

Travel Management Project

Biological Evaluations

&

Other Wildlife Considerations

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Introduction

Travel Management Rule

On November 9, 2005, the Forest Service published the Final Rule for Travel Management with an effective date of December 9, 2005. This rule revised the regulations regarding travel management on NF System lands to clarify policy related to motor vehicle use, including the use of off-highway vehicles. The rule requires designation of those roads, trails, and areas that are open to motor vehicle use. Designations are made by class of vehicle and, if appropriate, by time of year.

In 2004 the Chequamegon-Nicolet National Forest (CNNF) revised its Land and Resource Management Plan (*hereafter* Forest Plan). Prior to approval of the 2004 Forest Plan, each side of the CNNF had a different off road vehicle (ORV) policy. On the west side of the Forest, the ATV policy was open unless posted closed and off-trail/off-road use was allowed; street-legal vehicles were only allowed on open roads. On the east side of the Forest, only street legal vehicles were allowed on any open road and off-road use was not allowed. In the 2004 Forest Plan the direction for both sides of the Forest became consistent with a policy of allowing ATV use on designated routes/trails only, with routes/trails closed unless posted open. Off-trail/off-road use is no longer allowed. Street legal OHVs are allowed on any open road that is not physically closed.

The purpose of the Travel Management Rule (TMR) project is to identify the roads for motorized vehicle use on the CNNF in concert with the goals and objectives outlined in the 2004 Forest Plan. The project would also comply with the 2005 Travel Management Rule requiring a designated route system for motor vehicle use by vehicle class and if appropriate, by time of year.

The TMR Project is needed to consider how the CNNF can provide recreation experiences and traditional Tribal access opportunities considering changes in law, regulation, and policy under the 2005 Travel Management Rule and the 2004 CNNF Forest Plan and increased recreation use. Specifically, management actions are needed to move the existing condition towards the goals (2004 Forest Plan, Goal 1.3, page 1-2, Goal 2.1, pages 1-4 and 1-5); objectives (2004 Forest Plan 2.1d – 2.1h, page 1-5); and standards and guidelines (2004 Forest Plan, page 2-27);) for motorized vehicle use on designated roads in the CNNF.

Regulatory Direction

A variety of sources provide direction for management related to wildlife, fish, and rare plants on the CNNF. These include the Endangered Species Act, the National Forest Management Act, the 2004 Chequamegon-Nicolet National Forest, and the Forest Service Manual.

Biological Evaluations

The purpose of biological evaluations and assessments (BEs, BAs) are to "review all USDA Forest Service planned, funded, and executed, or permitted programs and activities for possible effects on endangered, threatened, proposed, or sensitive species" (FSM 2672.4). "Endangered" (E), "Threatened" (T), and "Proposed" (P) refer to those species covered by the Federal Endangered Species Act (19 USC 1536(c), 50 CFR 402.12(f) and 402.14(c)) and listed by the USDI Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS). "Sensitive" species include "those plant and animal species identified by a Regional Forester for which population viability is a concern" (FSM 2670.5). The Forest Service is responsible for protecting all federally proposed and listed species and the Regional Forester Sensitive Species

(RFSS). In addition, the Forest Service is directed to "assist states in achieving their goals for conservation of endemic species" (FSM 2670.32). State-listed species are not addressed in the project environmental impact statement, BE or BA, unless they are also considered a RFSS.

The Endangered Species Act (ESA) requires federal agencies to "... implement a program to conserve fish, wildlife, and plants . . . to insure their actions do not jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of critical habitat." The National Forest Management Act (NFMA) requires national forests to maintain viable populations of "native and desired nonnative vertebrate species... well distributed in the planning area."

The Secretary of Agriculture's Policy on Fish and Wildlife (9500-4) directs the Forest Service to "manage habitats for all native and desired nonnative plants, fish and wildlife species to maintain viable populations of each species; identify and recover threatened and endangered plant and animal species" and to avoid actions "which may cause species to become threatened or endangered."

Forest Service Sensitive Species Policy (FSM 2670.32) calls national forests to assist states in achieving conservation goals for endemic species; complete biological evaluations of programs and activities; avoid and minimize impacts to species with viability concerns; analyze significance of adverse effects on populations or habitat; and coordinate with states, USFWS and NMFS. The Forest Service Manual (2670.15) further defines sensitive species as those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trend in numbers, density or habitat capability that would reduce a species' existing distribution.

Endangered, threatened, and sensitive species are treated differently than other species. While most species are provided for by managing diverse habitats, endangered, threatened, and sensitive species require specific biological evaluations disclosing the effects of management activities on National Forest system land. Conservation measures are incorporated into project designs to protect these species, and the adverse effects of management activities are either eliminated or mitigated.

To protect the species discussed in this Biological Evaluation, the exact locations of their occurrences are not disclosed in this document.

Methodology for Analysis

The analysis areas vary according to the species being examined, which depends on the habitat needs and ranges of each individual species. For instance, effects of the project alternatives are analyzed in the vicinity of known sensitive plant locations, within nest-protection zones for forest raptors and within pack territories for gray wolf.

The current on-the-ground road densities and their assigned maintenance levels (MLs) will not change under any of the alternatives being analyzed for this project. The primary effects of this project on wildlife resources vary by alternative and occur because of changes in the allowable motorized use on existing routes. For some travelways, public motorized use would no longer be allowed.

Effects to sensitive species were analyzed for Forest Service roads by alternative. With any open road, there is a chance that the users leave the road and travel cross-country and directly or

indirectly affect individuals but this risk is always present and is constant through the alternatives of this project and the existing condition. For this reason, this potential effect is not further addressed in the analyses presented in this Biological Evaluation.

The designation and use of routes considered in this project may affect wildlife, fish, and rare plant resources in a number of ways. Motorized vehicle traffic can cause a visual or audible disturbance to some wildlife species. If this occurs during a critical breeding time, it may cause nest or territory abandonment and lead to decreased fecundity rates. Increased levels of access to the Forest can also facilitate the illegal killing/harvesting of wildlife or plant species.

The compaction, rutting, and erosion of soils can result in increased runoff and deposition of eroded material into lakes, streams, or wetlands. Excess runoff and sediment can affect water quality, channel stability, aquatic habitat, and wetland vegetative conditions, which can have detrimental impacts to fish and other aquatic organisms. Such impacts are analyzed in the soils and hydrology specialist reports but, overall, these impacts are not expected to increase in frequency because this project would not result in any road or trail construction. Under the action alternatives (Alt 2 and 3) the amount of roads available for motorized use would be decreased across the CNNF (Table 1).

Plant resources can be affected by motorized vehicle use on designated travelways because vehicle use may facilitate the spread of weeds which may displace endemics not only in the travel corridor but beyond it if disturbed soils are available for colonization by weed propagules.

Table 1. Summary of the consequences of the Travel Management Rule Project relative to availability of motorized access on the CNNF.

	<i>Alt. 1</i>	<i>Alt. 2</i>	<i>Alt. 3</i>
Miles of road open to ATV only	2	9	20
Miles of Trail Open for ATV Use	318	318	318
Fall Access	None	None	42
Miles open to ATV use: East side of the Forest	None	None	22
Road open to highway	0	0	0
legal vehicles only (miles)			
ML 1	4,086	1,543	1,587
ML 2	22	20	20
ML 3	48	46	45
ML 4	13	12	12
ML 5			
Total	4,169	1,621	1,664
Miles of Road Open to Both Vehicle Types	486	450	474
Total Road Miles Available for Motorized Use	4,657	2,080	2,158

Existing Condition

All of the Regional Forester Sensitive Species (RFSS) listed in Table 2 are confirmed to occur on the Chequamegon-Nicolet National Forest, but none of the Likely-to-occur Regional Forester Sensitive Species (LRFSS) are known from the Chequamegon-Nicolet National Forest.

Table 2. Species considered in this Biological Evaluation for the Travel Management Rule Project.

Species	Common Name	Rank & Status ¹
Federally-listed Species (Endangered, Threatened)		
<i>Oxytropis campestris</i> var. <i>chartacea</i>	Fassett's locoweed	G5,S2,SE,FT
Regional Forester Sensitive Species (RFSS)		
Animals		
<i>Accipiter gentiles</i>	Northern goshawk	G5,S2B,S2N,SC
<i>Acipenser fulvenscens</i>	Lake sturgeon	G3G4,S3,SC
<i>Ammodramus leconteii</i>	Le Conte's sparrow	G4,S2B,SC
<i>Bartramia longicauda</i>	Upland sandpiper	G5,S2B,SC
<i>Buteo lineatus</i>	Red-shouldered hawk	G5,S3S4B, ST
<i>Canis lupus</i>	Gray wolf	G4,S2,ST
<i>Catharus ustulatus</i>	Swainson's thrush	G5,S2B,SC
<i>Chlidonia niger</i>	Black tern	G4,S3B,SC
<i>Cygnus buccinator</i>	Trumpeter swan	G4,S1B,SE
<i>Dendroica cerulea</i>	Cerulean warbler	G4,S2S3B,ST
<i>Falcapennis canadensis</i>	Spruce grouse	G5,S1S2B,ST
<i>Glyptemys insculpta</i>	Wood turtle	G4,S3,ST
<i>Gomphus viridifrons</i>	Green-faced clubtail	G3,S3,SC
<i>Haliaeetus leucocephalus</i>	Bald eagle	G4,S3B,SC
<i>Incisalia henrici</i>	Henry's elfin butterfly	G5,S2,SC
<i>Lycaeides idas nabokovi</i>	Northern blue butterfly	G5,S1,SE
<i>Martes americana</i>	American marten	G5,S3,SE
<i>Moxostoma valenciennesi</i>	Greater redhorse	G4,S2S3,ST
<i>Notropis nogenus</i>	Pugnose shiner	G3,S2S3,ST
<i>Oeneis chryxus</i>	Chryxus arctic	G5,S2,SC
<i>Ophiogomphus anomalus</i>	Extra-striped snaketail	G3,S1,SE
<i>Ophiogomphus howei</i>	Pygmy snaketail	G3,S3,ST
<i>Oporornis agilis</i>	Connecticut warbler	G4,S3B,SC
<i>Phyciodes batesii</i>	Tawny crescent spot	G4,S3,SC
<i>Picoides arcticus</i>	Black-backed woodpecker	G5,S2B,SC
<i>Pieris virginiana</i>	West Virginia white	G3G4,S2,SC
<i>Stylurus scudderii</i>	Zebra clubtail	G3G4,S3,SC
<i>Tympanuchus phasianellus</i>	Sharp-tailed grouse	G4,S2B,SC
<i>Venustaconcha ellipsiformis</i>	Ellipse mussel	G3G4,S2,ST
Plants		
<i>Amerorchis rotundifolia</i>	Round-leaved orchis	G5,S2,ST
<i>Arabis missouriensis</i> var. <i>deamii</i>	Missouri rock cress	G4G5,S2,SC
<i>Asplenium trichomanes-ramosum</i>	Green spleenwort	G4,S1,SE
<i>Astragalus alpinus</i>	Alpine milk vetch	G5,S1,SE
<i>Botrychium minganense</i>	Mingan's moonwort	G4,S2,SC
<i>Botrychium mormo</i>	Goblin fern	G3,S3,SE
<i>Botrychium oneidense</i>	Blunt-lobed grapefern	G4,S2,SC
<i>Botrychium rugulosum</i>	Ternate grapefern	G3,S2,SC
<i>Callitriche hermaphroditica</i>	Northern water-starwort	G5,S2,SC
<i>Calypso bulbosa</i>	Calypso orchid	G5,S3,ST
<i>Carex assiniboensis</i>	Stoloniferous sedge	G5,S1,SC
<i>Carex backii</i>	Rocky Mountain sedge	G4,S1,SC
<i>Carex crawei</i>	Crawe's sedge	G5,S3,SC
<i>Carex gynocrates</i>	Northern bog sedge	G5,S3,SC
<i>Carex livida</i> var. <i>radicalis</i>	Livid sedge	G5,S2,SC
<i>Carex michauxiana</i>	Michaux's sedge	G5,S2,ST
<i>Carex sychnocephala</i>	Many-headed sedge	G4,S2,SC
<i>Carex vaginata</i>	Sheathed sedge	G5,S3,SC
<i>Ceratophyllum echinatum</i>	Spineless hornwort	G4,S2,SC
<i>Cynoglossum virginianum</i> var. <i>boreale</i>	Northern wild comfrey	G5

