

Managing Wildlife Habitat

Forestry MiniCollege



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Presentation Outline



- Basic Concepts and Guidance
- Habitat Planning
- Habitat Features
- Threatened & Endangered Species
- Tools and Resources

Sailing the Regulatory Waters



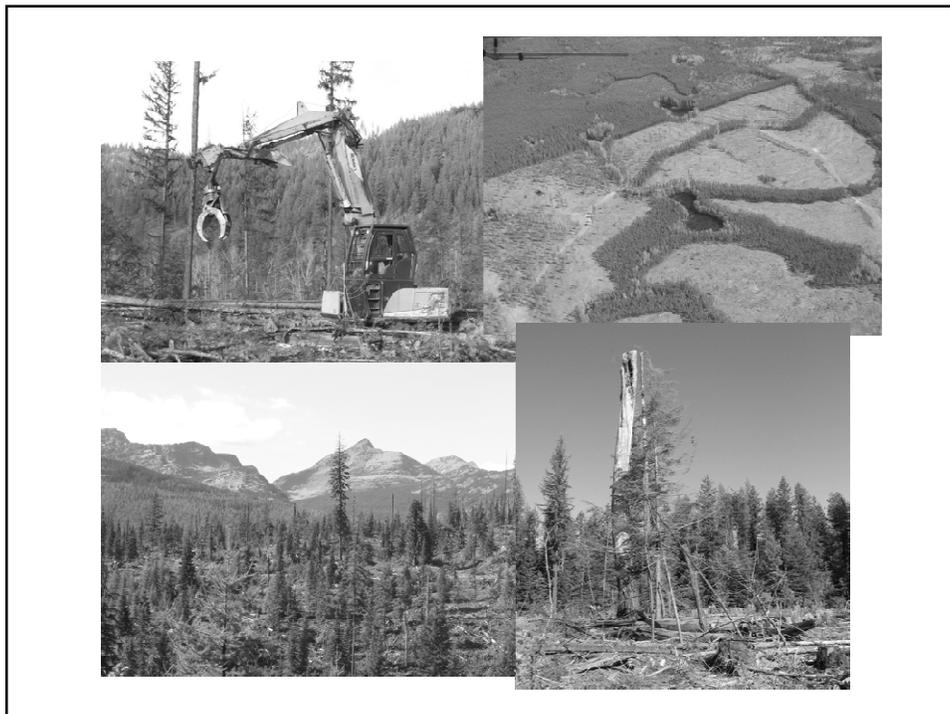
Forest Practices: Then and Now

<u>Practice</u>	<u>Then</u>	<u>Now</u>	<u>Why</u>
Dispersed Clearcuts	"Good"	"Bad"	Increases Fragmentation
Increased Utilization	"Good"	"Bad"	Reduces Snags
Harvest Scheduling <i>(oldest trees cut first)</i>	"Good"	"Bad"	Lose Ancient Forests
Stream Cleanout	"Good"	"Bad"	Removes Large Wood
Fire Suppression	"Good"	"Bad"	Interrupts Natural Processes

The Past vs. The Future

Forestry professionals contribute to sustainable forestry by:

- Being aware, talking with landowners, using information, & applying experience.
- Including Wildlife Habitat by Design rather than Default.



Understand SFI® Requirements and Other Expectations

- Biodiversity is the variety of living organisms
 - Genetic differences among them
 - Communities and ecosystems in which they occur
 - Ecological and evolutionary processes that keep them functioning
- SFI® Program objective:
 - “Manage the quality and distribution of wildlife habitats and contribute to the conservation of biological diversity by developing and implementing stand- and landscape-level measures that promote habitat diversity and the conservation of forest plants and animals including aquatic fauna.”

What can we provide?

(we = loggers, consultants, landowners, etc.)

