



FWP Northwest Montana Terrestrial Climate Change Species Monitoring and Conservation Plan

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Region One



NW MT FWP Staff Terrestrial Climate Change Species Monitoring & Conservation Plan

“Our goal is to protect and restore ecosystems to make them more resilient to the effects of climate change,” says McDonald. Identifying critical habitats and protecting them by purchasing conservation easements and wildlife management areas will be key. Especially important will be riparian habitats – what McDonald calls “ecological arteries for the entire landscape.” Conservation agencies and organizations will also need to maintain connections between critical habitats so wildlife such as wolverines and lynx can move across the landscape as they seek cooler temperatures. - [Ken McDonald, Wildlife Division Chief](#) 🐾

“Our focus continues to be to protect and restore critical habitats so that landscapes and wildlife can, to the extent possible, withstand climate change – or whatever other stresses they face in the future.” - [Ken McDonald, Wildlife Division Chief](#) 🐾

“Hunters and anglers are often the first people in Montana to witness the effects of climate change,” says [Bill Geer, Climate Change Initiative manager with the Theodore Roosevelt Conservation Partnership](#). 🐾

“Several large public wetlands in central Montana have been dry for going on nine years now,” says [Jim Hansen, FWP wetland wildlife coordinator](#). “The lack of winter runoff and heavy spring rains might be reducing duck production in that region, not to mention waterfowl hunting opportunities.” 🐾

In addition to shorebirds and wetland species, warming would put the white-tailed ptarmigan, gray jay, and other high-elevation birds at risk. “We’re particularly concerned about the black swift, which is an uncommon species that nests behind glacier-fed waterfalls,” says [Amy Cilimburg, director of bird conservation for Montana Audubon](#). 🐾

NW MT - FWP OBJECTIVES

1. Seek and obtain national and state funding opportunities for priority climate change species monitoring and habitat conservation efforts.
2. Enhance FWP species monitoring and inventory for species impacted by climate change.
3. Coordinate with other agencies, Tribes, NGOs, citizen scientists, and volunteers to increase regional knowledge relative to climate change

species by conducting surveys or coordinating the field survey efforts.

- 4. Establish appropriate regional databases to collect and store survey and inventory information that is readily accessible by the Montana Heritage Program and our conservation partners.**
- 5. Identify focal overlap for climate change species with FWP's Wildlife Mitigation Program, FWP's Comprehensive Wildlife Plan, and the upcoming Crucial Areas and Corridors project.**
- 6. Utilize these climate change species and the aforementioned FWP conservation plans to help prioritize wildlife habitat acquisitions and conservation easements in northwestern Montana.**
- 7. Develop wildlife habitat management recommendations for land uses such as subdivisions and timber sales that consider species vulnerable to climate change impacts.**
- 8. Identify and encourage new climate change research opportunities and partnerships.**
- 9. Provide the public with accurate species information relative to species vulnerable to impacts from climate change in northwest Montana.**

Please see NW MT focal species list below:



Alpine Climate Change Focus

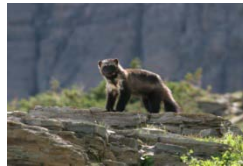
NW MT ALPINE MAMMAL SPECIES CLIMATE CHANGE MONITORING FOCUS

Mountain Goat – Hoary Marmot – Pika



NW MT Climate Change Alpine Species of Concern

Wolverine



NW MT CLIMATE CHANGE ALPINE BIRD SPECIES MONITORING FOCUS

White-tailed Ptarmigan – Gray Crowned Rosy Finch – Clarks Nutcracker



NW MT Climate Change Alpine Bird Species of Concern

American Pipit – Timberline Brewers Sparrow – Black Swift





Coniferous Forest Climate Change Focus

NW MT CLIMATE CHANGE CONIFEROUS FOREST MAMMAL SPECIES MONITORING FOCUS

Moose – Porcupine – Northern Bog Lemming



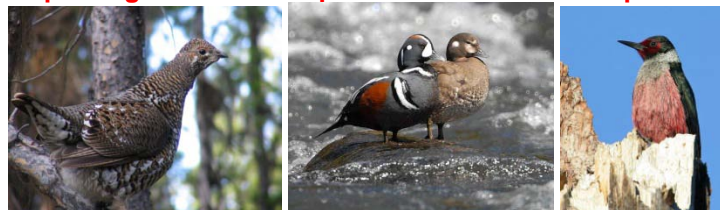
NW MT Climate Change Coniferous Forest Species of Concern

