PRO-EA-12-004

RECLAMATION

Managing Water in the West

Red Fleet Reservoir Resource Management Plan Final Environmental Assessment

Upper Colorado Region

U.S. Department of the Interior
Bureau of Reclamation
Provo Area Office
Provo, Utah

August 2013

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

PRO-FONSI-12-004

FINDING OF NO SIGNIFICANT IMPACT

Red Fleet Reservoir
Resource Management Plan
Environmental Assessment
Uintah County, Utah

United States Department of the Interior
Bureau of Reclamation
Upper Colorado Region
Provo Area Office
Provo, Utah

Recommended by:

Chief, Environmental Group — Date: 9/6/13

Concur:

Chief, Water and Environmental Resources Division — Date: 9/6/13

Approved by:

Curt Pledger
Area Manager, Provo Area Office — Date: 9/6/2013

FINDING

The Bureau of Reclamation (Reclamation) has determined that implementing the preferred alternative for the Red Fleet Reservoir Resource Management Plan (RMP) will not have a significant impact on the quality of the human environment and that an environmental impact statement is not required. This decision was based on a thorough review of comments received during the public review process and the environmental impacts as described in the Red Fleet Reservoir RMP Final Environmental Assessment (EA). This decision is in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508).

DECISION

Reclamation has decided to implement Alternative C, the Recreation Development Emphasis Alternative, which was identified as the preferred alternative in the Final EA. The preferred alternative prescribes a management plan for Red Fleet Reservoir that will allow for upgraded and expanded recreation facilities while also protecting important environmental and historic resource values at Red Fleet Reservoir. New boating, camping, parking, and picnicking facilities and the accompanying access roads would be developed. Specific components that would be included with this alternative are: development of group recreation sites; addition of rental cabins or yurts; expanded hiking trails, improved shoreline access, and an accessible fishing dock; and development of trailheads and trail connectivity. Opportunities to contract services with private concessionaires would be considered as appropriate. Activities that improve or protect environmental quality are included, as well as the development of interpretation systems to inform the public about important Study Area resource issues. Coordination with jurisdictions managing resources at the reservoir and the surrounding lands will be explored under this alternative. This alternative will not affect normal operations of the reservoir.

REASONS FOR THE DECISION

A finding of no significant impact is based on the following:

1. The preferred alternative will have no adverse effect on such unique characteristics as cultural resources, wilderness areas, wetlands, and riparian areas.

2. The environmental effects of the preferred alternative are neither controversial nor do they involve unique or unknown risks.

3. The preferred alternative will have no adverse effect on species either currently listed or proposed for listing as candidate, threatened, or endangered species and no adverse effect on designated critical habitat for these species.

4. The preferred alternative does not threaten to violate Federal, State, or local laws or requirements imposed for protection of the environment.

5. Reclamation has analyzed the environmental effects, public comments, and the alternatives in detail and believes that the preferred alternative best meets the purpose and need described in the EA.

PUBLIC INVOLVEMENT

Preparation of the EA for the Red Fleet Reservoir RMP required extensive public involvement activities throughout the planning process. The public scoping process, to contact and solicit comment from interested parties, was initiated in October 2011. The public scoping methods included publishing newsletters, holding public workshops, forming a Resource Management Planning Work Group (PWG), and obtaining media exposure. Each of these methods is described in Chapter 5 of the EA.

SUMMARY OF ENVIRONMENTAL IMPACTS

The expected environmental impacts of the preferred alternative are described in Chapter 4 of the EA. The environmental analysis is focused on impacts to resource management partnerships, water resources, recreation and visual resources, natural and cultural resources, and land management. The environmental analysis indicates that the impacts will be temporary, short term, and insignificant.

ENVIRONMENTAL MITIGATION COMMITMENTS

Reclamation is committed to carry out the mitigation measures described in Chapter 2 and Appendix C of the EA. These mitigation measures have been incorporated by reference into this FONSI decision. The implementation and effectiveness of these mitigation measures will be closely monitored by Reclamation. This monitoring will ensure incorporation of mitigation requirements in all construction contract specifications, as appropriate, and compliance with mitigation measures recommended by Reclamation or by other agencies.

Red Fleet Reservoir
Resource Management Plan
Final Environmental Assessment

Upper Colorado Region

prepared by

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U.S. Department of the Interior
Bureau of Reclamation

August 2013

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Chapter 1: Purpose and Need

Purpose of and Need for the Resource Management Plan (RMP)

The federal action being considered in this Environmental Assessment (EA) is the development and implementation of a Resource Management Plan (RMP) for Red Fleet Reservoir, located in northeastern Utah approximately 12 miles north of Vernal City in Uintah County (Figure 1-1). The U.S. Department of the Interior (USDI), Bureau of Reclamation's (Reclamation's) authority to prepare RMPs is vested in the broad authority of the Reclamation Act of 1902 (Chapter 1093, 32 Statute 388); the Reclamation Project Act of 1939 (Chapter 418, 53 Statute 1187); the federal Water Project Recreation Act (Public Law [P.L.] 89-72, 79 Statute 213); and, more specifically, in the Reclamation Recreation Management Act of 1992 (P.L. 102-575, Title 28 [2805(c)(1)(A)]). The Reclamation Recreation Management Act of 1992, Title 28 (P.L. 102-575) authorized the preparation of RMPs to "provide for the development, use, conservation, protection, enhancement, and management of resources on Reclamation lands in a manner that is compatible with the authorized purposes of the Reclamation Project associated with the Reclamation lands."

The purpose of the RMP is to produce a document that will guide Reclamation, along with local, state, federal, and other participating agencies, in managing, allocating, and appropriately using Red Fleet Reservoir's land and water resources. The RMP is also important in assisting Reclamation in making decisions regarding the management of recreational resources. Resource management issues and problems at Red Fleet Reservoir are addressed through various management solutions. The RMP document will include long-term management Goals and Objectives for the Red Fleet Reservoir RMP Study Area, which includes the reservoir and its associated lands (Study Area) (Figure 1-2).

Scope of the Environmental Assessment (EA)

As part of the RMP development process, Reclamation has prepared this EA in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, which requires federal agencies to consider the potential impact(s) of a federal action on the human environment before implementing the action. This EA is intended to meet the disclosure and environmental resource consideration requirements of NEPA for the preparation of the RMP. Resource management alternatives and development scenarios are presented and analyzed for environmental impacts. This EA specifically analyzes and discusses the consequences associated with each of two RMP action alternatives (developed as part of the resource management planning process) and the No Action Alternative (as required by NEPA as the base alternative for making comparisons). This EA evaluates potential impacts associated with alternatives proposed for the RMP to determine if the impacts would be significant and would therefore require preparation of an Environmental Impact Statement. The responsible official has decided that impacts from the proposed RMP are not significant, and a Finding of No Significant Impact (FONSI) has been prepared. The FONSI is a document briefly presenting the reasons why the action will not have significant impacts on environmental quality (40 CFR 1508.13) and can be found at the beginning of this document, prior to the Table of Contents.

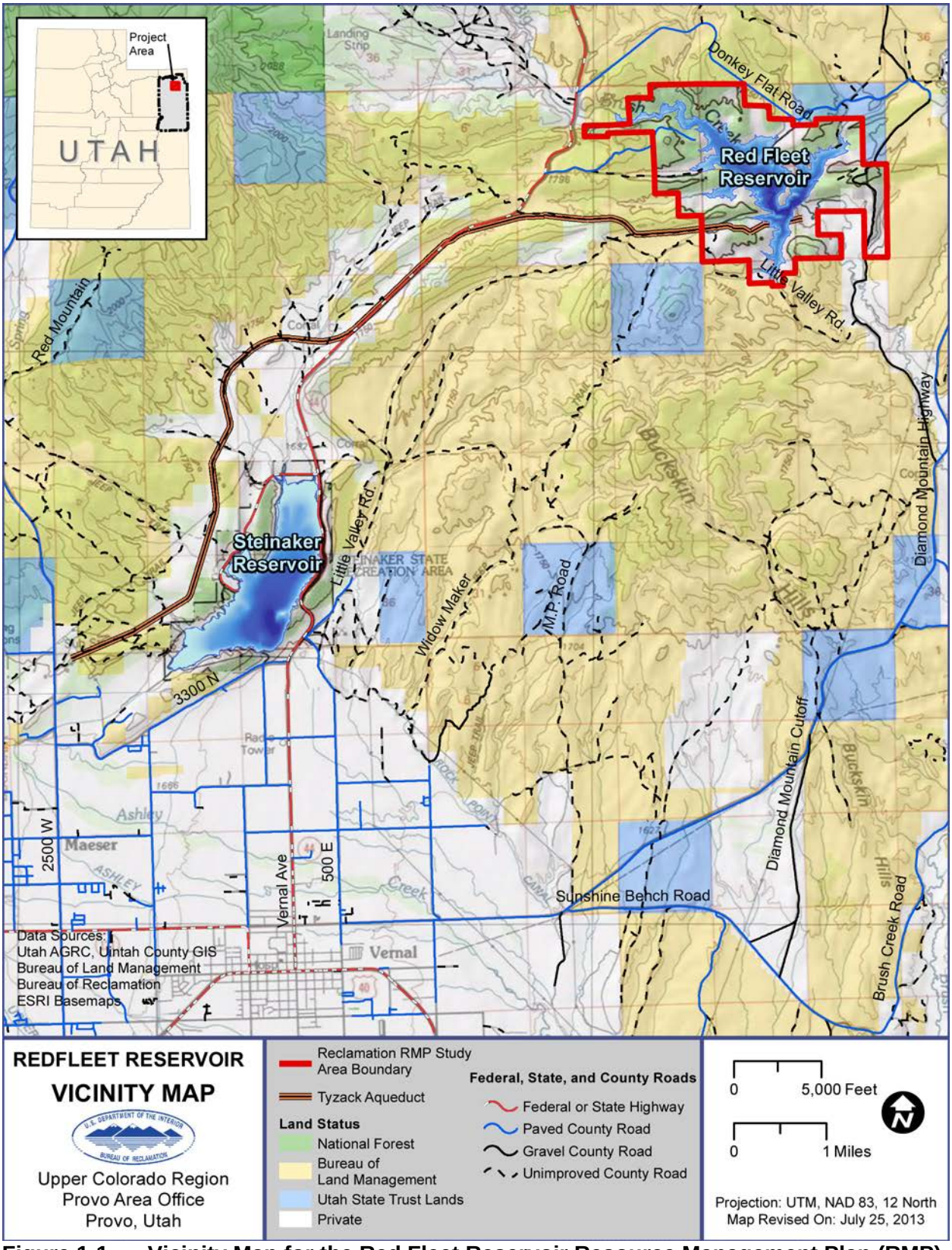

Figure 1-1. Vicinity Map for the Red Fleet Reservoir Resource Management Plan (RMP).

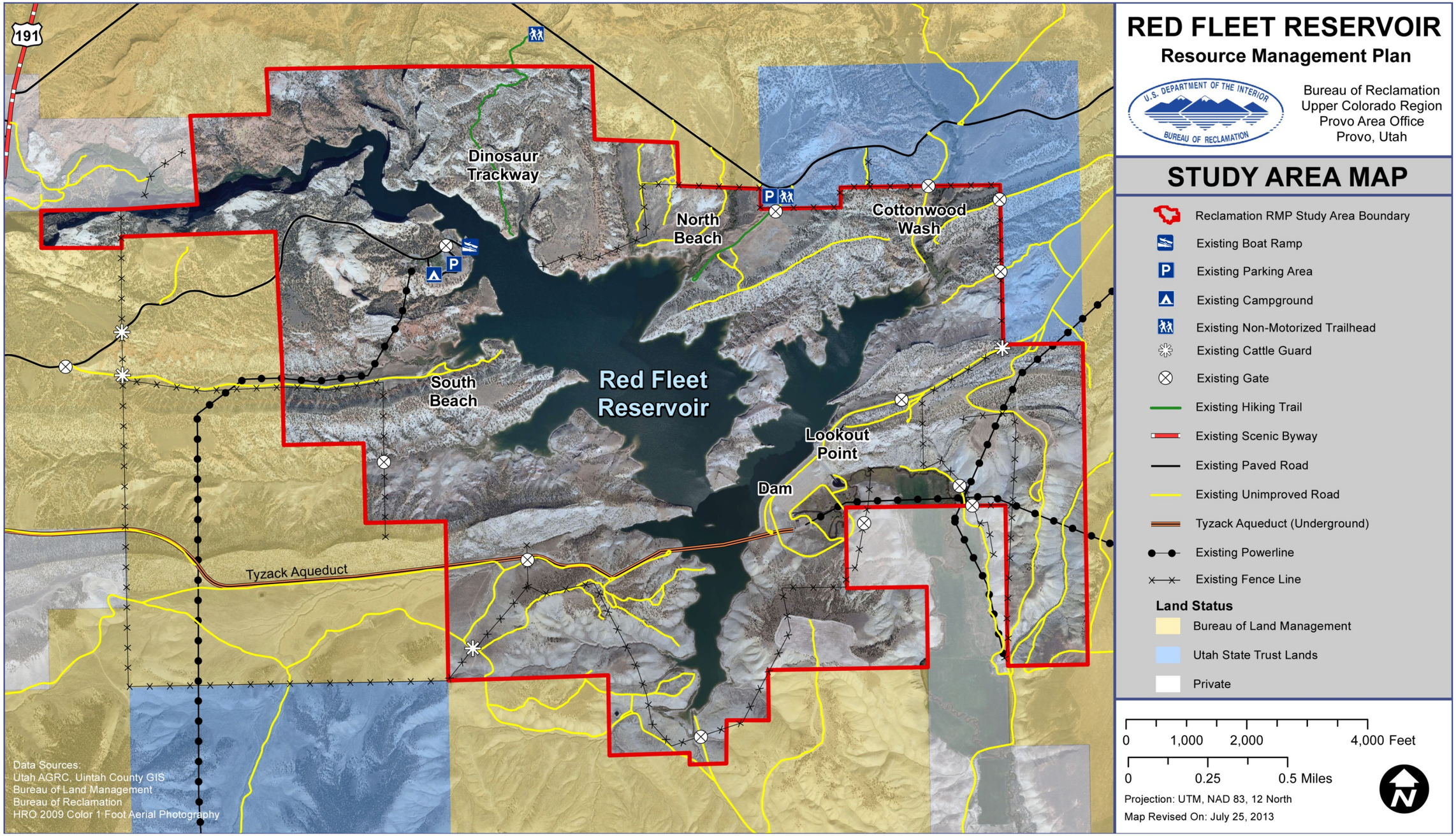

Figure 1-2. Study Area Map for the Red Fleet Reservoir Resource Management Plan (RMP).

The RMP will establish a conceptual framework for managing resources at Red Fleet Reservoir. Therefore, the scope (level of detail) of this EA focuses on the broadest scale of potential impacts associated with selection of a RMP alternative. The planning-level scope of this EA does not address site-specific impacts. Selection of any site specific plans that could be proposed under a selected RMP would represent a separate federal action and would therefore require site-specific NEPA compliance.

Existing contracts and agreements between Reclamation and other entities are also outside the scope of the RMP decision and evaluation of alternatives in this EA. Legal constraints include legislative acts, compacts, and agreements that govern the diversion and use of water from Brush Creek and, specifically, water stored in Red Fleet Reservoir. Institutional constraints include water delivery contracts or water rights and Reclamation's administrative procedures that govern the management and use of Project facilities. Land use constraints include existing Memorandums of Understanding, contracts, lease agreements, permits, easements, and rights-of-way (ROWs) that govern the management and use of Study Area resources. These land use planning constraints are described in Chapter 3 of this EA.

Management Areas

For purposes of developing alternatives and describing existing resource conditions, the Study Area was divided into separate management areas based upon natural resource features, land management considerations, recreational activities, and existing facilities. These geographical areas are illustrated in Figure 1-3 and defined below.

State Park Area

This area encompasses the existing developed Red Fleet State Park recreation facilities and the main public access road to Red Fleet Reservoir.

Inflow Area

This area surrounds a distinctive red-rock canyon where Big Brush Creek enters the Reservoir. There are currently no developed public facilities in this area.

Dinosaur Trackway Area

This area is characterized by a hiking trail that follows a series of fossilized dinosaur tracks that are a major attraction for Red Fleet Reservoir visitors. The trail enters Reclamation land from a U.S. Bureau of Land Management (BLM) trailhead located to the north of the reservoir.

North Beach Area

This area includes a popular beach area that is currently accessible to the public by walk-in access only. In the past this area was accessible by vehicle, but is currently closed to vehicular access. There are currently no developed public facilities in this area.

South Beach Area

This area includes another popular beach area located to the south of the existing State Park facilities. In the past this area was accessible by vehicle, but is currently closed to vehicular access. There are currently no developed public facilities in this area.

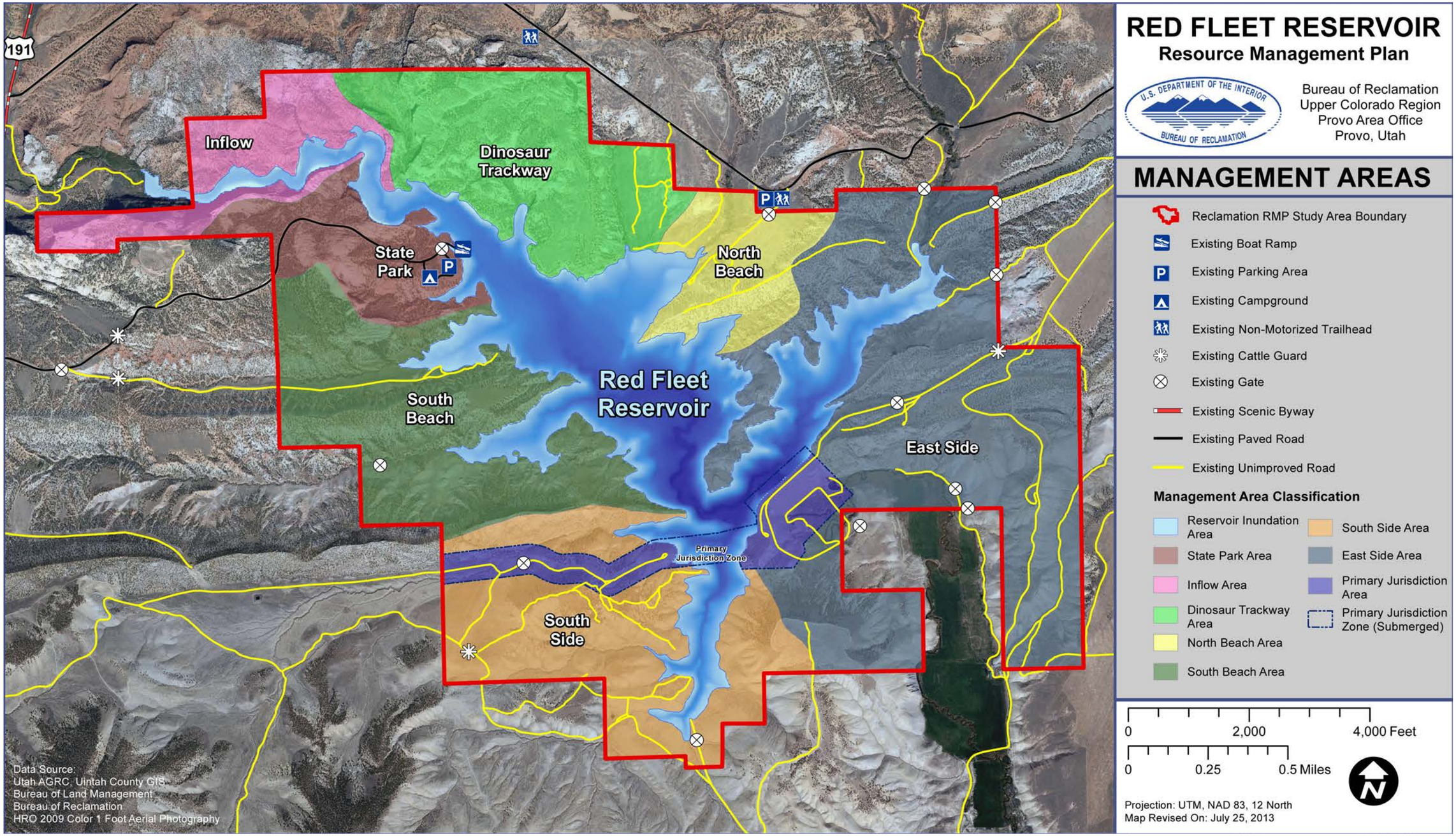

Figure 1-3. Management Areas Map for the Red Fleet Reservoir Resource Management Plan (RMP).

South Side Area
The southernmost portion of Reclamation lands include some designated Uintah County roads as well as some existing, user-created motorized trails. There are no developed public facilities in this area. The Tyzack Aqueduct, which originates at Tyzack Pumping Plant below the Red Fleet Dam, crosses underneath Red Fleet Reservoir and continues west through the South Side area.

East Side Area
The east side of Red Fleet Reservoir includes lands surrounding Red Fleet Dam and the borrow pit areas that were used as source material for the dam. There are currently no developed public facilities in this area.

Primary Jurisdiction Area
This area includes Red Fleet Dam, Tyzack Pumping Plant, and the lands surrounding the Tyzack Aqueduct. For the protection of public health, safety, and welfare, public access to this area and recreational uses (including trail use) are not permitted unless approved by Reclamation and the Uintah Water Conservancy District.

Reservoir Inundation Area
This area delineates the extent of the reservoir at full pool. Permanent recreational facilities (with the exception of water-based facilities), administrative facilities, camping, and the use of motor vehicles are not permitted in this area. Recreational activities (e.g., dispersed day use) may be allowed during periods of low water levels.

Background

Plan Location and Setting
The Study Area is located in northeastern Utah approximately 12 miles north of Vernal City in Uintah County. Uintah County has a semi-arid climate with average annual rainfall of 10.9 inches and average snowfall of 40.6 inches (Bestplaces.net 2012, Desertusa.com 2012). Uintah County is well known for fossil deposits found in the region, valuable mineral resources, and oil and gas development. Vernal, the county seat, is located in the Ashley Valley at an elevation of just over 5,000 feet above sea level. Ashley Valley, approximately 6 miles wide and 9 miles long, contains the largest population concentration in Uintah County, including the municipalities Maeser, Vernal, Naples, and Jensen.

Settlement of the Ashley Valley by cattle ranchers began in 1873 in the Ashley Creek drainage. Farm crops were difficult to grow in the area due to lack of water late in the growing season. Mormon colonists established the town of Jensen in 1878 and built irrigation ditches to divert and utilize water from Big Brush Creek. Groups of farmers formed irrigation companies to cooperatively build and operate larger ditches. Farmers continued to experience water shortages late in the growing season and recognized the need for reservoir storage to meet their needs (Eastman 2012).

Plan History
Local irrigation districts explored a number of potential reservoir projects and watershed diversions. In 1938 the Bureau of Reclamation established a Vernal office to conduct feasibility

studies for potential projects. The Tyzack Dam (later renamed Red Fleet Dam) was proposed in a feasibility study completed in 1944 (Eastman 2012).

Red Fleet Reservoir is formed by Red Fleet Dam, a 175-foot-tall, earthfill embankment structure completed in 1980. The project is part of the Jensen Unit of the Central Utah Project (CUP). Red Fleet Reservoir impounds Big Brush Creek, a tributary to the Green River, downstream from the U.S. Route 191 road crossing (Reclamation 2011a). Red Fleet Reservoir provides approximately 18,000 acre-feet of water annually for municipal and industrial uses and approximately 4,600 acre-feet for irrigation. Water for municipal and industrial uses is transferred to the Ashley Valley Water Treatment Plant by the Tyzack Aqueduct, which originates at Tyzack Pumping Plant located below the dam at Red Fleet Reservoir (UDWQ 2011a, Reclamation 2011a). Red Fleet Reservoir has approximately 26,020 acre-feet of storage, a surface area of 520 acres, a maximum depth of approximately 145 feet at full pool elevation, and a mean depth of 50 feet (UDWQ 2011a, Reclamation 2011b).

The Red Fleet Dam, Tyzack Pumping Plant, and Tyzack Aqueduct are operated and maintained by the Uintah Water Conservancy District (UWCD) under a partnership agreement with Reclamation. Recreation facilities and public access are managed by the Utah Division of State Parks and Recreation (State Parks) through a Memorandum of Agreement. Chapter 3 of this EA includes additional details regarding interagency partnerships and contracts. To date, an RMP document has not been completed for Red Fleet Reservoir.

Participating Agencies and Their Management Responsibilities

Reclamation is the lead agency charged with preparing the RMP document and this EA. Other government agencies having resource management responsibilities within the Study Area include the UWCD, State Parks, Utah Division of Wildlife Resources (UDWR), the U.S. Fish and Wildlife Service (USFWS), and the Utah State Historic Preservation Office. Additional participants in the RMP planning process include BLM, Uintah County, and Vernal City.

Scoping Summary and Issues of Concern

The Red Fleet Reservoir RMP/EA scoping process was initiated in October 2011 concurrently and in conjunction with the Steinaker Reservoir RMP/EA. The purpose of scoping was to receive interagency and public input on the appropriate scope of the EA, consistent with NEPA requirements and associated implementing regulations. An effort was made to notify all potentially interested parties about the RMP scoping process and to provide opportunities for comment. The following methods for soliciting input were utilized: (1) the formation of a Resource Management Planning Work Group (PWG), (2) facilitation of public workshops, and (3) distribution of RMP newsletters. Media releases were used to inform the public of scheduled meetings and events. Each method is described in detail below. A more detailed discussion of consultation and coordination activities is provided in Chapter 5 of this EA.

Resource Management Planning Work Group (PWG)

The PWG was formed to serve as a broad representation of agencies and special interest groups that have a significant interest in the future management and use of Study Area resources. Members of the PWG were selected primarily from those organizations and agencies directly

involved with management of resources within the Study Area and included representatives of the UWCD, State Parks, UDWR, USFWS, BLM, Uintah County, and Vernal City. The purpose of the PWG was to facilitate information exchange and to provide an open forum for discussing all aspects of the RMP and the planning process. In addition, the PWG provided input into the identification of issues, development of goals and objectives, and formulation of a full range of RMP alternatives. The PWG initially met in October 2011, and subsequently in February and May 2012, and March 2013.

Public Workshops

Public workshops were also held at each stage of the RMP planning process to inform interested parties of progress on the RMP and to solicit comments from the general public. Resource and management issues, future resource management goals and objectives, and potential management approaches for the Study Area were discussed at these workshops. Workshops were held in November 2011, May 2012, and March 2013.

Newsletters

Three newsletters designed to inform the public about progress of the planning process were sent to individuals, landowners, and agency personnel involved with the RMP. The distribution list was updated throughout the resource management planning process.

Public Issues and Concerns

Many key issues, problems, and concerns for the Study Area were identified by the public, participating agencies, and special interest groups during the RMP/EA scoping process. These elements were classified into Issue Categories to aid in understanding the scope of each concern and to assist in the development of Goals and Objectives for the RMP. A summary of the Issue Categories is presented in Table 1-1. Table 1-2 summarizes the Goals and Objectives identified to address RMP issues. However, each issue may not require a specific set of Goals and Objectives and, in some cases, a set of Goals and Objectives may address several issues simultaneously.

Goals and Objectives serve as a primary foundation on which alternatives for the RMP were developed and evaluated. Each Goal provides a description of the desired future condition within the Study Area. Along with each Goal is a set of Objectives describing a series of activities that must be accomplished in order to achieve each Goal. When each of the Objectives is implemented, the corresponding Goal will be attained. The complete text of Issue Statements and Goals and Objectives can be found in Appendix A.

Table 1-1. Summary of Issue Categories Identified for the Red Fleet Reservoir Resource Management Plan (RMP) Study Area.

PARTNERSHIPS
Partnership Contracts
WATER RESOURCES
Water Quality
RECREATIONAL AND VISUAL RESOURCES
Recreation Development
Visual Quality
NATURAL AND CULTURAL RESOURCES
Reservoir Fishery
Aquatic Invasive Species and Pathogens
Vegetation Communities
Wildlife and Special Status Species
Soil Erosion and Deposition
Paleontological Resources
Cultural Resources
LAND MANAGEMENT
Access Control
Fencing and Grazing
Mineral Development

Table 1-2. Summary of Goal Categories Identified for the Red Fleet Reservoir Resource Management Plan (RMP) Study Area.

PARTNERSHIPS
Support Existing Agreements and Contracts and Encourage New Partnerships that Improve Management Practices for Red Fleet Reservoir's Associated Lands and Resources
WATER RESOURCES
Protect Water Quality in Red Fleet Reservoir
RECREATIONAL AND VISUAL RESOURCES
Increase Visitation and Revenue by Improving Existing Recreational Facilities, Expanding and Enhancing Recreation Opportunities, and Providing Access to Regional Recreation Resources
Provide for Safe, Quality Recreation Opportunities that Minimize Conflicts
Protect and Manage Visual Resources
NATURAL AND CULTURAL RESOURCES
Protect and Enhance the Quality of the Fishery and Fishing Opportunities
Protect and Enhance Native Vegetation and Wildlife Habitat
Determine Occurrence of Special Status Species and Identify Important Habitat Areas
Control Erosion
Protect and Manage Paleontological Resources
Protect and Manage Cultural Resources
LAND MANAGEMENT
Provide Appropriate and Safe Access to Public Use Areas
Address Fencing and Cattle Trespass Issues
Manage Mineral Development

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Chapter 2: Description of the Alternatives

This chapter presents the process used to formulate resource management alternatives, the alternatives considered in detail, the alternatives eliminated from detailed study, and a summary comparison of the alternatives and their impacts at Red Fleet Reservoir. The three alternatives considered in detail are described, beginning with the No Action Alternative (expected future conditions based on current and historical resource management). The two action alternatives were designed to provide a broad spectrum of management options. One action alternative would emphasize conservation of resources; the other would emphasize recreational development. The names of the alternatives reflect the emphasis they represent.

Process Used to Formulate Alternatives

Alternatives for the Red Fleet Reservoir Resource Management Plan (RMP) Environmental Assessment (EA) were formulated through a systematic process using public input, technical information, interdisciplinary discussions, and professional judgment. The process began with consideration of the RMP Issue Statements and the RMP Goals and Objectives (Chapter 1 and Appendix A), in addition to recommendations and comments from public scoping activities.

In February and April, 2012, the Red Fleet Reservoir Resource Management Planning Work Group and the Red Fleet Reservoir RMP/EA Interdisciplinary Project Team (Project Team) convened to formulate the RMP alternatives. The Project Team developed two RMP alternatives, ranging from emphasizing conservation of resources to emphasizing recreational development, and presented these alternatives to the Planning Work Group. The alternatives were then presented to the public at a Public Workshop held in Vernal, Utah, in April 2012 and in a project newsletter (RMP Newsletter Volume 2). The public was asked to comment on the range of preliminary alternatives as part of the EA process. Based on public and participating agency input, the Project Team made appropriate revisions to the preliminary alternatives.

Land Use Categories

To facilitate development of the RMP alternatives, several “land-use categories” were defined to help describe present and future management strategies for different portions of Red Fleet Reservoir and its associated lands (Study Area). Land-use categories are used to facilitate understanding and consistency between land management agencies. These land-use categories are described in the following paragraphs.

Land Use Category 1: Developed Overnight Recreation Area

Developed Overnight Recreation Areas may contain improved recreational campsites with some or all utilities (e.g., water and electricity). They may have paved or gravel road systems and recreational vehicle dump stations. Campsites may be designated, leveled, and have tables and grills. Restrooms may be developed with water, or they may be vault- or chemical-type toilets. The Red Fleet State Park Campground is an example of a Developed Overnight Recreation Area.

Land Use Category 2: Developed Day Use Recreation Area

Developed Day Use Recreation Areas contain improved recreational picnic sites, and utilities (e.g., water and electricity) may be available. Access roads are either paved or have an improved gravel surface. Picnic sites with tables, grills, and shelters may be provided. Some areas contain restrooms with water; others have vault toilets. An example of a Developed Day Use Recreation Areas is the Red Fleet State Park Day Use Area.

Land Use Category 3: Developed Overnight and Day Use Group Recreation Area

Developed Overnight and Day Use Group Recreation Areas contain improved recreational camp and picnic sites designed to accommodate a large recreational group. Designated sites are paved and contain picnic tables, grills, shelters, water, and restrooms with water or vault toilets. There are currently no Developed Overnight and Day Use Group Recreation Areas at Red Fleet Reservoir.

Land Use Category 4: Undeveloped Day Use Recreation Area

Undeveloped Day Use Recreation Areas consist of unimproved day-use recreational areas that may or may not have vault toilets and are accessible either by road or by boat. Activities in these areas may include picnicking, fishing, hiking, beach combing, etc. An example of an Undeveloped Day Use Recreation Area is the dinosaur trackway hiking trail and interpretive area at Red Fleet Reservoir.

Land Use Category 5: Administrative Area

Administrative Areas are set aside for management headquarters. Public access to Administrative Areas may be restricted. Administrative Areas include State Park offices, storage areas, and maintenance equipment. An example of an Administrative Area is the Red Fleet Reservoir administrative offices and maintenance facilities area.

Land Use Category 6: Primary Jurisdiction Area

The Primary Jurisdiction Area is set aside for dam operation and maintenance. For the protection of public health, safety, and welfare, public access to this area and recreational uses (including trail use) are not permitted unless approved by the U.S. Bureau of Reclamation (Reclamation) and the Uintah Water Conservancy District (UWCD). Examples of Primary Jurisdiction Area are the Red Fleet dam and aqueduct facility areas.

Land Use Category 7: Reservoir Inundation Area

The Reservoir Inundation Area delineates the extent of the reservoir at full pool. Permanent recreational facilities (with the exception of water-based facilities), administrative facilities, camping, and the use of motor vehicles are not permitted in this area. Recreational activities (e.g., dispersed day use) may be allowed during periods of low water levels. An example of a Reservoir Inundation Area is the Red Fleet Reservoir Inundation Area.

Land Use Category 8: Natural Area

Natural Areas contain important natural, historical, or cultural features (e.g., wildlife habitat, fossils, and archaeological sites) and/or are generally undeveloped areas in which public use is discouraged or limited to appropriate nonmotorized activities. In addition, access to these areas may be temporally restricted. These areas may include limited and appropriate facilities for low-

impact recreation and interpretation of natural, historical, and cultural resources. There are currently no designated Natural Areas at Red Fleet Reservoir.

Recreational Development Suitability

Development suitability within the Study Area was determined by the location of sensitive physical, natural, and cultural resource constraints that would limit future recreational facility developments and/or uses. These sensitive resource factors may constrain the ability to accommodate development in a particular area. As such, the recreational development suitability analysis for the Study Area also considered the resource constraints, facility capacities, and desired visitor experiences. For resource constraints, development suitability is influenced by the ability of the existing resources (i.e., physical, biological, and cultural resources) within the Study Area to accommodate different types of development and land uses.

Figure 2-1 illustrates areas considered both suitable and unsuitable for recreational development within the Study Area. As shown in the figure, factors used to determine these areas included:

- Slopes with greater than 20 percent steepness
- 50-foot stream channel buffers
- Habitat occupied by greater sage-grouse (*Centrocercus urophasianus*)
- Important vegetation types (riparian and wetland vegetation communities)

All RMP alternatives include provisions for developing facilities only on lands determined to be suitable for such uses. In addition to consideration of these suitability factors, detailed site analysis would need to be conducted whenever specific development is proposed. Other suitability factors to be considered in site-specific analysis would include: cultural and archaeological sites, geologic hazards (e.g., rock fall areas), areas open for shotgun and archery hunting, and soil conditions that would be poor for building foundations or septic systems. Chapter 3 provides additional descriptions of each of these resource constraint factors.

Alternatives Considered in Detail

The three alternatives considered in detail are described below, beginning with the No Action Alternative, which provides a baseline for comparison. The two remaining “action” alternatives (i.e., Alternatives B and C, which prescribe changes in current resource management) have been developed and evaluated in detail and were designed to provide a broad spectrum of options. Alternative B has a resource conservation emphasis, and Alternative C has a recreational development emphasis.

Details of each alternative are divided into the five categories established by the Issue Statements and Goals and Objectives (see Chapter 1 and Appendix A). To facilitate evaluations of how the proposed changes would differ from the current management situation at the Study Area, each action alternative is presented for comparison with the No Action Alternative (Alternative A). Table 2-1 highlights the differences between alternatives in terms of acreages allocated to each of the eight land-use categories.

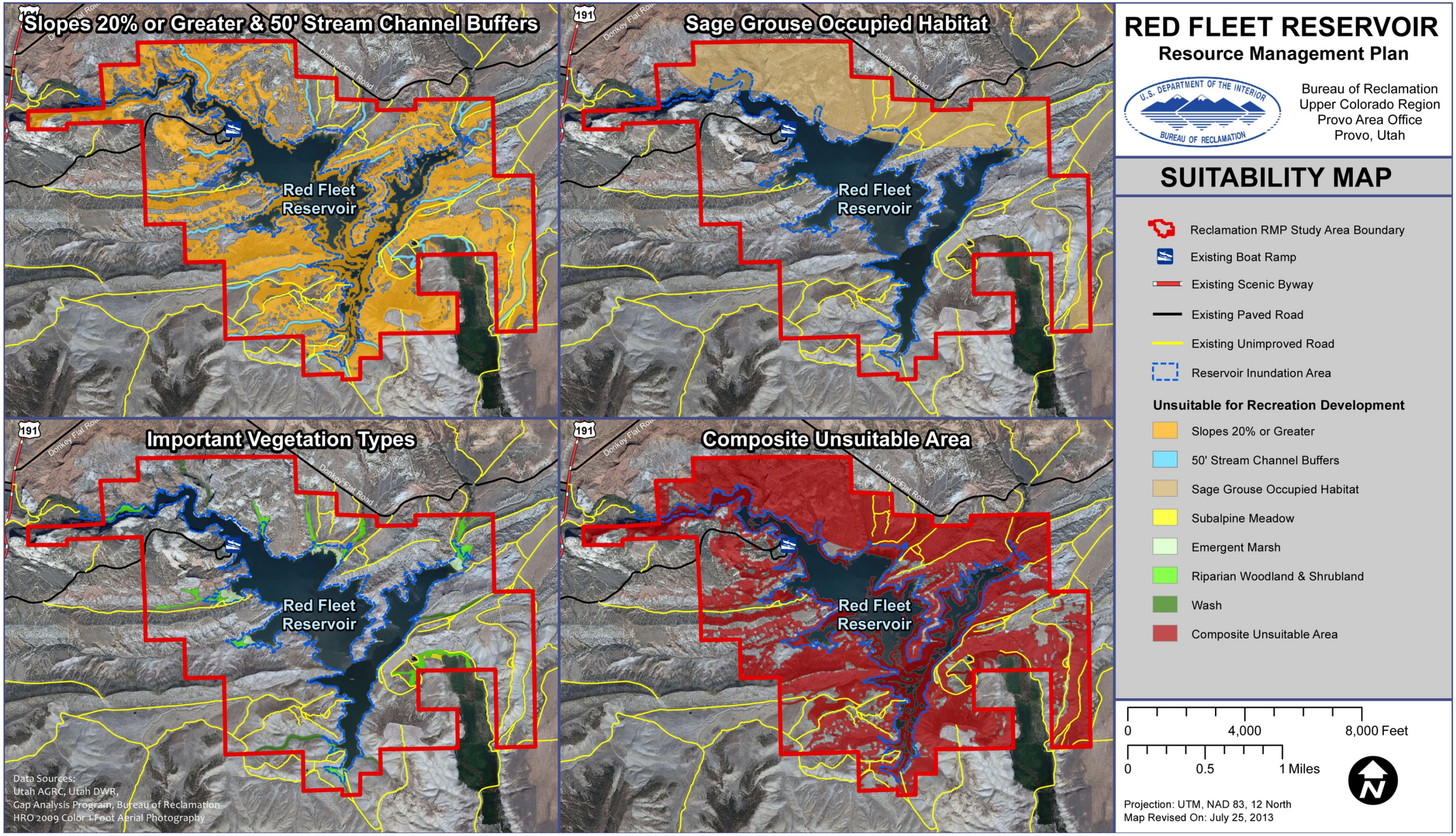

Figure 2-1. Recreation Development Suitability Map for the Red Fleet Reservoir Resource Management Plan (RMP).

Table 2-1. Acres of Study Area Lands in Land Use Categories by Project Alternative.

LAND USE CATEGORIES	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
	NO ACTION	RESOURCE CONSERVATION EMPHASIS	RECREATION DEVELOPMENT EMPHASIS
Developed Day Use Recreation Area	6.1	6.1	14.7
Developed Overnight Recreation Area	4.9	4.9	9.2
Developed Day Use and Overnight Group Recreation Area	-	-	10.1
Undeveloped Day Use Recreation Area	1,845.6	410.3	822.5
Natural Area	-	1,435.3	1,000.1
Administrative Area	1.6	1.6	1.6
Primary Jurisdiction Area	88.0	88.0	88.0
Reservoir Inundation Area	529.4	529.4	529.4
Total Study Area Acres [a]	**2,475.6**	**2,475.6**	**2,475.6**

[a] Due to rounding, acreages within land use area categories may not add exactly to the total Study Area acres in each column.

Alternative A: No Action

The No Action Alternative (Figure 2-2) maintains existing recreation development areas without expansion beyond existing disturbances. No new recreational facility site development would occur, but facility upgrades and site redesign would be completed as needed and as funding becomes available. Public information programs and interpretive opportunities are included in this alternative. Activities that help to clarify management policy and minimize resource degradation are also included. Consistent with existing use, the majority of Study Area lands (1,845.6 acres) are designated as Undeveloped Day Use Recreation Areas (Table 2-1). These lands would be managed much as they are currently.

Alternative A: Area-Wide Management

Partnerships The various partnerships that exist between state and federal agencies through statutes, regulations, and agreements would continue under Alternative A. The Utah Division of State Parks and Recreation (State Parks) would continue to manage recreation activities and provide law enforcement at Red Fleet Reservoir. When necessary, Uintah County would continue to provide additional law enforcement support to State Parks. The Utah Division of Wildlife Resources (UDWR) would continue to manage fish and wildlife resources within the Study Area. Reclamation would work to formalize and continue any existing partnerships that have not been formalized to establish roles and commitments of resources from respective management entities.

Water Resources Water operations, managed by UWCD, would continue as normal under the No Action Alternative. Maintaining water quality is important for meeting designated beneficial uses of water at Red Fleet Reservoir. Red Fleet Reservoir is a drinking water source for Vernal, Jensen, and Ashley Valley. Under the No Action Alternative, water quality would continue to be

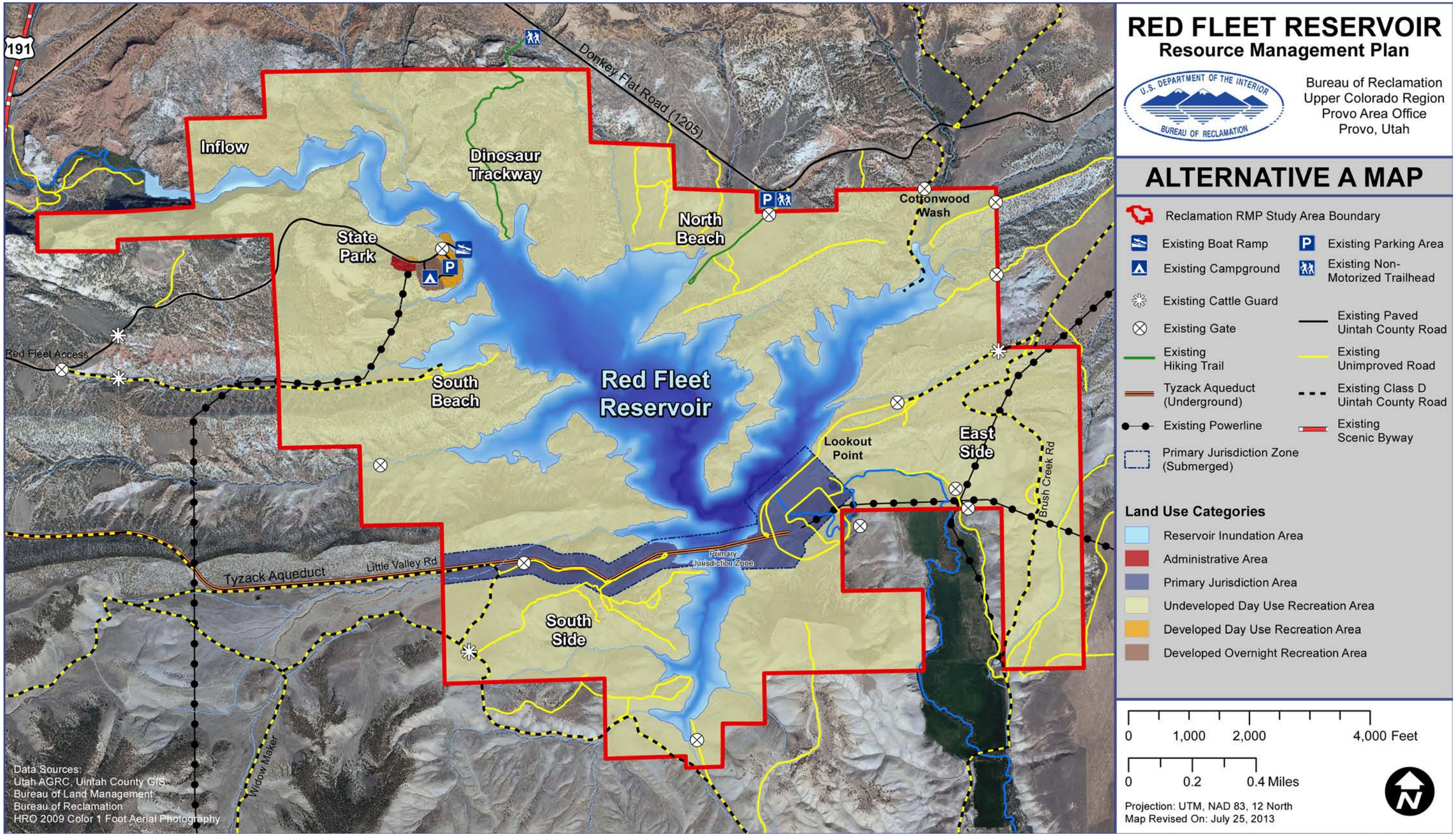

Figure 2-2. No Action Alternative A Map for the Red Fleet Reservoir Resource Management Plan (RMP).

monitored by the Utah Division of Water Quality (UDWQ). Reclamation and UWCD would continue to coordinate with UDWQ to monitor potential contaminants, bacteria, and viruses that would pose threats to aquatic life and human health. Any site redesign of existing recreation facilities would need to incorporate adequate sanitation facilities to prevent water contamination in Red Fleet Reservoir. Existing site redesign or facility rehabilitation would also incorporate improved stormwater control design elements.

Recreation and Visual Resources Under the No Action Alternative, existing Developed Day Use and Developed Overnight Recreation Areas would be maintained at their current sizes and locations. The number of developed campsites (38) would remain the same. Site redesign or rehabilitation of existing recreation facilities would be implemented, based on needs and available funding as determined by State Parks and Reclamation. However, no new recreation development sites would be proposed or developed under this alternative. Reclamation would evaluate consistency with visual quality management objectives in the renovation and redesign of existing recreation facilities.

Red Fleet Reservoir does not currently have a Developed Overnight and Day Use Group Recreation Area. Under the No Action Alternative, no group use facilities would be added at any new locations, though it would be possible to develop some group use facilities (such as a group picnic pavilion) in a redesign of the existing facilities.

State Parks would continue to be responsible for identifying and enforcing recreation capacities for both land- and water-based recreation, identifying appropriate recreational use areas for various activities, and managing user conflicts. Some programs would likely be implemented as funding becomes available; these would include interpretive displays and improved access for persons with disabilities.

By regulation 43 CFR § 420.2, Reclamation lands are closed to off-highway vehicle (OHV) use, except where specifically designated as open and in accordance with a public process specified in §420.21. Further, § 420.25 states that Reclamation lands managed by non-federal entities (such as State Parks) will be administered in a manner consistent with all applicable non-federal laws and regulations (including operation of OHVs).

The State of Utah legal code also states that currently registered OHVs may be operated on public land, trails, streets, or highways that are posted by sign or designated by map or description as open to OHV use by the controlling federal, state, county, or municipal agency (Utah Code 41-22-10.1(1)). At the present time, State of Utah administrative rules (R651-411-2(2)) specify that OHVs may be used to access ice fishing areas at Red Fleet Reservoir from the State Park boat ramp. Under Alternative A, Reclamation would officially designate that use under the federal regulation, but would not designate any other areas, roads, or trails open to public OHV use at Red Fleet Reservoir.

Natural and Cultural Resources Currently, Reclamation and partner agencies provide erosion control, revegetation, and road and parking area maintenance throughout the Study Area, as necessary. Under the No Action Alternative, necessary maintenance activities would continue; however, no comprehensive plans would be developed for habitat management or integrated pest

management. Reclamation would rely upon the UDWR to continue to manage the fishery and wildlife within the Study Area, and to monitor and prevent introduction of aquatic invasive species and pathogens. No special efforts would be implemented to enhance the fishery, fishing opportunities, or wildlife habitat.

Consistent with federal and state laws and regulations, cultural and paleontological sites would continue to be protected from the unauthorized collection and excavation of artifacts and all other ground-disturbing activities. The level of protection of cultural and paleontological sites and scenic quality would continue as it is presently; however, the potential for impacts to sites would likely increase as use of the Study Area increases. Under Alternative A, these conditions would continue.

Land Management Reclamation and its partners would continue to evaluate access and access controls and recommend improvements as needed. Reclamation and State Parks would work with Uintah County to manage OHV use within the Study Area in accordance with State and County laws. For purposes of the RMP, an unimproved road is defined as a road that does not have a paved or gravel surface and is irregularly maintained or not maintained. At Red Fleet Reservoir, there are currently a number of user-created unimproved roads that are not designated as county roads and that are not used for administrative access purposes. With Alternative A, none of the user-created unimproved roads would be actively decommissioned; however, boundary fencing, gates, and cattle guards would be installed, maintained, or upgraded as needed. As is currently the case, Reclamation would determine the appropriate uses for borrow pit areas, identify mineral rights for Reclamation lands, and coordinate with appropriate entities managing surrounding lands regarding any potential indirect effects to Reclamation lands and the reservoir.

Alternative A: Specific Area Management

The Study Area has been divided into nine management areas based upon natural resource features, land management, recreational activities, and existing facilities. The management areas are displayed on Figure 1-3 and are described below and shown on Figure 2-2.

State Park Area Under Alternative A, State Parks would continue to manage and maintain this area as an Administrative Area, Developed Day Use Recreation area, and Developed Overnight Recreation Area. Facilities would be upgraded or redesigned as needed but not expanded beyond existing disturbance areas.

Inflow Area Consistent with existing use, the Inflow Area would continue to be managed as an Undeveloped Day Use Recreation Area under Alternative A. No new facilities would be developed.

Dinosaur Trackway Area Consistent with existing use, the Dinosaur Trackway Area would continue to be managed as an Undeveloped Day Use Recreation Area under Alternative A. Reclamation, State Parks and U.S. Bureau of Land Management (BLM) would continue to coordinate trail maintenance efforts. Reclamation and its partners would determine an appropriate strategy for preserving the paleontological resource (dinosaur tracks) found in this area. No new facilities would be developed.

North Beach Area Consistent with existing use, the North Beach Area would continue to be managed as an Undeveloped Day Use Recreation Area under Alternative A. The road into the North Beach Area would continue to be gated, allowing only walk-in access by the public. No new facilities would be developed.

South Beach Area Consistent with existing use, the South Beach Area would continue to be managed as an Undeveloped Day Use Recreation Area under Alternative A. The road into the South Beach Area would continue to be gated, allowing only walk-in access by the public. No new facilities would be developed.

South Side Area Consistent with existing use, the South Beach Area would continue to be managed as an Undeveloped Day Use Recreation Area under Alternative A. Fencing, gates, and cattle guards would be replaced as appropriate to control access. No new facilities would be developed.

East Side Area Consistent with existing use, the East Side Area would continue to be managed as an Undeveloped Day Use Recreation Area under Alternative A. Walk-in access to the Lookout Point area would remain under Alternative A, but no new trailhead improvements or shoreline fishing access improvements would be developed.

Primary Jurisdiction Area The Primary Jurisdiction Area is set aside for dam, pumping plant, and aqueduct operation and maintenance and would be managed the same under any RMP alternative. Access is restricted for the protection of public health, safety, and welfare. Permitted access and use of this area would be determined by Reclamation and UWCD.

Reservoir Inundation Area The Reservoir Inundation Area would be managed the same under any RMP alternative. State Parks has determined that Red Fleet Reservoir has a maximum boat-carrying capacity of 70 boats; however, existing parking can only accommodate about 40 boat trailers at any given time (M. Murray 2012a, pers. comm.). State Parks would continue to maintain the current maximum 70 boat-carrying capacity, reducing this number as necessary to compensate for reservoir water level fluctuations, available parking, and to promote public health and safety. Reclamation would allow the public to use OHVs to access ice fishing areas from the boat ramp as conditions permit and in accordance with existing State of Utah administrative rule R651-411-2(2). State Parks would be responsible to manage this use.

Alternative B: Resource Conservation Emphasis

The emphasis of Alternative B is conservation, protection, and enhancement of natural and cultural resources. Some improvements to existing recreational facilities, such as utility upgrades and facility redesigns, are included. Additions to facilities would include improvements to existing managed and maintained roads and development of facilities that either improve environmental quality in the area or inform the public about regulations and expectations of resource protection. Coordination with surrounding property owners and jurisdictions would be explored in order to assure that surrounding land uses are compatible with and complementary to the conservation theme.

In terms of land use (Table 2-1) Alternative B would designate 1,435 acres as Natural Area and 410 acres for Undeveloped Day Use Recreation Area. Locations of these land-use designations are illustrated in Figure 2-3. The amount of Study Area lands devoted to Developed Day Use and Overnight Recreation Areas, Administrative Area, Reservoir Inundation Area, and Primary Jurisdiction Area uses under Alternative B would be the same as found under Alternative A.

The Natural Area designation would be used for the more remote portions of the Study Area which include the Inflow Area, Dinosaur Trackway Area, North Beach Area, South Beach Area, and East Side Area portions of the Study Area. Consistent with the conservation emphasis of Alternative B, these areas would be primarily managed for wildlife habitat and to preserve natural and cultural resource features. Nonmotorized, day-use recreation would occur in these areas, but recreation facilities would not be developed. Existing hiking and walk-in trails at the Dinosaur Trackway Area and the North Beach Area would be maintained. In the East Side Area, an existing unmaintained road to Lookout Point would be decommissioned and replaced with a walk-in trail and trailhead parking areas with a vault toilet. The South Side Area, which has county road access from outside the Study Area, would continue to be managed as an Undeveloped Day Use Recreation Area. Reclamation, UWCD, and State Parks would determine appropriate public access within this area. Lands surrounding the existing State Park facilities would also continue to be managed as an Undeveloped Day Use Recreation Area.

Alternative B: Area-Wide Management

Partnerships The various partnerships that exist between state and federal agencies through statutes, regulations, and agreements would continue under Alternative B. State Parks would continue to manage recreation activities and provide law enforcement. When necessary, Uintah County would continue to provide additional law enforcement support to State Parks. The UDWR would continue to manage fish and wildlife resources within the Study Area.

Reclamation would need to expand existing partnerships or pursue new ones to achieve Alternative B planning objectives. Reclamation would work to formalize and continue any existing partnerships that have not been formalized to establish roles and commitments of resources from respective management entities. Reclamation would pursue additional partnerships with Uintah County, Vernal City, UDWR, BLM, the National Scenic Byways Program, and other entities to facilitate best management of Study Area resources. Reclamation would consider contracts with qualified private concessioners for provision of specific public recreation facilities and/or activities and would consider formal partnerships with private, nonprofit recreation user groups for provision and maintenance of specific public recreation facilities and/or activities.

Water Resources Water operations, managed by UWCD would continue under Alternative B. Any site redesign or rehabilitation of existing recreation facilities would need to incorporate adequate sanitation facilities to prevent water contamination in Red Fleet Reservoir. Site redesign or facility rehabilitation would also incorporate improved stormwater control design elements.

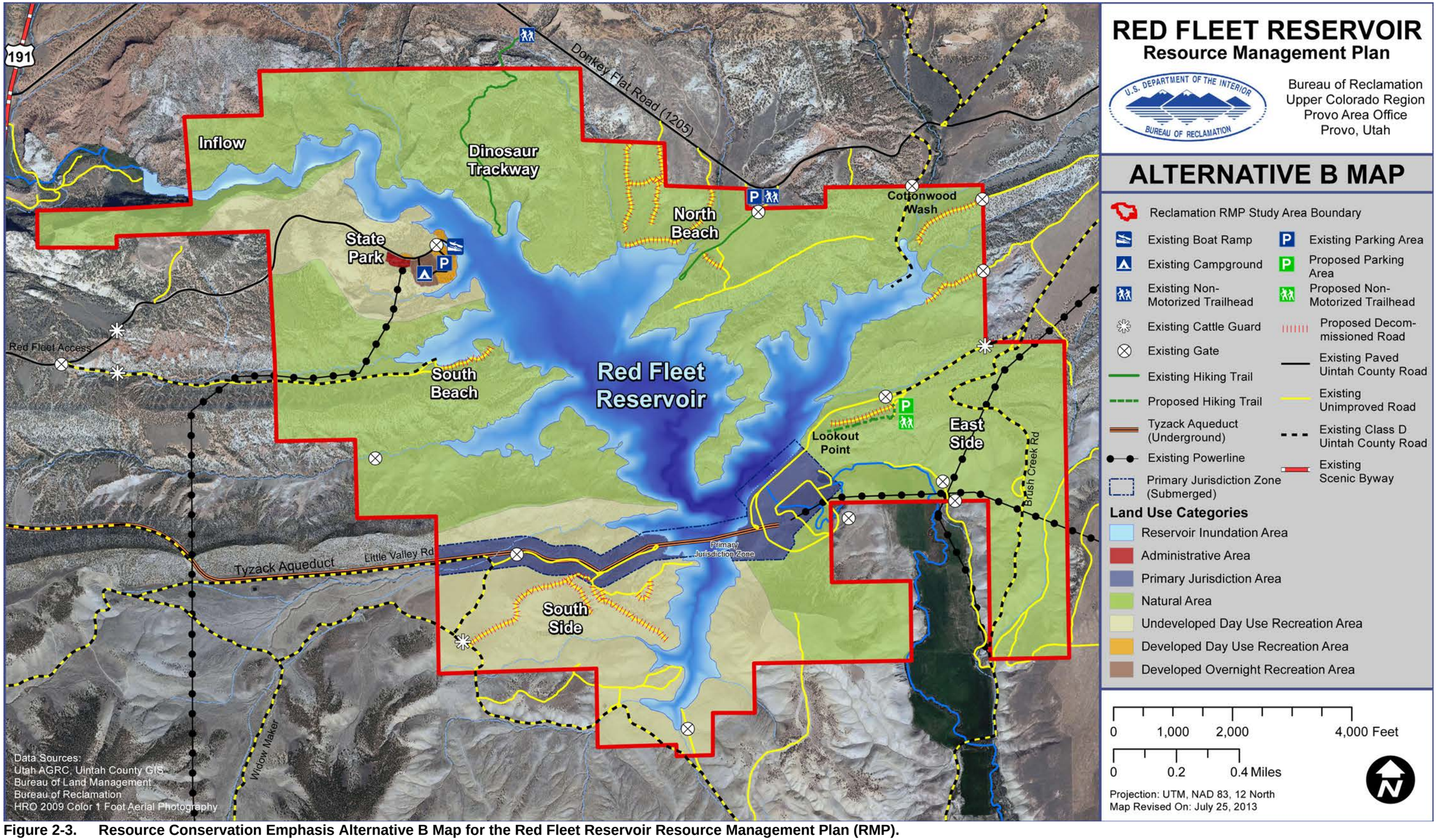

Figure 2-3. Resource Conservation Emphasis Alternative B Map for the Red Fleet Reservoir Resource Management Plan (RMP).

