



# Habitat

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## Carlton County Tax Forfeited Land Management Plan

### 7.I Assessment

#### **Coarse Filter / Fine Filter Approach**

Carlton County has adopted a policy of a dual level "coarse filter / fine filter" approach to habitat. The "coarse filter" aspect is achieved by striving to insure that all major habitats are represented on the landscape; the underlying premise is that if the habitats exist they will be capable of supporting the various species and biotic communities that depend upon them. The "fine filter" level is undertaken through direct management for individual species when such action is required or desired.

Table 10 presents the definitions of the coarse level habitats applied to Carlton County. These definitions were originally generated by the US Forest Service for use in northern Minnesota.

Table 11 shows the amount of each coarse level habitat on Carlton County's tax forfeited lands. Among the findings generated by this table are:

- The limitations of the County's relatively small base is emphasized when it is distributed across 21 habitat categories. With a few exceptions, it will be difficult for the County to manage its lands to consistently retain significant amounts of certain habitats.
- The County's large amount of lowland lands are evident in the lowland open habitat group. Nearly one-third of the County's lands fall into this category.
- Another 30% of the land base falls into the upland deciduous (aspen-birch) habitat niches reflecting the extensive aspen cover type. The older habitat within this type represents the tail end of the inherited forest; most of this will disappear as these stands become harvested and actively managed; a portion, however, including some in the mature group, are on unmanageable sites and will gradually shift into older types, probably dominated by conifers.
- There are no acres in the upland hardwood deciduous habitat type. Again this reflects the inherited forest; as these stands become managed as uneven aged stands, the effective age of the stands will become older and more stands will fall into the mature and old categories.
- Upland coniferous forests are primarily white spruce and balsam fir and will be retained. Because most of the white spruce is on unmanageable lands it will gradually become older forest and habitat. Balsam and manageable white spruce stands will be harvested and reset to younger stands.
- Lowland deciduous forests will gradually become older since few stands are managed. New stands will be created primarily through natural disturbance.
- A portion of lowland conifer types, primarily white cedar stands, will gradually shift into older stands through lack of active management.

A number of black spruce and most, if not all, stagnant stands will also shift into older feeling habitats. The rest will be managed to retain a mix of young and mature habitats.

Table 10: Upland Habitats for Use in Analyzing Wildlife Impacts of Forest Plan		
Habitat Categories		Definitions (age or size: cover types)
Open Habitat Types	Lowland open	Lowland grass, brush, marsh or muskeg
	Upland grass opening	Upland grass
	Shrub-Sapling opening / Regeneration	Upland brush, cutover area, and all regeneration under age 11
Upland Forest: Deciduous Aspen-Birch	Young	11-40 yrs: aspen, Balm of Gilead, off-site aspen 11-50 yrs: birch
	Mature	41-60 yrs: aspen, Balm of Gilead, off-site aspen 51-80 yrs: birch
	Old	61+ yrs: aspen, Balm of Gilead, off-site aspen 81+ yrs: birch
Upland Forest: Deciduous [NoHdwd/Oak]*	Young	11-60 yrs: northern hardwoods, oak
	Mature	61-120 yrs: "
	Old	121+ yrs: "
Upland Forest: Coniferous	Young	11-40 yrs: balsam fir 11-30 yrs: jack pine 11-70 yrs: red/white pine, white spruce, upland black spruce
	Mature	41-60 yrs: balsam fir 31-60 yrs: jack pine 71-120 yrs: red/white pine 71-100 yrs: white spruce, upland black spruce
	Old	61+ yrs: balsam fir, jack pine 121+ yrs: red/white pine 101+ yrs: white spruce, upland black spruce
Upland Forest: Mixed	Young	11-40 yrs: aspen-birch/spruce-fir, birch/sp-fir, boreal hdwd/conifer 11-60 yrs: northern hdwd/conifer
	Mature	41-60 yrs: aspen-birch/spruce-fir, birch/sp-fir, boreal hdwd/conifer 61-120 yrs: northern hdwd/conifer
	Old	61+ yrs: aspen-birch/spruce-fir, birch/sp-fir, boreal hdwd/conifer 121+ yrs: northern hdwd/conifer
Lowland Forest: Deciduous	Young	11-60 yrs: ash, lowland hardwood
	Mature	61-120 yrs: "
	Old	121+ yrs: "
Lowland Forest: Coniferous	Young	11-70 yrs: blk spruce, tamarack, white cedar, stagnant blk spruce/tam/white cedar
	Mature	71-100 yrs: blk spruce, tamarack, stagnant blk spruce/tam/white cedar 71-120 yrs: white cedar
	Old	101+ yrs: blk spruce, tamarack, stagnant blk spruce/tam/white cedar 121+ yrs: white cedar