Species	Common Name	Rank & Status ¹
<i>Cypripedium arietinum</i>	Ram's head lady's-slipper	G3,S2,ST
<i>Diplazium pycnocarpon</i>	Glade fern	G5,S2,SC
<i>Dryopteris expansa</i>	Spreading woodfern	G5,S2,SC
<i>Dryopteris filix-mas</i>	Male fern	G5,S1,SC
<i>Dryopteris fragrans</i> var. <i>remotiuscula</i>	Fragrant fern	G5,S3,SC
<i>Eleocharis olivacea</i>	Capitate spikerush	G5,S2,SC
<i>Eleocharis quinqueflora</i>	Few-flowered spikerush	G5,S2,SC
<i>Epilobium palustre</i>	Marsh willow-herb	G5,S3,SC
<i>Equisetum palustre</i>	Marsh horsetail	G5,S2,SC
<i>Eriophorum chamissonis</i>	Rusty cotton-grass	G5,S2,SC
<i>Geum macrophyllum</i> var. <i>macrophyllum</i>	Large-leaved avens	G5,S1,SC
<i>Huperzia selago</i>	Fir clubmoss	G5,S2, SC
<i>Juglans cinerea</i>	Butternut	G4,S3
<i>Juncus stygius</i>	Bog (moor) rush	G5,S1,SE
<i>Leucophysalis grandiflora</i>	Large-flowered ground cherry	G3?,S1,SC
<i>Littorella uniflora</i>	American shore-grass	G5,S2,SC
<i>Malaxis brachypoda</i>	White adder's mouth	G4,S3,SC
<i>Moehringia macrophylla</i>	Large-leaved sandwort	G4,S1,SE
<i>Myriophyllum farwellii</i>	Farwell's water milfoil	G5,S3,SC
<i>Oryzopsis canadensis</i>	Canada mountain-ricegrass	G5,S1,SC
<i>Panax quinquefolius</i>	American ginseng	G4,S4
<i>Parnassia palustris</i>	Marsh grass-of-parnassus	G5,S2,ST
<i>Poa paludigena</i>	Bog bluegrass	G3,S3,ST
<i>Polemonium occidentale</i> var. <i>lacustre</i>	Western Jacob's ladder	G5,S1,SE
<i>Polystichum braunii</i>	Braun's holly fern	G5,S3,ST
<i>Potamogeton confervoides</i>	Algae-like pondweed	G4,S2,ST
<i>Potamogeton hillii</i>	Hill's pondweed	G3,S1,SC
<i>Pyrola minor</i>	Lesser wintergreen	G5,S1,SE
<i>Ranunculus gmelinii</i> var. <i>hookeri</i>	Small yellow water crowfoot	G5,S2,SE
<i>Rhynchospora fusca</i>	Brown beak-sedge	G4G5,S2,SC
<i>Streptopus amplexifolius</i>	White mandarin	G5,S3,SC
<i>Tiarella cordifolia</i>	Heart-leaved foamflower	G5,S1,SE
<i>Vaccinium cespitosum</i>	Dwarf bilberry	G5,S2,SE
<i>Valeriana uliginosa</i>	Marsh valerian	G4G5,S2,ST
Non-Vascular Plants		
<i>Caloplaca parvula</i>	an ash-lowland lichen	G1,N1
<i>Usnea longissima</i>	Methuselah's beard lichen	G3,N2
Likely to Occur Regional Forester Sensitive Species		
Animals		
<i>Plethobasus cyphus</i>	Bullhead mussel	G3,S1,SE
<i>Somatochlora forcipata</i>	Forcinate emerald dragonfly	G5,S2S3,SC
Plants		
<i>Cardamine maxima</i>	Large toothwort	G5,S1,SC
<i>Carex lenticularis</i>	Shore sedge	G5,S2,ST
<i>Disporum hookeri</i>	Fairy bells	G4G5
<i>Eleocharis engelmannii</i>	Engelmann's spike-rush	G4?,S1,SC
<i>Listera auriculata</i>	Auricled twayblade	G3,S1,SE
<i>Listera convallarioides</i>	Broad-leaved twayblade	G5,S1,ST
<i>Petasites sagittatus</i>	Arrow-ldd sweet colt's-foot	G5,S3,ST
<i>Platanthera flava</i> var. <i>herbiola</i>	Pale-green orchid	G4,S2,ST
<i>Potamogeton pulcher</i>	Spotted pondweed	G5,S1,SE
<i>Pterospora andromeda</i>	Giant pinedrops	G5,S1,SE
<i>Ranunculus lapponicus</i>	Lapland buttercup	G5,S1,SE

Species	Common Name	Rank & Status ¹
¹ Rank and Status Codes:	State (Subnational) Element Rank	State Status
<u>Global Element Rank</u>	S1 - Critically imperiled	SE - State endangered
G1 - Critically imperiled globally	S2 - Imperiled	ST - State threatened
G2 - Imperiled globally	S3 - Vulnerable	SC - State special concern
G3 - Vulnerable globally	S4 - Apparently secure	
G4 - Apparently secure globally	SC - Special Concern	
G5 - Secure globally	SA - Accidental	
? - Inexact numeric rank	SH - Historical occurrence	
<u>Federal Status</u>	S#B - Long-distance migrant, breeding status	
FT - Federally threatened	S#N - Long-distance migrant, non-breeding status	
FE - Federally endangered		

Source for ranking definitions: Wisconsin NHI (2004)

Mitigation

There are no mitigation measures established specifically for this project related to Federally-listed species or Regional Forester Sensitive Species. Compliance with all Forest Plan standards and guidelines and best management practices is expected during project implementation.

Monitoring

There is no project-specific monitoring included with any of the alternatives, although user compliance with motorized designation of roads in this project is assumed to be high. The validity of this assumption could be evaluated by monitoring the motorized use of roads that are designated to be unavailable for such use.

Environmental Consequences: Biological Evaluations

The environmental analyses for sensitive wildlife & plant resources for this project focus on the effects of the amount/density of roads that are open to Highway-legal vehicles and/or ATVs. The primary assumptions used to conduct this analysis and to arrive at biological conclusions for all wildlife, fish, and rare plant resources include:

- ATV travel on designated routes has the potential to disturb wildlife. This disturbance has its greatest impact to wildlife populations when it occurs during the breeding season.
- Motorized travel on designated routes during hunting season may increase the potential for illegal killing or trapping of wildlife species.
- ATV travel on designated routes could lead to illegal off-route travel, which poses threats to rare plant populations through rutting, soil compaction, and trampling.

The level of detail in the effects evaluation varied by species (see Table 3) and was dependant on the habitat preferences/requirements of the species and the proximity of their occurrences to roads within the scope of this project. For example, effects to aquatic species and shoreline species were not evaluated in detail because no new roads [or road crossings over waterbodies] would be built under the TMR project. Furthermore, the CNNF implements the WDNR's Best Management Practices for Water Quality, and these BMP's have been shown to work (Shy & Wagner 2007). Impacts to water quality are evaluated in detail in the Hydrology Specialist Report.

Table 3. RAP Evaluation Criteria

Wildlife		
Risk	Risk score	Risk Criteria
Very Low Risk	0	Road is not present within ½ mile of a nesting, denning, or breeding site for TES wildlife.
Low Risk	1	Road lies within ½ mile of a nesting, denning, or breeding site for TES wildlife.
Moderate Risk	3	Road lies within 1320 feet of nesting, denning, or breeding site for TES wildlife.
High Risk	5	Road lies within 660 feet of a nesting, denning, or breeding site for TES wildlife.
Plants		
Very Low Risk	0	Road is not present within ½ mile of a documented TES plant occurrence.
Low Risk	1	Road lies within ½ mile of a documented TES plant occurrence.
Moderate Risk	3	Road lies within 1320 feet of a documented TES plant occurrence.
High Risk	5	Road lies within 660 feet of a documented TES plant occurrence.

Effects to many plant species were not evaluated in detail because the only occurrences of the species are more than 500 feet from any road that is open to motorized use, or none of the roads that are within 500 feet are within the scope of the TMR project (allowable access on them would not change). The 500 feet (152 m) distance was selected because it is the upper limit of the buffer distance stated in the guidelines of the CNNF Forest Plan (p.2-20) for maintenance or enhancement of habitat conditions surrounding RFSS occurrences. In the Roads Analysis Process (RAP), the proximity of RFSS occurrences to roads was considered in the risk assessment for each road and, in many cases, roads posing high risk to RFSS wildlife and plant species were excluded from consideration for increasing the allowable motorized use or were proposed for excluding motorized use altogether (see also Table 4).

Table 4. Determination of effects from the TMR Project on wildlife and plant species.

Species	Common Name	Evaluated in Detail?*	Alt. 1	Alt. 2	Alt. 3
Threatened and Endangered Species					
<i>Oxytropis campestris var. chartaceae</i>	Fassett's locoweed	Yes	No Effect	No Effect	No Effect
Regional Forester Sensitive Species					
Animals					
<i>Accipiter gentilis</i>	Northern goshawk	Yes	NI	BI	BI
<i>Acipenser fulvescens</i>	Lake sturgeon	No - 1	NI	NI	NI
<i>Ammodramus leconteii</i>	LeConte's sparrow	Yes	NI	NI	NI
<i>Bartramia longicauda</i>	Upland sandpiper	Yes	NI	NI	NI
<i>Buteo lineatus</i>	Red-shouldered hawk	Yes	NI	BI	BI
<i>Canis lupis</i>	Eastern timber wolf	Yes	NI	BI	BI
<i>Catharus ustulatus</i>	Swainson's thrush	Yes	NI	NI	NI

Species	Common Name	Evaluated in Detail?*	Alt. 1	Alt. 2	Alt. 3
<i>Chlidonia niger</i>	Black tern	No - 1	NI	NI	NI
<i>Gleptemys insculpta</i>	Wood turtle	Yes	NI	BI	BI
<i>Cygnus buccinator</i>	Trumpeter swan	No - 1	NI	NI	NI
<i>Dendroica cerula</i>	Cerulean warbler	Yes	NI	NI	NI
<i>Falcapennis canadensis</i>	Spruce grouse	Yes	NI	NI	NI
<i>Gomphus viridifrons</i>	Green-faced clubtail	No - 1	NI	NI	NI
<i>Haliaeetus leucocephalus</i>	Bald eagle	Yes	NI	BI	BI
<i>Incisalia henrici</i>	Henry's elfin butterfly	Yes	NI	BI	BI
<i>Lycaeides idas nabokovi</i>	Northern blue butterfly	Yes	NI	BI	BI
<i>Martes americana</i>	American marten	Yes	NI	BI	BI
<i>Moxostoma carinatum</i>	River redhorse	No - 1	NI	NI	NI
<i>Moxostoma valenciennesi</i>	Greater redhorse	No - 1	NI	NI	NI
<i>Notropis nogenus</i>	Pugnose shiner	No - 1	NI	NI	NI
<i>Oeneis chryxus</i>	Brown arctic	Yes	NI	NI	NI
<i>Ophiogomphus anomalus</i>	Extra-striped snaketail	No - 1	NI	NI	NI
<i>Ophiogomphus howei</i>	Pygmy snaketail	No - 1	NI	NI	NI
<i>Oporornis agilis</i>	Connecticut warbler	Yes	NI	NI	NI
<i>Phyciodes batesii</i>	Tawny crescent spot	Yes	NI	BI	BI
<i>Picoides arcticus</i>	Black-backed woodpecker	Yes	NI	NI	NI
<i>Pieris virginensis</i>	West Virginia white	Yes	NI	NI	NI
<i>Stylurus scudderii</i>	Zebra clubtail	No - 1	NI	NI	NI
<i>Tympanuchus phasianellus</i>	Sharp-tailed grouse	Yes	NI	BI	BI
<i>Venustaconcha ellipsiformis</i>	Ellipse mussel	No - 1	NI	NI	NI
Regional Forester Sensitive Species					
	Plants				
<i>Amerorchis rotundifolia</i>	Round-leaved orchis	No - 2	NI	NI	NI
<i>Arabis missouriensis var deamii</i>	Missouri rock cress	Yes	NI	BI	BI
<i>Asplenium trichomanes-ramosum</i>	Green spleenwort	Yes	NI	NI	NI
<i>Astragalus alpinus</i>	Alpine milk vetch	No - 1	NI	NI	NI
<i>Botrychium minganense</i>	Mingan's moonwort	Yes	NI	NI	NI
<i>Botrychium mormo</i>	Goblin fern	Yes	NI	BI	BI
<i>Botrychium oneidense</i>	Blunt-lobed grapefern	Yes	NI	BI	BI
<i>Botrychium rugulosum</i>	Ternate grapefern	Yes	NI	BI	BI
<i>Callitriche hermaphroditica</i>	Northern water-starwort	No - 1	NI	NI	NI
<i>Caloplaca parvula</i>	an ash-lowland lichen	No - 2	NI	NI	NI
<i>Calypso bulbosa</i>	Calypso orchid	No - 2	NI	NI	NI
<i>Carex assiniboinensis</i>	Assiniboine sedge	Yes	NI	BI	BI
<i>Carex backii</i>	Rocky Mountain sedge	Yes	NI	NI	NI
<i>Carex crawei</i>	Crawe's sedge	No - 2	NI	NI	NI
<i>Carex gynocrates</i>	Northern bog sedge	No - 2	NI	NI	NI
<i>Carex livida var radicaulis</i>	Livid sedge	No - 2	NI	NI	NI
<i>Carex michauxiana</i>	Michaux's sedge	No - 1	NI	NI	NI
<i>Carex sychnocephala</i>	Many-headed sedge	No - 1	NI	NI	NI
<i>Carex vaginata</i>	Sheathed sedge	No - 2	NI	NI	NI
<i>Ceratophyllum echinatum</i>	Spineless hornwort	No - 1	NI	NI	NI

Species	Common Name	Evaluated in Detail?*	Alt. 1	Alt. 2	Alt. 3
<i>Cynoglossum virginianum</i> var. <i>boreale</i>	Northern wild comfrey	Yes	NI	NI	NI
<i>Cypripedium arietinum</i>	Ram's head lady's slipper	No - 2	NI	NI	NI
<i>Diplazium pycnocarpon</i>	Glade fern	No - 3	NI	NI	NI
<i>Dryopteris expansa</i>	Spreading woodfern	Yes	NI	NI	NI
<i>Dryopteris filix-mas</i>	Male fern	No - 3	NI	NI	NI
<i>Dryopteris fragrans</i> var <i>remotiuscula</i>	Fragrant fern	Yes	NI	NI	NI
<i>Eleocharis olivacea</i>	Capitate spike-rush	No - 1	NI	NI	NI
<i>Eleocharis quinqueflora</i>	Few-flowered spike-rush	No - 1	NI	NI	NI
<i>Epilobium palustre</i>	Marsh willow-herb	No - 2	NI	NI	NI
<i>Equisetum palustre</i>	Marsh horsetail	No - 1	NI	NI	NI
<i>Eriophorum chamissonis</i>	Rusty cotton-grass	No - 2	NI	NI	NI
<i>Geum macrophyllum</i> var. <i>macrophyllum</i>	Large-leaved avens	Yes	NI	NI	NI
<i>Huperzia selago</i>	Fir clubmoss	Yes	NI	NI	NI
<i>Juglans cinerea</i>	Butternut	Yes	NI	NI	NI
<i>Juncus stygius</i>	Bog (moor) rush	No - 2	NI	NI	NI
<i>Leucophysalis grandiflora</i>	Large-flowered ground cherry	Yes	NI	NI	NI
<i>Littorella uniflora</i>	American shore-grass	No - 1	NI	NI	NI
<i>Malaxis brachypoda</i>	White adder's mouth	No - 2	NI	NI	NI
<i>Moehringia macrophylla</i>	Large-leaved sandwort	No - 3	NI	NI	NI
<i>Myriophyllum farwellii</i>	Farwell's water-milfoil	No - 1	NI	NI	NI
<i>Panax quinquefolius</i>	Ginseng	Yes	NI	BI	BI
<i>Parnassia palustris</i>	Marsh grass-of-parnassus	No - 1	NI	NI	NI
<i>Piptantherum canadensis</i>	Canada mountain rice-grass	Yes	NI	BI	BI
<i>Poa paludigena</i>	Bog bluegrass	No - 2	NI	NI	NI
<i>Polemonium occidentale</i> var. <i>lacustre</i>	Western Jacob's ladder	No - 2	NI	NI	NI
<i>Polystichum braunii</i>	Braun's holly fern	Yes	NI	BI	BI
<i>Potamogeton confervoides</i>	Algae-like pondweed	No - 1	NI	NI	NI
<i>Potamogeton hillii</i>	Hill's pondweed	No - 1	NI	NI	NI
<i>Pyrola minor</i>	Lesser wintergreen or small shinleaf	No - 2	NI	NI	NI
<i>Ranunculus gmelinii</i>	Small yellow water-crowfoot	No - 1	NI	NI	NI
<i>Rhynchospora fusca</i>	Brown beak-sedge	No - 2	NI	NI	NI
<i>Streptopus amplexifolius</i>	White mandarin	Yes	NI	NI	NI
<i>Tiarella cordifolia</i>	Foamflower	Yes	NI	NI	NI
<i>Usnea longissima</i>	Old Man's Beard	Yes	NI	NI	NI
<i>Vaccinium cespitosum</i>	Dwarf huckleberry	Yes	NI	BI	BI
<i>Valeriana uliginosa</i>	Marsh valerian	No - 2	NI	NI	NI
Likely-to-Occur Regional Forester Sensitive Species					
Animals					
<i>Plethobasus cyphus</i>	Bullhead mussel	No - 1	NI	NI	NI
<i>Somatochlora forcipata</i>	Forcipate emerald	No - 1	NI	NI	NI