Reclamation would identify water quality impacts originating in Red Fleet Reservoir and suggest ways to meet beneficial use designations. Red Fleet Reservoir is a drinking water source for Vernal, Jensen, and Ashley Valley. Under the No Action Alternative, water quality would continue to be monitored by UDWQ. Reclamation and UWCD would continue to coordinate with UDWQ to monitor potential contaminants, bacteria, and viruses that would pose threats to aquatic life and human health.

Recreation and Visual Resources Under Alternative B, Developed Day Use Recreation Areas and Developed Overnight Recreation Areas would be maintained at the current sizes and locations. The number of designated campsites (38) would remain the same under Alternative B. Site redesign or rehabilitation of existing recreation facilities would be implemented, based on needs and available funding as determined by State Parks and Reclamation; however, no new recreation development sites would be proposed or developed. Reclamation would evaluate consistency with visual quality management objectives in the renovation and redesign of existing recreation facilities.

Red Fleet Reservoir does not currently have a designated Developed Overnight and Day Use Group Area. Under Alternative B, no group use facilities would be added at any new locations, though it would be possible to develop some group use facilities (such as a group picnic pavilion) in a redesign of the existing development areas.

State Parks would continue to be responsible for identifying and enforcing recreation capacities for both land- and water-based recreation, identifying appropriate recreational use areas for various activities, and managing user conflicts. Some programs would likely be implemented as funding becomes available; these would include installing interpretive displays and providing improved access for persons with disabilities.

Under Alternative B, Reclamation would allow public OHV access to the Reservoir Inundation Area for ice fishing from the State Park Area boat ramp, as conditions permit and in accordance with existing Utah administrative rule R651-411-2(2). State Parks would be responsible to manage this use. Reclamation would also coordinate with the appropriate management entities regarding potential OHV use on designated state and county roads, or portions thereof, within the Study Area. An existing informal and undesignated OHV riding area in the East Side Area would be closed to that use, consistent with designation of that area as a Natural Area under Alternative B.

Natural and Cultural Resources Under Alternative B, management of the Study Area would focus on conservation of natural and cultural resources. For example, coordination with BLM and UDWR would occur for determining objectives and management strategies for conservation of greater sage-grouse occupied habitat and elk and deer habitat areas. Reclamation would encourage and work with the UDWR to develop a Fishery Management Plan intended to enhance recreational fishing opportunities where feasible within existing reservoir operating criteria and a Habitat Management Plan intended to conserve viable wildlife habitat where feasible using management strategies to protect wildlife values. In developing these plans Reclamation and its partners would determine and consider status of the state-listed flannelmouth sucker (*Catostomus latipinnis*) and would also consider plantings of native plant species that are

beneficial aquatic plants in vegetated shallows and shrubs and trees along shorelines and riparian areas where appropriate.

The RMP would also include specific objectives to develop and implement drainage improvements and stormwater best management practices (BMPs) and an Integrated Pest Management Plan. The latter would focus on controlling noxious and invading weeds, pests, and aquatic nuisances within the Study Area. Control methods could include mowing, applying chemicals, burning, removing, pulling, and trapping. This plan would improve current vegetation management within the Study Area.

Reclamation would continue to cooperate with UDWR, UDWQ, and other entities that monitor accumulations of selenium and mercury and provide adequate public information and education. Working with State Parks, Reclamation would continue fencing maintenance efforts to keep livestock and OHVs out of riparian wetlands and other sensitive areas. In developing recreation site redesign or rehabilitation activities, Reclamation and State Parks would develop an appropriate plant list for future landscaping, erosion control, and water conservation.

Consistent with federal and state laws and regulations, cultural and paleontological sites would continue to be protected from the unauthorized collection and excavation of artifacts and all other ground-disturbing activities. Reclamation would coordinate with the Utah State Historic Preservation Office (SHPO) and the cultural resource sections of State Parks and Reclamation, as necessary, to protect cultural and paleontological resources. Specific objectives would be developed to identify, manage, and interpret cultural and paleontological resources under Alternative B.

Land Management Reclamation and its partners would continue to evaluate access and access controls and recommend improvements as needed. Reclamation and State Parks would work with Uintah County to manage OHV use within the Study Area in accordance with State and County laws. For purposes of the RMP, an unimproved road is defined as a road that does not have a paved or gravel surface and is irregularly maintained or not maintained. With Alternative B, user-created unimproved roads (unimproved roads that are not designated as county roads or that are not used for administrative access purposes) would be decommissioned, particularly wherever these roads present erosion problems, provide access to unsafe areas, or enable trespass into the Primary Jurisdiction Area. Boundary fencing, gates, and cattle guards would be installed, maintained, or upgraded as needed to prevent trespass.

Under Alternative B, the roads into the South Beach and North Beach areas would continue to be gated, allowing only walk-in access by the public. On the east side, walk-in access to Lookout Point would remain, but no trailhead improvements or shoreline fishing access improvements would be made in this area. As is currently the case, access to Red Fleet Dam and the pumping plant segment of the Primary Jurisdiction Area would be restricted. There would be no change in the management of the Primary Jurisdiction Area. Permitted access and use of this area would be determined by Reclamation and UWCD.

As is currently the case, Reclamation would determine the appropriate uses for borrow pit areas, identify mineral rights for Reclamation lands, and coordinate with appropriate entities managing

surrounding lands regarding any potential indirect effects on Reclamation lands and the reservoir.

During the RMP planning process, Reclamation determined that a portion of land east of Red Fleet Dam within the Reclamation property boundary is contiguous with a private agricultural field and is being used by the private landowner for agricultural purposes. Under Alternative B, Reclamation would consider a mutually beneficial land exchange to resolve this issue.

Alternative B: Specific Area Management

Specific Management Area designations under Alternative B are described below and shown on Figure 2-3.

State Park Area Under Alternative B, State Parks would continue to manage this area as an Administrative Area, Developed Day Use Recreation Area, and Developed Overnight Recreation Area. Facilities would be upgraded or redesigned as needed but not expanded beyond existing disturbance areas. Reclamation would allow public OHV access to the Reservoir Inundation Area from the State Park Area boat ramp for ice fishing as conditions permit and in accordance with existing Utah administrative rule R651-411-2(2). State Parks would be responsible to manage this use. During the RMP planning process, State Parks expressed interest in increasing overnight camping stays by allowing public OHV use within the State Park Area and on the entrance road to Red Fleet Reservoir. As described above for Area-Wide management of Recreation and Visual Resources under Alternative B, Reclamation would coordinate with the appropriate management entities regarding this potential designation.

Inflow Area The Inflow Area would be designated as a Natural Area under Alternative B to protect natural and cultural resources, including scenic quality along the highway.. No new facilities would be developed.

Dinosaur Trackway Area The Dinosaur Trackway Area would be designated as a Natural Area under Alternative B to protect natural and cultural resources, including scenic quality. The existing hiking trail to the dinosaur trackway from a BLM trailhead would remain. Reclamation, State Parks, and the BLM would continue to coordinate trail maintenance efforts. Reclamation and its partners would determine an appropriate strategy for preserving the paleontological resource (dinosaur tracks) found in this area. Disturbed areas would be revegetated and erosion control would be provided as necessary. No new facilities would be developed.

North Beach Area The North Beach Area would be designated as a Natural Area under Alternative B to protect natural and cultural resources. The road into the North Beach Area would continue to be gated, allowing only walk-in access by the public. User-created unimproved roads would be decommissioned. Disturbed areas would be revegetated and erosion control would be provided as necessary. No new facilities would be developed.

South Beach Area The South Beach Area would be designated as a Natural Area under Alternative B to protect natural and cultural resources. The road into the South Beach Area would continue to be gated, allowing only walk-in access by the public. A user-created unimproved road would be decommissioned. Disturbed areas would be revegetated and erosion control would be provided as necessary. No new facilities would be developed.

South Side Area The South Side Area would continue to be managed as an Undeveloped Day Use Recreation Area under Alternative B. Fencing, gates, and cattle guards would be implemented as appropriate to control access. User-created unimproved roads would be decommissioned. Disturbed areas would be revegetated and erosion control would be provided as necessary. No new facilities would be developed.

East Side Area The East Side Area would be designated as Natural Area under Alternative B to protect natural and cultural resources. A walking trail to the Lookout Point would be developed with trailhead parking and a vault toilet. This would replace a user-created unimproved road to Lookout Point, which would be decommissioned. Two other user-created unimproved roads would be decommissioned, as illustrated on Figure 2-3. Shoreline fishing access improvements would also be made. Disturbed areas would be revegetated and erosion control would be provided as necessary. Consistent with the Natural Area designation, an existing informal and undesignated OHV riding area would be closed to that use within the Reclamation property boundary.

Primary Jurisdiction Area The Primary Jurisdiction Area is set aside for dam, pumping plant, and aqueduct operation and maintenance and would be managed the same under any RMP alternative. Access is restricted for the protection of public health, safety, and welfare. Permitted access and use of this area would be determined by Reclamation and UWCD.

Reservoir Inundation Area The Reservoir Inundation Area would be managed the same under any RMP alternative. State Parks has determined that Red Fleet Reservoir has a maximum boat-carrying capacity of 70 boats; however, existing parking can only accommodate about 40 boat trailers at any given time (M. Murray 2012a, pers. comm.). State Parks would continue to maintain the current maximum boat-carrying capacity of 70 boats, reducing this number as necessary to compensate for reservoir water level fluctuations, available parking, and to promote public health and safety. Under Alternative B, Reclamation would allow public OHV access to the Reservoir Inundation Area for ice fishing from the State Park Area boat ramp, as conditions permit and in accordance with existing Utah administrative rule R651-411-2(2).

Alternative C: Recreation Development Emphasis

Alternative C provides for and expands a variety of recreational opportunities by locating new facilities on accessible lands suitable for recreational development to meet demand. New boating, camping, parking, and picnicking facilities and the accompanying access roads would be developed. Specific components that would be included with Alternative C are: development of group recreation sites; addition of rental cabins or yurts; expanded hiking trails, improved shoreline access, and an accessible fishing dock; and development of trailheads and trail connectivity. Opportunities to contract services with private concessionaires would be considered as appropriate. Facilities that improve or protect environmental quality are included, as well as regulation and information systems to increase public awareness.

To accommodate these elements, Alternative C would allocate additional lands to developed recreation purposes, as illustrated in Figure 2-4. Table 2-1 indicates allocation of 14.7 acres to Developed Day Use Recreation Areas, 9.2 acres to Developed Overnight Recreation Areas, and 10.1 acres to Developed Overnight and Day Use Group Recreation Areas. Collectively, these

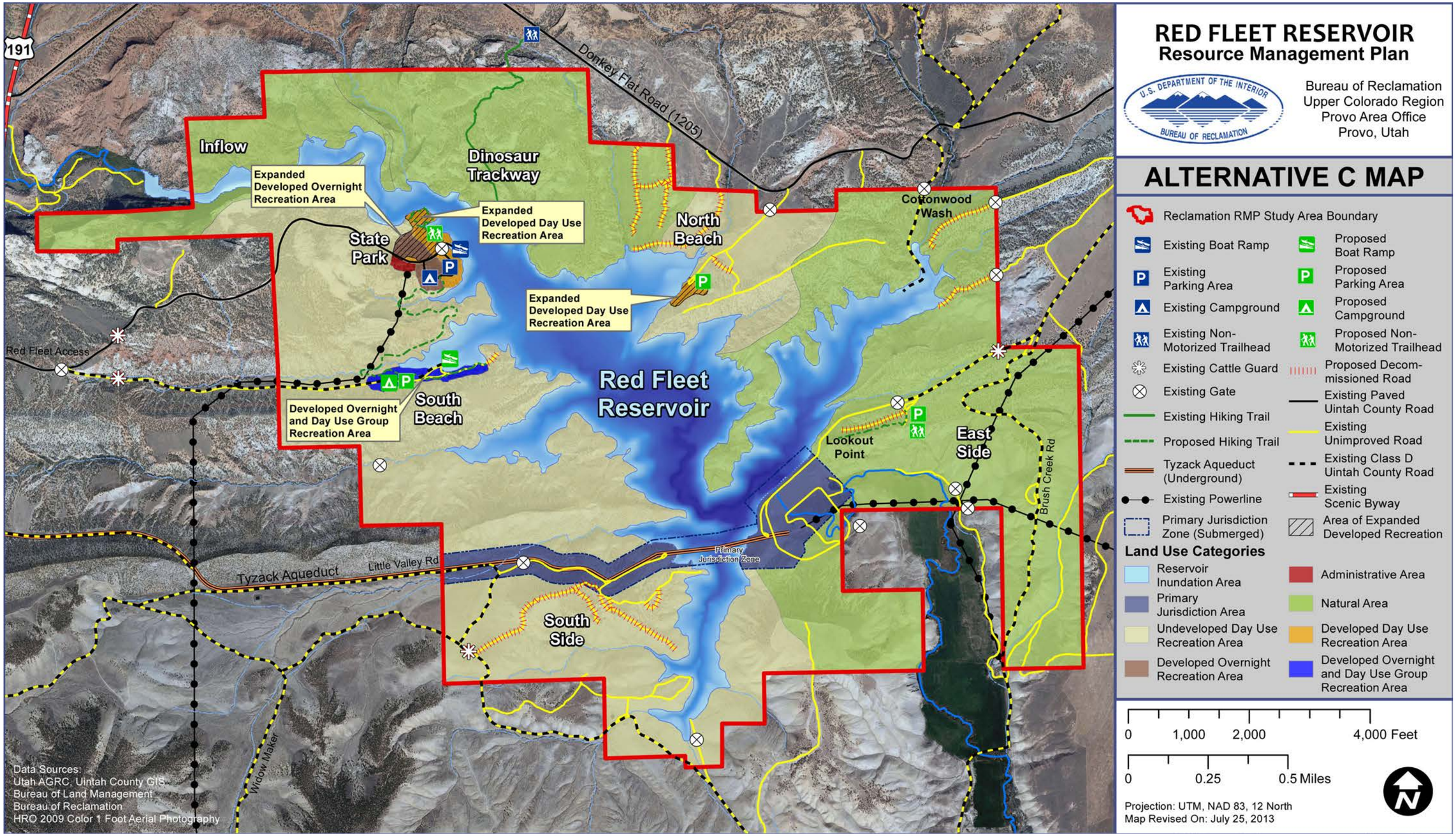

Figure 2-4. Recreation Development Emphasis Alternative C Map for the Red Fleet Reservoir Resource Management Plan (RMP).

designations reflect an increase of 23 acres available for developed use over existing conditions (Alternative A). Administrative Areas, Primary Jurisdiction Areas, and Reservoir Inundation Areas would not change. A large proportion of the Study Area, 1,000.1 acres, would become Natural Area while 822.5 acres would remain Undeveloped Day Use Recreation Area.

Alternative C: Area-Wide Management

Partnerships The same management actions and policies for partnerships described under Alternative B would be implemented under Alternative C.

Water Resources The same management actions and policies for water resources described under Alternative B would be implemented under Alternative C.

Recreation and Visual Resources The emphasis of Alternative C is accommodating expanded recreation facilities and opportunities. Figure 2-4 illustrates specific area designations that are consistent with the recreation development suitability analysis. The footprint of the existing State Park facilities would be expanded northward. Developed Overnight Recreation Area facilities would be redeveloped within the existing footprint and would be expanded to the north across the road from the Administrative Area. Some of the redeveloped or expanded area would be devoted to proposed rental cabins or yurts. The number of designated campsites would increase to 58 under Alternative C. Similarly, the Developed Day Use Recreation Area would be redesigned within its existing footprint and also expanded to the north. This expansion would allow for development of a beach area surrounding the cove immediately north of the existing boat launch area.

At the South Beach Area, a Developed Overnight and Day Use Group Recreation Area would be developed. This area would be accessible by reservation only; access would be controlled by the existing gate and access road to this area. Electric power lines already pass through this area, so power would be easy to provide for developed facilities and camp site hookups. Water and sewer facilities would need to be assessed in site design. A boat ramp would be developed in the nearby cove for use by groups reserving this area. A conceptual walking trail between the South Beach group area and the main State Parks facility area is also illustrated on Figure 2-4.

At the North Beach Area, the existing access road from Donkey Flat Road would be opened to the public for vehicular access and a Developed Day Use Recreation Area would be constructed. State Parks would maintain the area and collect day-use fees as warranted. Facilities would include parking, vault toilets, and picnic tables/pavilions. The South Side Area would continue to be managed as an Undeveloped Day Use Recreation Area under Alternative C.

Under Alternative C, Reclamation would allow public OHV access to the Reservoir Inundation Area for ice fishing from the State Park Area boat ramp as conditions permit and in accordance with existing Utah administrative rule R651-411-2(2). Reclamation would also coordinate with the appropriate management entities regarding potential OHV use on designated state and county roads, or portions thereof, within the Study Area. An existing informal and undesignated OHV riding area in the East Side Area would be closed to that use, consistent with designation of that area as a Natural Area under Alternative C.

State Parks would continue to be responsible for identifying and enforcing recreation capacities for both land-and water-based recreation, identifying appropriate recreational use areas for various activities, and managing user conflicts. Programs would likely be implemented as funding becomes available; these would include installing interpretive displays and providing improved access for persons with disabilities.

All of the above described recreation facility concepts were developed in consultation with State Parks. These facilities would be reasonable to implement within the time frame of the RMP (10–15 years), contingent on assessment of demand, available funding, and site-specific environmental evaluation as required by the U.S. National Environmental Policy Act of 1969 (NEPA). Reclamation would also evaluate consistency with visual quality management objectives in the design of renovated or new recreation facilities.

Natural and Cultural Resources While additional Study Area lands would be converted to developed uses under Alternative C, natural and cultural resources would be planned for and actively managed in the same manner as described for Alternative B. The more remote portions of the Study Areas—the Inflow, Dinosaur Trackway, and East Side areas—would be designated as Natural Areas. Management under this designation would emphasize the habitat values of these areas and would prioritize preservation of natural and cultural resources. To accommodate recreation opportunity an improved trailhead and shoreline access point would be provided in the East Side Area. This walk-in access would not compromise the Natural Area land-use designation but would be closed during certain times if needed. Otherwise, the same management actions and policies for natural and cultural resources described for Alternative B would be implemented under Alternative C.

Land Management Reclamation and its partners would continue to evaluate access and access controls and recommend improvements as needed. Reclamation and State Parks would work with Uintah County to manage OHV use within the Study Area in accordance with State and County laws. For purposes of the RMP, an unimproved road is defined as a road that does not have a paved or gravel surface and is irregularly maintained or not maintained. With Alternative C, user-created unimproved roads (unimproved roads that are not designated as county roads or that are not used for administrative access purposes) would be decommissioned, particularly wherever these roads present erosion problems, provide access to unsafe areas, or enable trespass into the Primary Jurisdiction Area. Boundary fencing, gates, and cattle guards would be installed, maintained, or upgraded as needed.

Public access to Red Fleet Reservoir would be improved and expanded with Alternative C. With site development, the road into the North Beach Area would be opened to public access. Development at the South Beach Area would be created for groups to reserve the area for day use or overnight camping. On the East Side Area, walk-in access to Lookout Point and the reservoir shoreline would be improved. As is currently the case, access to the Red Fleet Dam and the pumping plant segment of the Primary Jurisdiction Zone would be restricted. There would be no change in the management of the Primary Jurisdiction Zone; appropriate access and use of this area would be determined by Reclamation and UWCD.

As is currently the case, Reclamation would determine the appropriate uses for borrow pit areas, identify mineral rights for Reclamation lands, and coordinate with appropriate entities managing surrounding lands regarding any potential indirect effects to Reclamation lands and Red Fleet Reservoir.

During the RMP planning process, Reclamation determined that a portion of land east of Red Fleet Dam within the Reclamation property boundary is contiguous with a private agricultural field and is being used by the private landowner for agricultural purposes. Under Alternative C, Reclamation would consider a mutually-beneficial land exchange to resolve this issue.

Alternative C: Specific Area Management

Specific Management Area designations under Alternative C are described below and shown on Figure 2-4.

State Park Area Under Alternative C, State Parks would continue to manage this area as an Administrative Area, Developed Day Use Recreation Area, and Developed Overnight Recreation Area. Existing facilities would be upgraded or redesigned as needed. Available area for Developed Day Use Recreation Area and Developed Overnight Recreation Area have been expanded with Alternative C. Reclamation would allow public OHV access to the Reservoir Inundation Area from the State Park Area boat ramp for ice fishing as conditions permit and in accordance with Utah administrative rule R651-411-2(2). State Parks would be responsible to manage this use. During the RMP planning process, State Parks expressed interest in increasing overnight camping stays by allowing public OHV use within the State Park Area and on the entrance road to Red Fleet Reservoir. As described above for Area-Wide management of Recreation and Visual Resources under Alternative C, Reclamation would coordinate with the appropriate management entities regarding this potential designation.

Inflow Area As with Alternative B, the Inflow Area would be designated as Natural Area under Alternative C to protect natural and cultural resources, including scenic quality along the highway. No new facilities would be developed.

Dinosaur Trackway Area Management of the Dinosaur Trackway Area under Alternative C would be the same as described for Alternative B. The Dinosaur Trackway Area would be designated as Natural Area to protect natural and cultural resources, including scenic quality. The existing hiking trail to the dinosaur trackway from a BLM trailhead would remain. Reclamation, State Parks, and the BLM would continue to coordinate trail maintenance efforts. Reclamation and its partners would determine an appropriate strategy for preserving the paleontological resource (dinosaur tracks) found in this area. Disturbed areas would be revegetated and erosion control would be provided as necessary. No new facilities would be developed.

North Beach Area Under Alternative C, the road into the North Beach Area would be opened and a Developed Day Use Recreation Area would be developed to include vault toilets, picnic facilities, and a parking area. User-created unimproved roads would be decommissioned. Disturbed areas would be revegetated and erosion control would be provided as necessary.

South Beach Area A portion of the South Beach Area would be designated as a Developed Overnight Area and Day Use Group Recreation Area under Alternative C. State Parks would manage access to the Developed Overnight Area and Day Use Group Recreation Area that would be developed for reservation by groups. A user-created unimproved road would be decommissioned. Disturbed areas would be revegetated and erosion control would be provided as necessary. A walking trail connecting the South Beach Area to the main State Park Area facilities is also included.

South Side Area The South Side Area would be managed as an Undeveloped Day Use Recreation Area under Alternative C. Fencing, gates, and cattle guards would be implemented as appropriate to control access. User-created unimproved roads would be decommissioned. Disturbed areas would be revegetated and erosion control would be provided as necessary. No new facilities would be developed.

East Side Area Under Alternative C, the East Side Area would be managed the same as described under Alternative B. The area would be designated as a Natural Area to protect natural and cultural resources. A walking trail to the Lookout Point would be developed with trailhead parking and a vault toilet. This would replace a user-created unimproved road to Lookout Point, which would be decommissioned. Two other user-created unimproved roads in this area would be decommissioned, as illustrated on Figure 2-4. Shoreline fishing access improvements would also be made. Disturbed areas would be revegetated and erosion control would be provided as necessary. Consistent with the Natural Area designation, an existing informal OHV riding area would be closed to that use within the Reclamation property boundary.

Primary Jurisdiction Area The Primary Jurisdiction Area is set aside for dam, pumping plant, and aqueduct operation and maintenance and would be managed the same under any RMP alternative. Access is restricted for the protection of public health, safety, and welfare. Permitted access and use of this area would be determined by Reclamation and UWCD.

Reservoir Inundation Area The Reservoir Inundation Area would be managed the same under any RMP alternative. State Parks has determined that Red Fleet Reservoir has a maximum boat-carrying capacity of 70 boats; however, parking can only accommodate about 40 boat trailers at any given time (M. Murray 2012a, pers. comm.). State Parks would continue to maintain the current maximum boat-carrying capacity of 70 boats, reducing this number as necessary to compensate for reservoir water level fluctuations, available parking, and to promote public health and safety. Under Alternative C, Reclamation would allow public OHV access to the Reservoir Inundation Area for ice fishing from the State Park Area boat ramp as conditions permit and in accordance with existing Utah administrative rule R651-411-2(2). State Parks would be responsible to manage this use.

Summary Comparison of Alternatives and Impacts

Table 2-2 summarizes the land-use designations for each of the Red Fleet Reservoir management areas by alternative. As indicated in the table, the State Park Area retains the same land-use designations with Alternative B and C that it would have under the No Action Alternative

Table 2-2. Comparison of Land Use Designations for Resource Management Plan (RMP) Alternatives by Management Area.

MANAGEMENT AREAS	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
	NO ACTION	RESOURCE CONSERVATION EMPHASIS	RECREATION DEVELOPMENT EMPHASIS
State Park Area	AA[a] DDURA[b] DORA[c] UDURA[d]	AA DDURA DORA UDURA	AA DDURA DORA UDURA
Inflow Area	UDURA	NA[e]	NA
Dinosaur Trackway Area	UDURA	NA	NA
North Beach Area	UDURA	NA	DDURA UDURA
South Beach Area	UDURA	NA	DGRA[f] UDURA
South Side Area	UDURA	UDURA	UDURA
East Side Area	UDURA	NA	NA
Primary Jurisdiction Area	PJA[g]	PJA	PJA
Reservoir Inundation Area	RIA[h]	RIA	RIA

[a] AA = Administrative Area
[b] DDURA = Developed Day Use Recreation Area
[c] DORA = Developed Overnight Recreation Area
[d] UDURA = Undeveloped Day Use Recreation Area
[e] NA = Natural Area
[f] DGRA = Developed Overnight and Day Use Group Recreation Area
[g] PJA = Primary Jurisdiction Area
[h] RIA = Reservoir Inundation Area

(Alternative A). However, the Developed Overnight Recreation Areas and Developed Day Use Recreation Areas would be expanded under Alternative C. The Inflow Area, Dinosaur Trackway

Area, and East Side Area would all be designated as Natural Areas under Alternatives B and C but would be Undeveloped Day Use Recreation Areas under Alternative A.

North Beach and South Beach areas would be Natural Areas under Alternative B but would have new developed recreation facilities under Alternative C. The North Beach Area would have a designated Developed Day Use Recreation Area under Alternative C, while the South Beach Area would have a Developed Overnight and Day Use Group Recreation Area. The Primary Jurisdiction and Reservoir Inundation Area uses would not be modified from existing conditions under any RMP alternative.

Table 2-3 summarizes the impacts of each alternative for the Study Area. For a detailed description of impacts by resource, see Chapter 4: Environmental Consequences. Based on these impact assessments, Table 2-4 summarizes how well each alternative would fulfill the RMP goals. A full statement of RMP Goals and Objectives is provided in Appendix A.

Table 2-3. Summary of Resource Management Plan (RMP) Impacts by Alternative.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
		Partnerships	
Change in the number and type of resource management partnerships	No change to the number and type of partnerships. Existing partnerships include: • U.S. Bureau of Land Management • U.S. Fish and Wildlife Service • Utah Division of State Parks and Recreation • Uintah Water Conservancy District • Utah Division of Wildlife Resources • Utah Department of Environmental Quality • Utah Department of Transportation • Uintah County	Current partners listed for Alternative A would remain with increased responsibilities related to a conservation emphasis. Potentially new resource management partners include local conservation organizations and adjacent landowners.	Same as Alternative B, plus additional responsibilities and/or partnerships related to a recreation development emphasis. Potentially new resource management partners include those listed for Alternative B and also local recreation interest groups.
		Water Resources	
Change in the amount of unimproved roads due to de-commissioning and/or conversion to nonmotorized trail	No change from existing conditions (14 total miles of unimproved roads, including 5 miles within 50 feet of the reservoir or a tributary stream).	Decrease of 2.3 miles of unimproved roads, including a decrease of 0.7 mile within 50 feet of the reservoir or a tributary stream.	Decrease of 2.3 miles of unimproved roads, including a decrease of 0.7 mile within 50 feet of the reservoir or a tributary stream.
Change in the amount of nonmotorized trails	No change from existing conditions (1.1 miles of nonmotorized trails within the Study Area, including 0.2 mile within 50 feet of the reservoir or tributary stream).	Increase of 0.2 mile of nonmotorized trail in the East Side Area (at Lookout Point).	Increase of 1.8 miles of nonmotorized trail, including 1.4 miles within 50 feet of the reservoir or a tributary stream.
Change in the amount of developed recreation areas	No change from existing conditions (11 acres of developed recreation areas).	No change from existing conditions (11 acres of developed recreation areas).	Increase of 23 acres of developed recreation areas to a total of 34 acres. Increase of 13.3 acres of developed recreation area within 50 feet of a stream or the reservoir.

Table 2-3. (Cont.)

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the amount of Natural Area	No change from existing conditions (no existing Natural Areas).	Increase of 1,435 acres of Natural Area. Increase of 375 acres of Natural Area within 50 feet of a stream or the reservoir.	Increase of 1,000 acres of Natural Area. Increase of 255 acres of Natural Area within 50 feet of a stream or the reservoir.
Change in the number and types of toilet facilities	No change from existing conditions.	Additional vault toilet at the Lookout Point trailhead (East Side Area). No change in septic system at the State Park Area.	Additional vault toilets within the State Park, South Beach, North Beach, and East Side Areas. Septic system at the State Park Area may require upgrade or expansion.
Recreation and Visual Resources			
Change in recreational opportunities	No change from existing conditions.	Developed Recreation Areas would remain the same. Undeveloped Day Use Recreation Areas would decrease by 1,435.3 acres as Natural Areas would be designated. Administrative, Primary Jurisdiction, and Reservoir Inundation Areas would remain the same.	Developed Day Use Recreation Areas would increase by 8.6 acres. Developed Overnight Recreation Areas would increase by 4.3 acres. Developed Overnight and Day Use Group Recreation Areas would increase by 10.1 acres. Undeveloped Day Use Recreation Areas would decrease by 1,023.1 acres as 1,000.1 acres of Natural Areas would be designated and 23 acres of Developed Recreation Areas would be designated.
Change in visitation and recreational facilities	No change from existing conditions. Total persons at one time (PAOT): 575. Total developed campgrounds at 1. Total developed campsites at 38. Total day use picnic sites at 37. Total boat parking at 40.Total boat ramps at 1.	No change in total developed campgrounds (1). No change in developed campsites (38). No change in day use picnic sites (37). No change in boat parking (40). Total PAOT: 575. Total boat ramps at 1.	Expanding the footprint of the existing State Park Area facilities would increase the developed campsites from 38 to 58 in that area. Adding a Developed Overnight and Day Use Group Recreation Area at the South Beach Area would increase the campsites by 20 and the day-use sites by 20 in that area. Total PAOT would increase to 875.Total boat ramps at 2.

Table 2-3. (Cont.)

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in Water and Land Recreation Opportunity Spectrum (WALROS) Classification	No change from existing conditions.	The Inflow Area WALROS Classification would change from RN8 to SP8. The East Side Area WALROS Classification would change from SP9 to SP8. All other areas would exhibit no change in WALROS Classification from existing conditions.	The Inflow Area WALROS Classification would change from RN8 to SP8. The East Side Area WALROS Classification would change from SP9 to SP8. The South Beach Area WALROS Classification would change from SP8 to RD6. All other areas would exhibit no change in WALROS Classification from existing conditions.
Change in visual resource conditions	No change from existing conditions.	No change in visual resource conditions.	No change in visual resource conditions.
Natural and Cultural Resources			
Change in the amount of shoreline erosion	Shoreline erosion would be expected to continue. No change from existing conditions and trends.	Slightly reduced shoreline erosion with designation of Natural Area.	Same as Alternative B, with fewer acres designated as Natural Area.
Change in the amount of soil disturbance	67.6 acres (total existing soil disturbance).	53.1 acres (total existing and new soil disturbance).	69.8 acres (total existing and new soil disturbance).
Change in the quantity, condition, and level of disturbance of upland vegetation communities	Existing level of disturbance is 68 acres. No change in current upland vegetation conditions and trends.	Level of disturbance reduced to 53 acres through designation of 1,435 acres of Natural Area. Decommissioning of 2.3 miles of unimproved roads, including conversion of 0.2 mile to nonmotorized trail. Overall potential for improved condition of upland vegetation.	Level of disturbance increased to 70 acres through development of new recreation areas. Decommissioning of 2.3 miles of unimproved roads. Creation of 1.8 miles of new nonmotorized trails. Overall slight potential for decreasing condition of upland vegetation.

Table 2-3. (Cont.)

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the quantity, condition, and level of disturbance of riparian-wetland vegetation communities	No change to the existing riparian-wetland conditions and trends.	Potential for some improvement due to designation of Natural Areas.	Overall potential for improvement due to designation of Natural Areas that include riparian-wetland vegetation communities. Some localized minor to moderate impacts due to new recreation facility development near riparian-wetlands.
Change in the overall quality and amount of wildlife habitat	No change from existing conditions and trends.	Little or no impacts related to the loss of wildlife habitat. Enhancement and protection of important habitats as a result of designating Natural Areas.	Minimal impacts related to habitat loss as a result of recreational development and uses.
Change in the amount of human-related disturbance	No change from existing conditions and trends.	Decrease in disturbance related to restrictions of vehicle access, designated parking areas, and decommissioning unimproved roads. Short-term increase in disturbances during construction of facilities in localized areas where recreational use would increase in association with the development of new facilities. Impacts would be minimal because of the limited amount of proposed development, current condition of areas proposed for development, and availability of similar habitat in the surrounding area.	New recreation facility sites would be constructed under Alternative C, resulting in more short- and long-term wildlife disturbances. Impacts would be minimal because of the current condition of areas proposed for development and the availability of similar habitat in the surrounding area.
Change in the quality and quantity of fish spawning and recruitment habitat	Ongoing negative impacts associated with unfettered shoreline access around Red Fleet Reservoir.	Minimal positive impact associated with designating Natural Areas, revegetating disturbed areas, restricting vehicle access to sensitive areas.	Minimal positive impact associated with revegetating disturbed areas and restricting vehicle access to sensitive areas. Negative impact associated with continued unfettered shoreline access, as well as developing new recreational facilities.
Change in the amount of angling pressure	No change from existing conditions. However, a future increase in visitation would continue to increase fishing pressure.	Slight positive impact associated with access restrictions to the Inflow, North Beach, and South Side areas.	Negative impact associated with developing new recreational facilities with more boat launching and recreational capacity.
Change in the threat of aquatic invasive species infestation	No change from existing conditions. However, a risk is always present.	Slight positive to no impact with restrictions on access to the Inflow, North Beach, and South Side areas. However, the risk remains with boat launching.	Negative impact associated with developing new recreational facilities and boat launching areas allowing for greater potential for infestation.

Table 2-3. (Cont.)

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the quantity and quality of habitat for special status species	No change from existing conditions and trends.	Minimal impacts to the quantity and quality of habitat related to facility upgrades and improvements. Enhancement of habitat through designation of Natural Areas and development of a Habitat Management Plan.	Minimal impacts of habitat loss due to new developed recreation facilities; site-specific environmental analysis required. Enhancement of habitat through designation of Natural Areas and development of a Habitat Management Plan.
Change in the level of human-related disturbance for special status species	No change from existing conditions and trends.	Short-term increase in disturbance during improvements to recreational facilities in localized areas. Long-term decrease in disturbance due to decommissioning of unimproved roads and Natural Area designations.	Some localized increase in disturbance with recreation facility improvement and new facility development; site-specific environmental analysis required. Long-term decrease in disturbance due to decommissioning of unimproved roads and Natural Area designations.
Change in the integrity of cultural resource sites	Potential impacts to integrity of surficial and subsurface cultural resources unchanged.	Potential slight increased impact to the integrity of surficial and subsurface cultural resources.	Increased potential to impact the integrity of surficial and subsurface cultural resources caused by increased development.
Change in the condition of paleontological resource localities	Potential impacts to condition of surficial and subsurface paleontological resources.	Potential impacts to condition of surficial and subsurface paleontological resources.	Increased potential to impact the condition of surficial and subsurface paleontological resources caused by increased development.
Change in the use and quality of Indian Trust Assets (ITAs)	No projected impact to ITAs.	No projected impact to ITAs.	No projected impact to ITAs.
Land Management			
Change in the development of locatable, saleable, or leasable mineral resources	No projected impacts to energy, minerals, and other extractive resources.	No projected impacts to energy, minerals, and other extractive resources.	No projected impacts to energy, minerals, and other extractive resources.
Change in the amount of sanitation facilities	No change from existing conditions.	Addition of a vault toilet at the Lookout Point trailhead on the east side of the reservoir.	Increase in the number of vault toilets and possible expansion of existing septic systems.

Table 2-4. Summary of Resource Management Plan (RMP) Goals by Alternative.

RED FLEET RESERVOIR RMP GOALS		ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Goal Category A: Partnerships				
Goal A1:	Support Existing Agreements and Contracts and Encourage New Partnerships that Improve Management Practices for Red Fleet Reservoir's Associated Lands and Resources (Issue A1)	⊙	●	●
Goal Category B: Water Resources				
Goal B1:	Protect Water Quality in Red Fleet Reservoir (Issue B1)	⊙	●	⊙
Goal Category C: Recreational and Visual Resources				
Goal C1:	Increase Visitation and Revenue by Improving Existing Recreational Facilities, Expanding and Enhancing Recreation Opportunities, and Providing Access to Regional Recreation Resources (Issue C1)	○	⊙	●
Goal C2:	Provide for Safe, Quality Recreation Opportunities that Minimize Conflicts (Issue C1)	○	⊙	●
Goal C3:	Protect and Manage Visual Resources (Issue C2)	●	●	●
Goal Category D: Natural and Cultural Resources				
Goal D1:	Protect and Enhance the Quality of the Fishery and Fishing Opportunities (Issues D1 and D2)	⊙	●	●
Goal D2:	Protect and Enhance Native Vegetation and Wildlife Habitat (Issues D3 and D4)	⊙	●	⊙
Goal D3:	Determine Occurrence of Special Status Species and Identify Important Habitat Areas (Issue D4)	⊙	●	⊙
Goal D4:	Control Erosion (Issue D5)	⊙	●	⊙
Goal D5:	Protect and Manage Paleontological Resources (Issue D6)	●	●	⊙
Goal D6:	Protect and Manage Cultural Resources (Issue D7)	●	●	⊙
Goal Category E: Land Management				
Goal E1:	Provide Appropriate and Safe Access to Public Use Areas (Issues E1 and E4)	⊙	⊙	●
Goal E2:	Address Fencing and Trespass Issues (Issue E2)	●	●	●
Goal E3:	Manage Mineral Development (Issue E3)	●	●	●

Legend: ● Fulfills goal; ⊙ Partially fulfills goal; ○ Does not fulfill goal.

The No Action Alternative would be least effective at fulfilling the RMP goals, particularly goals related to expanding and enhancing recreation opportunities (Goal C1) and providing quality recreation opportunities that minimize conflicts (Goal C2). While existing recreation facilities could be redesigned or rehabilitated under the No Action Alternative, there would not be opportunities to provide expanded facilities at the location of the existing State Park facilities, to develop additional recreation sites, improve shoreline fishing access, or to work with other entities to develop and improve connectivity to motorized and nonmotorized trails beyond the Study Area.

Under Alternative B, Reclamation would not allow additional recreation facility site developments and would designate the majority of lands surrounding the reservoir as Natural Area. Additionally, under Alternative B, Reclamation would work cooperatively with partner entities in developing a Fishery Management Plan, Habitat Management Plan, and Integrated Pest Management Plan. Consequently, this alternative best fulfills RMP goals related to protecting natural and cultural resources (Goal Category D). Alternative B partially fulfills goals related to recreation facilities (Goal C1) and recreation opportunity (Goal C2). This is because Reclamation and its partners would work toward the objectives of redesigning or rehabilitating existing facilities and making improvements to shoreline access and hiking trails within the Study Area.

Under Alternative C, Reclamation would work with partners toward the goals of not only improving existing recreation facilities but also adding new recreation facility sites at Red Fleet Reservoir. Therefore, this alternative would best fulfill Goals C1 and C2, as well as Goal E1. However, as a result of increasing recreation development, fewer lands surrounding the reservoir would be designated as Natural Area. Sensitive resources would still be avoided and Reclamation would still work cooperatively with partner entities in developing a Fishery Management Plan, Habitat Management Plan, and Integrated Pest Management Plan. Consequently, Alternative C would partially fulfill Category D goals related to protecting natural resources (Goals D2, D3, D4, and D5).

Under any of the RMP alternatives (A, B, or C) Reclamation would continue to have responsibility for protecting and managing visual, paleontological, and cultural resources (Goals C3, D5, and D6) and for addressing fencing and trespass issues and managing mineral development (Goals E2 and E3). Therefore, these goals would reasonably be fulfilled regardless of the RMP alternative selected. Because Alternative C would be expected to increase the geographical extent and frequency of recreational activity on Study Area lands; however, it would have greater potential to have effects on cultural and paleontological resources. Thus, Alternative C was rated as partially fulfilling these goals (Goals D5 and D6).

Preferred Alternative

Based on public comments, input from the Planning Work Group, and internal deliberations, Reclamation has identified Alternative C as the Preferred Alternative.

Alternatives Considered and Eliminated from Detailed Study

No other potential RMP alternatives were suggested or developed; however, there were some suggested additions to Alternative C that were not adopted as components of the alternative. These suggestions included development of an overnight camping site at the North Beach Area, and development of day-use areas on the East Side and South Side areas. These suggestions were determined to exceed existing needs within the time frame of the RMP. Such facilities would also extend the need for additional patrolling, fee collection, and maintenance by State Parks to an unreasonably large and dispersed area.

Another suggestion was to allow OHV open riding at an area north of Red Fleet Dam, within the East Side Area. Reclamation and UWCD have indicated that this area is too close to the Reservoir and would present water quality and erosion concerns. It is also too remote of an area for State Parks to reasonably provide the law enforcement presence that would be needed with increased use.

Mitigation Measures

The following measures will be implemented to avoid potential adverse effects to resources within the Study Area. Unless otherwise noted, each of these mitigation measures will be implemented for any of the three alternatives. For reference purposes, these mitigation measures are also stated in Appendix C: Environmental Commitments.

Water Resources

Potential impacts to water quality associated with RMP action alternatives (Alternative B or C) would be mitigated through proper design, installation, and maintenance of stormwater BMPs, placement of vault toilet facilities in high-use recreation areas, and use of animal-proof garbage receptacles. Any development of the South Beach Area would include removal of existing invasive plants and restoration of native riparian vegetation.

As a component of a Habitat Management Plan to be developed under Alternatives B or C, a plan for improving floodplain and riparian functions of Big Brush Creek below the dam will be considered.

Under any alternative, Reclamation will continue existing interagency partnerships that maintain Study Area water quality and will participate in any future interagency coordination and partnership efforts associated with the Big Brush Creek watershed.

Recreation and Visual Resources

In site-specific design, visual impacts can be reduced or eliminated by using design and land planning techniques that borrow from naturally established line, form, color, and texture. Design considerations include building materials, size and scale, color, location, screening, and distance from critical viewpoints or transportation corridors. Visual resource values must be considered throughout the RMP implementation process because the assignment of visual management classes is based on the management decisions made in the RMP. All proposed actions that would result in surface disturbances must consider the importance of the visual resource and the

impacts the project may have on the characteristic landscape. Management decisions must reflect the importance of visual resources within the Study Area while also giving consideration to other resource values and uses.

Geology and Soils

Erosion-control and shoreline-stabilization measures will be installed where appropriate to prevent further erosion in high-use areas. Under either action alternative, mitigation measures for facility development or rehabilitation will require a Storm Water Pollution Prevention Plan for all construction operations that disturb 1.0 acre or more; this will include use of published BMPs for controlling erosion and sedimentation from stormwater runoff and will address runoff from all roads (paved and unpaved), trails, campgrounds, parking lots, and administrative buildings.

Vegetation including Wetlands

Mitigation measures for either action alternative will include the development of noxious and invasive weed control strategies as a part of an Integrated Pest Management Plan. Fence lines can facilitate weed invasion as winds blow invasive vegetation against fences, where it becomes trapped and releases seed. Therefore, including a provision for removal of redundant and unnecessary fence lines as part of the Integrated Pest Management Plan would provide some weed management benefit. Additionally, the plan should address weed control strategies to be implemented along all existing and future boundary and access control fences in the Study Area.

After site-specific environmental assessment and design, appropriate sediment and erosion control strategies would be implemented during construction activities to limit impacts to the upland and riparian-wetland vegetation communities. Restored areas would be replanted with appropriate native species. Should it be found that any site-specific projects would involve filling of wetlands, Reclamation would need to comply with Section 404 of the Clean Water Act. Section 404 requires wetland impacts be mitigated and that no net loss of wetland occurs. The Section 404 permitting and mitigation process is under the jurisdiction of the U.S. Army Corps of Engineers.

Wildlife and Fisheries

Mitigation measures that will minimize or avoid impacts to wildlife are recommended below. These measures will be integrated into development of a Habitat Management Plan if either action alternative were selected for the RMP:

- At appropriate locations, signs will be posted to encourage recreationists to stay on the trail and within developed recreation facility boundaries to minimize the amount of vegetation trampling and disturbance to wildlife.

- Wetland and riparian habitats will be protected in accordance with existing federal regulations. During the development and expansion of recreation facilities, construction will, to the extent possible, avoid disturbance (both directly and indirectly) of wetland and riparian areas.

- Wildlife management will be coordinated between Reclamation and appropriate partner agencies to specify suitable recreation within the Natural Areas and identify measures to target areas that were previously impacted by recreationists and are in need of restoration.

Under Alternative B or C, Reclamation will engage partners, particularly State Parks and UDWR, in developing a Fishery Management Plan. Among other elements, the Fishery Management Plan will include goals to emphasize aquatic invasive species awareness and preventive measures for the Study Area.

Threatened, Endangered, and Other Special Status Species

Mitigation measures for special status species are inclusive of those previously described for vegetation, wildlife, and fisheries. Surveys for special status species would be completed as a component of site-specific environmental analysis prior to implementing any recreation facility developments. With implementation of Alternative B or C, Reclamation will encourage UDWR to include objectives in a Fishery Management Plan to determine the status of the flannelmouth sucker (*Catostomus latipinnis*) population in the Study Area.

Cultural Resources

Reclamation will ensure the completion of cultural resource compliance for all site-specific undertakings as a means to fulfill Section 106 of the National Historic Preservation Act, as well as to avoid, reduce, or mitigate impacts to the integrity of cultural resources. Avoidance is the preferred method of cultural resource mitigation. If historic properties are located within the area of potential effects associated with a specific undertaking, and if they would be impacted by activities associated with the undertaking, a Memorandum of Agreement (MOA) would be developed. The MOA would be among Reclamation, the Utah State Historic Preservation Office, the Advisory Council on Historic Preservation (if it chooses to participate), and any other party that assumes responsibility under the agreement. The MOA would include the terms and conditions agreed upon to resolve (mitigate) the impacts of the undertaking upon historic properties.

Paleontological Resources

Reclamation will ensure the completion of paleontological resource compliance for all site-specific projects as a means to fulfill Section 6302 of the Paleontological Resources Preservation Act, as well as to avoid, reduce, or mitigate impacts to the condition of paleontological resources. Avoidance is the preferred method of paleontological resource mitigation. If avoidance of paleontological resources is not possible, a mitigation plan would be developed. The mitigation plan would include the terms and conditions agreed upon to resolve (mitigate) the impacts to paleontological resources.

Indian Trust Assets

Reclamation will ensure the completion of Indian Trust Asset (ITA) compliance for all site-specific projects as a means to fulfill both U.S. Department of Interior (512 DM 2) and Reclamation policies regarding ITAs, as well as to avoid, reduce, or mitigate impacts to ITAs. Avoidance is the preferred method of ITA mitigation. If avoidance of ITAs is not possible, a mitigation plan would be developed. The mitigation plan would include the terms and conditions agreed upon to resolve (mitigate) the impacts to ITAs.

Energy, Minerals, and Other Extractive Resources

No mitigation measures for locatable, saleable, or leasable mineral resources are necessary because there are no impacts to the exploration and development of the resources in the Study Area.

Wastewater, Solid Waste, and Hazardous Materials

Under Alternative C and pending site specific environmental analysis and design, local and state regulations concerning septic tank renovations would be followed during the possible expansion of the existing septic systems in the Developed Overnight Recreation Area. Additionally, providing frequent and adequate refuse collection at all refuse collection locations in the Study Area will help reduce the potential for groundwater, soil, or surface water contamination from litter and trash.

Chapter 3: Affected Environment

This chapter of the Environmental Assessment (EA) describes the existing environment that would potentially be affected by the proposed Red Fleet Reservoir Resource Management Plan (RMP) alternatives. The resource information presented in this chapter is of sufficient detail to support and clarify the impact analyses provided in Chapter 4 of this document. The resources discussed in this chapter were identified by the public and various groups and agencies that have an interest in the Red Fleet Reservoir RMP Study Area (Study Area). Chapter 1 of this document provides a detailed description of the scoping process and outcomes. The resource conditions described in this chapter existed in 2011 and 2012; these conditions established the baseline for analysis of effects in Chapter 4. Resource conditions were determined by onsite inspections, literature searches, and through coordination with local, state, and federal agency personnel.

Local Setting

The Study Area is located in northeastern Utah approximately 12 miles north of Vernal City in Uintah County. Additional characteristics of the local setting and project history are described in Chapter 1; this section provides an overview of the existing economic, population, housing, and tourism characteristics of Uintah County.

Economy

Uintah County's economy is characterized by development of oil and gas resources and mining; consequently, international market prices for these natural resources have a strong influence on fluctuations in the local economy. Table 3-1 summarizes employment by industry for Uintah County in the first quarter of 2011. The mining, oil, and gas sector had the largest number of establishments in the county (197), accounted for the largest average employment (2,933 jobs), and had the largest payroll (more than $56 million). Total private-sector employment was 10,760 and the total private sector payroll was $126.8 million. The public sector accounted for an additional 2,872 jobs and $24.3 million in payroll.

Growth in oil and gas production in recent years has helped to support growth in the construction, manufacturing, trade, and service sectors, particularly in the Vernal area. As shown in Figure 3-1, employment in Uintah County grew steadily from 2001 to 2008 with average annual employment increasing from 9,866 jobs to 15,273 jobs. Employment has declined somewhat since, with a relatively quick decline to 13,321 jobs in 2009 and a slower rate of decline for the subsequent 2 years. Average employment during the first quarter of 2011 was 12,933 jobs.

Population

Changes in rates of population growth and decline in Uintah County are also closely tied to oil, gas, and mining development trends. Figure 3-2 illustrates population by year from 1940 to 2009. The County's population grew somewhat gradually from 1940 to 1970, with an average annual growth rate of about 1 percent during this period. There was significant out-migration in most years during this period, with growth largely due to natural increase. In 1970 the population of Uintah County was 12,800. Beginning in that year, the rate of growth increased significantly,

Table 3-1. Uintah County Employment and Income by Sector, First Quarter 2011.

INDUSTRY SECTOR	ESTABLISHMENTS	AVERAGE EMPLOYMENT	PAYROLL	AVERAGE MONTHLY WAGE
Private Sector				
Agriculture, Forestry, Fishing and Hunting	12	50	$311,871	$2,079
Mining (including oil and gas)	197	2,993	$56,243,820	$6,264
Utilities	6	143	$3,034,701	$7,074
Construction	137	769	$8,522,702	$3,694
Manufacturing	32	180	$1,366,712	$2,531
Wholesale Trade	69	618	$9,639,194	$5,199
Retail Trade	123	1,452	$9,386,118	$2,155
Transportation and Warehousing	116	850	$11,095,144	$4,351
Information	13	133	$1,055,381	$2,645
Finance and Insurance	41	185	$1,693,210	$3,051
Real Estate and Rental and Leasing	77	402	$5,809,084	$4,817
Professional Scientific and Technical Services	92	393	$3,651,186	$3,097
Admin., Support, Waste Management Remediation	41	296	$2,600,631	$2,929
Education Services	8	21	$65,145	$1,034
Health Care and Social Assistance	63	965	$6,638,583	$2,293
Arts, Entertainment, and Recreation	11	23	$37,344	$541
Accommodation and Food Services	65	952	$2,802,980	$981
Other Services (except Public Administration)	79	378	$3,112,934	$2,745
Total Private Sector	**1,172**	**10,760**	**$126,837,234**	**$3,929**
Public Sector				
Federal Government	27	370	$5,272,640	$4,750
State Government	16	157	$1,526,337	$3,241
Local Government	60	2,345	$17,500,320	$2,488
Total Public Sector	**103**	**2,872**	**$24,299,297**	**$2,820**

Source: UDWS (2012).

averaging about 5 percent annually until 1982 when the population peaked at 26,000. However, collapse of the oil shale industry that year resulted in a decline in regional population throughout the 1980s. Uintah County's population declined by an annual average of about 2.6 percent during this period, to 22,200 in 1989. The county's population has been on an upswing since 1990, increasing gradually during the 1990s and the first half of the next decade. The rate of population growth increased beginning in 2005 to an average annual increase of about 3.6 percent. This rate of increase was associated with increased activity in natural gas exploration and development. The 2010 U.S. Census showed Uintah County's population had reached an all-time high of 32,588.

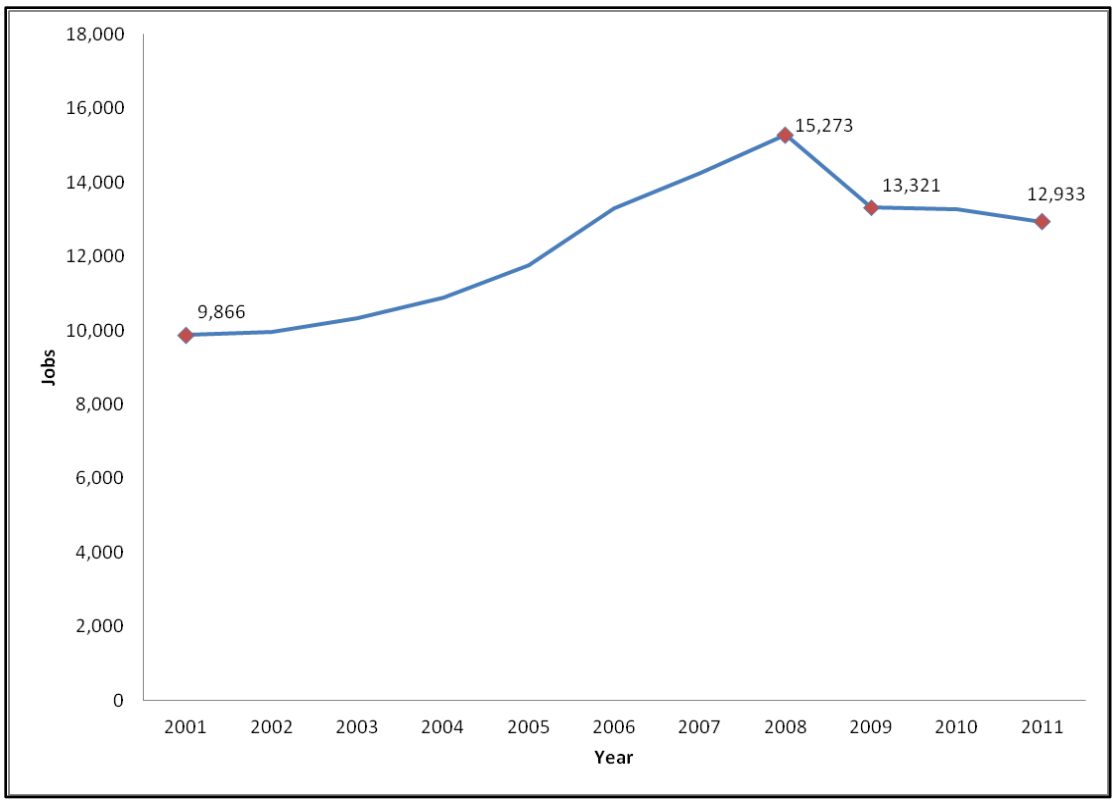

Figure 3-1. Uintah County Average Employment, 2001–2011 (UDWS 2012).

