

**Wildlife and Terrestrial Habitat Resource Group
Mystic Lake Field Survey
May 18-19, 2004
Mystic Lake, Montana**

The summary discussions presented below are a work in progress and do not reflect formal decisions made by PPLM or any agency or public group.

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Summary of Mystic Site Visit

(Also see attached summary from USFS, Barb Pitman)

On May 18-19, 2004, members of the Wildlife and Terrestrial Habitat Resource Group (entire Resource Group was invited) met at the Mystic Lake Project site. The following summary lists the topics/questions focused on during the site field survey as well as the results/conclusions and recommendations for potential Project induced resource impacts and potential PM&E measures:

1) Question:

Are sensitive amphibians (boreal toad, northern leopard frog) or their habitats present and potentially impacted by Project operations?

Results:

West Rosebud Lake, Emerald Lake, beaver ponds, and the pond/slow water area approximately ¼ mile downstream of the housing compound were checked for amphibians. No sensitive amphibian species were observed during site visit. Only one, Columbia spotted frog, was observed located near a beaver pond, hydrologically unconnected to the Project waters (West Rosebud Creek). Amphibian breeding and general habitat for Boreal toads and northern leopard frogs is minimal and where present is associated with beaver ponds constructed along tributaries to West Rosebud Creek of which the Project operations and management would have no effect.

2) Question:

Are raptor electrocution or collision hazards associated with Project distribution and transmission lines significant?

Results:

Several raptor species, although not detected during the field review, are known to utilize the West Rosebud drainage. These species include bald eagle, osprey, and

northern goshawk. Owls, including large species such as great-horned and great-gray owls, would also be expected to occur in the drainage. The extent of past raptor electrocutions or collisions associated with project transmission and distribution lines is not known. Lines and poles within and near the housing compound were checked for hazard potential and evidence of raptor use.

- The powerline from the powerhouse upstream to Mystic Lake is mostly below treetop level and thus is expected to have minimal collision or electrocution hazard potential.
- The configuration of the powerline from the powerhouse to the surge tower has the potential to electrocute raptors attempting to perch on the crossarms.
- Corner configuration power poles and poles containing transformers or uninsulated jumper wires provide potential electrocution hazards to raptors attempting to perch on them. Four such poles occur in the housing and powerhouse area. Possible solutions include installation of artificial perches or replacement of uninsulated jumper wires with insulated wires.

Potential PM&E:

Recommended PM&E measures to reduce potential for adverse impacts to raptors within or near the housing compound involve further investigation of options and strategies to address configuration of corner power poles, poles containing transformers or uninsulated jumper wires, and the powerline from the powerhouse to the surge tower.

Potential safety hazard

A MFWP biologist conducts game surveys two to three times a year in the West Rosebud drainage. The surveys are typically conducted from a helicopter during winter months. Although surveys have been conducted annually for many years without incident, the biologist suggested the line from the powerhouse to the surge tower be marked to improve visibility. The line from the powerhouse to Mystic Lake is mainly below tree level and not a hazard, and the biologist did not consider the transmission lines to be a hazard.

3) Question:

Will future Project transmission and distribution lines be upgraded to raptor protection standards?

Results:

Over the next couple years, PPL Montana, in consultation with the USFS, plans to upgrade transmission Line A for reliability and to raptor-safe standards. Transmission line B runs parallel to line A and is not currently scheduled for upgrade. No portions of line B are currently known or suspected to be raptor high use areas and this line is in good condition. Thus, the need for an early upgrade of line B is not proposed.

4) Question:

Do Project operations adversely impact West Rosebud Creek riparian habitats or related riparian-dependent wildlife species?

Results:

Forty bird species were observed visually or via audio cue on Forest Service land between the Forest Service boundary upstream to the powerhouse (refer to Table 1 provided in USFS summary notes of May 2004 site visit). Twenty-two species were associated with riparian habitats (river, lake, willow/alder, or cottonwood). Non-bird species that utilize the riparian habitat include moose, deer, beaver, muskrats, and small mammals. Among these species, moose, beaver, and muskrats are riparian-dependent. Affects of project operations on terrestrial wildlife species that use the riparian habitat is expected to be minimal.

5) Question:

Have Project operations (versus livestock grazing and other land-use impacts) caused West Rosebud Creek riparian community changes over time?