Species	Common Name	Evaluated in Detail?*	Alt. 1	Alt. 2	Alt. 3
Likely-to-Occur Regional Forester Sensitive Species Plants					
<i>Cardamine maxima</i>	Large toothwort	No - 3	NI	NI	NI
<i>Carex lenticularis</i>	Shore sedge	No - 1	NI	NI	NI
<i>Disporum hookeri</i>	Fairy bells, Hooker's mandarin	No - 3	NI	NI	NI
<i>Eleocharis engelmannii</i>	Engelmann's spike-rush	No - 1	NI	NI	NI
<i>Listera auriculata</i>	Auricled twayblade	No - 1	NI	NI	NI
<i>Listera convallarioides</i>	Broad-leaved twayblade	No - 3	NI	NI	NI
<i>Petasites sagittatus</i>	Arrow lvd sweet colt's foot	No - 2	NI	NI	NI
<i>Platanthera flava var herbiola</i>	Pale-green orchid	No - 2	NI	NI	NI
<i>Potamogeton pulcher</i>	Spotted pondweed	No - 1	NI	NI	NI
<i>Pterospora andromeda</i>	Giant pinedrops	No - 3	NI	NI	NI
<i>Ranunculus lapponicus</i>	Lapland buttercup	No - 2	NI	NI	NI
<p>*Reasons a species was not evaluated in detail:</p> <ol style="list-style-type: none"> 1. The species is aquatic (or its most sensitive life stage is aquatic) or a shoreline-specialist and implementation of the project either does not affect the availability of motorized access in the Riparian Management Zone (Alternative 1) or reduces such access (Alternatives 2, 3). 2. Species occurs in lowland habitat and implementation of the project either does not affect the availability of motorized access in the lowlands (Alternative 1) or reduces such access (Alternatives 2, 3). 3. There are no known occurrences of the species on the CNNF <u>or</u> the known occurrences of the species on the CNNF are ≥ 500 ft from any road allowing vehicular traffic that is also within the scope of the project. Distance determined through GIS spatial analysis. <p>Determinations for Regional Forester Sensitive Species:</p> <ol style="list-style-type: none"> a) NI "No Impact" b) BI "Beneficial Impact" c) MINT "May impact individuals but not likely to cause a trend to federal listing or loss of viability" d) MILT "May impact individuals and likely to result in a trend to federal listing or loss of viability" 					

Fassett's Locoweed (*Oxytropis campestris var. chartaceae*)

Effects of Alternatives 1, 2 & 3

Fassett's Locoweed is a Federally Threatened species. It is known from two locations on the Washburn Ranger District. The species is adapted to lakes with fluctuating water levels and is vulnerable to displacement by non-native species in this narrow band of habitat. Although roads are potential sources of non-native species, there is only one road within 500 feet of one of the lakes. This road is a ML 2 road that will be open to highway-legal vehicles under Alternative 1, but will be unavailable for motorized use under Alternatives 2 and 3. At its nearest point, the lake (Lake A) is approximately 200 feet from this road.

The other lake (Lake B) has a few more roads within 500 feet of it (Table 5). Overall, there would be no increase in allowable motorized use within 500 feet of the Lake B under Alternative 1. Therefore, no increase in risk to Fassett's Locoweed is expected from this project. Under Alternatives 2 and 3, one road that is open to motorized use now would become unavailable to motorized use, and thereby reduce its potential to spread weeds to the shoreline of Lake B. This road is only approximately 0.10 miles in length, so the reduction in risk is minimal. Because none of the alternatives would increase open road density in the vicinity of Fassett's Locoweed sites, no direct or indirect effects are anticipated. Absent any direct or indirect effects, there would be no cumulative effects.

Table 5. Roads within 152.4 meters (500 ft) of Lake B.

<i>Road [ML]</i>	<i>Distance from lake at closest point</i>	<i>Existing use</i>	<i>Alt 1</i>	<i>Alt 2</i>	<i>Alt 3</i>
road A [ML 4]	50 m	HLV	HLV	HLV	HLV
road B [ML 4]	40 m	HLV	HLV	HLV	HLV
road C [ML 5]	25 m	HLV	HLV	HLV	HLV
road D [ML 2]	100 m	HLV	HLV	HLV	HLV
road E [ML 1]	55 m	closed	closed	closed	closed
road F [ML 2]	55 m	HLV	HLV	U	U

HLV = Highway-legal Vehicles only; U = Unavailable for motorized use

Determination (All Alternatives): No Effect

Bald Eagle (Haliaeetus leucocephalus)

Effects of Alternatives 1, 2 & 3

Although bald eagles are susceptible to collisions with vehicles when feeding on road-kills, this risk is primarily on high standard roads such as highways rather than on roads low standard roads (e.g. ML 2) like those within the scope of this project. For that reason, the motorized travel that would result from this project is not expected to have a direct effect on eagles. Eagles are expected to be sensitive to disturbance during the nesting season, however. This is the reason the CNNF Forest Plan (p.2-18) includes the guideline of closing or relocating FS-jurisdiction roads and trails within ¼ mile of nest sites (between Feb 15 and Aug 1) whenever feasible.

While those seasonal restrictions on roads would apply regardless, the TMR project can affect the amount of roads and trails available for motorized vehicle travel in the vicinity (¼ mile) and, in that way, could reduce the potential for disturbing eagles during the nesting season.

None of the alternatives increases the amount of roads available for motorized travel within ¼ mile of known nest sites. Alternatives 2 and 3 reduce the density of open roads and trails in this zone by more than half (Figure 1). Given that none of the alternatives would increase allowable motorized travel in the vicinity of eagle nests, no adverse impacts to eagle are anticipated under any of the alternatives of this project. Absent any direct or indirect effects, there would be no cumulative effects. The reduction in roads available for motorized use is assumed to provide some benefit to eagles through a lessening of the likelihood of disturbance of individuals.

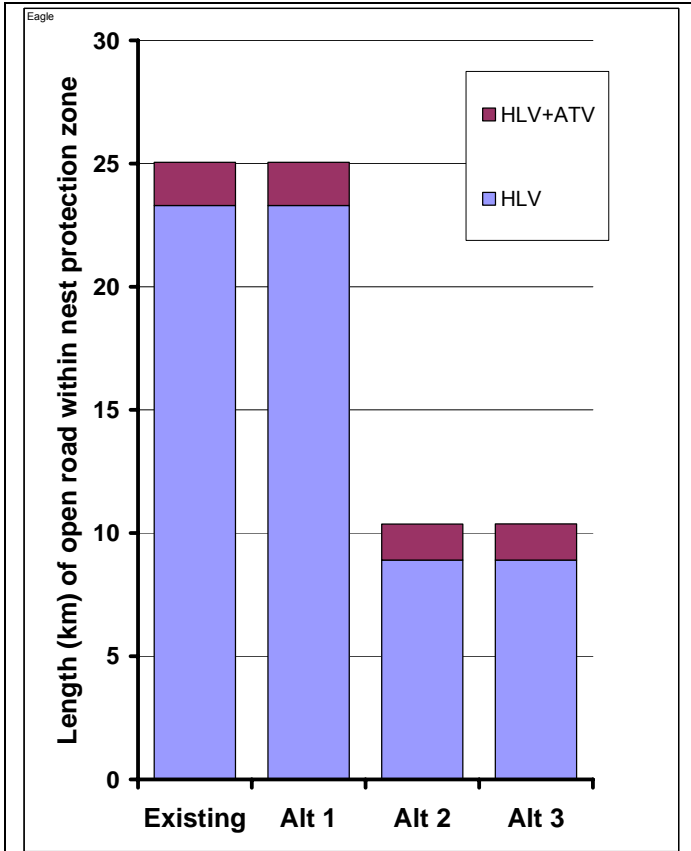


Figure 1. Length of road 1) open to motorized use, 2) within ¼ mile of Eagle nest locations and 3) within the scope of this project.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Gray Wolf (*Canis lupis*)

Effects of Alternatives 1, 2 & 3

Use of roads by people can affect wolves. First, wolf-vehicle collisions are a cause of mortality to wolves. This is not a risk on low standard roads such as the ML-2 roads that are within the scope of this project, however, because these roads cannot be driven at speeds which put wolves at risk. Second, open roads facilitate increased likelihood of human-wolf interactions such that wolves could be disturbed or persecuted (e.g. shot). Wolves may also be particularly sensitive to human interference at den and rendezvous sites, but few of these locations have been identified. Therefore, road access changes are analyzed at the scale of wolf pack territories (within which den and rendezvous would be located). For those den and rendezvous sites that are known, open road density within 330 feet of them would not increase under any of the action alternatives per Forest Plan direction (USFS 2004, p 2-19).

Under Alternative 1, the mileage of open roads within wolf pack territories would not change from the existing condition. Under Alternative 2, approximately half of the roads within the wolf pack territories and within the scope of this project would be made unavailable to any motorized use (consequently lowering open road density in wolf pack territories) (see Figure 2). Alternative 3 would also result in a reduction in the mileage of open roads within wolf pack territories, but to a slightly lesser degree than alternative 2 (Figure 2).

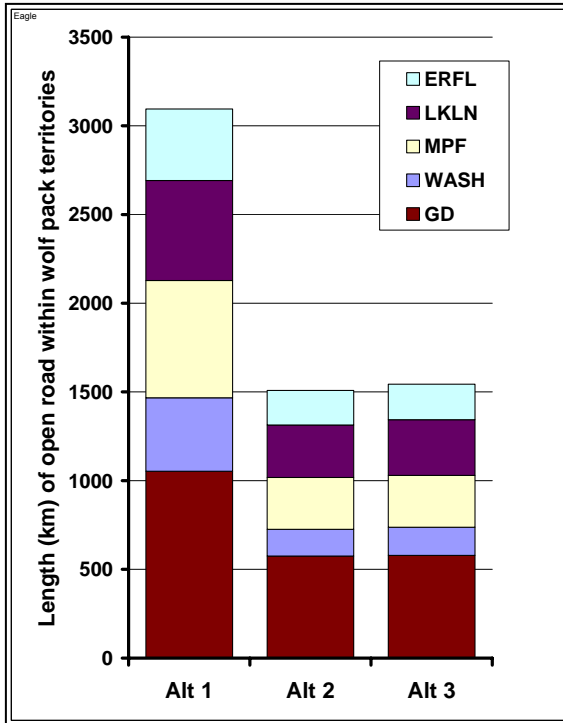


Figure 2. Length of road 1) open to any motorized use, 2) within 2007 wolf pack territories and 3) within the scope of this project.

Open roads enable people to interact with wolves and these interactions may affect wolves. All alternatives maintain some open roads in wolf pack territories, which are nearly ubiquitous on the Chequamegon landbase and are becoming more prevalent on the Nicolet landbase. Alternative 1 would result in no change in the amount of roads available for motorized use within pack territories therefore the impacts of road use would not be increased in magnitude or extent over that which are occurring now under this alternative. Under Alternatives 2 and 3, the amount of roads available for motorized use within wolf pack territories would decrease and this reduction could decrease the frequency of human/wolf interaction (to the benefit of wolves).

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

American Marten (Martes americana)

Effects of Alternatives 1, 2 & 3

American marten are known from both the Chequamegon and Nicolet landbases of the CNNF. The two populations are the result of reintroduction efforts in the 1970s and 1980s, and both populations have been studied intensively in the last decade. Marten in Wisconsin prefer mature forest conditions. Collectively, telemetry, mark-recapture, genetic sampling, winter track observations, and road kill collections indicate that higher standard roads (ML 3, 4 and 5) can be dangerous for marten to cross because of the risk of vehicle collisions. Such roads, particularly paved highways, may present dispersal barriers to martens (though not an impenetrable ones). Motorized use of lower standard roads [ML 1 and 2 roads] poses much less of a risk of vehicle collisions; these types of roads are much less of a barrier to movement of marten. Because no higher standard roads [ML 3-5] would be created through this project and no lower standard roads would be upgraded to higher standards, there is little potential for this project to affect marten.