1. Habitat Diversity
 - Variety of habitat types (ages, wetlands, patches, etc.)
2. Habitat Features
 - Snags, down wood, green trees, etc.
3. Conservation of Rare Plants & Animals
 - Species of concern
 - Proactive efforts



A General Planning Process: Essential Components

- Conducting an assessment
- Establishing specific resource goals & objectives
- Developing and implementing a plan
- Monitoring, audit and adjust (adaptive management)

Conducting an Assessment

- Why?
 - Necessary prerequisite for goals / objectives
 - Establishes baseline for monitoring
- How?
 - Rely on inventory information (e.g. cover types)
 - Web-based resource data (e.g. aerial imagery)
 - Field assessments and outside experts
- What?
 - I.D. existing biological and physical features
 - Develop indicators for biodiversity
 - Find management limitations that hinder success

Biodiversity Assessment Features

- Boundaries
 - Land use / cover types
 - Wetlands
 - Water sources (rivers, streams and ponds)
- Man-made Features
 - Roads & trails
 - Utility rights-of-way
 - Buildings
- Natural Features
 - Rock outcrops, steep slopes and caves
 - Seeps, springs, meadows, glades and waterfalls
 - Archeological, cultural and historic sites

Establish Resource Goals & Objectives

Goals : broad statements of intent / guidance

Objectives: specific & measurable actions

- **Step 1**: Written commitment with short / long term goals & objectives
- **Step 2**: Refine goals & objectives with specific information and evidence (e.g. species data)
- **Step 3**: Assign priorities to provide essential components based on importance or achievability

Develop and Implement a Wildlife Habitat and Biodiversity Plan

- Part of an overall forest management plan
- Foundation is a land classification system that identifies management units with similar physical features (e.g. soils, vegetation, topo)
- Management units evaluated for their role in achieving goals and objectives
- Include employee / contractor training and involvement

Monitor, Audit and Adjust the Plan

- Selection of monitoring “metrics” is important
 - Must relate to indicators of wildlife habitat and biodiversity conservation
 - Should be cost effective
 - Focus on a few measurable forest features
- Metrics can be refined or narrowed with time
- Metrics can be applied to some portion of ownership
- Metrics can be established for some period of time rather than indefinitely

Habitat Diversity

- Benefits of active forest management:
 - No single habitat type offers everything → trade-offs.
 - Varying harvest equipment, stand sizes & shapes, original timber type, site conditions, previous management history → all leads to a diversity of habitats.



Habitat Diversity

- Benefits of different landowner strategies



Habitat Diversity



Habitat Diversity



Habitat Diversity



Fragmentation ? Barriers ?

Habitat Diversity

- **Streams, Wetlands, & Rivers**
 - Why: Biodiversity hotspots, aquatic species, water quality
 - Why: Travel corridors
 - How: Operationally a good place for snag, green tree, & habitat patch retention. Design.
- **Road Management**
 - Provides “security habitat” for big game and other wildlife
- **Noxious Weeds**
 - Take over native habitats
 - Good management practices
 - Containment of new invasives
 - Long-term control strategies



Habitat Diversity & Game Species

- Forest management contributes to game habitat
 - White-tailed deer
 - Elk
 - Moose
 - Black bear
 - Mountain lion
 - Grouse/Turkey



2-day old elk calf, Blackfoot Valley



Habitat Diversity

- Special sites - Design
 - Seeps & springs
 - Wetlands
 - Caves
 - Rock outcrops



- Each harvest unit adds to the whole picture

Wetlands

- Isolated, non-forested wetlands
 - Not covered by MT SMZ law (associated wetlands are)
 - Are covered by MT BMPs (equipment restrictions)
 - Are covered by SFI
 - “Identification and protection of non-forested wetlands, including bogs, fens, vernal pools, and marshes of significant size.”
 - Federal regulatory controversy



Wetland Habitat

- Lots of important functions
 - Aquatic species, unique plants, deciduous trees and shrubs
 - Water quality – filtering zone, aquifer recharge, etc.