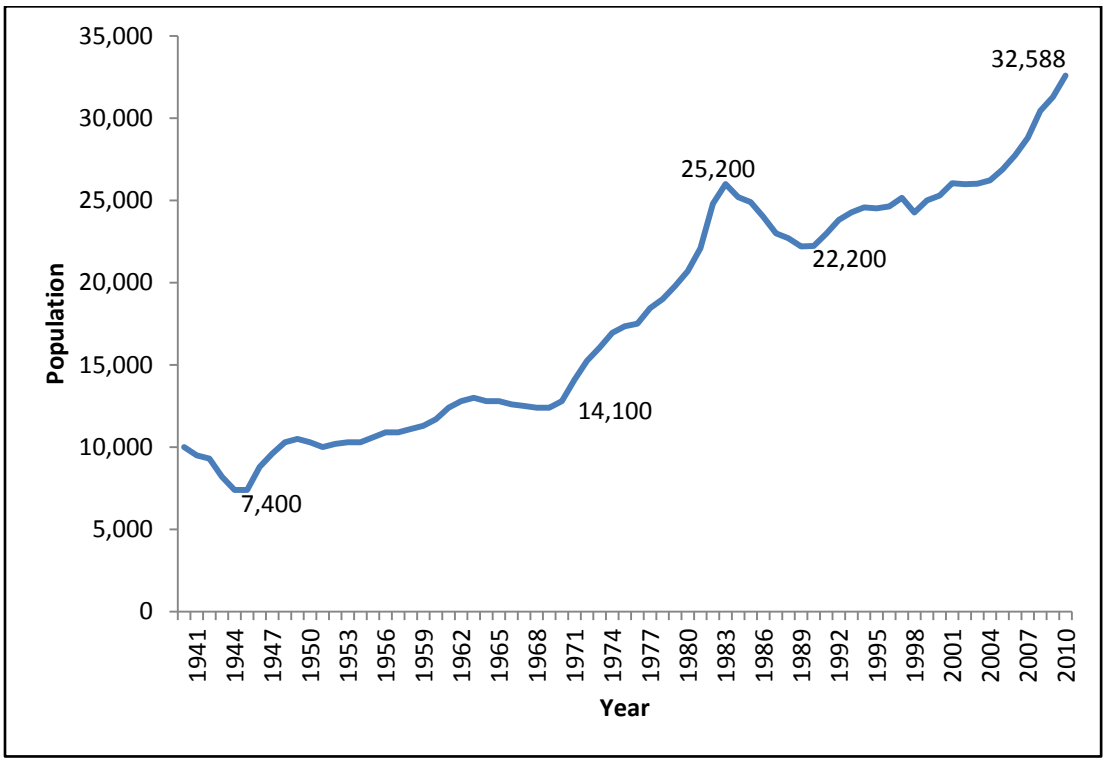

Figure 3-2. Uintah County Population 1940–2010 (GOPB 2012, U.S. Census Bureau 2012).

Housing

Population growth in the late 1970s and early 1980s also created a residential construction boom in Uintah County, as illustrated in Figure 3-3. From 1975 to 1978, Uintah County averaged about 273 new residential buildings per year. This increased to an annual average of 418 new buildings per year from 1979 to 1982. A significant number of multiple-unit dwellings must have been constructed in 1983, as the number of units constructed in that year spiked while the number of new buildings plummeted from 515 in 1982 to 74 in 1984. This was followed by a bust, where residential construction nearly ceased for the remainder of the decade. A new construction boom commenced in 2002 and continued through 2009. During this period, new building construction averaged about 283 structures per year, with a peak of 537 new structures in 2006. The 2006 building year was also a peak in terms of the value of residential construction, which suggests that higher-valued residences were constructed during this period. Higher-value nonresidential construction was also built in the 2006–2008 timeframe.

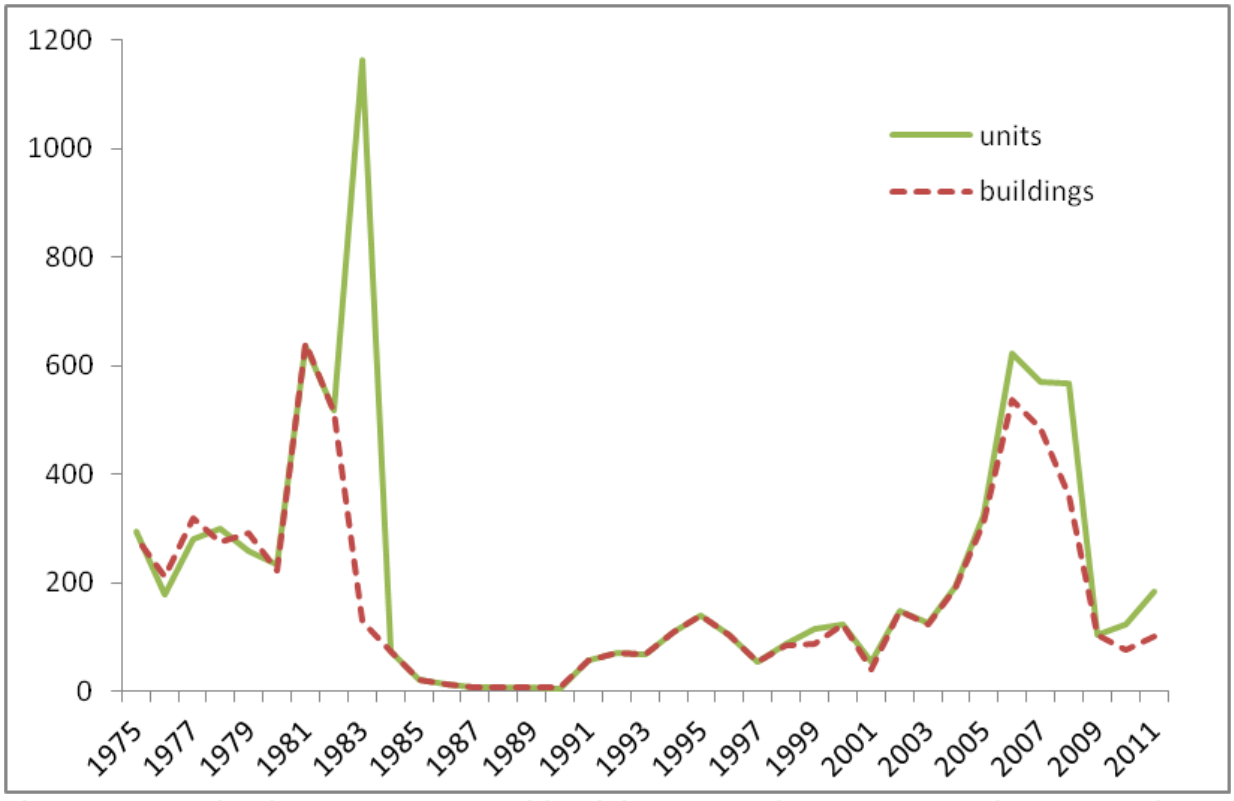

Figure 3-3. Uintah County New Residential Construction, 1975–2011 (BEBR 2012).

Tourism

Natural and historical resources in Uintah County have drawn tourists for many years, bringing economic benefits. Destinations include Dinosaur National Park, Flaming Gorge Reservoir, Steinaker State Park, Red Fleet State Park, museums, and Uintah County's Western Park multi-activity conference complex. The county strives to balance increased recreation and tourism with the area's rural lifestyle and traditional resource uses (Uintah County 2005). Travel and tourism

accounted for 1,236 Uintah County jobs in 2010 and traveler spending totaled $65.7 million, which ranked Uintah County 14th among Utah's 29 counties (Utah Office of Tourism 2012).

Research by the Utah Division of State Parks and Recreation (State Parks) found that the majority of Red Fleet State Park (State Park) visitors live outside the area. State Parks has also estimated that visitors generated approximately $561,413 in local wages, earnings, rents, and tax revenues within Uintah County in 2009. Not captured in these figures, Red Fleet Reservoir also supports economic impacts to the county through the provision of boating opportunities. There are five boat dealerships in Uintah County. Through its operations at Red Fleet Reservoir, State Parks itself paid $2,679 in sales and use taxes and, along with Steinaker State Park, paid $2,593 in transient room taxes to Uintah County (State Parks 2011).

Environmental Justice

Environmental Justice refers to the protection of human rights, particularly those of minority and lower-income populations. It further means that, to the greatest extent practicable and permitted by law, minority and low-income groups are provided the opportunity to participate prior to decision making and are not affected in a disproportionately high and adverse manner by government programs and activities affecting human health or the environment. In addition, Environmental Justice means that such populations are allowed to share in the benefits of and are not excluded from the due processes associated with government activities that involve human health and the environment. Environmental Justice is included in this document in compliance with Executive Order 12898, signed in 1994.

According to data from the U.S. Census Bureau (2012), Uintah County had a population of 32,588 in 2010; this was a 29 percent increase from the population count of 25,224 in 2000. The majority of the population in both of these census years was predominantly white alone/not Hispanic or Latino, with nearly 86 percent of the population in 2000 and about 83 percent in 2010. Approximately 3.5 percent of the population was Hispanic or Latino in 2000, which increased to just over 7 percent in 2010. The largest minority race category in both 2000 and 2010 was Native American, with 2,599 persons in 2000 and 2,905 persons in 2010.

Uintah County median household income in 2010 was $59,730. This median income level was $3,400 above the state median. In 2010, 11.7 percent of Uintah County's population lived at or below the poverty level. This was 3.2 percent higher than the state average but 2.1 percent below the average poverty level of the United States.

Partnerships

The U.S. Department of the Interior (DOI), Bureau of Reclamation (Reclamation) administers approximately 2,561 acres at Red Fleet Reservoir. This figure includes a full pool surface area of approximately 533 acres. Water operations, recreation facilities, fish and wildlife resources, minerals, and other resources are managed through the following interagency partnerships.

Water Operations and Water Rights

Red Fleet Dam water operations were turned over to the Uintah Water Conservancy District (UWCD) on May 1, 1985. Reclamation retains title to Red Fleet Dam, water rights, reservoir,

surrounding land, canals, and appurtenant works, while UWCD has a permanent right to the use of water within the provisions of the contract.

Recreation Management

Red Fleet State Park was opened to the public in 1988 and is managed through a Memorandum of Agreement between Reclamation and State Parks and subsequent agreements. The agreements obligate State Parks to administer recreation and to operate, maintain, and replace recreational facilities. Water-based activities, such as swimming, waterskiing, pleasure boating, and fishing are the prominent attractions at Red Fleet Reservoir. Other activities include sunbathing, picnicking, camping, sightseeing, hiking, and biking.

Fish and Wildlife Management

The Utah Division of Wildlife Resources (UDWR) has full authority to enforce state fishing and hunting regulations within the Study Area. By regulation, shotgun and archery hunting are not permitted in state parks within 0.25 miles of developed recreational areas where camping, picnicking, boating, and other activities take place. The UDWR conducts a fisheries stocking program at Red Fleet Reservoir and works with Reclamation, State Parks, and other entities in providing fishing and wildlife enjoyment opportunities for all persons.

The U.S. Fish and Wildlife Service (USFWS) is responsible for working with Reclamation in protecting fish and wildlife and their habitats under the auspices of the Fish and Wildlife Coordination Act (1958 as amended). Reclamation is responsible for management and recovery of Threatened and Endangered Species within the Study Area under the Endangered Species Act of 1973 (ESA), as amended, with recommendations and consultation provided by the USFWS.

Minerals Development and Withdrawn Lands Management

Through an Interagency Agreement dated December 1982, Reclamation and the U.S. Bureau of Land Management (BLM) agreed to coordinate on land-use planning, land resource management, land conveyance and exchange, and cooperative services. The agreement brings coordinated agency efforts into compliance with existing laws and policies. The agreement provides that Reclamation will, when requested, provide expertise in water resources conservation, development, and management, to be utilized by the BLM in preparing its RMPs. The agreement further provides that the BLM will, when requested, provide expertise in land resource, forest, range, oil, gas, and mineral management, to be utilized by Reclamation when preparing its RMPs and in managing public lands administered, acquired, or withdrawn by Reclamation.

Law Enforcement and Fire Suppression

Law enforcement and fire suppression activities are primarily provided by State Parks, UDWR, Uintah County, and the Uintah Basin Interagency Fire Center.

Road Maintenance

Access to the State Park begins at U.S. Route 191 (US-191) and proceeds easterly on a county road a distance of 2.0 miles to the pay gate at the park and is under the jurisdiction of Uintah County (Utah Code 72-3-205).

Water Quality

The Utah Department of Environmental Quality (UDEQ), Division of Water Quality (UDWQ) is responsible for ensuring that state water quality standards and beneficial uses are met for surface waters within the Study Area.

Water Resources

This section provides a detailed description of the Red Fleet Reservoir watershed, water operations, and water quality conditions. Sources of information consulted to develop this description of existing conditions included U.S. Geological Survey (USGS) gage station records, UDWQ reports, Reclamation reports, U.S. Environmental Protection Agency (EPA) Storage and Retrieval (STORET) water quality data, consultations with agency personnel, and onsite observations during a field visit in October 2011.

Watershed

The watershed area draining to Red Fleet Reservoir, illustrated in Figure 3-4, is approximately 60,600 acres in size. The headwaters of Big Brush Creek originate in the Uinta Mountains at a peak elevation of approximately 10,600 feet above sea level. Big Brush Creek flows southeast until it is impounded by Red Fleet Dam at a streambed elevation of approximately 5,500 feet. The majority of the watershed area is located within the Ashley National Forest, while the southern portion of the watershed consists of lands managed by the BLM.

A USGS gage (09261700) records flows on Big Brush Creek at a site about 1 mile upstream of Red Fleet Reservoir. Daily flow data were analyzed for water years 1980 through 2010 to assess the hydrologic regime of the creek. Mean annual discharge for this time period is approximately 42 cubic feet per second (cfs). The largest instantaneous peak flow recorded at this site was 423 cfs on May 25, 2005. Average peak flow for the 1980–2010 time period is 248 cfs. The Big Brush Creek hydrograph is largely driven by snowmelt runoff. Peak flow generally occurs in May. A secondary flow peak is sometimes observed in early fall, a result of "monsoon" rainstorms. Figure 3-5 shows a typical annual hydrograph for Big Brush Creek.

Reservoir

Red Fleet Reservoir is managed by UWCD primarily for storage of water for irrigation, municipal, and industrial purposes. The reservoir is operated with a normal (i.e., full/maximum) water surface elevation of 5,608.2 feet, and the crest elevation of the dam is at an elevation of 5,627.0 feet. Total reservoir capacity is 26,000 acre-feet with a 521-acre surface area at normal water surface elevation (Reclamation 2011a).

Red Fleet Dam outlets into Big Brush Creek. Near the outlet of the dam, Tyzack Pumping Plant removes water and conveys it west to the Ashley Valley Water Treatment Plant via the Tyzack Aqueduct (Reclamation 2011b). This water is subsequently used for municipal and industrial purposes by the Jensen Water District and Vernal City (Reclamation 2011b). The Tyzack Pumping Plant has a design capacity of 45 cfs and was completed in 1983 (Reclamation 2011b).

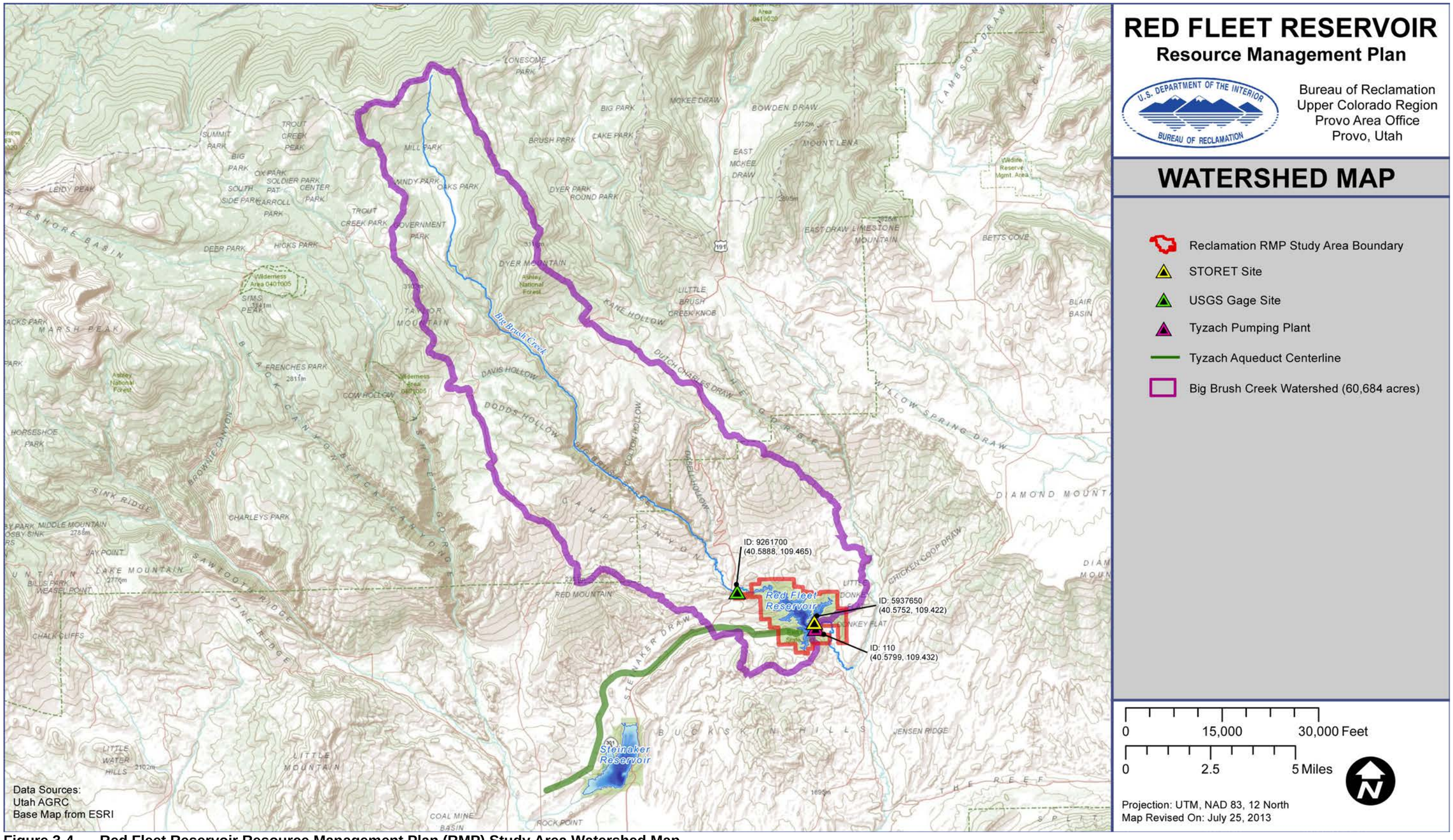

Figure 3-4. Red Fleet Reservoir Resource Management Plan (RMP) Study Area Watershed Map.

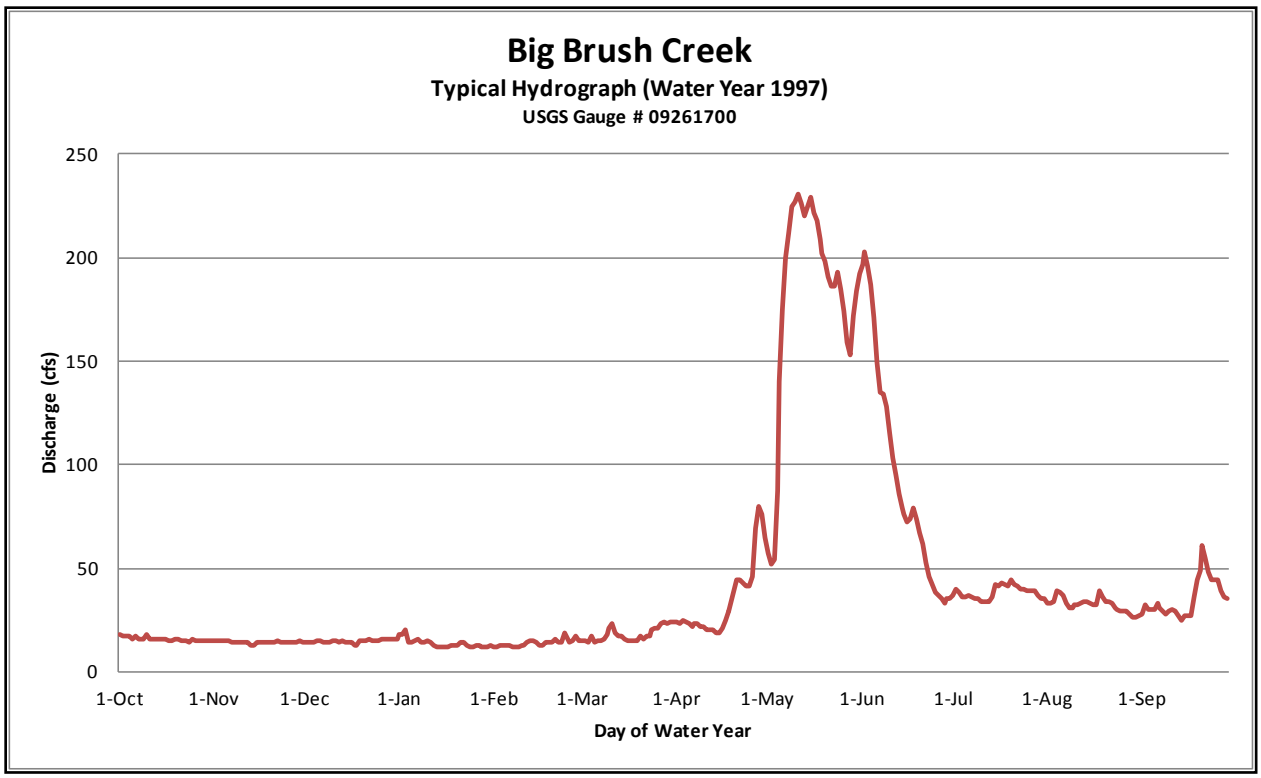

Figure 3-5. Typical Hydrograph for Big Brush Creek above Red Fleet Reservoir.

Red Fleet Reservoir water elevation data for October 1988 through September 2010 are graphed in Figure 3-6. As shown in the plot, water levels fluctuate significantly throughout the year. Typical seasonal fluctuations are on the order of 15 to 20 feet. The seasonal patterns are typical for a reservoir managed for irrigation storage. Reservoir levels during the first few months of the water year are primarily a function of conditions at the end of the previous year. Levels then increase during winter and spring, when there is no demand for irrigation water and heavy snowmelt runoff inflows in Big Brush Creek enter the reservoir. Water levels in the reservoir drop during summer and fall, when water is released for irrigation and inflows from Big Brush Creek are low. This seasonal pattern holds during dry, average, and wet water years (Figure 3-7) but the rates, timing, and magnitude of the fluctuations vary. In dry water years (e.g., 1990) water levels never completely fill the reservoir; in wet years (e.g., 2005 when snowmelt runoff inflows are high and irrigation demands low) reservoir levels rise very rapidly and drop more slowly.

Sedimentation

Some evidence of sedimentation can be seen in aerial imagery near the inflow of Red Fleet Reservoir, but the apparent delta feature is relatively small. Big Brush Creek is a natural stream channel and likely carries significant sediment loads during high-flow periods, but specific amounts are not known because quantitative studies of sediment transport and reservoir sedimentation rates have not been completed. Possible sources of sediment to Big Brush Creek include livestock grazing, logging, and roads (UDWQ 2011a). Field observations noted significant rill erosion at the US-191 crossing associated with poor roadway drainage controls.

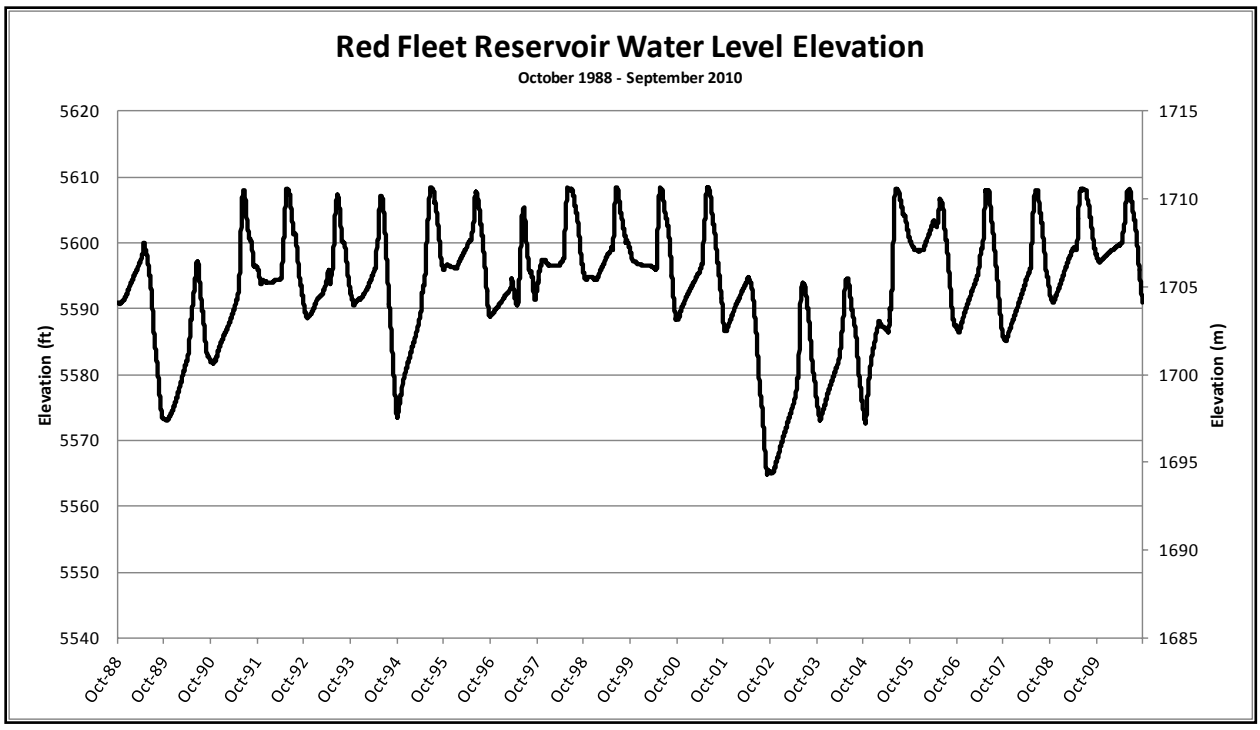

Figure 3-6. Daily Red Fleet Reservoir Water Levels for Water Years 1989–2010.

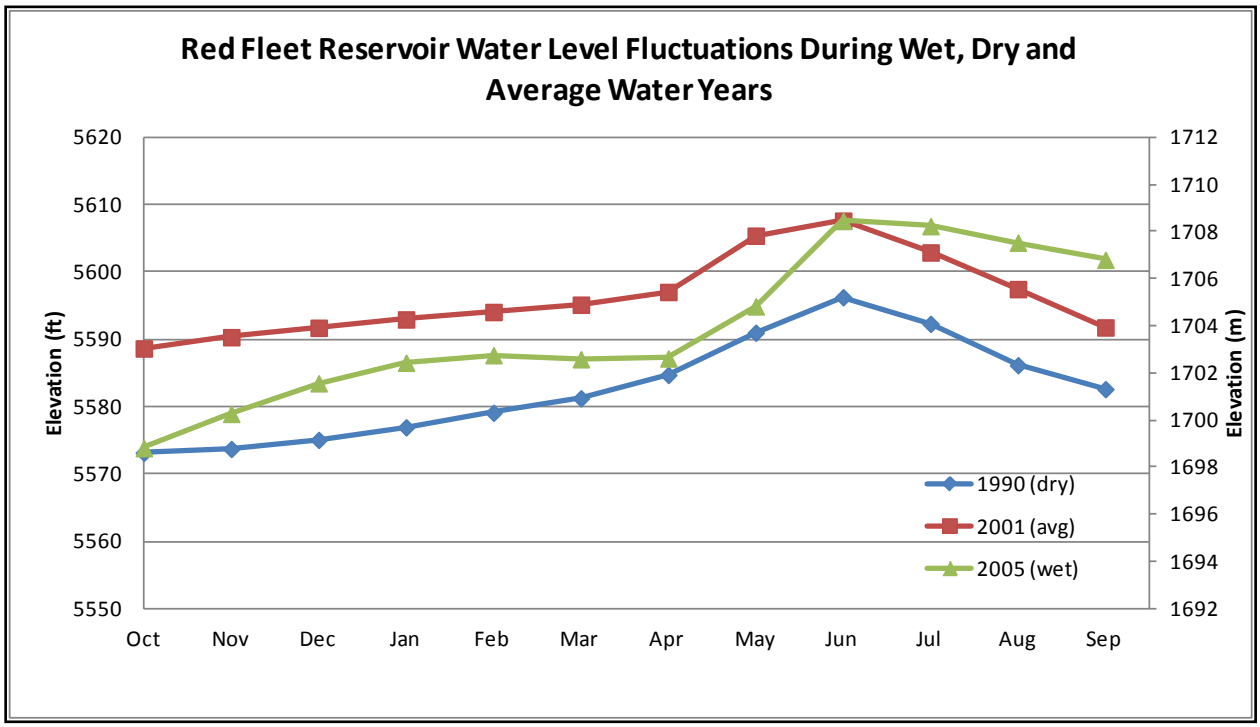

Figure 3-7. Monthly Red Fleet Reservoir Water Level Fluctuations for Typical Wet, Average, and Dry Years Based on Gage Data for Big Brush Creek.

Development associated with the potash mine just west of US-191 may also contribute sediment to Big Brush Creek.

Field observations indicate that shoreline erosion contributes some sediment to Red Fleet Reservoir, although the eroded areas appear to be fairly isolated and small. In many areas the shoreline consists of resistant sandstone bedrock. In a few localized areas, illegal, off-highway-vehicle (OHV) activities on hill slopes near the shoreline have reduced vegetation cover and likely increased stormwater-associated sediment inputs to the reservoir. The developed portions of the State Park are another potential sediment source; however, drainage from the existing paved roads, boat launch, and campground facilities appears to generally be well managed and not a major contributor of sediment. Walking trails, such as the trail to the Dinosaur Trackway Area, could be improved to reduce the amount of bare soil exposed to erosion.

Floodplains

Floodplains are present in the Study Area where Big Brush Creek enters the Red Fleet Reservoir and on Big Brush Creek below the outlet of Red Fleet Dam. Cottonwood Wash, a smaller, intermittent tributary that enters at the northeast end of the reservoir, also appears to support riparian floodplain vegetation within the Study Area. Upstream of the US-191 crossing, Big Brush Creek exhibits a meandering plan form with a hydrologically connected floodplain that supports stands of riparian willows. The extent of this riparian vegetation appears to be limited by developed pastureland on the north side of the Big Brush Creek. Between the US-191 crossing and the reservoir, Big Brush Creek continues to support riparian floodplain vegetation, but its lateral extent is limited by the narrow valley and steep slopes adjacent to the creek.

The operations of Red Fleet Reservoir and Tyzack Pumping Plant have substantially altered the hydrologic regime of Big Brush Creek below Red Fleet Dam. High peak flows have been cut off, and base flows have been artificially increased during the growing season when irrigation water is delivered downstream via the creek (Figure 3-8). The effects of these hydrologic changes have not been studied in detail on Big Brush Creek, but the altered and simplified flow regime has the potential to reduce active floodplain areas and riparian functions. Upper streambank/floodplain areas that previously would have overtopped during peak flows have become hydrologically disconnected from the creek, while low bank areas that previously would have supported grasses and herbaceous riparian vegetation are now continuously inundated during the growing season. Floodplain functions below the Red Fleet Dam also appear to have been impacted by agricultural development. Based on field observations of the area visible from the dam, pastures are mowed to the edge of the creek in many areas, and buffers of natural riparian vegetation are of minimal width. Vertical, bare banks are also visible and the channel appears somewhat incised.

Water Quality

The State of Utah has assigned four beneficial use classifications for the upper portion of Big Brush Creek (from the creek headwaters to Red Fleet Reservoir). Indicated in Table 3-2, these use classifications are 1C (drinking water), 2B (infrequent primary contact recreation), 3A (coldwater fisheries), and 4 (irrigation). Big Brush Creek currently meets all water quality standards and is attaining its designated beneficial uses (UDWQ 2010). Red Fleet Reservoir also has these same four classifications as well as use 2A (frequent primary contact recreation). In 2010 the state identified temperature as a cause of impairment to coldwater aquatic life use in the reservoir (UDWQ 2010). This is likely a greater problem at the surface during late summer,

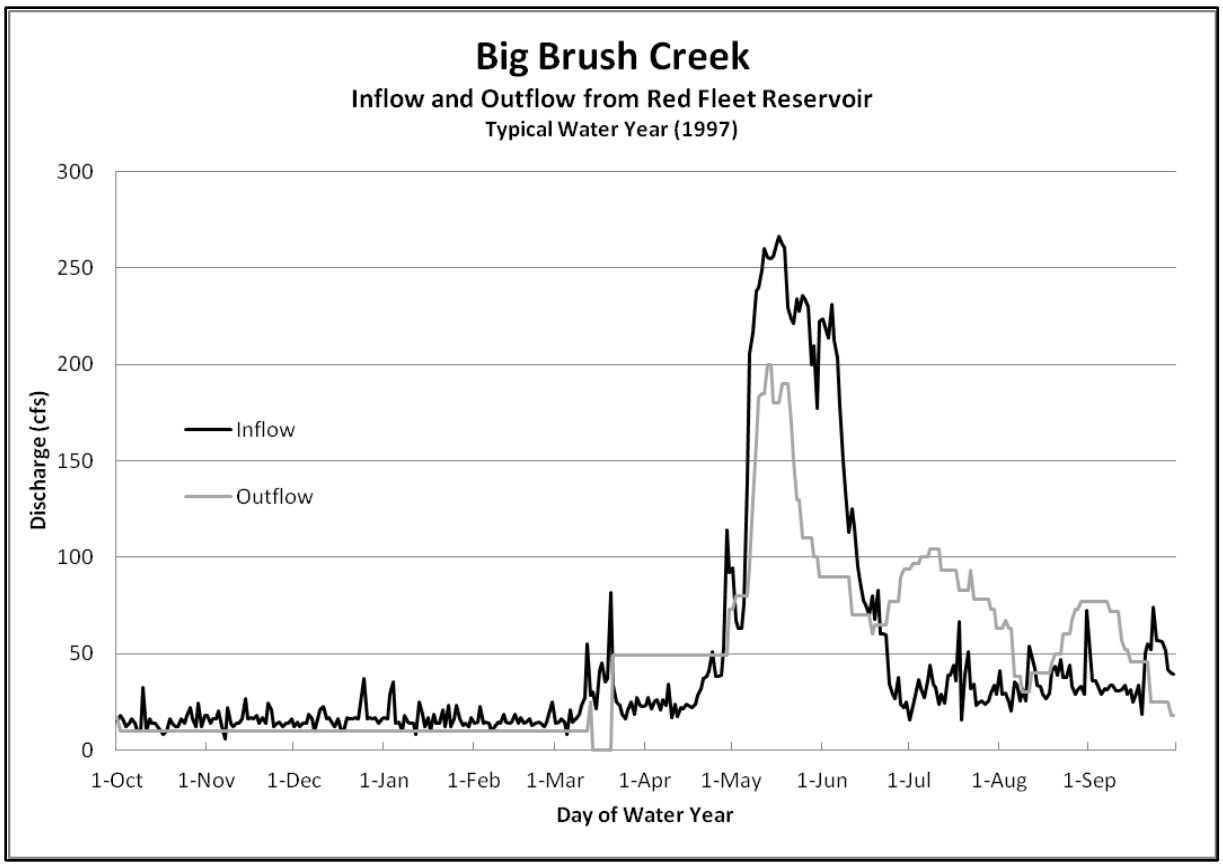

Figure 3-8. Comparison of Flow Patterns of Big Brush Creek at Inflow versus Outflow from Red Fleet Reservoir during a Typical Water Year.

Table 3-2. Designated Beneficial Use Classes and Attainment Status.

BENEFICIAL USE CLASSES	DESCRIPTION	ATTAINMENT STATUS	
		Big Brush Creek	Red Fleet Reservoir
1C	Domestic Water Source (with prior treatment)	Attained	Attained
2A	Frequent Primary Contact Recreation (swimming, kayaking)	Not a designated use	Attained
2B	Infrequent Primary Contact Recreation (fishing, hunting)	Attained	Attained
3A	Coldwater Aquatic Life	Attained	Impaired (2010), low-priority TMDL
4	Irrigation	Attained	Attained

Source: UDWQ (2011b).

when the air temperatures are highest and the water levels are lowest, creating conditions where water temperatures rise easily.

Water quality data taken near the Red Fleet Dam (Figure 3-9) illustrate water temperatures at the surface exceeding the numeric standard of 20 degrees Celsius. July data show how high air temperatures create a lens of warmer water at the surface, while water temperatures remain consistent below 10 meters. October data in Figure 3-10 show a much less pronounced difference between water temperatures at the surface and at depth. While this stratification is known to occur in the reservoir (UDWQ 2011a), some mixing through the water column may occur in shallower areas due to wind and other surface disturbances such as boats. Mixing may also occur on a seasonal basis with turnover of lake water.

With respect to dissolved oxygen, Red Fleet Reservoir has been observed to have low dissolved oxygen levels at certain times. However, based on the EPA approved Total Maximum Daily Load (TMDL) for dissolved oxygen (UDWQ 2010), none of the reservoir's beneficial uses are listed as impaired as a result of low dissolved oxygen levels. Dissolved oxygen is used when organisms are active and respiring and also when organic matter decomposes. During the day, photosynthesis will naturally increase dissolved oxygen levels. Measurements show the reservoir as oligotrophic (low productivity) with measurements for some dates falling into the eutrophic range (UDWQ 2010). Under these eutrophic conditions, dissolved oxygen concentrations tend to drop. Sometimes concentrations may drop to very low levels and may go anoxic at night or after a large algal die-off. With temperature stratification, lower depths of the reservoir can have lower dissolved oxygen concentrations, particularly during summer months (UDWQ 2011a). In addition to temperature, algae can affect the dissolved oxygen levels. The state has noted cyanobacteria present at the reservoir and State Parks staff has confirmed observation of algal blooms at Red Fleet Reservoir, often in September (M. Murray 2011, pers. comm.).

Nutrient levels are not presently considered a water quality problem for Red Fleet Reservoir, though measurements at depth have exceeded the state numerical criteria for phosphorus (0.025 milligrams per liter). Formations containing phosphorus are part of the regional geology and there is a phosphorous mine located upstream of Red Fleet Reservoir. There are no wastewater treatment plants discharging to either Big Brush Creek or Red Fleet Reservoir that could potentially create elevated levels of nutrients. Grazing on adjacent lands can also be a source of pollutants and State Parks makes efforts to maintain boundary fencing to keep cattle away from the reservoir (M. Murray 2011, pers. comm.).

Nonpoint sources that most directly affect the reservoir are associated with stormwater runoff from paved surfaces at the State Park facilities. Stormwater from parking areas will transport debris and pollutants that have deposited on the paved surface including oils and grease, nutrients, trash, and pet waste. In addition, stormwater can cause erosion and rilling off of the paved areas, which would transport sediment to the reservoir. Notably, this reservoir is bowl-shaped with high bedrock cliffs in many locations. There are few areas with riparian buffers and the lack of vegetated buffer allows stormwater to enter the reservoir directly. However, sediment does not present a water quality concern at the present time.

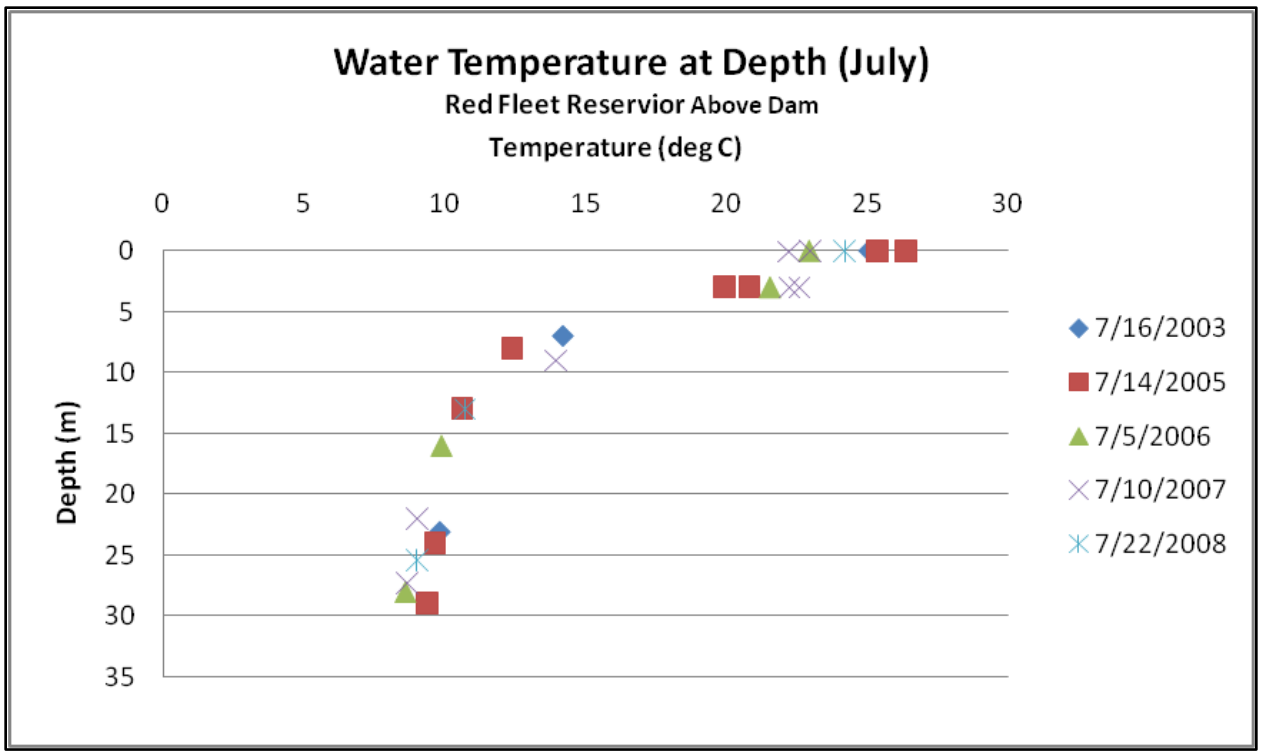

Figure 3-9. July Water Temperatures at Indicated Depths at STORET Station 5937650 (USEPA 2011).

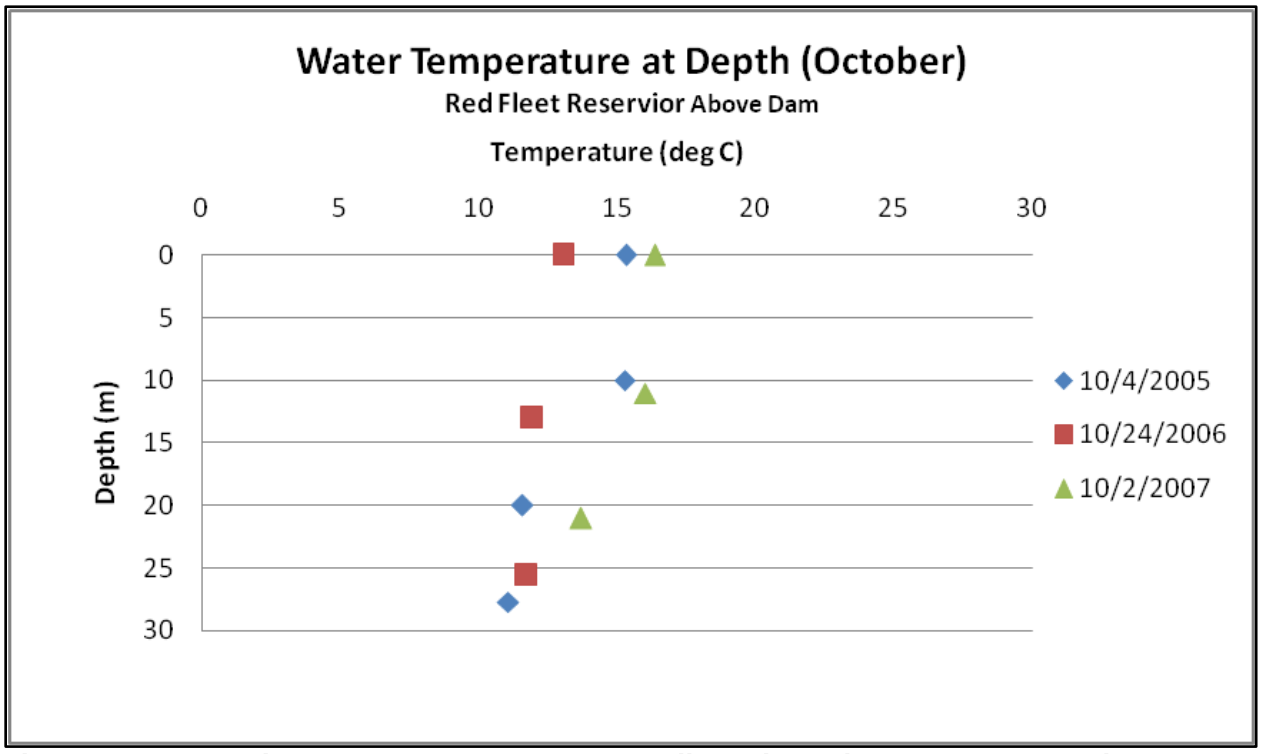

Figure 3-10. October Water Temperatures at Indicated Depths at STORET Station 5937650 (USEPA 2011).

Other water quality health concerns at reservoirs can include bacteria, viruses, and heavy metals. Bacteria (e.g., *E. Coli* and cryptosporidium) and viruses have not been found at Red Fleet Reservoir. Recreational use and pet waste are likely the largest potential sources for introduction of bacteria and viruses. With respect to metals, the State of Utah has issued consumption advisories for large and small walleye and largemouth bass caught from Red Fleet Reservoir (UDWQ 2010). These advisories are indicative of mercury occurring in the water column; however, the current levels do not impair water quality.

Recreation and Visual Resources

Recreation activities within the Study Area are managed by State Parks for outdoor public recreation purposes. Access to the Study Area is provided by Red Fleet Access Road, a road maintained by Uintah County, off of US-191 and approximately 12.2 miles north of downtown Vernal. Sources of information used to develop this assessment of existing recreation and visual resources included State Parks reports, tourism websites, Reclamation reports and technical guidance documents, BLM's visual resource management system, consultation with agency personnel, and field observations made in fall 2011 and summer 2012.

Recreation Opportunities and Facilities

The dominant recreational opportunities and attractions at Red Fleet Reservoir are water-based activities including fishing, swimming, waterskiing, pleasure boating, and personal watercraft use. Camping, picnicking, hiking, sightseeing, and sunbathing are also enjoyed in conjunction with water-based activities. Undeveloped beaches at Red Fleet Reservoir are only accessible via hiking or boating. Motorized and nonmotorized trails are located nearby. The reservoir provides year-round recreation opportunities; ice fishing continues through winter. The proximity of Red Fleet Reservoir to a National Scenic Byway (US-191), another state park (Steinaker State Park), and another reservoir (Steinaker Reservoir) creates a confluence of recreational opportunities near the Study Area.

By regulation 43 CFR § 420.2, Reclamation lands are closed to off-highway vehicle (OHV) use, except where specifically designated as open and in accordance with a public process specified in §420.21. By state regulation (R651-411-2), OHV use is allowed only within designated areas at State Parks. At present, Reclamation has not designated any areas, roads, or trails as open to OHV use at Red Fleet Reservoir.

The Study Area has been divided into nine management areas which are shown in Figure 1-3. Recreation facilities within each management area are described below.

State Park Area

Access to the State Park Area is provided by Red Fleet Access Road, a paved county road, approximately 1.9 miles from the US-191 intersection. The developed campground sits on a bluff overlooking Red Fleet Reservoir and offers 38 campsites including 5 full hookups for recreational vehicles (RVs), 9 tent-only sites, and 24 standard campsites. Because of the limited number of full hookup sites, some visitors use generators. The use of generators is restricted between the hours of 10:00 p.m. and 6:00 a.m. All sites are back-in and accommodate tents and RVs up to 30 feet long. The Study Area does not offer a group camping area. There are 37 day-

use picnic sites and flush toilets at the day-use area and 1 vault toilet at the boat ramp. The reservoir can accommodate a maximum of 40 boats based on available parking. Entrance fees are as follows: $7 for day use including watercraft launches, $4 for day use for Utah seniors 62 years and older, $75 for an annual pass, and $35 for a Senior Adventure (annual) Pass. The Study Area is open year-round with no holiday closures. Summer hours are from 6:00 a.m. to 10:00 p.m. Winter hours are from 8:00 a.m. to 5:00 p.m. (State Parks 2012a, Utah.com 2012).

Inflow Area

This is an undeveloped area surrounding the reservoir inflow. Public access is available from unimproved roads off of US-191 and by boat. These unimproved roads that are outside the Reclamation boundary are used by anglers to access Big Brush Creek for fishing.

Dinosaur Trackway Area

This is an undeveloped area that includes a dinosaur tracks exhibit across the water from the boat ramp at the State Park Area. Public access is provided by a hiking trail that begins on BLM lands north of Red Fleet Reservoir. The trailhead is maintained by BLM. Public access is also possible by boat or by swimming. No fees are required.

North Beach Area

This area includes a beach area along the southeast portion of a small bay. The beach area is accessible by walking a short distance from a closed gate at the Reclamation property boundary. There are also two user-created, unimproved roads into the northwestern side of the small bay. There are no developed facilities and no fees are required.

South Beach Area

This area includes a small cove that is accessible by boat. There is also a County road providing access to the area from the west; however, this road is not currently open to public access. There are no developed facilities and fees are not required.

South Side Area

There are no developed facilities in the South Side Area. Public access is available from unpaved county roads, administrative access roads, and several user-created, unimproved roads. No fees are required.

East Side Area

There is an undeveloped reservoir overlook on the East Side Area above Red Fleet Dam. Walk-in access to the reservoir shoreline is also possible. There are no developed facilities and no fees are required.

Primary Jurisdiction Area

This area includes Red Fleet Dam and lands surrounding the Tyzack Pumping Plant and Tyzack Aqueduct. For the protection of public health, safety, and welfare, public access to this area and recreational uses (including trail use) are not permitted unless approved by Reclamation and the UWCD. These areas are used primarily by anglers who fish from the dam or shoreline. Public access to the dam area is limited to foot traffic or from boats along the shoreline. Public access to the Tyzack Aqueduct shoreline is possible from an administrative access road (gated) or from other user-created, unimproved roads. No fees apply to this area.

Reservoir Inundation Area

This area includes the reservoir water surface at full pool. Developed public facilities include the movable floating boat dock and a movable floating swimming dock near the existing boat ramp. No fees apply to this area.

Flaming Gorge-Uintas National Scenic Byway

The proximity of Red Fleet Reservoir to a National Scenic Byway, another state park (Steinaker State Park), and another reservoir (Steinaker Reservoir) creates a confluence of recreational opportunities near the Study Area. Red Fleet Reservoir is just off the southern portion of the Flaming Gorge-Uintas National Scenic Byway. The scenic byway consists of portions of US-191 and State Route 44 (SR-44), and is approximately 80 miles long. The south end of the scenic byway starts in Vernal, Utah, at the intersection of U.S. Route 40 (US-40) and US-191. It runs north on US-191, enters Ashley National Forest, passes Steinaker Reservoir and Red Fleet Reservoir, climbs into the Uinta Mountains, and leaves Utah to enter Wyoming after crossing Flaming Gorge Reservoir. This scenic byway was designated as Utah's first Forest Service Scenic Byway in 1988. It was added to the National Scenic Byways system on June 9, 1998.

There are informational signs along the byway explaining the geology of the area. Visitors can use turn-outs, view areas, and nature trails to view and explore the high desert and forested landscape. There is a visitor center near the junction of US-191 and SR-44 at Red Canyon Overlook, which provides vistas of Flaming Gorge. Flaming Gorge-Uintas National Scenic Byway is listed on the "Fall Colors Tour" at Utah.com (FGCOC 2012, Utah.com 2012).

Visitation and Visitor Characteristics

According to visitation information collected from State Parks, the majority of visitations to Red Fleet Reservoir occur from May to September. These figures also indicate that the months of June and July are typically peak months for visitation during the year. Further evaluation of these figures also indicates that visitation levels have been sporadic over a 9-year period. At this time, accurate visitation rates are available for 2003 through 2011. A summary of visitation rates for these years is contained in Table 3-3.

Table 3-3. Summary of Annual Visitation at Red Fleet Reservoir from 2003 to 2010.

YEAR	NUMBER OF VISITORS	PERCENT (%) CHANGE PER YEAR
2003	33,162	Not applicable.
2004	27,550	-16.92
2005	23,959	-13.05
2006	30,818	28.63
2007	38,274	24.19
2008	39,210	2.45
2009	37,222	-5.07
2010	28,617	-23.12
2011	31,822	11.20

Source: State Parks (2012b).

Recreation Conflicts and Concerns

Observations by State Parks personnel suggest that recreation improvements and added capacity at Red Fleet Reservoir could increase visitation and revenue throughout the year (M. Murray 2011, pers. comm.). The existing Developed Day Use Area at Red Fleet Reservoir is underutilized, which may be due to lack of parking on peak days. Underutilization may also result from the layout of the area—the campground and day use areas are closely spaced, creating conflicts among visitors, particularly related to noise and crowding. Visitors have expressed desires for ATV trail access from the State Park, a new beach area, and better access to the reservoir shoreline for fishing.

Water and Land Recreation Opportunity Spectrum Analysis (WALROS)

An analysis and classification of the recreation opportunities that currently exist within the Study Area is included in this section. The analysis was conducted using the Water and Land Recreation Opportunity Spectrum (WALROS) system developed by Reclamation (Reclamation 2011c). The WALROS is modeled after the Recreation Opportunity Spectrum (ROS) and Water Recreation Opportunity Spectrum (WROS) systems, but is updated and tailored for use on land and water resources such as reservoirs, lakes, rivers, and bays.

The WALROS system is a means by which the water and land related recreation opportunities of an area can be inventoried and mapped by classes. This is accomplished by analyzing the physical, social, and managerial setting components for each use area (Reclamation 2011c). The WALROS system characterizes the type of experience a visitor could expect when visiting a particular area. The scale of degree of major development for the six major classifications, shown in Table 3-4, range from fully developed (Urban) to completely undeveloped (Primitive). The WALROS classifications serve as the basis from which to compare future WALROS levels associated with various land and water resource use strategies.

Table 3-4. Scale of Degree of Major Development Used in WALROS Classifications.

URBAN (U)	SUBURBAN (SU)	RURAL DEVELOPED (RD)	RURAL NATURAL (RN)	SEMI PRIMITIVE (SP)	PRIMITIVE (P)
80–100%	50–80%	20–50%	10–20%	3–10%	0–3%
Dominant	Very prevalent	Prevalent	Occasional	Minor	Very minor
Extensive	Widespread	Common	Infrequent	Little	Very little
A great deal	Very obvious	Apparent	Periodic	Seldom	Rare
Extremely	Very	Moderately	Somewhat	Slightly	Not at all

Source: Reclamation (2011c).

The six major recreation opportunity classes were mapped and inventoried using protocols from Reclamation's handbook (Reclamation 2011c) and expert opinion. The recreation attributes that differentiate the WALROS classes are described in Table 3-5. Three attributes of the recreation setting are assessed—physical setting, managerial setting, and social setting. Using these attributes, a rating from 1 (Urban) to 11 (Primitive) is given to inventoried sites.

Table 3-5. Setting Descriptors by Attribute Categories Used in WALROS.

PHYSICAL ATTRIBUTES	SOCIAL ATTRIBUTES	MANAGERIAL ATTRIBUTES
• Degree of development • Sense of closeness to a community • Degree of natural resource modification • Distance to development on or adjacent to a water resource • Degree that natural ambiance dominates the area	• Degree of visitor presence • Degree of visitor concentration • Degree of recreation diversity • Distance to visitor services, security, safety, comforts, and conveniences • Degree of solitude and remoteness • Degree of non-recreational activity	• Degree of management structures • Distance to on-site developed recreation facilities and services • Distance from developed public access facilities • Frequency of seeing management personnel

Source: Reclamation (2011c).

A WALROS analysis showing the current recreation opportunities was developed for the nine management areas defined for Red Fleet Reservoir, which are illustrated in Figure 1-3. The results are presented in Table 3-6 and are illustrated on Figure 3-11. The inventory was conducted during fall 2011 by the Project Team. Each management area was treated as an inventory site. The physical, social, and managerial attributes were noted on a WALROS inventory protocol sheet. Project Team members circled the degree extent or magnitude that each attribute was rated and the results were compiled for each management area. Then a map was created showing the WALROS class in each management area.

Table 3-6. Setting Attribute Ratings and Overall WALROS Classification for Each Red Fleet Reservoir Management Area.[a]

MANAGEMENT AREA (INVENTORY SITE)	PHYSICAL SETTING ATTRIBUTE RATING	SOCIAL SETTING ATTRIBUTE RATING	MANAGEMENT SETTING ATTRIBUTE RATING	OVERALL WALROS CLASSIFICATION
Inflow Area	SP8	RN8	RN7	RN8
State Park Area	RD5	RD4	S4	RD4
South Beach Area	RN8	RN8	RN8	RN8
South Side Area	RN8	RN8	RN8	RN8
Primary Jurisdiction Area	RD5	RD5	RD5	RD5
East Side Area	SP8	SP8	SP8	SP8
North Beach Area	RN9	RN8	RN8	RN8
Dinosaur Trackway Area	RN8	RN7	RN7	RN7
Reservoir Inundation Area	RN6	RN6	RN6	RN6

[a] See Table 3-4 for abbreviation descriptions.

Visual Resources

Visual resources include the visible physical features on a landscape, such as land, water, vegetation, animals, structures, and other features. A viewshed is the landscape that can be directly seen under favorable atmospheric conditions from a specific viewpoint or along a transportation corridor (BLM 1984). For the purposes of this RMP project, the Study Area falls under one viewshed.

