



# 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



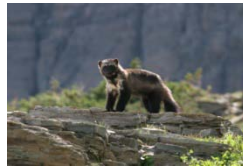
### NW MT ALPINE MAMMAL SPECIES CLIMATE CHANGE MONITORING FOCUS

**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**

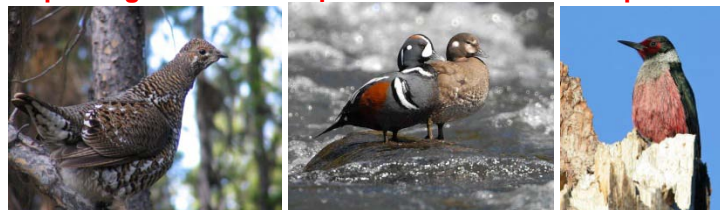


NW MT Climate Change Coniferous Forest Species of Concern  
**Canada Lynx – Fisher – Pine Marten – Alpine Mule Deer – Grizzly Bear**



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**





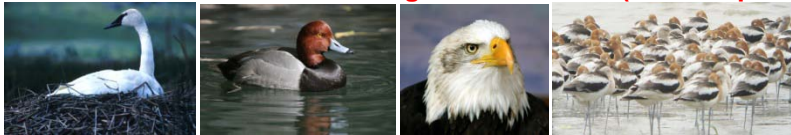
# Intermountain Foothill-Grassland and Wetland (riparian and pothole) Climate Change Focus

## 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