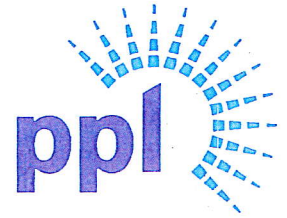


PPL Montana, 45 Basin Creek Road, Butte, Montana 59701



PPL MONTANA, LLC

PPLM-Mystic-3172

Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street
Washington, D.C. 20426

June 19, 2014

RE: PPL Montana files Mystic Lake Hydroelectric Project (No. 2301) Five Year (2010-2014)
Harlequin Duck Survey Report

Dear Secretary Bose:

Herein attached, per U.S. Forest Service (USFS) Appendix B Condition 12 of the December 17, 2007 Commission Order Issuing New License (effective January 1, 2010), is PPL Montana's Five Year (2010-2014) Harlequin Duck Survey Report for the Mystic Lake Project. This Five year comprehensive report has been completed in consultation with the U.S. Forest Service.

No harlequin ducks were observed during the five year period of annual surveys and no additional surveys or conservation actions are being requested by the U.S. Forest Service. PPL Montana and U.S. Forest Service conclude this filing represents the completion of all License Appendix B Condition 12 requirements. Attached below is the U.S. Forest Service signature approving this conclusion and filing.

Sincerely,

A handwritten signature in black ink, appearing to read "J. H. Jourdonnais". The signature is fluid and cursive.

Jon H. Jourdonnais,
Manager Hydro Regulatory and Environmental Compliance

Cc: Scott Barndt, USFS
Barb Pitman, USFS
Terry Jones, USFS
Ginger Gillin, GEI
Kristi Webb, New Wave
Jim Darling, MFWP

By signature below, the U.S. Forest Service approves PPL Montana completion of Mystic Lake License Appendix B Condition 12 requirements and the Five Year (2010-2014) Annual Harlequin Duck Survey Summary Report.

Mary C Eubank
Name

Forest Supervisor Custer Gallatin National Forests
USFS Position

6/17/14
Date



**Mystic Lake Hydroelectric Project
FERC Project Number 2301**

**5-Year (2010-2014) Annual Harlequin Duck Survey
Summary Report
Public**

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Submitted to:
Federal Energy Regulatory Commission
888 First Street NE
Washington DC 20426

Submitted by:
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Executive Summary

The Mystic Lake Hydroelectric Project No. 2301 (Project) is operated and owned by PPL Montana, LLC (PPL Montana). On December 15, 2006, PPL Montana submitted the Mystic Lake Hydroelectric Project's (Project) Final License Application (FLA) with the Federal Energy Regulatory Commission (FERC). FERC approved the FLA and issued an Order for the new License on December 17, 2007. The previous License expired December 31, 2009 and the new 40-year License was in effect starting January 1, 2010.

Pursuant to the new License Order (dated December 17, 2007), PPL Montana is required to complete a harlequin duck (*Histrionicus histrionicus*) survey annually for the first 5 years (2010 through 2014) of the new License. The objective of the annual surveys is to determine the presence or absence of harlequin ducks along West Rosebud Creek from the U.S. Forest Service (USFS) boundary upstream to the Mystic Lake powerhouse. If harlequin ducks were found in the survey area, then additional objectives of the survey were to determine the usage of West Rosebud Creek by harlequin ducks and to determine potential disturbance effects from recreation on harlequin ducks.

PPL Montana completed five annual surveys (2010 through 2014) along West Rosebud Creek. No harlequin duck were observed during the surveys. All surveys were completed during the month of May per the study methodology defined in Appendix E of Volume IA – Public, FLA Exhibit E (December 15, 2006) and the Mystic Lake Project Wildlife Plan (PPL Montana, 2010).

This report concludes PPL Montana's compliance requirements of the 5-Year Harlequin Duck Study per the License for the Mystic Lake Hydroelectric Project No. 2301. PPL Montana consulted with the USFS to determine if additional surveys or conservation actions were warranted. No additional action is proposed by USFS or PPL Montana. This summary report has been prepared and filed with the Commission in compliance with the FERC Order issued on December 17, 2007 and the USFS Section 4(e) Terms and Condition No. 12.