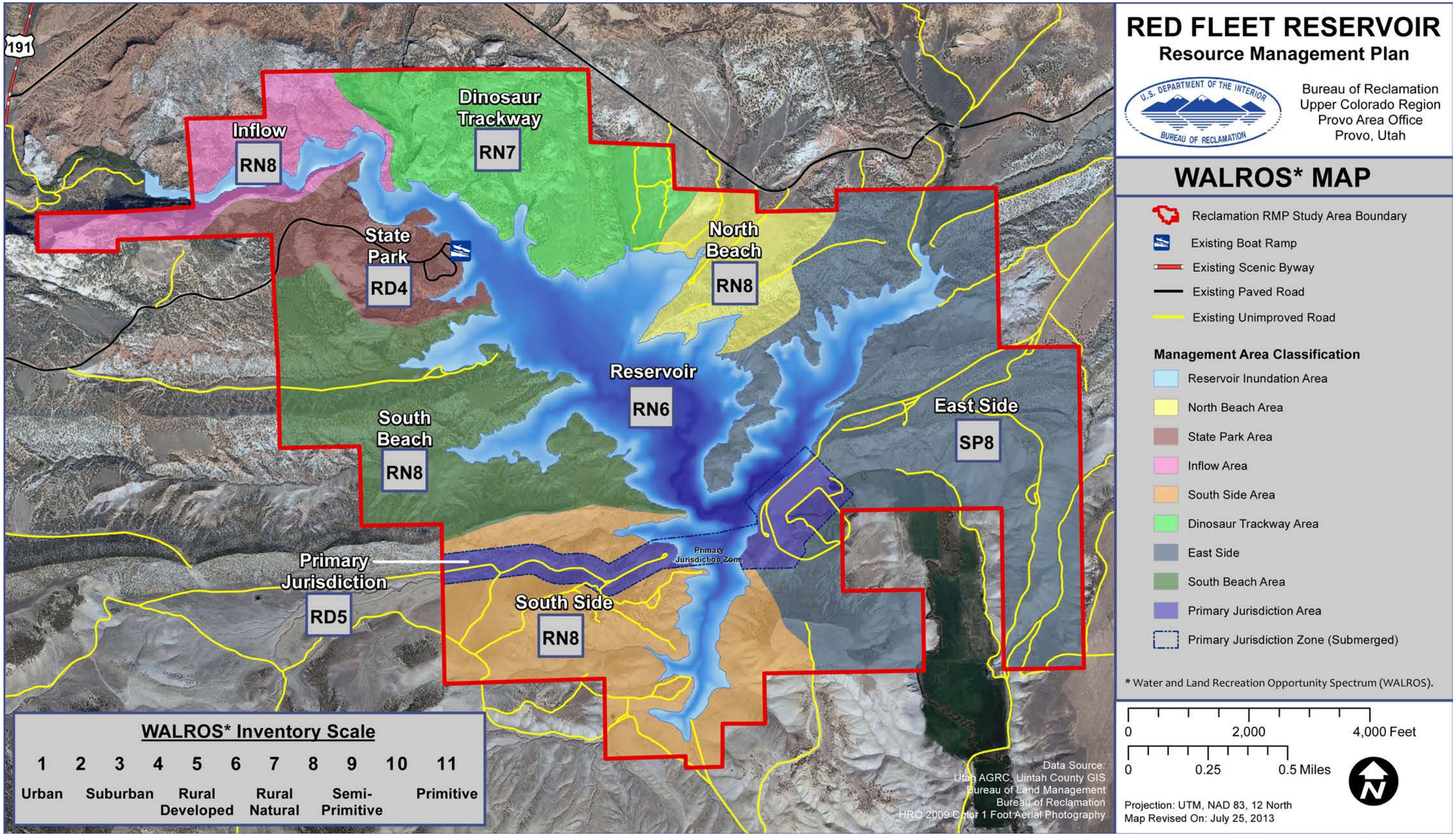

Figure 3-11. Red Fleet Reservoir Resource Management Plan (RMP) Study Area WALROS Map.

The BLM Visual Resource Management (VRM) system (BLM 1986) was used as the technical approach to assess and classify the existing visual setting that may be experienced by visitors to Red Fleet Reservoir. The VRM system is designed to inventory existing scenic values and provide baseline visual conditions for assigning visual resource management objectives to lands under BLM agency management. The primary objective of the VRM is to maintain the existing visual quality of BLM-administered public lands and to protect unique and fragile visual resources. In short, the VRM system identifies visual values, establishes objectives for managing those values, and provides a means to evaluate proposed projects to ensure that visual resource management objectives are met. The BLM VRM system was used because of the existence of BLM lands surrounding the Study Area and because it is best suited for this type of characteristic landscape within the Study Area.

There are two phases of work involved in the VRM assessment process: (1) Visual Resource Inventory (VRI) and (2) analysis of the Visual Resource Contrast Rating.

For the VRI, three factors are considered: scenic quality rating, sensitivity level, and distance zones. From the inventory process, landscape units are assigned one of four visual resource inventory classes as described in the BLM Handbook H-8431-1 (BLM 1986).

For the Visual Resource Contrast Rating analysis, potential visual impacts from the project RMP alternatives are analyzed to determine whether proposed activities would meet the management objectives established for the Study Area from the VRI. A visual contrast rating process is used in the analysis, which involves comparing the proposed project features with the major features in the existing landscape using the basic design elements of form, line, color, and texture. The analysis is then used as a guide for resolving visual impacts. Potential visual impacts, including the Visual Resource Contrast Rating analysis, are discussed in Chapter 4: Environmental Consequences.

The first step in the VRM inventory for the Study Area involved identifying the existing BLM visual classes on surrounding BLM lands. The BLM has classified lands under their jurisdiction immediately adjacent to and in the vicinity of Red Fleet Reservoir in their RMP. The BLM's Vernal Field Office RMP was completed in October 2008. The BLM lands to the west and north of the Study Area have been designated as Class II while BLM lands immediately to the east and south have been designated as Class III and Class IV, respectively (BLM 2008).

The VRI phase for the Study Area followed the VRM process, which has four steps. These steps are (1) establishing scenic quality rating, (2) performing sensitivity level analysis, (3) delineating distance zones, and (4) determining visual resource classes by overlay methods. Data collected included USGS quadrangle maps, GoogleEarth maps, aerial photographs, surface photographs, Study Area maps, and maps of existing BLM lands and visual resource classes. These data were used to analyze vegetation types, land uses, and landscape character. Fieldwork consisted of driving and walking designated travel routes and visiting recreation destinations within the Study Area.

The following Red Fleet Reservoir VRI analysis provides a description and classification of the Study Area's visual landscape character associated with the natural and cultural lines, forms, colors, and textures that are reflected in land, rock, vegetation, and water forms.

Regional Setting and Landscape Character

The Study Area is located in the Uinta Basin physiographic section of the larger Colorado Plateaus province. Uinta Basin is rimmed by the Wasatch Mountains on the west, the Uinta Mountains on the north, Roan Plateau on the south, and runs east into western Colorado. The region is characterized by high mountain terrain, fertile valleys and rugged and stark uninhabited canyon lands.

The landscape character surrounding the Study Area exhibits a range of natural and developed landscapes. U.S. Highway 191 crosses Big Brush Creek just west of the Study Area as it climbs out of Steinaker Draw. The Buckskin Hills to the south are dry and dusty and top out close to 7,000 feet elevation. Ashley Valley farther to the south includes the city of Vernal, the surrounding small towns, and agricultural land.

Vegetation types outside of developed areas are typically upland vegetation communities where the exposed rock dominates the landscape with scattered trees, shrubs, and sparse grasses. There are riparian-wetland vegetation communities with larger trees that are found on the reservoir's fringe and along tributary streams.

Scenic Quality Rating

Scenic quality is the overall impression retained by the observer after driving through, walking through, or flying over an area of land (BLM 1986). It is a measure of the visual appeal of a tract of land where those with the most variety and the most harmonious composition have the greatest scenic value. Rating scenic quality requires an understanding of the landscape characteristics and a description of the existing scenic values. A landscape is first divided into subunits called scenic quality rating units (SQRU) that appear homogeneous in terms of landscape characteristics, similar visual patterns, and similar man-made modifications. The size of the SQRUs may vary from several thousand acres to 100 acres or less, depending on the homogeneity of the landscape features and the detail desired in the inventory. For this inventory, the Study Area was assumed to be a single SQRU, as it appears to be a similar homogeneous landscape type from key observation points and along the dominant paths of travel.

The SQRUs are rated by seven key factors: landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modification. Using a standardized point system, values for each category are calculated and, according to total points, three Scenic Quality Classes are determined. Class A areas combine the most outstanding characteristics, Class B areas combine both outstanding features and fairly common features, and Class C areas have features fairly common to the physiographic region (BLM 1986).

The Study Area SQRU landscape character features are dominated by panoramic views of water framed by surrounding hills. The landscape forms include the wide, flat, horizontal plane of the water surface with rounded and amorphous hills and ridges rising above. The characteristic lines include the horizontal lines of the water's edge meeting the angular land forms and continuing to the rounded outlines of silhouetted hills. The shoreline is geomorphic with convex slopes

contrasting with the vertical cliffs along part of the shoreline. Landscape colors include blues and grays of the water as well as grays, reds, and browns of the exposed rock and earth, and the vegetation colors of light and dark greens. The landscape texture is dominated by the contrast of the smooth water surface and the medium-course texture of the patchy vegetation growing on the surrounding hillsides. Exposed rock dominates the ridgelines and slopes along the northwest portion of the Study Area with scattered trees, shrubs, and a sparse herbaceous layer. The exposed red and white bedrock colors and textures provide a contrast with the surrounding shrublands and semi-desert grassland. Based on these characteristics, the Study Area was judged to be rated with a scenic quality score of 22, which makes it a Class A classification.

Sensitivity Level

Sensitivity levels are a measure of public concern for scenic quality, where lands are assigned high, medium, or low sensitivity levels by analyzing various indicators of public concern (BLM 1986). These include interest in and public concern for a particular area's visual resources, an area's degree of public visibility, the level of use of an area by the public, and the type of visitor use that an area receives (BLM 1984). The sensitivity of viewers in the Study Area's viewshed is determined based on viewing duration, use volumes, and aesthetic concerns. Sensitive viewing areas typically include residences, common travel routes, recreational areas, and special areas.

The sensitivity level for users visiting Red Fleet State Park was determined to be medium based on the following findings: (1) the reservoir is a regional recreational destination, (2) there are expectations that the Study Area will retain the characteristics of the surrounding viewshed, (3) the geology and biology of the Study Area are of local interest (not of national significance), (4) access to the Study Area via US-191 is a primary travel route and national scenic byway, and (5) the man-made reservoir was constructed to supply downstream water to farmers for crop irrigation purposes.

Distance Zones

The visual quality of a landscape may be magnified or diminished by the visibility of the landscape from sensitive viewpoints. As such, distance plays a key part in VRM where visible details in the landscape or the scale of objects being observed depend on the proximity of the viewer. Because areas that are closer have a greater effect on the observer, they require more attention than do areas that are farther away. Distance zones allow this consideration of the proximity of the observer to the landscape (BLM 1980).

There are three distance zones described in the VRM process: foreground-middleground, background, and seldom seen. These distance zones are based on the relative visibility from key observation points and primary travel routes. The foreground-middleground zone includes areas seen from highways, water routes, or other view locations less than 3 to 5 miles away. Areas seen beyond the foreground-middleground zone but are less than 15 miles away are considered background. Areas that are not seen as either foreground-middleground or background are in the seldom-seen zone. For the Study Area, the foreground-middleground distance zone encompasses all Reclamation lands from key observation points and primary travel routes.

Visual Resource Class

By combining the results of the scenic quality rating, sensitivity level, and distance zones, the Study Area was determined to be Class II. The objective of Class II, as described in the BLM Visual Resource Inventory Handbook (BLM 1986), is as follows:

> The objective of [Class II] is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Natural and Cultural Resources

This section provides detailed descriptions of existing conditions for Study Area resources including geology, soils, vegetation, wildlife, fisheries, special-status species, cultural, paleontological, and extractive resources. The Study Area was also inventoried for possible Indian Trust Assets (ITAs), to determine consistency with DOI and Reclamation policies for fulfilling ITA obligations, and for any environmental hazard conditions.

Geology

Sources of information used to develop this assessment of geologic conditions included published literature, USGS reports, and field observations made in October 2011. The Study Area is located northeast of Vernal on the southern flank of the Uinta Mountains in northeastern Utah. The Uinta Mountains are an east-west trending, 150-mile-long mountain range consisting of Precambrian- to Quaternary-aged rocks formed during a period of Cretaceous uplift (USGS 1975). Sedimentary rock strata in and around the Study Area dip steeply to the south exposing several Mesozoic formations (Kinney 1955).

The geology of the Study Area is dominated by Mesozoic sedimentary rocks ranging in age from upper Triassic to upper Cretaceous. These formations consist of sandstones, shales, siltstones, mudstones, and limestones (Sprinkel 2006). Some Quaternary alluvial, colluvial, and eolian deposits of mud, silt, sand, and gravel are present in the Study Area (Sprinkel 2006). The Quaternary deposits are Holocene to Pleistocene in age. A small deposit of the Paleozoic-aged Weber Sandstone is also located within the Study Area. Figure 3-12 depicts the Study Area geology.

As mapped by Sprinkel (2006), Red Fleet Reservoir is primarily surrounded by Mesozoic sedimentary deposits, except on the northeast corner of the Red Fleet Reservoir, where surficial deposits of Quaternary alluvium and eolian deposits (Qae) occur. These deposits are composed of alluvial mud, silt, and sand mixed with windblown sand and silt. Quaternary alluvium deposits (Qal) occur along Brush Creek below Red Fleet Dam on the southwestern portion of the Study Area. These deposits are composed of alluvial silt, sand, and gravel. Quaternary piedmont alluvium deposits occur on the southwestern portion of the Study Area. These deposits are composed of alluvial sand, gravel, cobbles and boulders. A small deposit of Quaternary alluvium and colluvium deposits (Qac) is located along the western shoreline of Red Fleet Reservoir. This deposit consists of mud, silt, sand, and gravel. A small deposit of the lower Permian- to

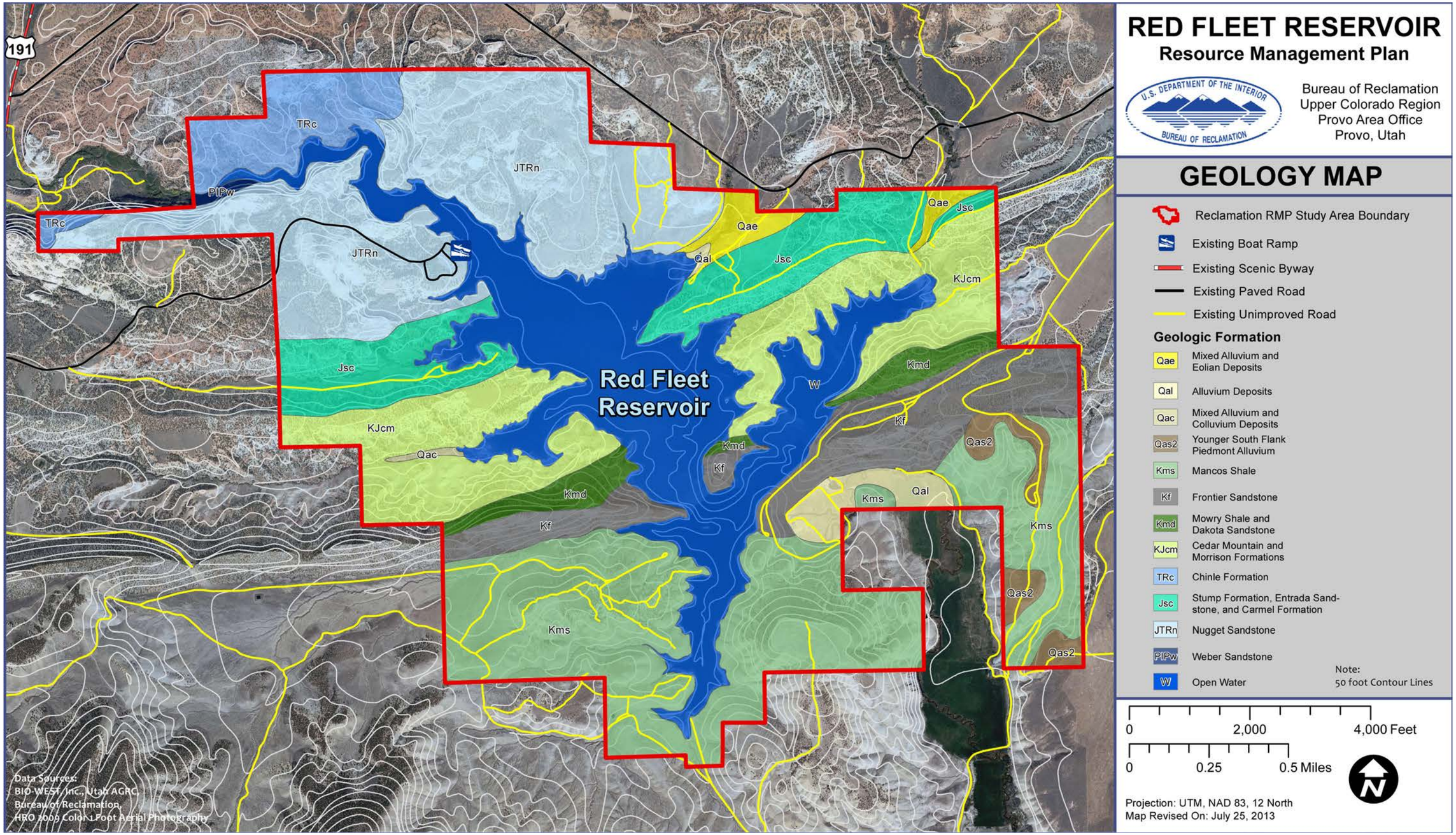

Figure 3-12. Red Fleet Reservoir Resource Management Plan (RMP) Study Area Geology Map.

middle-Pennsylvanian-aged Weber Sandstone (PIPw) is present in the northwest portion of the Study Area, where Brush Creek enters Red Fleet Reservoir.

Mesozoic rock formations present in the Study Area include the upper-Cretaceous-aged Mancos Shale (Kms); the upper-Cretaceous-aged Frontier Sandstone (Kf); the upper- to lower-Cretaceous-aged Mowry Shale and Dakota Sandstone (Kmd); the lower-Cretaceous- to upper-Jurassic-aged Cedar Mountain and Morrison Formations (Kjcm), which are composed primarily of shale, mudstone, claystone, and siltstone; the upper- to middle-Jurassic-aged Stump, Entrada, and Carmel Formations (Jsc), which are composed primarily of shale, siltstone, sandstone, and limestone; the lower-Jurassic- to upper-Triassic-aged Nugget Sandstone (JTRn); and the upper-Triassic-aged Chinle Formation, which is composed primarily of siltstone, sandstone, claystone, shale, and conglomerate (Sprinkel 2006).

Geologic mapping shows no faults or folds located in the Study Area vicinity (Sprinkel 2006). A member of the Red Fleet Reservoir RMP/EA Interdisciplinary Project Team (Project Team) observed a small, unmapped fault on the eastern shore of the reservoir. It is unlikely that this fault is active, given its limited extent. The geologic units that are important within the Study Area are listed below in Table 3-7, along with their associated age, map symbol, and a summarized description of the unit modified from Sprinkel (2006).

Seismic Activity

Most of the faults that exhibit surface displacement within the region are located approximately 12 miles west of the Study Area. All the faults in this area are normal and characterized by high-to-moderate dips. Most of these faults trend in a northwest-southeast direction (Sprinkel 2006). Seismic hazard mapping by the USGS (2011) has placed the Study Area within a zone that has a 2 percent probability of exceedance in 50 years of a 0.15 Peak Acceleration (%g) earthquake. A 0.15%g earthquake generally produces strong perceived shaking and light potential for damage (USGS 2006). Therefore, although the potential for seismic activity exists at the Study Area, there is a very low probability that seismic activity would produce significant damage.

Liquefaction

Seismic events would not trigger liquefaction in the Study Area because the geologic deposits found within the Study Area are composed of Mesozoic sedimentary rocks, which are non-liquefiable materials. Unconsolidated, surficial deposits are found in the Study Area. These deposits are relatively thin and small in scale. The unconsolidated deposits are underlain by the Mesozoic sedimentary rock units in the area. The presence of the sedimentary rocks eliminates the potential for liquefaction of these unconsolidated deposits.

Shoreline Erosion

Wave action from wind-generated and boat-generated waves, along with annual fluctuations in reservoir levels, contribute to shoreline erosion at Red Fleet Reservoir. The geomorphic areas most susceptible to erosion are points that protrude into the reservoir, convex shorelines, and steep shorelines. A significant factor in the degree of shoreline erosion is the shoreline's slope. The more gently sloping shorelines, which are generally protected from wave erosion by beaches, tend to erode much less than steeper shorelines. Erosion is more prevalent on softer geologic formations including: Quaternary deposits, Mancos Shale, Mowry Shale, Cedar Mountain Formation, Morrison Formation and the Stump Formation.

Table 3-7. Geologic Units Located within the Study Area.

MAP SYMBOL	DEPOSIT DESCRIPTION
	Quaternary Deposits
Qae	Mixed Alluvium and Eolian Deposits (Holocene): unconsolidated alluvial mud, silt, and sand mixed with well-sorted, fine-grained, windblown sand silt; less than 10 meters thick.
Qal	Flood-Plain Alluvium (Holocene): unconsolidated silt, sand, and gravel mostly along Green River; 1–30 meters thick.
Qac	Mixed Alluvium and Colluvium (Holocene to Pleistocene): unconsolidated, poorly to moderately sorted mud, silt, sand, and gravel along channels of Green River tributaries, smaller streams, and intermittent streams; on Mancos Shale, unit is mostly reworked mud; less than 10 meters thick.
Qas2	Younger South Flank Piedmont Alluvium (Upper Pleistocene): unconsolidated to moderately consolidated, poorly sorted sand, gravel, cobbles, and boulders; poorly developed soil profile and stage II-III pedogenic carbonate (caliche) coatings of clasts in upper 1 meter of deposit; mapped on south flank of Uinta Mountains from Island Park to Whiterocks Canyon and topographically higher than Qas1; less than 3 meters thick.
	Mesozoic Sedimentary Rocks
Kms	Mancos Shale (Upper Cretaceous): main body of the Mancos Shale; dark-gray, soft, slope-forming calcareous shale containing beds of siltstone and bentonitic clay; only mapped on south flank of Uinta Mountains; 1,400–1,700 meters thick.
Kf	Frontier Sandstone (Upper Cretaceous): upper part resistant, light-brown to light-gray and yellow, fine-grained and ripple- marked sandstone with local petrified wood and invertebrate fossils; lower part soft, light- to dark-gray calcareous shale; locally includes minor limestone (with bivalve coquina) and coal beds in the lower part, 36–85 meters thick.
Kmd	Mowry Shale and Dakota Sandstone (Upper and Lower Cretaceous): locally shown as one unit along south flank of Uinta Mountains because formations are too thin to show separately at map scale. Mowry Shale (Upper and Lower Cretaceous): dark-gray, siliceous shale that weathers silver gray, contains abundant fossil fish scales and disarticulated fish bones; 10–75 meters thick. Dakota Sandstone (Lower Cretaceous): upper and lower resistant, yellow and light-gray, medium- to coarse-grained sandstone beds separated by a carbonaceous shale; contains coal beds in exposures along south flank of Uinta Mountains, 15–76 meters thick.
KJcm	Cedar Mountain Formation and Morrison Formation (Lower Cretaceous and Upper Jurassic): Cedar Mountain is mapped with underlying Morrison Formation because it is generally thin and contact with underlying Morrison is difficult to map. Cedar Mountain Formation (Lower Cretaceous): purple, gray and greenish-gray mudstone, siltstone, minor sandstone and limestone; contains calcrete beds that weather out as carbonate nodules; 0–60 meters thick. Morrison Formation (Upper Jurassic): upper Brushy Basin Member consists of soft, banded, variegated (light-gray, olive-gray, red, and light-purple) shale, claystone, siltstone, and minor cross-bedded sandstone, conglomerate, and bentonite; lower, Salt Wash Member may not be present in the Flaming Gorge area; dinosaur remains are preserved in Salt Wash Member at dinosaur National Monument south of quadrangle; 90–287 meters thick.
Jsc	Stump Formation, Entrada Sandstone, and Carmel Formation (Upper and Middle Jurassic): locally shown as one unit where formations are too thin to show separately at map scale. Stump Formation (Upper Jurassic): upper Redwood Member is greenish-gray and light-green slope-forming shale with glauconitic, fossiliferous (belemnites and bivalves) sandstone and limestone; lower Curtis Member is resistant, light-gray to greenish-gray, cross-bedded, glauconitic sandstone; Curtis Member is thin or locally missing in this quadrangle because of erosion prior to deposition of Redwood Member along J-4 unconformity of Pipiringos and O'sullivan (1978); palynomorph assemblage from base of Curtis Member indicates an Oxfordian age; 40–82 meters thick. Entrada Sandstone (Middle Jurassic): upper part reddish-brown siltstone and fine-grained sandstone and lower part light-gray, pink, and light-brown sandstone; lower sandstone is resistant to erosion and forms cliffs and ridges; 30–75 meters thick. Carmel Formation (Middle Jurassic): medium- to dark-red, green, and gray sandy shale, sandstone, siltstone, limestone, and gypsum; upper part is mostly slope-forming red shale, siltstone, and sandstone underlain by a middle gypsiferous unit; lower part is mostly ledge-forming limestone, which is commonly oolitic and fossiliferous; may contain one or more biotite-rich ash layers; 30–144 meters thick.

Table 3-7. (Cont.)

MAP SYMBOL	DEPOSIT DESCRIPTION
	Mesozoic Sedimentary Rocks
JTRn	Nugget Sandstone (Lower Jurassic and Upper Triassic): pink, light-gray, and light-brown, resistant, massive-weathering, large-scale cross-bedded sandstone; locally contains carbonate lenses (playa) and fluvial lenses (wadi) near top; forms cliffs and ridges; vertebrate tracks of Jurassic age preserved in a fluvial lens near the top of the Nugget near Red Fleet Reservoir, and casts of vertebrate tracks of Late Triassic age are preserved on underside of base of Nugget south of quadrangle near Dinosaur National Monument; 200–315 meters thick.
Trc	Chinle Formation (Upper Triassic): purplish-red, purple, light-gray, greenish-gray, light-green, ripple marked siltstone, sandstone, claystone, shale, and conglomerate that locally contains abundant petrified wood; generally forms slopes; upper 26–36 meters is light-reddish-brown planar laminated sandstone, cross-bedded sandstone, siltstone, and variegated mudstone that is correlated with Bell Springs Members of Nugget Sandstone by Jensen and Kowallis (2005); base is resistant conglomerate unit named the Gartra Member; 40–140 meters thick.
	Paleozoic Sedimentary Rocks
PIPw	Weber Sandstone (Lower Permian to Middle Pennsylvanian): light-gray to yellowish-gray, very thick-bedded sandstone with interbeds of limestone in the lower part, highly cross-bedded sandstone in the upper part; forms steep cliffs and ridges; 186–472 meters thick.

The major process eroding and transporting shoreline sediments into Red Fleet Reservoir occurs primarily when the reservoir is at full pool, allowing waves to impinge against the steep portions of the shoreline. The waves undercut a notch in the steeper shorelines, resulting in shoreline collapse. When a large enough volume of material has been eroded, the collapsed debris eventually forms a beach that then protects the highest shoreline from wave energy. This process also adds small amounts of sediment to the reservoir. Shorelines are still adjusting to Red Fleet Reservoir's presence in areas with minor erosion. After the shoreline reaches a stable angle from beach formation, the hill behind the shoreline will also continue to erode to a more-stable angle. This process may take up to several decades.

Minor erosion occurs when Red Fleet Reservoir is at lower water levels, when waves contact the shoreline below the high-water level. This primarily mobilizes silt and clay into the water column near the shore. Areas with eroding shorelines shown by wave-cut cliffs are present primarily on the southern and eastern portions of the reservoir. In some locations, riprap has been placed to prevent further erosion. The riprap placed at and near the dam has been largely successful in stopping erosion.

Soils

According to the U.S. Department of Agriculture (USDA) web soil survey (USDA 2012), the Red Fleet Reservoir area consists of loam, loamy fine sand, loamy sand, clay loam, sandy loam, fine sandy loam, sandy clay loam, silty clay loam, sandy loam, very cobbly loam, very cobbly sandy loam, very cobbly sandy clay loam, clay, silty clay, fine sand, and weathered bedrock (USDA 2012). Silty clay loam, loamy fine sand, loam, and clay loam are the most prevalent soils in the Study Area. The majority of the northern portion of the Study Area is composed primarily of sandy loam, loamy fine sand, and sand. The majority of the middle portion of the Study Area is composed primarily of loam, clay loam, and clay. The majority of the southern portion of the Study Area is composed of silty clay loam and gravelly loam. The Mikim Loam,1–3 percent slope, Parodox Loam, and the Yarts Fine Sandy Loam are rated as "prime farmland if irrigated"

by the USDA (2012). These soil units comprise 6.58 percent of the Study Area. The remainder of the Study Area is rated as "not prime farmland". The names and characteristics of the various soils found within the Study Area are summarized in Table 3-8 and shown in Figure 3-13.

Table 3-8. Soil Types Located within the Study Area.

SOIL NAME	PERCENT OF STUDY AREA SOILS	SLOPE (PERCENT)	DEPTH TO BEDROCK IN CENTIMETERS	SHRINK-SWELL POTENTIAL (0.00–1.00)[a]	LIMITATIONS	
					BUILDING SITE DEVELOPMENT[b]	SEPTIC[c]
Arches-Mespun-Rock Outcrop Complex	17.46	4–40	23	0.00	Very Limited	Very Limited
Badland-Montwel Complex	10.01	50–90	>200	0.50-1.00	Very Limited	Very Limited
Badland-Rock Outcrop Complex	5.30	1–100	>200	0.00-1.00	Very Limited	Very Limited
Begay Sandy Loam	0.02	2–15	>200	0.00	Somewhat to Very Limited	Somewhat Limited
Bullpen-Mikim Complex	1.61	25–50	>200	0.00-0.50	Very Limited	Very Limited
Clapper Gravelly Loam	6.96	25–50	>200	0.00	Very Limited	Very Limited
Gerst Loam	12.46	4–40	>200	0.00	Very Limited	Very Limited
Gerst Rock Outcrop Complex	12.26	4–40	>200	0.00	Very Limited	Very Limited
Hanksville Silty Clay Loam	18.64	25–50	>200	1.00	Very Limited	Very Limited
Mikim Loam, 1-3% slope	0.37	1–3	>200	0.50	Somewhat Limited	Somewhat Limited
Mikim Loam, 3-15% Slope	1.87	3–15	>200	0.50	Somewhat Limited	Somewhat Limited
Paradox Loam	2.08	1–3	>200	0.00	Not Limited to Somewhat Limited	Somewhat Limited
Reepo Rock Outcrop Complex	3.20	4–25	76	0.00	Very Limited	Very Limited
Rock Outcrop	2.54	0–100	0	0.00	Not Rated	Not Rated
Shotnick-Walkup Complex	0.70	0–2	>200	0.00	Not Limited to Very Limited	Not Limited
Solirec Fine Sandy Loam	0.36	3–8	>200	0.00	Not Limited to Somewhat Limited	Somewhat Limited
Yarts Fine Sandy Loam	4.12	2–4	>200	0.00	Not Limited to Somewhat Limited	Not Limited

Source: NRCS Web Soil Survey (USDA 2012).
[a] 0.00–1.00 is a scale of the severity of shrink-swell limitations. 0.00 represents no limitation and 1.00 represents a severe limitation.
[b] Building Site Development = shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets.
[c] Septic = septic tank absorption fields.

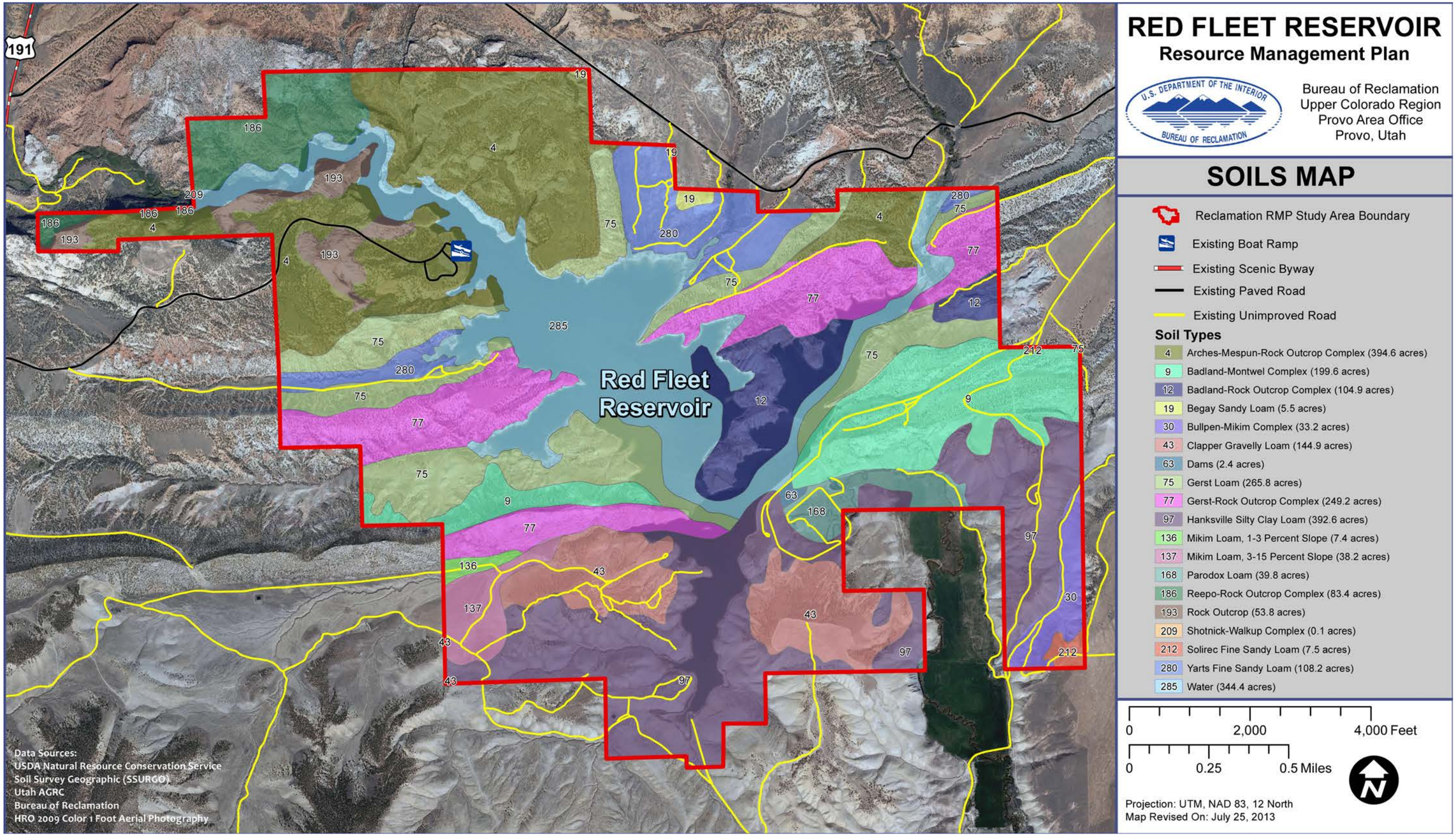

Figure 3-13. Red Fleet Reservoir Resource Management Plan (RMP) Study Area Soils Map.

Soil Erosion

Soils in the Study Area are moderately susceptible to wind erosion. The USDA classifies soils based upon their Wind Erodibility Group, which classifies soils that have similar susceptibility to wind erosion in cultivated areas (USDA 2012). The soil groups range from 1 to 8, with group 1 representing soils that are most susceptible to wind erosion and group 8 representing soils that are least susceptible to wind erosion. The Reepo-Rock Outcrop Complex is classified as group 1. The Arches-Mespun-Rock Outcrop Complex is classified as group 2. The Bullpen-Mikim Complex is classified as group 5. The Clapper Gravelly Loam is classified as group 6. The Rock Outcrop is classified as group 8. The remaining soils are classified as either group 3 or 4 (USDA 2012).

Soils in the Study Area are moderately susceptible to water erosion. The USDA rates soils based upon their susceptibility to sheet and rill erosion by water by assigning soil erosion factors. The erosion factor is based upon the percentages of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity. Erosion factor values range between 0.02 and 0.69. With all other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill water erosion (USDA 2012). Soils within the Study Area are rated 0.10–0.43. The erosion factors of the Badland-Montwell Complex, Badland-Rock Outcrop Complex, Begay Sandy Loam, Bullpen-Mikim Complex, and Clapper Gravelly Loam range between 0.10 and 0.20. The erosion factors of the remainder of the soils range between 0.24 and 0.43.

Characteristics and Limitations of Soil Resources

Characteristics of soils, such as slope, depth to bedrock, and shrink-swell potential, are shown in Table 3-8. Shrinking and swelling of some soils can damage building foundations, basement walls, roads, and other structures unless special designs are used. A high shrink-swell potential indicates that special design and added expense may be required if the planned soil use will not tolerate large volume changes (USDA 2012). Similarly, if steep slopes are present or depth to parent rock is shallow, additional building limitations may exist.

The Study Area soils are also rated in Table 3-8 according to soil limitations affecting their suitability for building site development and septic development. Building site development refers to the degree of soil limitations affecting shallow excavations, dwellings with and without basements, small commercial buildings, and local roads and streets. The degree of soil limitations that affect the construction of septic tank absorption fields is based on soil permeability, depth to seasonal high-water table, depth to bedrock, and the area's susceptibility to flooding. The degree of soil limitation is expressed as "not limited," "somewhat limited," or "very limited." "Not limited" indicates that the soil has features that are very favorable for building or septic development, and that good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for building or septic development, and that the limitations can be overcome or minimized by special planning, design, or installation. "Very limited" indicates that the soil has one or more features that are unfavorable for building or septic development, and that the limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures (USDA 2012). Generally, the soils within the Study Area are rated as either "somewhat limited" or "very limited."

Utilization of Soil Resources

The majority of the soils in the Study Area currently support vegetation favorable for wildlife habitat and recreational activities.

Vegetation

This section describes the vegetation communities found in the Study Area. Upland vegetation communities are discussed first, followed by riparian-wetland communities. Figure 3-14 illustrates the distribution and acreages of these various classes within the Study Area. Sources of information consulted to develop this assessment of existing conditions included published literature, the Southwest Regional Gap Analysis (Lowry et al. 2007), State of Utah and Uintah County-listed noxious weeds obtained from the Utah Department of Agriculture and Food (UDAF) (UDAF 2012), consultations with agency personnel, and field observations made in fall 2011.

Upland Vegetation Communities

Red Fleet Reservoir is located on the Colorado Plateau within the Semi-Arid Benchlands and Canyonlands ecoregion. It is near the boundary of both the Uinta Basin Slopes, and the Uinta Basin Floor ecoregions (Bailey et al. 1994). Ecoregion determination is based on geology, vegetation, climate, hydrology, land use, and other ecological and cultural factors (CECWG 1997). The Semi-Arid Benchlands and Canyonlands ecoregion represents benches and mesas from 1,524–2,286 meters in elevation dominated by grassland, shrubland and/or woodland vegetation communities. The benches are separated from remnant mesatops by low escarpmentsand narrow canyons. Exposed bedrock is abundant on steep slopes, canyons, and escarpments. Typical soils are entisols of fine sand. Common plant species include winterfat (*Krascheninnikovia lanata*), Mormon tea (*Ephedra* spp.), fourwing saltbush (*Atriplex canescens*), big sagebrush (*Artemisia tridentata*), pinyon pine (*Pinus edulis*), and Utah juniper (*Juniperus osteosperma*) (Woods et al. 2001).

Bedrock Canyon and Tableland Approximately 127 acres of the Study Area is classified as bedrock canyon and tableland. These features occur above the Brush Creek inflow down to the vicinity of the developed State Park Area and the Dinosaur Trackway Area. This classification corresponds to the Colorado Plateau Mixed Bedrock Canyon and Tableland class in the Southwest Regional Gap Analysis (Lowry et al. 2007). It is a temperate, xeric ecological system occurring on the Colorado Plateau, and is characterized by the sparsely vegetated to barren terrain of steep cliffs, narrow canyons and open rock. Scattered trees, shrubs and a sparse herbaceous layer account for less than 10 percent cover. Exposed rock is most often sandstone, shale or limestone. Associated plant species commonly include pinyon pine, ponderosa pine (*Pinus ponderosa*), juniper (*Juniperus* spp.), mountain mahogany (*Cercocarpus intricatus*), white fire (*Abies concolor*), fourwing saltbush, and Mormon tea. This system is similar to Intermountain Basins Cliff and Canyon but is more geographically restricted (Lowry et al. 2007).

Pinyon-Juniper Shrubland Pinyon-Juniper Shrubland is the largest and most dispersed vegetation class in the Study Area, accounting for approximately 1,061 acres. This community corresponds to Colorado Plateau Pinyon-Juniper Shrubland ecological system (Lowry et al. 2007), which occupies mesatops, foothills, and slopes at elevations ranging from about 4,000 to 6,500 feet. This system extends upslope transitioning to Colorado Plateau Pinyon-Juniper Woodland. These two systems are similar but differ in elevation range, moisture and shrub/tree

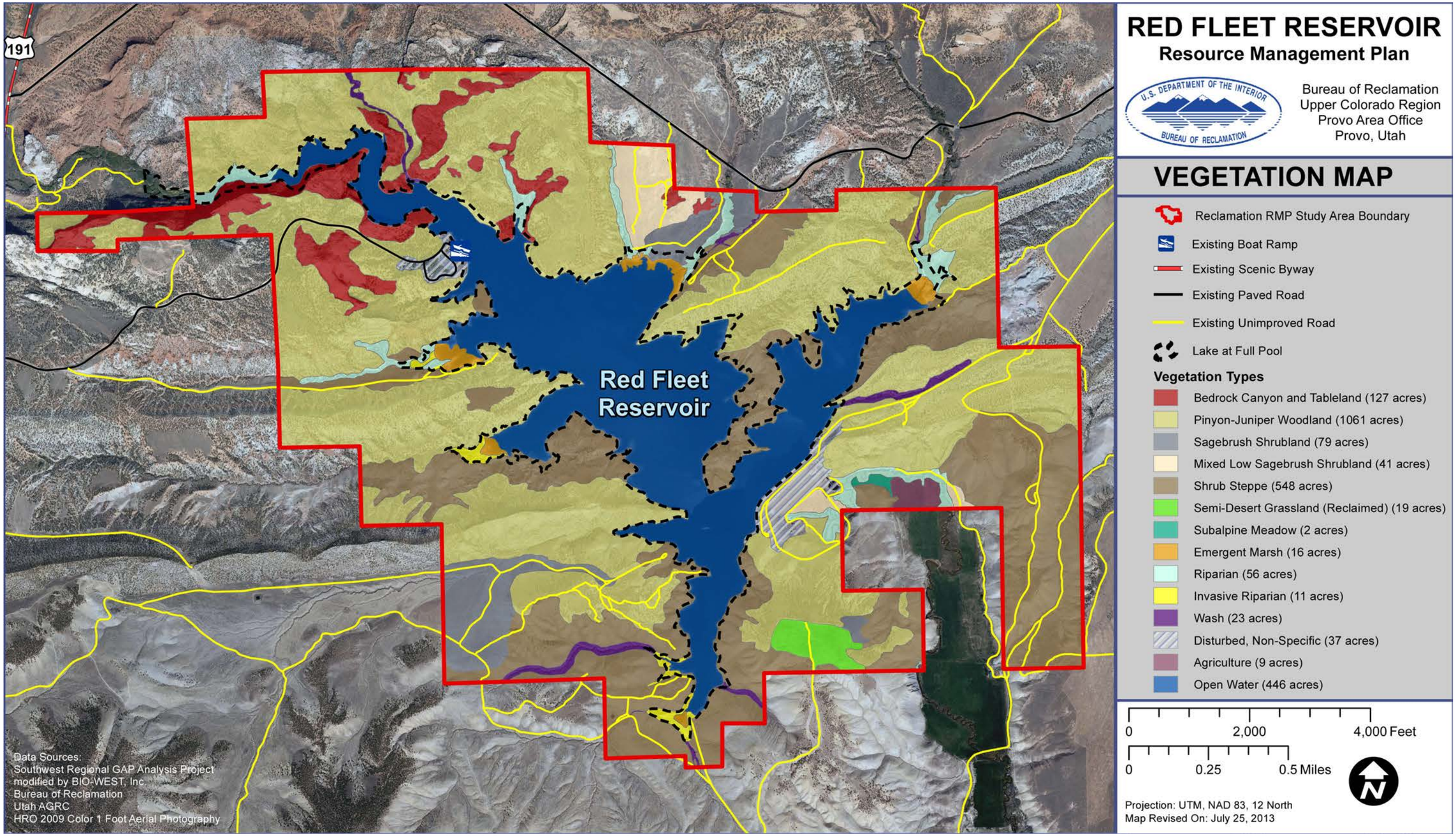

Figure 3-14. Red Fleet Reservoir Resource Management Plan (RMP) Study Area Vegetation Map.

height. Shrublands exist at slightly lower elevations than woodlands, are dryer, and have a maximum shrub height of 9.8 feet. Common species include pinyon pine, Utah juniper, black sagebrush (*Artemisia nova*), Wyoming big sagebrush (*Artemisia tridentata* spp. *wyomingensis*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), and blackbrush (*Coleogyne ramosissima*). The herbaceous layer consists of sparse to dense xeric graminoides (Lowry et al. 2007).

Sagebrush Shrubland Approximately 79 acres of sagebrush shrubland are located in the southwestern portion of the Study Area. This vegetation community continues westward onto BLM lands in an upland valley separated from the Study Area by pinyon-juniper and shrub steppe hillsides. This ecological system is consistent with the Inter-Mountain Basins Big Sagebrush Shrubland that is widespread across the western United States and occupies lowlands (4,900–7,500 feet) in broad basins, valleys, and foothills between mountain ranges (Lowry et al. 2007). The dominant species in this system is Wyoming big sagebrush or basin big sagebrush (*Artemisia tridentata* spp. *tridentata*) with scattered juniper species or pinyon pine. The most common associated shrub species are greasewood (*Sarcobatus vermiculatus*), saltbush (*Atriplex* spp.), rubber rabbitbrush (*Ericameria nauseosa*), yellow rabbitbrush, and bitterbrush (*Purshia tridentata*). In areas that have been previously burned, mountain snowberry (*Symphoricarpos oreophilus*) may be co-dominant. The herbaceous layer has less than 25 percent coverage and common species are Indian ricegrass (*Achnatherum hymenoides*), blue grama (*Bouteloua gracilis*), thickspike wheatgrass (*Elymus lanceolatus*), Idaho fescue (*Festuca idahoensis*), needle and thread (*Hesperostipa comata*), western wheatgrass (*Pascopyrum smithii*), and Sandberg bluegrass (*Poa secunda*). Invasive cheatgrass (*Bromus tectorum*) or other nonnative species can dominate the herbaceous layer (Lowry et al. 2007).

Mixed Low Sagebrush Shrubland Approximately 41 Study Area acres consist of this temperate xeric ecological system. This community is found at the North Beach Area and below Red Fleet Dam. Regionally, this system is known to occupy hilltops, toeslopes, dry flats, and gravel draws of the Colorado Plateau and Uinta Basin at elevations up to 5,900 feet (Lowry et al. 2007). The most common and dominant shrub species are black sagebrush, Bigelow sage (*Artemisia bigelovii*), and Wyoming big sagebrush. The herbaceous layer has 25 percent or more coverage and consists of temperate xeric grasses. Common species are Indian ricegrass, needle and thread, and James' galleta (*Pleuraphis jamesii*).

Shrub Steppe Hillsides in the southeastern half of the Study Area (about 536 acres) that are not pinyon-juniper communities can be characterized as shrub steppe. This community is typical of the Intermountain Basins Semi-Desert Shrub Steppe ecological system occupying alluvial fans and flats throughout the U.S. intermountain west and extending into the southern Great Plains (Lowry et al. 2007). This shrub steppe exhibits a sparse to moderately dense woody layer with a patchy grass herbaceous layer that is often more dominant than woody species coverage. Common shrub and dwarf shrub species are fourwing saltbush, big sagebrush, yellow rabbitbrush, Mormon tea, rubber rabbitbrush, winterfat, and broom snakeweed (*Gutierrezia sarothrae*). The shrub layer may be dominated by a single species. Species found in the herbaceous layer include bluebunch wheatgrass (*Pseudoroegneria spicata*), Indian ricegrass, blue grama, saltgrass (*Distichlis spicata*), Sandberg bluegrass, alkali sacaton (*Sporobolus airoides*), needle and thread, James' galleta, and saline wildrye (*Leymus salinus*). Forbs within the herbaceous layer are highly variable.

Semi-Desert Grassland An approximately 19-acre reclaimed hilltop south of Red Fleet Dam that was used as a source for dam construction has revegetated as a semi-desert grassland vegetation community. This vegetation community is consistent with the Intermountain Basins Semi-Desert Grassland community that is widespread in the U.S. intermountain west, occupying lowlands and uplands in an elevation range between 4,700 to 7,600 feet (Lowry et al. 2007). Dominant vegetation consists of drought-tolerant grasses with scattered shrub species. The most common plants that may be found in this system are Indian ricegrass, blue grama, needle and thread, three-awn (*Aristida* spp.), satin grass (*Muhlenbergia* spp.), James' galleta, sagebrush (*Artemisia* spp.), saltbush, blackbrush, Mormon tea, winterfat, and snakeweed (*Gutierrezia* spp.).

Riparian-Wetland Vegetation Communities

Riparian-wetland communities provide important ecological and resource management functions, including conveyance and storage of floodwaters, prevention of erosion, wildlife habitat, recreation, water supply and quality maintenance, archeological value, educational value, and aesthetic value (Dennison and Schmid 1997). Riparian zones can be defined as strips of vegetation adjacent to streams, rivers, lakes, reservoirs, and other inland aquatic systems that affect or are affected by the presence of water (Fischer et al. 2000). Wetlands can be defined as lands transitional between terrestrial and aquatic systems where the water table is usually at or near the soil surface or the land is covered by shallow water (Cowardin et al. 1979). Depending on the level of flooding and soil saturation, riparian-wetland communities within the Study Area may be legally protected under the Clean Water Act of 1972 and the Utah Stream Alteration Rule of 1973 (CWA 1972/UT 1973). Thus, the identification and classification of these communities is important both from the standpoint of resource management as well as legal jurisdiction; consequently, riparian-wetland communities were identified in the recreation development suitability analysis, summarized in Chapter 2.

The riparian-wetlands classification within the Study Area includes several types of ecosystems that are associated with flooding and/or soil saturation of varying durations. For the purposes of the RMP, the riparian-wetlands classification includes areas dominated by woody wetland vegetation that require frequent flooding, areas dominated by herbaceous emergent/submerged aquatic vegetation that require frequent or permanent flooding, and unvegetated dry washes flowing into Red Fleet Reservoir that exhibit a defined channel due to ephemeral flows. The dry wash areas are subject to ephemeral flows that prevent the growth of vegetation within the channel. The dry wash areas are included in the riparian-wetlands classification because management decisions here can be important to the aquatic ecosystem as a whole. Similarly, the subalpine meadow community, though it is most typically dominated by upland plant species, is included with the riparian-wetlands classification because wetland species and soils likely extend into this small area located along Big Brush Creek below Red Fleet Dam.

Riparian-wetlands within the Study Area were classified into groups according to the International Terrestrial Ecological Systems Classification, and mapping data was downloaded from the Southwest Regional Gap Analysis Project. The riparian-wetland classes identified include five types of communities and are mapped in Figure 3-14.

Riparian Riparian plant communities are found at the Big Brush Creek inflow and other drainage areas, totaling about 56 acres. These correspond to the Rocky Mountain Lower Montane Riparian Woodland and Shrubland ecological system, which is found throughout the

Colorado Plateau and Rocky Mountain regions at elevations of about 3,000–9,200 feet (Lowry et al. 2007). This system represents an assemblage of tree communities with varying dominant tree species and a highly diverse shrub component. Riparian communities are dependent on annual flooding of riverine systems. They can be found occupying floodplains, sand and cobble bars, islands, and irrigation ditches. Common tree species include box elder (*Acer negundo*), eastern cottonwood (*Populus deltoides*), narrowleaf cottonwood (*Populus angustifolia*), Fremont cottonwood (*Populus fremontii*), Douglas fir (*Pseudotsuga menziesii*), and blue spruce (*Picea pungens*). Some common shrub species are redosier dogwood (*Cornus sericea*), chokecherry (*Prunus virginiana*), skunkbush sumac (*Rhus trilobata*), willow (*Salix* spp.), silver buffaloberry (*Shepherdia argentea*), snowberry (*Symphoricarpos* spp.), and river hawthorn (*Crataegus rivularis*). Patches of Russian olive (*Elaeagnus angustifolia*) and saltcedar (*Tamarix* spp.) are also common (Lowry et al. 2007).

Invasive Riparian Approximately 11 acres of the Study Area are dominated by invasive riparian vegetation. Regionally, this ecological system includes all altered or disturbed riparian communities that are dominated by saltcedar and Russian olive (Lowry et al. 2007). At Red Fleet Reservoir, riparian areas dominated by these invasive species are found in bays along the southwestern side of the reservoir; in particular, the southernmost bay appears to be a significant seed source for saltcedar that may facilitate spreading to other areas.

Subalpine Meadow A 2-acre area below Red Fleet Dam is characterized by vegetation typical of a subalpine meadow. Vegetation is generally dominated by forbs with a lower grass component. Vegetation is a mixture of plants found within both wetland and upland communities. It is often a transitional area from wetland communities to upland communities. The community found in the Study Area is most consistent with the Rocky Mountain Subalpine Montane Mesic Meadow community. Regionally, this ecological system is located at gentle to moderately sloping sites where tree growth is restricted by snow or dry, windy conditions (Lowry et al. 2007). It is similar to Rocky Mountain Alpine-Montane Wet Meadow system but is not as wet, with only moist to saturated soils in spring and dry soils through the rest of the growing season. Common associated genera and species include bluebells (*Mertensia* spp.), beardstongue (*Penstemon* spp.), bellflower (*Campanula* spp.), lupine (*Lupinus* spp.), goldenrod (*Solidago* spp.), mule ear (*Wyethia* spp.), arrowleaf balsamroot (*Balsamorhiza sagittata*), tufted hairgrass (*Deschampsia caespitosa*), western meadow-rue (*Thalictrum occidentale*), prairie junegrass (*Koeleria macrantha*), and marsh valerian (*Valeriana sitchensis*).

Wash This ecological system is sparsely vegetated to barren with less than 10 percent cover. Wash communities occupy ephemeral streambeds and banks and comprise about 23 acres of the Study Area. This system is most often found in the U.S. intermountain west but may also be found, to a lesser extent, in the western Great Plains (Lowry et al. 2007). In general, washes are often bordered by shrublands dominated by greasewood, rubber rabbitbrush, silver sage (*Salvia argentea*), and Apache plume (*Fallugia paradoxa*). Shrubs form a dense linear boarder but do not extend into the wash itself. In areas where water pools, saltgrass is typically dominant.

Emergent Marsh Approximately 16 acres of the Study Area are characterized as emergent marsh, found in bays of Red Fleet Reservoir where washes and riparian communities funnel toward the lake. All of these occur below the full pool elevation of the reservoir, and are

therefore periodically inundated. Dominant vegetation is herbaceous and adapted to frequent or continual inundation. North American Arid West Emergent Marshes are found in association with landscape depressions, lake edges, and stream and river banks (Lowry et al. 2007). Specific species vary greatly throughout the Arid West, but common genera include bulrush (*Schoenoplectus* spp.), cattail (*Typha* spp.), rush (*Juncus* spp.), pondweed (*Potamogeton* spp.), smartweed (*Polygonum* spp.), and canary grass (*Phalaris* spp.). Rooted vegetation can exist in up to 6.5 feet of open water. Vegetation may also include floating, partially submerged, and fully submerged species.

Disturbed Non-specific Vegetation Communities

This ecological system describes areas that have been disturbed by human activity to the point that they are barren or exhibit relatively low vegetated cover (Lowry et al. 2007). For the Study Area, this vegetation class was used to represent the State Park facilities area and Red Fleet Dam, totaling about 37 acres. Additionally, a small area below the dam (9 acres) is continuous with an agricultural field that continues southward outside of the Reclamation boundary.

Noxious Weeds

Table 3-9 shows plant species listed by the State of Utah and Uintah County as noxious weeds, as reported by UDAF (UDAF 2012). Portions of the Study Area that are most vulnerable to infestation by noxious weeds include roadsides, camping areas, fishing access areas, and the reservoir shoreline. Noxious weeds frequently infest roadsides because vehicles help disperse seeds over large geographical areas. Off-highway vehicle travel, fishing and hunting access, and other recreational activities may also promote the spread of noxious species by disturbing existing vegetation and by helping to disperse seeds. Persons walking through riparian areas can spread species including (but not limited to) poison hemlock (*Conium* spp.), teasel (*Dipsacus* spp.), Canada thistle (*Cirsium arvense*), hoary cress, and perennial pepperweed. Dogs may spread species such as houndstongue, teasle, and thistle (*Cirsium* spp.) by carrying seeds in their fur. As previously described, fluctuating water levels along shorelines are vulnerable to saltcedar and Russian olive infestation.

Wildlife

Wildlife of interest to state and federal agencies and the general public in the Study Area include special-status species (federal and state threatened and endangered species and other species of concern), big game, raptors, waterfowl, and general wildlife populations. Wildlife viewing opportunities, big game-vehicle conflicts, nuisance wildlife species, and the effect of reservoir uses on wildlife habitats are also concerns in the Study Area. Sources of information used to develop this assessment of existing wildlife conditions included UDWR reports, websites, data, and maps, published literature, consultations with agency personnel, and field observations made in October 2011.

Habitat Characteristics

Figure 3-15 illustrates habitat areas that have been identified by UDWR for particular species. The Study Area overlaps winter habitats for elk (*Cervus canadensis*) and mule deer (*Odocoileus hemionus*), and the area below Red Fleet Dam is continuous with an area designated as mule deer year-long habitat. Portions of the Study Area (i.e., along the north side of the reservoir and an area below the dam) are continuous with larger areas of brood habitat, occupied habitat, and winter habitats for greater sage-grouse (*Centrocercus urophasianus*).