Canada Lynx – Fisher – Pine Marten – Alpine Mule Deer – Grizzly Bear



NW MT CLIMATE CHANGE CONIFEROUS FOREST SPECIES BIRD MONITORING FOCUS

Spruce grouse – Harlequin Duck – Lewis Woodpecker



NW MT CLIMATE CHANGE CONIFEROUS FOREST REPTILE AND AMPHIBIN SPECIES MONITORING FOCUS

Northern Alligator Lizard – Boreal Toad – Coeur d'Alene Salamander – Tailed Frog





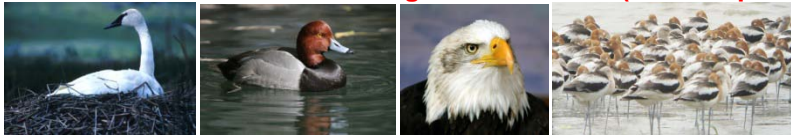
Intermountain Foothill-Grassland and Wetland (riparian and pothole) Climate Change Focus

NW MT CLIMATE CHANGE WETLAND AND RIPARIAN SPECIES MONITORING FOCUS

Great Blue Heron – Black Tern – Northern Leopard Frog



NW MT Climate Change Wetland and Riparian Species of Concern **Trumpeter Swan – Waterfowl – Bald Eagle – Shorebirds (avocets-phalaropes)**



NW MT CLIMATE CHANGE INTERMOUNTAIN GRASSLAND SPECIES MONITORING FOCUS

Long-billed Curlew – Short-eared Owl – Migratory Bighorn Sheep



ALPINE FOCUS

Mountain Goat
Hoary Marmot
Pika
White-tailed Ptarmigan
Gray Crowned Rosy Finch
Clarks Nutcracker
Wolverine
American Pipit
Timberline Brewer's Sparrow
Black Swift

THREATS

Limited alpine distribution, forage quality
Limited alpine distribution, forage quality
Limited alpine distribution, forage quality
Limited alpine distribution, nesting and forage habitat
Limited alpine distribution, nesting and forage habitat
Limited alpine distribution, nesting and forage habitat
Spring snow for dens, habitat connectivity
Limited alpine distribution, nesting and forage habitat
Limited alpine distribution, nesting and forage habitat
Limited alpine distribution in coldwater spry zones

MONITORING FUNDS

FWP/CSKT/GNP
No
GNP only
No
No
GNP only
FWP/CSKT/GNP/USFS
No
No
No

CONIFEROUS FOREST FOCUS

Moose
Porcupine
Northern Bog Lemming
Spruce grouse
Harlequin Duck
Lewis Woodpecker
Northern Alligator Lizard
Boreal Toad
Coeur d'Alene Salamander
Tailed Frog
Canada Lynx
Fisher
Pine Marten
Alpine Mule Deer
Grizzly Bear

Temperature impacts on reproduction and health
Very limited distribution, historical presence
Forested peat bog desertification
Vulnerable to large stand replacement fires
Water quantity, temperature and quality, glacial run-off
Ponderosa pine and cottonwood/riparian species
Very limited distribution in forested lake cliffs
Water quantity, temperature and quality, fragmentation
Water quality and temperature at spray zones
High elevation water quantity, temperature and quality
Snowshoe hare density and deep snow presence
Limited distribution, wet/cool forest types
Vulnerable to large stand replacement fires
Poor summer forage quality, loss of snowfields
Avalanche chutes, denning snow, huckleberry production

FWP/CSKT
No
No
FWP
GNP? USFS?
No
No
No
No
FWP/USFS
FWP/CSKT/GNP/USFS
FWP/CSKT/GNP/USFS
FWP/CSKT
FWP/CSKT
FWP/GNP/USGS/USFWS

GRASSLAND – WETLAND - RIPARIAN FOCUS

Great Blue Heron
Black Tern
Northern Leopard Frog
Long-billed Curlew
Short-eared Owl
Migratory Bighorn Sheep
Trumpeter Swan
Waterfowl
Bald Eagle
Shorebirds (avocets/phalaropes)

Riparian gallery forest quality, water quality, fishery
Limited distribution, water temperature, quality, fishery
Very limited distribution, water temperature and quality
Limited distribution, grassland quantity
Limited distribution, grassland quantity, voles
Migration habitat fragmentation, summer forage quality
Wetland quantity and quality
Wetland quantity and quality
Riparian gallery forest quality, water quality, fishery
Wetland quantity and quality

FWP
FWP
FWP/CSKT/USFSN
No
CSKT/ORI
FWP/CSKT/GNP
CSKT/FWP
CSKT/NBR
FWP/CSKT/GNP/USFS
No