1.0 Introduction

The Mystic Lake Hydroelectric Project No. 2301 is operated and owned by PPL Montana, LLC (PPL Montana). On December 15, 2006, PPL Montana submitted the Mystic Lake Hydroelectric Project's (Project) Final License Application (FLA) with the Federal Energy Regulatory Commission (FERC or Commission). FERC approved the FLA and issued an Order for the new License on December 17, 2007. The previous License expired December 31, 2009 and the new 40-year License was in effect starting January 1, 2010.

The Order issued on December 17, 2007 includes U.S. Forest Service (USFS) Section 4(e) Terms and Conditions filed on May 3, 2007. Condition No. 12 – Wildlife Species Protection specified PPL Montana complete the following:

The Licensee shall determine the presence or non-detection of Harlequin ducks along West Rosebud Creek from the Forest Service boundary upstream to the powerhouse and determine disturbance effects of recreation on Harlequin ducks. At a minimum, the Licensee shall:

- Conduct surveys annually for the first five years after License issuance, then survey incrementally in future years if warranted.
- File a progress report of the monitoring and determination of effects with the Commission within 1 year of the completion of the 5-year survey.

The annual surveys to determine the presence or absence of harlequin ducks in the Project area was developed to address two potential issues/concerns.

- Potential for increased disturbance of harlequin ducks, if the species is present in the Project area, as a result of recreational use along West Rosebud Creek, West Rosebud Lake, and Emerald Lake.
- Potential future modifications to the hydrograph caused by Project operations to accommodate whitewater recreation that may affect nesting habitat, if the species is present.

Human presence is related to existing recreational opportunities in the Project area. Several recreational opportunities such as whitewater boating, fishing, flatwater boating, hiking, camping are related to non-Project facilities (West Rosebud Creek downstream of the powerhouse, Emerald Lake, Emerald campground, Pine Grove campground, Mystic Lake Trail) and Project facilities (West Rosebud Lake, Mystic Lake). Consequently, recreational use could potentially disrupt harlequin duck nest success, if the species was found to be present.

As a result of the uncertainty regarding the presence of the harlequin duck and potential impacts the Project and associated recreationists may have; PPL Montana developed a protocol to survey for harlequin ducks. The objective of the survey was to determine presence of harlequin ducks along West Rosebud Creek from the USFS boundary upstream to the powerhouse (Figure 2-1) as well as determine disturbance effects related to recreationists, specifically whitewater boaters and fisherman, if the species is present.

2.0 Methods

The harlequin duck survey methodology is outlined in Appendix E of Volume IA – Public, Final License Application Exhibit E (December 15, 2006) and includes the following:

- Conduct at least two harlequin duck surveys from May 1 to 25, at least 1 week apart.
- Conduct survey annually for first 5 years, then survey incrementally in future years if warranted.
- If pairs are detected in May, return for brood survey in late June – early August.
- Method: slowly hike upstream, scanning the creek and creek banks for harlequin ducks. Stop periodically and scan through binoculars.
- Record data on standard harlequin duck survey form.

The survey reach extended from the USFS boundary upstream to the Mystic Lake powerhouse (Figure 2-1).

If warranted, adapt future survey method and timing to better monitor harlequin duck presence and use of West Rosebud Creek, and disturbance effects from recreation on harlequin ducks.