Results:

An initial assessment of the riparian corridor was conducted by comparing historic to current aerial photos of the West Rosebud Creek drainage from 1959, 1971, and 1998. However, the scale of the aerial photos was insufficient to address question (5) regarding any visible changes to the riparian community over time in the Project area, and limited abilities to differentiate disturbances if present, among grazing, agriculture, or hydrologic regime alterations.



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On May 18 and 19, 2004, informal surveys along the West Rosebud drainage were conducted from the powerhouse downstream to the Forest boundary. Present were Kristi Overberg (GEI Consultants), Dennis Flath (wildlife consultant), and Barb Pitman (Forest Service, Beartooth District). In addition to participating in the group review, Barb Pitman conducted a bird survey along the drainage on May 17. The purpose of the studies was to address wildlife and terrestrial habitat questions and potential issues. The topics addressed are as follows:

- 1) Presence of and potential impacts to sensitive amphibian species (boreal toads, northern leopard frogs) or their habitats.
- 2) Extent of raptor electrocution or collision hazards associated with Project distribution and transmission lines.
- 3) Future upgrades of Project transmission and distribution lines to raptor protection standards.
- 4) Impacts of Project facilities to bat species.
- 5) Impacts of Project operations on West Rosebud Creek riparian habitats or related riparian-dependent wildlife species.
- 6) Effects over time of Project operations (versus livestock grazing and other land-use impacts) on West Rosebud Creek riparian community.
- 7) Potential for aircraft collision with powerlines.

Conclusions of the surveys in the above topic order are:

- 1) West Rosebud Lake, Emerald Lake, beaver ponds, and the pond/slow water area approximately ¼ mile downstream of the housing compound were checked for amphibians. One Columbia spotted frog was detected in a beaver pond. No sensitive species were detected in any of the surveyed areas. Dennis concluded that a small amount of amphibian habitat may have existed before development, especially at beaver ponds, and that development probably had little impact on habitat. Beavers occur in the drainage, and potential amphibian habitat may increase slightly as beaver dam construction increases. Dennis also concluded that Northern Leopard Frog habitat and Boreal Toad breeding habitat probably do not occur in the subject area.

2) Several raptor species, although not detected during the field review, are known to utilize the West Rosebud drainage. These species include bald eagle, osprey, and northern goshawk. Owls, including large species such as great-horned and great-gray owls, would also be expected to occur in the drainage. The extent of past raptor electrocutions or collisions associated with project transmission and distribution lines is not known. Lines and poles within and near the housing compound were checked for hazard potential and evidence of raptor use. Little use was detected. However, lack of detection does not mean lack of use since signs of low or moderate use may disappear before being detected.

The powerline from the powerhouse upstream to Mystic Lake is mostly below treetop level and thus is expected to have minimal collision or electrocution hazard potential.

The configuration of the powerline from the powerhouse to the surge tower has the potential to electrocute raptors attempting to perch on the crossarms. Possible solutions include installation of perch guards or artificial perches. The possibility for raptor collisions with this line also exists and could be resolved by adding markers to increase line visibility.

Corner configuration power poles and poles containing transformers or uninsulated jumper wires provide potential electrocution hazards to raptors attempting to perch on them. Approximately four such poles occur in the housing and powerhouse area. Possible solutions include installation of artificial perches or replacement of uninsulated jumper wires with insulated wires.

3) Existing transmission lines will be upgraded to raptor protection standards when scheduled maintenance is due. Transmission Line A is scheduled for upgrade in 2005 and will include raptor protection features. Line B is not currently scheduled for upgrade. No portions of Line B are currently known or suspected to be raptor high use areas. Thus, the need for early upgrade of Line B is not expected.

4) Evening surveys for bat presence in the housing compound/powerhouse area and the pond/slow water area approximately ¼ mile downstream of the housing compound were conducted utilizing a bat detector. No bats were detected. However, lack of bat detection does not necessarily mean lack of bat presence. Bats may have been inactive due to cold temperatures and lack of insect activity. If bats do occur in the West Rosebud drainage, particularly around the Project facilities, positive or negative effects of the facilities and Project operations are expected to be minimal. Positive effects may include roosting sites provided by buildings and increased insect numbers caused by an increase in water surface area. Negative effects include loss of roosting sites in buildings if such sites are made unavailable.

