

Potential *NatureMapping* Projects for the Chewelah Peaks Learning Center

1. Wildlife Inventory

Developing a list of species found near the Center

Questions:

- What wildlife are utilizing habitats around the Learning Center?
- Are some coming in closer to the Center than others?

Project Design:

- Monitor stations at various distances from Learning Center
- Monitor stations established within different habitats

Methods:

- Identify and establish stations around the Center at a distance of 100, 200 and 300 meters,
- Stations should represent all habitats
- Construct a “blind” by the new pond for monitoring diurnal and nocturnal activities.
- Monitor at morning, mid-day, and late afternoon
- Stay at each station a minimum of 10 minutes.
- Record sounds, tracks, signs on a journal

Data Reporting and Analysis:

- All groups going out the same day should combine data and use the highest number of sightings to report.
- Weekly data should be averaged for the month
- Graph data

Potential *NatureMapping* Projects for the Chewelah Peaks Learning Center

2. Wildlife Passage Assessment

Understanding the effects of new culvert designs/installation under the new highway on the movement of animals

Questions:

Are wildlife using the culvert?

If so, to what extent?

What species come to the culvert and don't enter?

Project Design:

Fish passage project

Effectiveness monitoring of the new culvert installations

Methods:

Monitor existing culvert for 6 years

Install Large Woody Debris (LWD) inside of culverts to create more pool structure

Collect macroinvertebrates outside and inside and 100m above and 100m below culvert in May and September

Monitor fish movement (association with LWD?)

Water flow

Water quality parameters (oxygen, temp, pH, nitrogen, phosphorus)

Data Reporting and Analysis:

Develop maps showing usage areas

Trends of fish movement associated with habitat modification

Number of macroinvertebrates before and after habitat modification

Track distance of fish movement

Other species

Methods:

Conduct track surveys of animal movement within 10 meters in all direction of the culverts (snow tracking or other means)

Install cameras near culvert that are movement sensitive

Data Reporting and Analysis:

List species that use culvert

At what point do critters decide to use or avert culvert

Monitor seasonal use wildlife via the camera

Potential *NatureMapping* Projects for the Chewelah Peaks Learning Center

3. Mammal Usage of Clear-cuts and Surrounding Forest

A. Moose

Moose are increasing due to clearing of the forests. Mule deer numbers are dropping.

Questions:

What time of the year to moose visit clear-cuts?

What stage of re-growth (e.g., clear-cut to saplings to a small-saw, young forest) do the moose use the most?

How often do moose use the adjacent/mature forests and when?

Is the depth of snow a factor in using closed canopy mature forests?

Project Design:

Monitor clear-cuts and surrounding forests for moose/deer scat

Monitor wildlife “trails” to develop movement patterns of moose and deer

Identify the difference between vegetation that has been browsed by moose, deer, elk, small mammals, and bears.

Methods:

Locate and map wildlife “trails” of moose, elk, and deer

Locate and map latrines and favorite resting areas

Visit monthly (or weekly) these areas and record scat and browse

Mark new scat and newly browsed bushes so they won’t be counted again

Map trails using GPS/CyberTracker for monitoring

Data Recording and Analysis:

Record usage for trails, latrines, and resting areas and show highest usage via GIS maps

Model movement based on above data

B. Huckleberries and Black Bears

(Well documented in literature from Priest Lake, Idaho that bear reproduction is tied to success of huckleberry crop. Also, we at WDFW know that our bear nuisance complaints increase tremendously when the wild berry crop is poor. – Steve Zender)

Questions:

Where are the huckleberry patches?

What are the climatic factors for poor, good, and bumper huckleberry crops?

Is there some means a biologist could use to predict the crop by an index or monitoring precipitation or temperature?

How do bears use the area (sign for other foraging behaviors)

How long do they stay at a huckleberry patch?

Does their behavior in patch usage change in a good vs poor crop year?

Project Design:

Map huckleberry patches on 3 sizes; small – 10 bushes or less, medium – 10-30 bushes, large – over 30 bushes

Record scat and amount of browsing

Methods:

Track weather patterns (wet year/dry year) seasonal temp/precip (regional)

Take temperature at each patch – 1 meter from ground

Check rain gauge at the Center at each visit

Visit patches in morning, mid-day and late afternoon

Potential *NatureMapping* Projects for the Chewelah Peaks Learning Center

Identify scat and browsing habits

Data Reporting and Analysis:

Graph temperature and rainfall

Quantify scat per test area

Number of plants browsed

Qualify the health of huckleberry plants

C. Ecology and other mammals

Changes in the prey base may also change the type and number of predators.

Does the composition of predators change with changing ecology

Questions:

Are mule deer found in the same area as moose?

What other animals visit huckleberry patches?

Do predators stay on the boundaries of the patches?

Project Design:

Monitor winter snow tracks and develop spatial and temporal maps

Monitor scat along edges of clear-cut, inside forest, and within the clear-cut

Monitor browsing within the clear-cut and forest edges

Methods:

Follow trails and collect tracks and scat

Set up monitoring sites in different habitats

Data Reporting and Analysis:

Number and location of scat by each species

Highest area of browsing by species

Signs of carcasses mapped

Potential *NatureMapping* Projects for the Chewelah Peaks Learning Center

Projects that extend into the surrounding communities

Pileated woodpecker Monitoring

Questions:

- What is the population abundance and density?
- Are they utilizing developed areas?
- Are Pileated woodpeckers a keystone species in this area?

Project Design:

- Identify snags and dying trees for pileated woodpecker sign
- Become knowledgeable of woodpecker calls and drumming for ID purposes
- Locate and identify nest sites
- Record sightings in developed/undeveloped areas and behaviors

Where are the Bobolink?

Questions:

- Can a Bobolink habitat be created to successfully attract neighboring source populations?

Project Design:

- Map extent of Bobolink habitats in region
- Monitor existing habitats
- Create Bobolink habitat and monitor

Red-necked grebe and Common loon populations

Loons and grebes are species of interest for WDFW. They act as indicators to the health of the lake systems since they are associated with wetland habitats. The decline of loons and grebes could be a reflection of changing land use.

Loons migrate through in spring but no known nesting in Pend Oreille or Stevens counties at this time. Could we develop a "loon watch" network on some prospective lakes? (Steve Zender).

Questions:

- What is the status of Red-necked grebe and Common loon populations?
- How are the loons using the area lakes?

Project Design:

- Monitor lakes for seasonal observations and abundance
- Compare historic habitat to current habitat around lakes
- What is the forecast for land use/zoning?

Cattle-guards and wild ungulates

Questions:

- How well do ungulates (moose/elk/deer) deal with the cattle-guards on the Pend Oreille County side of the highway?

Project Design:

- Create a map of cattle-guards
- Set-up "hotline" for people in the area to report certain sightings to a school
- Students create and conduct a survey for local community members