreal Forest:
Guideline(s):
Generally, maintain late-seral, boreal forest.

Seek opportunities to regenerate boreal forest on appropriate sites.

Permanent Forest Openings
Guideline(s):
Emphasize creation and maintenance of large openings where they are ecologically appropriate, particularly in more xeric landscapes (MAs 4.1a, 4.2a). De-emphasize creation and maintenance of smaller openings (<5 acres) in hardwood stands and other moist/mesic landscapes.

Use hand tool treatment and mechanical treatment, or prescribed fire to maintain permanent upland openings.

Caves/mines/rock outcrops/talus slopes
Standard(s):
Prohibit rock climbing and other recreational uses where sensitive rock-associated plant and animal populations occur and the recreational uses are expected to have negative effects.

When closing mineshafts, use bat-friendly closure devices.

Guideline(s):
Avoid modifying microclimate and microhabitat conditions within caves, cliffs, talus slopes, and areas of exposed bedrock.

Maintain existing shade on and around large boulders and outcrops, eight feet in diameter and larger, by not establishing canopy gaps near them where practical.

Aquatic/Wetland Ecosystems

Guideline(s):
Discourage stocking fish in fishless lakes in order to maintain habitat for aquatic invertebrates and other species.

Protect loon or trumpeter swan nesting islands from ice-off thru July 15.

On lakes known to be productive for loons, protect nest sites and rearing habitat.

Support efforts to reduce use of lead fishing tackle.

Retain a vegetated or natural shoreline buffer along lakes to protect habitat and water quality. Generally avoid mowing, rototilling, and other activities involving intensive removal of understory vegetation; except as needed for TES species.

Identify roads, gravel pits and nesting beaches where human uses pose a threat to wood turtle viability. Where feasible, consider these as priorities for decommissioning, rehabilitation or seasonal closures.

Maintain beaver works (dams, lodges, food caches, etc) to the extent practical, while recognizing there will be instances where removal is warranted due to other resource concerns.

In previously forested wetlands with artificially altered water tables, seek opportunities to convert alder wetlands back to forested wetlands.

Bog/Fen/Wet Meadow/Open Wetland
Guideline(s):
Maintain hydrologic function and shade regime including wetland edges/ecotones.

Fisheries and Aquatic Resources

Guideline(s):
Design, construct and maintain stream crossings and dams to minimize disrupting the migration or movement of fish and other aquatic life. Passage may be blocked for prescribed fish management procedures or if passage is deemed unnecessary.

2700 Special Use Management

Utility Transmission Corridors

Guideline(s):
When feasible, require multi-utility use of individual rights-of-way within corridors.

Emphasize use of existing corridors when granting rights-of-way.

Utility Distribution Systems

Guideline(s):
In general, require:

- Burial of new or reconstructed telecommunication lines.
- Burial of new or reconstructed powerlines.
- Multi-utility use of individual utility rights-of-way.

Other Special Uses

Guideline(s):
Locate special uses to minimize adverse effects on desired resource conditions.

Generally, when more than one special use is located in proximity, encourage joint use of access roads.

2800 Minerals and Geology

Federal Minerals

Guideline(s):
Generally, permit surface-disturbing exploration (including core drilling) in most areas, except within or adjacent to developed recreation sites during the recreation use season. Permit exploration especially where there is a potential to discover minerals of compelling domestic significance (as defined by U.S. Department of the Interior).

3400 Forest Pest Management

Guideline(s):
Use silvicultural practices and integrated pest management techniques to minimize forest susceptibility and vulnerability to forest pests, and to prevent insect and disease outbreaks from spreading to adjacent stands.

Consider the application of the following silvicultural practices and integrated pest management techniques where appropriate:

- Maintain health and vigor of stands through thinning.
- Keep trees growing vigorously to reduce root diseases.
- Maintain a diversity of age classes.
- Maintain a diversity of species.
- Plant insect- and/or disease-resistant tree planting stock, if available.
- Match the tree species to the capability of the site.
- Reduce insect damage by reducing heavy concentrations of slash.
- Limit the spread of invasive species through proper prevention practices and control measures.

Salvage insect- and disease-caused tree mortality, where marketable, and consistent with other resource objectives.

5100 Fire Management

Guideline:
Apply suppression techniques consistent with the level of threat posed to public and firefighter safety, property, or threatened resources.

Allow fires originating from natural ignitions (lightning) to burn as part of natural ecological disturbance regimes where appropriate.

5400 Landownership

Surface Ownership

Guideline(s):

Give priority to land adjustments that:

- Will protect habitat for Species of Viability Concern.
- Are needed to promote activities or programs of national significance.
- Will protect wildlife, fish, and wetland values.
- Have cultural or historical values that are threatened, or whose values would be enhanced by public ownership.
- Are within a designated wilderness or wild and scenic river corridor.
- Will provide public recreation opportunities.
- Result in more efficient landownership patterns.
- Result in lower resource management costs.
- Are suited to and needed for community development and other public purposes.
- Afford protection of undeveloped beaches.

Seek to acquire access within land adjustments.

Where the United States acquires land subject to existing occupancy leases and/or permits such leases and/or permits should not be extended beyond the original term designated at the time of United States acquisition, nor transferred to other parties.

Subsurface Ownership

Guideline(s):

Acquire subsurface rights under certain conditions such as the following:

- To resolve conflicts between surface values and mineral activities that cannot be mutually resolved.
- To protect surface values.
- Utilize exchange of mineral rights when feasible.

7100 Landline Location

Guideline(s):

Emphasize the locating, surveying, posting, marking, and maintaining of those National Forest System boundaries where highest resource program benefits can be achieved where:

- Further landownership adjustment is unlikely.
- Activities on adjacent lands may threaten resources of National Forest System lands.
- Adjacent landowners are likely to be sensitive to land management practices and ownership boundaries.

7700 Transportation System

Guideline(s):
Emphasize the use of existing roads over the construction of new roads. Provide maintenance, resource protection, and drivability commensurate with road use.

Decommissioned roads will generally be re-vegetated with local native or non-invasive exotic species seed mixture recommended by an Ottawa botanist, when and where appropriate. Refer to 2080 guidelines for additional guidance.

Locate new roads outside riparian areas where practical.

Minimize the location of log landings in the foreground areas along collector roads.

Permit decking areas adjacent to collector roads on a case-by-case basis provided the following conditions are met and there are no conflicts with other resource objectives:

- Collector roads are not blocked
- Operation is safe for public passage and properly signed.
- No damage is done to the roadbed, ditches are not blocked, and road investment is protected.
- Visual quality objectives are met or enhanced.

Decommission, or consider for alternate uses, roads that are no longer needed to meet Ottawa resource management objectives.

Travel by vehicles, including OHVs, off designated trails and routes (cross-country) is prohibited except for administrative use or as authorized.

References

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