**Table 11: Distribution of Habitats on Carlton County Tax-Forfeited Land, 2003**

Habitat Categories		Acres	Percent of Land
Open Habitat Types	Lowland open	22,380	31.9%
	Upland grass opening	221	0.3%
	Shrub-Sapling opening / Regeneration	3,594	5.1%
Upland Forest: Deciduous Aspen-Birch	Young	6,106	8.7%
	Mature	12,607	18.0%
	Old	3,397	4.8%
Upland Forest: Deciduous [NoHwd/Oak] *	Young	1,111	1.6%
	Mature	2,144	3.1%
	Old	0	0.0%
Upland Forest: Coniferous	Young	1,691	2.4%
	Mature	791	1.1%
	Old	1,362	1.9%
Upland Forest: Mixed	Young	391	0.6%
	Mature	464	0.7%
	Old	505	0.7%
Lowland Forest: Deciduous	Young	444	0.6%
	Mature	2,944	4.2%
	Old	812	1.2%
Lowland Forest: Coniferous	Young	2,751	3.9%
	Mature	4,691	6.7%
	Old	1,669	2.4%

Note: open-water systems are not included.

**Rare, Endangered or Species of Special Concern**

Information provided by the Minnesota DNR's Natural Heritage system indicates a number of plants and animals that are rare, endangered, or of special concern for which management practices should be adopted. The following list presents these species along with their State status:

Plants

- Moschatel (*adoxa moschatellina*) / special concern
- Carey's smartweed (*polygonum careyi*) / special concern
- Slender naiad (*najas gracillima*) / special concern
- Vasey's pondweed (*potamogeton vaseyi*) / special concern
- Twig-rush (*cladium mariscoides*) / special concern

- Eastern hemlock (*tsuga canadensis*) / special concern
- American shore-plantain (*littorella uniflora*) / special concern
- Clustered bur-reed (*sparganium glomeratum*) / special concern
- St. Lawrence grapefern (*botrychium rugulosum*) / threatened
- Wild chives (*allium schoenoprasum* var. *sibiricum*) / threatened
- Blunt-nosed grapefern (*botrychium oneidense*) / endemic
- Triangle moonwort (*botrychium lanceolatum*) / threatened
- Bog rush (*juncus stygius* var. *americanus*) / special concern

#### Animals

- Wood turtle ( *Clemmys insculpta*) / threatened
- Four-toed salamander (*hemidactylum scutatum*) / special concern
- Bald eagle (*haliaeetus leucocephalus*) / special concern
- Blanding's turtle (*emydoidea blandingii*) / threatened

#### Aquatic Animals

- Northern brook lamprey (*ichthyomyzon fossor*) / special concern
- Southern brook lamprey (*ichthyomyzon gagei*) / special concern
- Mucket mussel (*actinonaias ligamentina*) / threatened
- Elktoe mussel (*alasmidonta marginata*) / threatened
- Fluted-shell mussel (*lasmigona costata*) / special concern
- Black sandshell mussel (*ligumia recta*) / special concern

## 7.2

### Policies

**Objective:** *Carlton County recognizes its responsibility to maintain a diversity of distinct ecosystems and habitats which are appropriate to the region and which are within the capability of the County resource to satisfactorily and viably sustain.*

The following are the policies of Carlton County regarding habitat:

1. Adopt an ecosystem approach to understanding and managing its tax-forfeited land base. This concept involves: coordinating with other managing agencies to define the appropriate type and mix of diverse ecosystems to be managed for within Carlton County and then determine which of these can best be accomplished on County managed lands; basing the definition of ecosystems on the physical characteristics and capacities of the land; managing for types of ecosystems and habitats and not individual species; integrating management of County lands with that of non-County lands in a way that recognizes appropriate roles and responsibilities for the County.
2. Utilize a variety of management techniques and apply them as best as suited to maintain the desired ecosystem and resource values on a given parcel. The range of techniques includes such actions as contiguous large block harvest and small opening harvest to produce edge; all aged and even aged stands; mixed species and monoculture stands; clear cut and selective harvest; fixed and variable harvest rotations; natural regeneration and plantings. Site specific management will be a professional judgement made by the Department staff considering overall resource goals, site quality, resource quality, management plans of adjacent landowners, markets, unique events, access, and ecological needs.