Project Location

West Rosebud Creek

**Forest Service Boundary
Start of Harlequin Duck Survey**

Emerald Lake

Re-regulation Dam

STILLWATER COUNTY
CARBON COUNTY

West Rosebud Lake

**Mystic Lake Powerhouse
End of Harlequin Duck Survey**

Mystic Lake

	Re-regulation Dam
	Mystic Lake Powerhouse
	Harlequin Duck Survey Reach
	FERC Project Boundary
	Custer National Forest
	Absaroka-Beartooth Wilderness Area
	County Boundary



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Mystic Lake Hydroelectric Project
FERC No. 2301
Stillwater and Carbon Counties, Montana
PPL Montana, LLC



Annual Harlequin Duck Survey 2010-2014
JUNE 2014
FIGURE 2-1

3.0 Results

3.1 2010 Survey

A survey was completed on May 14, 2010. The field survey crew included Erik Nyquist with Morrison-Maierle, Inc. (MMI) and Barb Pitman, USFS Wildlife Biologist. Site conditions were approximately 57 degrees Fahrenheit (°F), southwest winds at 0 to 5 miles per hour (mph), and approximately 30 percent cloud cover. No precipitation had occurred within the 24 hours prior to the survey. However, snow depths along West Rosebud Creek varied in depth from 1 to 2 feet. No harlequin ducks were observed from the USFS boundary upstream to the powerhouse.

A second survey was completed on May 25, 2010. The field survey crew included Erik Nyquist and Steve Laufenberg, with MMI. Site conditions were approximately 50 °F, southwest winds at 10 to 15 mph, and approximately 40 percent cloud cover. Heavy precipitation had occurred within the 24 hours prior to the survey. There was no snow along West Rosebud Creek during the survey. No harlequin ducks were observed from the USFS boundary upstream to the powerhouse.

As no harlequin ducks were observed during the May 14, 2010 and May 25, 2010 surveys, a follow-up brood survey was not completed in 2010. Photos 1 and 2 depict site conditions that were typical for the May 2010 surveys.

Table 3-1: Bird species observed during the May 14 and 25, 2010 surveys.

Common Name	Scientific Name	May 14, 2010	May 25, 2010
American coot	<i>Fulica Americana</i>	X	X
American dipper	<i>Cinclus mexicanus</i>	X	X
American robin	<i>Turdus migratorius</i>	X	X
American wigeon	<i>Anas Americana</i>		X
Barrow's goldeneye	<i>Bucephala islandica</i>	X	X
Canada goose	<i>Branta canadensis</i>	X	X
Common merganser	<i>Mergus merganser</i>	X	X
Lesser Scaup	<i>Aythya affinis</i>		X
Mallard	<i>Anas platyrhynchos</i>	X	X
Ruby-crowned kinglet	<i>Regulus calendula</i>	X	
Sandhill crane	<i>Grus canadensis</i>		X
Song sparrow	<i>Melospiza melodia</i>	X	X



Photo 1: May 14, 2010 harlequin duck survey site conditions



Photo 2: May 25, 2010 harlequin duck survey site conditions 2011 Survey

A survey was completed on May 16, 2011. The field survey crew included Erik Nyquist, Pat Eller, and Brian Wainright with MMI. Site conditions were approximately 55 °F, southwest winds at 5 to 10 mph, and approximately 20 percent cloud cover. No precipitation had occurred within the 24 hours prior to the survey. No harlequin ducks were observed from the USFS boundary upstream to the powerhouse.

Table 3-2: Bird species observed during the May 16 and 23, 2011 surveys.

Common Name	Scientific Name	May 16, 2011	May 23, 2011
American dipper	<i>Cinclus mexicanus</i>	X	X
American robin	<i>Turdus migratorius</i>	X	X
Barrow's goldeneye	<i>Bucephala islandica</i>	X	X
Common merganser	<i>Mergus merganser</i>	X	X
Common raven	<i>Corvus corax</i>		X
Common yellowthroat	<i>Geothlypis trichas</i>		X
Gadwall	<i>Anas strepera</i>	X	
Golden eagle	<i>Aquila chrysaetos</i>	X	
Great blue heron	<i>Ardea herodias</i>		X
Mallard	<i>Anas platyrhynchos</i>	X	X
Mountain bluebird	<i>Sialia currucoides</i>	X	
Northern pintail	<i>Anas acuta</i>		X
Ruby-crowned kinglet	<i>Regulus calendula</i>	X	
Song sparrow	<i>Melospiza melodia</i>	X	
Yellow-rumped warbler	<i>Dendroica coronate</i>		X

A second survey was completed on May 23, 2011. The field survey crew included Erik Nyquist, and Pat Eller with MMI, and Barb Pitman, USFS. Site conditions were approximately 50 °F, southwest winds at 5 to 10 mph, approximately 80 percent cloud cover, with intermittent rain showers. Heavy precipitation had occurred within the 24 hours prior to the survey. No harlequin ducks were observed from the USFS boundary upstream to the powerhouse.

