

APPENDIX H

WILDLIFE: REGIONAL FORESTER SENSITIVE SPECIES (RFSS) - TERRESTRIAL ANIMALS

Species monitoring

The three primary ways that terrestrial animal RFSS are monitored are through 1) population monitoring; 2) presence/absence detection, and 3) nest or den occupancy and breeding productivity surveys.

Population monitoring. This involves multiple years of surveying a large enough number of individuals (“sample size”) to allow an accurate estimate of population trend (direction and magnitude of population change over time) and/or population trajectory (the size of the population over time). Because it is not possible to count every individual of a species, we do not know true population size but rely on monitoring data to provide an “index” or indicator of population. The location of this monitoring is usually Forest-wide and not tied to project areas only.

Presence/Absence detection. For most RFSS population monitoring would be prohibitively expensive because the species’ rarity makes it impractical to track enough individuals. So we rely on monitoring methods that detect presence and absence, as well as distribution. For most of the large landscape scale (10,000s of acres) vegetation management projects, surveys are conducted to detect whether species are present, even though the absence of a detection is not a certainty that the species doesn’t occur there. Because of timing of the survey, rarity of the species, weather or some other factor, we may miss detection of individuals in suitable habitat. The purpose of surveying is to attempt to improve our understanding of habitat associations by surveying across projects in potential habitat and over time (years). In addition to conducting new surveys, we return to known sites to monitor whether the species is continuing to use the area.

Nest occupancy and breeding productivity surveys: For a few species whose breeding territories or nest or denning sites have been located, we also conduct nest or den site occupancy and breeding success surveys. The results of these surveys also contribute to understanding population dynamics, management impacts, and can add to information used to develop indices of population.

Table 1 shows the key (but not all) methods of monitoring for each terrestrial RFSS. For some species monitoring is done by multiple methods. More detailed information on monitoring protocols and results are available in monitoring project file.

Project-specific surveys for presence/absence detection are noted only for the eight large landscape scale (10,000s of acres) vegetation management projects for which decisions to implement have been made between 2004 and 2007. These projects (proposed, analyzed, and selected via National Environmental Policy Act environmental assessments or environmental impact statements) are: Virginia, Tomahawk, Dunka, Inga South, Mid-Temperance, Whyte, Devil Trout, and Echo Trail. All information on these projects can be found on the SNF website: <http://www.fs.fed.us/r9/forests/superior/projects/>. The reason only these projects are cited is because these projects generally have the most impact on RFSS and part of their purpose is to maintain or enhance habitat for RFSS.

Acronyms used in table:

DNR: Minnesota Department of Natural Resources
NRRI: Natural Resources Research Institute,
University of Minnesota-Duluth
USGS: US Geological Survey
FS – Forest Service
HRBO – Hawk Ridge Bird Observatory

BBS – The North American Breeding Bird Survey
1966-2007
MOU – Minnesota Ornithologists Union records
MAPS – Monitoring Avian Productivity and
Survivorship
NCFES – North Central Forest Experiment Station

Table 1. Regional Forester Sensitive Species monitoring through 2007.				
Sensitive Species	Population Monitoring	Presence/Absence Detection	Breeding Territory & Productivity	Remarks
Gray wolf	<ul style="list-style-type: none"> • DNR periodic (5-year) statewide surveys, most recent: 2003-2004. • DNR winter track surveys and predator & scent station surveys • USGS wolf project 1966-2007. 	<ul style="list-style-type: none"> • DNR winter track surveys and predator/scent station surveys; • Project-specific winter track surveys: Virginia, Dunka, Inga South, Whyte 	USGS wolf project 1966-2007, tracks collared individuals and their pack members, including pups. Den sites noted.	For more detailed information on wolf monitoring refer to <i>Wildlife: Management Indicator Species</i> section of this report. Population monitoring is also conducted for prey species moose and deer.
Heather vole		<ul style="list-style-type: none"> • Detections during annual long-term 1995-2007 small mammal monitoring project in central SNF (Jannett). • Also, 1854 Treaty Authority small mammal monitoring project with no detections (2002-2007). • DNR Natural Heritage database tracks all documented sites within SNF. 		
Bald Eagle	<ul style="list-style-type: none"> • DNR/FS nest surveys 1966-2005 • BBS – national and regional trends 	<ul style="list-style-type: none"> • Project-specific surveys 2004-2007: Echo Trail, Tomahawk, Dunka, Whyte, Mid-Temperance as well as 2007 Ham Lake wildfire and South Fowl snowmobile trail project 2005. 	DNR/FS nest surveys 1966-2005	For more detailed information on eagle monitoring refer to <i>Wildlife: Management Indicator Species</i> section of this report.
Northern goshawk	(In 2008 an interagency multi-state population monitoring project will be undertaken in the Western Great Lakes)	<ul style="list-style-type: none"> • Project-specific surveys 2004-2007 in potential habitat: Virginia, Dunka, Whyte, Inga South, Devil Trout, Mid-Temperance. • DNR Natural Heritage database tracks all documented nest sites within SNF. 	DNR/FS nest monitoring surveys 2003-2007.	For more detailed information on goshawk monitoring refer to <i>Wildlife: Management Indicator Species</i> section of this report.
Peregrine falcon	Midwest Peregrine Society Restoration Project 1986 -2007 monitoring.	DNR Natural Heritage database tracks documented nest sites within SNF.		
Sharp-tailed grouse			MNDNR Sharp-tailed Grouse and Prairie-chicken Lek Surveys	Currently none are conducted on SNF because there are no longer any known leks.
Yellow rail		<ul style="list-style-type: none"> • DNR Natural Heritage database tracks documented sites within SNF. • MOU records 		
Great gray owl	Western Great Lakes Region Owl Monitoring (2005-2007)	<ul style="list-style-type: none"> • Project-specific surveys 2004-2007 in potential habitat: Dunka, Whyte, Echo Trail. 		
Boreal owl		<ul style="list-style-type: none"> • Project-specific surveys 2004-2007 in potential habitat: Dunka, Whyte, Echo Trail. • Boreal owl survey projects (Lane, Belmonte, Wilson) DNR, HRBO, 2007 • Western Great Lakes Region Owl Monitoring (2005-2007) • DNR Natural Heritage database tracks documented nest sites within SNF. • MOU records 	Boreal owl nest sites, when located, are monitored to detect nesting success.	
Three-toed woodpecker		Project-specific surveys 2006: Echo Trail. MOU records		This species has never been detected on the NRRRI songbird monitoring project

