



MIGRATORY BIRD / RAPTOR SURVEY REPORT

WELBA PEAK UNIT

DUNCAN FACILITY (ECMC LOCATION ID: 485573)

Moffat County, Colorado



May 1, 2024

OPERATOR:

Petroleum Resource Management Corp. (PRM)

Attention: Duncan Shepherd, President

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SUMMARY OF FINDINGS

Resource	Regulatory Authorities	Findings
Eagles & Other Raptors	U.S. Fish and Wildlife Service (USFWS) – Bald and Golden Eagle Protection Act; USFWS - Migratory Bird Treaty Act (MBTA); ECMC – 1200 Series Rules	There are no eagle nests, raptor nests, nor CPW-mapped bald eagle winter night roost areas within 0.5 mile of the Location.
Western Burrowing Owl	USFWS – MBTA; Colorado Parks and Wildlife (CPW) – Nongame, Endangered or Threatened Species Conservation Act; ECMC – 1200 Series Rules	There is no suitable nesting habitat for burrowing owls within 0.25 mile of the Location.
Migratory Birds	USFWS – MBTA; ECMC – 1200 Series Rules	There is suitable habitat for nesting migratory birds within and adjacent to the Location.

1.0 INTRODUCTION

Per the Energy and Carbon Management Commission (ECMC) 1200 Series Rules for the protection of wildlife resources, Petroleum Resources Management Corp. (PRM) is presenting this migratory bird and raptor survey for the Duncan Facility and its access road, hereafter referred to as Location (Rule 1202.a.(8)). The wildlife and habitat evaluations included in this report are part of the Wildlife (Compensatory) Mitigation Plan (WMP) to be submitted with the forthcoming ECMC Form 2A application for the Location, Rule 304.c.(17) Wildlife Mitigation Plan, and Rule 1201.b for an Oil and Gas Location within a High Priority Habitat (HPH). PRM and Colorado Parks and Wildlife (CPW) have engaged in detailed, continuous pre-application consultation beginning in May 2019 regarding minimizing unavoidable impacts, preliminary mitigation options and compensatory costs, and Alternative Location Analysis (ALA) needs for the Location.

Quandary Consultants, LLC (Quandary) was hired by PRM to assist with environmental compliance prior to construction activities of the Location. Quandary conducted biological resources pre-construction surveys for several biological resources to determine their presence or absence within the Location (e.g. raptors, migratory birds, and burrowing owls). This report consolidates the results of biological year-of-construction surveys conducted in 2023.

State and federal regulations addressed include the Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA), Colorado Parks and Wildlife (CPW) Buffer Zones, and Seasonal Restrictions for Colorado Raptors guidelines.

2.0 PROJECT DESCRIPTION

The Location is situated in Lots 3, 4, 5, & 6 of Section 14, Township 11 North, and Range 89 West of Moffat County, Colorado (Figure 1). PRM is proposing to construct an approximate 12-acre Location on private property owned by Duncan Livestock Company (surface owner). Of the approximate 12 proposed acres, 7.91 acres are currently constructed, and this MBTA/raptor survey is focused on the currently constructed Location. The proposed Location was determined to be the optimal location based on several factors including vegetation removal, proximity to existing roads (County Road 1), topographic constraints, and nearby no surface occupancy (NSO) lease prohibiting that from being included as an available location, eliminating PRM's ability to relocate it. See Figure 1., Duncan Facility As-Built Exhibit.

Quandary Consultants (Quandary) surveyed a 0.50-mile buffer around the Location disturbance area (DA) to accommodate for the widest potential environmental constraint. Analysis included a desktop review of appropriate databases and imagery collections, identification of features requiring focused survey in the field, and a site inspection to review these desktop-identified features and to search for other instances of protected and sensitive natural resources. Sixteen site visits and inspections were conducted over the following days:

April 10, 2023 – Preliminary Welba Peak Site Inspections (1 week)
May - September 2023 – Follow-Up Welba Peak Assessments
May 23, 2023 – Initial MBTA / Raptor Surveys for Location
July 24, 2023 – Follow-up MBTA / Raptor Surveys for Location

The results for each natural resource element reviewed are described below.

3.0 LOCATION SETTING

Land use and vegetation within the Location were reviewed and are detailed below.