As no harlequin ducks were observed during the May 16, 2011 and May 23, 2011 surveys, a follow-up brood survey was not completed in 2011. Photos 3 and 4 depict site conditions that were typical for the May 2014 surveys. The water level in West Rosebud Creek for the May 23, 2011 survey was higher than the May 16, 2011 survey.



Photo 3: May 16, 2011 harlequin duck survey site conditions



Photo 4: May 23, 2011 harlequin duck survey site conditions

3.2 2012 Survey

A harlequin duck survey was completed on May 14, 2012. The field survey crew included Erik Nyquist and Steve Laufenberg with Steigers Corporation (Steigers) and Barb Pitman, USFS. Site conditions were sunny and clear, approximately 70 degrees Fahrenheit, southwest winds at 0 to 5 miles per hour. No precipitation had occurred within the 24 hours prior to the survey. No harlequin ducks were observed from the USFS boundary upstream to the Mystic Lake powerhouse.

A second survey was completed on May 22, 2012. The field survey crew included Erik Nyquist and Steve Laufenberg with Steigers. Site conditions were approximately 44 °F, southwest winds at 15 to 25 mph, approximately 95 percent cloud cover, with light to moderate rain showers. Heavy precipitation had occurred within the 24 hours prior to the survey. No harlequin ducks were observed from the USFS boundary upstream to the Mystic Lake powerhouse.

Table 3-3: Bird species observed during the May 14 and 22, 2012 surveys

Common Name	Scientific Name	May 14, 2012	May 22, 2012
American dipper	<i>Cinclus mexicanus</i>	X	X
American robin	<i>Turdus migratorius</i>	X	X
Bald eagle	<i>Haliaeetus leucocephalus</i>	X	
Canada goose	<i>Branta canadensis</i>	X	
Common merganser	<i>Mergus merganser</i>	X	
Common raven	<i>Corvus corax</i>	X	X
Mallard	<i>Anas platyrhynchos</i>	X	X
Ring-necked duck	<i>Aythya collaris</i>		X
Spotted sandpiper	<i>Actitis macularia</i>	X	



Photo 5: May 14, 2012 harlequin duck survey site conditions



Photo 6: May 22, 2012 harlequin duck survey site conditions

3.3 2013 Survey

One of two harlequin duck surveys was completed on May 7, 2013. The field survey crew included Erik Nyquist and Steve Laufenberg with Steigers Corporation (Steigers), and Barb Pitman, USFS. Site conditions were mostly sunny and clear, approximately 30 percent cloud cover, approximately 68 °F, southwest winds at 0 to 5 mph. No precipitation had occurred within the 24 hours prior to the survey. No harlequin ducks were observed from the USFS boundary upstream to the Mystic Lake powerhouse.

The second harlequin duck survey was completed on May 21, 2013. The field survey crew included Erik Nyquist and Steve Laufenberg with Steigers. Site conditions were sunny, approximately 52 °F, and southwest winds at 10 to 15 mph. Heavy precipitation had occurred within the 24 hours prior to the survey. No harlequin ducks were observed from the USFS boundary upstream to the Mystic Lake powerhouse.

As no harlequin ducks were observed during the May 7, 2013 and May 21, 2013 surveys, a follow-up brood survey was not completed in 2013. Photos 7 and 8 depict site conditions that were typical for the May 2013 surveys. The water level in West Rosebud Creek for the May 21, 2013 survey was higher than the May 7, 2013 survey.