Table 3-9. State of Utah and Uintah County Noxious Weed List.

COMMON NAME	SCIENTIFIC NAME
black henbane	*Hyoscyamus niger*
diffuse knapweed	*Centaurea diffusa*
Johnsongrass	*Sorghum halepense*
leafy spurge	*Euphorbia esula*
Medusahead	*Taeniatherum caput-medusae*
oxeye daisy	*Leucanthemum vulgare*
purple loosestrife	*Lythrum salicaria*
St. John's wort	*Hypericum perforatum*
spotted knapweed	*Centaurea stoebe*
sulfur cinquefoil	*Potentilla recta*
yellow starthistle	*Centaurea solstitialis*
yellow toadflax	*Linaria vulgaris*
Bermudagrass	*Cynodon dactylon*
Dalmatian toadflax	*Linaria dalmatica*
dyer's woad	*Isatis tinctoria*
hoary cress	*Cardaria draba*
musk thistle	*Carduus nutans*
perennial pepperweed	*Lepidium latifolium*
poison hemlock	*Conium maculatum*
Russian knapweed	*Centaurea repens*
squarrose knapweed	*Centaurea virgata*
Scotch thistle	*Onopordum acanthium*
Canada thistle	*Cirsium arvense*
field bindweed	*Convolvulus arvensis*
houndstongue	*Cynoglossum officinale*
quackgrass	*Elymus repens*
saltcedar	*Tamarix* spp.
common teasel [b]	*Dipsacus fullonum*
puncturevine [b]	*Tribulus terrestris*
Russian olive [b]	*Elaeagnus angustifolia*

Source: UDAF (2012).
[b] Uintah County noxious weeds

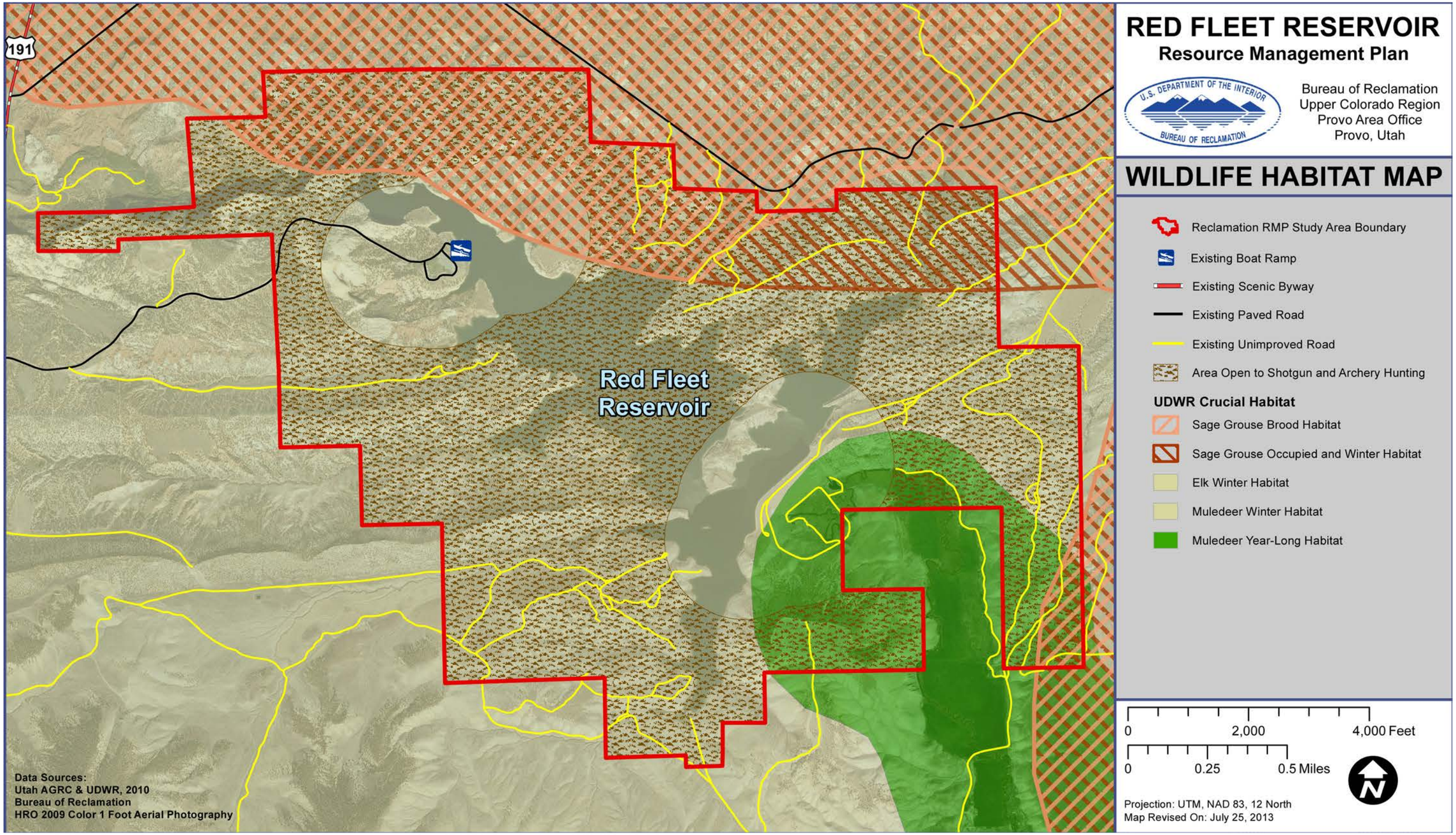

Figure 3-15. Red Fleet Reservoir Resource Management Plan (RMP) Study Area Wildlife Habitat Map.

A component of the Utah Comprehensive Wildlife Conservation Strategy (CWCS) is to prioritize habitat types within the state for species of greatest conservation need (Sutter et al. 2005). Five criteria are used to score habitats: abundance, threats, trends, sensitive species occurrence, and vertebrate biodiversity. Habitat types are evaluated and assigned values from 1 to 5 in each of the five categories, with potential total scores of 5–25, 5 being the lowest possible priority and 25 being the highest possible priority. Habitat types with high scores are considered to be high priority and most in need of conservation. The CWCS scoring system was used as a guideline for assessing habitat preservation priorities for Study Area vegetation communities. Table 3-10 summarizes Study Area vegetation communities and CWCS scoring of habitats.

Table 3-10. Status Review of Study Area Habitat Types Using the Utah Comprehensive Wildlife Conservation Strategy (CWCS) Scoring System.

STUDY AREA VEGETATION COMMUNITY	COMPARABLE CWCS[a] HABITATS	OVERALL CWCS SCORE
Bedrock Canyon and Tableland	Rock	11.7
Pinyon-Juniper Woodland	Pinyon-Juniper	12.6
Sagebrush Shrubland	High Desert Scrub	14.8
Shrub Steppe	High Desert Scrub	14.8
Emergent Marsh	Wetland	20.7
Riparian and Invasive Riparian	Lowland Riparian/Mountain Riparian	23.8/20.5
Subalpine Meadow	Grassland	17.7
Disturbed/Modified (Agriculture)	Agriculture	15

[a] Utah Comprehensive Wildlife Conservation Strategy (Sutter et al. 2005).

The majority of the wildlife habitat in the Study Area consists of upland plant communities (e.g., woodlands, shrublands, and grasslands). Statewide, these communities rank in the middle of the CWCS prioritization scale. Within the Study Area, these habitats are continuous with BLM lands that are important to a wide range of wildlife including big game, rodents, lizards, snakes, upland game birds, raptors, and songbirds. As previously illustrated, portions of the Study Area overlap designated greater sage-grouse brood, occupied, and winter habitats. In 2013 the State of Utah completed a conservation plan for greater sage-grouse (UDWR 2013). The plan includes measurable objectives to maintain habitat acreage and spatial distribution of the species and to increase the population size.

The highest priority CWCS habitats found in the Study Area are the emergent marsh and riparian habitats. Riparian-wetland vegetation types are located in the bays where washes and riparian corridors drain to Red Fleet Reservoir. Despite a limited amount of riparian-wetland vegetation types and their fragmented nature, these habitats add substantially to the biological diversity of the Study Area by attracting a diverse assemblage of wildlife species that otherwise would not occur. Riparian-wetland habitats are considered a limited resource in the surrounding arid environment and are valuable to species of waterfowl, shorebirds, passerines, and amphibians.

In general, factors that negatively influence wildlife habitat condition in the Study Area are disturbance from recreation use, introduction of invasive plants and animals, and reservoir water management. Recreational use may cause disturbance to and displacement of wildlife, and can degrade habitat conditions. Disturbance associated with campers, boats, and vehicular traffic

often increases stress to some wildlife that are intolerant of human presence, such as nesting birds. Depending on the level of disturbance, some species may be displaced from the Study Area to adjacent habitats. Recreational use of undeveloped areas can also cause trampling and subsequent fragmentation of habitat, depending on the level and frequency of disturbance. Fluctuating reservoir water levels alter wildlife use in a number of ways. For instance, when water levels are low, species that prefer mudflats and shallow water, such as shorebirds, benefit by having available habitat and prey. Conversely, low water levels can create exaggerated separations of riparian-wetland habitats from open water, negatively affecting habitat quality for other species. When water levels are raised during the breeding season, nesting and roosting sites may become flooded. Fish spawning areas, which are where many birds feed, also vary with the changing water levels. Shore scouring prevents vegetation from becoming established and can facilitate establishment of invasive plants such as saltcedar. These factors can reduce the overall amount of available habitat for some species.

Birds

Migratory birds found within the Study Area are protected under the Migratory Bird Treaty Act of 1918 (MBTA) and Executive Order 13186 (66 FR 3853, January 17, 2001), "Responsibilities of Federal agencies to Protect Migratory Birds." This order directs federal agencies to take certain actions to further implement the MBTA and the Bald and Golden Eagle Protection Act of 1940 as well as other pertinent statutes.

Red Fleet Reservoir receives a substantial amount of bird use during all seasons of the year because of the presence of a complex of open water and upland habitats. This complex provides waterfowl, grebes, and other waterbirds with resources they require, including food items (e.g., fish, macroinvertebrates, and some emergent vegetation) and habitat to loaf and rest. However, protective cover, nest material, and secluded nesting areas are rather limited in the Study Area. Such resources are directly associated with riparian-wetland vegetation types that are larger than 1 acre in size, and therefore are in short supply in the Study Area. The quality of the habitat for waterfowl and other waterbirds is influenced by the high degree of disturbance resulting from recreational use and fluctuating water levels.

Water birds potentially found in the Study Area include common loon (*Gavia immer*), pied-billed grebe (*Podilymbus podiceps*), eared grebe (*Podiceps caspicus*), western grebe (*Aechmophorus occidentalis*), Clark's grebe (*Aechmophorus clarkii*), American white pelican (*Pelecanus erythrorhynchos*), double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodias*), Canada goose (*Branta canadensis*), gadwall (*Anas strepera*), American wigeon (*Anas americana*), mallard (*Anas platyrhynchos*), northern pintail (*Anas acuta*), cinnamon teal (*Anas cyanoptera*), green-winged teal (*Anas carolinensis*), redhead (*Aythya americana*), ring-necked duck (*Aythya collaris*), lesser scaup (*Aythya affinis*), northern shoveler (*Spatula clypeata*), common merganser (*Mergus merganser*), ruddy duck (*Oxyura jamaicensis*), American coot (*Fulica americana*), killdeer (*Charadrius vociferous*), spotted sandpiper (*Actitis macularius*), greater yellowlegs (*Tringa melanoleuca*), willet (*Tringa semipalmata*), Franklin's gull (*Larus pipixcan*), ring-billed gull (*Larus delawarensis*), California gull (*Larus californicus*), and Forster's tern (*Sterna forsteri*). Waterfowl hunting is allowed at Red Fleet according to current UDWR waterfowl hunting guidebook regulations (see Figure 3-15).

Raptors, such as red-tailed hawk (*Buteo jamaicensis*), osprey (*Pandion haliaetus*), great-horned owls (*Bubo virginianus*), barn owl (*Tyto alba*) and American kestrel (*Falco sparverius*), likely occur throughout the Study Area, particularly in the cottonwood (*Populus* sp.) around the reservoir edges. The upland areas provide an abundance of small mammal prey, such as deer mouse (*Peromyscus maniculatus*) and gopher (*Thomomys* spp.). Peregrine falcon (*Falco peregrinus*) have nested in the Study Area (Maxfield 2012). Bald eagle (*Haliaeetus leucocephalus*) commonly winter on the reservoir. Golden eagle (*Aquila chrysaetos*) has been documented nesting along the cliffs on the north end of Red Fleet Reservoir (Maxfield 2012). Both eagle species are given special protection under the Bald and Golden Eagle Protection Act, which prohibits the take of birds, their parts, nests, or eggs without a permit.

Although hunting greater sage-grouse is allowed in Utah, the species is listed as sensitive by the state and is considered a candidate species by the federal government (UDWR 2009a). Sage-grouse use of the Study Area vicinity is somewhat limited, and occurs most often in winter (Maxfield 2012).

Songbirds using habitat in the Study Area could include yellow-rumped warbler (*Dendroica coronata*), black-capped chickadee (*Poecile atricapillus*), mountain bluebird (*Sialia currucoides*), white-crowned sparrow (*Zonotrichia leucophrys*), chipping sparrow (*Spizella passerina*), and song sparrow (*Melospiza melodia*).

Other species of birds using the Study Area include mourning dove (*Zenaida macroura*), northern flicker (*Colaptes auratus*), Steller's jay (*Cyanocitta stelleri*), pinyon jay (*Gymnorhinus cyanocephalus*), western scrub-jay (*Aphelocoma californica*), black-billed magpie (*Pica hudsonia*), common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), tree swallow (*Tachycineta bicolor*), violet-green swallow (*Tachycineta thalassina*), northern rough-winged swallow (*Stelgidopteryx serripennis*), cliff swallow (*Hirundo pyrrhonota*), wild turkey (*Meleagris gallopavo*), and common nighthawk (*Chordeiles minor*).

The Study Area includes UDWR-delineated habitat for two game bird species, California quail (*Callipepla californica*) and chukar (*Alectoris chukar*). Hunting does not generally occur for these species within the Study Area boundary, so the area may provide a useful refuge for these species, if they are present.

Mammals

The Study Area provides habitat for a number of mammal species, including big game, small mammals, bats, and others. The pinyon-juniper, sagebrush and grassland habitats serve as both summer and winter habitat for mule deer and winter habitat for elk. Moose (*Alces alces*) may use stream drainages associated with the Red Fleet Reservoir, and predators such as black bear (*Ursus americanus*), mountain lion (*Felis concolor*), and coyote (*Canis latrans*) are also found in the area. Big game hunting is not allowed within the Study Area, which may provide important refuge for these species during hunting season.

Other mammals potentially found within the Study Area include dwarf shrew (*Sorex nanus*), Merriam's shrew (*Sorex merriami*), mountain cottontail (*Sylvilagus nuttalli*), white-tailed jackrabbit (*Lepus townsendii*), beaver (*Castor canadensis*), porcupine (*Erethizon dorsatum*), northern pocket gopher (*Thomomys talpoides*), Ord's kangaroo rat (*Dipodomys ordii*), brush

mouse (*Peromyscus boylii*), canyon mouse (*Peromyscus crinitus*), deer mouse, pinyon mouse (*Peromyscus truei*), long-tailed vole (*Microtus longicaudus*), muskrat (*Ondatra zibethicus*), cliff chipmunk (*Neotamias dorsalis*), Hopi chipmunk (*Neotamias rufus*), least chipmunk (*Neotamias minimus*), Uinta chipmunk (*Neotamias umbrinus*), yellow-bellied marmot (*Marmota flaviventris*), red fox (*Vulpes vulpes*), ringtail (*Bassariscus astutus*), raccoon (*Procyon lotor*), American mink (*Mustela vison*), badger (*Taxidea taxus*), long-tailed weasel (*Mustela frenata*), and bobcat (*Lynx rufus*). Northern river otter (*Lontra canadensis*) breed at Red Fleet Reservoir and along Big Brush Creek, both above and below the reservoir (Maxfield 2012). A small number of white-tailed prairie dog (*Cynomys leucurus*) can be found in the basin on the southwest side of the reservoir (Maxfield 2012).

The Study Area supports a number of bat species because of the availability of a stable insect prey source associated with the reservoir and the riparian-wetland habitats along Big Brush Creek and the reservoir shoreline. Both spotted bat (*Euderma maculata*) and big free-tailed bat (*Nyctinomops macrotis*) have been detected during acoustic surveys just above the reservoir along Big Brush Creek (Maxfield 2012). Other potential species include big brown bat (*Eptesicus fuscus*), little brown myotis (*Myotis lucifugus*), and long-eared myotis (*Myotis evotis*).

Herpetofauna

Suitable habitat for amphibians at Red Fleet is very limited. The relatively degraded riparian-wetland habitats are small and disturbed, but it is likely that some species thrive within the Study Area, particularly those that are tolerant of arid conditions, such as the Great Basin spadefoot (*Spea intermontana*). Other potentially occurring species within the Study Area include boreal chorus frog (*Pseudacris maculata*), tiger salamander (*Ambystoma tigrinum*), and northern leopard frog (*Lithobates pipiens*). Reptile species that potentially occur throughout the Study Area in the upland and riparian-wetland habitats include common sagebrush lizard (*Sceloporus graciosus*), eastern fence lizard (*Sceloporus undulates*), greater short-horned lizard (*Phrynosoma hernandesi*), Great Basin gophersnake (*Pituophis catenifer deserticola*), eastern racer (*Coluber constrictor*), midget faded rattlesnake (*Crotalus concolor*), milksnake (*Lampropeltis triangulum*), striped whipsnake (*Masticophis taeniatus*), and prairie rattlesnake (*Crotalus viridis*). Several species of garter snake (*Thamnophis* spp.) are also likely present.

Fisheries

Red Fleet Reservoir is managed as a put-and-take fishery and stocked with rainbow trout (*Oncorhynchus mykiss*) every year; however, the reservoir also contains other species, including some warmwater species that have been illegally introduced. This section discusses existing fishery conditions, including aquatic invasive species. Sources of information consulted to develop this assessment of existing conditions included UDWR reports, published literature, consultations with agency personnel, and field observations made during a site visit in October 2011.

Red Fleet Reservoir is considered an oligotrophic-mesotrophic reservoir and has low turbidity (UDWQ 2011a). This means that the reservoir has a low nutrient content for supporting organisms. The water body also experiences thermal and chemical stratification in the summer months, with the top-most layer becoming too warm to support coldwater fish species. The deepest water layer experiences nutrient loading (sink), but nutrient levels nearer the surface do not appear to exceed state pollution thresholds (UDWQ 2008).

The shoreline habitat of Red Fleet Reservoir has intermixed vegetated and nonvegetated slopes, in addition to a few areas that have been stabilized with riprap (e.g., the dam). The majority of the topography is steep sloping shorelines and cliffs. Much of the habitat in the form of fish cover is represented by boulders or large cobble submerged along the shoreline. Inundated and emergent vegetation is present in the shallow coves and inflow areas. The largest area of submerged vegetation occurs in the northern end of the lake at the Big Brush Creek inflow. Shallow, marsh-like habitat is also present at the mouth of Cottonwood Wash east of the dam. Low-water years could produce limited cover for all life stages of fish because there is little shoreline vegetation present.

Although standard water quality parameters don't seem to indicate impairment to the aquatic biota (UDWQ 2011a), the UDEQ has issued a mercury fish consumption advisory on Red Fleet Reservoir as of August 2011. This finding advises that pregnant women do not eat walleye (*Sander vitreus*) greater than 12 inches, and adults to limit their consumption to two 8-ounce servings per month (UDEQ 2011). Although mercury is a naturally occurring element, it can transform into toxic methyl mercury. Chronic exposure in low concentrations can lead to neurological effects in developing fetuses and children. Although mercury may be found in low concentrations in Red Fleet Reservoir, it bioaccumulates and biomagnifies through the food web. Therefore, secondary consumers contain higher concentrations (and sometimes toxic concentrations) than that found in the water column (Morel et al. 1998). There are no health risks associated with other uses of Red Fleet Reservoir, including swimming (UDEQ 2011).

With the presence of selenium throughout the Big Brush Creek drainage, there is potential for elevated selenium levels to occur in Red Fleet Reservoir. Selenium accumulated in fish tissue could result in consumption advisories for harvested fish. Selenium has also shown to cause malformations in fish that may hinder their reproductive capacity (Lemly 1998).

Fish Species

Fishery biologists and managers use the Statewide Aquatic Habitat Classification System to rate stream sections and water bodies according to aesthetic, access, and productivity characteristics. Ratings within these categories are then totaled, weighed, and given a numeric rating from 1 to 6. Big Brush Creek near the confluence of Red Fleet Reservoir has been classified as a Class 3 body of water (Crosby and Bartlett 2005). A brief description of each class is as follows:

- **Class 1** waters are top-quality fisheries that should be preserved and improved for angling and recreational use. These areas are accessible by vehicle, with blue ribbon trout fishing and excellent productivity that supports large fish populations of one or more species of sportfish.

- **Class 2** waters also provide excellent fishing but are lacking in one category. Many of these waters are comparable to Class 1 waters, except are smaller in size. Water fluctuations may differentiate these waters from Class 1 streams.

- **Class 3** waters are very important because they comprise about half of the total stream fishery habitat and support the majority of recreational fishing in Utah.

- **Class 4** waters are usually poor in quality with limited fishery habitat. These waters are usually small and have poor scenic value with a short growing season. Drawdown or dewatering may occur. Stocking of catchable-sized fish are required to maintain the fishery.

- **Class 5** waters are of little value to the sport fishery due to the degradation of the natural environment from human development. A long-term sport fishery cannot be established by natural or artificial means.

- **Class 6** waters are those streams that are dewatered for a significant period each year.

Sport species in Utah water bodies are given a management classification in addition to the aquatic habitat classification. The management classifications denotes how a species or group of species is managed relative to fishing pressure, fish production of the system, and presence of wild fish, species of special concern, or trophy fishery conditions. The stream section of Big Brush Creek adjacent to Red Fleet reservoir is managed as a wild-fish water, in which fish species and habitat dictate what can naturally be produced and sustained. Fish within these waters reproduce naturally, and fishing opportunities are sustained rather than managed. Red Fleet Reservoir is managed with a Basic Yield classification for rainbow trout (*Oncorhynchus mykiss*) and largemouth bass (*Micropterus salmoides*). Basic Yield Waters are those that provide fishing opportunities in areas where angling pressure is extensive or where habitat is marginal for fishery success (Crosby and Bartlett 2005).

Red Fleet Reservoir is managed primarily as a put-and-take fishery for rainbow trout, although there are brown trout (*Salmo trutta*) present that have entered the reservoir via Big Brush Creek. Due to illegal stockings of black bass (*Micropterus* spp.) and sunfish (*Lepomis* spp.), Red Fleet Reservoir is managed as a two-story fishery, with both coldwater and warmwater fishes (Johnson and Crosby 1992). The illegal stocking of walleye in 2002 (T. Hedrick 2011, pers. comm.) has become problematic in managing for the rainbow trout fishery because of increased predation (Boren 2011).

Fish assemblages for Red Fleet Reservoir have varied historically but currently support eight species of fish representing four families (Table 3-11). Coldwater fish species consist of rainbow trout and brown trout, while warmwater species of largemouth bass, smallmouth bass (*Micropterus dolomieu*), green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), and walleye have inhabited Red Fleet Reservoir by way of introduction. Red Fleet Reservoir also harbors a population of flannelmouth sucker (*Catostomus latipinnis*) that was thought to have been trapped in the reservoir from Big Brush Creek during dam construction. Specific bag and possession limits do exist for sport fish on the reservoir; however, length limits are not imposed (Table 3-12).

Because Red Fleet Reservoir is a put-and-take trout fishery, the reservoir is stocked annually with rainbow trout. Stockings occur in spring or fall and have varied from approximately 60,000 to 15,000 fish per year since 2002 (Table 3-13) (UDWR 2011a).

Experimental gill netting in 2010 and 2011 showed highest catch rates for rainbow trout and walleye, although relatively few individuals were captured either year. Largemouth bass and

Table 3-11. Fish Species Occurring in Red Fleet Reservoir.

COMMON NAME (*SCIENTIFIC NAME*)	STATUS
Family Catostomidae—Suckers	
flannelmouth sucker (*Catostomus latipinnis*)	Native/CS[a]
Family Salmonidae—Trout	
brown trout (*Salmo trutta*)	Introduced
rainbow trout (*Oncorhynchus mykiss*)	Introduced
Family Centrarchidae—Sunfishes	
bluegill (*Lepomis macrochirus*)	Introduced
largemouth bass (*Micropterus salmoides*)	Introduced
green sunfish (*Lepomis cyanellus*)	Introduced
smallmouth bass (*Micropterus dolomieu*)	Introduced
Family Percidae—Perch	
walleye (*Sander vitreus*)	Introduced

Source: E. Johnson 2011, pers. comm.
[a] CS = species receiving special management in Utah under a conservation agreement in order to preclude the needs for federal listing.

Table 3-12. Daily Bag and Size Limits for Sportfish in Red Fleet Reservoir.

SPECIES	LIMIT
bluegill and green sunfish [a]	50 in aggregate
largemouth bass and smallmouth bass [a]	6 in aggregate
trout in aggregate [a]	4
walleye [a]	No limit. All walleye must immediately be killed.

Source: UDWR (2011b).
[a] No minimum or maximum size limit.

Table 3-13. Rainbow Trout Stocking Records (2002–2011) in Red Fleet Reservoir.

YEAR	NUMBER STOCKED	SIZE (inches)
2002	no stocking record	-
2003	62,239	6
2004	20,008	8
2005	30,150	3 and 8
2006	19,989	8
2007	20,420	9
2008	15,064	8 and 10
2009	no stocking record	-
2010	20,007	8
2011	20,007	8

Source: UDWR (2011a).

bluegill were also captured during sampling events for both years. One flannelmouth sucker (536 mm) was also captured in 2010. It appears that several year classes of walleye and largemouth bass exist in the reservoir, indicating that natural reproduction and recruitment are occurring (E. Johnson 2011, pers. comm.; Johnson 2010).

Aquatic Nuisance and Invasive Species

Aquatic nuisance and invasive species (AIS) are defined as water-associated, nonnative plant and animal species that threaten diversity or abundance of native species due to a variety of ecological factors. There are numerous AIS already occurring in Utah waters with others threatening immediate arrival. Red Fleet Reservoir is among the Utah water bodies that are susceptible to AIS introductions. (UDWR 2009b).

Quagga Mussel Invasive mussels are a threat throughout Utah and in other states because they can be transported in boats and equipment, reproduce rapidly, deplete nutrients in the water, and are costly to control (UDWR 2012a). Quagga mussel (*Dreissena bugensis*) veligers were found and later confirmed with DNA testing (PCR) in 2008 in Red Fleet Reservoir. The UDWR immediately established monitoring efforts and a boat-washing program; however, subsequent testing has been negative for DNA, adults, or larval quagga mussel. Consequently, the State of Utah downlisted Red Fleet Reservoir from "detected" to "inconclusive" in 2012 (Dalton 2012).

Pathogens Whirling disease is a condition caused by the parasite *Myxobolus cerebralis.* This pathogen has been detected in other Utah waters (UDWR 2009b), but has not been found in Red Fleet Reservoir or Big Brush Creek to date. While rainbow trout are very susceptible to this pathogen, the disease is mostly detrimental to smaller fish. It is unlikely that catchable-sized fish stocked in Red Fleet Reservoir would show deformities should the pathogen occur.

Nonnative Fish Species The fishery at Red Fleet Reservoir has been changing as a result of illegal introductions of bass, sunfish, and walleye (T. Hedrick 2011, pers. comm.). This has resulted in decreased catch rates for rainbow trout, which were originally stocked for a put-and-take fishery. Although bass, sunfish, and walleye are considered sportfish throughout the state, they are nuisance species and invasive in nature.

Threatened, Endangered, and Other Special-Status Species

This section provides an assessment of special-status species known to occur in Uintah County and the likelihood of occurrence in the Study Area. This includes consideration of state-listed, special-status species as well as any federally listed endangered, threatened, or candidate species.

Plants

The vegetation communities associated with Red Fleet Reservoir have the potential to support listed plant species of concern (state and federal) that have known distributions in Uintah County. These species are listed in Table 3-14. Potential occurrence of these species is based on the existence of appropriate, or seemingly appropriate, habitat within the Study Area. Not all potential habitats will be appropriate for species presence. Because of the specific habitat needs of each species, it is likely that only micro-habitats within the vegetation classifications will be appropriate for rare occurrence. Field surveys, prior to implementation of any new facilities, would be to determine presence or absence of these species; site-specific impacts are not addressed in this EA.

Table 3-14. Rare Plant Species with Potential to Occur at Red Fleet Reservoir.

COMMON NAME	SCIENTIFIC NAME	GLOBAL RANK [a]	STATE RANK [b]	FEDERAL STATUS
Graham's columbine	*Aquilegia grahamii*	G1	S1	
park rockcress	*Arabis vivariensis*	G2G3	S1	
horseshoe milkvetch	*Astragalus equisolensis*	G5	S1	
Hamilton's milkvetch	*Astragalus hamiltonii*	G1	S1	
canyonlands sedge	*Carex curatorum*	G2	S2	
Ownbey thistle	*Cirsium ownbeyi*	G3	S1	
Graham's cryptantha	*Cryptantha grahamii*	G3	S3	
giant helleborine	*Epipactis gigantea*	G3	S2S3	
orchard snakeweed	*Gutierrezia pomariensis*	G2G3	S2S3	
Garrett bladderpod	*Lesquerella garrettii*	G2	S2	
large yellow evening primrose	*Oenothera flava* var. *acutissima*	G2	S2	
Uinta parrya	*Parrya rydbergii*	G3Q	S3	
Flowers' penstemon	*Penstemon flowersii*	G1	S1	
Goodrich's penstemon	*Penstemon goodrichii*	G2	S2	
Graham's penstemon	*Penstemon grahamii*	G2	S2	Proposed Threatened
white river penstemon	*Penstemon scariosus* var. *albifluvis*	G4	S1	Candidate
alcove bog-orchid	*Platanthera zothecina*	G2	S2	
shrubby reed-mustard	*Schoenocrambe suffrutescens*	G1	S1	Endangered
pariette cactus	*Sclerocactus brevispinus*	G1	S1	Threatened
Uinta basin hookless cactus	*Sclerocactus wetlandicus*	G3	S3	Threatened
Ute ladies tresses	*Spiranthes diluvialis*	G2	S1	Threatened
Uinta wirelettuce	*Stephanomeria tenuifolia* var. *uintaensis*	G5	S1	
sterile yucca	*Yucca sterilis*	G4G5	?	
alcove death camas	*Zigadenus vaginatus*	G2	S2	

Source: UDWR (2012b).

[a] Global Ranking: G1-Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors. G2-Imperiled—At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors. G3- Vulnerable—At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors. G4-Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors. G5-Secure—Common; widespread and abundant. GQ-Questionable taxonomy that may reduce conservation priority— Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank. The "Q" modifier is only used at a global level and not at a national or subnational level.

[b] State Ranking: S1-Critically Imperiled—Critically imperiled in the jurisdiction because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction. S2-Imperiled—Imperiled in the jurisdiction because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction. S3-Vulnerable—Vulnerable in the jurisdiction due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation.

Many of the rare plant species have the potential to occur in more than one vegetation community type. The vegetation communities with the highest number of potential rare plant species are Mixed Low Sagebrush Shrubland (10 species), Pinyon-Juniper Woodland (8 species), and Shrub Steppe (8 species). Conversely, Emergent Marsh, Wash, Invasive Riparian, and the disturbed vegetation communities do not have the potential for rare plant occurrence.

Bedrock Canyon and Tableland vegetation type has the potential to support Graham's columbine (*Aquilegia grahamii*), Canyonlands sedge (*Carex curatorum*), Flowers' penstemon (*Penstemon flowersii*), Uinta Basin hookless cactus (*Sclerocactus wetlandicus*), and alcove death camas (*Zigadenus vaginatus*). Pinyon-Juniper Woodland has the potential to support park rockcress (*Arabis vivariensis*), Hamilton's milkvetch (*Astragalus hamiltonii*), Ownbey thistle (*Cirsium ownbeyi*), Graham's cryptantha (*Cryptantha grahamii*), White River penstemon (*Penstemon scariosus* var. *albifluvis*), pariette cactus (*Sclerocactus brevispinus*), Uinta wirelettuce (*Stephanomeria tenuifolia* var. *uintaensis*), and sterile yucca (*Yucca sterilis*). Sagebrush shrubland has the potential to support horseshoe milkvetch (*Astragalus equisolensis*), Ownbey thistle, Graham's cryptantha, Garrett bladderpod (*Lesquerella garrettii*), White River penstemon, shrubby reed-mustard (*Schoenocrambe suffrutescens*), and sterile yucca. Mixed Low Sagebrush Shrubland has the potential to support park rockcress, horseshoe milkvetch, Hamilton's milkvetch, Graham's cryptantha, orchard snakeweed (*Gutierrezia pomariensis*), Uinta parrya (*Parrya rydbergii*), alcove bog-orchid (*Platanthera zothecina*), shrubby reed-mustard, Uinta basin hookless cactus, and sterile yucca. Shrub steppe has the potential to support park rockcress, Hamilton's milkvetch, Uinta parrya, Goodrich's penstemon (*Penstemon goodrichii*), Graham's penstemon, shrubby reed-mustard, pariette cactus, and Uinta basin hookless cactus. Riparian areas have the potential to support giant helleborine (*Epipactis gigantea*), and Ute lady's tresses (*Spiranthes diluvialis*). Subalpine meadow has the potential to support Garrett bladderpod, and large yellow evening primrose (*Oenothera flava* var. *acutissima*).

There are two occurrences of Ute lady's tresses reported on private land near the Inflow Area. Populations are described as occurring in riparian habitat in moist soil conditions. These occurrences were last observed in 2007. Field investigations are needed to determine current health of documented populations and further investigate additional potential habitats for species presence or absence on Reclamation lands (UDWR 2012b; Defreese 2012).

Wildlife

Threatened and endangered and state-listed wildlife species listed in Table 3-15 that are known or suspected to occur within or near the Study Area are discussed below. Although Mexican spotted owl (*Strix occidentalis lucida*) and the Canada lynx (*Lynx canadensis*) were noted by the USFWS as potentially occurring in the Study Area, suitable habitat (i.e., mature coniferous forest) is not present. Similarly, the black-footed ferret (*Mustela nigripes*) is listed as an endangered species in Uintah County and is listed because portions of Uintah County were part of its historical range, and because there is a reintroduced colony in Coyote Basin on the east side of the county (UDWR 2012b). However, there is no suitable habitat or prey base for black-footed ferret within the Study Area.

Table 3-15. State and Federally Listed Threatened, Endangered, or Sensitive Wildlife and Fish Species Occurring in Uintah County.

COMMON NAME	SCIENTIFIC NAME	STATUS [a]	POTENTIAL TO OCCUR IN THE STUDY AREA
	Birds		
American white pelican	*Pelecanus erythrorhynchos*	SPC	YES
bald eagle	*Haliaeetus leucocephalus*	SPC	YES
bobolink	*Dolichonyx oryzivorus*	SPC	NO
burrowing owl	*Athene cunicularia*	SPC	YES
ferruginous hawk	*Buteo regalis*	SPC	YES
greater sage-grouse	*Centrocercus urophasianus*	S-ESA	YES
Lewis's woodpecker	*Melanerpes lewis*	SPC	NO
long-billed curlew	*Numenius americanus*	SPC	NO
mountain plover	*Charadrius montanus*	SPC	NO
northern goshawk	*Accipiter gentilis*	CS	NO
Mexican spotted owl	*Strix occidentalis lucida*	S-ESA	NO
short-eared owl	*Asio flammeus*	SPC	NO
three-toed woodpecker	*Picoides tridactylus*	SPC	NO
yellow-billed cuckoo	*Coccyzus americanus*	S-ESA	NO
	Mammals		
big free-tailed bat	*Nyctinomops macrotis*	SPC	YES
black-footed ferret	*Mustela nigripes*	S-ESA	NO
brown (grizzly) bear	*Ursus arctos*	S-ESA	NO
Canada lynx	*Lynx canadensis*	S-ESA	NO
fringed myotis	*Myotis thysanodes*	SPC	NO
kit fox	*Vulpes macrotis*	SPC	NO
spotted bat	*Euderma maculatum*	SPC	YES
Townsend's big-eared bat	*Corynorhinus townsendii*	SPC	POSSIBLE
white-tailed prairie-dog	*Cynomys leucurus*	SPC	YES
	Reptiles		
cornsnake	*Elaphe guttata*	SPC	NO
smooth greensnake	*Opheodrys vernalis*	SPC	NO
	Fish		
bluehead sucker	*Catostomus discobolus*	CS	NO
bonytail	*Gila elegans*	S-ESA	NO
Colorado pikeminnow	*Ptychocheilus lucius*	S-ESA	NO
Colorado River cutthroat trout	*Oncorhynchus clarkii pleuriticus*	CS	NO
flannelmouth sucker	*Catostomus latipinnis*	CS	YES
humpback chub	*Gila cypha*	S-ESA	NO
razorback sucker	*Xyrauchen texanus [Abbott]*	S-ESA	NO
roundtail chub	*Gila robusta*	CS	NO

Source: UDWR (2012b).
[a] S-ESA = federally-listed or candidate species under the Endangered Species Act. SPC = wildlife species of concern to the State of Utah; CS = species receiving special management under a conservation agreement in order to preclude the needs for federal listing.

Habitat for the western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is characterized by dense lowland riparian areas with a dense sub-canopy of shrubs. These birds nest in lower to mid elevations from 2,500–6,000 feet and typically require large, 100-200-acre tracts of contiguous riparian habitat for nesting (Hughes 1999). It is unlikely that the western yellow-billed cuckoo would nest within the Study Area. Occurrences would be temporary and infrequent because of recreational use and lack of suitable habitat.

As previously illustrated in Figure 3-15, UDWR lists the northern edge and the lower southeast corner of the Study Area as being occupied habitat for greater sage-grouse. These large game birds inhabit dry upland areas such as foothills and mountain valleys. They are a sagebrush obligate species, and require sagebrush during most of their life cycle. Optimal habitat also includes an understory of grasses and forbs, and is usually associated with some wet meadow habitat (Schroeder et al. 1999; UDWR 2009a).

Fish

The federally listed fish species occurring in the area of influence of Red Fleet Reservoir are bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and razorback sucker (*Xyrauchen texanus* [Abbott]). Although none of these endangered fish species are known to occur in Red Fleet Reservoir or Big Brush Creek above the reservoir (M. Breen 2011, pers. comm.), any water depletions from any portion of the Upper Colorado River Basin could jeopardize the continued existence of (or adversely modify the critical habitat of) the four endangered fish species of the Colorado River, and so such actions must be evaluated with regard to criteria described in the Upper Colorado River Endangered Fish Recovery Program (USFWS 1987).

State-listed sensitive fish species likely to have occurred historically in the Big Brush Creek drainage basin include flannelmouth sucker, bluehead sucker (*Catostomus discobolus*), and roundtail chub (*Gila robusta*). Currently, bluehead sucker can be found downstream of Red Fleet Reservoir near the confluence of the Green River, while flannelmouth sucker occur within Red Fleet Reservoir and likely upstream from the reservoir in Big Brush Creek. Roundtail chub, which currently occur in the Green River, were likely found in the lower portion of Big Brush Creek historically (Bosworth 2003, UDWR 2006). Roundtail chub are not currently found in Red Fleet Reservoir (Crosby and Bartlett 2005).

It was thought that the flannelmouth sucker currently inhabiting Red Fleet Reservoir were likely individuals impounded in the reservoir after dam construction. This would mean that these individuals would be 30 years old or more. Although flannelmouth sucker are a long-lived fish, recent studies indicate an average life span of 10 years (Sigler and Sigler 1996). Recent preliminary aging data from pectoral fin rays from two individuals captured in Red Fleet Reservoir determined these fish to be 7–8 years old. This data is still being verified (M. Breen 2011, pers. comm.). It is most likely that individuals were impounded in the reservoir and a small population has recruited. It is likely that spawning habitat exists within Big Brush Creek and near the inflow of Big Brush Creek to Red Fleet Reservoir. This is an important issue when considering the removal of unwanted fish species via chemical treatment, should this ever be warranted.

Cultural Resources

Cultural resources are defined as physical or other expressions of human activity or occupation. Such resources include culturally significant landscapes, prehistoric and historic archaeological sites as well as isolated artifacts or features, traditional cultural properties, Native American and other sacred places, and artifacts and documents of cultural and historic significance. Section 106 of the National Historic Preservation Act of 1966 (NHPA) mandates that Reclamation take into account the potential effects of a proposed federal undertaking on historic properties, such as a "Federal Action" in accordance with the National Environmental Policy Act (NEPA). Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for, inclusion in the National Register of Historic Places (NRHP). Potential effects of the described alternatives on historic properties are the primary focus of this analysis.

The affected environment for cultural resources is identified as the area of potential effects (APE), in compliance with the regulations to Section 106 of the NHPA (36 CFR 800). The APE is defined as the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties. The APE for the undertaking (proposed action) includes the entire Study Area.

Culture History Overview

The Study Area lies on the border between the Uinta Mountains, an east-west trending, 150-mile-long mountain range in northeastern Utah and the distinctly bowl-shaped region known as the Uinta Basin. Both the Uinta Mountains and Uinta Basin are sections of what geologist William Lee Stokes refers to as the Colorado Plateau physiographic province (1986). The general culture history of the Study Area described below is based on the broader cultural chronological sequence of the Uinta Basin.

Archaeological evidence of human occupation in the Uinta Basin extends as far back as about 11,000 years ago, the beginning of what is generally referred to as the PaleoIndian Period (ca 13,000 BP–6,000 BC). The PaleoIndian Period is characterized by human adaptation to terminal Pleistocene environments and the exploitation of various extinct and modern megafauna (Lower-Eskelson 2007). A deficiency in evidence of plant procurement as well as repeated or longer-term occupation suggests that PaleoIndian populations in the Uinta Basin were highly mobile. Although distinctive artifacts typically associated with the hunting of Pleistocene megafauna have been discovered in the Uinta Basin, there remains a lack of stratified sites exhibiting evidence of human occupation prior to about 6,000 BC. PaleoIndian projectile points from the Uinta Basin (i.e., Clovis, Folsom, Goshen, Agate Basin, Hell Gap, Eden-Scottsbluff, and Alberta-Cody), however, are identical to those from the northwestern plains region of the North America, which have been recovered in chronometrically dated contexts from this period (Spangler 1995). As a result, even though a detailed account of the nature and extent of human occupation in the Uinta Basin during the PaleoIndian Period remains difficult without sufficient site data, the existence of these projectile points implies that the area was inhabited during the PaleoIndian Period.

The next period in the cultural chronological sequence of the Uinta Basin is known as the Early Archaic Period (ca 6,000 BC– 3,000 BC). According to Jennings (1978), a shift to a "mobile hunting-collecting way of life" marks the transition from the PaleoIndian to the Early Archaic

Period. In addition, new projectile point types also appear during the Early Archaic Period (i.e., Pinto Series, Humboldt, Elko Series, Northern Side-Notched, Hawken Side-Notched, Sudden Side-Notched, and Rocker Base Side-Notched). This change in projectile point production is seen by some as a reflection of the development of the atlatl for the pursuit of smaller, faster game (Holmer 1986). The discovery of projectile points characteristic of the Early Archaic Period in association with temporary camps and lithic scatters suggests human occupations in the region were sporadic. The Early Archaic inhabitants of the Uinta Basin likely practiced nomadic exploitation of local resources in small groups based on seasonal and locational availability (Spangler 1995). Although cultural remains from the PaleoIndian and Early Archaic Periods remain sparse in the Uinta Basin, dozens of archaeological sites representing the next cultural chronological sequence period, the Middle Archaic, exist in the region.

The shift from the Early Archaic to the Middle Archaic Period in the Uinta Basin is demonstrated by an increase in human populations and the appearance of the distinctive McKean Complex projectile points (Spangler 1995). The Middle Archaic Period (ca 3,000 BC–500 BC) sites illustrate cultural influences from the plains region of North America. The continued production and use of Elko Series projectile points, however, indicates cultural influences from the Great Basin and/or northern Colorado Plateau as well (Spangler 1995). Most researchers agree that Middle Archaic populations in the Uinta Basin were mobile foragers whose subsistence patterns included predominantly hunting, supplemented with gathering. This theory is supported by the fact that no permanent settlements have been discovered in the region, although a few semi-permanent base camps have been noted. Middle Archaic Period subsistence activities were likely conducted within the context of small bands. These small bands hunted game and procured locally available floral resources from one of these semi-permanent base camps (Spangler 1995). As the Middle Archaic Period transitioned into the Late Archaic Period, the subsistence strategies and settlement patterns that are generally associated with the Early and Middle Archaic Periods began to change.

As the Late Archaic Period (ca 500 BC–AD 550) began, McKean Complex projectile points vanish. Semi-subterranean residential structures began to appear regularly at base camps beginning around AD 1. At the same time, the introduction of maize horticulture, the bow and arrow, and Rose Spring arrow points suggest that, in addition to the traditional Archaic mobile hunter-gatherer subsistence strategies prevalent during the Early and Middle Archaic Periods, a new strategy incorporating horticulture and a more sedentary lifestyle emerged (Spangler 1995). The Archaic Periods were followed by a series of Formative Stage cultures, groups that were even more dependent on foods produced through horticulture (Jennings 1978).

The Formative Stage (ca AD 550–AD 1300) and the "Fremont culture," a term generally associated with the people of the Formative Stage, remains the most thoroughly investigated period of the cultural chronological sequence of the Uinta Basin. Even with the breadth of research associated with the Formative Stage, important questions regarding temporal ranges, geographic distribution, settlement patterns, and subsistence strategies, to name a few, remain unanswered. Some broad distinctions, however, can be made between the Late Archaic Period and the Formative Stage. In addition to a greater, perhaps dominant, importance placed on horticulture as a subsistence strategy, one such distinction involves an increase in the complexity of residential architecture. Architectural advancements include prepared clay floors, adobe-

rimmed firepits, and coursed-masonry architecture (Spangler 1995). An increase in the size of food-storage structures, typically associated with food surplus, also demarcates the Formative Stage. The manifestation of small villages and farmsteads, elaborate rock art and figurines, and ceramics suggest an "enhanced social complexity" during this period (Spangler 1995:453).

In the Uinta Basin, specifically, the Fremont culture is characterized by "shallow, saucer-shaped pithouses or surface structures with randomly placed potholes and off-center firepits, some of which were adobe-rimmed" (Spangler 1995). Surface storage structures were nearly absent and Uinta Gray ceramics dominated all other types. Uinta Gray ceramics were constructed using a coil-and-scrape method are almost exclusively tempered with crushed calcite (Madsen 1977). Unlike the Fremont cultures in other portions of Utah, the Uinta Basin Fremont did not use the Utah-type metate, nor did they produce unfired clay figurines. Gilsonite, a natural asphalt found only in the Uinta Basin, was used to repair broken ceramics (Marwitt 1970). The use of gilsonite marks another distinguishing feature of the Uinta Fremont. Projectile points used in the Uinta Basin during the Formative Stage include Rose Springs, Cottonwood triangular, Eastgate expanding-stem, and Elko corner-notched varieties. By AD 1300, evidence of the Fremont culture in the Uinta Basin disappears, giving way to what is commonly termed the Protohistoric Period (AD 1300–1650).

The reasons for the disappearance of Fremont culture sites in the Uinta Basin remain unclear. Some researchers postulate that climatic changes or the pressures of other cultural groups entering the region caused the Fremont culture abandonment (Jennings 1978). Others believe that the Fremont culture didn't actually abandon the Uinta Basin, but rather, that Fremont culture peoples coexisted with the new groups, such as the ancestral Ute (Uinta-ats) and Shoshone. A sheer lack of archaeological data associated with the Protohistoric Period in the Uinta Basin leaves many questions about the cultural continuity, or lack thereof, unanswered. Whatever the reasons, evidence points to a disappearance of horticulture and subsequent dominance of a more hunter-gatherer-oriented subsistence strategy, traditionally referred to as Shoshonean or Numic. Although earlier Formative Stage Fremont culture remains turn up at some archaeological sites dating to the Protohistoric Period, the Protohistoric Period material culture in the Uinta Basin, unlike earlier Fremont sites, includes Desert side-notched projectile points, Shoshonean ceramics, and occasionally, basketry and Shoshonean knives. Decidedly different rock art styles from those of the Formative Period also appear (Spangler 1995). One distinct aspect of Protohistoric Period rock art in the Uinta Basin is the representation of the horse. The introduction of the horse into the Uinta Basin cultures occurred sometime during the late stages of the Protohistoric Period. Contact between Euro-American peoples and Native American groups to the south eventually led to the animals' dissemination into the basin. The introduction, and subsequent dependency, of the horse in Protohistoric Period cultures marks the shift to the next period in the cultural chronological sequence of the Uinta Basin.

The Historic Ute Period (ca AD 1650–present) follows the Protohistoric Period. According to Spangler (1995), the Historic Ute Period actually consists of three distinct phases, the Antero Phase (ca AD 1650–1861), the Early Reservation Phase (ca AD 1861–1881), and the Late Reservation Phase (ca AD 1881–present). The Antero Phase is generally classified as the time period when those Protohistoric Period groups living in the Uinta Basin first adopted a lifestyle highly dependent on the horse but prior to their confinement to reservations. Subsistence

strategies during this time continued to include both hunting and gathering, although the introduction of the horse dramatically changed the dynamics of these strategies. Groups in the Uinta Basin became exceptionally mobile, exploiting floral and faunal resources all over Utah. In addition to buffalo, historical accounts reference seasonal hunting forays into the Uinta Basin for fish, fowl, and lacustrine plant resources (Spangler 1995). Small bands of 10 to 40 individuals, and occasionally larger groups numbering in the hundreds, travelled throughout the region hunting and gathering.

Ute peoples during this period experienced rapid social, political, and economic change (Spangler 1995). The aforementioned use of horses contributed greatly to the changes, as did the arrival of Euro-American explorers into the Uinta Basin. According to historical descriptions, the first Euro-American explorers to enter the Uinta Basin were members of the small Spanish expedition from Santa Fe, New Mexico, headed by Fray Silvestre Velez de Escalante and Fray Francisco Atanasio Dominguez. The Dominguez-Escalante expedition traveled through the Uinta Basin in 1776 searching for a land route to Monterey, California. These explorers opened the Uinta Basin to Spanish, and later Mexican, American, and British fur-trappers and traders.

With the arrival of Euro-American explorers came trade with the Ute groups in the Uinta Basin. Euro-American items such as weaponry, blankets, metal utensils, and glass ornaments were often traded for animal furs during the early nineteenth century. This eventually led the Ute peoples to become increasingly dependent upon these trade goods. Euro-American trade with these Native American groups, along with intermarriage between Euro-Americans and the Native American groups in the Uinta Basin, “irreversibly altered traditional lifeways” (Spangler 1995). The practice of slave trading and exacting tribute from traders also became prevalent by the 1830s. Increased territoriality and warfare were among the results of such practices.

Several important U.S. government expeditions (official and unofficial) also visited the Uinta Basin during the Antero Phase, including the Captain John C. Fremont expedition in the 1840s. The government declared that the intent of these expeditions involved surveying and mapping undiscovered western territories (Spangler 1995). The Uinta Basin drew little interest during this initial exploration. Many saw the climate and environment as unsuitable for settlement. In 1852 Mormon leader Brigham Young ordered small survey parties to explore the Uinta Basin to determine the suitability for locating settlements there. Upon their return the survey parties reported that the Uinta Basin was one vast contiguity of waste and measurably valueless (Fuller 1994). As a result Young decided not to send Mormon settlers to the region. Mormon leaders did, however, decide that the Uinta Basin was a suitable region for the relocation of Ute peoples. Near the end of the Antero Phase, the social and political attitudes of the Mormon leaders toward the Native American groups led to their dispossession from their traditional territories around Utah Lake.

Violence resulting from the dispossession and relocation of the Ute peoples resulted in the creation of the first reservation in the Uinta Basin in 1861. The creation of the Uintah Reservation marks the beginning of the Early Reservation Phase of the Historic Ute Period. According to Spangler (1995), this phase is defined as the period when Ute peoples throughout Utah were systematically removed from their traditional territories and forced to live in the Uintah Reservation. The reservation originally included western Uintah County, most of

modern-day Duchesne County, and the Strawberry Valley (Spangler 1995). Ute peoples participated in government-sponsored agricultural projects, and relations on the reservation were relatively peaceful. The arrival of government surveying parties in 1876 and the subsequent arrival of homesteaders to the reservation in the late 1870s, however, led the Ute peoples to suspect a government plan to open the reservation to white settlers. As the Early Reservation Phase came to an end, the Ute culture was experiencing "tremendous social upheaval precipitated by at least three decades of intensive association with Euro-Americans" (Spangler 1995). The Ute peoples of western Colorado were facing similar issues.

By 1881 violence over the dispossession of traditional territories in the region culminated in the forcible relocation of Ute peoples from western Colorado to a new temporary reservation, the Ouray Reservation, in the Uinta Basin. According to Spangler (1995), this marks the beginning of the Late Reservation Phase of the Historic Ute Period. The forced settlement of so many different Ute bands in the Uinta Basin led to serious friction. Increased Mormon settlement in the Uinta Basin continued to promote Ute fears of white settler infiltration of reservation lands. Ute lifeways now included cattle ranching, cultivation of crops, and dairy farming. The Late Reservation Phase was also marked by a decisive plan of enculturation by the U.S. government. Through the use of government-assigned reservation superintendents, Ute peoples were to be made into "carbon-copy white men" (Spangler 1995). The discovery of gilsonite and valuable hydrocarbon resources in the Uinta Basin in the late 1880s led to the withdrawal of 7,000 acres from the Uinta Reservation (Fuller 1994). The subsequent establishment of U.S. military forts and the official opening of the Uintah and Ouray Reservations to white settlement in 1887, with the Dawes Severalty Act, marked the final dispossession of the Ute peoples (Spangler 1995).

With an influx of white settlers (mostly farmers and ranchers) entering the Uinta Basin, complex irrigation systems and additional rangelands were needed. This led to the dispossession of Ute peoples from the reservation lands originally set aside for their exclusive use following their previous dispossession from traditional territories. Initially, livestock represented the main industry of white settlers in the Uinta Basin, likely due to the availability of grass and water in the region. Eventually, the sheep industry boomed, contributing to a decline in the cattle industry (Lower-Eskelson 2007). Commercial oil production began in 1948 but was not fully exploited until the 1970s with increases in the price of crude oil. Consequently, private and public ventures began work to develop an inexpensive process for separating oil from oil shale and tar sands, both prevalent in the Uinta Basin.

Around 1980, international oil prices began to fall and the economic health of the Uinta Basin, based heavily on the oil industry, fell sharply. The development of water resources for other parts of Utah, especially the Wasatch Front, led to another temporary economic stimulus. Today, little evidence of the aforementioned economic flourishes remains (Fuller 1994). What does remain is a fairly small population base of both white farmers and ranchers as wells as Ute peoples on the Uintah and Ouray Reservation, who are supported by a fragile economy based on petroleum and mining. According to Burton (1996), an estimated 30 percent of jobs in the Uinta Basin were related to mining and petroleum.

Existing Cultural Resource Information

A Class I cultural resource literature search was conducted by Reclamation at the Division of State History, Utah State Historic Preservation Office, on October 19, 2011, to identify any

previously conducted cultural resource inventories and recorded cultural resource sites within the Study Area. Files from Reclamation and General Land Office maps were also examined. As a result of the literature search, 14 previously conducted cultural resource inventories and four previously recorded cultural resource sites were identified within the Study Area. The four previously recorded sites are all prehistoric in nature. Two of the sites have been previously determined ineligible for the NRHP, one site has been previously recommended ineligible for the NRHP, and the other site's eligibility was undetermined.

Due to the scarcity of previously recorded sites in the Study Area, the previously recorded sites were revisited and re-recorded by Reclamation's archeologist during the RMP process. In addition, an initial recording of two previously identified prehistoric sites were also performed.

In accordance with 36 CFR 800.4(c), all six sites were evaluated for significance in terms of NRHP eligibility. The significance criteria applied to evaluate cultural resources are defined in 36 CFR 60.4 as follows:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
>
> - that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> - that are associated with the lives of persons significant in our past; or
>
> - that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> - that have yielded, or may be likely to yield, information important in prehistory or history.

Following an evaluation of each site, Reclamation's archeologist has determined that all four of the previously recorded sites are ineligible for the NRHP. Reclamation has determined, however, that the two newly recorded prehistoric sites are eligible for the NRHP under Criteria C and D.

The Red Fleet Reservoir RMP establishes only a conceptual framework for managing cultural resources at Red Fleet Reservoir and does not implement any specific projects. As such, the scope of this RMP focuses on a broad scale of cultural resource impacts associated with the array of alternatives and their broad levels of proposed development within the Study Area. Site-specific cultural resource impacts will be addressed as part of separate NEPA and Section 106 compliance processes prior to the implementation of individual projects proposed as part of the selected RMP; those site-specific impacts are not addressed in this RMP.

Paleontological Resources

Paleontological resources are defined as any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth. Any materials associated with an archaeological resource (as defined in section 3(1) of the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470bb(1)) and any cultural item (as defined in Section 2 of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001)) are not considered paleontological resources. Section 6302 of the Paleontological Resources Preservation Act (PRPA) of 2009 (Sections 6301-6312 of the Omnibus Land Management Act of 2009 [Public Law 111-11 123 Stat. 991-1456]) requires the U.S. Secretary of the Interior to manage and protect paleontological resources on federal land using scientific principles and expertise. The affected environment for paleontological resources is represented by the same proposed action Study Area APE that corresponds to cultural resources.

Paleontological History

The following is a very brief overview of the paleontological history of the Study Area. Due to the extensive nature of the geologic record in the Study Area, a more detailed description of paleontological history has been omitted. Comprehensive paleontological histories are available in various publications specific to the paleontology at Red Fleet Reservoir (Santucci and Zack 2000, Sloan et al. 1980, Hamblin and Bilbey 1999, Hamblin et al. 2000).