3.1 Land Use

The Location entirely intersects rangeland. Table 1 lists the approximate acreage of the existing land use types that occur within the disturbance area.

Table 1: Land Use Acreage Within the DA

Land Use Type	Acreage Within DA	Description
Irrigated Crop Land	0	
Non-Irrigated Crop Land	0	
Rangeland	12	Agriculture/Disturbed Grassland
Forest	0	
Public	0	
Industrial	0	
Commercial	0	
Residential	0	

3.2 Vegetation

Field investigations identified that approximately 80% of ground cover within the Location is vegetation and 20% of ground cover is bare ground. The entirety of the Location is disturbed grassland due to cattle grazing and ranching operations. Table 2 lists the predominate species composition of the Location and respective plant communities. There were no sensitive/threatened plant species located within the Location DA.

Table 2: Predominate Vegetation Composition within the DA

Vegetation (Common Name)	Vegetation (Latin Name)	Plant Community
Sagebrush	<i>Artemisia tridentata</i>	Disturbed Grassland
Rabbit Brush	<i>Asteraceae ericameria</i>	Disturbed Grassland
Sideoats grama	<i>Bouteloua curtipendula</i>	Disturbed Grassland
Western wheatgrass	<i>Pascopyrum smithii</i>	Disturbed Grassland
Gambel Oak	<i>Quercus gambelii</i>	Disturbed Grassland

4.0 LOCATION FINDINGS

4.1 Wildlife

Quandary surveyed for raptor and migratory bird species nesting and the seasonal spatial restrictions in accordance with state and federal regulations. Biologists identified an active nest as any identified raptor or migratory nest site that could provide a nesting opportunity for a species. This includes all nests or burrows that remain intact or that could be repaired and used by a raptor or migratory bird. Active nests include both occupied and unoccupied nests. Occupied nests are those nests, including burrows and ground nests, which are repaired or tended in the current year by a pair of raptors or

migratory birds. Presence of avian species (e.g., adults, eggs, young), evidence of nest repair or nest marking, freshly molted feathers or plucked down, or current year's mute remains (whitewash) each suggest nest occupancy. Unoccupied nests are nests not selected by raptors or migratory for use in the current year. Unoccupied nests are still considered active for the duration of the breeding season (USFWS 2023).

A summary of the seasonal spatial restrictions for the affected resources for the Location is shown below in Table 3.

Table 3. Seasonal and Spatial Restrictions for Biological Resources

Wildlife Species	CPW Wildlife Survey Buffer	CPW Seasonal Survey Timing
Raptors	0.5-mile buffer around Location DA	February 15 to August 15
Burrowing Owls	0.25-mile buffer around Location DA	April 15 to September 15
Migratory Birds	300-foot buffer around Location DA and access road	April 15 through July 31

4.1.1 Bald and Golden Eagles and Other Raptors

Quandary surveyed for common western raptor species, including but not limited to:

Bald eagle (<i>Haliaeetus leucocephalus</i>)	Cooper's hawk (<i>Accipiter cooperii</i>)
Ferruginous hawk (<i>Buteo regalis</i>)	American kestrel (<i>Falco sparverius</i>)
Golden eagle (<i>Aquila chrysaetos</i>)	Long-eared owl (<i>Asio otus</i>)
Peregrine falcon (<i>Falco peregrinus</i>)	Northern harrier (<i>Circus hudsonius</i>)
Red-tailed hawk (<i>Buteo jamaicensis</i>)	Prairie falcon (<i>Falco mexicanus</i>)
Swainson's hawk (<i>Buteo swainsoni</i>)	Short-eared owl (<i>Asio flammeus</i>)
Great horned owl (<i>Bubo virginianus</i>)	Western screech owl (<i>Megascops kennicottii</i>)
Northern goshawk (<i>Accipiter gentilis</i>)	Osprey (<i>Pandion haliaetus</i>)
Merlin (<i>Falco columbarius</i>)	Barn owl (<i>Tyto alba</i>)
Sharp-shinned hawk (<i>Accipiter striatus</i>)	

In compliance with BGEPA, raptor surveys were conducted April 10, 2023, through October 23, 2023. Location specific pre-construction surveys were conducted on May 23, 2023, and July 24, 2023. For specific survey results see the Survey Results for Raptors and Migratory Birds in Appendix A and Raptor and Migratory Birds Data Sheets in Appendix B. The Location, survey buffers and seasonal timing are shown below in Table 4.