Nonetheless, marten have the potential to be disturbed by motorized use on roads; therefore, open road density within marten home ranges is used as a proxy measure for the impact of travel management on marten on the CNNF (see Figure 3). While none of the alternatives increase road density in marten home ranges, alternatives 2 and 3 both substantially reduce the mileage of roads available for motorized use within occupied marten territories from both the Chequamegon and Nicolet populations. Such reductions in the amount of roads allowing motorized use within marten territories is expected to result in reduced risk of disturbing marten. In conclusion, Alternative 1 would not result in any detrimental impacts to marten, and alternatives 2 and 3 would likely have a beneficial effect on marten.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

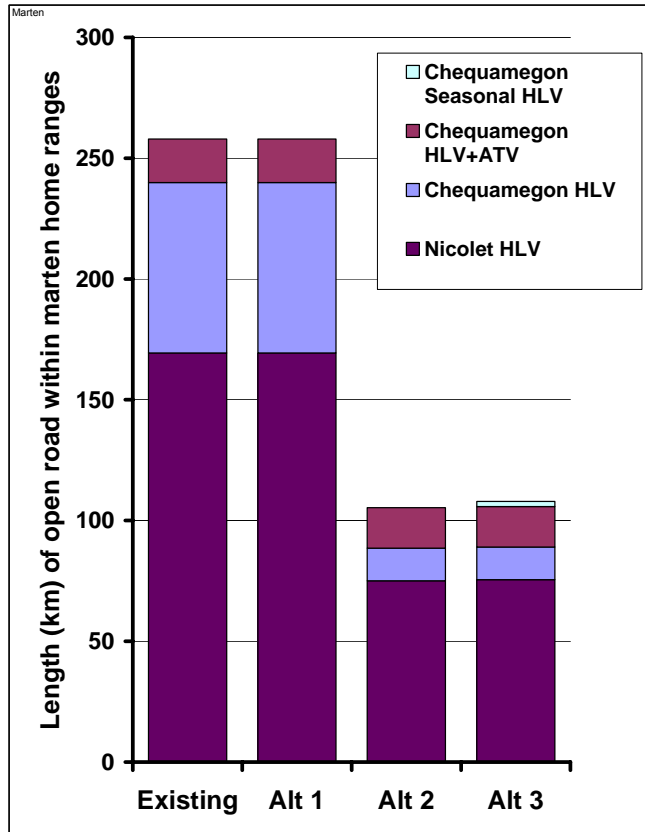


Figure 3. Length of road 1) open to motorized use, 2) within the marten home ranges and 3) within the scope of this project. The Chequamegon and Nicolet marten populations are separated (see legend).

Northern Goshawk (*Accipiter gentilis*)

Effects of Alternative 1, 2 & 3

Goshawk are found throughout the CNNF. No goshawk habitat will be manipulated in this project. No new roads would be built and no closed roads would be opened under this project. Goshawks are unlikely to forage along roads, except low standard two-track roads where canopy cover over the road exists. Goshawk have been shown to use such road and trail corridors as flyways. Many of these types of roads are within the scope of this project. Goshawk use of roads and trails aside, motorized use of roads does not provide benefits to goshawks. During the nesting season, goshawk are sensitive to disturbance in the vicinity of their nest. They will fiercely defend their nest area from invaders and motorized use of roads near their nests could have an adverse effect on nesting goshawk and/or the success of their reproductive effort. For this reason, the CNNF Forest Plan includes the following guideline (p.2-21):

Close roads and trails under Forest Service jurisdiction to vehicular traffic within 330 ft of a nest site from February 15 to August 1 unless no feasible alternatives exist and use can be justified.

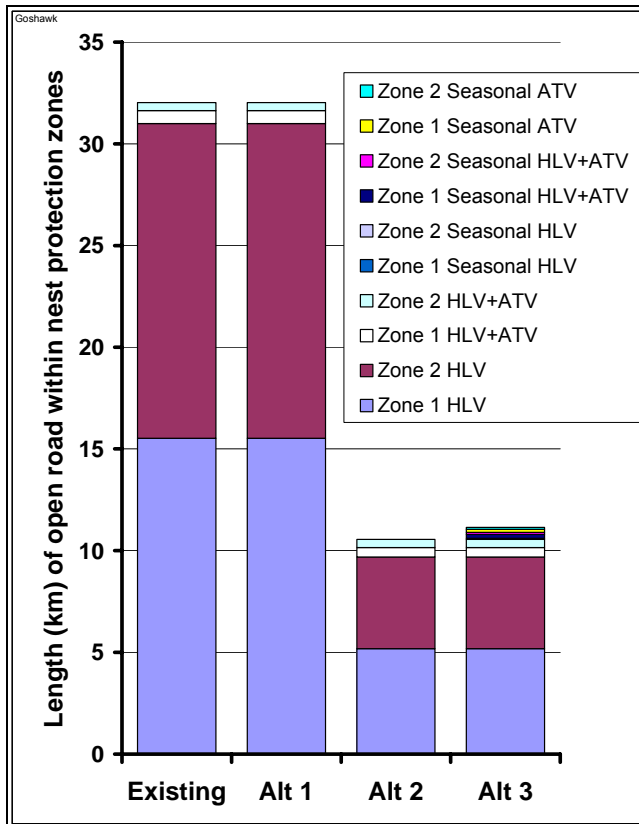


Figure 4. Length of road 1) open to motorized use, 2) within the nest protection zones surrounding goshawk nests and 3) within the scope of this project. Zones 1 and 2 refer to the primary and secondary nest protection zone provided in the Forest Plan.

Given this, it is assumed that an increase in the allowable motorized use of roads in the vicinity of goshawk nests could have an effect on goshawk and maintenance or a decrease in road use near goshawk nests could have no effect or, perhaps, a beneficial effect on goshawk. Numerous factors affect goshawk behavior/nesting success. Relative to predation, prey availability, and nesting habitat availability, changes in the allowable motorized use on existing open roads is probably much less important. Nonetheless, that is the only on-the-ground condition that this project would impact. In this project, approximately 32 km of roads in the vicinity of goshawk nests were considered for re-designation of allowable motorized use. Under Alternative 1, all of those roads would continue to allow the same level of motorized access as they do currently (Figure 4). Under alternatives 2 & 3, motorized access adjacent to goshawk nests would be reduced by two thirds. Such reductions in access under Alternatives 2 & 3 would be expected to lessen the likelihood of disturbance of nesting goshawks, which may benefit the species.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Upland Sandpiper (Bartramia longicauda)

Effects of Alternative 1, 2 & 3

Upland sandpiper is a grassland specialist bird with confirmed occurrences on the Eagle River District and the Washburn District. No upland sandpiper habitat will be affected by the project. This species is not particularly sensitive to the existence or use of roads within its habitat. Instead, the primary threats to the species are loss of open land habitat through development or afforestation or degradation of its habitat through extensive grazing or row-cropping (USDA 2003). Given this, the designation of allowable uses on existing roads in upland sandpiper habitat is not expected to have any effect on upland sandpipers. Absent any direct or indirect effects, there would be no cumulative effects.

Determination (All Alternatives): No Impact

Red-shouldered Hawk (Buteo lineatus)

Alternative 1, 2 & 3

Direct and Indirect Effects

Red-shouldered hawk are found throughout the Nicolet portion of the CNNF, as well as on the Medford-Park Falls Ranger District. Although historic records of red-shouldered hawk are known from the Great Divide District, no active nests are known from the Great Divide or Washburn Ranger Districts. No red-shouldered hawk habitat would be manipulated in this project. No new roads would be built and no closed roads would be opened under this project. During the nesting season, red-shouldered hawks may be sensitive to disturbance in the vicinity of their nest. For this reason, the CNNF Forest Plan includes the following guideline (p.2-21):

Close roads and trails under Forest Service jurisdiction to vehicular traffic within 330 ft of a nest site from February 15 to August 1 unless no feasible alternatives exist and use can be justified.

Given this, it is assumed that an increase in the allowable motorized use of roads in the vicinity of red-shouldered hawk nests could have an effect on the species and maintenance or a decrease in road use near goshawk nests could have no effect or, perhaps, a beneficial effect on the species. In this project, approximately 44 km of roads in the vicinity of known nests were considered for re-designation of allowable motorized use. Under Alternative 1, all of those roads would continue to allow the same level of motorized access as they do currently (Figure 5). Under alternatives 2 & 3, motorized access adjacent to red-shouldered hawk nests would be reduced by half (Figure 5). Such reductions in access under Alternatives 2 & 3 would be expected to lessen the likelihood of disturbance of nesting red-shouldered hawks, which may benefit the species.

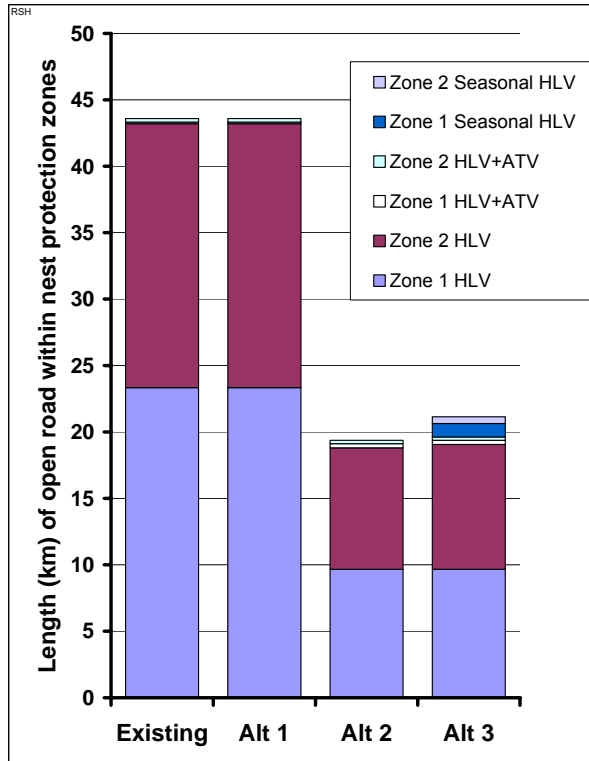


Figure 5. Length of road 1) open to motorized use, 2) within the nest protection zones surrounding red-shouldered hawk nests and 3) within the scope of this project. Zones 1 and 2 refer to the primary and secondary nest protection zone provided in the Forest Plan.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Noetropical Migrant Bird RFSS

Effects of Alternatives 1, 2 & 3

Connecticut Warbler (*Oporornis agilis*), Swainson’s Thrush (*Catharus ustulatus*), Cerulean Warbler (*Dendroica cerulea*) and LeConte’s Sparrow (*Ammodramus leconteii*) are all migratory bird species with a portion of their breeding ground in the Chequamegon-Nicolet National Forest. They winter in the South and/or Central America. None of these species nest in roads but road corridors but roads generally create detrimental edge effects to nesting songbirds such as increased risk of predation or nest-parasitism near roads.

Birds are at risk of mortality at roads and such casualties may be underestimated in the literature (Forman et al. 2003, p115) but the roads within the scope of the TMR project (largely ML 2) are of such low standard that vehicle speeds on these roads would not be great enough to result in many, if any, fatal vehicle-bird collisions. Consequently, these bird species are unlikely to be directly affected by the designations of allowable motorized vehicle use on the existing road

system of the CNNF. Vehicle disturbance and traffic noise, if they have more of an impact than is currently realized, would be assumed to be directly related to open road densities.

No habitat for these RFSS would be manipulated by this project, and no new roads would be built that could either remove habitat or fragment existing blocks of contiguous habitat for these species. Individuals of these RFSS bird species are not expected to be impacted by vehicles because these species are not known to prefer roads to meet foraging, mating or nesting needs. Traffic on the roads within the scope of this project is not expected to have a measurable or meaningful effect on these species but the risk of any such effect would be expected to relate to the availability of roads open to motorized uses. Overall, Alternative 1 provides the highest amount of roads available to motorized vehicle use, followed by Alternatives 3 and 2, in that order (see Table 1). Absent any direct or indirect effects, there would be no cumulative effects.

Determination (All Alternatives): No Impact

Black-backed Woodpecker (Picoides arcticus)

Effects of Alternative 1, 2 & 3

Black-backed woodpecker is a highly mobile species that is very efficient at locating suitable habitat (dead and dying conifer stands) within the landscape. No habitat will be lost or gained for this species as a result of this project and it is unlikely that black-backed woodpeckers are sensitive to vehicular traffic such that they avoid stands of suitable habitat if they are adjacent to travel corridors. Furthermore, black-backed woodpeckers would not be at increased risk of being struck by vehicles within their habitat because no new travel corridors will be created in this project and no roads closed to vehicular traffic will be made open to motorized use as a result of this project. Absent any direct or indirect effects, there would be no cumulative effects.

Determination (All Alternatives): No Impact

Sharp-tailed grouse (Tympanuchus phasianellus)

Effects of Alternative 1, 2 & 3

Sharp-tailed Grouse are known from two areas on the CNNF: the Moquah Barrens on the Washburn District and the Riley Lake Wildlife Management Area on the Park Falls District. These two areas are the two Management Area 8C areas on the Forest (USFS 2004, pp3-39 to 3-42). Like the upland sandpiper, sharp-tailed grouse are open lands specialists and are not particularly sensitive to the presence or use of roads within their habitat. With any open road, however, there is a chance that the users leave the road and travel cross-country and directly or indirectly affect individuals but this risk is always present. It is possible that sharp-tailed grouse or other open-lands specialist species may use ephemeral open habitat in MA 4C; therefore, the effects of the project in this MA are also considered in this analysis.

Under all of the alternatives, there would be no increase in amount of roads available to motorized use within MA 8C or MA 4C areas on the CNNF. Alternative 1 proposes that the existing motorized use of existing roads where sharp-tailed grouse may occur (open-lands habitat) would continue to be allowed but under alternatives 2 and 3 greatly reduce the length of road available for motorized use in these areas (Figure 6).