Habitat Features

- Snags
 - 60+ Montana species use snags
 - Don't last forever; for persistence select:
 - Larger DBH
 - Tall
 - Early stages of decay with bark
 - Evidence of current use
 - Biological legacies
 - Snag recruitment trees
 - How many?
 - Defective / diseased ?
 - Or healthy, good genetic seed trees?
 - Where? - patches, clumps, dispersed
 - Operator and public safety



Habitat Features

- Snags



Habitat Features

- Down wood
 - Cover, food, growing sites for a diverse group of animals.
 - Salamanders, small mammals, ruffed grouse drumming sites, ants/termites for black bears, lynx dens,
 - Larger pieces last longer & have less wildfire risk.
 - Large decayed pieces have high wildlife value (lots of nooks, crannies, tunnels, crevices, retain moisture like sponges, etc).



Lynx den near Seeley Lake

Habitat Features

- Green live trees
 - Snag recruitment (and eventually large down wood)
 - Nest and perch sites
 - Clumps / dispersed
 - Deciduous trees important



What can we provide?

1. Habitat Diversity
2. Habitat Features

Paying attention to HABITAT addresses ~ 99% of wildlife concerns.

Safety Net:

3. Conservation of Rare Plants & Animals
 - Species of concern
 - Proactive efforts



Northern
Goshawk

Conservation of Rare Plants & Animals

- Endangered Species Act – USFWS, *Regulatory*
 - Endangered – in danger of extinction
 - Threatened – likely to become endangered without conservation action

Only 4 species in NW Montana

13 listed species in all of Montana

(Compare to 308 species in California; Montana is 45th in the U.S.)

Grizzly Bear, Canada Lynx, Bull Trout, Water Howellia

Threatened & Endangered Species

- Grizzly Bear
 - Two recovery zones in NW Montana
 - Private lands can contribute to grizzly bear habitat

Good management practices:

- Manage human / bear interactions
- Eliminate food attractants → keep a clean workplace
- Practice sustainable forestry
- Protect riparian areas, berry fields, wetlands, etc.



Threatened & Endangered Species

- Grizzly Bear
 - Ongoing projects in Montana
 - USGS DNA project
 - State GPS radio-telemetry monitoring



Threatened & Endangered Species

- Canada Lynx

- Higher elevation, cool coniferous forest types
- Primarily feed on snowshoe hares

Good management practices:

- Practice sustainable forestry
- Promote areas of habitat diversity → provide low, dense cover
- Retain down logs, jackstrawed material, windthrow → dens



photo by Corbis.com



photo by Corbis.com

Threatened & Endangered Species

- Canada Lynx Dens



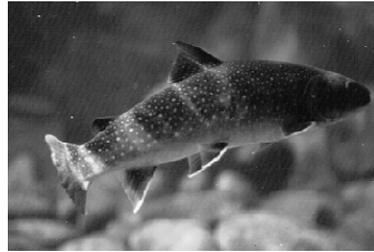
Threatened & Endangered Species

- Bull Trout

- Cold water streams, in-stream habitat diversity, connected stream systems

Good management practices:

- Implement the SMZ law and Montana's BMPs



Threatened & Endangered Species

- Water Howellia

- Aquatic plant, found in isolated potholes that dry out, Swan V.

Good management practices:

- Implement the SMZ law and Montana's BMPs



photo by K. DuBois

Recently Delisted

- Bald Eagle

- Protected under the Bald & Golden Eagle Act and Migratory Bird Treaty Act
- Cannot “disturb” (injury, agitate, nesting disruption, etc.)
- National guidelines available
- Montana guidelines available (used since 1980’s)
- Over 400 nests in MT



Recently Delisted

- Bald Eagle

- Nest typically near lakes and rivers

Good management practices:

- Retain nest tree & alternates
- Retain future nest trees
- Time operations outside breeding season (Feb-Aug)
- Consult MT Bald Eagle Management Guidelines
- Be aware of possible new nests



Recently Delisted

- Gray Wolf
 - Delisted most recently in 2010
 - Hunting season in progress – quota of 220
 - 62 wolves killed as of November 10.
 - Population in Montana estimated at 500-600
 - 213 wolves in 36 packs in NW Montana
 - Confirmed wolf kills in Montana and Idaho
 - 152 cattle
 - 108 sheep
 - 12 dogs
 - 3 horses