Table 4. Raptor Survey Areas/Buffers and Seasonal Survey Timing

Location	DA	Raptor Survey Buffer	Seasonal Survey Timing
Duncan Facility	12 acres	0.50-mile buffer around Location DA	April 10 to July 24, 2023

There were no bald eagle (BAEA) or golden eagle (GOEA) nests or other raptor nests were observed within 0.5 mile of the Location, and none are recorded within 0.5 mile of the Location (CPW 2023). The nearest recorded historical eagle nest is 2.16 miles north (GOEA) and nearest active eagle nest is 4.24 miles northeast (BAEA) of Location. The nearest active raptor nest is 3.95 miles southeast (Northern Goshawk) of Location (CPW 2023). The Location is not within 0.5 mile of a CPW-mapped BAEA winter night roost area. The nearest recorded BAEA roost is 11 miles northeast of Location.

4.1.2 Burrowing Owl

No suitable nesting habitat for burrowing owls (e.g., prairie dog colony) was observed within 0.25 mile of the Location at the time of the assessments conducted between April 2023 and September 2023.

4.1.3 Migratory Birds

In compliance with MBTA and ECMC Rule 1202.a(8), migratory bird surveys were conducted April 10, 2023, through October 23, 2023. Location specific migratory bird nest observations were conducted on May 23, 2023, and July 24, 2023, prior to and during construction activities (Figure 2). For specific survey dates see the Survey Results for Raptors and Migratory Birds in Appendix A and Raptor and Migratory Birds Data Sheets in Appendix B.

Quandary surveyed for common MBTA-protected species, including but not limited to:

Three-toed woodpecker (*Picoides dorsalis*)
Baird's Sparrow (*Ammodramus bairdii*)
Brewer's sparrow (*Spizella breweri*)
Loggerhead shrike (*Lanius ludovicianus*)
Long-billed curlew (*Numenius americanus*)
Sagebrush sparrow (*Artemisiospiza nevadensis*)
Sage thrasher (*Oreoscoptes montanus*)

The Location, survey buffers and seasonal timing are shown below in Table 5.

Table 5. Migratory Bird Survey Areas/Buffers and Seasonal Survey Timing

Location	DA	MBTA Survey Buffer	Seasonal Survey Timing
Duncan Facility	12 acres	300-foot buffer around Location DA	April 10 to July 24, 2023

There is suitable habitat for nesting migratory birds within and adjacent to the Location, predominately in the form of tall grasses and ground-nesting habitat for ground-nesting birds. There was one small cup like nest identified during the survey window as an unoccupied- active nest. Details of each survey are found in Appendix A.

4.1.4 Federally Listed Species

According to the USFWS IPaC, two federally listed species should be considered in an effects analysis for the Location: Mexican Spotted Owl (*Strix occidentalis lucida*) and Yellow-billed Cuckoo (*Coccyzus americanus*).

Table 6 provides a summary review of endangered and threatened species considered in the effects analysis for the Location.

Table 6: Federally Listed Species Reviewed

Species	Federal Status	Likelihood of species presence at location?
Birds		
Mexican Spotted Owl (<i>Strix occidentalis lucida</i>)	Threatened	Low; Mexican spotted owl occurs in forested mountains and canyonlands throughout the southwestern U.S. Nesting habitat is typically in areas with complex old growth forest structure or rocky canyons. No suitable habitat nor birds were observed at the Location.
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	Threatened	Low; Yellow-billed cuckoos use wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland and dense thickets along streams and marshes. No suitable habitat nor birds were observed at the Location.

There were no sensitive/threatened wildlife species located within the Location.

5.0 SURVEYOR QUALIFICATIONS

Ground surveys were completed by qualified biologists employed by Quandary. All surveyors were familiar with local species, their behavior, and vocalizations. Surveys were conducted for the presence of raptors and MBTA species and occurred during nesting season prior to any disturbance (USFWS 2023).