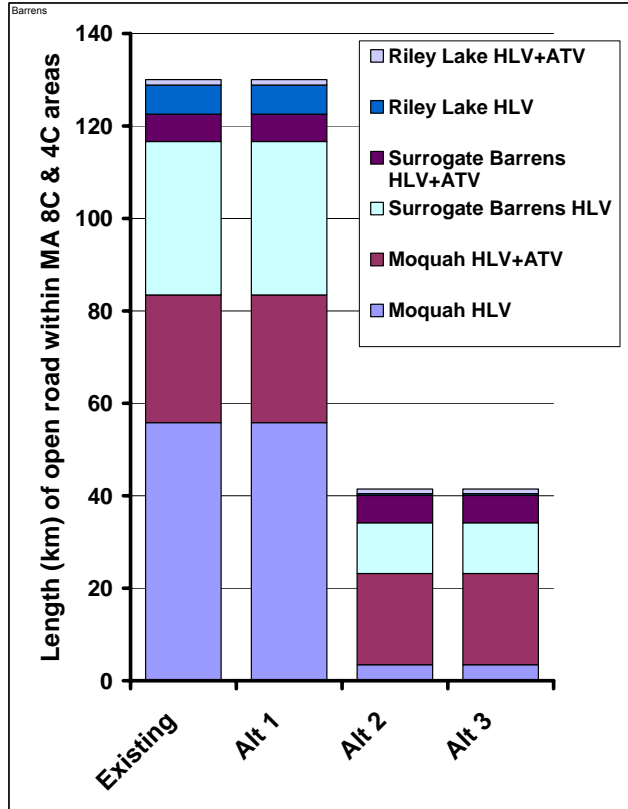


Figure 6. Length of road 1) open to motorized use, 2) within the barrens (MA 8C) and surrogate barrens (MA 4C) and 3) within the scope of this project.

Maintaining the allowable use on currently existing roads (under Alternative 1) or reducing the amount of road available for motorized use in sharp-tailed grouse habitat under alternatives 2 and 3 would not result in any detrimental effects on the species. The reduction in allowable motorized access in sharp-tailed grouse habitat under alternatives 2 and 3 would be expected to provide some benefit to the species by reducing disturbance of the species in their habitat (e.g. leks).

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Spruce Grouse (*Falcipennis canadensis*)

Effects of Alternatives 1, 2 & 3

Spruce grouse are found on the CNNF in lowland conifer and adjacent upland short-needled conifer habitat. They are a non-game species but are occasionally taken accidentally by ruffed grouse hunters. Under this project, no habitat is proposed to be affected but motorized access (highway legal vehicles and/or ATVs) to this species' habitat may affect the likelihood of incidental take of these birds by grouse hunters (more access → greater likelihood of incidental take).

On the Chequamegon side of the CNNF, no increase in the miles of open roads would occur in spruce grouse habitat complexes under any of the alternatives. Under alternative 1, the open road density within spruce grouse habitat complexes would remain as they are now. Under Alternatives 2 and 3, a small amount (~800 m) of open road would be unavailable for motorized use from reducing portions of three roads to ML-1 status. These roads are currently open to motorized use now and would remain so under Alternative 1. Two of these roads are within spruce grouse habitat complexes with records of spruce grouse occurrences.

On the Nicolet side of the CNNF, no increase in the miles of open roads would occur in spruce grouse habitat complexes under any of the alternatives. Under Alternative 1, open road access in spruce grouse habitat on the Nicolet landbase would remain the same as the existing condition. Under Alternatives 2 and 3, open road density within spruce grouse habitat would decrease because some ML 2 roads open to motorized use now would become unavailable to motorized use in the future (14 roads in Alt 2 and 12 road in Alt 3). On the Nicolet landbase, no ML-2 roads within spruce grouse habitat would be reduced to ML-1 status under any of the alternatives.

Because there would be no increase in the open road density in spruce grouse habitat (occupied or unoccupied), no effects to spruce grouse from the project are anticipated. Forestwide, although open road density in suitable habitat would be reduced under alternatives 2 and 3, relative to the existing condition and Alternative 1, these reductions are too small to meaningfully reduce the likelihood of incidental harvest of spruce grouse. Absent any direct or indirect effects, there would be no cumulative effects.

Determination (All Alternatives): No Impact

Wood Turtle (Gleptemys insculpta)

Effects of Alternatives 1, 2 & 3

There are several known waterways on the Chequamegon landbase with documented Wood Turtle occurrences: Yellow River, Jump River, Elk River, and possibly SF Flambeau River on Medford/Park Falls RD; Morgan Creek, Brunsweler River, and Spring Brook on the Great Divide RD. On the Nicolet landbase, wood turtle mark-recapture research has been conducted since 1991 on the Lakewood/Laona RD and there are four known nesting locations. There are fewer locations on the Eagle River/Florence RD, with 6 documented observations and one suspected nesting site just outside of the CNNF boundary.

Many of the observations of the wood turtle on the CNNF have been along roads. Wood turtle are vulnerable to vehicle collisions; therefore, open roads within 500 feet of turtle occurrences and nest locations can present a risk to wood turtles. In addition, wood turtles are sometimes collected (illegally) to become pets. Although home ranges of wood turtle are usually small (<25 acres) and are centered on the stream, individuals are known to disperse up to a mile or more (Bowen & Gillingham 2004, pp. 9-10).

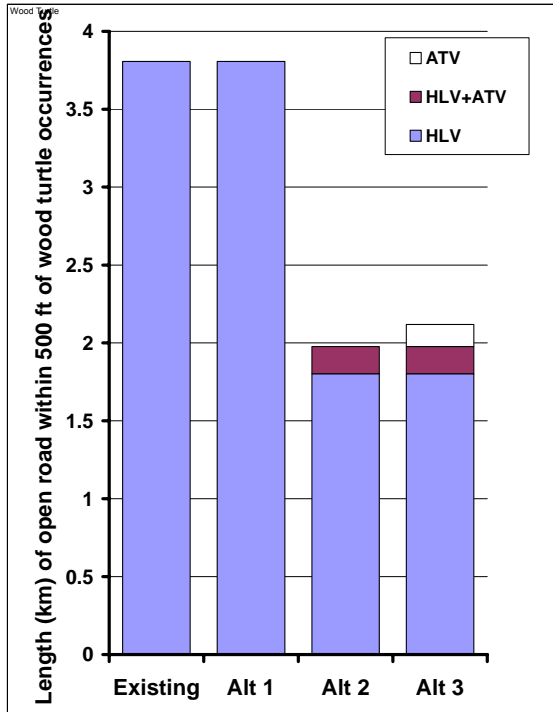


Figure 7. Length of road 1) open to motorized use, 2) within 500 feet of locations where wood turtles have been reported and 3) within the scope of this project.

Many of the open roads where wood turtle have been observed are not within the scope of this project; they are higher standard road (ML -3, 4 and 5, gas-tax roads and highways). For those roads within the scope of this project, there are differences among the alternatives in the amount that would be available for motorized use. Alternative 1 would keep the same level of allowable access that exists now (Figure 7). Alternatives 2 and 3 both reduce the length of roads allowing motorized travel by approximately half. For the roads in the vicinity of wood turtle sightings, Alternatives 2 and 3 do not differ except for the designation of road A (currently an ML-2 road) as an ATV route under Alternative 3 only. None of the alternatives increase the amount of open road miles within the vicinity of wood turtle occurrences therefore no adverse effects of the project are expected under any of the alternatives. Alternatives 2 and 3 would reduce the amount of roads with motorized use and would lessen the likelihood of traffic-related mortality to wood turtle. In addition, the likelihood of illegal collection of wood turtles might be reduced by decreasing the amount of roads allowing motorized travel where wood turtles have been observed.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Henry's Elfin (Incisalia henrici)

Effects of Alternatives 1, 2 & 3

The species is known only from the Riley Lake area of the Park Falls District. There are few roads within lowland shrub complex in which the species was found. All would remain available to highway legal vehicles under Alternative 1 but one would remain available to highway-legal vehicles under Alternatives 2 & 3. Use of motorized vehicles on these roads poses a risk to butterflies puddling on the road. Butterflies sip up minerals from puddles (and sometimes scat). Such minerals are otherwise limited in their diet. Motorized use of roads maintains them in an open condition and thereby maintains puddling opportunities but also places butterflies at risk of being crushed by vehicles. Overall, no increase in the amount of roads open to motorized use would result from any of the alternatives therefore no detrimental impacts of the project are expected. Absent any direct or indirect effects, there would be no cumulative effects.

Under Alternatives 2 and 3, making roads near the Riley Lake area occurrence could reduce the risk of traffic-related mortality to the species.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Tawny Crescent (Phyciodes batesii)

Effects of Alternatives 1, 2 & 3

Tawny Crescent is a barrens specialist butterfly. It is known from the Waubee Lake area of the Lakewood District, two locations on the Medford District and the Moquah Barrens of the Washburn Ranger District. Neither of the occurrences on the Medford District are within 500 feet of a road within the scope of this project although one of the occurrences is within 60 m of an ML 3 road that will remain open to motorized use under all alternatives. Of the two Waubee Lake area occurrences, one is within 50 meters of an ML-2 road that is open now and would remain open to motorized use under alternative 1. Under Alternatives 2 and 3, this road would be unavailable for motorized use. The other is within 115 meters of another ML-2 road that would also remain open to highway legal vehicles under all alternatives.

Approximately 40 occurrences of Tawny Crescent were recorded in surveys on the Washburn district. Many of the observations were along roads (both open and closed). Tawny Crescents, like other butterflies, are known to puddle and may be using these roads for their puddles. This use places them at risk of being crushed by vehicles on the roadway or flying in it. Roads are vectors for weed spread and spotted knapweed, in particular, poses a threat to the barrens community. Although tawny crescent adults may use the floral resources of knapweed, it is not a suitable host to the species. Its larval hosts (suspected to be *Aster* spp.) could be displaced by non-native weed species such as knapweed.

Under all of the alternatives, there would be no increase in the allowable motorized use of roads in the Moquah barrens (MA 8C) and surrogate barrens area (MA 4C) of the Washburn District (Figure 6) therefore there would be no increase in the likelihood of road-related butterfly-mortality and no increased threat of weed spread as a result of any of the action alternatives. Absent any direct or indirect effects, there would be no cumulative effects. Under Alternatives 2 and 3, however, the reduction in roads available for motorized use may have a beneficial effect on

Tawny Crescent because of the reduced likelihood of spreading weeds into their habitat and the reduced likelihood of crushing them with vehicles on roadways.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Chryxus Arctic (Oeneis chryxus)

Effects of Alternatives 1, 2 & 3

The species is known from the CNNF only from the Washburn District. Like the other butterflies with barrens affinities (e.g. Henry's Elfin & Tawny Crescent), most of the observations are adjacent to roads (Table 6). None of the alternatives propose any change to the existing allowable motorized use of these roads. Although *Chryxus* may puddle along open roads and such behavior puts them at risk of being crushed by vehicles, this risk is not elevated under any of the alternatives. Roads are vectors for weed spread, however, and spotted knapweed in particular poses a threat to the barrens community. Although *Chryxus* adults may use the floral resources of knapweed, it is not a suitable host to the species. Its larval hosts (grasses and possibly sedges) are generally less susceptible to displacement by NNIS than forbs, but invasion of barrens habitat by exotic weeds is expected to be detrimental to the species.

Under all of the alternatives, there would be no increase in the allowable motorized use of roads in the Moquah barrens (MA 8C) and surrogate barrens area (MA 4C) of the Washburn District (see Figure 6); therefore, there would be no direct or indirect effects to butterflies using roads and no increased risk of weed spread as a result of any of the action alternatives. Absent any direct or indirect effects, there would be no cumulative effects.

Table 6. Roads along which *Chryxus Arctic* have been observed.

<i>Road</i>	<i>ML</i>	<i>Existing Access</i>	<i>Alt 1</i>	<i>Alt 2</i>	<i>Alt 3</i>
Road A	2	HLV+ATV	HLV+ATV	HLV+ATV	HLV+ATV
Road B	4	HLV	HLV	HLV	HLV
Road C	5	HLV	HLV	HLV	HLV
Road D	5	HLV	HLV	HLV	HLV

Determination (All Alternatives): No Impact

West Virginia White (Pieris virginienensis)

Effects of Alternatives 1, 2 & 3

West Virginia Whites are known only from the Nicolet landbase of the CNNF. Most of the occurrences of the species are along roads which they use as flyways. The flight period for the species is April and May when motorized use of roads on the CNNF is much less than during the summer and fall. Thus, although motorized use of roads does pose a threat to individuals flying in the roadway or puddling on the roadbed, this threat is largely mitigated through timing of the use of roads by the public.

All of the West Virginia White occurrences on the CNNF (n=21) are along either a ML 4/5 road or a closed road (ML 1). Under all of the alternatives, the ML 4/5 roads will remain open to

motorized travel and the ML 1 roads will remain closed to motorized travel. Consequently, West Virginia Whites from areas of known occurrences will not be differentially affected by any of the alternatives of this project. West Virginia Whites can be affected by motorized use on roads but this project would have no effect on the level of allowable motorized use on roads from where this species is known. Absent any direct or indirect effects, there would be no cumulative effects.

Determination (All Alternatives): No Impact

Green Spleenwort (*Asplenium trichomanes*)

Effects of Alternatives 1, 2 & 3

Six occurrences are known from the Chequamegon-Nicolet National Forest; four of those are known from the Penokee range of the Great Divide District and those occurrences are on an industrial forest inholding and are over 500 ft from the nearest Forest Service road. The remaining two occurrences are from the Brule River Area of the Florence Ranger District. One of these occurrences is 15 m from a closed road. Neither is within 300 m of the nearest open Forest Service road. Because none of the occurrences of the species on the CNNF are within 500 ft (152.4m) of an open road, there would be no impact of the project on this species. Absent any direct or indirect effects, there would be no cumulative effects.

Determination (All Alternatives): No Impact

Missouri Rockcress (*Arabis missouriensis var deamii*)

Effects of Alternatives 1, 2 & 3

Forty-six occurrences are known from the CNNF; all but two of the occurrences are from the Lakewood Ranger District.

Table 7. Missouri Rockcress occurrences on the CNNF in relation to roads considered for changing designated motorized use under this project.

