Transboundary Flathead Research Needs Workshop
November 3, 2005
Meeting Notes

Breakout Groups: Terrestrial

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Objective: Identify key information gaps and research priorities

Geographic focus: Transboundary Flathead within the broader context of the Crown of the Continent region

Research, Monitoring & Information Priorities: Terrestrial Group

1) Grizzly bear: apply U.S. cumulative effects model to Canadian portion of watershed, with special emphasis on floodplain habitat selection; U.S. - assess how development is affecting population

2) Mesocarnivores: 4 key species are wolverines, lynx, badger and fisher

3) Local wisdom and traditional knowledge workshop: capture information from outfitters, hunters, naturalists, etc.

4) Birds: focus on pileated woodpecker and water ouzel; include territorial counts, productivity, and sampling egg shells for pollutants

5) Riparian habitat classification: including distribution of cottonwood galleries, deciduous trees, small mammals, beetles

6) Current human impacts: road use and traffic counts, recreational user days and trends, etc.

7) Tailed frog: evaluate current surveys, continue monitoring

8) Whitebark pine: cascading effects on red squirrel, grizzly bear, etc.

Ray Demarchi notes that the transboundary Flathead has one of the most amazing wildlife assemblages in North America. We don't fully understand why this is so, but key factors, especially for the diversity of carnivores, include:

- Primary producers are in good shape
- Not so many people, isolation
- Diversity of landscapes, habitat and landforms
- Good connectivity across landscape types
- Intact floodplain ecosystem
- Critical mass in terms of scale of the landscape
    - No portion of the landscape alone can sustain these populations

The transboundary Flathead (TBF) is the primary intact landscape for wild land connectivity between the Rockies of the U.S. and Canada. It holds a unique community of carnivores that appears "unmatched in North America for its variety, completeness, use of valley bottomlands, and density of species that are rare elsewhere" and arguably is "the single most important basin for carnivores in the Rocky Mountains." (Weaver 2001). The TBF connects the Northern Continental Divide and the Northern Crown of the Continent ecosystems, 2 "critical core and corridors" identified in the Yellowstone to Yukon conservation strategy.

16 species of carnivores include:
Grizzly, black bear, wolf, bobcat, cougar, fisher, wolverine, red fox, marten, long-tailed weasels, short-tailed weasels, lynx, coyote, otter, mink, badger

Six species of ungulates include:
Sheep, goats, elk, whitetail deer, mule deer, moose

- Mountain caribou are at best transient and rare in the Flathead

General needs:

Fine-scale, integrated and seamless transboundary base map with spatial data layers showing physiographic conditions, including cover types, structure, roads and other human developments. Need to cross-walk existing vegetation, habitat and hydrology layers across international and provincial borders.

Need mechanism to assemble and share data, such as a spatially linked data portal on the internet.

Need an annotated bibliography for existing research in the transboundary Flathead.

Grizzlies:
What do we know?

- Hard to keep bears alive in the flood plain south of the border
- There's apparently a lot of bears using the floodplain north of the border
    - Need broader shared access to telemetry data from Canadian side

- Factor of survival and density is ecosystem productivity and human mortality
- Bears are low on the resilience scale in terms of survival, reproduction, corruptible by humans
- When you have roads up drainages, bears die
- Bears are in the Flathead because it's an intact watershed with an intact floodplain
- Flathead floodplain has the highest density of non-salmon grizzlies in North America
- Bears don't necessarily use the altitudinal gradient; floodplain bears are dominant, with a higher density, and subdominant bears get pushed into mountains
- South of the border, the valley bottom area in Glacier may be a population source, whereas east of the river may be a population sink

- Baseline data needs for grizzlies
  - Integrated data set of recorded mortality
    - Rocky Mtn. Grizzly bear monitoring committee disbanded
  - Comprehensive bear mortality trend analysis in the transboundary region
    - Need to compile and synthesize existing data
  - Need to move the U.S. cumulative effects model for grizzlies north of the border and do validation south of the border, with an emphasis on floodplain habitat selection on both sides of the border and both sides of the river in the US.
  - Don't have telemetry data for grizzly bears that use floodplain habitat; data has been collected in B.C., but it's not available;
    - Possibly need more telemetry data

Wolves

- Capture and synthesize mortality, movement, and denning data
- Dispersal importance of Flathead wolves has reduced due to introduction of wolves in Idaho and elsewhere, however, wolf population in northwest MT has not increased significantly since mid-1990s likely due to high mortality and may be considered a sink that requires dispersal of wolves from the TBF among other areas

- Wolves not identified as a key indicator species because they are relatively resilient – recent work from Canadian arctic however has indicated significant negative response of wolves to development.