6.0 REFERENCES

The following sources were used in the review and evaluation process of the Duncan Facility Location and in preparation of the MBTA/Raptor surveys:

(CPW) Colorado Parks & Wildlife. 2023. HPH ECMC SB181 Data. Available online at: <https://www.arcgis.com/home/group.html?id=280f7c0420604edaa66ed6c0311d31d9#overview>. (Accessed May/July 2023).

(CPW) Colorado Parks & Wildlife. 2023. CPW Nest Data. Available online at: <https://www.arcgis.com/apps/mapviewer/index>. (Accessed May/July 2023).

(USFWS) U.S. Fish and Wildlife Service. 2023. IPaC – Information Planning and Conservation System. Available online at: <http://ecos.fws.gov/ipac/>. (Accessed May/July 2023).

(USFWS) U.S. Fish and Wildlife Service. 2023. Regulations – MBTA. Available online at: <https://www.fws.gov/regulations/mbta>

APPENDIX A: SURVEY RESULTS FOR RAPTORS AND MIGRATORY BIRDS

Survey Date	Surveyor	Cloud Coverage	Temp (°F)	Wind Speed / Direction	Precipitation	Observations
Duncan Facility						
23-May-23	Sarah Brady	Sunny	Low 46/High 73	10-15MPH SSE	None	No raptors observed within 0.5 miles of Location. Walked the entire Duncan Facility, no nesting MBTA in disturbance area. One unoccupied, small cup like nest in gamble oak north of Location.
24-Jul-23	Chris Cooper	Mostly sunny	Low 57/High 92	20-25MPH WSW	None	No raptors observed within 0.5 miles of Location. No nesting MBTA in disturbance area. Could not locate small cup like nest north of Location.

APPENDIX B: RAPTOR AND MIGRATORY BIRDS DATA SHEETS

DUNCAN FACILITY RAPTOR/MBTA INVENTORY DATA SHEET

Observer: Sarah Brady
Date of Observation: 05/23/2023
Land Ownership: Private
Description of Nest: Small cup like nest; Unoccupied
Nest Substrate: Gamble Oak (live)
Height of Substrate (ft): 8
Nest Ht. Above Ground (ft): 6
Active ☐ **Inactive** ☒
Number of Eggs: NA
Number of Young: NA
Exposure of Nest: NW
Vegetation Type: Rangeland
Condition of Nest: Good
Quad Name: Fly Creek

Nest Number: N/A
Species: Unknown MBTA
T 11N, R 89W, Sec 14
GIS File Name: Welba Peak
Remarks, Physical Relationship to Other Nests, Etc.: Nest is small MBTA cup like nest located outside and north of disturbance area; it is in good condition for use. No other MBTA nest within disturbance area. No raptor nests within 0.5 miles.

Observer: Chris Cooper
Date of Observation: 07/24/2023
Land Ownership: Private
Description of Nest: Could not locate
Nest Substrate: Gamble Oak
Height of Substrate (ft): 8
Nest Ht. Above Ground (ft): 6
Active ☒ **Inactive** ☐
Number of Eggs: NA
Number of Young: NA
Exposure of Nest: NA
Vegetation Type: Rangeland
Condition of Nest: NA
Quad Name: Fly Creek

Nest Number: NA
Species: Red-Tailed Hawk (RTHA)
T 11N, R 89W, Sec 14
GIS File Name: Welba Peak
Remarks, Physical Relationship to Other Nests, Etc.: Could not locate previous nest north of Location. No other MBTA nest within disturbance area. No raptor nests within 0.5 miles.

REPRESENTATIVE PHOTOGRAPHS



APPENDIX C: SURVEYOR QUALIFICATIONS



CHRIS COOPER

MANAGER, NATURAL RESOURCES

SKILLS & ABILITIES

Biological Surveys
Wetland Surveys
Noxious Weed Surveys
Prairie Dog Management
Water/Aquatic Resource Management
Best Management Practices
NEPA Assessments (EA /EIS)

EDUCATION

University of Tennessee,
B.S. Wildlife & Fisheries Science, 1998
Minor Forestry

CERTIFICATIONS

Six Sigma LEAN Certified/Yellow Belt
Kepner-Tregoe Strategic Decisions
Crucial Conversations/Negotiations
National Environmental Policy Act
National Historic Preservation Act
Section 7 USFWS Consultation
Section 106 SHPO Consultation
Section 401 CWA State Permitting
Section 404 USACE Permitting
Wetland Assessment / Delineation
OSHA Hazardous Waste Operations 10-Hr
Safe Land USA Training
H2S Training
Wildland Fire / Prescribed Fire