<i>District</i>	<i>Observation ID</i>	<i>Open roads within 152 m?*</i>	<i>Current</i>	<i>Alt 1</i>	<i>Alt 2</i>	<i>Alt 3</i>
LKLN	1	road A [ML 2]	HLV	HLV	U	U
LKLN	2	road B [ML 2]	HLV	HLV	U	U
LKLN	3	road C [ML 2]	HLV	HLV	U	U
		road D [ML 2]	HLV	HLV	U	U
		road E [ML 2]	HLV	HLV	U	U
		road F [ML 2]	HLV	HLV	U	U
LKLN	4	road G [ML 2]	HLV	HLV	U	U
LKLN	5	road H [ML 2]	HLV	HLV	U	U
LKLN	6	road I [ML 2]	HLV	HLV	U	U
LKLN	7	road J [ML 2]	HLV	HLV	U	U
LKLN	8	in opening with large leafy spurge and knapweed infestation				
		road K [ML 2]	HLV	HLV	U	U

*152.4 meters = 500 feet

The two outliers are from the Medford Ranger District, and they are approximately 140 m from each other on opposite edges of a gravel pit infested with spotted knapweed. The opening is

traversed by a road, which is currently available for motorized use. All of the open roads in the vicinity of Missouri Rockcress occurrences that were also considered for re-designating allowable motorized use would be made unavailable under alternatives 2 and 3, and would remain available under alternative 1 (Table 7). Consequently, no detrimental effects would result from implementing any of the alternatives of this project, and alternatives 2 & 3 would lessen the risk of adverse impacts to the species. Absent any adverse effects of the project, there would be no cumulative effects.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Mingan's Moonwort (Botrychium minganense)

Effects of Alternatives 1, 2 & 3

Seven occurrences of Mingan's Moonwort are known from the CNNF (three on the Great Divide District, two locations on the Washburn District, and one each on the Eagle River/Florence and Lakewood/Laona District). The species is found in mesic hardwood habitat. Only four open roads are within 500 ft of known occurrences of the species on the CNNF. Two of them are roads that were not within the scope of this project and would remain open to highway-legal vehicles under all of the alternatives. The remaining two are both ML-2 roads that are open to highway legal vehicles now, and would remain so under Alternative 1. Under alternatives 2 and 3, however, these two roads would become unavailable to motorized use under this project. Overall, under Alternative 1, the existing amount of motorized access in the vicinity (500 ft) of occurrences of the species would remain unchanged. Under Alternatives 2 and 3, motorized access would be reduced; therefore, no negative effects of any of the alternatives are anticipated. Absent any direct or indirect effects of the project, there would be no cumulative effects.

Determination (All Alternatives): No Impact

Goblin fern (Botrychium mormo)

Effects of Alternatives 1, 2 & 3

Goblin fern have been located on all of the Ranger Districts of the CNNF except the Washburn Ranger District. There are currently over 100 occurrences. Although this project will not affect any habitat (northern mesic hardwood forest with a basswood component) of goblin fern, motorized access in the vicinity of occurrences is assumed to correlate with the likelihood of spread of exotic species that could displace the species or adversely alter goblin fern habitat. Under Alternative 1, the existing amount of motorized access in the vicinity (500 ft) would remain (Figure 8). Under Alternatives 2 and 3, motorized access would be reduced; roughly half of the length of road segments within the scope of this project that are also in the vicinity of Goblin Fern occurrences would be made unavailable to motorized access (Figure 8).

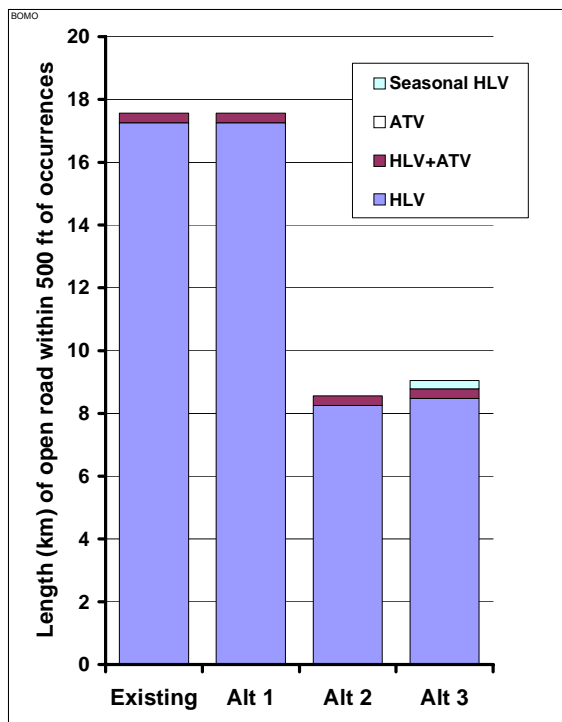


Figure 8. Length of road 1) open to motorized use, 2) within 500 ft of Goblin Fern occurrences and 3) within the scope of this project.

No change from the existing condition in the amount (km) of roads allowing both highway legal vehicles and ATVs would result under any of the alternatives. No ATV-only roads currently exist in the vicinity of goblin fern occurrences, and none are proposed under any of the alternatives. Overall, maintenance in the allowable motorized use in the vicinity of goblin fern occurrences on the CNNF is expected to have no effect on goblin fern. Under Alternatives 2 and 3, reductions in the amount of roads available for motorized use in the vicinity of occurrences of the species would be expected to lessen the risk of traffic-related impact to the species.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Blunt-lobed Grapefern (Botrychium oneidense)

Effects of Alternatives 1, 2 & 3

Blunt-lobed grapefern prefers moist, shady deciduous woods with somewhat acid soils, hummocks in swamps and often grows with other moonworts and grapeferns in a "genus community". No habitat for the species would be affected by this project. The species has been documented on both sides of the Forest: on the Great Divide (2 sites), Laona/Lakewood (10 sites), and Eagle River/Florence (7 sites) Ranger Districts. It has also been located in Price and Taylor Counties, but not within the Forest boundary.

The level of allowable use of roads in the vicinity of occurrences of this species is assumed to correlate with the likelihood of spread of exotic species that could displace the species or adversely alter its habitat. Under Alternative 1, the existing amount of motorized access in the vicinity (500 ft) of known occurrences would remain unchanged (Figure 9). Under Alternatives 2 and 3, motorized access would be reduced; roughly half of the length of road segments within the scope of this project that are also in the vicinity of *Botrychium oneidense* occurrences would be made unavailable to motorized access (Figure 9).

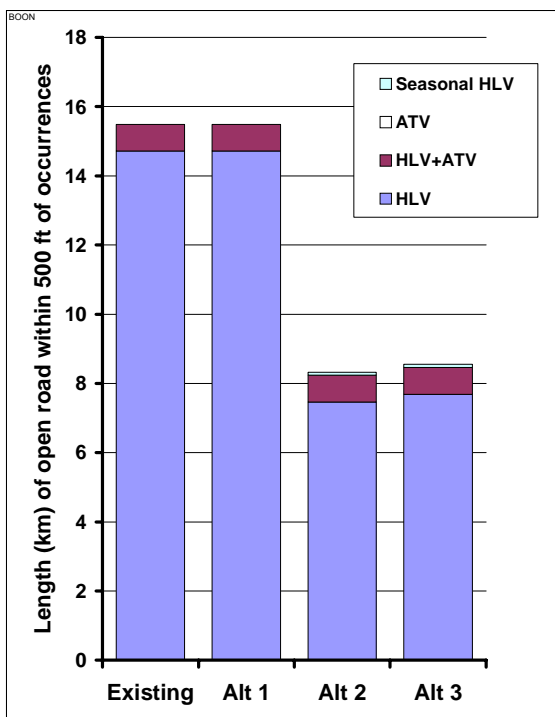


Figure 9. Length of road 1) open to motorized use, 2) within 500 ft of Blunt-lobed Grapefern occurrences and 3) within the scope of this project.

No ATV-only roads currently exist in the vicinity of Blunt-lobed Grapefern occurrences, and none are proposed under any of the alternatives. There are some roads in the vicinity of occurrences of this species that allow both highway legal vehicles and ATVs, but the amount of such routes would remain unchanged under all alternatives. Overall, maintenance or a reduction in the allowable motorized use in the vicinity of Blunt-lobed Grapefern occurrences on the CNNF is expected to have no effect. Absent any direct or indirect effects of the project, there would be no cumulative effects.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Ternate Grapefern (*Botrychium rugulosum*)

Effects of Alternatives 1, 2 & 3

Ternate grapefern have been documented on both the Chequamegon and Nicolet sides of the Forest: Eagle River/Florence Ranger District (2 sites), Great Divide Ranger District (3 sites) and Washburn Ranger District (14 sites) Ranger Districts. Habitat for the species includes sandy acidic soils, particularly depressions and lake edges with no overstory or with a sparse canopy. It may also be found on sandy shores and areas of known past disturbance, especially burned areas, old log landings, old apple orchards, brushy old fields and second-growth upland woods.

There are eight occurrences of this species in the vicinity (within 500 ft) of roads within the scope of this project. All of these roads are open to highway-legal vehicles now and would remain so under Alternative 1. One of these roads also allows ATV use now, and this use would continue under Alternative 1. Under Alternatives 2 and 3, this road would remain available to highway-legal vehicles and ATVs (Table 8). Alternatives 2 and 3 do differ from Alternative 1, however, in the allowable motorized use on the rest of the roads such that Alternatives 2 and 3 make unavailable all but one of them unavailable for motorized use (Table 8). One of these roads has several occurrences of non-native plant species (St. Johns Wort, burdock and white sweet clover) known along it; making it unavailable to motorized use is expected to lessen the risk of spread of these weed species into Ternate Grapefern habitat.

Without any increase in the allowable motorized use in the vicinity of known occurrences, this project would not affect the species under any of the alternatives. Under alternatives 2 and 3, the reduction in motorized use in the vicinity of occurrences of the species could lessen the risk of impact to the species. Absent any detrimental effects of the project, there would be no cumulative effects under any of the alternatives of this project.

Table 8. Ternate Grapefern occurrences on the CNNF in relation to roads considered for changing designated motorized use under this project.

<i>District</i>	<i>Observation ID</i>	<i>Open roads within 152 m²*</i>	<i>Current & Alt 1</i>	<i>Alt 2</i>	<i>Alt 3</i>
ERFL	1	road A [ML 4]	HLV	HLV	HLV
ERFL	2	road B [ML 2]	HLV	U	U
GDRD	3,4	road C [ML 2]	HLV&ATV	HLV&ATV	HLV&ATV
		road D [ML 2]	HLV	U	U
		road E ML 2]	HLV	U	U
WRD	5	road F [ML 2]	HLV	U	U
WRD	6	road G [ML 2]	HLV	U	U

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Assiniboine Sedge (*Carex assiniboinensis*)

Effects of Alternatives 1, 2 & 3

Over 100 occurrences of *Carex assiniboinensis* are known from the CNNF; 38 of those were located in 2006 and 2007. Most of the occurrences are from the Nicolet landbase, with the remainder from the Park Falls district on the Chequamegon landbase. Portions of 93 roads are

within 500 feet of Assiniboine Sedge occurrences, but the allowable motorized use on all of these roads would either remain unchanged or would be reduced by this project (Alt 2 & 3). Thirty two of these roads are closed to motorized use now and would remain so under all alternatives. For the 61 roads that are currently open in the vicinity of occurrences of this species, all would remain open to highway-legal vehicles under alternative 1. Under alternative 2 and 3, approximately one-third (21/61) of the roads would become unavailable to motorized vehicle use. It is the same 21 roads under both alternatives. Without any increase in the allowable motorized use in the vicinity of known occurrences, this project would not adversely affect the species under any of the alternatives. Under alternatives 2 and 3, the reduction in motorized use in the vicinity of occurrences of the species could lessen the risk of impact to the species.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Rocky Mountain Sedge (Carex backii)

Effects of Alternatives 1, 2 & 3

Only one occurrence of the species is known from the CNNF, and that occurrence is in an upland opening on the Lakewood District. The location of the species is approximately 325m (>1,000 ft) from the terminus of a ML 2 road, which is the nearest road to the occurrence. Because no open roads are within 1,000 feet of this occurrence, no direct, indirect or cumulative effects of the project are expected.

Determination (All Alternatives): No Impact

Northern Wild Comfrey (Cynoglossum boreale)

Effects of Alternatives 1, 2 & 3

This species occurs in sandy or rocky soil in borders, clearings, openings, or in dense shade in mixed woods. With these habitat preferences, it is not surprising that some of the species' occurrences on the CNNF are in gravel pits and along roads. On one hand, use of roads helps to maintain these habitats in an open condition. On the other, motorized use of roads can cause direct effects to plants (by running them over), and can lead to habitat degradation through invasion of exotic weed species. It is assumed, for this analysis, that the negative effects related to road use are more important than the potential positive effects of road use. Under Alternative 1, the existing amount of motorized access in the vicinity (500 ft) of comfrey occurrences would remain unchanged (Figure 10). Under Alternatives 2 and 3, motorized access would be reduced; roughly half of the length of road segments within the scope of this project that are also in the vicinity of comfrey occurrences would be made unavailable to motorized access (Figure 10).

Only under Alternative 3 would the allowable use on a ML-2 within 500 feet of a comfrey occurrence be changed such that ATVs would be the only allowed vehicles on it. Under alternatives 1 & 2, the allowable use on that road would be limited to highway legal vehicles and no motorized use, respectively. While this increase in allowable use in Alternative 3 (creating an ATV route from a road that is open to vehicles now) may elevate the risk of impacts to that occurrence, this increase in risk is probably not so great that it is more important than the reductions in risk from reducing the overall allowable motorized use on roads in the vicinity of comfrey sites across the CNNF.