Table 1. Regional Forester Sensitive Species monitoring through 2007.				
Sensitive Species	Population Monitoring	Presence/Absence Detection	Breeding Territory & Productivity	Remarks
				or BBS.
Olive-sided flycatcher	BBS – national and regional trends	<ul style="list-style-type: none"> • NRRF Forest Songbird Monitoring 1991-2007. To date the sample size of detected individuals is not adequate to determine population trend on the forest. • MAPS • MOU records. 	MAPS: annual adult apparent survival rates and indices of productivity.	Currently there is not an adequate sample size on the NRRF survey to detect population trends.
Black-throated blue warbler	<ul style="list-style-type: none"> • NRRF Forest Songbird Monitoring 1991-2007 • BBS – national and regional trends 	<ul style="list-style-type: none"> • Project-specific surveys 2005-2006 in potential habitat: Whyte, Echo Trail. • DNR Natural Heritage database tracks documented nest sites within SNF. • MAPS 		
Bay-breasted warbler	<ul style="list-style-type: none"> • NRRF Forest Songbird Monitoring 1991-2007 • BBS – national and regional trends 	<ul style="list-style-type: none"> • MAPS 		
Connecticut warbler	BBS – national and regional trends	<ul style="list-style-type: none"> • Project-specific surveys 2005: Echo Trail. • NRRF Forest Songbird Monitoring 1991-2007 • MAPS • MOU records. 		
LeConte's sparrow	BBS – national and regional trends	MOU records		This species has never been detected on the NRRF songbird monitoring (however, its habitat is not surveyed).
Wood turtle		<ul style="list-style-type: none"> • DNR Natural Heritage database tracks documented sites within SNF. • Wood turtle project (NCFES) 	<ul style="list-style-type: none"> • Wood turtle project (NCFES) 	
Mancinus alpine butterfly		<ul style="list-style-type: none"> • Butterfly surveys (MacCLean) • DNR Natural Heritage database tracks documented sites within SNF. 		
Red-disked alpine butterfly		<ul style="list-style-type: none"> • Butterfly surveys (MacCLean) • DNR Natural Heritage database tracks documented sites within SNF. 		
Nabokov's (Northern) blue butterfly		<ul style="list-style-type: none"> • Butterfly surveys (MacCLean) • DNR Natural Heritage database tracks documented sites within SNF. 		
Jutta arctic butterfly		<ul style="list-style-type: none"> • DNR Natural Heritage database tracks documented sites within SNF. 		
Freija's grizzled skipper butterfly		<ul style="list-style-type: none"> • Periodic site monitoring by SNF and Northern Crescents chapter of North American Butterfly Association • DNR Natural Heritage database tracks documented sites within SNF. 		
Laurentian tiger beetle		<ul style="list-style-type: none"> • Project-specific surveys 2005: Echo Trail. Also conducted for various road maintenance and gravel pit development projects. • DNR Natural Heritage database tracks documented sites within SNF. 		
Quebec emerald		<ul style="list-style-type: none"> • DNR Natural Heritage database tracks documented sites within SNF. 		

Table 2 shows known occurrences of RFSS tracked by Minnesota Department of Natural Resources Natural Heritage & Nongame Research Program. RFSS terrestrial animals *not* tracked are: gray wolf, Le Conte's sparrow, olive-sided flycatcher, Connecticut warbler, and three-toed woodpecker. Additionally only nests, not all sightings, are documented for great gray owl, bald eagle, boreal owl, northern goshawk, peregrine falcons, and

Table 2. Documented occurrences of Regional Forester Sensitive Species		
Sensitive Species	Known occurrences	
	2004	2007
Heather vole	3	6
Northern goshawk (nests)	12	24
Boreal owl (nests)	12	12
Yellow rail	1	1
Peregrine falcon nests (No. Shore Lk Superior)	7	10
Bald Eagle (breeding pairs)	78	93
Great gray owl (nests)	2	4
Sharp-tailed grouse (leks)	0	0
Wood turtle	8	13
Laurentian tiger beetle	13	70
Mancinus alpine butterfly	4	4
Red-disked alpine butterfly	7	
Nabokov's (Northern) blue butterfly	8	26
Jutta arctic butterfly	3	3
Freija's grizzled skipper butterfly	1	1
Quebec emerald dragonfly	0	1
<i>Data source:</i> Minnesota Department of Natural Resources Natural Heritage Database, 2007.		