Table 3-4: Bird species observed during the May 7 and 21, 2013 surveys

Common Name	Scientific Name	May 7, 2013	May 21, 2013
American coot	<i>Fulica americana</i>	X	
American dipper	<i>Cinclus mexicanus</i>	X	
American robin	<i>Turdus migratorius</i>	X	X
Bald eagle	<i>Haliaeetus leucocephalus</i>	X	X
Canada goose	<i>Branta canadensis</i>	X	X
Common merganser	<i>Mergus merganser</i>	X	X
Common raven	<i>Corvus corax</i>	X	
Mallard	<i>Anas platyrhynchos</i>	X	X
Mountain bluebird	<i>Sialia currucoides</i>	X	



Photo 7: May 7, 2013 harlequin duck survey site conditions



Photo 8: May 21, 2013 harlequin duck survey site conditions

3.4 2014 Survey

A harlequin duck survey was completed on May 7, 2014. The field survey crew included Kristi Webb with New Wave Environmental Consulting, LLC (New Wave), Steve Laufenberg with Cobb Crest, LLC (Cobb Crest), and Barb Pitman, USFS. Site conditions were cloudy, approximately 29 °F, winds out of the southwest at 5 to 10 mph. It had snowed within the last 24 hours prior to the survey with approximately 3 to 4 inches of snow on the ground. No harlequin ducks were observed from the USFS boundary upstream to the Mystic Lake powerhouse.

A second survey was completed on May 21, 2014. The field survey crew included Kristi Webb, Steve Laufenberg, and Barb Pitman. Site conditions were sunny and clear, approximately 57 °F, southwest winds at 5 to 9 mph. No precipitation had occurred within the 24 hours prior to the survey. No harlequin ducks were observed from the USFS boundary upstream to the Mystic Lake powerhouse.

As no harlequin ducks were observed during the May 7, 2014 and May 21, 2014 surveys, a follow-up brood survey was not completed in 2014. Photos 9 and 10 depict site conditions that were typical for the May 2014 surveys. The water level in West Rosebud Creek for the May 21, 2014 survey was higher than the May 7, 2014 survey.

Table 3-5: Bird species observed during the May 7 and 21, 2014 surveys

Common Name	Scientific Name	May 7, 2014	May 21, 2014
American coot	<i>Fulica americana</i>	X	
American dipper	<i>Cinclus mexicanus</i>	X	X
American robin	<i>Turdus migratorius</i>	X	X
Bald eagle	<i>Haliaeetus leucocephalus</i>		X
Barrow's goldeneye	<i>Bucephala islandica</i>	X	X
Canada goose	<i>Branta canadensis</i>	X	X
Common merganser	<i>Mergus merganser</i>	X	
Common raven	<i>Corvus corax</i>		X
Common yellowthroat	<i>Geothlypis trichas</i>		X
Downy woodpecker	<i>Picoides pubescens</i>		X
Mallard	<i>Anas platyrhynchos</i>	X	X
Red-naped sucker	<i>Sphyrapicus nuchalis</i>		X
Sandhill crane	<i>Grus canadensis</i>		X
Song Sparrow	<i>Melospiza melodia</i>		X
Spotted Sandpiper	<i>Actitis macularius</i>		X
Yellow-rumped warbler	<i>Dendroica coronata</i>		X



Photo 9: May 7, 2014 harlequin duck survey site conditions



Photo 10: May 21, 2014 harlequin duck survey site conditions

4.0 Summary

PPL Montana conducted the first harlequin duck survey along West Rosebud Creek in May 2010 and continued annual harlequin duck surveys through 2014. No harlequin duck was observed during the surveys. PPL Montana consulted with the USFS to determine if additional surveys or conservation actions were warranted. No additional action is proposed by USFS or PPL Montana. This summary report has been prepared and filed with the Commission in compliance with the FERC Order issued on December 17, 2007 and the USFS Section 4(e) Terms and Condition No. 12.

5.0 References

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