CONTACT

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QUALIFICATIONS SUMMARY

Mr. Chris Cooper is a Manager in Natural Resources for Quandary and has over 23 years of professional experience as an environmental scientist/biologist and manager overseeing authorized use of public lands. Mr. Cooper regularly conducted wetland delineations, 401/404 permitting, NEPA preparation, and multi-disciplined biological surveys for projects across the Southern U.S. He has conducted environmental and biological assessments to identify and determine risks associated with environmental issues prior to land purchase, construction or operations. Mr. Cooper has served in a variety of roles including lead biologist, managed natural resources and regulatory compliance for a variety of coal and gas companies, and has conducted numerous biological and environmental assessments for new and continued operations.

KEY PROJECTS

TENNESSEE VALLEY AUTHORITY (USA) – OVERSIGHT & MANAGEMENT 300,000 ACRES PUBLIC LANDS / 49 RESERVOIRS

Mr. Cooper worked in setting priorities for assessing and allocating resources to manage the natural resources and lands of 49 reservoir while ensuring a balance between protection and appropriate public use. Worked across seven states with local, state and federal entities in implementing natural resource management projects and activities, including land condition and biological assessments, 401/404 permitting, implementation of enhanced stewardship improvement projects, dispersed recreation projects, water quality enhancement and improvement projects, and forestry and grasslands management.

TENNESSEE VALLEY AUTHORITY (USA) – NORTHEASTERN TRIBUTARIES RESERVOIR LAND MANAGEMENT PLAN

Mr. Cooper conducted and managed numerous biological, land rights and current use assessments in preparation of an Environmental Assessment for seven reservoirs across two states in order to allocate the use of backlying public lands through numerous field assessments, deed/title research, state/federal agency meetings, public meetings and public comment periods.



SARAH BRADY ENVIRONMENTAL SCIENTIST

SKILLS & ABILITIES

Data Collection
Wildlife Surveys
ArcGIS programs
Technical Writing
Vegetation Management

EDUCATION

University of Michigan, Ann Arbor, MI
B.S. Biology, Health, and Society
Focus: Plant Biology, 2020

CERTIFICATIONS

ISA Certified Arborist (In-Progress)
SafeLand USA Training (2023)
H2S Training (Current)

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QUALIFICATIONS SUMMARY

Ms. Brady is a biologist with over 3 years of experience working in the fields of natural resource management and utility forestry. Key skills attained during this time include precise data collection, wildlife identification and monitoring, and technical writing. Her current position as an Environmental Scientist with Quandary Consultants includes a diverse portfolio of ongoing projects, ranging from raptor surveys to noxious weed mitigation. Prior to this, she gained a strong working knowledge of vegetation management and public outreach in her time as a Consulting Utility Forester.

KEY PROJECTS

PG&E ENHANCED VEGETATION MANAGEMENT PROGRAM

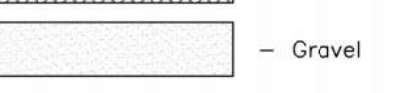
Ms. Brady worked diligently as a contractor for California's largest utility to identify and mitigate hazardous vegetation threats surrounding the power lines in high wildfire risk areas in Northern California. This role included over 10,000 individual tree health risk assessments and prescriptions, delicate client rights cases, and in-depth GIS mapping abilities. A deep understanding of utility forestry was critical to the success of the program, and Ms. Brady commits to staying up-to-date with continuing education in arboriculture.

OIL AND GAS CLIENTS THROUGHOUT COLORADO

Ms. Brady regularly performs wildlife and stormwater surveys for a wide range of oil and gas clients in Colorado. Such surveys include, but are not limited to, BUOW, raptor, MBTA, and noxious weed projects. She has excellent data collection capabilities using various ArcGIS programs and is continuously advancing her knowledge of Colorado's most pressing environmental concerns in regards to utility compliance.

FIGURE 1. DUNCAN FACILITY AS-BUILT EXHIBIT

Moffat County, Colorado



of: 1

FIGURE 2. MBTA/RAPTOR SURVEY MAP