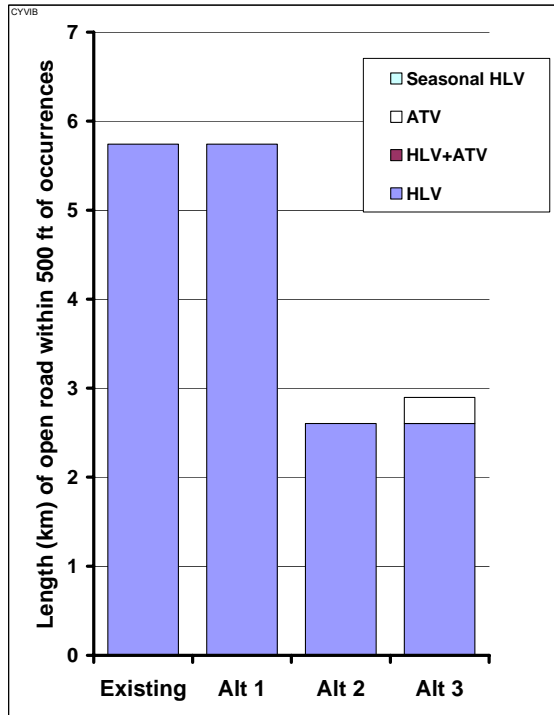


Figure 10. Length of road 1) open to motorized use, 2) within 500 ft of Northern Wild Comfrey occurrences and 3) within the scope of this project.

Consequently, the maintenance or reduction in the allowable motorized use in the vicinity of comfrey occurrences on the CNNF is expected to have no negative effect on the species. Absent any direct or indirect effects of the project, there would be no cumulative effects.

Determination (All Alternatives): No Impact

Fragrant Fern (Dryopteris fragrans var. remotiuscula)

Effects of Alternatives 1, 2 & 3

Fifteen occurrences of the species are known from the CNNF; all are from the Great Divide Ranger District except for a single occurrence on the south end of the Washburn District. The Washburn occurrence is in a hardwood stand and is approximately 130 meters from the terminus of a ML 2 road that would remain open to motorized use under alternative 1 but would be unavailable to motorized use under alternatives 2 and 3. Only one of the occurrences on the GDRD is within 152 m (500 feet) of a ML-2 (see Table 9). This road would remain open to motorized use under all alternatives; this road was not within the scope of this project. Consequently, Alternatives 2 and 3 would result in a small decrease in the allowable motorized use within 500 ft of the known occurrences of Fragrant Fern on the CNNF. Alternative 1 would result in no change from the existing condition with respect to motorized use in the vicinity of known occurrences. Because there would be no increase in the amount of open roads near

occurrence of the species, no detrimental effects of the project are expected under any of the alternatives.

Table 9. Fragrant Fern occurrences on the CNNF in relation to roads.

<i>District</i>	<i>Observation ID</i>	<i>Open roads within 152 m?*</i>
GDRD	1	none
GDRD	2	none
GDRD	3	none
GDRD!	4	none
GDRD!	5	none
GDRD!	6	none
GDRD!	7	none
GDRD	8	road A [ML 2]
GDRD	9	none
GDRD!	10	none
GDRD!	11	none
GDRD	12	none
GDRD	13	none
GDRD	14	none
WRD	15	road B [ML 2]

*152.4 meters = 500 feet

GDRD! = occurrence is on non-FS land

Determination (All Alternatives): No Impact

Spreading Woodfern (*Dryopteris expansa*)

Effects of Alternatives 1, 2 & 3

Ten occurrences of the species are known from the CNNF. The occurrences are from the Great Divide Ranger District, Park Falls District and Eagle River District. Only one of the occurrences is within 500 feet of an open road which is a ML 3 road that would remain open under all alternatives; it is outside of the scope of this project.

Determination (All Alternatives): No Impact

Large-leaved Avens (*Geum macrophyllum* var. *macrophyllum*)

Effects of Alternatives 1, 2 & 3

Fourteen occurrences of Large-leaved Avens are known from the CNNF (or from inholdings within the CNNF). This species tends to occupy edge, trail and clearing habitat in northern dry-mesic hardwood forests, which suggests the species prefers light to moderate disturbance. It is known only from the Great Divide and Washburn Districts. Of those fourteen occurrences, only three are in the vicinity of roads within the scope of this project. Four roads are within 500ft of these occurrences and all would remain available for use by highway legal vehicles under alternative 1 (Table 10). Under alternatives 2 & 3, two of the roads would remain available to highway legal vehicles and two would become unavailable. Overall, maintenance or a reduction

in the allowable motorized use in the vicinity of Large-leaved Avens occurrences on the CNNF is expected to have no effect on the species. Absent any direct or indirect effects of the project, there would be no cumulative effects.

Determination (All Alternatives): No Impact

Table 10. Large-leaved Avens occurrences on the CNNF in relation to roads considered for changing designated motorized use under this project.

District	Observation ID	Open Roads within 152 m?	Current			
WRD	1	road A [ML 2]	HLV	HLV	HLV	HLV
		road B [ML 2]	HLV	HLV	U	U
WRD	2	road C [ML 2]	HLV	HLV	HLV	HLV
WRD	3	road D [ML 2]	HLV	HLV	U	U

*152.4 meters = 500 feet

Fir Clubmoss (Huperzia selago)

Effects of Alternatives 1, 2 & 3

One occurrence of the species is known from the CNNF. The occurrence is near Mountain Lake on the Washburn Ranger District, and is approximately 110 meters from an ML-2 road, which will remain open to motorized vehicle use under alternative 1 but would become unavailable to motorized use under Alternatives 2 & 3. A spotted knapweed infestation is known from this road, but the moist habitat preferred by *Huperzia* is not likely to be invaded by knapweed; therefore, this infestation is not expected to impact this occurrence. Consequently, no direct, indirect or cumulative effects of the project are expected.

Determination (All Alternatives): No Impact

Butternut (Juglans cinerea)

Effects of Alternatives 1, 2 & 3

Butternut are known from the Medford, Park Falls, Great Divide and Lakewood-Laona Ranger Districts of the CNNF. Butternut are a shade-intolerant species in dramatic decline because a fungal disease is causing mortality to the species throughout its range. Motorized use of roads is not anticipated to have an impact on butternut because the fungal disease is not transmitted along roads. Butternut may benefit from the presence of roads in many forest situations because road corridors can be places with more sunlight than the forested matrix. For that reason, regeneration of butternut may be enhanced there.

Determination (All Alternatives): No Impact

Large-flowered Ground Cherry (Leucophysalis grandiflora)

Effects of Alternatives 1, 2 & 3

Only one occurrence of the species is known from the CNNF, and that occurrence is in a northern hardwood stand on the Medford District. The location of the species is approximately 210m (~700ft) from the terminus of a closed road (ML 1) that would remain closed under all

alternatives. The nearest open road is approximately 660 meters from the occurrence, but motorized use of this road is too distant to have any effect on this occurrence. Consequently, no direct, indirect or cumulative effects of the project are expected.

Determination (All Alternatives): No Impact

American Ginseng (*Panax quinquefolius*)

Effects of Alternatives 1, 2 & 3

Ginseng is known from all Districts of the Nicolet landbase and from the Medford-Park Falls landbase on the Chequamegon landbase. It historically occurred on the Great Divide District, but no sites have been documented since 1990. No ginseng habitat would be affected by this project, but motorized access in the vicinity of ginseng occurrences has the potential to lead to spread of non-native species that could displace ginseng or adversely affect its habitat. Open roads in the vicinity of ginseng occurrences also enable easier access to illegal harvest of the plant.

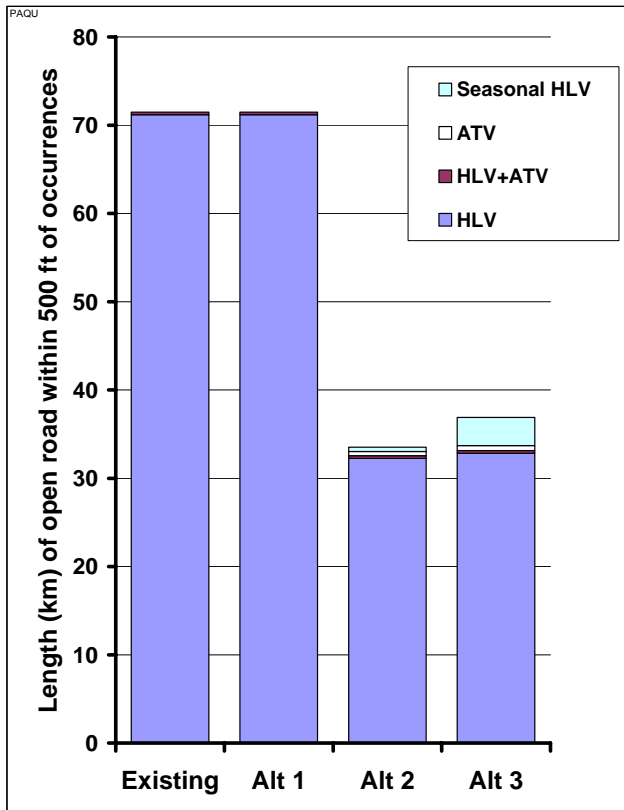


Figure 11. Length of road 1) open to motorized use, 2) within 500 ft of Ginseng occurrences and 3) within the scope of this project.

Under Alternative 1, the existing amount of motorized access in the vicinity (500 ft) of ginseng occurrences would remain unchanged (Figure 11). Under Alternatives 2 and 3, motorized access would be reduced; more than half of the length of road segments within the scope of this project that are also in the vicinity of Ginseng occurrences would be made unavailable to motorized

access (Figure 11). Under Alternative 1, maintenance in the allowable motorized use in the vicinity of ginseng occurrences on the CNNF is expected to have no effect on ginseng. Under Alternatives 2 and 3, reductions in the amount of roads available for motorized use in the vicinity of occurrences of the species would be expected to lessen the risk of traffic-related impact to the species.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Canadian Ricegrass (*Piptatherum canadense*)

Effects of Alternatives 1, 2 & 3

Five occurrences of the species are known from the CNNF. One is from the Washburn Ranger District and the remaining four are from the Eagle River Ranger District (and two more occurrences in the same area are known from non-FS land). The Washburn location is approximately 10 meters from an open ML-2 road that is proposed to be unavailable to motorized use under Alternatives 2 and 3 and would remain open to motorized use under Alternative 1. This road is a dead end road that begins at an ML-3 where a leafy spurge and St. Johnswort infestation is present. Making the ML-2 road unavailable to motorized use under alternative 2 and 3 would probably reduce the risk that these non-natives advance and impact the *Piptatherum* occurrence. Leaving the road available to motorized use, as under Alternative 1, would not affect or lessen this risk.

The four occurrences from the Eagle River District are all in or immediately adjacent to openings (99-type). Two of the occurrences are within 500 feet of ML-2 roads that are open to motorized vehicle use now and would remain so under Alternative 1. Under alternatives 2 and 3, however, these two roads would become unavailable to motorized vehicle use. The other two occurrences are beyond 500 feet of the nearest road and are unlikely to be affected by use of the nearest roads.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Braun's Holly Fern (*Polystichum braunii*)

Effects of Alternatives 1, 2 & 3

Braun's Holly fern occurrences are known from the CNNF in three areas: the Diamond Roof area of the Lakewood-Laona District (with two outliers), the Brule River area of the Florence District and the Penokee area of the Great Divide Ranger District (Table 11). This species is primarily associated with cool, shaded, moist, humus-rich mesic northern hardwoods and it tend to be found in rocky spots and along streams or seeps.

No Braun's Holly Fern would be altered under any of the alternatives. No increases in motorized access in the vicinity of known occurrences would occur under any of the alternatives; therefore, no detrimental effects of the project are anticipated under any of the alternatives. Absent any direct or indirect effects, there would be no cumulative effects. Implementation of Alternative 2 or 3 could be beneficial to Braun's Holly Fern because they both reduce the allowable motorized use in the vicinity of known occurrences (Table 11). The risk of weed spread along roads that allow motorized use is assumed to be greater than for roads that do not allow motorized traffic.

This reduction in the risk of weed spread in the vicinity of known occurrences is the basis for the Beneficial Impact determination for Alternatives 2 and 3.

Table 11. Braun's Holly Fern occurrences on the CNNF in relation to roads.

	<i>Existing Condition</i>	<i>Alt 1</i>	<i>Alt 2</i>	<i>Alt 3</i>	
Brule River (n = 5)	(4) road A (ML 1)	closed	closed	closed	closed
	(1) no roads within 500 ft	-	-	-	-
Diamond Roof (n = 27)	(1) road B (ML 2)	HLV	HLV	U	U
	(2) road C (ML 2)	HLV	HLV	U	U
	(2) road D (ML 1)	closed	closed	closed	closed
	(12) various combinations of ML 1 closed roads (roads E, F, G, H & I) and ML 2 open roads (roads J & K)	ML 1: closed	ML 1: closed	ML 1: closed	ML 1: closed
		ML 2: HLV	ML 2: HLV	ML 2: U	ML 2: U
	(2) road L (ML 2)	HLV	HLV	U	U
	(1) road M (ML 1) & road N (ML 2)	HLV	HLV	U	U
	(1) roads O, P, Q & R (all ML 2)	HLV	S-HLV	S-HLV	S-HLV
		HLV	HLV	HLV	HLV
		HLV	HLV	U	HLV
HLV		HLV	HLV	HLV	
(2) combinations of roads S, T, U & V (all ML 2)	HLV	HLV	U	F-HLV	
	HLV	HLV	U	U	
	HLV	HLV	U	U	
	HLV	HLV	U	U	
(2) road W (ML 1)	closed	closed	closed	closed	
(2) road X (ML 2)	HLV	HLV	U	U	
Penokee (n = 40)	(8) on non-FS land and not within 500 ft of a CNNF road.	-	-	-	-
	(2) road Y (ML 2)	HLV+ATV	HLV+ATV	U	U
	(3) road Z and/or road AA (both ML 4)	outside of scope	outside of scope	outside of scope	outside of scope
	(2) road BB (ML 1)	closed	closed	closed	closed
	(2) road CC (ML 1)	closed	closed	closed	closed
	Remaining occurrences are not within 500 feet of any road.	-	-	-	-

F-HLV = Fall HLV; S-HLV = Seasonal HLV

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

White Mandarin (Streptopus amplexifolius)

Effects of Alternatives 1, 2 & 3

Eight occurrences of the species are known from the Penokee area of the Great Divide Ranger District (two of those are from non-FS lands). Of these occurrences, only one is within 500 feet of any road (open or closed). That occurrence is a single plant discovered in 2007 and it is 420 ft (128 m) from an ML-4 road, which is outside of the scope of this project and would remain open to motorized use under all of the alternatives.