The rock formations exposed within the Study Area are of sedimentary origin. These sediments were originally deposited under a variety of environmental conditions, mainly marine in nature. At the end of the Cretaceous period, approximately 65 million years ago, geologic processes created an uplift, resulting in the formation of the Uinta Mountains. This process led to a transition from marine sediments to what we see in the Study Area today, mainly a sequence of sandstones and shales with minor limestones (Sloan et al. 1980). Sedimentary exposures in the Study Area include 11 formations from the Mesozoic era (dating from about 250 million to 65 million years ago). In addition, Quaternary alluvium from the Cenozoic era (dating from about 65 million years ago to present) also appear.

Various paleontological resource types are known to exist within the same formations found in the Study Area. These include, but are not limited to, petrified or carbonized wood, marine vertebrates and invertebrates, and ichnofossils (Santucci and Zack 2000).

Existing Paleontological Resource Information

A paleontological resource file search was conducted by the Utah Geological Survey, at the request of Reclamation, on January 23, 2012, to identify any previously conducted paleontological resource surveys and recorded paleontological resource localities within the Study Area. Files from Reclamation were also examined. Four previously conducted paleontological resource surveys and 57 previously recorded paleontological resource localities were identified within the Study Area during the file search.

Paleontological resources localities within the Study Area include fossil plant remains in the form of petrified wood and gymnosperm branches and needles. Invertebrate remains in the Study Area consist of brachiopods, bivalves, gastropods, ammonoids, and belemnites. Several vertebrate fossils have also been recovered from the Study Area. These include not only fish

scales and a partial fish skeleton, but also pliosaur and plesiosaur remains. Ichnofossils, such as shrimp burrows, ornithopod tracks, and a theropod tracksite, also appear in the Study Area (Santucci and Zack 2000).

The Red Fleet Reservoir RMP will establish only a conceptual framework for managing paleontological resources at Red Fleet Reservoir and does not implement any specific projects. As such, the scope of this RMP focuses on a broad scale of paleontological resource impacts associated with the array of alternatives and their broad levels of proposed development within the Study Area. Site-specific paleontological resource impacts will be addressed as part of separate NEPA and PRPA compliance processes prior to the implementation of individual projects proposed as part of the selected RMP; those site-specific impacts are not addressed in this RMP.

Indian Trust Assets (ITAs)

Indian Trust Assets are legal interests in property held in trust by the United States for Indian tribes or individuals. Trust assets may include lands, minerals, hunting and fishing rights, traditional gathering grounds, and water rights. Impacts to ITAs are evaluated by assessing how the action affects the use and quality of ITAs. Any action that adversely affects the use, value, quality or enjoyment of an ITA is considered to have an adverse impact to the resources.

The DOI's policy is to recognize and fulfill its legal obligations to identify, protect, and conserve the trust resources of federally recognized Indian tribes and tribal members, and to consult with tribes on a government-to-government basis whenever plans or actions affect tribal trust resources, trust assets, or tribal safety (please refer to Departmental manual, 512 DM 2). Under this policy, as well as Reclamation's ITA policy, Reclamation is committed to carrying out its activities in a manner that avoids adverse impacts to ITAs when possible, and to mitigate or compensate for such impacts when avoidance is not possible. All impacts to ITAs, even those considered nonsignificant, must be discussed in the trust analyses in NEPA compliance documents and appropriate compensation or mitigation must be implemented.

Reclamation contacted the Bureau of Indian Affairs (BIA) Uintah and Ouray Agency in Fort Duchesne, Utah to identify any potential impacts to ITAs within the Study Area. According to the BIA, the only known ITA involves a water right in the Green River held in trust for the Ute Indian Tribe of the Uintah and Ouray Reservation.

Energy, Minerals, and Other Extractive Resources

Mineral resources are divided into three categories: locatable, leasable, and saleable. Locatable minerals include gold, silver, lead, zinc, and other "high value" metallic ores subject to the Mining Law of 1872, as amended by 30 U.S.C. Ch. 2. Leasable minerals are oil and gas, oil shale, coal, potash, phosphate, sodium, gilsonite, and geothermal resources. These are subject to lease under the Mineral Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181, et seq.), the Mineral Leasing Act for Acquired Lands as amended (30 U.S.C. 351-359), and the Geothermal Steam Act of 1970, (30 U.S.C. 1001-1025). Saleable minerals are of the common variety and include sand, stone, gravel, pumice, cinders, clay, and other minerals extracted in bulk such as petrified wood. These minerals are subject to sale and disposal at the discretion of Reclamation under the Act of July 31, 1947, as amended (30 U.S.C. 601 et seq.); the Act of July

23, 1955 (30 U.S.C. 601); the Act of September 28, 1962 (30 U.S.C. 611); and Section 10 of the Reclamation Projects Act of 1939 (43 U.S.C. 387). Except for minerals and conditions meeting the provisions of section 10 of the Reclamations Projects Act of 1939, leases for mineral and geothermal resources on all land acquired or withdrawn by Reclamation are issued by the BLM. There is a borrow area on top of the hill just south of Red Fleet Dam that was used as a source of fill for construction of Red Fleet Dam (M. Murray 2011, pers. comm.).

Leasable minerals are under discretionary authority, meaning they are open to development through application and permitting by the BLM with concurrence of Reclamation. Under the present Interagency Agreement (December 1982), the BLM will, in all issues involving mineral and geothermal leases, request that Reclamation determine whether leasing is permissible and, if so, provide any stipulations required to protect the interests of the United States. Currently, no formal Reclamation stipulations exist for the Study Area.

No evidence of mineralization was observed during the Project Team site visit in October 2011. No past locatable mineral development has occurred within the Study Area. Most of the Study Area consists of steep slopes, open water, and recreational or administrative areas. Therefore, locatable mineral resource exploration or development in the Study Area is unlikely. However, the potential for hydrocarbon resources does exist within the Study Area. There are several gas fields in the vicinity of Red Fleet Reservoir. As with locatable mineral resources, the exploration or development of leasable minerals is unlikely because of the limited available surface area. There are also saleable mineral resources (e.g., sand, gravel, and cobbles) in the Study Area. Limited quantities of cobble and gravel resources and large quantities of silt and clay were observed in the Study Area during the Project Team site visit in October 2011.

Waste Water, Solid Waste, and Hazardous Materials

Wastewater

Wastewater generated by the restrooms and residence at the State Park is treated using a septic tank and absorption field within the Study Area. The fish-cleaning station is designed to be a decomposition unit, but cold temperatures prevent operation as designed, and the debris must be cleaned out manually about three times per year (M. Murray 2012b, pers. comm.).

Solid Waste

All solid waste is transported out of the Study Area for disposal in a local landfill.

Hazardous Materials

Hazardous materials are not used in the Study Area. No evidence of spills, contamination problems, or hazardous materials were identified within the Study Area. A propane tank is present at the Stake Park warehouse.

Land Management

This section describes current land management conditions that affect Study Area resource management, including ownership and transportation characteristics as well as existing legal, institutional, and land-use constraints, such as contracts between Reclamation and other entities.

Legal constraints include legislative acts, compacts, and agreements that govern the diversion and use of water from Big Brush Creek and, specifically, water stored in Red Fleet Reservoir. Institutional constraints include water delivery contracts or water rights and Reclamation's administrative procedures that govern the management and use of Study Area facilities. Land-use constraints include existing Memorandums of Understanding, contracts, lease agreements, permits, easements, and rights-of-way that govern the management and use of Study Area resources.

Land Ownership and Management

Figures 1-1 and 1-2 show land ownership characteristics surrounding the Study Area. Within a 2-mile radius, approximately 76 percent of lands are federal, administered by the BLM. Another 5 percent are state trust lands, administered by the State of Utah School and Institutional Trust Lands Administration (SITLA). There are two SITLA parcels adjacent to the Red Fleet Reservoir Reclamation boundary, as illustrated in Figure 1-2. The remaining lands (approximately 19 percent) near Red Fleet Reservoir are privately owned. These private lands are located adjacent to the Reclamation boundary in two locations, at the Big Brush Creek inflow and below Red Fleet Dam.

Transportation and Access

Roads entering the Study Area are illustrated on the Study Area map (Figure 1-2). Primary access to the State Park begins at US-191 and proceeds east on a paved, two-lane county road labeled "Red Fleet Access Road" for a distance of 2.0 miles to the pay station at the park. By state code, this access road is under the jurisdiction of and is maintained by Uintah County (Utah Code 72-3-205).

Red Fleet Dam is accessed via Donkey Flat Road, a paved county road, located north of Red Fleet Reservoir. Donkey Flat Road joins with Brush Creek Road, an unpaved county road, to the northeast of the Reclamation property. An access road to the dam branches from Brush Creek Road near the Reclamation property boundary. For security reasons, public access into to the Primary Jurisdiction Zone is prevented by a gate and fence. Brush Creek Road can also be accessed from the south from the Diamond Mountain Highway, which is a paved county road originating in Vernal.

Little Valley Road, an unimproved (Class D) county road, crosses through Reclamation property along the southern boundary. Little Valley Road originates at US-191 within Reclamation property at Steinaker Reservoir just north of Vernal and terminates on Brush Creek Road a short distance south of the Red Fleet Dam.

Also illustrated in Figure 1-2 are a number of unimproved roads within the Reclamation boundary. A Class D county road provides access to the South Beach Area. This road is currently gated and provides administrative access only. To prevent the spread of AIS, the public is presently not allowed to drive to the South Beach Area. There is another road into the North Beach Area, which is gated at the Reclamation boundary for similar reasons. At the present time, the public is allowed walk-in access to the North Beach Area. Some of the other undesignated roads within the Reclamation boundary provide administrative access and need to be maintained; others are user-created unimproved roads that could potentially be decommissioned, particularly

wherever these roads present erosion problems, provide access to unsafe areas, or enable trespass into the Primary Jurisdiction Zone.

Legal Constraints

Legal constraints include legislative acts, compacts, and agreements that govern the use of water from Big Brush Creek and, specifically, water stored in Red Fleet Reservoir.

Reclamation Act of 1902

In the Reclamation Act of June 17, 1902, the U.S. Congress authorized construction of irrigation projects in arid and semiarid lands that now comprise the western United States (43 U.S.C. § 301). General authority over these projects was assigned to the U.S. Secretary of the Interior; project administration and oversight responsibilities were assigned to Reclamation. Proceeds from sales of public lands were placed into a Reclamation fund to assist in paying for the irrigation projects. Reclamation is the agency responsible for overall resource and facility management within the Study Area.

Colorado River Storage Project Act of 1956 as Amended (1962, 1964, 1968, and 1980)

The Colorado River Storage Project Act of 1956 as amended (1962, 1964, 1968, and 1980) provides for the following: (1) the comprehensive development of the water resources of the Upper Colorado River Basin to regulate the flow of the Colorado River; (2) water storage for beneficial consumptive use, making it possible for states of the Upper Basin to use the apportionments made to and among them in the Colorado River Compact and the Upper Colorado River Basin Compact, respectively; and (3) the reclamation of arid and semiarid land, control of floods, and generation of hydroelectric power. The act authorizes the U.S. Secretary of the Interior to construct, operate, and maintain initial units of the Colorado River Storage Project and additional reclamation projects (referred to as "participating projects") in the Upper Colorado River Basin. The units and projects consist of dams, reservoirs, power plants, transmission facilities, and appurtenant works. The Central Utah Project (CUP) is a participating project of the Colorado River Storage Project; Red Fleet Dam, Tyzack Aqueduct, and Tyzack Pumping Plant and are components of the Jensen Unit of the CUP.

Reclamation Recreation Management Act of 1992

The Reclamation Recreation Management Act (Public Law 102-575) provides uniform policies regarding recreation developments, fish and wildlife enhancements, cost sharing of federal multipurpose water resource projects, and other purposes. As part of the policies section on management of Reclamation lands, the U.S. Secretary of the Interior is authorized to develop, maintain, and revise RMPs for Reclamation lands. The RMPs shall provide for the development, use, conservation, protection, enhancement, and management of resources on Reclamation lands in a manner that is compatible with the authorized purposes of each specific Reclamation project.

Institutional Constraints

Institutional constraints for resource planning include existing water delivery contracts, water rights, and the Reclamation administrative procedures that govern the management and use of Study Area facilities.

Reclamation's Emergency Management Policies and Directives

Reclamation's Emergency Management Policies and Directives provide for safety and protection of environmental resources from incidents at Reclamation storage dams and reservoirs by: (1) taking the reasonable and prudent actions necessary to ensure timely notification to potentially affected jurisdictions of such incidents, and (2) defining program needs and requirements essential to maintain self-regulation by line managers, be responsive to public safety, and satisfy legal requirements during operations or emergency incidents at Reclamation facilities. This program also requires that an Emergency Action Plan be written for each dam to include emergency management initiating conditions, response levels, and expected actions. The Emergency Action Plan for Red Fleet Reservoir was completed and signed April 12, 2012.

Standing Operating Procedures (SOPs)

Standing Operating Procedures (SOPs) are prepared for all Reclamation dams and reservoirs to establish, in one primary document, the complete, accurate, current, structure-oriented operating instructions for each dam and reservoir and its related structures. The document's purpose is to ensure adherence to approved operating procedures over long periods of time and during changes in operating personnel. Operating procedures shall not deviate from those stated in the SOPs without appropriate authorization. The SOP for Red Fleet Reservoir and Dam was signed into effect on June 14, 2004.

Water Operations

Red Fleet Reservoir has a total capacity of 26,000 acre-feet, of which 24,000 acre-feet is active storage. The reservoir has a surface area of 521 acres at the normal water surface elevation of 5,608.2 feet. Red Fleet Dam and Reservoir were turned over to UWCD for operation and maintenance on May 1, 1985. The operation and maintenance responsibilities for the Tyzack Aqueduct and Tyzack Pumping Plant were transferred to the UWCD on October 1, 1988.

Land Use Constraints

Land use constraints are existing policies and agreements that define management and agency jurisdiction, authorities, and responsibilities for the use, enhancement, and protection of resources within the Study Area. The following is a list of contracts and agreements on file with Reclamation.

Reclamation Contracts

- Memorandum of Agreement 0-LM-40-00020 between the Bureau of Reclamation and the Utah Division of State Parks and Recreation for Management of Recreation Facilities at Red Fleet Reservoir.

- Repayment Contract 6-05-01-00143 between the United States and the Uintah Water Conservancy District, June 3, 1976.

    - Amendment to Contract 6-05-01-00143 for conformance with the Reclamation Reform Act of 1982, November 1, 1985.

    - Amendment to Contract 6-05-01-00143 to modify the municipal and industrial water repayment obligation, December 30, 1992.

Concession Agreements

- None currently.

Licenses, Leases, and Permits

- License Agreement 4-07-41-L0420 to Mountain States Telephone and Telegraph Company (Mountain Bell), September 17, 1984.

- Relocation Contract 6-07-01-00122 between Bureau of Reclamation and Uintah County, Utah for Relocation of a County Road.

Chapter 4: Environmental Consequences

This chapter describes the anticipated impacts of the Red Fleet Reservoir Resource Management Plan (RMP) alternatives on resource areas described in Chapter 3: partnerships, water, recreation and visual, natural and cultural, and land management resources. Current conditions for these resources on U.S. Bureau of Reclamation (Reclamation) administered federal lands at Red Fleet Reservoir RMP Study Area (Study Area) were described in Chapter 3 and establish the baseline for the impact analysis. To the extent possible, the analysis provides quantitative impact estimates from the various alternatives in order to facilitate comparisons among alternatives during the decision-making process.

Issues Considered but Eliminated from Detailed Analysis

Some resource issues were beyond the scope of the analysis or were determined to not be relevant issues, and were therefore not evaluated in detail. Specifically:

- water operations are governed by existing legal commitments and water rights constraints and are not within the scope of decision to be made based on this Environmental Assessment; and

- the assessment of existing conditions (Chapter 3) determined that there were no Environmental Justice communities in the Study Area and therefore no disproportionate effects to minority or low-income populations would result from implementation of any of the RMP alternatives.

Partnerships

This section provides an assessment of how each alternative would impact resource partnerships between Reclamation and other stakeholder entities. Sources consulted in developing this information were personal correspondence with Reclamation team members, Utah Division of State Parks and Recreation (State Parks) officials, and partner agency representatives listed in Chapter 5.

Issue

How would implementation of the RMP affect resource management partnerships for the Study Area?

Impact Indicators

The following impact indicator was used to determine if implementation of the RMP would affect resource management partnerships within the Study Area:

- change in the number and type of resource management partnerships.

Analysis Methods

Partnerships needed to accomplish RMP goals related to each alternative were assessed based on agency experience associated with similar past activities at the Study Area and at other comparable Reclamation facilities.

Summary of Impacts

Under Alternative A, current resource management partnerships would continue in much the same way as they currently exist. Under Alternative B or C, resource management presence would increase within the Study Area with the likely opportunity for additional partnerships (Table 4-1).

Table 4-1. Summary of Partnership Impacts at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the number and type of resource management partnerships	No change to the number and type of partnerships. Existing partnerships include: • U.S. Bureau of Land Management • U.S. Fish and Wildlife Service • Utah Division of State Parks and Recreation • Uintah Water Conservancy District • Utah Division of Wildlife Resources • Utah Department of Environmental Quality • Utah Department of Transportation • Uintah County	Current partners listed for Alternative A would remain with increased responsibilities related to a conservation emphasis. Potentially new resource management partners include local conservation organizations and adjacent landowners.	Same as Alternative B, plus additional responsibilities and/or partnerships related to a recreation development emphasis. Potentially new resource management partners include those listed for Alternative B and also local recreation interest groups.

Alternative A: No Action

Because management goals would not change substantially from existing conditions, it is likely that the same partnerships currently in place with federal, state, and local governments would continue in the same manner as described in Chapter 3. Therefore, Alternative A partnerships would have little or no impact on resource management within the Study Area. While some erosion control measures would be implemented at existing recreational sites, impacts to vegetation, wildlife, and water quality at the Study Area would likely continue. No new interpretation or public education facilities for cultural or natural resources within the Study Area would be constructed.

As the sole recreation manager for Red Fleet Reservoir, State Parks would continue to manage recreational activities within the Study Area. Management of fish and wildlife resources within the Study Area by the Utah Division of Wildlife Resources (UDWR) and the U.S. Fish and Wildlife Service (USFWS) would continue with little or no changes under Alternative A. All law enforcement and fire suppression activities would continue to be provided primarily by State Parks, UDWR, Uintah County, and the Uintah Basin Interagency Fire Center. State and county road maintenance activities would not change under Alternative A and would continue under the direction of the Utah Department of Transportation (UDOT) and Uintah County. Water quality oversight would still be provided by the Utah Department of Environmental Quality. Alternative A would not impact existing agreements between Reclamation and the Bureau of Land Management (BLM) regarding minerals leasing and development within the Study Area.

Alternative B: Resource Conservation Emphasis

Because of its emphasis on conservation and enhancement of Study Area natural resources, Alternative B would provide opportunities for additional resource management partnerships. Additional cooperation would be needed with adjacent landowners (government and private) to achieve optimal protection of resources. Alternative B would increase some management roles for current partnerships as described below for cumulative impacts.

Recreation management within the Study Area would continue to be provided by State Parks under Alternative B. The level of management is expected to increase for some management areas and decrease for others. New and improved types of visitor experiences would be created by designating Natural Areas around the reservoir, restricting access to sensitive areas, and providing increased trail connectivity between developed facilities. Enhanced public information and interpretation pertaining to Study Area natural, recreational, and cultural resources would also enhance visitor experiences. Such facilities would likely help reduce impacts to resources by increasing visitor education and ultimately lessening the management burden on partnering agencies.

Management of fish and wildlife resources would continue under the jurisdiction of the UDWR and USFWS. However, under Alternative B more proactive management of these resources would likely occur. Items include providing additional angling opportunities, improving wildlife habitat with the implementation of erosion control and revegetation measures using native plant species, and managing Natural Areas for conserving important wildlife habitat. Additional partnerships would be created with local conservation organizations dedicated to improving these resources and associated opportunities.

Water rights and water operations are outside of the scope of the Red Fleet Reservoir RMP; therefore, partnering relationships related to these resources would not be impacted by this alternative. A partnership agreement for minerals leasing and development currently exists with the BLM and would not change under Alternative B. Law enforcement and fire suppression activities and partnerships are not likely to be impacted under Alternative B. Road maintenance activities on Study Area and surrounding roads are currently under the direction of UDOT and Uintah County. This would not change under Alternative B.

Alternative C: Recreation Development Emphasis

Recreation management is expected to increase under Alternative C because of an increase in developed recreation facilities. In addition to enhanced trail connectivity, fishing opportunities, and interpretive programs described for Alternative B, Alternative C would expand existing Developed Day Use, Developed Overnight, and Developed Day Use and Overnight Group Recreation Areas. In site design, rental cabins and/or yurts may be added. Alternative C would also add a new Developed Day Use Recreation Area at the North Beach Area and a Developed Overnight and Day Use Group Recreation Area at the South Beach Area. Collectively, these additions would likely increase annual State Park visitation, particularly during the shoulder seasons in spring and fall. Reclamation and State Parks would likely pursue expanded partnerships with Uintah County, BLM, and private recreation user groups to help manage use and facility maintenance. Private concessions may also be pursued as an option.

Partnerships for water rights and water operations, minerals development, fish and wildlife management, law enforcement and fire suppression, highway maintenance, and water quality would be the same under Alternative C as described for Alternative B. As with Alternative B, additional partnerships would be facilitated with adjacent landowners, USFWS, and UDWR related to protection of Study Area natural resources.

Cumulative Impacts

Past partnerships have helped shape the existing resource conditions and recreational opportunities at the Study Area. An example is the Dinosaur Trackway hiking trail, which enters the Study Area from a trailhead located on BLM-administered federal lands. Trends in recreation user preferences for land- and water-based recreation activities are another outside influence on the Study Area that resource managers would have to address as the need arises.

Regardless of the RMP alternative selected, State Parks would continue to have responsibility to identify and enforce recreation capacities, identify appropriate recreational use areas for various activities, and manage user conflicts. Selecting one of the two action alternatives (i.e., Alternatives B and C) would provide greater specificity and management area direction that would be utilized by Reclamation, State Parks, and other partners in making these management decisions.

Mitigation Measures

No mitigation measures related to partnerships would be required.

Residual Impacts

No residual impacts related to partnerships would occur as a result of selecting any RMP alternative.

Water Resources

Issue

How would implementation of the RMP affect water resources within the Study Area?

Impact Indicators

The following impact indicators were used to determine if implementation of the RMP would affect water quality within the Study Area:

- change in the amount of unimproved roads,
- change in the amount of nonmotorized trails,
- change in the amount of developed recreation areas,
- change in the amount of Natural Areas, and
- change in the number and types of toilet facilities.

Impact indicators were assessed on two scales, for the overall Study Area and for areas within 50 feet of a water body. For the overall Study Area, changes in land use affect stormwater runoff and potential for erosion to occur in a particular area. Areas with more development, particularly areas with impervious surfaces, would generate more stormwater runoff, potentially increasing erosion. Sediment yields increase with greater stormwater and erosion. Changes in land use within 50 feet of a water body are more likely to impact water quality since pollutants are more readily transported or directly discharged into the water body. This buffer represents the area 50 feet from the reservoir full pool elevation or from a tributary channel. It does not include information about riparian vegetation or other characteristics of the area within the 50-foot buffer. Toilet facilities, both septic systems and vault toilets, are indicators of the potential for water quality impacts, specifically in terms of bacteria, pathogens, and other human-health-related water quality concerns, in addition to nutrient loading.

The proposed RMP alternatives would have essentially no impact on reservoir temperature, the parameter for which the reservoir is currently listed as impaired. Temperature is predominantly controlled by the temperature of the water entering the reservoir, the amount of solar radiation, and reservoir depth, none of which are within the scope of the RMP decision.

Analysis Methods

Background information on existing water resource conditions was compiled from a variety of sources, as described in Chapter 3. This information was used in conjunction with the impact indicators to evaluate the impacts of the RMP alternatives on Study Area water quality. A Geographic Information Systems (GIS) analysis was completed to determine the acreage of land use, linear feet of trail, and recreation facility development within each management area, as well as within 50 feet of a water body, for the water resource impact assessment.

Summary of Impacts

Overall, the three RMP alternatives would be expected to have slightly different impacts on Study Area water resource conditions. Alternative A would not change water resource conditions directly; however, lack of an RMP combined with the potential for growing use and water demands would leave Red Fleet Reservoir open to increases in erosion and sediment generation near the reservoir, and therefore the potential for decreases in water quality within the reservoir. Although Red Fleet Reservoir visitation numbers have remained fairly flat over the past decade, strong recent population growth in Uintah County creates the potential for increased visitation. Each of the RMP action alternatives includes elements of improved resource management, reclamation of disturbances, and implementation of stormwater management facilities that would

benefit water quality and provide better preparation for accommodating future increases in visitation and resource use relative to the No-Action Alternative.

Comparisons of the alternatives indicate that Alternative B would benefit the Study Area water quality to the greatest extent because of the reduction in ground disturbance as well as improved resource management. Alternative C would lead to slight net improvements in water quality over existing conditions because of improved resource management, but to a lesser extent than Alternative B because of the increased development and ground disturbance associated with Alternative C. Assessments of the impact indicators for water resources are summarized for each alternative in Table 4-2.

Table 4-2. Summary of Water Resource Impacts to Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the amount of unimproved roads due to decommissioning and/or conversion to nonmotorized trail	No change from existing conditions (14 total miles of unimproved roads, including 5 miles within 50 feet of the reservoir or a tributary stream).	Decrease of 2.3 miles of unimproved roads, including a decrease of 0.7 mile within 50 feet of the reservoir or a tributary stream.	Decrease of 2.3 miles of unimproved roads, including a decrease of 0.7 mile within 50 feet of the reservoir or a tributary stream.
Change in the amount of nonmotorized trails	No change from existing conditions (1.1 miles of nonmotorized trails within the Study Area, including 0.2 mile within 50 feet of the reservoir or tributary stream).	Increase of 0.2 mile of nonmotorized trail in the East Side Area (at Lookout Point).	Increase of 1.8 miles of nonmotorized trail, including 1.4 miles within 50 feet of the reservoir or a tributary stream.
Change in the amount of developed recreation areas	No change from existing conditions (11 acres of developed recreation areas).	No change from existing conditions (11 acres of developed recreation areas).	Increase of 23 acres of developed recreation areas to a total of 34 acres. Increase of 13.3 acres of developed recreation area within 50 feet of a stream or the reservoir.
Change in the amount of Natural Area	No change from existing conditions (no existing Natural Areas).	Increase of 1,435 acres of Natural Area. Increase of 375 acres of Natural Area within 50 feet of a stream or the reservoir.	Increase of 1,000 acres of Natural Area. Increase of 255 acres of Natural Area within 50 feet of a stream or the reservoir.
Change in the number and types of toilet facilities	No change from existing conditions.	Additional vault toilet at the Lookout Point trailhead (East Side Area). No change in septic system at the State Park Area.	Additional vault toilets within the State Park, South Beach, North Beach, and East Side areas. Septic system at the State Park Area may require upgrade or expansion.

Alternative A: No Action

Current trends in water resource conditions would continue under Alternative A. No changes would occur in water management and operation of Red Fleet Reservoir, and the existing impacts of Red Fleet Dam on the hydrology, floodplain, and channel conditions of Big Brush Creek would continue. Existing levels of unauthorized off-highway vehicle (OHV) use and associated runoff and sediment impacts would be expected to continue. No specific projects to control erosion and soil compaction at the Dinosaur Trackway hiking trail would be implemented. However, improved stormwater control design elements would be incorporated into any redesign or rehabilitation projects completed at existing recreational sites as part of ongoing management and maintenance efforts. The existing septic system at the State Park management area would continue to function in the same manner it does currently.

Under Alternative A, no specific plans would be in place to further study, manage, or address any of the existing potential pollution sources. Current trends in water quality would continue if the number of users (i.e., the number of people camping, boating, and swimming) remains the same. Water quality would potentially decline if actual use increases. Although Red Fleet Reservoir visitation numbers have remained fairly flat over the past decade, strong recent population growth in Uintah County creates the potential for increased visitation and use in the future. With increased human activity, the types of potential pollutant sources that currently exist would not change, but the amount of pollutants would increase. Pollutants include oil and gas and metals from vehicles such as cars, trucks, all-terrain vehicles, and boats. Garbage, human waste, food waste, and stormwater-borne sediment and phosphorus and other potential pollutants that could contribute to water quality issues—particularly bacteria, pathogens, algal blooms, and low dissolved oxygen.

Alternative B: Resource Conservation Emphasis

The changes associated with Alternative B described below would have overall positive impacts for Red Fleet Reservoir water quality by reducing erosion, stormwater runoff, and accumulation of trash, human waste, and vehicle-associated pollutants in remote portions of the Study Area.

Change in the Amount of Unimproved Roads

Under Alternative B, the amount of unimproved roads within the Study Area would decrease by a total of about 2.3 miles. Most of this decrease would result from decommissioning of redundant motorized access. This change would reduce the amount of disturbed bare ground in the Study Area and increase vegetation cover, resulting in improved infiltration and reduced surface runoff potential. This reduction in runoff would reduce the potential for erosion and sediment pollution within the decommissioned unimproved road areas. The benefits to water quality would be greatest where decommissioning occurs close to the reservoir shoreline or tributary drainage channels. Under Alternative B, 0.7 mile of unimproved road would be decommissioned within 50 feet of the reservoir or tributary channels.

Reduction in the amount of unimproved roads would have positive impacts for water quality because it is likely to reduce levels of vehicle-related pollution including oil and gas spills; erosion and related sediment and dust deposition that can increase the Total Suspended Solids (TSS) load; and metal contaminants (generally lead, copper, and silver). Reducing the amount of

unimproved roads would also reduce the number of users in more remote areas, which would reduce trash, garbage, and human waste accumulation.

More than a mile of user-created unimproved roads would be decommissioned in the South Side Area, reducing sediment inputs to nearby tributary washes and to the reservoir. However, none of the decommissioning in this area lies within 50 feet of a water body, so the expected improvements in water quality associated with reduced stormwater runoff and human activity would be relatively minor but nevertheless would improve watershed vegetation cover and reduce soil disturbance.

Portions of the proposed decommissioning in the Dinosaur Trackway, East Side, and North Beach areas would also occur close to the reservoir and to tributary drainage channels, and benefits to water quality would be correspondingly enhanced.

Change in the Amount of Nonmotorized Trails

Under Alternative B, the length of nonmotorized trails in the Study Area would increase by 0.2 mile. This change would result from development of a new nonmotorized trail to Lookout Point in the East Side Area. The trail construction would occur in conjunction with decommissioning and reclamation of an adjacent section of an unmaintained road. Because the new trail would have a smaller disturbance footprint, the combined net result would be a reduction in disturbed area, which would improve infiltration and reduce the potential for erosion and sediment-laden runoff. These benefits would be expected to be quite minor, as the affected area is relatively small and the majority of the trail length is not close to a water body.

Because the new trails would facilitate human movement, there is potential for trash and garbage to be present. In addition, in areas where the trail comes close to the reservoir, people may create footpaths off of the main trail, increasing impacts related to sediment and erosion as well as human waste. These impacts would be minimal if few people use the spurs and remain on the trail. Leaving any existing riparian vegetation buffer areas intact would help mitigate potential impacts. Overall, because the length of proposed trail near the reservoir is small, the effects to water quality would be minor.

Change in the Amount of Developed Recreation Areas

There would be no change in the amount of developed recreation areas from existing conditions in the Study Area under Alternative B.

Change in the Amount of Natural Area

Within the 1,435 acres of Natural Area proposed with Alternative B, off-trail recreational access would be discouraged by measures such as signage, more frequent patrolling and monitoring, and potential closures during sensitive time periods. Efforts to monitor OHV activities would be implemented more aggressively in Natural Areas. More stringent erosion control measures would also be implemented. All of these measures would be integrated into a Habitat Management Plan to be developed as an objective of Alternative B. These changes would result in a slight reduction in the amount of disturbed ground within the Study Area. Natural Area designations within the Inflow and East Side areas would increase protection of sensitive riparian floodplain areas adjacent to Big Brush Creek above and below the reservoir, and would have

substantial benefits in these localized areas. However, the overall benefits to reservoir water quality would be minor.

As discussed in Chapter 3, floodplain and riparian functions of Big Brush Creek are currently degraded in the area below the dam due to hydrologic alterations and agricultural practices. If restoration efforts (e.g., no-mow buffer practices, riparian plantings) were implemented in conjunction with the Natural Area designation, substantial benefits to riparian functions would be achieved. Benefits would include increased shading, reduced amounts of bank erosion and sediment loading, and increased filtration of sediment and pollutants.

Under Alternative B, approximately 375 acres of Study Area lands within 50 feet of the full pool shoreline would be designated as Natural Area. This designation would contribute to maintaining and potentially improving water quality. There would be a reduction in trash, food waste, human waste, and erosion and sedimentation. Such reductions would reduce the nutrient load to the reservoir, effectively reducing potential for algal blooms, eutrophication, and subsequent dissolved oxygen issues. In addition, the vegetation and soils in these areas along the water body would not be trampled, allowing the area to act as a filter for stormwater generated upslope of the Natural Area shorelines. In general, areas so managed are highly effective in filtering and retaining pollutants such as sediments, nutrients, and metals often associated with stormwater.

Change in the Number and Type of Toilet Facilities

Under Alternative B, vault toilets would be added at the Lookout Point trailhead. Improvement of the trailhead would encourage increased human presence at the trailhead and reservoir shoreline at the East Side Area, potentially increasing sediment and trash. However, providing toilets would reduce pollution from human waste including bacteria, pathogens, viruses, and nutrients. Including animal-proof trash receptacles would mitigate potential trash issues at a new trailhead. Since the trailhead is some distance away from a water body, these facilities would have less impact on water quality but are important for human health reasons and as components of the overall management strategy under Alternative B. The existing septic system at the State Park Area would continue to function in the same manner as it does currently.

Alternative C: Recreation Development Emphasis

With well-designed and implemented mitigation measures, Alternative C would lead to slight net improvements in water quality over existing conditions because of improved resource management. However, overall recreation use would be expected to increase and would occur at more locations around the reservoir, increasing the need for waste management and erosion control design elements to prevent water quality impacts.

Change in the Amount of Unimproved Roads

Overall, Alternative C would result in the same net decrease in unimproved road miles as Alternative B (Table 4-2).

Change in the Amount of Nonmotorized Trails

Alternative C includes the same Lookout Point trail as proposed under Alternative B, and would have the same water-resource effects in the East Side Area as described for Alternative B. Within the South Beach Area, Alternative C proposes to convert portions of an existing unimproved

road to a nonmotorized trail. This change would reduce the overall disturbance footprint, improve vegetation cover, and reduce stormwater runoff and erosion concerns in that area relative to existing conditions. However, new disturbances would occur as a result of the construction of more than 1 mile of new nonmotorized trails in the State Park and South Beach areas. Where new trails are installed in currently undisturbed, well-vegetated areas, they would reduce infiltration and increase surface runoff during rain events. These changes in runoff conditions would lead to increased erosion and sediment loads, particularly when trails are located close to the reservoir or tributary streams.

The proposed new trail that would link the State Park and South Beach areas would traverse two tributary washes and would impact riparian vegetation along the wash that parallels the South Beach Area access road. Portions of the proposed trail would be constructed in areas with steep (>20%) slopes, increasing the risk of erosion problems during and after trail construction. Care would need to be taken when aligning and designing this trail to minimize the potential for impacts from erosion and sediment-laden runoff. Under existing conditions, this area already receives a large amount of day use, evident from user-created hiking trails throughout the area. Therefore, the designation of an established trail and decommissioning of redundant, user-created trails that would occur under Alternative C would represent an improvement over existing conditions.

Another new trail is also proposed under Alternative C and would head north from the State Park access road, traverse an area of pinyon-juniper woodland, and end at a bedrock bluff above the reservoir. This area currently receives dispersed foot traffic and existing vegetation is fairly sparse. Therefore, trail construction would be expected to have minimal effects on infiltration, erosion, and runoff conditions.

Although new trail construction under Alternative C will facilitate and encourage human access, dispersed day use levels are already high in the areas where trails are proposed. Therefore, increases in potential pollutant sources such as garbage and human waste would be expected to minimal.

Change in the Amount of Developed Recreation Areas

Under Alternative C, developed recreation areas, which include developed overnight, day use and group recreation areas, would increase by a total of 23 acres. A large proportion of this new development would occur within the State Park Area, where the existing campground and developed day use areas would be expanded to the north. Where these expansions include new paved roads and parking areas, they would result in increased amounts of impervious pavement, leading to higher runoff and potential increases in erosion and sediment inputs. The expanded Developed Day Use Recreation Area would likely result in increased use and disturbance along the reservoir shoreline area, and has the potential to increase erosion and sediment inputs to the reservoir. However, the establishment of a formal trailhead and new toilet would likely improve sanitation conditions in an area that currently receives dispersed use.

Under Alternative C, developed recreation areas within 50 feet of the reservoir or other water body increase by just over 13 acres. These increases occur in the North Beach, South Beach, and State Parks areas. Water quality impacts would occur from increases in impervious surface area,

which generally cause an increase in stormwater-related pollutant loads and increased human use in the vicinity. Increases in erosion would lead to increased sediment load to the reservoir and nearby small streams. In addition, an increase in the direct access to the reservoir would potentially increase the amount of garbage, food waste, and stormwater impacts from trampling vegetation and soils. These impacts would be mitigated through well-designed and maintained toilet facilities, animal-proof dumpsters, and erosion and sediment controls.

A new boat ramp and group recreation area would be developed in the South Beach area under Alternative C. The majority (about 7 of 10 acres) of this development would be located within 50 feet of a water body, and areas of existing riparian and emergent marsh vegetation would be affected. The new camping and day-use facilities in this area would reduce vegetation cover, reduce infiltration, and increase runoff and erosion potential.

Change in the Amount of Natural Area

Within the 1,000 acres of Natural Area designated under Alternative C, off-trail recreational access would be discouraged and measures such as signage, more frequent patrolling and monitoring, and potential closures during sensitive time periods would be implemented. Efforts to monitor OHV activities would be implemented more aggressively in Natural Areas. More stringent erosion control measures would also be implemented. All of these measures would be integrated into a Habitat Management Plan to be developed as an objective of Alternative C. These changes would result in a slight reduction in the amount of disturbed ground within the Study Area. Natural Area designations within the Inflow and East Side areas would increase protection of sensitive riparian floodplain areas adjacent to Big Brush Creek above and below the reservoir, and would have substantial benefits in these localized areas. However, the overall benefits to reservoir water quality would be minor.

As discussed in Chapter 3, floodplain and riparian functions of Big Brush Creek are currently degraded in the area below the dam due to hydrologic alterations and agricultural practices. If restoration efforts (e.g., no-mow buffer practices, riparian plantings) were implemented in conjunction with the Natural Area designation, substantial benefits to riparian functions would be achieved. Benefits would include increased shading, reduced amounts of bank erosion and sediment loading, and increased filtration of sediment and pollutants.

Approximately 255 acres of Undeveloped Day Use Recreation Area acreage would be designated as Natural Area within 50 feet of a tributary stream or the reservoir at the Inflow, East Side, and Dinosaur Trackway areas. Such designation would improve water quality by potentially reducing human access, and therefore the amount of human waste and trash left by users. In addition, the vegetation and soils in these areas along the water body would not be trampled, allowing the area to act as a filter for stormwater runoff generated upslope of the reservoir. In general, areas so managed are highly effective in filtering and retaining pollutants such as sediments, nutrients, and metals often associated with stormwater runoff.

Change in the Number and Type of Toilet Facilities

Under Alternative C, vault toilets would be added at the expanded and newly developed recreation facilities within the State Park, South Beach, North Beach, and East Side areas. The vault toilets in existing and expanded recreation areas and areas with high use would improve

water quality by reducing the pollution from human waste including bacteria, pathogens, viruses, and nutrients discharged into the reservoir. Vault toilets at the new trailheads are some distance away from a water body and would have less impact on water quality but are important for human health reasons and as components of the overall management strategy under Alternative C. An increase in the number of visitors would increase the loads on the existing septic system at the State Park Area. Any upgrade or expansion of the existing septic system would have minimal impact on reservoir water quality over current conditions since upgrades or expansions would have to meet current health department and state regulations for septic systems.

Cumulative Impacts

Other activities in the watershed and Study Area contribute to or compound impacts to water quality at Red Fleet Reservoir. Logging and grazing on federal lands administered by the U.S. Forest Service and BLM contribute incrementally to erosion and a sediment load to tributary streams, particularly where these activities expose highly erodible soils adjacent to streams. The Big Brush Creek watershed also has some extensive dead forest stands from pine beetle infestation that are a known watershed condition. There are also private and federal lands within the watershed with active phosphate mining that is expected to continue in the future. Specifically, the phosphate mine, located within the Big Brush Creek watershed just upstream and west of the Study Area, expects to expand its disturbance footprint by approximately 180 acres over the next 2 years. Long-term UDOT plans include widening of U.S. Highway 191 (US-191), which will increase impervious cover and stormwater runoff within the Big Brush Creek watershed.

Recreation such as dispersed camping within the watershed would also contribute some pollutants to the streams and subsequently the reservoir. Pollutants would include sediment, nutrients, and trash. However, the magnitude of this impact depends largely on the quantity of dispersed camping, with heavy use near contributing water bodies having a greater impact than minimal use away from water bodies. Recreation development such as trails for OHVs, mountain bikes, and hiking also increase land disturbance, stormwater runoff, and potential pollutant loads. Current BLM plans include expansion and hardening of OHV trail access to the reservoir inflow area and hardening of a mountain bike trail just north of the Dinosaur Trackway Area. The BLM trail expansions and improvements would cumulatively contribute to the water resource effects of the new trails proposed under RMP Alternatives B and C.

Any increased sediment and phosphorus loads to Big Brush Creek would be transported to Red Fleet Reservoir, particularly during spring runoff when inflows contain high amounts of suspended sediment. Any increase in phosphorus load would be important because it would contribute to eutrophication, associated algal blooms, and potential for dissolved oxygen issues including anoxic conditions in the reservoir. The State of Utah already considers Red Fleet Reservoir impaired for temperature, which affects dissolved oxygen concentration in the water column. Dam operations also have some impact on water temperature and dissolved oxygen concentrations in the reservoir.

All of these factors are important ongoing concerns for the management of the Study Area as well as the surrounding BLM-designated Red Mountain-Dry Fork Area of Critical Environmental Concern and the larger Big Brush Creek watershed. Interagency coordination and

partnerships are important for addressing cumulative impact issues and maintaining water quality at Red Fleet Reservoir.

Mitigation Measures

Potential impacts to water quality associated with the RMP action alternatives would be mitigated through proper design, installation, and maintenance of stormwater best management practices (BMPs), placement of vault toilet facilities in high-use recreation areas, and use of animal-proof garbage receptacles. These elements would be incorporated in site-specific designs for State Park Area redevelopment or rehabilitation and for any new facility developments at the Study Area. Stormwater BMPs would reduce or eliminate stormwater-generated sediment and potentially eliminate untreated stormwater discharge into the reservoir. Vault toilets address impacts from untreated human waste entering the reservoir, and animal-proof garbage receptacles reduce the amount of trash potentially entering the water body.

In addition, removal of invasive plants and restoration of native riparian vegetation at the South Beach Area would result in small benefits to water quality and would also benefit wildlife habitat. Riparian restoration and bank stabilization on Big Brush Creek below the dam would help mitigate impacts at the South Beach Area if necessary under Section 404 of the Clean Water Act (see Vegetation Section of this chapter).

As discussed in Chapter 3, floodplain and riparian functions of Big Brush Creek are currently degraded in the area below the dam due to hydrologic alterations and agricultural practices. If restoration efforts (e.g., no-mow buffer practices, riparian plantings) were implemented in conjunction with the proposed Natural Area designation under either action alternative, substantial benefits to riparian functions would be achieved. Benefits would include increased shading, reduced amounts of bank erosion and sediment loading, and increased filtration of sediment and pollutants.

Under any alternative, Reclamation will continue existing interagency partnerships that maintain Study Area water quality and will participate in any future interagency coordination and partnership efforts associated with the Big Brush Creek watershed.

Residual Impacts

With the previously stated mitigation measures, there would be no residual impacts to water resources resulting from any of the RMP alternatives.

Recreation and Visual Resources

Issues

How would implementation of the RMP affect recreation activities and visual-resource conditions within the Study Area?

Impact Indicators

The following impact indicators were used to determine if implementation of the RMP would affect recreation activities and visual-resource conditions within the Study Area:

- change in recreational opportunities,
- change in visitation and facilities,
- change in Water and Land Recreation Opportunity Spectrum (WALROS) Classification, and
- change in visual-resource conditions.

Analysis Methods

Change in Recreational Opportunities

Recreational opportunities were described using the recreation-based land use categories defined during the development of alternatives (see Chapter 2). Land use categories were applied to each kind of recreational opportunity and the area where it occurs. For purposes of evaluating alternatives, any change in an existing land use category was considered a change in recreational opportunity. The total area involved in the change of land use categories was compared between alternatives.

Change in Visitation and Facilities

Visitation is a function of how many people use the Study Area. Visitation numbers for this analysis are expressed as persons at one time (PAOT) and were estimated for developed camping and day use areas based on facility capacities and an assumed party size.

When the additional campground facilities are added, as in Alternative C, it is assumed to include 20 new campsites. When the additional day-use facilities are added, as in Alternative C, it is assumed to include 20 new picnic sites. The assumed party size is five persons per campsite, day use picnic site, or boat parking stall and 3.5 persons per parking lot stall at trailheads. The resulting calculation (number of campsites, picnic sites, and boat parking stalls multiplied by five persons) is equivalent to PAOT, which represents usage typical of a peak weekend or holiday. During a typical summer weekday, PAOT would likely be less. While PAOT is useful as a relative comparison between alternatives, it is not intended to represent a definitive number of people.

As the number and types of facilities change with the alternatives, it is possible to estimate relative changes in the actual number of people who would use the areas. Again, the total acreage of various kinds of land uses was compared between alternatives, along with the number of developed facilities. This analysis documents how many people would be accommodated at the developed recreation areas in the Study Area under each alternative.

Change in Water and Land Recreation Opportunity Spectrum (WALROS) Classification

Using the Water and Land Recreation Opportunity Spectrum Analysis method (Reclamation 2011b), recreational opportunities have been classified at the Study Area (see Chapter 3). Changes in existing land use categories were evaluated, by alternative, to determine the effect on physical, social, and managerial setting components for each use area. Changes in setting components were evaluated to determine a change in WALROS Classification.

Change in Visual Resource Conditions

As described in Chapter 3 Visual Resources, the BLM uses the Visual Resource Management (VRM) system and the four VRM classes to analyze and determine the visual impacts of proposed activities on the land and gauge the level of disturbance an area can tolerate before it exceeds the visual objectives of each VRM class. The method that the BLM uses to determine whether proposed projects conform to an area's VRM class objectives is a contrast rating system that evaluates the effects of proposed projects on visual resources. Contrast rating is accomplished from critical viewpoints or along a transportation corridor using BLM Contrast Rating Worksheets to determine whether the level of disturbance associated with any of the alternatives would exceed the VRM objectives for that area. The evaluator rates the degree of visual contrasts based on form, line, color, and texture of the existing landform, vegetation, and structures, and determines how these features would look after project implementation. Under this system, it is assumed that the greater the degree of contrast between the existing landscape and the project-altered landscape, the greater the change in the existing character of the landscape.

During a site visit conducted in August 2012, a visual contrast rating worksheet (Form 8400-4) was completed for Alternatives B and C. A knoll overlooking the State Park Area was selected as the key observation point for evaluating proposed projects. Contrast ratings were assigned to the proposed project or activity in comparison to the existing landscape character. Contrast ratings were noted as being strong, moderate, weak, or none depending on degree of change. For a contrast to be rated as strong, the proposed project would be evaluated as dominant and demanding attention and would not be overlooked by the casual observer. For contrast to be rated as moderate, the proposed project would be evaluated as beginning to attract attention and beginning to dominate the characteristic landscape. For a contrast to be rated as weak, the proposed project would be evaluated as being seen but not attracting attention to the casual observer. For the contrast to be rated as none, the proposed project would be evaluated as not attracting attention or not being visible. The four levels of contrast correspond to the Visual Resource Classes IV, III, II, and I, referred to in Chapter 3.

Summary of Impacts

Impacts to recreational resources at the Study Area are summarized in Table 4-3. The change in the amount of land use category areas according to alternative was considered a change in recreational opportunities. A description of the existing recreational opportunities available in each land use category is included in Chapter 2. Tables 2-1 and 2-2 (see Chapter 2) list the change in acreage for each land use category under each alternative and the number and kind of recreation facilities. The Primary Jurisdiction Area and Reservoir Inundation Area land use categories remain unaffected at the Study Area under any of the alternatives. For all other land use categories, there would be changes in recreational opportunities as shown by the change in acreage and PAOT under each alternative.

Table 4-3. Summary of Recreational and Visual Resource Impacts at Red Fleet Reservoir.

INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in recreational opportunities	No change from existing conditions.	Developed Recreation Areas would remain the same. Undeveloped Day Use Recreation Areas would decrease by 1,435.3 acres as Natural Areas would be designated. Administrative, Primary Jurisdiction, and Reservoir Inundation areas would remain the same.	Developed Day Use Recreation Areas would increase by 8.6 acres. Developed Overnight Recreation Areas would increase by 4.3 acres. Developed Overnight and Day Use Group Recreation Areas would increase by 10.1 acres. Undeveloped Day Use Recreation Areas would decrease by 1,023.1 acres as 1,000.1 acres of Natural Areas would be designated and 23 acres of Developed Recreation Areas would be designated.
Change in visitation and recreational facilities	No change from existing conditions. Total developed campgrounds at 1. Total developed campsites at 38. Total day-use picnic sites at 37. Total boat parking at 40. Total persons at one time (PAOT): 575. Total boat ramps at 1.	No change in total developed campgrounds (1). No change in developed campsites (38). No change in day use picnic sites (37). No change in boat parking (40). Total PAOT: 575. Total boat ramps at 1.	Expanding the footprint of the existing State Park Area facilities would increase the developed campsites from 38 to 58 in that area. Adding a Developed Overnight and Day Use Group Recreation Area at the South Beach Area would increase the campsites by 20 and the day-use sites by 20 in that area. Total PAOT would increase to 875.Total boat ramps at 2.
Change in Water and Land Recreation Opportunity Spectrum (WALROS) Classification	No change from existing conditions.	The Inflow Area WALROS Classification would change from RN8 to SP8. The East Side Area WALROS Classification would change from SP9 to SP8. All other areas would exhibit no change in WALROS Classification from existing conditions.	The Inflow Area WALROS Classification would change from RN8 to SP8. The East Side Area WALROS Classification would change from SP9 to SP8. The South Beach Area WALROS Classification would change from SP8 to RD6. All other areas would exhibit no change in WALROS Classification from existing conditions.
Change in visual-resource conditions	No change from existing conditions.	No change in visual resource conditions.	No change in visual resource conditions.

Alternative A: No Action

Change in Recreational Opportunities

There would be no change to existing recreational opportunities under Alternative A for the Study Area. No new recreational opportunities would be added to the current available spectrum.

At the present time, State of Utah administrative rules (R651-411-2(2)) specify that OHVs may be used to access ice fishing areas at Red Fleet Reservoir from the State Park boat ramp. Under Alternative A, Reclamation would officially designate that use under federal regulation 43

CFR § 420.2, but would not designate any other areas, roads, or trails open to public OHV use at Red Fleet Reservoir.

Change in Visitation and Facilities

There would be no change to existing recreational facilities under Alternative A for the Study Area. The current trend in visitation would be expected to continue. The total PAOT would remain at 575 assuming a party size of five persons for 38 campsites, 37 day use picnic tables, and 40 boat parking spaces. The number of boat ramps would remain at one.

Change in Water and Land Recreation Opportunity Spectrum (WALROS) Classification

There would be no change to existing recreational facilities or opportunities under Alternative A for the Study Area. Therefore, there would be no change in WALROS Classification.

Change in Visual Resource Conditions

There would be no changes in resource management at the Study Area under Alternative A; therefore, this alternative meets the visual objectives of VRM Class II and results in no impacts on visual resources within the Study Area.

Alternative B: Resource Conservation Emphasis

Change in Recreational Opportunities

Under Alternative B, recreational opportunities in developed campsites would be the same as those under existing conditions. Substantial portions of the Inflow Area, Dinosaur Trackway Area, North Beach Area, South Beach Area, and East Side Area (1,435.3 acres) would be designated as Natural Area, with a focus on conservation of natural and cultural resources. Because of the Natural Area designation, there would be some reduced recreational motorized access in areas where it currently exists (i.e., North Beach, East Side, and South Side areas) thereby reducing motorized access but improving the nonmotorized recreational user experience. In other areas there would be increased trail connectivity between developed facilities with the addition of proposed trails. Enhanced public information and interpretation projects would also improve visitor experiences.

The South Beach Area would continue to be managed as an Undeveloped Day Use Recreation Area and some access-control facilities (i.e., gates and fences) would remain under Alternative B.

Under Alternative B, Reclamation would allow public OHV access to the Reservoir Inundation Area for ice fishing from the State Park Area boat ramp, as conditions permit and in accordance with Utah administrative rule R651-411-2(2). Reclamation would also coordinate with the appropriate management entities regarding potential OHV use on designated state and county roads, or portions thereof, within the Study Area. An existing informal and undesignated OHV riding area in the East Side Area would be closed to that use, consistent with designation of that area as a Natural Area under Alternative B.

Change in Visitation and Facilities

Some improvements to existing recreational facilities, such as sanitary facilities and utility upgrades, are included. The total number of developed campgrounds would remain at one, the number of developed campsites would remain at 38, the number of day use picnic sites would remain at 37, and the number of boat parking would remain at 40. At an average of five persons per site, overnight facility capacity remains at 190 PAOT, and day use facility capacity remains at 385 PAOT, for a total PAOT of 575 under Alternative B.

Change in WALROS Classification

Changing the land use designation from Undeveloped Day Use to Natural Area would result in a WALROS Classification change from RN8 to SP8 in the Inflow Area. Adding trailhead parking and improving fishing access in the East Side Area would result in a WALROS Classification change from SP9 to SP8. All other areas would exhibit no change in WALROS Classification from existing conditions.

Change in Visual Conditions

Under Alternative B, site redesign or rehabilitation of existing recreation facilities would be implemented; however, no new recreation development sites would be proposed or developed. A redesign of the existing development areas would be implemented on lands already disturbed. Using the visual contrast rating process by comparing the proposed project features with the major features of the existing landscape's form, line, color, and texture, there would be minimal changes in resource management at Red Fleet Reservoir under Alternative B. Therefore, this alternative meets the visual objectives of VRM Class II and results in minimal impacts on visual resources within the Study Area.

Alternative C: Recreation Development Emphasis

Change in Recreational Opportunities

Recreational opportunities in the Study Area would increase under Alternative C. In addition to enhanced trail connectivity, fishing opportunities, and interpretive programs described for Alternative B, Alternative C would expand existing Developed Day Use, Developed Overnight, and Developed Day Use and Overnight Group Recreation Areas. Rental cabins and/or yurts may also be added. Alternative C would allow the development of a new Developed Day Use Recreation Area at the North Beach Area and a Developed Overnight and Day Use Group Recreation Area at the South Beach Area. Under Alternative C, overall recreation use would likely increase and would occur at more locations around the reservoir.

Under Alternative C, Reclamation would allow public OHV access to the Reservoir Inundation Area for ice fishing from the State Park Area boat ramp, as conditions permit and in accordance with Utah administrative rule R651-411-2(2). Reclamation would also coordinate with the appropriate management entities regarding potential OHV use on designated state and county roads, or portions thereof, within the Study Area. An existing informal and undesignated OHV riding area in the East Side Area would be closed to that use, consistent with designation of that area as a Natural Area under Alternative C.

Change in Visitation and Facilities

New facilities under Alternative C would include parking areas and sanitation facilities. Expanding the footprint of the existing State Park Area facilities would increase the developed campsites from 38 to 58. Adding a Developed Overnight and Day Use Group Recreation Area at the South Beach Area would increase the campsites by 20 and the day use sites by 20 in that area. This would increase total PAOT capacities by 300 (from 575 under Alternative A to 875 under Alternative C). An upward trend in visitation would be expected under alternative C as a result of constructing additional recreation facilities.

Change in WALROS Classification

Changing the land use designation from Undeveloped Day Use to Natural Area would result in a WALROS Classification change from RN8 to SP8 in the Inflow Area. Adding trailhead parking and improving fishing access in the East Side Area would result in a WALROS Classification change from SP9 to SP8. Adding a Developed Overnight and Day Use Group Recreation Area in the South Beach Area would result in a WALROS Classification change from SP8 to RD6. All other areas would exhibit no change in WALROS Classification from existing conditions.

Change in Visual Resource Conditions

There would be some localized changes in visual-resource conditions at the Study Area under Alternative C. New facilities would be constructed on suitable land, including new boating, camping, and picnicking facilities with accompanying parking and access roads. The contrast to the basic visual elements caused by the proposed facilities, while seen, would remain subordinate to the existing landscape and not attract attention. Therefore, this alternative would meet the visual objectives of VRM Class II by retaining the existing character of the landscape within the Study Area.

Cumulative Impacts

The Study Area is frequently visited by recreational users and tourists. Implementation of any proposed projects or actions would have both temporary and permanent effects on the recreational opportunities and the visual resources. However, these effects are not considered to be cumulatively significant. Evaluating cumulative impacts to these resources includes review of proposed onsite projects or actions and offsite projects or actions proposed in the reasonably foreseeable future, any of which may not be significant on its own but when combined could be significant. This assessment is based on information that was reasonably available during the RMP process.

The Study Area's recreational opportunities are mostly water based (e.g., boating and fishing, with associated camping and picnicking) and do not depend on a pristine viewshed. Any proposed facilities are similar to existing facilities and will not change the overall recreational experience. The alternative with the greatest impact on recreation facilities would be Alternative C, which proposes an estimated increase of 300 PAOT. However, this is not enough to create a significant cumulative change from the historical baseline visitation conditions.