5) Forty bird species (see attached Table 1) were detected on Forest Service land between the Forest boundary and the powerhouse. Twenty-two species were associated with riparian habitats (river, lake, willow/alder, or cottonwood). Non-bird species that utilize the riparian habitat include moose, deer, beaver, muskrats, and small mammals. Among these species, moose, beaver, and muskrats are riparian-dependent. Affects of project operations on terrestrial wildlife species that use the riparian habitat is expected to be minimal. However, impacts to fisheries resources are more likely than to terrestrial species and should be addressed by the Fisheries, Aquatic Habitat, and Water Quality Resource Group.

6) 1959 and 1998 aerial photo scans at a scale sufficient to address this question were not available as planned. Riparian community changes over time may be related more to weather and climate than to Project operations, but no definite conclusions could be made.

7) A Montana Dept. of Fish, Wildlife and Parks biologist conducts game surveys two to three times a year in the West Rosebud drainage. The surveys are typically conducted from a helicopter during winter months. Although surveys have been conducted annually for many years without incident, the biologist suggested the line from the power house to the surge tower be marked to improve visibility. The line from the power house to Mystic Lake is mainly below tree level and not a hazard, and the biologist did not consider the transmission lines to be a hazard.

Summary:

- Potential impacts to amphibians and bats, plus terrestrial wildlife species that utilize riparian habitat, is expected to be minimal.

- Potential raptor electrocution and collision hazards exist along the powerline from the powerhouse to the surge tower, and on corner configuration power poles and poles containing transformers or uninsulated jumper wires.

- Potential impacts associated with the transmission lines are already addressed by upgrade requirements.

- Potential impacts to riparian habitat are considered more pertinent to fisheries resources than to terrestrial species.

- The line from the power house to the surge tower is potentially hazardous to aircraft during game surveys.

Recommendations:

- To reduce potential for adverse impacts to raptors, investigate options and strategies for addressing configuration of corner power poles, poles containing

transformers or uninsulated jumper wires, and the powerline from the powerhouse to the surge tower.

-- Since potential impacts to riparian habitat is considered more pertinent to fisheries resources than to terrestrial species, riparian habitat issues should be addressed by the Fisheries, Aquatic Habitat, and Water Quality Resource Group.

-- Continue to pursue the question of whether Project operations (versus other land-use patterns) have caused West Rosebud Creek riparian community changes over time.

-- To improve safety for aircraft during game surveys, pursue increasing visibility of the powerline from the power house to the surge tower.

Barbara A. Pitman

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Wildlife Biologist

TABLE 1 - SUMMARY OF BIRD SPECIES DETECTED ON FOREST SERVICE LAND IN WEST ROSEBUD DRAINAGE: F.S. BOUNDARY TO POWERHOUSE MAY 17, 18 AND 19, 2004

Species	Habitat (1)	Cue (2)
American dipper	R, LK	A, V
American goldfinch	F	A
American robin	LP, W/A, C, G	A, V
Barrow's goldeneye	LK	V
Belted kingfisher	F, R, LK	A, V
Brewer's blackbird	LP	A, V
Brown-headed cowbird	LP, W/A	A, V
Canada goose	F, LK	A, V
Chipping sparrow	LP, DS	A
Clark's nutcracker	LP	V
Common merganser	R, LK	A, V
Common raven	F, LP, LK	A, V
Common snipe	F	A
Common yellowthroat	W/A	A, V
Dark-eyed junco	LP, W/A	A, V
Dusky flycatcher	W/A	A
Green-tailed towhee	DS	A, V
Green-winged teal	LK	A, V
Hairy woodpecker	LP	A, V
Hammond's flycatcher	LP, C	A, V
Hooded merganser	LK	V
House wren	DS	A
Lincoln's sparrow	W/A	A
Mallard	F, R, LK	A, V
Mountain bluebird	G	A
Mountain chickadee	LP	A, V
Northern flicker	LP	A
Pine siskin	LP, F	A, V
Red-breasted nuthatch	LP	A
Red-naped sapsucker	C	A
Ruby-crowned kinglet	LP, C	A, V
Ruffed grouse	C	A
Savannah sparrow	G	A
Song sparrow	W/A	A, V
Spotted sandpiper	R, LK	A, V
Stellar's jay	LP	A, V
Townsend's solitaire	LP	A, V
Tree swallow	F	V
White-crowned sparrow	W/A	V
Yellow-rumped warbler	LP, C	A, V

(1)

LP – Lodgepole pine

DS – Dry shrubs

W/A – Willow &/or alder

R – River

C – Cottonwood &/or aspen

LK – Lake

F – Flew over

G - Grassland

(2)

A – Audio

V - Visual