Montana Wolf Management

- Gray Wolf
 - State management focuses on areas where:
 - Wolf needs are met;
 - Human social tolerance permits wolves.
 - Good management practices:
 - Wolves & forestry are a good fit
 - Practice sustainable forestry
 - Wolf sighting info valuable for management:
 - Notify FWP (call, email, website)
 - FWP placing collars in most packs
 - FWP focusing work in conflict areas
 - Intensive monitoring next 5 years



Conservation of Rare Plants & Animals

- Global Ranking System – NatureServe, *Non-regulatory*

G1 G2 G3 G4 G5
 Imperiled → → Common

- SFI uses this ranking system to:

- Show that sustainable forestry is proactive;
- Show credibility.



Examples of G1/G2 Species in NW Montana



photo by MNHP

Carinate Mountainsnail



Lyre Mantleslug

Good management practices might be:

- Following the SMZ law & implementing Montana BMP's;
- Retaining representative trees, patches, etc;
- Minimizing disturbance to the understory;
- Site-specific.



Examples of G1/G2 Forest Communities



Spruce-skunk cabbage Forest

Cottonwood-snowberry Forest

Montana Natural Heritage Field Guide and Map Viewer

The screenshot shows the Montana Field Guide website. At the top, it features the 'mt.gov' logo and navigation tabs for 'Field Guide Home', 'Animals', 'Plants', 'Lichens', 'Ecological Systems', and 'Help'. Below the navigation is a search bar labeled 'Search Field Guide' with a 'Go' button. The main content area is divided into several sections:

- Animals - Animalia**: (Latin = breath, soul); Multicellular organisms that derive from fertilization of an egg by a sperm. Heterotrophic (obtain food by ingestion).
- Plants - Plantae**: (Latin = plant); Multicellular organisms that are autotrophic (make complex "food" molecules from basic co-increments). Most use photosynthesis.
- Lichens - Fungi**: (Latin, derived from Greek = net/loaves; sponges); Obtain food through absorption, excrete enzymes for digestion. Ex. molds, mushrooms, etc.
- Ecological Systems**: Biological systems represent recurring groups of biological communities that are found in similar physical environments and are influenced by similar dynamic ecological processes, such as fire or flooding.

Below these sections is a 'How to use the Animal / Plant / Lichen guide' and 'How to use the Ecological System guide' section. On the right side, there is a 'Welcome to our Montana Field Guides' message, a 'sponsored by' section for the Montana Natural Heritage Program, and a list of featured resources including 'Animal Species of Concern Report', 'Plant Species of Concern Report', 'NH Map Viewer', 'NH Tracker', 'Wetlands Information', 'Montana Fish, Wildlife & Parks', 'Species of Concern Endangered Species Living With Wildlife', and 'Kids Guide Discover Montana's Ecosystems!'.

At the bottom of the page, there are links for 'Privacy & Security', 'Accessibility', 'Contact Us', and 'Search', along with the 'mt.gov' logo.

Species Reports by Location and Group

mt.gov MONTANA NATURAL HERITAGE PROGRAM

Report Filters: refresh reports, clear

Expand All | collapse All

Geographic Locations: Single select only. Click to select the location type on which you wish to filter.

County: --Statewide--

T1: --All-- T2: --All--

Township: --All-- N Range: --All-- E

Animals: Multi-select is allowed. Use "CTRL+Click" to select or deselect.

- Invertebrates
- Fish
- Amphibians
- Reptiles
- Birds
- Mammals

Species Rank / Status

View as PDF PDF Errors Export to Excel (version 2003+)

Animal Species of Concern (switch to Plants report) Species List Last Updated 07/19/2011

Use the "Refresh Reports" button to apply filters

Expand All | collapse All

- Introduction
- Species of Concern
- Potential Species of Concern
- Additions To Statewide List
- Species Removed From Statewide List

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Montana Natural Heritage Field Guide and Map Viewer

mt.gov MONTANA FIELD GUIDE

Field Guide Home Animals Plants Lichens Ecological Systems Help

Search Field Guide (Advanced Search) Go

sponsored by Montana Natural Heritage Program

Animal Species of Concern Report
Plant Species of Concern Report
NH Map Viewer
NH Tracker
Wetlands Information

Montana Fish, Wildlife & Parks
Species of Concern
Endangered Species
Living With Wildlife

Kids Guide
Discover Montana's ECOSYSTEMS!