Visual conditions of adjacent lands have been or are being altered by past and present actions as development continues in the Ashley Valley and more people visit popular nearby recreation

areas. However, there have been no large projects or actions that have significantly impacted the visual character of lands adjacent to the Study Area.

Some actions on adjacent lands in the foreseeable future include the development of new trails surrounding the Study Area. The BLM's Vernal Field Office indicates that there are plans to expand and harden the OHV trail access to the swimming hole in the Inflow Area, and to harden and add signage to mountain bike standards to the Flat Rock Loop trail in the North Beach Area so that more people will use the trail. The increase in trail usage could mean more visitation pressure on the Study Area, but any reasonably foreseeable changes to the surrounding land uses would not change the overall recreational opportunities, the WALROS designations, or the overall viewshed character of the Study Area.

Mitigation Measures

Because the cumulative impact effects of the proposed projects and actions in all three alternatives are not significant, no major mitigation measures are needed. However, in site-specific design, visual-resource impacts can be reduced or eliminated by using facility design and land-planning techniques that borrow from naturally established line, form, color, and texture. Design considerations include building materials, size and scale, color, location, screening, and distance from critical viewpoints or transportation corridors. Visual-resource values must be considered throughout the RMP process as the assignment of visual-management classes is based on the management decisions made in the RMP. All proposed actions that would result in surface disturbances must consider the importance of the visual resource and the impacts the project may have on the characteristic landscape. Management decisions must reflect the importance of visual resources within the Study Area while also giving consideration to other resource values and uses.

Residual Impacts

Residual impacts to recreation resources from implementation of any alternative could include restricting certain recreational activities, limiting user numbers, or eliminating recreational opportunities in some areas. However, these impacts are not considered significant. There are no foreseeable, residual impacts under any of the proposed alternatives with regard to visual resources.

Natural and Cultural Resources

Geology

This section evaluates the proposed RMP alternatives for potential impacts on the geologic processes within the Study Area.

Issue

How would implementation of an RMP affect geologic processes within the Study Area?

Impact Indicators
The following impact indicator was used to determine if implementation of the RMP would affect geologic processes within the Study Area:

- change in the amount of shoreline erosion.

Analysis Methods
The evaluation of impacts to geologic processes was based on a review of ongoing shoreline erosion within the Study Area.

Summary of Impacts
Shoreline erosion is expected to continue with implementation of any of the RMP alternatives. As long as Red Fleet Reservoir is utilized for water storage and water-based recreation purposes, wave action and fluctuating water levels would continue to cause reservoir shoreline erosion. Under Alternative B or C, a Habitat Management Plan would be developed with provisions to protect and maintain Natural Areas for wildlife habitat values. From a geologic standpoint, this may slightly reduce the amount of shoreline erosion in these areas. Table 4-4 provides a summary of impacts to geologic processes at the Study Area.

Table 4-4. Summary of Impacts to Geologic Processes at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the amount of shoreline erosion	Shoreline erosion would be expected to continue. No change from existing conditions and trends.	Slightly reduced shoreline erosion with designation of Natural Area.	Same as Alternative B, with fewer acres designated as Natural Area.

Alternative A: No Action
Alternative A would not change the amount of shoreline erosion within the Study Area.

Alternative B: Resource Conservation Emphasis
Under Alternative B, more portions of the reservoir shorelines would be designated as Natural Areas. These designations would slightly decrease the amount of shoreline erosion in these areas when the reservoir is at full pool. This would be contingent on development of a Habitat Management Plan and assessment of practicability in consultation with State Parks.

Alternative C: Recreation Development Emphasis
Same as Alternative B, with fewer Study Area acres designated as Natural Area.

Cumulative Impacts
The greatest factor influencing past, present, and future shoreline erosion is reservoir water level management. The RMP action alternatives (Alternative B or C) would to a small degree incrementally reduce shoreline erosion, contingent on development and implementation of a Habitat Management Plan.

Mitigation Measures
Shoreline erosion is currently occurring along the reservoir full pool elevation throughout much of the Study Area. Appropriate erosion control and shoreline stabilization measures should be installed where appropriate to prevent further erosion in high-use areas.

Residual Impacts
Implementation of an RMP alternative would not result in any significant residual impacts to geologic processes.

Soils

This section evaluates RMP alternatives for their potential impacts on the soils within the Study Area.

Issue
How would implementation of an RMP affect soils within the Study Area?

Impact Indicators
The following impact indicator was used to determine if implementation of the RMP would affect soils within the Study Area:

- change in the amount of soil disturbance.

Analysis Methods
For the soil impact analysis, the amount of soil that would be disturbed or removed from vegetation production because of construction or paving activities was calculated using a GIS database for each RMP alternative. The land areas proposed for campgrounds, access roads, and other improvements were calculated and totaled.

The amount of existing soil disturbance varies with each land use category. Table 4-5 shows the percentage of these disturbances for each land use category under current conditions. Under the proposed RMP alternatives, the amount of soil that would be disturbed or removed from vegetation production as a result of construction or recreation activities was calculated by applying these same disturbance percentages to the action alternatives and their proposed changes in land uses.

Summary of Impacts
Under Alternative A, soil conditions within the Study Area would not be expected to change over the existing conditions. Currently, a total of approximately 69.0 acres, or 2.7 percent, of the entire Study Area is disturbed. Under Alternative B, no soil would be disturbed or lost as a result of constructing new campgrounds, restrooms, roads, or other developed recreational facilities, and overall soil disturbance would decrease compared with Alternative A as a result of Natural Area designation and associated land management and from decommissioning of some unimproved roads. Under Alternative C, overall soil disturbance would also decrease from existing conditions, though to a lesser degree than with Alternative B. The amount of soil disturbance by alternative is presented in Table 4-6.

Table 4-5. Percentage of Existing Soil Disturbance for Each Land Use Category at Red Fleet Reservoir.

LAND USE CATEGORY	PERCENT DISTURBED
Administrative Area	45
Developed Day Use Recreation Area	55
Developed Overnight Recreation Area	85
Developed Overnight and Day Use Group Recreation Area	45
Undeveloped Day Use Recreation Area	2
Natural Area	1
Primary Jurisdiction Area	25

Table 4-6. Acres of Soil Disturbance by Alternative for Red Fleet Reservoir.

LAND USE AREAS	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Administrative Area	1.0	1.0	1.0
Developed Day Use Recreation Area	3.4	3.4	8.1
Developed Overnight Recreation Area	4.2	4.2	7.8
Developed Overnight and Day Use Group Recreation Area	0	0	4.5
Undeveloped Day Use Recreation Area	36.9	8.2	16.5
Natural Area	0	14.4	10.0
Primary Jurisdiction Area	21.9	21.9	21.9
Total Soil Disturbance [a]	67.6	53.1	69.8

[a] Due to rounding, columns may not sum exactly to the total soil disturbance.

Alternative A: No Action

Under Alternative A, minimal or no soil would be lost as a result of new construction or paving activities related to building new camping and recreational facility sites. The existing amount of soil disturbance related to existing roads, campgrounds, campsites, administrative areas, and so forth is estimated to be 67.6 acres (see Table 4-6). However, the amount of total soil disturbance would likely increase as visitation and use of the Study Area increases over time under Alternative A.

Alternative B: Resource Conservation Emphasis

Under Alternative B, no additional soil disturbance or paving would occur in the Study Area. Natural Areas would be designated within the Study Area and an estimated 14.4 acres of soil

disturbance would occur within these areas. This represents a reduction over existing use for these areas, which is primarily Undeveloped Day Use Recreation Area. Removal and reseeding of a number of unimproved roads would also reduce the amount of disturbance over existing conditions. Overall, soil disturbance is estimated as 53.1 acres with Alternative B, or about 14.5 acres less than Alternative A.

Alternative C: Recreation Development Emphasis

Under Alternative C, new developed recreation areas would be created, resulting in additional soil disturbance (Table 4-6). Expansion of the Developed Day Use Recreation Areas would disturb an additional 4.7 acres of soil (8.1 total acres for the land use category). Expansion of Developed Overnight Recreation Area near the existing State Park Area facilities would disturb an additional 3.6 acres (7.8 total acres). The addition of the Developed Overnight and Day Use Group Recreation Area would disturb an estimated 4.5 acres. Factors more than balancing these additional disturbances are designation of Natural Areas and decommissioning unimproved roads. Overall, soil disturbance is estimated as 69.8 acres with Alternative C, or about 2.2 acres more than Alternative A.

Cumulative Impacts

In addition to RMP actions, soil erosion would continue to occur within the Study Area as a result of reservoir water operations. Soils would be removed from vegetative production as a result of campground and associated recreation facility upgrades or construction. Cumulative impacts would include this loss of productive soil, combined with the loss of soils from similar activities in the past. Designating portions of the Study Area as a Natural Area would restrict vehicle access and create a beneficial cumulative impact by reducing soil disturbances and erosion in these areas.

Additionally, federal, state, local, and private entities are expected to conduct a number of projects in the watershed of the Study Area that have the potential to cause soil erosion. These projects include the following: (1) The BLM plans to expand and harden OHV trail access to a swimming hole in the reservoir Inflow Area just outside the Study Area boundary; (2) in the long-term, UDOT plans to widen US-191 for a stretch of road near the Study Area; (3) phosphate mining in the vicinity of the Study Area is expected to expand and to continue over the long-term. It is anticipated that these disturbances would use appropriate mitigation measures to minimize soil erosion impacts.

Mitigation Measures

To mitigate soil erosion impacts, Reclamation would implement erosion control methods for individual projects under Alternatives B and C. Implementation of proper erosion controls would mitigate impacts caused by construction activities and stormwater runoff. Mitigation measures would include requiring a Storm Water Pollution Prevention Plan for all construction operations that disturb 1.0 or more acres; this would require use of published BMPs for controlling erosion and sedimentation from stormwater runoff and would address runoff from all roads (paved and unpaved), trails, campgrounds, parking lots, and administrative buildings.

Other elements of Alternatives B or, to a somewhat lesser extent, Alternative C, would help mitigate soil erosion, including restricting vehicle access to sensitive areas in the Study Area and restoring areas that have been damaged by unmanaged recreation use.

Residual Impacts

Soil erosion is a natural process that occurs as a result of climate conditions and the nature of the soils in the Study Area. Human activity (e.g., construction, recreation, reservoir operations) has the potential to increase soil erosion rates. Under all RMP alternatives, a minor amount of soil would be eroded and deposited in Red Fleet Reservoir as the result of natural and human-induced erosion, both within and outside of the Study Area. Mitigation measures described above would avoid or mitigate significant soil erosion impacts resulting from implementation of the RMP alternatives.

Vegetation

Issue

How would implementation of the RMP affect upland and riparian-wetland vegetation communities within the Study Area?

Impact Indicators

The following impact indicators were used to determine if implementation of the RMP would affect upland and riparian-wetland vegetation communities within the Study Area:

- change in the quantity, condition, and levels of disturbance of the upland vegetation communities; and

- change in the quantity, condition, and levels of disturbance of riparian-wetland vegetation communities.

Analysis Methods

The land use categories defined and described in Chapter 2 provide the basis for the vegetation impact analysis. As the boundaries of the land use categories change with each alternative, so do the condition and amount of disturbance to plant communities within each land use category. Each land use category and its associated quantity of land disturbances for each alternative are listed in Table 4-5 in the Soils Section.

Specifically, decommissioning of unimproved roads, new facility construction, and changes in land use designation were used to describe potential impacts. Typical disturbances related to the RMP alternative actions being considered include elimination of vegetation within developed use areas such as campsites, roads, trails, or parking areas; indirect affects to vegetation conditions resulting from increased use in an area; and increased potential for facilitating the spread of noxious or undesirable species into areas where vegetation was removed.

The placement of dredge or fill material within riparian-wetland communities is regulated under Section 404 of the Clean Water Act. The action alternatives do not identify specific project-related fill activities. These fill activities within riparian-wetlands would need to be identified on

a project-by-project basis and all efforts to avoid and minimize impacts to riparian-wetlands would be required as a part of the Section 404 permitting process. Therefore, for this analysis it is assumed that direct ground disturbance would occur primarily in upland vegetation communities and not in riparian-wetland vegetation communities because of jurisdictional wetlands regulations.

Summary of Impacts

Impacts to vegetation communities are described in Table 4-7. The analysis for vegetation involved comparing changes in the quantity and condition of upland and riparian-wetland vegetation communities as a result of changes in the designated land use classification. Alternative A involves no changes from existing conditions and trends. Alternative B includes decommissioning of existing unimproved roads, construction of new nonmotorized trails, and changes in the designated land use classification affecting upland and riparian-wetland vegetation communities within Natural Areas. Alternative B has the potential to improve the overall condition and decrease the level of disturbance of vegetation within the Study Area. Alternative C includes the decommissioning of existing unimproved roads; the construction of new nonmotorized trails; and the expansion of Developed Day Use, Developed Overnight, and Developed Day Use and Overnight Group Recreation Areas within the Study Area. Therefore, Alternative C has the potential to slightly increase the level of disturbance to upland and riparian-wetland vegetation communities within the Study Area.

Table 4-7. Summary of Upland and Riparian-Wetland Impacts at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the quantity, condition, and level of disturbance of upland vegetation communities	Existing level of disturbance is 68 acres. No change in current upland vegetation conditions and trends.	Level of disturbance reduced to 53 acres through designation of 1,435 acres of Natural Area, decommissioning of 2.3 miles of unimproved roads, and conversion of 0.2 mile of unimproved roads to nonmotorized trail. Overall potential for improved condition of upland vegetation.	Level of disturbance increased to 70 acres through development of new recreation areas. Decommissioning of 2.3 miles of unimproved roads. Creation of 1.8 miles of new nonmotorized trails. Overall slight potential for decreasing condition of upland vegetation.
Change in the quantity, condition, and level of disturbance of riparian-wetland vegetation communities	No change to the existing riparian-wetland conditions and trends.	Potential for some improvement due to designation of Natural Areas.	Overall potential for improvement due to designation of Natural Areas that include riparian-wetland vegetation communities. Some localized minor to moderate impacts due to new recreation facility development near riparian-wetlands.

Potential impacts on riparian-wetlands are primarily related to the decommissioning of existing unimproved roads, the construction of new nonmotorized trails, or changes to the designated land use categories. Alternative B would likely provide an increase in the overall function of the riparian-wetland community due to the decommissioning and revegetation of existing unimproved roads as well as changes to the designated land use categories. Alternative C would likely cause minor impacts to the riparian-wetland communities due to new nonmotorized trail construction, new recreation facility construction, and the related increase in disturbance from recreational activity.

Noxious weeds are present in the Study Area as discussed in the Vegetation section of Chapter 3. They tend to occur in scattered patches throughout the Study Area, with more dense growth in high-use recreation areas and along the shoreline of the reservoir. The primary concerns are the propagation of noxious weeds and the introduction of additional populations within the Study Area. The amount of disturbance for each alternative is useful in comparing the potential of noxious weed invasion under each alternative.

Alternative A: No Action

Change in the Quantity, Condition, and Level of Disturbance of Upland Vegetation Communities

Under Alternative A the quantity, condition, and level of disturbance of upland vegetation communities would remain unchanged from existing conditions and trends described in Chapter 3. Currently there are 1,945 acres of upland vegetation communities and approximately 69 acres of disturbance within the Study Area. Reclamation, State Parks, and other partners would continue existing levels of effort in managing access and controlling invasive species. However, no formal Habitat Management or Integrated Pest Management Plans would be developed.

Change in the Quantity, Condition, and Level of Disturbance of Riparian-Wetland Vegetation Communities

The quantity, condition, and level of disturbance of riparian-wetland vegetation communities would not change under Alternative A.

Alternative B: Resource Conservation Emphasis

Change in the Quantity, Condition, and Level of Disturbance of Upland Vegetation Communities

Alternative B includes the decommissioning of approximately 2.3 miles of existing unimproved roads, the conversion of 0.2 miles of unimproved roads to nonmotorized trail, and the designation of 1,435acres of Natural Area. Alternative B has the potential for improving the overall condition of the upland vegetation community through reduction of disturbance levels to 53 acres, or 15 acres less than Alternative A.

Change in the Quantity, Condition, and Level of Disturbance of Riparian-Wetland Vegetation Communities

Designation of Natural Areas and development of Habitat Management and Integrated Pest Management Plans would provide longer-term improvements in condition. Natural Area designations with Alternative B are inclusive of 108 acres of riparian-wetland communities. This

designation and associated management efforts would reduce the existing level of disturbance and increase the overall functions of the riparian-wetland community.

Alternative C: Recreation Development Emphasis

Change in the Quantity, Condition, and Level of Disturbance of Upland Vegetation Communities

Alternative C includes the decommissioning of approximately 2.3 miles of existing unimproved roads and the construction of approximately 1.8 miles of new nonmotorized trails. Alternative C includes the designation of 1,000 acres of Natural Area and an additional 23 acres for developed recreation uses. Alternative C has the potential for slightly decreasing the overall condition of the upland vegetation community through an increase of disturbance levels to 70 acres, or 2 acres more than Alternative A.

Change in the Quantity, Condition, and Level of Disturbance of Riparian-Wetland Vegetation Communities

Alternative C does not involve any loss in the quantity of riparian-wetlands. While additional recreation facility development would occur, riparian-wetland communities have been avoided in the suitability analysis (Chapter 2). However, it is probable that site-specific facility design would involve some minor to moderate impacts to riparian-wetland communities, resulting from nonmotorized trail crossings of washes, nonmotorized trails through wetland communities, boat ramp construction, or other features. Site specific design would require National Environmental Policy Act environmental analysis and would need to comply with Section 404 of the Clean Water Act.

Alternative C proposes decommissioning 2.3 miles of unimproved roads of which a small amount, 25 feet, are within Study Area riparian-wetland communities. New nonmotorized trails that cross within or near riparian communities would increase day use activity, potential for noxious weed introduction and dispersal, disturbance of wetland vegetation due to foot traffic, increased erosion/sedimentation, and disturbance of wildlife. Negative impacts would be concentrated around developed facilities, while benefits from unimproved road decommissioning and development of Habitat Management and Integrated Pest Management Plans would mostly occur in the portions of the Study Area that would be designated as Natural Areas.

With Alternative C, Natural Area designations are inclusive of 108 acres of riparian-wetland communities. This designation and associated management efforts would reduce the existing level of disturbance and increase the overall functions of the riparian-wetland community.

Cumulative Impacts

Public use and the continued threat of noxious weed invasion are the most likely cumulative impacts expected as a result of past, present, and reasonably foreseeable future impacts on both upland and riparian-wetland plant communities within the Study Area and on surrounding lands. Reasonably foreseeable projects outside of the Study Area that have been discussed in earlier sections of this chapter (Water Resources and Soils) included BLM recreation developments, US-191 highway widening, and ongoing phosphate mining. These projects would have potential to facilitate noxious weed invasions in the general vicinity; however, it is also anticipated that

these disturbances would be accompanied by appropriate mitigation measures to minimize this potential.

An RMP action alternative would incrementally improve Study Area riparian-wetland conditions. Alternative B provides greater improvements throughout, while Alternative C provides less overall improvement and some localized minor-to-moderate (less-than-significant) impacts. Past, present, and future fluctuations in the water level of Red Fleet Reservoir have the greatest overall impact on both the quantity and condition of riparian-wetland plant communities in the Study Area. The impacts of water fluctuation are both detrimental and beneficial depending on seasonal timing, duration of flooding or low-water period, and depth. However, water level rises are based on a combination of water right delivery requirements and climate conditions, both of which are beyond the scope of the RMP decision.

Mitigation Measures

Mitigation measures for either action alternative will include the development of noxious and invasive weed control strategies as a part of an Integrated Pest Management Plan. Fence lines can facilitate weed invasion as winds blow invasive vegetation against fences, where it becomes trapped and releases seed. Therefore, including a provision for removal of redundant or unnecessary fence lines as part of the Integrated Pest Management Plan would provide some weed management benefit. Additionally, the plan should address weed control strategies to be implemented along all existing and future boundary and access control fences in the Study Area.

After site-specific environmental assessment and design, appropriate sediment and erosion control strategies would be implemented during construction activities to limit impacts to the upland and riparian-wetland vegetation communities. In site-specific designs, disturbed areas would be replanted with appropriate native species. Should it be found that any site-specific projects would involve filling of wetlands, Reclamation would need to comply with Section 404 of the Clean Water Act. Section 404 requires wetland impacts be mitigated and that no net loss of wetland occurs. The Section 404 permitting and mitigation process is under the jurisdiction of the U.S. Army Corps of Engineers.

Residual Impacts

With the previously stated mitigation measures, impacts of Alternative B would be avoided or fully mitigated. Pending site-specific design and environmental assessment, Alternative C would likely include some minor-to-moderate (less-than-significant) impacts to riparian-wetland plant communities as a result of new recreation facility development.

Wildlife

Wildlife of interest to state and federal agencies and the general public in the Study Area include special status species (federally and state-threatened and endangered species and other species of concern), big game, raptors, waterfowl, and general wildlife populations. Wildlife viewing opportunities, big game and vehicle conflicts, presence of nuisance wildlife species, and the impact of reservoir uses on wildlife habitats are also concerns in the Study Area. Sources of information used in developing this assessment of impacts to wildlife and habitat included

UDWR reports, websites, data, and maps; published literature; consultations with agency personnel; and field observations made in October 2011.

Issue
How would implementation of an RMP alternative affect wildlife and their habitat in the Study Area?

Impact Indicators
The following impact indicators were used to determine if implementation of the RMP would affect wildlife and their habitat within the Study Area:

- changes in the quality and amount of wildlife habitat, and
- changes in the amount of human-related disturbance.

Analysis Methods
Changes in the amount and quality of available habitat were determined by the habitat type and amount of area that would be impacted as a result of constructing recreation facilities (e.g., campgrounds, picnic areas, parking areas, boat facilities), trails and roadway systems, the designation of Natural Areas, and developing a Habitat Management Plan for the Study Area.

Increased human activity and loss of habitat can have a direct impact on wildlife and would increase stress, reduce reproductive success, and cause displacement. Disturbance is detrimental during critical seasonal periods, especially during spring and winter. Changes in disturbance were determined based on the estimated increase or decrease in public use and the location of the use in relation to important wildlife habitat. The amount and location of public use were based on the review of each alternative in terms of the types of recreation facilities, trail systems, and roadways; the decommissioning of roads; and the designation of Natural Areas.

Summary of Impacts
Impacts to wildlife are summarized in Table 4-8. Under Alternative A, wildlife conditions within the Study Area would not be expected to change from existing conditions and trends. Alternative B would potentially improve wildlife conditions through improved management of resources and increased protection of sensitive wildlife habitat and important wildlife areas. Alternative C would potentially negatively impact wildlife, based on the increased recreational activities and facility development impacts to wildlife and wildlife habitat. Mitigation measures are included with action alternatives to eliminate or reduce potential impacts, as described in the subsections below for each alternative.

Alternative A: No Action
Additional recreational facility site development would not be pursued under Alternative A. In addition, land use category changes, trail decommissioning, erosion control measures, and protective wildlife habitat measures would not be pursued. Therefore, these actions would not change wildlife habitat or disturbance levels from existing conditions and trends.

Table 4-8. Summary of Impacts to Wildlife at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the overall quality and amount of wildlife habitat	No change from existing conditions and trends.	Little or no impacts related to the loss of wildlife habitat. Enhancement and protection of important habitats as a result of designating Natural Areas.	Minimal impacts related to habitat loss as a result of recreational development and uses.
Change in the amount of human-related disturbance	No change from existing conditions and trends.	Decrease in disturbance related to restrictions of vehicle access, designated parking areas, and decommissioning unimproved roads. Short-term increase in disturbances during construction of facilities in localized areas where recreational use would increase in association with the development of new facilities. Impacts would be minimal because of the limited amount of proposed development, current condition of areas proposed for development, and availability of similar habitat in the surrounding area.	New recreation facility sites would be constructed under Alternative C, resulting in more short- and long-term wildlife disturbances. Impacts would be minimal because of the current condition of areas proposed for development and the availability of similar habitat in the surrounding area.

Alternative B: Resource Conservation Emphasis

Under Alternative B, wildlife in the Study Area would generally benefit from reduced disturbance, especially in key wildlife habitat and proposed Natural Area designations.

Change in the Quality and Amount of Wildlife Habitat

Under Alternative B, approximately 1,435.3 acres would be designated as Natural Area, which under present management receives no protection from day use recreation impacts. Classification of this land use category would potentially enhance wildlife habitat by reducing the amount and intensity of recreational use and providing long-term protection of areas that support a relatively higher diversity and number of wildlife species than other portions of the Study Area.

While the amount of wildlife habitat would not increase, the quality of habitat would improve with development and implementation of a Habitat Management Plan. Specific management efforts that would be included in the Habitat Management Plan under Alternative B would be to limit the carrying capacity of boats on the reservoir to the current maximum capacity of 45 boats, decommission unimproved roads, and manage habitat needs for special status species.

Change in the Amount of Human-Related Disturbance

Under Alternative B, wildlife in the Study Area would generally benefit from reduced disturbance, especially in key wildlife habitat within the proposed Natural Area designations. In addition, wildlife would benefit from decommissioning unimproved roads. Protecting quality wildlife areas, restricting vehicle access to sensitive areas, decommissioning unimproved roads, and managing for a reduced number of users would decrease the amount of stress to and

displacement of wildlife over the long term, especially during critical periods such as the nesting season.

Short-term disturbance to wildlife would likely occur during the improvement of existing recreational facilities (e.g., picnic and camping areas, sanitary facilities, utility upgrades) and future implementation of erosion control measures and habitat enhancements. No long-term impacts are anticipated. Short-term impacts would include greater stress to the inhabitants and possible temporary displacement of wildlife to adjacent habitats. However, impacts would be minimal because of the limited amount of proposed development and the availability of similar habitat in the surrounding area.

Of the sensitive species identified as potentially occurring in the Study Area, greater sage-grouse (*Centrocercus urophasianus*) in particular would benefit from the decrease in human disturbance under Alternative B. The designation of the entire area classified as occupied greater sage-grouse habitat would provide protection from disturbance during critical periods, such as when birds gather on leks for breeding, and during nesting and brood rearing. Protecting sensitive areas from recreation and removing unimproved roads fragmenting habitat have been identified as important management actions for protecting and enhancing greater sage-grouse populations (Stiver et al. 2006). Surveys specifically targeting the greater sage-grouse are recommended to document the species' presence and use within the project boundary, in order to properly estimate the number of birds impacted by management actions.

Other special status species that would be potentially impacted by Alternative B include the black-footed ferret (*Mustela nigripes*), Mexican spotted owl (*Strix occidentalis lucida*), Canada lynx (*Lynx canadensis*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). However, suitable habitat for these species does not currently exist within the Study Area and is not likely to be created by current or proposed management actions, and therefore the impacts on these species from Alternative B would be limited.

Alternative C: Recreation Development Emphasis

Under Alternative C, wildlife in the Study Area would generally benefit from improved management and the designation of parking areas as described under Alternative B.

Change in the Quality and Amount of Wildlife Habitat

Under Alternative C, more recreational opportunities would be pursued, including developing new camping, picnicking, and recreational facilities; improving developed camping facilities; and developing new hiking trails. This would occur throughout the Study Area but primarily in areas where some level of recreational use already exists. While the development of facilities would result in some loss of habitat, impacts would be restricted to currently disturbed areas or upland plant communities that are common in the surrounding area. Construction of the hiking trail in the South Beach Area would remove a minor amount of habitat in an area that is currently undisturbed. Construction of the trail to Lookout Point involves conversion of existing motorized access to nonmotorized and would therefore not involve additional habitat loss. Overall, impacts of habitat loss would be minimal under Alternative C, although greater than those described under Alternative B.

Change in the Amount of Human-Related Disturbance

Under Alternative C, as under Alternative B, wildlife in the Study Area would generally benefit from reduced disturbance in important wildlife areas. Similar to Alternative B, vehicle access would be restricted to the proposed parking areas and designated roads and trails, thereby protecting sensitive wildlife habitat and important wildlife areas. This would decrease the amount of stress to and displacement of wildlife over the long term, especially during critical periods such as the nesting season. Additionally, some unimproved roads would be decommissioned, which would prevent vehicle disturbance in some areas.

Short-term disturbance to wildlife would likely occur during the development of new boating, camping, and picnicking facilities and associated access roads; construction of the proposed trail segments; and implementation of erosion control measures. Impacts would be minimal because of the limited duration of the disturbance activities and availability of similar habitat in the surrounding area.

Wildlife would be impacted long-term by disturbance in areas where recreational use would increase in association with the new facilities and the hiking trails. Impacts include greater stress to the inhabitants and temporary displacement of wildlife to adjacent habitats. Activity during the nesting season would also lead to loss of reproductive success for bird species. Improvements in the North Beach Area would increase use and disturbance in that area, which may indirectly affect the surrounding area, which includes designated greater sage-grouse habitat. This developed area also fragments the Natural Area along the northern and eastern sides of the Study Area, and the two disconnected sections would not provide as much benefit to greater sage-grouse as the contiguous Natural Area designated in Alternative B.

Cumulative Impacts

Past actions that have contributed to current conditions for wildlife in the Study Area and surrounding lands include grazing and agricultural development, reservoir construction, reservoir water level fluctuations, phosphate mining, and human disturbance from recreational activity. Alternative C would incrementally add to wildlife habitat disturbances by developing new recreation facilities. Either of the action alternatives (Alternative B or C) would result in some incremental improvements to wildlife habitat over existing conditions by decommissioning user-created unimproved roads, designating portions of the Study Area as Natural Areas, and cooperatively developing and implementing a Habitat Management Plan that would increase consistency of wildlife management objectives inside and outside the Study Area.

Mitigation Measures

Mitigation measures that will minimize or avoid impacts to wildlife are recommended below. These measures will be integrated into development of a Habitat Management Plan if either action alternative were selected for the RMP:

- At appropriate locations, signs will be posted to encourage recreationists to stay on the trail and within developed recreation facility boundaries to minimize the amount of vegetation trampling and disturbance to wildlife.

- Wetland and riparian habitats will be protected in accordance with existing federal regulations. During the development and expansion of recreation facilities, construction will, to the extent possible, avoid disturbance (both directly and indirectly) of wetland and riparian areas.

- Wildlife management will be coordinated between Reclamation and appropriate partner agencies to specify suitable recreation within the Natural Areas and identify measures to target areas that were previously impacted by recreationists and are in need of restoration.

Residual Impacts

Under either action alternative, beneficial impacts to wildlife would occur. Potential negative impacts under each alternative would be minimized or avoided by implementing mitigation measures. However, regardless of the mitigation measures, some wildlife habitat would be impacted by the development of recreation facilities and recreational use, especially under Alternative C. Disturbance levels would also increase in localized areas. Overall net impacts of either action alternative would be beneficial because of improved management of Study Area resources.

Fisheries

This section evaluates RMP alternatives for potential impacts on Study Area fishery resources, including habitat quantity and quality, angling pressure, and potential threat of aquatic invasive species (AIS) infestation.

Issue

How would implementation of the RMP affect the fishery within the Study Area?

Impact Indicators

The following impact indicators were used to determine if implementation of the RMP would affect the fishery within the Study Area:

- change in the quality or quantity of fish spawning and recruitment habitat,
- change the amount of angling pressure, and
- change in the threat of AIS infestation.

Analysis Methods

Impacts to spawning and recruitment habitat were assessed qualitatively by assuming that various resource management actions would have negative, beneficial, or no impacts on littoral and inflow habitats important to egg, larval, and juvenile stages of fishes. Beneficial resource management actions include revegetating disturbed areas, implementing erosion control measures, providing access controls to riparian, shoreline, and inflow areas. Proposed resource management actions where changes to shoreline areas would increase siltation or disturbance to littoral areas, such as the creation of new campground facilities, were considered negative. Areas where the existing management situation, if left unchanged, would result in a negative impact to the fishery were also included in the analysis.

Change in the amount of angling pressure was assessed by reviewing proposed resource management actions that would impact angling pressure on the reservoir. Factors such as boating restrictions and the amount of development or enhancement of recreational facilities were analyzed to determine whether these actions would be beneficial, negative, or have no influence on fishing pressure. Those improvements that had the potential to considerably increase angling pressure were identified as negative impacts, while those that limited fishing pressure, such as boating limits, were identified as positive impacts.

Infestation of AIS was assessed by reviewing the proposed resource management actions that would impact numbers of boaters utilizing the reservoir. Factors such as boat launching and trailer parking capacity and development or enhancement of recreational facilities were analyzed to determine whether these actions would be beneficial, negative, or have no influence on the potential for AIS infestation. Improvements that had the potential to increase the number of boats traveling to and launching in the reservoir were identified as negative impacts, while those which limited boat traffic were identified as positive impacts.

Summary of Impacts

Alternative A would have a slight negative impact on the existing fishery at Red Fleet Reservoir because ongoing resource management conditions are allowing for bank erosion and siltation in some areas. Alternative B should have no negative impacts to the fishery. Alternative C would have a slight negative impact from developing camping and picnicking facilities and associated access roads, trails, and boat ramps. Impacts to fisheries are summarized in Table 4-9.

Table 4-9. Summary of Fishery Resources Impacts at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the quality and quantity of fish spawning and recruitment habitat	Ongoing negative impacts associated with unfettered shoreline access around Red Fleet Reservoir.	Minimal positive impact associated with designating Natural Areas, revegetating disturbed areas, restricting vehicle access to sensitive areas.	Minimal positive impact associated with revegetating disturbed areas and restricting vehicle access to sensitive areas. Negative impact associated with continued unfettered shoreline access, as well as developing new recreational facilities.
Change in the amount of angling pressure	No change from existing conditions. However, a future increase in visitation would continue to increase fishing pressure.	Slight positive impact associated with access restrictions to the Inflow, North Beach, and South Side Areas.	Negative impact associated with developing new recreational facilities with more boat launching and recreational capacity.
Change in the threat of aquatic invasive species infestation	No change from existing conditions. However, a risk is always present.	Slight positive to no impact with restrictions on access to the Inflow, North Beach, and South Side Areas. However, the risk remains with boat launching.	Negative impact associated with developing new recreational facilities and boat launching areas allowing for greater potential for infestation.

Alternative A: No Action

Change in the Quality or Quantity of Fish Spawning and Recruitment Habitat

The minimal negative impacts resulting from Alternative A would be related to continued bank erosion and trampling of littoral habitat by vehicle and foot traffic. Currently, there is uncontrolled access to the Study Area from adjacent lands by uncontrolled vehicular access to shoreline areas which also contributes to soil erosion. An anticipated increase in future visitation would also result in the disturbance of surface soils through the creation of informal use areas. Reducing the amount of sediment entering the reservoir and reducing the access to shoreline areas by motor vehicles would help maintain a littoral area that contains substrates and plants important to macroinvertebrates, young sport fish, and prey species.

Change in the Amount of Angling Pressure

If Study Area visitation and angling pressure increased under Alternative A, it is likely that the quality of the fishing experience would diminish. If angling pressure were to increase without actions to improve the fishery, it is likely that fish recruitment and survival would decrease for some species.

Change in the Threat of Aquatic Invasive Species Infestation

Alternative A would result in continued existing conditions with regard to AIS. If visitation increased in the future the added boat traffic would increase the likelihood for AIS infestation. Continuing to limit boat capacity and parking would diminish the opportunity for increased traffic. Maintaining the boat washing facility would likely deter visitors and maintain limited boat traffic.

Alternative B: Resource Conservation Emphasis

Change in the Quality or Quantity of Fish Spawning and Recruitment Habitat

As under Alternative A, minimal beneficial impacts to spawning and recruitment habitat in the Study Area would result from Alternative B. Reducing use within the North Beach and South Side Areas by decommissioning unimproved roads would have a beneficial impact on the fishery. There would be a slight reduction in impacts to riparian vegetation and shoreline substrate from reduced shoreline erosion.

Change in the Amount of Angling Pressure

An anticipated increase in future visitation would negatively impact the fishery by increasing angling pressure. Higher angler pressure could reduce sport fish catch rates. If angling pressure were to increase, it is possible that fish recruitment and survival would decrease for some species. However, changes in management to the Inflow, North Beach, and South Side Areas that would reduce use or access would mitigate the anticipated increase in angling pressure for the Study Area.

Change in the Threat of Aquatic Invasive Species Infestation

As with Alternative A, Alternative B would result in continued existing conditions with regard to AIS. If visitation increases in the future, the added boat traffic would increase the likelihood for AIS infestation. Continuing to limit boat capacity and parking would diminish the opportunity

for increased traffic. Maintaining the boat washing facility would likely deter visitors and maintain limited boat traffic.

Alternative C: Recreation Development Emphasis

Change in the Quality or Quantity of Fish Spawning and Recruitment Habitat

Minimal beneficial impacts to spawning and recruitment habitat should result from implementing Alternative C. There would be a slight reduction in impacts to riparian vegetation and shoreline substrate from reduced shoreline erosion. These benefits would result from implementing erosion control measures and designating Natural Areas.

Negative impacts to the fishery would be associated with expanding existing recreation facilities at the State Park Area and developing new recreation facilities in the South Beach and North Beach Areas. These activities would contribute to erosion and siltation of the reservoir's littoral area. Of these areas, creating an overnight, day use, or group area in the South Beach Area would potentially have the most direct impacts on littoral habitat due to increased erosion resulting from increased use. Alternative C would have a slight negative impact from developing new camping and picnicking facilities and associated access roads and trails.

Change in the Amount of Angling Pressure

Alternative C would result in a slight negative impact associated with increased angling pressure from the development of new recreation facilities in the South Beach and North Beach Areas. Angling would increase as more access becomes available. This is especially true in the South Beach Area with the development of a new boat launching area.

Change in the Threat of Aquatic Invasive Species Infestation

Alternative C would result in increased likelihood of an AIS infestation. With increased angling pressure and increased boat traffic, the threat of an AIS being brought into Red Fleet Reservoir becomes higher. Maintaining the boat washing station would reduce the threat, but with increased access points boat washing becomes more difficult to regulate.

Cumulative Impacts

Other factors impacting the Study Area fishery include reservoir water level fluctuations and water quality conditions. Under past, present, and reasonably foreseeable conditions, late spring and summer irrigation draw-downs typically occur during the spawning and young-of-the-year rearing periods. At times, such dewatering likely impacts the reproductive success of littoral spawning fishes and reduces the aquatic invertebrate food base available to these fishes. Additionally, summer low-water levels are usually associated with depressed dissolved oxygen levels, which at times would result in fish kills. Low dissolved oxygen levels would also lead to anoxic conditions during winter when ice and snow covering the reservoir limit oxygen-producing photosynthetic activity. Water quality is also influenced by upstream land use practices such as grazing, timber management, agriculture, mining, and other factors. Sediment inputs from upstream and nearshore activities can impair littoral habitat and also contribute to reduced water quality.

Assuming fishery management practices continue as they have in the past or improve as a result of developing a Fishery Management Plan (Alternative B or C), and because the reservoir is managed as a put-and-take fishery, there is little threat of losing quality angling opportunities at the Study Area.

Although not approved or scheduled at this time, the UDWR has submitted a scope of work to the Colorado River Recovery program outlining treatment plans for Red Fleet Reservoir in an effort to eradicate unwanted fish species such as walleye. Should this plan be implemented, fishing opportunity would be diminished for an undetermined period of time during and after the treatment. However, the treatment plan is designed to accommodate the needs of the angling community and the resource agencies. The quality of the put-and-take fishery would be improved after the treatment and during restocking.

With any alternative, the threat of introducing AIS to the reservoir is possible. Under Alternative C, as facilities are improved or added, visitation is more likely to increase along with the distance traveled to visit. With visitors traveling from other regions, the risk of new AIS invasions would potentially increase.

Mitigation Measures

Under Alternative B or C, Reclamation would engage partners, particularly State Parks and UDWR, in developing a Fishery Management Plan. Among other elements, the Fishery Management Plan will include goals to emphasize AIS awareness and preventive measures for the Study Area.

Residual Impacts

With the previously stated mitigation measures, neither of the RMP action alternatives would have residual impacts to the Study Area fishery.

Threatened, Endangered, and Other Special Status Species

Issues

How would the implementation of an RMP affect threatened, endangered, and other special status species and their habitats in the Study Area?

Impact Indicators

The following impact indicators were used to determine if implementation of the RMP would affect threatened, endangered, and other special status species and their habitats within the Study Area:

- change in the quantity and quality of habitat for a given species, and
- change in the level of human-related disturbance.

Analysis Methods

Methods used to assess impact indicators for special status wildlife and fish species are similar to those described in the wildlife and fisheries sections of this chapter. Species potentially occurring in the Study Area are the American white pelican (*Pelecanus erythrorhynchos*), bald eagle

(*Haliaeetus leucocephalus*), ferruginous hawk (*Buteo regalis*), burrowing owl (*Athene cunicularia*), greater sage-grouse, big free-tailed bat (*Nyctinomops macrotis*), spotted bat (*Euderma maculatum*), Townsend's big-eared bat (*Corynorhinus townsendii*), white-tailed prairie dog (*Cynomys leucurus*), and flannelmouth sucker (*Catostomus latipinnis*).

For special status plants (rare plants), RMP alternatives were compared with existing rare plant habitat to provide an estimate of how each alternative would impact appropriate habitat within vegetation communities. Each community within the Study Area with potential to support rare plant habitat was analyzed. Specifically, decommissioning unimproved roads, new nonmotorized trail construction, and changes in the land use designation were used to describe potential impacts. Typical disturbances related to the RMP alternative actions would include elimination of vegetation within developed use areas, construction of new nonmotorized trails, increased foot traffic disturbance, and increased potential for noxious weed invasion.

Summary of Impacts

Impacts of RMP alternatives to special status wildlife and fish species are summarized in Table 4-10. Under Alternative A, conditions for special status wildlife and fish species would not be expected to change. Alternatives B and C would generally provide benefits to special status species by improving resource management and increasing habitat protection within the Study Area. Alternative C would have less benefit because of its emphasis on recreational development and resulting increases in area disturbed by human activity and fewer acres of Natural Area land use designation. Site-specific assessments would be required for any new recreation facility developments under Alternative C in order to determine actual presence and potential for impacts to special status species.

Table 4-10. Summary of Impact Assessments for Special Status Wildlife and Fish Species at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the quantity and quality of habitat for special status species	No change from existing conditions and trends.	Minimal impacts to the quantity and quality of habitat related to facility upgrades and improvements. Enhancement of habitat through designation of Natural Areas and development of a Habitat Management Plan.	Minimal impacts of habitat loss due to new developed recreation facilities; site-specific environmental analysis required. Enhancement of habitat through designation of Natural Areas and development of a Habitat Management Plan.
Change in the level of human-related disturbance for special status species	No change from existing conditions and trends.	Short-term increase in disturbance during improvements to recreational facilities in localized areas. Long-term decrease in disturbance due to decommissioning of unimproved roads and Natural Area designations.	Some localized increase in disturbance with recreation facility improvement and new facility development; site-specific environmental analysis required. Long-term decrease in disturbance due to decommissioning of unimproved roads and Natural Area designations.

Impacts to the vegetation communities that have potential to support rare plants are described in Table 4-11. The Threatened, Endangered, and Other Special Status Species section of Chapter 3 describes the rare plants that potentially occur in each vegetation community. The analysis involved comparing changes in the quantity and condition of potential rare plant habitat. Alternative A involves no actions that would alter existing conditions and trends for rare plants. Alternative B has the potential for improving the overall condition and decreasing the level of disturbance of rare plant habitat. In addition to 1,435 acres of Natural Area land use designation, Alternative B includes decommissioning unimproved roads (2.3 miles) and the conversion of a unimproved road to nonmotorized trail (0.2 mile). Alternative C includes 1,000 acres of Natural Area, decommissioning of 2.3 miles of unimproved road, the construction of new nonmotorized trails, and conversion of unimproved road to nonmotorized trail totaling 0.2 miles. Collectively, Alternative C actions would slightly increase the level of disturbance within some localized areas that would support rare plants; site-specific surveys would be required before implementing new disturbances.

Table 4-11. Summary of Potential Rare Plant Habitat Impacts at Red Fleet Reservoir.

VEGETATION COMMUNITIES WITH POTENTIAL TO SUPPORT RARE PLANTS	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Bedrock Canyon and Tableland	No change from existing conditions and trends.	Minor benefit from 0.1 mile of unimproved road decommissioning.	Minor increased disturbance from 0.2 mile of new nonmotorized trails.
Pinyon-Juniper Woodland	No change from existing conditions and trends.	Potential benefits from 1.0 miles of unimproved road decommissioning and conversion of 0.2 mile from unimproved road to nonmotorized trail.	Minor benefits or neutral effects of decommissioning unimproved roads (0.9 mile) and creating new nonmotorized trails (1.0 mile).
Sagebrush Shrubland	No change from existing conditions and trends.	Potential benefit by decommissioning 0.5 mile of unimproved roads.	Same as Alternative B.
Mixed Low Sagebrush	No change from existing conditions and trends.	Potential benefit by decommissioning 0.6 mile of unimproved roads.	Same as Alternative B.
Shrub Steppe	No change from existing conditions and trends.	Potential minor benefit by decommissioning 0.4 mile of unimproved roads.	Potential minor net benefit by decommissioning 0.4 mile of unimproved roads and creating 0.4 mile of new nonmotorized trails.
Riparian	No change from existing conditions and trends.	Potential minor benefit of decommissioning unimproved roads near riparian vegetation communities.	Potential minor impact of creating 0.1 mile of new nonmotorized trail.
Subalpine Meadow	No change from existing conditions and trends.	Same as Alternative A.	Same as Alternative A.

Alternative A: No Action

Additional recreational development would not occur under Alternative A. In addition, land use category changes, trail decommissioning, special erosion control measures, and protective habitat measures would not be pursued under Alternative A. Because these management actions would not occur under Alternative A, there would be no change in habitat quantity and quality, or disturbance levels for threatened, endangered, and other special status species, compared with existing conditions and trends.

The status of the flannelmouth sucker in Red Fleet Reservoir is largely unknown. Because individuals have been found in recent years, it may be (based on some preliminary aging) that these fish are in fact spawning and recruiting within the reservoir/inflow area. If so, protecting the inflow habitat would be critical for maintaining a recruiting population. Maintaining a relatively more turbid, flowing, vegetated inflow area that provides spawning gravel and nursery habitat (cover) would then become important. Under Alternative A, Reclamation would not make specific efforts to encourage UDWR to develop a Fishery Management Plan for the Study Area, nor to determine the status of the flannelmouth sucker or determine what, if any, management specific to the species may be implemented as part of an overall Fishery Management Plan.

Under Alternative A the quantity of potential rare plant habitat would remain unchanged. There are currently approximately 14.1 miles of motorized and nonmotorized trails within vegetation communities that have the potential to support rare plant habitat. Alternative A would result in continued access to rare plant habitat and would increase disturbance over time in Bedrock Canyon and Tableland, Mixed Low Sagebrush, Pinyon-Juniper Woodland, Sagebrush Shrubland, Riparian, and Shrub Steppe communities.

Alternative B: Resource Conservation Emphasis

Change in the Quantity and Quality of Wildlife and Fish Habitat for Given Species

Under Alternative B, special status wildlife and fish species would generally benefit from reduced disturbance in those portions of the Study Area designated as Natural Areas (1,435 acres, or 58% of total Study Area acreage). Special status species also would likely benefit from the following management actions: maintaining the current carrying capacity of no more than 45 boats on the reservoir at any given time, decommissioning unimproved roads, revegetation of disturbed areas, and restricting motorized access in Natural Areas.

Under Alternative B, Reclamation would encourage UDWR, in consultation with Reclamation and other entities, to determine goals and objectives for managing the Study Area fishery; this would include developing goals and objectives for determining the status of the flannelmouth sucker and determining what, if any, management specific to the species may be implemented as part of an overall Fishery Management Plan. Because individuals have been found in recent years, it may be (based on some preliminary aging) that these fish are in fact spawning and recruiting within the reservoir/inflow area. If so, protecting the inflow habitat would be critical for maintaining a recruiting population. Maintaining a relatively more turbid, flowing, vegetated inflow area that provides spawning gravel and nursery habitat (cover) would then become important.

Change in the Level of Human-Related Disturbance

Under Alternative B, special status species in the Study Area would generally benefit from reduced amounts of human-related disturbance in areas that provide suitable habitat. Short-term disturbance to special status species would likely occur during the improvement of existing recreational facilities (e.g., sanitary facilities, utility upgrades) and implementation of erosion control measures and habitat improvements. Short-term impacts would include greater stress to the inhabitants and temporary displacement of wildlife to adjacent habitats. However, impacts would be minimal because of the limited amount of proposed development and availability of similar habitat in the surrounding area. No long-term impacts are anticipated on any of the listed species.

The American white pelican would benefit from Alternative B. Although the designation of Natural Areas is most likely to benefit terrestrial species, Alternative B also would provide the opportunity to develop a Fisheries Management Plan that would include addressing habitat needs for aquatic species.

For the bald eagle, specific benefits or impacts under Alternative B are likely directly related to Study Area visitation levels and, just as importantly, the presence of super-canopy roost trees, such as eastern cottonwood (*Populus deltoides*), narrowleaf cottonwood (*Populus angustifolia*), and Fremont cottonwood (*Populus fremontii*). During winter, the bald eagle has less specific foraging habitat requirements than it does during the breeding season (Buehler 2000). Under Alternative B, creation of Natural Areas and decommissioning of unimproved roads would reduce the likelihood of harassment or disturbance by visitors, but the benefits would be minimal, at least during winter, when there are fewer visitors and associated disturbances.

The ferruginous hawk is likely to benefit from Alternative B through the creation of Natural Areas and from decommissioning of existing unimproved roads in the southwestern portion of the Study Area. The ferruginous hawk may use several Study Area vegetation communities—Shrub Steppe, Semi-Desert Grasslands, Mixed Low Sagebrush Shrubland, and Sagebrush Shrubland—as well as the interface between the Shrub Steppe and Pinyon-Juniper Woodland habitat types. Additionally the Bedrock Canyon and Tableland habitat type would protect nest sites for this species, which are typically located on slightly elevated terrain, such as rocky outcroppings (Bechard and Schmutz 1995).

Greater sage-grouse would likely benefit substantially from Alternative B. Habitat included in the Natural Areas of Alternative B are continuous with areas of greater sage-grouse brood habitat and winter habitat beyond the Study Area, as delineated by UDWR. Under Alternative B, the greater sage-grouse also would likely benefit from decommissioning unimproved roads located within the Dinosaur Trackway and North Beach areas. Natural Area designation would also provide the ability to close these areas during part of the year, should greater sage-grouse be found utilizing these habitats in the future.

The white-tailed prairie dog is likely to benefit because, under Alternative B, at least some of the southwestern portion of the Study Area would be included in a Natural Area and this portion of the Study Area includes potential habitat for the white-tailed prairie dog. Under Alternative B decommissioning unimproved roads in the South Side Area, in the southwestern portion of the

Study Area, would also benefit the white-tailed prairie dog, should they occur there now or in the future.

Potential benefits of Alternative B for the white-tailed prairie dog would similarly benefit the burrowing owl, because throughout much of its range the burrowing owl uses prairie dog burrows as both nest and roost sites (Poulin et al. 2011).

Three bat species would potentially benefit from Natural Area designations and decommissioning unimproved roads under Alternative B. Potential habitats for the Townsend's big-eared bat, the big free-tailed bat, and the spotted bat are found within the Study Area.

As a fish that is not sought after for angling and not easily captured on rod and reel, increased fishing pressure should not have a negative impact on the flannelmouth sucker. In fact, it would be positive for this species if walleye (*Sander vitreus*) and other piscivores are removed from the system with increased angling due to increased fishing access. Consequently, with implementation of Alternative B, Reclamation would encourage UDWR to include objectives in a Fishery Management Plan to determine the status of the flannelmouth sucker population in the Study Area and to address the management of walleye in relation to its potential impacts on other species that may be reproducing in the reservoir.

Alternative B includes the decommissioning of approximately 2.3 miles of unimproved road and the conversion of approximately 0.2 miles of motorized trail to nonmotorized trail in rare plant habitat. These actions would decrease overall disturbance and increase habitat quality in impacted vegetation communities.

Alternative C: Recreation Development Emphasis

Change in the Quantity and Quality of Habitat for Given Species

Under Alternative C, special status wildlife and fish species would generally benefit from reduced disturbance in those sections designated for conversion to Natural Areas (1,000 acres, or 40.3% of total Study Area acreage). The benefits to those species would be less than those under Alternative B, however, because under Alternative C fewer acres would be converted to Natural Areas and therefore fewer acres would be closed to motorized vehicles. Special status species would also likely benefit from decommissioning unimproved roads in the Dinosaur Trackway, North Beach, and South Side areas; the extent to which these planned closures benefit a specific species is dependent upon the occurrence of that species' required habitat at those locations. Also, because Alternative C emphasizes recreation over natural areas, there would be fewer acres that would have closures imposed on them; 857 acres (34.6%) of Study Area lands would be available for recreation. Although direct habitat loss would not occur, habitat degradation would and perhaps is likely to occur, depending upon visitation levels and recreational use. Accordingly, there would be short-term and long-term impacts to those same species, as detailed below.

Under Alternative C, Reclamation would encourage UDWR, in consultation with Reclamation and other entities, to determine goals and objectives for managing the Study Area fishery; this would include developing goals and objectives for determining the status of the flannelmouth

sucker and determining what, if any, management specific to the species may be implemented as part of an overall Fishery Management Plan. Because individuals have been found in recent years, it may be (based on some preliminary aging) that these fish are in fact spawning and recruiting within the reservoir/inflow area. If so, protecting the inflow habitat would be critical for maintaining a recruiting population. Maintaining a relatively more turbid, flowing, vegetated inflow area that provides spawning gravel and nursery habitat (cover) would then become important.

Change in the Level of Human-Related Disturbance

Any of the special status wildlife species have potential to be impacted by actions proposed under Alternative C. Short- and long-term disturbance impacts for any of these special status species under Alternative C would be similar to the impacts previously described for general wildlife. Short-term disturbance would occur during the development of new recreation facilities. These impacts would be minimal because of the limited duration of the activities and availability of similar habitat in the surrounding area. Longer-term disturbance would occur in areas where recreational use would increase in association with the new facilities. Impacts would include stress, reduced reproductive success, and displacement.

Potential impacts of Alternative C on flannelmouth sucker are the same as those described for Alternative B.

Because actual occurrence of any of the special status species is not known, surveys for species and assessment of potential impacts should be completed prior to implementation of site-specific designs.

Alternative C includes the decommissioning of approximately 2.3 miles of unimproved road, the construction of approximately 1.6 miles of new nonmotorized trails and the conversion of 0.2 miles of unimproved road to nonmotorized trail. The construction of new trails would result in an increase of rare plant habitat disturbance; however, the conversion of unimproved road to nonmotorized trail would result in a decrease of rare plant habitat disturbance. These actions would negate any benefit or degradation resulting in the overall condition of the potential rare plant habitat remaining unchanged. Vegetation communities that would have a slight increase in rare plant habitat disturbance include Bedrock Canyon and Tableland, Pinyon-Juniper Woodland, Shrub Steppe, and Riparian. Alternative C also includes a proposed boat ramp at the South Beach Area that would impact riparian habitat potentially supporting rare plants; plant surveys would be required as a component of site-specific environmental assessment.

Cumulative Impacts

Cumulative impacts to special status wildlife, fish, and rare plant species would be the same as those described in the wildlife, fisheries, and vegetation sections of this chapter. For rare plants, public use and the continued threat of noxious weed invasion are the most likely cumulative impacts within the Study Area that would be expected as a result of past, present, and reasonably foreseeable actions. Riparian areas are especially vulnerable to weed invasion. Alternative C would slightly increase the level of cumulative impacts on rare plant habitat.

Mitigation Measures
Mitigation measures for special status species are inclusive of those previously described for vegetation, wildlife, and fisheries. Surveys for special status species would be completed as a component of site-specific environmental analysis prior to implementing any recreation facility developments. With implementation of Alternative B or C, Reclamation would encourage UDWR to include objectives in a Fishery Management Plan to determine the status of the flannelmouth sucker population in the Study Area.

Residual Impacts
With the previously stated mitigation measures and pending site-specific environmental assessments, the RMP action alternatives would not have significant residual impacts on any special status species occurring in the Study Area.

Cultural Resources

Issue
How would implementation of an RMP affect the physical integrity of cultural resources within the Study Area?

Impact Indicators
The following impact indicator was used to determine if implementation of the RMP would affect the cultural resources within the Study Area:

- change in the integrity of cultural resource sites.

Analysis Methods
A Class I cultural resource literature search was conducted by Reclamation's archeologist to identify any previously conducted cultural resource inventories and recorded cultural resource sites within the Study Area. Files at Reclamation and General Land Office maps were also examined. Previously determined site integrity information ascertained from the literature search was used as a basis to address the impact indicator for each RMP alternative.

Summary of Impacts
Each alternative has the potential to impact to a varying degree the integrity of cultural resource sites within the Study Area. As proposed development increases within an alternative, so does the potential for impacts to the integrity of cultural resources. A summary of the projected impacts to cultural resources as a result of each alternative are shown in Table 4-12.

Alternative A: No Action
Under Alternative A, there is a potential for impacts to the integrity of cultural resources. This alternative maintains existing recreation development areas but allows for facility upgrades, site redesign, and the installation, maintenance, or upgrading of boundary fencing, gates, and cattle guards. This alternative also involves managing a large portion of the Study Area as an Undeveloped Day Use Recreation Area. This potentially increases public access into these areas.

Table 4-12. Summary of Cultural Resources Impacts at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the integrity of cultural resource sites	Potential impacts to integrity of surficial and subsurface cultural resources unchanged.	Potential slight increased impact to the integrity of surficial and subsurface cultural resources.	Increased potential to impact the integrity of surficial and subsurface cultural resources caused by increased development.

Increased public access has the potential to increase the unauthorized collection or excavation of cultural resources, thus impacting site integrity. Alternative A potentially involves the replacement or repair of existing facilities, which in some cases represent cultural resources themselves. In addition, there would likely be other ground-disturbing activities, such as erosion control, revegetation, and road maintenance, as a result of implementing management practices under Alternative A. This type of activity has the potential to impact the integrity of both surficial and subsurface cultural resources.