Ungulates:

- White-tailed deer and elk populations declined through the 1990s and moose remained stable
- Knowledge of movement corridors OK
- Upper Flathead is calving range for elk and moose, and winter range for moose, lower Flathead is winter range for deer and elk

- We know the least about bighorn sheep (blue-listed in BC) and mountain goats
    - Tremendous loss of institutional knowledge in B.C. due to budget cuts, turnover. The lack of knowledge about the mountain goat winter range in McLatchie and Foisey Creek area at the Ministry is an example of this. Ray says this information exists on maps in the Cranbrook office, but no one remembers or knows where this information can be found.

Meso-carnivores

- Meso and large carnivores are guild of species that largely define the TBF (i. e. Weaver, Demarchi etc)
- Meso-carnivores are good surrogate species (umbrellas, indicators, keystones, flagships) for assessing ecological integrity and impacts of humans on this, some species are of relatively low resilience
- Badgers are listed as endangered in Canada, the western Canadian population of wolverines is listed as a species of species, fisher are red listed in BC, lynx are threatened in US
- Need better presence/absence inventories of wolverines, lynx, fisher, badger, river otters, as well as demographic info and population trends
- Need cumulative effects model for meso-carnivores
- A CEM can be built only after additional field research provides a large sample size of meso-carnivores (wolverine, lynx, badger, fisher) in developed areas and non-developed areas
    - Presence/absence
    - Demographic assessment

Birds

Neo-tropical birds, harlequin ducks and great blue heron are of limited value as indicators since they are seasonal residents and population trends could be affected more by external factors.

Woodpeckers (pileated emphasized) are important keystone species

- Research priority for baseline assessment and long-term monitoring would include:
    - Presence/absence inventories
    - Relative abundance and demographic trends
    - Habitat maps (key on older forests and structure)

Dippers or water ouzels are a good indicator of water quality

- Metals can affect reproductive capacity
- Would be a priority baseline study prior to CBM wastewater discharge, in particular, with long-term monitoring
    - Conduct territorial counts to determine population status, trends
    - Measure reproduction success, sample egg shells for pollutants

Great blue heron

- presence-absence
- include in local wisdom workshop
- very sensitive to disturbance

Harlequin ducks

- Productivity surveys
- There is some history data, but not consistent

Goshawks

- Good indicator but harder to find than woodpeckers

Tailed frogs very important in the Flathead

- one of the few amphibians that are stream inhabitants,
- indicator of forestry issues and water quality, (sedimentation and temperature?)
- need summary of existing studies
- has been some surveys in last couple years
    - Need to assess status of tailed frog research
- Good indicator of non-fish bearing streams

A priority wildlife research activity would be a local wisdom and traditional knowledge workshop. This would update a 1993 workshop that covered the entire Kootenay Region. The geographic focus of this workshop could be focused on the transboundary region, with a primary focus on the Flathead. Pull together hunters, outfitters, rangers, naturalists, hikers, anglers, local residents and others from both sides of the border who are knowledgeable and spend time on the land. Purpose would be to capture their knowledge about the relative abundance, trends, distribution and key ranges of a variety of wildlife species.

Riparian habitat classification

- cottonwood galleries, distribution
- seral dynamics of deciduous, riparian trees
- indicator species: beavers, small mammals
- we have geomorphological data, but not vegetative
- Some old studies from 1970, Carl Keys (small mammal studies) need to be updated

Sub-alpine vegetation a good indicator of response to climate change

Fire

- Document cover type change in terms of patch size, mosaic patterns, species composition

Landscape change – repeat photography from Dominion lands study of late 1880s

Quantify stand dynamics in relation to flooding and fire and link that to numbers and distribution of wildlife species (bear, dippers, woodpecker, wolverine)

Whitebark pine surveys

- Expand and integrate studies across the border

Measure road use/traffic counts/recreational use days survey on both sides of the border

- Important baseline assessment study prior to major changes that could affect use of the transboundary Flathead, including mining, CBM, new park designation, road improvements, etc.