

Mixed Conifer Working Group Meeting
February 17, 2011
Wildlife Habitat Management Considerations

Overview

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2. Habitat trends
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Existing mixed conifer habitat

- Approximately 241,785 acres
- Encompassing 13% of the Forest's land base
- Third most abundant habitat type on the Forest (behind spruce-fir and aspen)
- Approximately 30% warm-dry (WD) and 70% cool-moist (CM)
- Approximately 16% in designated Wilderness Areas
- Vast majority located on the Columbine and Pagosa Units
- Approximately 36% suitable for mechanical vegetation treatment

Mixed conifer habitat trends

- Total acres of WD - stable
- Total acres of CM - stable
- Total acres of late successional habitat - stable (both types)
- White fir abundance – increasing (WD)
- Insect and diseases – increasing (both types)
- Snags and future replacements – increasing (both types)
- Presence of aspen inclusions – decreasing (both types)

Factors influencing wildlife habitat suitability

- Stand structure and species composition
- Presence/absence of physical attributes used for key biological/life history requirements
 - Physical attributes - snags, downed logs, multi-storied conditions, canopy closure, etc.
 - Biological/life history requirements – water availability and habitat suitable for foraging, nesting, denning, breeding, etc.
- Human presence and disturbance

- Tolerance for disturbance differs among species and groups of species
 - Most impacted by disturbance – northern goshawk, elk, and others?
 - Less impacted by disturbance – some species of songbirds, squirrels, coyote, fox, and other species more habituated to human presence
- Level of disturbance will affect habitat effectiveness

Species utilizing mixed conifer habitat

- Used by many species
- Extensive overlap in species use of both types
- Some species show preference for CM due to habitat attributes and more mesic conditions present
- Unaware of any species “dependent” on either mixed conifer type
- Forest Plan Management Indicator Species (MIS) – Species selected during Forest Planning to help monitor effects from management actions; changes in populations are believed to indicate the effects of management actions
 - Species associated with CM - American marten, Black bear, Canada lynx, deer mouse, elk, mule deer, hairy woodpecker, Merriam’s turkey, and mountain bluebird
 - Species associated with WD - Same as CMMC except marten and lynx
- Forest Service sensitive species – Designated by Regional Forest due to concerns related to populations status, trends, and habitat conditions
 - Species associated with CM – American marten, American three-toed woodpecker (where bark beetles are present), northern goshawk, olive-sided flycatcher, and northern leopard frog (where water is present)
 - Species associated with WD - Fringed myotis (where suitable roost habitat is present), flammulated owl, Lewis’ woodpecker (at forest/meadow edges), northern goshawk, olive-sided flycatcher, and northern leopard frog (if water present)
- Federally listed threatened or endangered species – listed by the U.S. Fish and Wildlife Service
 - Species associated with CM – Canada lynx
 - Species associated with WD – Mexican spotted owl (steep, rock-walled canyons)
- U.S. Fish and Wildlife Service and Colorado Partners In Flight Birds of Conservation Concern
 - Species associated with CM – Cassin’s finch, Dusky grouse, Williamson’s sapsucker, olive-sided flycatcher
 - Species associated with WD – same as CMMC plus flammulated owl

Wildlife inventory and monitoring in mixed conifer

- Forest-wide MIS
 - Hairy woodpecker and mountain bluebird monitoring by Rocky Mountain Bird Observatory
 - Elk and mule deer monitoring by Colorado Division of Wildlife
 - Coordination with CDOW on status and distribution of other game species such as Merriam's turkey and black bear
 - American marten monitoring by USFS
- Project and District-level
 - Northern goshawk, flammulated owl, Mexican spotted owl, and northern leopard frog
 - Piedra Birds and Burns Network – Monitoring effects of prescribed fire on cavity nesting birds and other birds species
 - Song bird monitoring conducted by the Colorado Bird Observatory to measure species abundance and diversity in ponderosa pine, pine/fir, and fir communities

Existing warm-dry mixed conifer habitat conditions and influences to species (refer to existing habitat trends)

- Current stand conditions beneficial for species preferring dense forests, but have reduced habitat quality for species preferring more open stand conditions
- Current stand conditions provide optimal cover for black bear, elk, mule deer and Merriam's turkey, but at the expense of foraging habitat which is limited for all species
- Dense forests affect habitat quality for forest dwelling raptors (northern goshawk and flammulated owl) by affecting maneuverability while pursuing prey
- Insect and disease activity has increased habitat quality for hairy woodpecker and other cavity nesters due to the large number of snags present and increase in foraging habitat
- 1996 Colorado Bird Observatory study
 - Conducted surveys in ponderosa pine, ponderosa pine/white fir, and fir communities (white fir and Douglas-fir) across the District to assess the influence of white fir invasion on ponderosa pine bird communities
 - Results showed average number of individuals observed per point was highest for fir stands, followed by pine/fir stands, and pine stands (Gillihan 1997).
 - Fir community supported more individuals possibly because of multi-storied structure that provides greater habitat diversity
 - As white fir closes the canopy and fills the understory in stands dominated by ponderosa pine, it restricts habitat suitability for birds of open habitats such as western bluebirds
 - Influx of white fir and associated tree species creates opportunities for birds of higher-elevation, closed-canopy forests such as red breasted nuthatch

- Habitat quality is expected to continue decreasing in the short and long-term for species associated with more open stand conditions (chipping sparrow, dusky flycatcher, house wren, pygmy nuthatch, American robin, and others)
- Habitat quality is expected to continue increasing in the short and long-term for species associated with more dense, multi-storied stand conditions (ruby-crowned kinglet, black-headed grosbeak, western tanager, and others) pending insect and disease influences to stand structure

Existing cool-moist mixed conifer habitat conditions and influences to species

- Insect defoliators, disease, and parasitic plants have decreased habitat quality for species such as American marten, Canada lynx, and other species by killing many trees present in the lower, mid, and upper canopies in some locations
- Forest environment has changed from cool and moist to more warm and dry conditions in some locations
- Overall affect is reduced habitat quality for species associated with mesic forests such as American marten and marten prey species such as red-backed vole, red squirrel, and snowshoe hare
- Red-backed voles prefer mesic forests that provide ideal growing conditions for preferred fungi food sources (present on downed logs and litter on forest floor)
- Defoliation of mature Douglas-fir and spruce trees effect red squirrel foraging habitat (healthy cone producing trees) and nesting habitat (canopies of mature trees)
- Defoliation also affects habitat for snowshoe hare by reducing conifer forage habitat at or near the snow surface
- Defoliation of trees in the lower, mid, an upper canopies reduces habitat quality for migratory (ruby-crowned kinglet, black-headed grosbeak, and western tanager) and non-migratory (brown creeper, red-breasted nuthatch, and mountain chickadee) bird species associated with multi-story stand conditions

Management recommendations/considerations

- Continue management efforts with emphasis on forest restoration
 - Mechanical vegetation treatments
 - Ground and aerial ignition prescribed burn treatments where feasible
- Implement effective road closures to reduce disturbance levels post-project implementation (maintains habitat effectiveness)
- Implement effective noxious weed treatments pre and post-project implementation
- Apply timing restrictions necessary to reduce adverse impacts to key biological/life history requirements
 - Winter range concentration areas for big game
 - Calving/fawning concentration areas for big game
 - Activities within major migration corridors
 - Breeding seasons for sensitive and federally listed species
 - Others

- Retention and recruitment of key habitat attributes (snags, downed logs, etc.)
- Southern Rockies Lynx Plan Amendment
- Continue coordination with CDOW and other interested stakeholders
- Implement monitoring programs to address management questions

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