3. Recognize the unique qualities and management limitations of the extensive red clay areas of Carlton County especially the ravine terrain of the Nemadji River watershed. It will be the general policy to not harvest timber along the slopes or in the ravine bottoms. The Department will actively promote erosion control and prevention measures and coordinate with other agencies on this effort. In general, the Department will allow natural succession to run its course although efforts may be made, as prudent and possible, to promote reforestation in long-lived species capable of naturally reducing or eliminating erosion. Timber management and harvesting may occur on the upland flat lands of the red clay region utilizing practices to minimize erosion.
4. Work closely with the Minnesota DNR to promote game and non-game wildlife. On lands within the Fond du Lac Reservation this policy extends to the Reservation's forestry and natural resource staff.
5. Support research into ways of enhancing and maintaining desired water quality through appropriate forest land management.

### 7.3

#### Procedures

As appropriate or desired Carlton County will undertake the following general and species-specific management actions. For many species there is a lack of information on how best to manage for them. This set of procedures must be seen as a work in progress.

##### **Coarse Filter**

The coarse filter approach will be applied generally across Carlton County's ownership to provide and maintain representation of all major habitat types to the degree this can be achieved on County administered lands.

##### **Database Listing and Utilization**

Minnesota's Natural Heritage database will be consulted for all site specific management activities to determine if any recorded sightings apply to the project.

Carlton County's inventory database, which includes data fields for forest ecological system information, will be augmented to identify what types of listed species might possibly occur on a given stand.

If a stand to be managed is identified as possibly having a natural heritage feature on it, the forester will examine the site to determine if the species is present.

##### **Reporting**

County staff will report any sightings of listed species to the appropriate DNR office and incorporate the sightings into the County's inventory database.

##### **Stand Level Timber Sale Checklist**

The following checklist summarizes the minimum general items the staff will consider when preparing a timber sale. This list was prepared by the MnDNR's Cloquet Wildlife office using the site-level guidelines as a basis. Additional details are provided in the site-level guideline book.

- Leave Trees and Snags
  - Leave scattered trees, or, islands/strips of trees. Islands are preferred over scattered trees as this method helps retain ecological legacy patches.
  - Leave at least 6-12 scattered trees per acre, or, islands/strips of trees 1/4 to 2 acres in size.
  - Locate on slopes, wetland edges, around seasonal ponds, along streams, etc. where trees are less prone to wind throw.
  - Choose some trees larger than 12 inches in diameter.
  
- Understory Conifer
  - Retain regenerating conifers less than 4 inches in diameter.
  
- Coarse Woody Debris
  - Goal is to have 2-5 logs greater than 6-12 inches in diameter per acre.
  - Retain stumps, fallen trunks or limbs greater than 6 inches in diameter.
  - Seek to avoid disturbing large logs and stumps already on forest floor.
  - Some snags or leave trees can be felled to create woody debris.
  
- Mast
  - Retain some mast trees such as oak when present.
  - Create and maintain edges and open, sunny areas in order to stimulate fruit and nut producing shrubs.
  
- Wetland Inclusions, Vernal Pools, and Seasonal Ponds
  - Maintain filter strips around these sites.
  - Avoid rutting, compaction, and disturbance of the litter layer.
  - Do not skid in, lay or fell tops in, pile slash in, or use as winter log landing sites.
  - Follow Best Management Practices for wetlands as provided in *Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines* for road construction, timber harvest, site preparation, and chemical use. This means no landings on open water wetlands.
  - Good places for islands or strips of leave trees.
  - Vernal pools are not to be disturbed. Frozen ground access to the encompassing stand is preferred. Skid / access trails (even if winter access) should not cross or run immediately adjacent to pools. Coarse woody debris should not be left in or immediately adjacent to pools. Pools are excellent areas for leave trees such as ash.
  
- Riparian Habitats
  - Follow Best Management Practices for riparian areas as provided in *Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines*.
  - Promote long-lived species.
  - Provide snags and coarse woody debris.
  - Reserve stand timber from clear-cutting within 150 feet of designated trout streams and lakes. Within this zone, partial or salvage cutting will be done only after consultation with

local DNR Fisheries manager.