Animals - Animalia
(Latin = ζωον, ζώω) Multicellular organisms that develop from the fertilization of an egg by a sperm heterotrophic (obtain food by ingestion).

Plants - Plantae
(Latin = plant) Multicellular organisms that are autotrophic (make complex "food" molecules from basic constituents). Most use photosynthesis.

Lichens - Fungi
Lichens formed from Green - algae (Korrees, sponges). Obtain food through absorption, secrete enzymes for digestion. Ex. molds, mushrooms, lichens.

Ecological Systems
Ecological systems represent recurring groups of biological communities that are found in similar physical environments and are influenced by similar dynamic ecological processes, such as fire or flooding.

Welcome to our Montana Field Guides. These guides and this website are a collaborative effort between the Montana Natural Heritage Program and Montana Fish, Wildlife and Parks. The Animal Field Guide provides information on identification, habitat, ecology, reproduction, range, and distribution of Montana's animals; new features include a hierarchical approach to finding an animal of interest, thumbnail photos of the animals and additional links. The Plant Field Guide offers information on plant species of concern, including references and photographs.

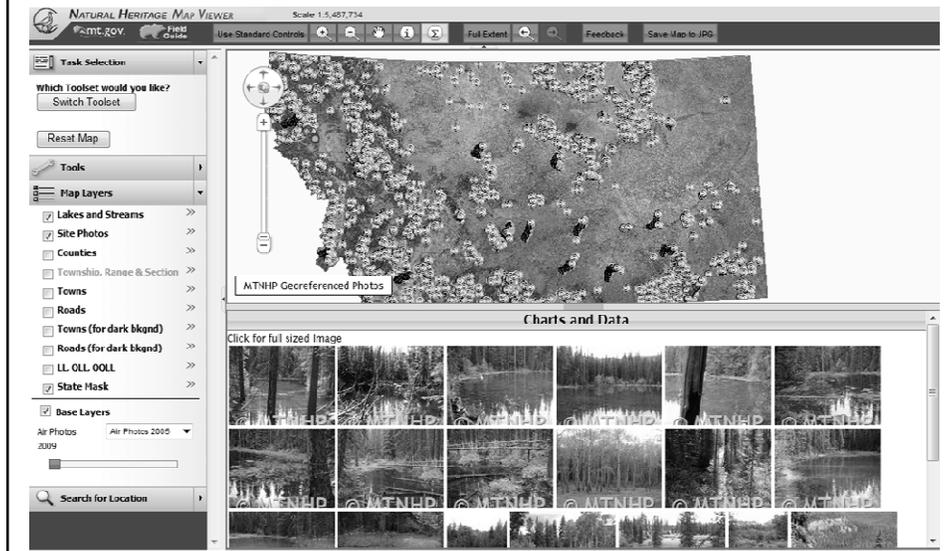
Select a Field Guide to start browsing or use the Search.

How to use the Animal / Plant / Lichen guide
How to use the Ecological System guide

Privacy & Security Accessibility Contact Us Search

mt.gov

Ecological Classification Data



Where to Find Information

- How do you find out where G1/G2 species are located?
 - Contact the Montana Natural Heritage Program
 - Helena – 406-444-5354 mtnhp@mt.gov
- T & E information:
 - FWP, Kristi DuBois 406-542-5551
 - USFWS Helena office: 449-5225
- SFI - aboutSFI.org
- State Extension Forestry – 243-2773
- Montana Logging Association – 752-3168
- Montana Natural Heritage Program - 444-5354
- NatureServe – www.natureserve.org

Summary Points

- Know where to find information.
- Be aware of connecting-the-dots between:
 - Habitat diversity, habitat features, & rare critters/sites
 - &
 - What you do on-the-ground.
- Consider wildlife habitat design when planning/operating.

Feedback?