Determination (All Alternatives): No Impact

Heart-leaved foamflower (Tiarella cordifolia)

Effects of Alternatives 1, 2 & 3

Twenty occurrences of the species are known from a single area of approximately 1 km² on the Lakewood Ranger District. None are within 500ft of the nearest open road; the closest occurrence is approximately 675ft (205 m) from an ML 3 that would remain open to motorized use under all alternatives. A network of closed (ML 1 roads) surrounds and intersects the occurrences, but these roads would remain closed to motorized vehicle use under all of the alternatives.

Determination (All Alternatives): No Impact

Old-Man's Beard (Usnea longissima)

Effects of Alternatives 1, 2 & 3

Only one occurrence of the species is known from the CNNF, and that occurrence is in a swamp conifer stand. The location of the species is within approximately 300 feet of an ML- 4 road. Motorized use of this road will not be changed by this project. No other roads are within 500 ft of the occurrence; therefore, no increases in motorized access are anticipated under any of the alternatives. Consequently, no direct, indirect or cumulative effects of the project are expected.

Determination (All Alternatives): No Impact

Northern Blue Butterfly (Lycaeides idas nabokovi) and Dwarf Bilberry (Vaccinium cespitosum)

Effects of Alternatives 1, 2 & 3

Northern Blue Butterfly and its larval host plant, Dwarf bilberry, are known from a scattering of occurrences within an area of approximately 15 km² on the Lakewood Ranger District. Both are Regional Forester Sensitive Species. Most of the occurrences of both species are known from openings adjacent to roads or in proximity to roads (within 500 ft). Northern Blues are obligate herbivores of Dwarf bilberry; therefore, impacts to these two species are assessed together.

Dwarf bilberry is a low-growing plant and is vulnerable to displacement (by non-native species) from the open habitats it prefers. Fortunately for the species, however, no weed infestations are known from these areas.

Table 12. Northern Blue Butterfly and Dwarf Bilberry Occurrences within 500 feet of roads on the CNNF.

<i>ML</i>	<i>Road</i>	<i>Existing Condition</i>	<i>Alt 1</i>	<i>Alt 2</i>	<i>Alt 3</i>
4	A	HLV	HLV	HLV	HLV
	B	HLV	HLV	HLV	HLV
3	C	HLV	HLV	HLV	HLV
	D	HLV	HLV	HLV	HLV
	E	HLV	HLV	HLV	HLV
2	F	HLV	HLV	U	U
	G	HLV	HLV	HLV	HLV
	H	HLV	HLV	U	U
	I	HLV	HLV	U	U
	J	HLV	HLV	U	U
	K	HLV	HLV	U	U
	L	HLV	HLV	U	U
1	M	closed	closed	closed	closed
	N	closed	closed	closed	closed

HLV = Highway-legal Vehicles only; U = Unavailable for motorized use

Northern Blues may puddle along open roads and such behavior puts them at risk of being crushed by vehicles. This risk is not elevated under any of the alternatives, however, because open road density would be either maintained (Alt 1) or reduced (Alt 2 & 3) in this project. Roads are vectors for weed spread and spotted knapweed, in particular, pose a threat to the open-lands specialists like the Dwarf bilberry. Although Northern Blue adults may use the floral resources of knapweed, it is not a suitable host to the species.

Under Alternative 1, no change in the allowable motorized use in the vicinity of known occurrences of northern blue butterfly or its host, dwarf bilberry, would occur; therefore, there would be no effect. Under alternatives 2 and 3, six roads in the vicinity of these species would become unavailable to motorized use (Table 12). Reduced motorized travel on these roads would be expected to reduce the likelihood of spread of weeds that could impact the host plant, and would reduce the likelihood of traffic-related mortality of butterflies.

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Environmental Consequences: Other Wildlife Concerns

Elk

Effects of Alternatives 1, 2 & 3

In spring 1995, with cooperation from the Wisconsin Department of Natural Resources (DNR), the Michigan DNR and the Rocky Mountain Elk Foundation, the University of Wisconsin – Stevens Point released 25 elk into the Chequamegon National Forest near Clam Lake, WI. The Wisconsin DNR assumed management responsibility for the Clam Lake Herd in 1999 and

completed a management plan for the herd in 2000. There are approximately 125 elk in the Clam Lake Herd, with a majority of these animals within the core range around the release site.

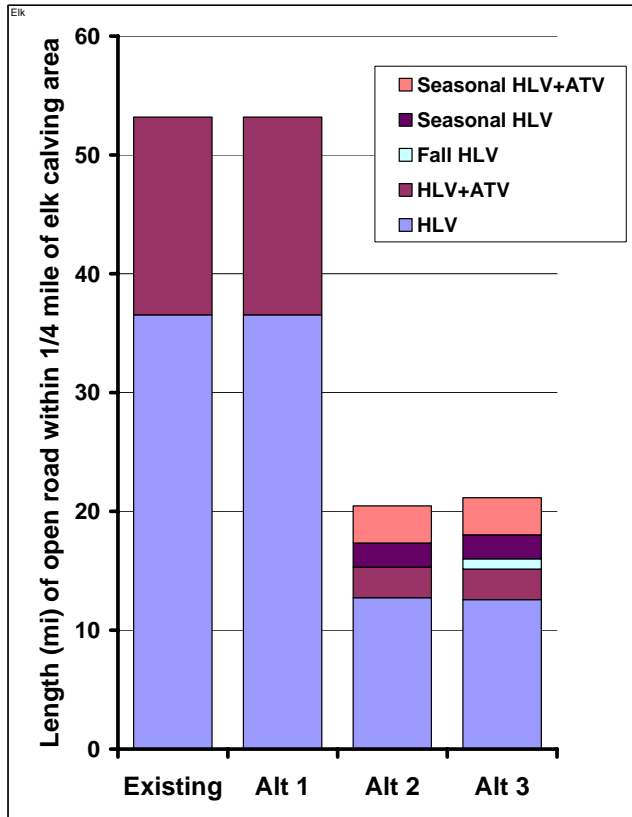


Figure 12. Total length of road 1) open to motorized use, 2) that have at least a portion of the road within 1/4 mile of elk calving grounds and are 3) within the scope of this project.

The CNNF has issued temporary road closure orders in the past to limit motorized disturbance to elk during the calving season. In the development of Alternatives 2 and 3, the CNNF considered designating some roads within the areas used by elk for calving grounds as unavailable for motorized use. Some of these roads proposed for no allowable motorized use would have that restriction year-round and other roads would only be unavailable for motorized use during the calving season (Figure 12).

The amount (miles) of road that are within 1/4 mile of elk calving grounds, or at least a portion of the road meets this criteria, would be reduced by more than half under Alternatives 2 and 3 (Figure 12). By contrast, under Alternative 1, all of those open to motorized travel now would remain available to the same motorized uses that they currently allow. Under Alternative 1, seasonal road closures would likely continue to be issued for select roads to protect elk during the

calving season. Alternatives 2 and 3 incorporate seasonal restrictions on roads in the vicinity of the calving grounds used by elk in the past.

Overall, the reduction in the amount of roads allowing motorized use under alternatives 2 and 3 would be expected to reduce disturbance to elk, particularly during the calving season. It is possible that reducing motorized access in these areas could reduce the density of deer hunters in the area and, consequently, reduce the likelihood that a deer hunter mistakenly shoots an elk. While Elk is not an RFSS, I provide the following determination of effects for this species:

Determination (Alternative 1): No Impact

(Alternative 2 & 3): Beneficial Impact

Hunting Opportunity

Effects of Alternative 1, 2 & 3

No vegetation management would occur in the TMR project; therefore, game management (and hunting opportunities) through habitat management is not relevant to this project. This project does not affect the amount of CNNF land that is open to hunting. The only relevant consequence of the TMR project on hunting opportunity is the change (or lack of) in the accessibility of the CNNF to motorized vehicle use [by hunters].

In general, through implementation of vegetation management projects, the CNNF is actively reducing open and total road density consistent with Forest Plan objective 3.1. Some hunters prefer a more secluded hunting experience; road decommissioning increases those opportunities. Other hunters prefer increased motorized access. In the analysis for the TRM project, it is assumed that the majority of hunters prefer increases in motorized access to decreases in such access.

Deer: In general, deer hunters favor increases in the amount of open roads vehicles such as trucks and ATVs make accessing hunting blinds/stands, transporting bait and stands and hauling their kill more convenient. Where roads are closed to motorized access, the hunter must walk in farther and haul bait/stands/kill greater distances. Comments received during the public involvement process for this project supports this generalization and Alternative 3 was developed, in part, to assuage concerns over the reductions in motorized access from the existing condition to the Initial Proposal (Alternative 2).

Overall, motorized access would be greatest under Alternative 1, which proposes to maintain the current level of motorized access on roads of the CNNF. Alternatives 2 and 3 both propose substantial reductions (more than 50%) in the amount (miles) of motorized access on the CNNF (see Table 1; Figure 13). Alternative 3, in response to the concern over reductions in motorized access in the hunting season (fall), would make 42 miles of road available for motorized use in the fall. These roads would remain unavailable to motorized use year-round under Alternative 2.

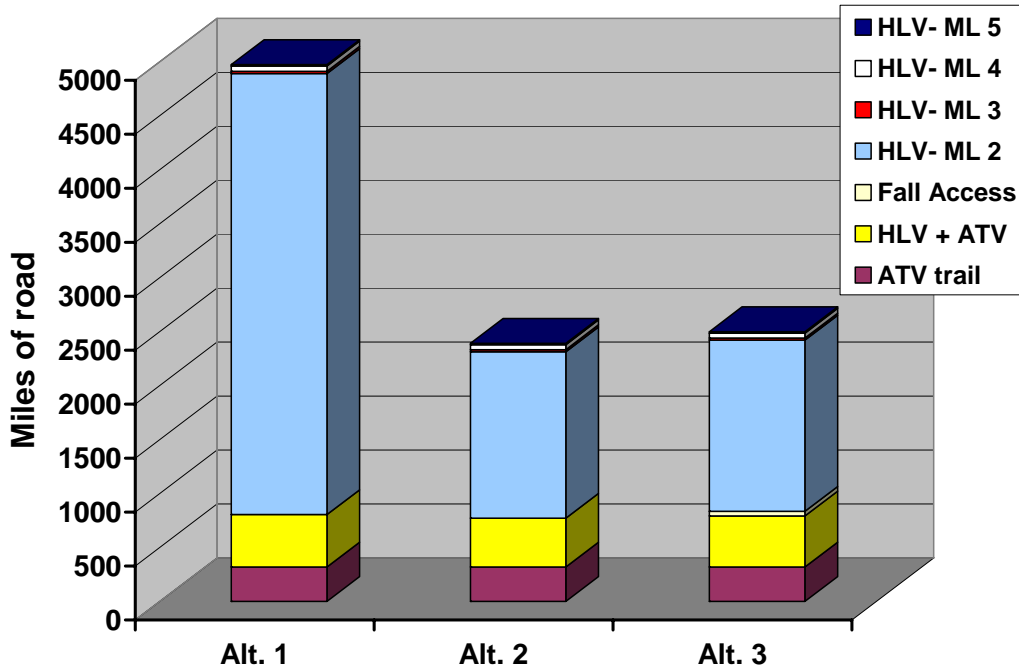


Figure 13. Length of road open to motorized use and within the scope of this project.

Grouse and Woodcock: As hunting grouse/woodcock is an activity that involves walking while hunting, open road density is much less of an issue for these hunters compared to deer hunters. Nonetheless, the availability of roads allowing motorized travel remains a valid metric for evaluating impacts of the TMR project to small game hunters, because these hunters still drive to the place they begin their hunt and the availability of motorized roads is a relative measure of the accessibility of places to begin hunting grouse.

Bear & Bobcat: Many bear and bobcat hunters use hounds to hunt these animals, and the hunters pursue their animals with the use of vehicles. As a result, open road density is the most relevant measure for evaluating impacts to these hunters. As noted for both bear and small game hunters, the availability of road open to motorized travel under Alternative 1 would remain the same as it is now (Existing Condition) but would be reduced under Alternatives 2 and 3 (See Table 1). Alternative 3 provides more motorized access opportunity than Alternative 2 because this alternative was developed through modifications of Alternative 2 to provide “More Access.”

Compliance with the Forest Plan and Other Regulatory Direction

All of the alternatives comply with the Chequamegon-Nicolet National Forest Land and Resource Management Plan. Implementation of any of them would not result in loss of viability of any Federally-listed species or agency-identified sensitive species (Regional Forester Sensitive Species) and is therefore consistent with the Endangered Species Act, the National Forest Management Act and Forest Service Manual Direction (section 2672).

Conclusion

For all of the Regional Forester Sensitive Species (RFSS) addressed in this Biological Evaluation, implementation of the No-Action Alternative (Alt 1) would have no effect because the motorized use of the transportation system that currently exists would continue. For some of the species, known occurrences are not in the vicinity of roads or their habitat is unlikely to be affected by the use of roads; therefore, no impacts of the project are expected, no matter which alternative is selected. Without exception, Alternatives 2 and 3 were very similar to each other on all of the quantitative measures used in the analysis of effects for individual RFSS. This is evident in many of the tables and figures in this document.

For the remainder of the sensitive species in this Biological Evaluation, a reduction in the amount of roads available for motorized use in the vicinity of know occurrences as under Alternatives 2 or 3 would be expected to lower the risk of traffic-related detrimental effects to these species. Such effects include collisions with vehicles, disturbance by noise, incidental/illegal harvest, and spread of invasive species by vehicles. This reduction of risk is the basis for the Beneficial Effect determination for those species. The reduction in this risk may vary over time and by location because this project entails an administrative decision on the allowable (legal) motorized use of roads, but does not provide any guarantee that all motorized users will abide by rules.

For Elk, implementation of Alternatives 2 or 3 would be beneficial because either would increase security for the species, particularly during the calving season. While Alternatives 2 and 3 generally would have a beneficial or neutral effect on the sensitive species of the CNNF because motorized traffic near their occurrences would bring only detrimental consequences, reducing motorized access could be perceived as a hindrance to many hunters (especially deer hunters).

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