- Maintain buffer strips of uncut or selectively harvested forest.
- Do not place skid trails parallel to streams or lakes.
- Do not place landings or fueling/maintenance areas near open water.
- Design harvests within perimeter zones (66 feet out from edge) of qualifying wetlands (open-water types 3, 4, and 5 larger than 1 acre) so that no more 50% of the zone is harvested within 5 years.

■ Patterns of Cutting

- Shape harvest areas to fit into natural pattern of overall landscape.
- Type and degree of edge or amount of effective interior space to depend upon specific habitat needs being sought.

### **Coordination**

County will provide a copy of its on-going five year tactical plan to local MnDNR Wildlife offices so as to allow DNR staff to review the proposed management activities relative to wildlife and habitat issues.

When a proposed management area is in, near, or may likely affect a known wildlife management area (or area of concern), County staff will contact MnDNR Wildlife officials to review management options.

### **Geographic Areas for Special Management**

In addition to the non-site specific measures presented in this chapter, there are a number of specific sites where management focuses primarily on habitat. The following summarizes the general management intent of these areas:

- Ditchbanks: Perch Lake Township (sections 7, 8, 17-20). Area contains bogs and muskegs with little timber value but high wildlife values. Cedar stands provide excellent winter habitat for deer. Management to be coordinated with DNR and Fond du Lac Reservation.
- Twin Lakes: Twin Lakes Township (sections 29, 30). Excellent wildlife habitat including a cedar-ash swamp and area along Blackhoof Creek. Management to focus on protecting fishery and maintaining general wildlife habitat.
- Cedar Yard: Skelton Township (sections 11, 14, 15). Area contains a sizeable cedar swamp which provides winter cover for deer. Management is to retain the cedar swamp which may require special measures to effect regeneration.
- Moose Lake Wildlife Area: Moose Lake Township (east part: sections 28, 33). This area is an excellent mixture of upland islands and lowland brush. Over 1,000 acres of contiguous County ownership in a single block. Good road access. Has been managed for deer and ruffed grouse through small stands and edge enhancement. Previous to management activities the natural state of the area consisted of upland islands within expanses of various lowland conditions. Management will focus on providing habitat for deer and

ruffed grouse.

- State Wildlife Management Areas: County owns varying amounts of land in or near each of the following state Wildlife Management Areas. County management will be in coordination with the overall management objectives for each area.

Blackhoof WMA: Protect and enhance state-designated trout stream (steelhead running up from Lake Superior). Deer wintering yard. Hunter/walking trails.

Kettle Lake WMA: Manage lake for wild rice and waterfowl. Sharptail grouse / brushland habitat to the east.

Sawyer WMA: Impoundments serving waterfowl, wild rice, furbearers. Hunter/walking trails.

Dye WMA: Ruffed grouse and deer. Openings. Blueberries (sustained with periodic burns).

Mervin WMA: White cedar swamp providing winter deer yard. Hunter/walking trails.

### **Fine Filter Management**

Fine filter management procedures have been established for the following species:

- Botrychium
- Blanding's turtle (*Emydoidea blandingii*)
- Wood turtle (*Clemmys insculpta*)
- Four-toed salamander (*Hemidactylium scutatum*)
- Aquatic species
- Game species: Sharptail Grouse (*Pedioecetes phasianellus*)
- Endangered, Threatened, or Special Concern Species: General

The following are the procedures for the above listed species.

### **Botrychium**

If site investigations indicate the real or likely presence of Botrychium, the following forest management will be done:

- Conduct search for plants as part of site appraisal. Identify areas where plants are found or are suspected to be found.
- If the species which are either endangered or threatened are found, then the core area and buffer of 1-2 tree lengths are to be identified; no harvesting or disturbance is to occur in these areas.
- Harvest operations will occur during frozen soil conditions and at least 80% crown cover (approximately 70+ BA) is retained. This is the preferred forest management approach.
- Harvest operations occurring during non-frozen soil conditions and/or retain less than 80% crown cover should retain >5% of the site as undisturbed (i.e., legacy patches). These undisturbed areas should be located in areas with appropriate microsite characteristics or in observed Botrychium locations. Individual

undisturbed patches should be at least .25 acre in size.  
Undisturbed buffers adjacent to wetland transition areas should be >35 feet wide.

- These guidelines should be integrated with other site-level forest management strategies for natural resource protection.

### **Blanding's Turtle**

Blanding's turtles use sandy streambanks for nesting; these areas are especially important to retaining this species. Such areas in known turtle habitat will be protected through the absence of forest management. In addition, no recreation trails of any type will be allowed closer to these areas than a distance to be determined through consultation with a DNR non-game specialist; any existing trails in this area will be rerouted and effectively closed to future travel.

### **Wood Turtle<sup>3</sup>**

Wood turtles are a long lived species and management needs to consider that population changes may not be immediately apparent. Nesting habitat is believed to be the most significant limiting factor affecting wood turtle populations. Other concerns are loss of summer habitat (forested areas along the stream within a 1/4 mile), mortality caused by humans (often motorized vehicles), and removal of individual adults by humans. Wood turtles need medium sized rivers with sandy bottoms which meander through wooded habitat.

Management actions include:

- In cooperation with the MnDNR, identify likely wood turtle nesting areas along with critical summer feeding habitat. Include this information in the County's computerized mapping and analysis system.
- Keep nesting areas free from human disturbance.
- Maintain public ownership of these areas. Seek to acquire any private lands that fall within these areas.
- Keep human traffic away from these areas. This may include rerouting non-winter use trails and precluding cabin leases in these areas.
- Stream crossings should be minimized if not eliminated.
- Maintain wooded habitat within stream corridor.
- Logging and related forest management activities should only occur between November 1 and April 15 (e.g., frozen ground, snow covered conditions).
- Unforested areas should be reforested within the corridor to connect tracts of existing forest.

### **Four-toed Salamander**

In areas where the salamander might be found, minimize disturbance of existing coarse woody debris, leave additional coarse woody debris, and conduct winter harvest whenever possible.

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<sup>3</sup> This management summary was based on "St. Louis River Wood Turtle Management Plan" prepared by the MnDNR.

In all known breeding locations maintain or restore high quality breeding habitat: adults prefer cool, moist closed-canopy northern hardwoods with abundant coarse woody debris and vegetation litter / moss for security cover adjacent to breeding wetlands; swamps, boggy streams, and wet, wooded or open areas near fish-free ponds.

### **Aquatic Species**

Rare, threatened, or species of special concern found within most wetlands and aquatic habitats are generally protected by the lack of management in these areas and by riparian management practices. When management is considered in these areas, County staff will contact DNR personnel regarding any known species of concern in the water body and the appropriate management measures to be taken.

### **Game Species: Sharptail Grouse**

Most of Carlton County is considered primary range for the sharptail grouse once one of Minnesota's most abundant game birds. Development and natural succession have claimed most of the bird's desired brushland, open field or open bog habitat. The MnDNR actively manages for sharptail grouse habitat in Carlton County.

- In cooperation with the MnDNR, identify critical sharptail grouse habitat. Include this information in the County's computerized mapping and analysis system.
- Identify lands that will be permanently retained as sharptail grouse habitat and managed in cooperation with the MnDNR.
- Contact the local MnDNR Wildlife office regarding any proposed management activities on lands within 2 miles of known leks or within brushlands where opportunities exist to create sharptail habitat in coordination with DNR lands.
- Avoid converting aspen-birch cover types to conifers near leks and, in general, eliminate conifers within ½ mile of known leks.
- Sharptail management actions include: maintaining existing marshes, grasslands and brush areas; delaying management activities until after August 1 nesting period; leave or plant small grain food plots for winter food; remove all tall trees (over 25 feet) near food plots or leks.

### **Endangered, Threatened, or Special Concern Species: General**

Objective is to retain and enhance habitat critical to support these species.

- Nesting areas for colonial birds (e.g., great blue herons) will be reserved from harvest and allowed to expand.
- Eagle nests on or close to County lands will be protected by implementing nest management plans provided by DNR's Regional Nongame specialist.
- Use Natural Heritage database information, DNR Wildlife and Non-game staff, and other data to determine if endangered, threatened or special concern species (and biotic communities) might be present on County lands. As appropriate, create general policies or place-specific practices to protect and enhance these areas. This action will apply to **other significant**

**natural heritage features** which may be present on the landscape.

#### 7.4

#### Strategic Actions

Carlton County will undertake the following actions relative to habitat to implement this strategic plan:

1. Support water quality research through in-kind participation, endorsement of projects, and the like.
2. Support additional training training for foresters, loggers and landowners regarding habitat, water quality, and related issues.
3. Cooperate with the Minnesota DNR, Fond du Lac Reservation and others concerning habitat research, management, and conservation of biological diversity.