Alternative B: Resource Conservation Emphasis

Under Alternative B, a large portion of the Study Area would be designated as Natural Areas; however, there is still a potential for impacts to the integrity of cultural resources. The land use proposed under this alternative is similar to that of Alternative A, with lands devoted to developed recreation remaining unchanged. Alternative B still allows for facility upgrades, site redesign, and the installation, maintenance, or upgrading of boundary fencing, gates, and cattle guards. This alternative would also continue the management of a portion of the Study Area as Undeveloped Day Use Recreation Area. This designation potentially increases public access into these areas. Increased public access has the potential to increase the unauthorized collection or excavation of cultural resources, thus impacting site integrity. As with Alternative A, Alternative B potentially involves the replacement or repair of existing facilities, which in some cases represent cultural resources themselves. In addition, there would likely be other ground-disturbing activities, such as erosion control, revegetation, and road maintenance, as a result of implementing management practices under Alternative B. This type of activity has the potential to impact the integrity of both surficial and subsurface cultural resources.

Alternative C: Recreation Development Emphasis

Under Alternative C, there is an increased potential for impacts to the integrity of cultural resources. Alternative C still allows for facility upgrades, site redesign, and the installation, maintenance, or upgrading of boundary fencing, gates, and cattle guards. Additionally, Alternative C includes the development of additional boating, camping, picnicking, and parking facilities as well as associated access roads. This alternative also includes potential development of group recreation sites, rental cabins/yurts, hiking trails, shoreline access, and an accessible fishing dock. Development increases the potential to impact the integrity of both surficial and subsurface cultural resources.

Alternative C also involves expanding developed portions of the Study Area, including Developed Day Use, Developed Overnight, and Developed Day Use and Overnight Group Recreation Areas. These designations potentially increase public access into these areas.

Increased public access has the potential to increase the unauthorized collection or excavation of cultural resources, thus impacting site integrity. As with Alternatives A and B, Alternative C potentially involves the replacement or repair of existing facilities, which, in some cases represent cultural resources themselves. In addition, there would likely be other ground-disturbing activities, such as erosion control, revegetation, and road maintenance, as a result of implementing management practices under Alternative C. This type of activity has the potential to impact the integrity of both surficial and subsurface cultural resources.

Cumulative Impacts

Potential cumulative impacts to cultural resources would result from reasonably foreseeable future actions associated with all three alternatives. Fluctuations in reservoir levels (wave action) as well as sedimentation would lead to cumulative cultural resource impacts located near Red Fleet Reservoir. Upgrades to existing facilities, which in some cases represent cultural resources themselves, are another form of potential cumulative impact. Other potential cumulative impacts, such as unauthorized collection or excavation of cultural resources and erosion, would result from development and increased public use within the Study Area.

Mitigation Measures

Reclamation will ensure the completion of cultural resource compliance for all site-specific undertakings as a means to fulfill Section 106 of the National Historic Preservation Act, as well as to avoid, reduce, or mitigate impacts to the integrity of cultural resources. Avoidance is the preferred method of cultural resource mitigation. If historic properties are located within the area of potential effects associated with a specific undertaking, and if they would be impacted by activities associated with the undertaking, a Memorandum of Agreement (MOA) would be developed. The MOA would be among Reclamation, the Utah State Historic Preservation Office, the Advisory Council on Historic Preservation (if it chooses to participate), and any other party that assumes responsibility under the agreement. The MOA would include the terms and conditions agreed upon to resolve (mitigate) the impacts of the undertaking upon historic properties.

Residual Impacts

Cultural resources are, by definition, nonrenewable resources. If alternative impacts to cultural resources remain unmitigated, the integrity of the resource is likely to be lost. In turn, information and data associated with the resource also becomes unavailable. With implementation of the above-stated mitigation measures, selection of an action alternative would not cause significant residual impacts to cultural resources.

Paleontological Resources

Issue

How would implementation of an RMP affect paleontological resources within the Study Area?

Impact Indicators
The following impact indicator was used to determine if implementation of the RMP would affect the paleontological resources within the Study Area:

- change in the condition of paleontological resource localities.

Analysis Methods
A paleontological resource file search was conducted by the Utah Geological Survey, at the request of Reclamation, to identify any previously conducted paleontological resource surveys and recorded paleontological resource localities within the Study Area. Files at Reclamation were also examined. Previously determined locality condition information ascertained from the file search was used as a basis to address the impact indicator for each RMP alternative.

Summary of Impacts
Each alternative has the potential to impact to a varying degree the condition of paleontological resource localities within the Study Area. As proposed development increases within an alternative, so does the potential for impacts to the condition of paleontological resource localities. A summary of the projected impacts to paleontological resources as a result of each alternative are shown in Table 4-13.

Table 4-13. Summary of Paleontological Resources Impacts at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the condition of paleontological resource localities	Potential impacts to condition of surficial and subsurface paleontological resources.	Potential impacts to condition of surficial and subsurface paleontological resources.	Increased potential to impact the condition of surficial and subsurface paleontological resources caused by increased development.

Alternative A: No Action
Under the Alternative A, there is a potential for impacts to the condition of paleontological resources. This alternative maintains existing recreation development areas but allows for facility upgrades, site redesign, and the installation, maintenance, or upgrading of boundary fencing, gates, and cattle guards. This alternative also continues management of a large portion of the Study Area as Undeveloped Day Use Recreation Area. This designation potentially increases public access into these areas, which has the potential to increase the unauthorized collection or excavation of paleontological resources, thus impacting locality condition. In addition, there would likely be other ground-disturbing activities, such as erosion control, revegetation, and road maintenance, as a result of implementing management practices under Alternative A. This type of activity has the potential to impact the condition of both surficial and subsurface paleontological resources.

Alternative B: Resource Conservation Emphasis
Under Alternative B, a large portion of the Study Area would be designated as Natural Area, which would limit public access to these areas. However, there is still a potential for impacts to

the condition of paleontological resources. Other land uses proposed under this alternative are similar to Alternative A, with lands devoted to developed recreation remaining unchanged. Alternative B still allows for facility upgrades, site redesign, and the installation, maintenance, or upgrading of boundary fencing, gates, and cattle guards. This alternative also involves designating a portion of the Study Area for an Undeveloped Day Use Recreation Area. This designation potentially increases public access into these areas. Increased public access has the potential to increase the unauthorized collection or excavation of paleontological resources, thus impacting locality condition. In addition, there would likely be other ground-disturbing activities, such as erosion control, revegetation, and road maintenance, as a result of implementing management practices under Alternative B. This type of activity has the potential to impact the condition of both surficial and subsurface paleontological resources.

Alternative C: Recreation Development Emphasis

Under Alternative C, there is an increased potential for impacts to the condition of paleontological resources. Alternative C still allows for facility upgrades, site redesign, and the installation, maintenance, or upgrading of boundary fencing, gates, and cattle guards. Additionally, Alternative C includes the development of additional boating, camping, picnicking, and parking facilities as well as associated access roads. This alternative also includes potential development of group recreation sites, rental cabins/yurts, hiking trails, shoreline access, and an accessible fishing dock. Development increases the potential to impact the condition of both surficial and subsurface paleontological resources.

Alternative C also involves expanding developed portions of the Study Area including Developed Day Use, Developed Overnight, and Developed Day Use and Overnight Group Recreation Areas. Many of these designations potentially increase public access into these areas. Increased public access has the potential to increase the unauthorized collection or excavation of paleontological resources, thus impacting locality condition. In addition, there would likely be other ground-disturbing activities, such as erosion control, revegetation, and road maintenance, as a result of practices under Alternative C. This type of activity has the potential to impact the condition of both surficial and subsurface paleontological resources.

Cumulative Impacts

Potential cumulative impacts to paleontological resources would result from reasonably foreseeable future actions associated with all three alternatives. Fluctuations in reservoir levels (wave action) as well as sedimentation would lead to cumulative paleontological resources impacts located near Red Fleet Reservoir. Other potential cumulative impacts, such as unauthorized collection or excavation of paleontological resources and degradation, would result from development and increased public use within the Study Area.

Mitigation Measures

Reclamation will ensure the completion of paleontological resource compliance for all site-specific projects as a means to fulfill Section 6302 of the Paleontological Resources Preservation Act, as well as to avoid, reduce, or mitigate impacts to the condition of paleontological resources. Avoidance is the preferred method of paleontological resource mitigation. If avoidance of paleontological resources is not possible, a mitigation plan would be developed.

The mitigation plan would include the terms and conditions agreed upon to resolve (mitigate) the impacts to paleontological resources.

Residual Impacts

Paleontological resources are, by definition, nonrenewable resources. If alternative impacts to paleontological resources remain unmitigated, the resource is likely to be destroyed. In turn, information and data associated with the resource also becomes unavailable. With implementation of the above-stated mitigation measures, selection of an action alternative would not cause significant residual impacts to paleontological resources.

Indian Trust Assets

Issue

How would implementation of an RMP affect Indian Trust Assets (ITAs) within the Study Area?

Impact Indicators

The following impact indicator was used to determine if implementation of the RMP would affect the ITAs within the Study Area:

- change in the use and quality of ITAs.

Analysis Methods

Reclamation contacted the Bureau of Indian Affairs (BIA) Uintah and Ouray Agency in Fort Duchesne, Utah, to identify any potential impacts to ITAs within the Study Area. According to the BIA, the only known ITA involves a water right in the Green River held in trust for the Ute Indian Tribe of the Uintah and Ouray Reservation. This ITA information was used as a basis to address the impact indicator for each RMP alternative.

Summary of Impacts

The water right in the Green River held in trust for the Ute Indian Tribe of the Uintah and Ouray Reservation would not be impacted by any RMP alternative. A summary of the projected impacts to ITAs as a result of each alternative are shown in Table 4-14.

Table 4-14. Summary of Indian Trust Assets (ITAs) Impacts at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the use and quality of Indian Trust Assets (ITAs)	No projected impact to ITAs.	No projected impact to ITAs.	No projected impact to ITAs.

Alternative A: No Action

Under Alternative A, there is no projected impact to ITAs.

Alternative B: Resource Conservation Emphasis
Under Alternative B, there is no projected impact to ITAs.

Alternative C: Recreation Development Emphasis
Under Alternative C, there is no projected impact to ITAs.

Cumulative Impacts

There are no projected cumulative impacts to ITAs following implementation of any of the RMP alternatives.

Mitigation Measures
Reclamation will ensure the completion of ITA compliance for all site-specific projects as a means to fulfill both U.S. Department of Interior (512 DM 2) and Reclamation policies regarding ITAs, as well as to avoid, reduce, or mitigate impacts to ITAs. Avoidance is the preferred method of ITA mitigation. If avoidance of ITAs is not possible, a mitigation plan would be developed. The mitigation plan would include the terms and conditions agreed upon to resolve (mitigate) the impacts to ITAs.

Residual Impacts
There are no projected residual impacts to ITAs following implementation of any of the RMP alternatives.

Land Management

Energy, Minerals, and Other Extractive Resources

This section evaluates RMP alternatives for potential impacts on the energy, minerals, and other extractive resources within the Study Area.

Issue
How would implementation of an RMP affect the exploration and development of energy, minerals, and other extractive resources within the Study Area?

Impact Indicators
The following impact indicator was used to determine if implementation of the RMP would affect energy, minerals, and other extractive resources within the Study Area:

- change in the development of locatable, saleable, or leasable mineral resources.

Analysis Methods
The impact indicator noted above was used to determine impacts to locatable, saleable, and leasable mineral resources. Impacts to these mineral resources are discussed qualitatively below.

Summary of Impacts

Impacts to locatable mineral resources (e.g., gold and silver) would not occur because these types of mineral resources do not occur within the Study Area. The potential for saleable (e.g., sand, gravel, and cobbles) and leasable mineral resources does exist within the Study Area. Saleable mineral resources may exist in portions of the Study Area overlain by alluvial deposits, but it has not yet been shown that these resources can be mined economically. Leasable mineral resources are located in the vicinity of the Study Area, but they have not been documented within the Study Area. Table 4-15 summarizes the impacts to the development of mineral resources.

Table 4-15. Summary of Energy, Minerals, and Other Extractive Resources Impacts at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the development of locatable, saleable, or leasable mineral resources	No projected impacts to energy, minerals, and other extractive resources.	No projected impacts to energy, minerals, and other extractive resources.	No projected impacts to energy, minerals, and other extractive resources.

Alternative A: No Action

Under Alternative A, there would be no change in the management of the exploration and development of locatable mineral resources because these resources do not occur in the Study Area. Saleable mineral resources may exist in portions of the Study Area overlain by alluvial deposits, but it has not yet been shown that these resources can be mined economically. Impacts to the exploration or development of saleable or leasable mineral resources within the Study Area would not occur because there would be no change in management of these resources under Alternative A. There are no known plans for development of saleable or leasable mineral resources within the Study Area.

Alternative B: Resource Conservation Emphasis

Impacts to mineral resources under Alternative B would be the same as those described for Alternative A.

Alternative C: Recreation Development Emphasis

Impacts to mineral resources would be the same as those described for Alternative A.

Cumulative Impacts

Implementation of an RMP would not result in any cumulative impacts to the exploration and development of locatable, saleable, or leasable mineral resources in the Study Area.

Mitigation Measures

No mitigation measures for locatable, saleable, or leasable mineral resources are necessary as there are no impacts to the exploration and development of the resources in the Study Area.

Residual Impacts
Implementation of a RMP under Alternative A, B, or C would result in no residual impacts to the exploration and development of locatable or leasable mineral resources in the Study Area.

Waste Water, Solid Waste, and Hazardous Materials

This section evaluates RMP alternatives for the potential of waste water, solid waste, and hazardous materials to contaminate soil, groundwater, and surface water in the Study Area.

Issue
How would implementation of an RMP affect the likelihood of contamination of soil, groundwater, and surface water by wastewater, solid waste, and hazardous materials?

Impact Indicators
The following impact indicator was used to determine if implementation of the RMP would affect the likelihood of contamination of soil, groundwater, and surface water by wastewater, solid waste, and hazardous materials within the Study Area:

- change in the amount of sanitation facilities.

Analysis Methods
Existing and proposed recreational facility plans were used to determine the variation in the amount of restroom facilities and refuse control proposed for each RMP alternative. Potential impacts to soil, groundwater, and surface water are discussed qualitatively.

Summary of Impacts
There would not be a change in impacts to groundwater, soil, or surface water under Alternative A because there would be no change in the amount of sanitation facilities. Alternative B would contribute a vault toilet at the proposed Lookout Point trailhead on the east side of the reservoir. This vault toilet would not pose a risk for groundwater, soil, or surface water contamination because the restroom would be pumped on a regular basis. Under Alternative C, the existing Developed Day Use Recreation Area and Developed Overnight Recreation Area would be expanded. This expansion would include the addition of a small number of vault toilets. Additionally, under Alternative C, a Developed Overnight and Day Use Group Recreation Area at the South Beach Area and a Developed Day Use Recreation Area at the North Beach Area would be added to the Study Area. Several vault toilets would be added to the South Beach Area and one vault toilet would be added to the North Beach Area. Additionally, a vault toilet would be added to the Lookout Point trailhead on the east side of the reservoir. The vault toilets added to the Study Area would not pose a risk for groundwater, soil, or surface water contamination because the restrooms would be self-contained and would be pumped regularly. The possible expansion of septic systems under Alternative C has the potential to slightly increase nitrogen loads to Red Fleet Reservoir via groundwater transport (Table 4-16).

Table 4-16. Summary of Wastewater, Solid Waste, and Hazardous Materials Impacts at Red Fleet Reservoir.

IMPACT INDICATOR	ALTERNATIVE A: NO ACTION	ALTERNATIVE B: RESOURCE CONSERVATION EMPHASIS	ALTERNATIVE C: RECREATION DEVELOPMENT EMPHASIS
Change in the amount of sanitation facilities	No change from existing conditions.	Addition of a vault toilet at the Lookout Point trailhead on the east side of the reservoir.	Increase in the number of vault toilets and possible expansion of existing septic systems.

Alternative A: No Action

Under Alternative A, numbers and types of restroom facilities and refuse controls would not change. Currently, Study Area has flush toilets and a vault toilet at the existing State Park Area. The waste from the flush toilets is discharged to a septic tank and absorption field. No additional sanitation facilities would be added under Alternative A, so there would not be an increased risk to groundwater, soil, or surface water quality. All solid waste is currently transported out of the Study Area for disposal in a local landfill.

Alternative B: Resource Conservation Emphasis

Under Alternative B, the only change in the amount of sanitation facilities in the Study Area would be an additional vault toilet at the proposed Lookout Point trailhead on the east side of the reservoir.

Alternative C: Recreation Development Emphasis

Under Alternative C, the existing Developed Day Use Recreation Area and Developed Overnight Recreation Area would be expanded. This expansion would include the addition of a small number of vault toilets. Additionally, under Alternative C a Developed Overnight and Day Use Group Recreation Area at the South Beach Area and a Developed Day Use Recreation Area at the North Beach Area would be added to the Study Area. Several vault toilets would be added to the South Beach Area and one vault toilet would be added to the North Beach Area. Additionally, a vault toilet would be added to the Lookout Point trailhead on the east side of the reservoir. An increase in the number of vault restrooms does not pose a risk for groundwater, soil, or surface water contamination because the restrooms would be pumped on a regular basis. An increase in the number of visitors would increase the loads on the existing septic system and would necessitate additional refuse collection in the Study Area.

Cumulative Impacts

Implementing an RMP action alternative would contribute incrementally to existing Study Area waste water impacts. As a result of increased visitor use and campground and associated recreation facility construction, the potential for groundwater, soil, or surface water quality degradation would increase slightly with Alternative C.

Mitigation Measures

Under Alternative A or B, no mitigation measures are necessary for waste water, solid waste, or hazardous materials, as there are no anticipated impacts. Under Alternative C and pending site-specific environmental analysis and design, local and state regulations concerning septic tank renovations would be followed during the possible expansion of the existing septic systems in

the Developed Overnight Recreation Area. Additionally, providing adequate refuse collection frequency at all refuse collection locations in the Study Area will help reduce the potential for accumulated trash to create groundwater, soil, or surface water contamination.

Residual Impacts

With implementation of the above-stated mitigation measures, none of the RMP alternatives would result in significant residual impacts to Study Area resources related to waste water, solid waste, and hazardous materials.

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Chapter 5: Consultation and Coordination

The Red Fleet Reservoir Resource Management Plan (RMP) Environmental Assessment (EA) was completed concurrently and in conjunction with the same process for Steinaker Reservoir. The RMP/EA process required an extensive consultation and coordination effort. This chapter describes the coordination with agencies that either have jurisdiction by law or interest in the development of RMP document for the Red Fleet Reservoir RMP Study Area (Study Area). The chapter also describes the public involvement process that was undertaken, lists persons who were involved in preparation of the document, and provides a distribution list of specific agencies and organizations receiving a copy of this EA.

Consultation

The Red Fleet Reservoir RMP/EA Interdisciplinary Project Team (Project Team) consulted with numerous federal and state government agencies, special-interest groups, and local governments to discuss the issues and land-use problems that must be addressed in the RMP. Government agencies included the U.S. Bureau of Land Management (BLM), the U.S. Fish and Wildlife Service (USFWS), the Utah Division of Wildlife Resources (UDWR), the Utah Division of Water Rights, the Utah Division of State Parks and Recreation (State Parks), the Utah Division of Water Quality, the Utah State Historic Preservation Officer (SHPO), the Uintah Water Conservancy District (UWCD), Uintah County, and Vernal City, Utah. Special interest groups included recreation interests and environmental interests.

Consultation with some of these agencies was conducted to ensure compliance with relevant laws and regulations. These included consultation with SHPO in compliance with the National Historic Preservation Act of 1966 (as amended in 1992) and consultation with the USFWS in compliance with the Endangered Species Act of 1973.

Public Involvement

The preparation of an RMP document for Red Fleet Reservoir has required extensive public involvement activities throughout the planning process. Because the preparation of an RMP is a federal action requiring compliance with the National Environmental Policy Act (NEPA), the public involvement process serves both the RMP and NEPA documents. This section describes the general methods used to contact and solicit comment from interested parties.

The process of informing the public and soliciting response is known as “scoping.” The scoping process for the Red Fleet Reservoir EA document was initiated in October 2011. The public scoping methods included publishing newsletters, holding local and regional public workshops, forming a Resource Management Planning Work Group (PWG), and obtaining media exposure. Each of these methods is described below.

Newsletters

Three newsletters designed to inform the public about progress during the planning process were sent to individuals, interested organizations, and agency personnel involved with the RMP. The

distribution list was updated throughout the planning process as contact information was provided. Editions of newsletters and a brief description of content are as follows:

- ***Newsletter 1 (November 2011).*** This newsletter provided an overview of the Study Area, a summary of the RMP/EA planning process, a description of public involvement activities, the project schedule, the proposed Planning Work Group, a list of key contacts, identified preliminary issues, and requested that individuals fill out a voluntary comment form.

- ***Newsletter 2 (May 2012).*** This newsletter provided an update on the planning process, described the draft land use categories, presented the preliminary alternatives that will be evaluated in detail in the EA, and requested that individuals fill out a voluntary comment form.

- ***Newsletter 3 (March 2013).*** This newsletter provided an update on the planning process, discussed the release of the Draft EA document, and presented information on how individuals could provide comments.

Public Workshops

Public workshops were held at each stage of the RMP planning process to inform interested parties of progress on the RMP and to solicit comments from the general public and agency stakeholders. These public workshops were "open house" informational meetings, during which individuals were able to freely participate. Several Project Team members were available to answer questions. Each workshop was held at the Uintah County Western Park center in Vernal from 6:00 to 8:00 p.m. Resource and management issues, future resource management goals and objectives, and potential management approaches for the Study Area were discussed at these workshops. The following is a summary of the workshops with descriptions of their proceedings:

- ***Workshop 1 (November 17, 2011).*** The first workshop allowed attendees to identify the issues, concerns, and opportunities inherent at the Study Area. Maps and photographs of the Study Area were available for review. A preliminary list of issues was provided to inform the public of potential planning constraints, and members of the public were asked to comment on these issues and provide additional issues or concerns to be included in the RMP/EA planning process.

- ***Workshop 2 (May 9, 2012).*** The second public workshop gave the public and agency stakeholders opportunities to view maps, information boards, and proposed RMP alternatives. Detailed descriptions of the alternatives were provided and members of the public were asked to volunteer written feedback on comment forms.

- ***Workshop 3 (March 28, 2013).*** The third public workshop provided the public opportunities to view updated maps and proposed RMP alternatives. The Project Team members solicited suggestions for a "preferred RMP alternative" and answered questions regarding the Draft EA. Information was provided on how members of the public and agency stakeholders could provide comments on the Draft EA. Comment letters received during the comment period and Reclamation responses are provided in Appendix D.

Resource Management Planning Work Group (PWG)

The PWG was formed to broadly represent agencies and stakeholders with significant interests in the future management and use of Study Area resources. Representatives in the PWG were selected primarily from those organizations and agencies directly involved with management of resources within the Study Area and included representatives of the UWCD, State Parks, UDWR, USFWS, BLM, Uintah County, and Vernal City. The purpose of the PWG was to facilitate information exchange and to provide an open forum for discussing all aspects of the RMP and the planning process. In addition, the PWG provided input into the identification of issues, development of goals and objectives, and formulation of a full range of RMP alternatives. A brief description of each of the four PWG meetings is as follows:

- ***Meeting 1 (October 18, 2011).*** At this meeting, PWG members were introduced, and an overview of the RMP/EA process was provided. The existing management situation was discussed, and Preliminary Issue Statements, Goals, and Objectives for the RMP process were developed.

- ***Meeting 2 (February 22, 2012).*** At this meeting, PWG members reviewed and finalized the Issue Statements, Goals, and Objectives; discussed the preliminary land-use categories; reviewed the recreational development suitability criteria; and obtained comments and ideas for preliminary RMP alternatives.

- ***Meeting 3 (May 9, 2012).*** At this meeting, PWG members reviewed and discussed their comments regarding RMP alternatives to be presented to the public and analyzed in detail in the EA.

- ***Meeting 4 (March 28, 2013).*** The purpose of this meeting was to provide an overview of the Draft EA document, discuss a preferred alternative, and describe how to provide comments to the U.S. Bureau of Reclamation (Reclamation) within the comment period.

Additionally, Reclamation scheduled a meeting with the Uintah County Commission on January 8, 2013. The purpose of the meeting was to discuss how comments received from the County Commissioners (in a letter dated May 30, 2012) had been incorporated into the RMP alternatives. Attendees at the meeting included representatives of the County Commission, Reclamation, UWCD, and State Parks.

Media

Media exposure for the Red Fleet Reservoir RMP project included local newspapers (print and on-line) and radio. Print publicity in the form of legal notices and paid advertisements guaranteed adequate exposure and were placed in the Vernal Express newspaper. Radio notices were in the form of public service announcements and were delivered to local radio stations.

Distribution List

Copies of the Draft and Final EA documents were distributed by Reclamation's Provo Area Office to the government agencies, organizations, individuals, and libraries listed below.

Government Agencies

Uintah Water Conservancy District
78 West 3325 North
Vernal, Utah 84078

Uintah County Commission
152 East 100 North
Vernal, Utah 84078

Uintah Recreation District
610 S. Vernal Avenue
Vernal, Utah 84078

U.S. Bureau of Land Management
Vernal Field Office
170 South 500 East
Vernal, Utah 84078

U.S. Fish and Wildlife Service
Utah Field Office
2369 Orton Circle, Suite 50
West Valley City, Utah 84119

Utah Division of Wildlife Resources
Northeast Region
318 N. Vernal Ave.
Vernal, Utah 84078

Utah Division of State Parks and Recreation
PO Box 146001
Salt Lake City, Utah 84114-6001

Utah Division of State Parks and Recreation
Steinaker and Red Fleet State Parks
4335 N. Hwy 191
Vernal, Utah 84078-7800

Utah Public Lands Policy Coordination Office
5110 State Office Building
Salt Lake City, Utah 84114

Utah State Historic Preservation Office
300 S. Rio Grande Street
Salt Lake City, Utah 84101

Vernal City Mayor's Office
374 East Main Street
Vernal, Utah 84078

Interested Individuals and Organizations

Orlan and Donna Anderson
1966 West 1500 South
Vernal, Utah 84078

Trever Anderson
965 West 1100 South
Vernal, Utah 84078

Tammy Ferguson
1877 East 3500 South
Vernal, Utah 84078

Orlando Heaton
965 North 2175 West
Vernal, Utah 84078

Bret and Laurie Reynolds
917 North 2000 West
Vernal, Utah 84078

Marilyn Sweetser
780 West 350 North
Vernal, Utah 84078

Libraries

Uintah County Library
155 East Main
Vernal, Utah 84078

List of Preparers

The following is a list of preparers who participated in the development of the Draft and Final EA. They include Project Team members, Reclamation Team members, and other contributors.

Project Team Members

Table 5-1 provides a list of preparers from the BIO-WEST, Inc., Project Team, their qualifications, and their roles in developing the Draft and Final EA documents.

Table 5-1. List of Preparers for the Project Team.

NAME	RESPONSIBILITIES	QUALIFICATIONS
Christopher Sands	Project Team Leader, EA development, public involvement, project management.	B.L.A. landscape architecture, M.L.A. landscape architecture, 24 years professional experience.
Sandra Turner	Public involvement, editorial oversight	A.A.S. science and journalism, B.S. English (professional writing emphasis), 20 years professional experience.
Chadd VanZanten	Document preparation	B.S. communications (journalism), 13 years professional experience.
Sean Keenan	EA development, public involvement, socioeconomic conditions	Ph.D. sociology, M.S. sociology, B.A. social and behavioral sciences, 6 years professional experience.
Sandra Davenport	Recreation and visual resources existing conditions, impact evaluation	M.L.A. landscape architecture, B.L.A landscape architecture, 20 years professional experience.
Michael Sipos	Wildlife oversight, impact evaluation	M.S. wildlife science, B.S. wildlife science, 18 years professional experience.
Mary Cheney	Wildlife existing conditions, impact evaluation	B.S. environmental studies, M.S. wildlife biology (candidate), 8 years professional experience.
Brandon Albrecht	Fisheries oversight, impact evaluation	M.S. aquatic ecology, B.S. fisheries and wildlife, 13 years professional experience.
Ron Kegerries	Fisheries existing conditions, impact evaluation	M.S. biology, B.S. biology, 10 years professional experience.
Melissa Stamp	Water resources existing conditions, impact evaluation	M.S. watershed science, B.A. geography, 17 years professional experience.
Shannon Herstein	Water quality existing conditions, impact evaluation	M.S. watershed science, B.S. watershed science, 12 years professional experience.
Alyson Eddie	Vegetation community oversight, impact evaluation	B.S. environmental biology and ecology, 10 years professional experience.
Kari Coy	Vegetation community existing conditions, impact evaluation	B.S. botany, A.A.S. general studies, 7 years professional experience.
Travis Taylor	Vegetation community existing Conditions, impact evaluation	B.S. restoration and conservation ecology, 8 years professional experience.
Wes Thompson	Geology, soils, waste water, and hazardous materials oversight; existing conditions; impact evaluation	B.S. composite sciences with an emphasis in geology, A.A.S. geology, Utah Professional Geologist Certificate (5540557-2250), 23 years professional experience.
Glen Busch	Geographic information system (GIS) oversight, analysis, mapping, presentation	M.S. bioregional planning, B.S. forest management, 10 years professional experience.
Adam Perschon	GIS analysis and mapping	A.S. communications, B.A. communications, M.S. bioregional planning (candidate), 7 years professional experience.
Aaron Crookston	GIS analysis and mapping	B.L.A. landscape architecture, ArcGIS Technician Certification, 5 years professional experience.
Jennifer Dunn	Public involvement, media coordination, document preparation, and administrative	18 years professional experience.

Reclamation Team Members

- Peter Crookston, Environmental Protection Specialist
- Jeffrey D'Agostino, Environmental Group Chief
- Troy Ethington, Geography/GIS
- Jonathan Jones, Water Resources Group Chief
- Brian Joseph, Archaeologist
- Kerry Schwartz, Water and Environmental Resources Division Manager/COR
- Johnn Sterzer, Landscape Architect

Other Contributors to the Planning Process

The following individuals participated in the Planning Work Group and/or otherwise assisted with information and analysis in the Draft and Final EA documents:

- Gawain Snow, General Manager, Uintah Water Conservancy District
- John Hunting, Assistant Manager for Operations, Uintah Water Conservancy District
- Mike Murray, Park Manager, Red Fleet and Steinaker State Parks
- Fred Hayes, Director, Utah Division of State Parks and Recreation
- Tim Smith, Regional Manager, Utah Division of State Parks and Recreation
- Leon Tate, Senior Business Analyst, Utah Division of State Parks and Recreation
- Jason West, Outdoor Recreation Planner, U.S. Bureau of Land Management, Vernal Field Office
- Amy Defreese, Ecologist, U.S. Fish and Wildlife Service, Utah Field Office
- Trina Hedrick, Northeast Region Aquatics Manager, Utah Division of Wildlife Resources
- Natalie Boren, Northeast Region Aquatic Invasive Species Coordinator, Utah Division of Wildlife Resources
- Darlene Burns, Uintah County Commissioner
- Diane Coltharp, Public Lands Specialist, Uintah County

- Lesha Coltharp, Travel and Tourism Specialist, Uintah County
- E. Allen Parker, Assistant City Manager and City Planner, Vernal City
- Mark Raymond, Uintah County Commissioner

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APPENDIX A: ISSUE STATEMENTS AND GOALS AND OBJECTIVES

APPENDIX A: ISSUE STATEMENTS AND GOALS AND OBJECTIVES

The Red Fleet Reservoir Resource Management Plan (RMP) Project Issue Statements and Project Goals and Objectives represent the guidelines that were used in developing the resource management alternatives found in Chapter 2 of this Environmental Assessment (EA). The Issue Statements clarify the issues and opportunities (identified through public and agency scoping) that will be addressed and solved in the course of the RMP implementation process. The Goals and Objectives respond to the issues and opportunities identified in the Issue Statements. The Goals give descriptions of the desired future resource conditions at Red Fleet Reservoir, while the Objectives define the activities required to achieve each Goal.

The Issue Statements and the Goals and Objectives were developed through an iterative process and are based on comments received through public and agency consultation and coordination as described in Chapter 5 of this EA. Specifically, their content was based on comments received from (1) the general public at the Public Workshops held in November 2011 and May 2012; (2) the general public through the Voluntary Mail-In Response Form contained in the first two editions of the project newsletter; (3) management agency personnel interviewed during the planning process including U.S. Bureau of Reclamation (Reclamation), Utah Division of State Parks and Recreation (State Parks), and Uintah Water Conservancy District (UWCD); (4) members of the Planning Work Group formed for the project; and (5) the Red Fleet Reservoir RMP/EA Interdisciplinary Project Team members in a series of coordination meetings. The RMP Issue Statements and the Goals and Objectives are presented in their entirety in the following sections.

ISSUE STATEMENTS

These Issue Statements resulted from the exploration of identified issues and opportunities that should be addressed by the Red Fleet Reservoir RMP Project. The Issue Statements provide detailed discussions of the primary issues or opportunities that have been identified by the public and involved agencies described above. Although the Issue Statements provide a necessary foundation for the RMP process by representing both public and agency opinions, some of the statements may reflect "perceptions" rather than factual data. The Issue Statements are intended to clarify the scope of each concern and to provide the foundation for the development of RMP Goals and Objectives. The Issue Statements were organized into the following Issue Categories: (A) Partnerships, (B) Water Resources, (C) Recreational and Visual Resources, (D) Natural and Cultural Resources, and (E) Land Management.

Issue Category A: Partnerships

Issue A1: Partnership Contracts

Existing agency partnerships for Red Fleet Reservoir are working well. Reclamation has long-standing partnerships with State Parks, UWCD, U.S. Bureau of Land Management (BLM), and Utah Division of Wildlife Resources (UDWR). State Parks manages all public recreation

facilities, UWCD performs all reservoir operation and maintenance functions, and UDWR manages the fishery and wildlife on Reclamation lands.

The possibility of additional partnerships that could mutually improve land and resource management at Red Fleet Reservoir should be evaluated in the RMP. In addition to agency partnerships, there may be potential for partnerships with private concessioners and/or private recreation user groups. Future partnerships should be formalized to ensure proposed activities are consistent with existing contractual and legal obligations.

Issue Category B: Water Resources

Issue B1: Water Quality

Maintaining water quality is important for meeting designated beneficial uses of water at Red Fleet Reservoir. Red Fleet Reservoir is a drinking water source for Vernal, Jensen, and Ashley Valley. Big Brush Creek, which supplies water to Red Fleet Reservoir, is considered by the State of Utah to fully support its designated beneficial uses.

Water quality concerns at Red Fleet Reservoir include water temperature, dissolved oxygen levels, and algal blooms. These constituents are important for supporting coldwater aquatic life and for recreation. State of Utah ratings indicate that Red Fleet Reservoir currently does not meet numeric criteria for the coldwater aquatic life. Low dissolved oxygen levels for supporting aquatic life have also been a concern. Algal blooms can become a health hazard because cyanobacteria in high concentrations can create toxic conditions. Algal blooms can make swimming and boating less appealing, affecting recreational opportunities. Algal blooms also affect dissolved oxygen levels, and under certain circumstances can result in fish kills.

Runoff from areas with impervious surfaces poses a potential threat to water quality. Impervious surfaces allow deposition from vehicles and the atmosphere to accumulate. Rainfall and snowmelt then transport the deposition (possibly consisting of metals, nutrients, and other pollutants) to Red Fleet Reservoir. Stormwater runoff may create erosion issues and may transport sediment to the reservoir. Therefore, development and maintenance of adequate stormwater controls around developed areas are important design elements for existing and future recreation sites.

Other potential water-quality concerns that require monitoring include concentrations of metals (e.g., selenium and mercury) and potential introductions of bacteria and viruses. Selenium accumulations can create conditions potentially harmful to aquatic organisms and mercury is a concern for human health associated with fish consumption. Bacteria and viruses could also become an issue with increased recreational use. The State of Utah has not identified *E. coli* as an impairment to water quality in Red Fleet Reservoir, but monitoring is important.

Issue Category C: Recreation and Visual Resources

Issue C1: Recreation Development

Recreation improvements and added capacity could increase visitation and revenue throughout the year. The existing day-use area at Red Fleet Reservoir is underutilized, which may be due to lack of parking on peak days. The existing campground and day-use area is in need of renovation

and redesign, including additional electric power to supply camp sites, development of rental cabin sites and a group area, creation of a beach area, and repairing the boat trailer parking lot. Additional angler shoreline access and an accessible fishing dock would also be great additions and would increase angler visitation if feasible locations can be identified. Camping use would also likely increase by providing trailhead access/connectivity to motorized and nonmotorized trails on BLM lands. Ideally, trails could also provide connectivity to Steinaker Reservoir and Vernal City. It is acknowledged that all suggestions above are feasible if appropriate developable areas are available or become available.

Issue C2: Visual Quality

Red Fleet Reservoir provides for exceptional visual surroundings. The Flaming Gorge-Uintas Scenic Byway on U.S. Route 191 (US-191) from Vernal to the Wyoming border helps to attract day visitors and campers to the Red Fleet Reservoir RMP Study Area (Study Area). Design and development of recreation structures and facilities should blend with and complement the surrounding landscape to protect existing visual quality.

Issue Category D: Natural and Cultural Resources

Issue D1: Reservoir Fishery

Red Fleet Reservoir offers anglers opportunities to catch both coldwater and warmwater fish species. The fishery has been changing as a result of illegal stocking of bass (*Micropterus* spp.), sunfish (*Lepomis* spp.), and walleye (*Sander vitreus*). This has resulted in decreased catch rates, particularly for rainbow trout (*Oncorhynchus mykiss*), which were originally stocked for a put-and-take trout fishery. Plans for managing the fishery based on the current species composition or plans to restore the reservoir for a desired fishery should be considered. Additional shoreline fishing access is also desired by anglers.

With the presence of selenium throughout the Brush Creek drainage, there is potential for elevated selenium levels to occur in Red Fleet Reservoir. Selenium accumulated in fish tissue could result in consumption advisories for harvested fish. Selenium has also shown to cause malformations in fish that can hinder their reproductive capacity. The presence of mercury in fish tissue has been detected and resulted in a fish consumption advisory for Red Fleet Reservoir. This advisory is specific to both largemouth bass (*Micropterus salmoides*) and walleye. Monitoring for both mercury and selenium must be considered and/or continued to ensure the health of the fishery and the public.

Native flannelmouth sucker (*Catostomus latipinnis*) have been found in fish surveys of Red Fleet Reservoir. The status of these fish and a determination on whether or not flannelmouth sucker are reproducing and recruiting in the reservoir or upstream in Brush Creek should be considered when developing the fishery management plan.

Issue D2: Aquatic Invasive Species and Pathogens

Spread of aquatic invasive species (AIS) is a statewide issue. Quagga mussel (*Dreissena bugensis*) veliger(s) were found and later confirmed with DNA testing (PCR) in 2008 in Red Fleet Reservoir. However, subsequent testing has been negative for DNA, adults, or larval quagga mussels. The State of Utah subsequently downlisted Red Fleet Reservoir from “detected” to “inconclusive” in January 2012. The UDWR has established monitoring efforts and a boat-

washing program at Red Fleet Reservoir. Prevention of all AIS must be addressed in ways that do not discourage visitation, but that also ensure the longevity of dam operations and healthy fish populations.

Whirling disease is a condition caused by the parasite *Myxobolus cerebralis.* This pathogen has been detected in Utah waters throughout the years. Although it has not been detected in Red Fleet Reservoir or Brush Creek, efforts should continue to monitor and prevent the spread of whirling disease because rainbow trout are very susceptible to infestation.

Issue D3: Vegetation Communities

Reclamation lands surrounding Red Fleet Reservoir include a variety of vegetation communities that are important to wildlife and fish. These include vegetated shallows and riparian corridors. The steep topography along the reservoir shoreline limits shallow areas that can support rooted aquatic vegetation; however, the vegetated shallows that do exist are important to waterfowl, fish, and amphibians. Inflows and riparian corridors range from named perennial streams to unnamed ephemeral washes. Many of these corridors are incised, eroded, and dominated by nonnative plants. Some impacts to riparian corridors within Reclamation lands are associated with off-road vehicle travel. Grazing also contributes to degradation of these corridors outside of the Reclamation boundaries and by trespass cattle that cross over into Reclamation lands. The exotic invasive plant of greatest concern in these areas is saltcedar (*Tamarix* spp.), which has also spread to shorelines in many areas of the reservoir.

Issue D4: Wildlife and Special Status Species

Reclamation lands provide habitat for numerous wildlife species including birds, mammals, reptiles, and amphibians. The broader region surrounding Red Fleet Reservoir is inclusive of BLM and other lands that provide crucial habitat for several game species, including California quail (*Callipepla californica*), chukar (*Alectoris chukar*), cougar (*Puma concolor*) and winter range for elk (*Cervus canadensis*) and mule deer (*Odocoileus hemionus*). Important wildlife habitats, such as riparian and wetland areas, should be maintained and improved for the benefit of wildlife. Interpretation and education programs may be helpful for informing the public regarding the value of reservoir lands for general wildlife and sensitive species habitat.

The potential occurrence of threatened, endangered, and other special status species on Reclamation lands should be evaluated. The UDWR lists portions of the Study Area as occupied brooding and wintering habitat for the greater sage-grouse (*Centrocercus urophasianus*), which is listed as a candidate species under the Endangered Species Act. Potential for occurrence of other species should also be evaluated including yellow-billed cuckoo (*Coccyzus americanus*), the Canada lynx (*Lynx canadensis*), and the Mexican spotted owl (*Strix occidentalis lucidae*). Several state-listed sensitive species have been documented using Red Fleet Reservoir or have the potential to be found there, such as the American white pelican (*Pelecanus erythrorhynchos*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), and flannelmouth sucker (*Catostomus latipinnis)*. Other raptors documented at or near Red Fleet Reservoir include red-tailed hawk (*Buteo jamaicensis*).

Issue D5: Soil Erosion and Deposition

Erosion concerns are largely related to unauthorized trails and roads along shorelines and erodible hillsides. Access points have been closed, but some areas are difficult to patrol

regularly. Providing additional recreational access areas and maintained trails could help meet public demand for additional use areas while reducing impacts. Drainage improvements to established/formal trails (e.g., the trail in the Dinosaur Trackway Area) would also help reduce the potential for erosion in these areas.

Issue D6: Paleontological Resources

Identification, management, and interpretation of paleontological resources within and surrounding Red Fleet Reservoir should be considered in the RMP. Any areas in which geologic deposits have the potential to yield significant fossil localities would need to be surveyed for paleontological resources prior to implementation of any ground-disturbing activities. Primary concerns associated with protecting the physical condition or integrity of paleontological sites include (but are not limited to) potential effects from recreational development, erosion, and vandalism.

Issue D7: Cultural Resources

Identification, management, and interpretation of cultural resources within and surrounding Red Fleet Reservoir should be considered in the RMP. Any areas in which ground-disturbing activities could occur would need to be surveyed prior to implementation in order to determine the presence, nature, and extent of cultural resources. Primary concerns associated with protecting the physical condition or integrity of cultural resource sites include (but are not limited to) potential effects from recreational development, erosion, and vandalism.

Issue Category E: Land Management

Issue E1: Access Control

Access control is important for preventing the spread of invasive species, minimizing erosion, and managing public safety. Improving additional areas for public recreational access at Red Fleet Reservoir may reduce desire or interest in illegal access and also promote better use (e.g., reduce vandalism, off-road travel). In providing improved public access, security of the dam and associated water delivery facilities must be maintained.

Issue E2: Fencing and Grazing

There are grazing allotments on BLM lands surrounding Red Fleet Reservoir. Although grazing is not allowed on Reclamation lands, fence cutting and trespass cattle have been a problem. Fencing is difficult and costly to maintain. At times there is a need by cattle ranchers to herd cattle through Reclamation lands on the east end to reach corrals on ranches below the dam.

Issue E3: Mineral Development

There are borrow pit areas used for the construction of Red Fleet Dam located on Reclamation lands. The future use of these areas for mineral material extraction should be addressed in the RMP. There is oil and gas development in the area, but in different geologic strata than found on Reclamation lands. Mineral rights for the Study Area should be identified, and the RMP should address future mineral development on its lands and develop appropriate lease stipulations if mineral extraction is anticipated in the future.

GOALS AND OBJECTIVES

The Goals and Objectives developed for the Red Fleet Reservoir RMP are in direct response to the preceding Issue Statements. However, each Issue Statement may not require a specific set of Goals and Objectives and, in some cases, a set of Goals and Objectives may address several Issue Statements. In all cases, an effort has been made to translate the issues and opportunities identified in the Issue Statements into proactive Goals and Objectives for the RMP.

The Goals and Objectives serves as the primary foundation on which resource management alternatives for the RMP were developed. Each Goal provides a description of a desired future resource condition within the Study Area. Objectives listed under each Goal describe a series of activities to be accomplished in order to achieve each Goal. When each of the Objectives is implemented, the corresponding Goal will be attained. The Issue Statement(s) that each Goal addresses is noted in parentheses. The Goals and Objectives were organized into the same five categories as the Issue Statements: (A) Partnerships, (B) Water Resources, (C) Recreational and Visual Resources, (D) Natural and Cultural Resources, and (E) Land Management.

It is not the intent of the RMP or the RMP process to challenge or change existing law, treaties, formal agreements, or water rights. Therefore, all Goals, Objectives, and management alternatives developed as part of the RMP will be in agreement with existing laws, treaties, formal agreements, water rights, and operating constraints of Red Fleet Reservoir.

Goal Category A: Partnerships

Goal A1: Support Existing Agreements and Contracts and Encourage New Partnerships that Improve Management Practices for Red Fleet Reservoir's Associated Lands and Resources (Issue A1)

Objectives:

A.1.1 Evaluate proposed use activities against existing project purposes, contracts, and agreements.

A.1.2 Formalize any existing partnerships that have not been formalized to establish roles and commitments of resources from respective entities.

A.1.3 Pursue additional partnerships with Uintah County, Vernal City, UDWR, BLM, the National Scenic Byways Program, and other entities to facilitate best management of Study Area resources.

A.1.4 Consider contracts with qualified private concessioners for provision of specific public recreation facilities and/or activities.

A.1.5 Consider formal partnerships with private, nonprofit recreation user groups for provision and maintenance of specific public recreation facilities and/or activities.

Goal Category B: Water Resources

Goal B1: Protect and Improve Water Quality in Red Fleet Reservoir (Issue B1)

Objectives:

B.1.1 Identify water-quality impacts originating in Red Fleet Reservoir and suggest ways to meet beneficial use designations.

B.1.2 Include BMPs and design elements for stormwater controls in developing upgraded facility designs and new public use areas.

B.1.3 Identify areas where sanitation facilities (e.g., restrooms, refuse containers) are needed.

B.1.4 Coordinate with Utah Division of Water Quality and other entities in monitoring potential contaminants, bacteria, and viruses that can pose threats to aquatic life and human health.

Goal Category C: Recreation and Visual Resources

Goal C1: Increase Visitation and Revenue by Improving Existing Recreational Facilities, Expanding and Enhancing Recreation Opportunities, and Providing Access to Regional Recreation Resources (Issue C1)

Objectives:

C.1.1 Recommend improvements to existing facilities to meet visitor needs.

C.1.2 Recommend appropriate new recreational facilities at appropriate locations to meet demands for existing and potential recreation activity interests.

C.1.3 Work with other entities, particularly BLM, Uintah County, and the National Scenic Byway Program to determine opportunities for connectivity of motorized and nonmotorized trails.

C.1.4 Work with UDWR to maintain and enhance fishing opportunity, particularly by improving shoreline fishing access at Red Fleet Reservoir.

C.1.5 Consider other public and private partnerships that can enhance recreation opportunity, visitation, and revenue.

Goal C2: Provide for Safe, Quality Recreation Opportunities that Minimize Conflicts (Issue C1)

Objectives:

C.2.1 Identify appropriate recreational use areas for various activities.

C.2.2 Identify recreation capacities for both land-based and water-based recreation.

C.2.3 Explore ways to increase safety and security and to prevent user conflicts from becoming an issue.

Goal C3: Protect and Manage Visual Resources (Issue C2)

Objectives:

C.3.1 Establish Visual Integrity Objectives for the Study Area that are compatible with the National Scenic Byway designation of US-191.

C.3.2 Complement or enhance the natural surroundings when maintaining and/or designing new facilities.

Goal Category D: Natural and Cultural Resources

Goal D1: Protect and Enhance the Quality of the Fishery and Fishing Opportunities (Issues D1 and D2)

Objectives:

D.1.1 Work with UDWR to identify a desired fish species composition for Red Fleet Reservoir and to develop a Fisheries Management Plan to proactively manage the fishery for the desired species composition.

D.1.2 Determine and consider the status of the State-listed flannelmouth sucker (Catostomus latipinnis) when developing the Red Fleet Reservoir Fishery Management Plan.

D.1.3 Include objectives in the Fisheries Management Plan to monitor accumulations of selenium and mercury and provide adequate public information and education.

D.1.4 Include objectives in the Fisher Management Plan to monitor and prevent introduction of AIS and pathogens that can negatively affect the health of fish populations, visitation, and dam operations.

D.1.5 Coordinate with UDWR in all of the above-listed efforts and work collaboratively to identify possible fishery enhancement opportunities.

Goal D2: Protect and Enhance Native Vegetation and Wildlife Habitat (Issues D3 and D4)

Objectives:

D.2.1 Identify Study Area vegetation and habitat communities and develop a Habitat Management Plan for wildlife species conservation.

D.2.2 Consider plantings of additional native beneficial aquatic plants in vegetated shallows and native shrubs and trees along shorelines and riparian areas where appropriate.

D.2.3 Prioritize fencing maintenance efforts to keep livestock and off-road vehicles out of riparian wetlands and other sensitive areas.

D.2.4 Develop an appropriate plant list for future landscaping, erosion control, and water conservation for recreation facility and public access areas.

D.2.5 Identify the location and extent of noxious and invading weeds, pests, and any other nuisance species.

D.2.6 Control/manage noxious and invading plant species through development of an Integrated Pest Management Plan.

Goal D3: Identify, Protect, and Enhance Special Status and Other Wildlife Species of Interest and Their Habitats (Issue D4)

Objectives:

D.3.1 Determine the location and extent of suitable habitat for, and known occurrences of, threatened, endangered, and other special status species as a component of the Habitat Management Plan.

D.3.2 Identify undeveloped areas at suitable locations to conserve long-term, viable habitat for all wildlife with attention to deer and elk winter range, greater sage-grouse occupied habitat, and habitat for any other special status species.

D.3.3 Cooperate with appropriate entities in managing wildlife values and providing public education and interpretation.

D.3.4 Identify areas where Reclamation and partner agencies can restore, enhance, or conserve habitat for special status species in the Habitat Management Plan.

D.3.5 Coordinate with UDWR in prioritizing areas for habitat restoration, enhancement, and conservation of areas that may be at risk according to the 2005 Utah Wildlife Action Plan.

Goal D4: Control Erosion (Issue D5)

Objectives:

D.4.1 Inventory erosion problem locations and causes.

D.4.2 Address erosion problem locations through Best Management Practices (BMPs) for site-specific design and construction.

D.4.3 Work with partner agencies and other entities as appropriate to implement erosion-control strategies.

Goal D5: Protect and Manage Paleontological Resources (Issue D6)

Objectives:

D.5.1 Determine the nature and extent of paleontological resources where development is proposed.

D.5.2 For previously identified paleontological resource localities, develop a plan for stabilization, protection, and additional interpretation.

D.5.3 Recommend mechanisms to identify, manage, protect, and interpret paleontological resources.

Goal D6: Protect and Manage Cultural Resources (Issue D7)

Objectives:

D.6.1 Determine the nature and extent of cultural resources where development is proposed.

D.6.2 Recommend mechanisms to identify, manage, protect, and interpret cultural resource sites.

Goal Category E: Land Management

Goal E1: Provide Appropriate and Safe Access to Public Use Areas (Issues E1 and E4)

Objectives:

E.1.1 Evaluate current access and access controls to public use areas and recommend improvements.

E.1.2 Determine future access needs and develop plans for implementation.

E.1.3 Restrict access to sensitive areas where public safety and natural resources protection are concerns (e.g., important wildlife habitat, hazardous areas, Primary Jurisdiction Areas).

E.1.4 Consider opportunities to consolidate and exchange lands where appropriate.

Goal E2: Address Fencing and Trespass Issues (Issue E2)

Objectives:

E.2.1 Coordinate with BLM and grazing allotment holders to maintain fencing and prevent cattle trespass.

E.2.2 Coordinate with ranchers regarding land access needs.

E.2.3 Work with adjacent landowners to address any trespass issues.

Goal E3: Manage Mineral Development (Issue E3)

Objectives:

E.3.1 Determine appropriate land uses for existing borrow pit area(s).

E.3.2 Identify mineral rights for Reclamation lands and address future mineral development, if any, through appropriate lease stipulations.

E.3.3 Coordinate with appropriate entities managing surrounding lands regarding any potential indirect effects of mineral development on Reclamation lands and the reservoir.

APPENDIX B: RESOURCE MANAGEMENT PLAN SUMMARY TABLE

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AREA-WIDE MANAGEMENT DIRECTION			
GENERAL MANAGEMENT AND PARTNERSHIPS			
MANAGEMENT DIRECTION	**STANDARD OR GUIDE**	**MONITORING**	**CONTACTS AND REFERENCE**
Applicable Goals: ▸ **Support Existing Agreements and Contracts and Encourage New Partnerships that Improve Management Practices for Red Fleet Reservoir's Associated Lands and Resources**			
Contracts and Operations			
Project Purposes Fully protect the purposes for which the Red Fleet Dam and Reservoir lands were acquired or withdrawn. Formalize any existing partnerships that have not been formalized to establish roles and commitments of resources from respective entities.	Memorandum of Agreement 0-LM-40-00020 between the Bureau of Reclamation and the Utah Division of State Parks and Recreation for Management of Recreation Facilities at Red Fleet Reservoir. Repayment Contract 6-05-01-00143 between the United States and the Uintah Water Conservancy District, June 3, 1976. Amendment to Contract 6-05-01-00143 to include RRA, November 1, 1985. Amendment to Contract 6-05-01-00143 to modify M&I obligation, December 30, 1992. License Agreement 4-07-41-L0420 to Mountain States Telephone and Telegraph Company (Mountain Bell), September 17, 1984. Relocation Contract 6-07-01-00122 between Bureau of Reclamation and Uintah County, Utah for Relocation of a county road.	Evaluate proposed use activities against original purposes, contracts, and agreements. Evaluate at the time of activity proposal and document in Reservoir Management Reviews.	Documents on file with Reclamation, Provo Area Office. Potential Partnerships include: UWCD, State Parks, Uintah County, Vernal City, Utah Department of Natural Resources, Division of Wildlife Resources (UDWR), U.S. Fish and Wildlife Service (USFWS), U.S. Bureau of Land Management (BLM), and other entities.

AREA-WIDE MANAGEMENT DIRECTION

GENERAL MANAGEMENT AND PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Fish and Wildlife			
Fish and Wildlife Management Work with the UDWR and USFWS to protect, propagate, manage, conserve, and distribute protected wildlife throughout the state.	The UDWR is the fish and wildlife authority for the State of Utah and the USFWS is the federal fish and wildlife authority. State management activities are subject to the broad policy-making authority of the Utah State Wildlife Board. Activities regulated by the UDWR are specified in Title 23 of the Utah Code, or addressed in rules or proclamations as provided by Utah Code. The UDWR has primary responsibility for enforcement of fish and wildlife related laws. However, any peace officer of the State has the same authority to enforce these laws.	Enforce and field review.	The UDWR, USFWS, and appropriate law enforcement agencies.
Fish and Wildlife Use Manage for fish and wildlife uses as appropriate.	Same as above.	Track in Reservoir Management Reviews.	Reclamation, UWCD, UDWR, and USFWS.
Road Maintenance Partnerships			
Maintenance Encourage appropriate maintenance of access roads to Red Fleet Reservoir.	Reclamation and Uintah County are responsible for maintenance of existing access roads .	Field review.	Reclamation and Uintah County.

AREA-WIDE MANAGEMENT DIRECTION

GENERAL MANAGEMENT AND PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Information and Interpretation			
Interpretive Partnerships Coordinate interpretive efforts with appropriate entities.			Reclamation, State Parks, UDWR, UWCD, Uintah County, Vernal City, Utah State Historic Preservation Office (SHPO), and other interested parties.
Interpretive Programs As appropriate, describe geological, paleontological, biological, archaeological, or historical features and management concerns that are unique or of high interest. As appropriate, develop interpretive information for these resources.	Design interpretive service programs to help resolve management problems, reduce management costs, obtain visitor feedback, increase public understanding of project management, enhance visitor use, and provide safe use of the Study Area. Program elements could include: 1. Facility use guidelines and regulations. 2. Water and land use etiquette and safety regulations. 3. Project purposes and public benefits. 4. Recreation opportunity guides and maps. 5. Reservoir watercraft conditions and hazards. 6. Developed and dispersed recreation regulations. 7. Environmental interpretation and education. 8. Wildlife species and habitat values of Reclamation lands at Red Fleet Reservoir. 9. Off-highway vehicle (OHV) access status, guidelines, and maps. 10. Waste management, fire prevention, sanitation, and use of fuels and chemicals.	Determine visitor profile and interpretive themes/media in Reservoir Management Reviews.	Reclamation, UWCD, State Parks, UDWR, and other interested parties.

AREA-WIDE MANAGEMENT DIRECTION

GENERAL MANAGEMENT AND PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Signage Establish clear, consistent signage to orient the public and identify available opportunities at use areas and facilities. Provide signs at key locations for effective visitor orientation, such as entrances, boat ramps, picnic areas, and camping areas. Coordinate warning, traffic control, interpretive, and informational signs. Post boundary signs at pertinent locations.	Use Reclamation Sign Standards, the State Parks Sign Handbook, and the UDOT sign standards.	Document compliance/needs in Reservoir Management Reviews.	Reclamation, UWCD, UDOT, State Parks, UDWR, Uintah County, and other interested parties.
Law Enforcement and Fire Suppression			
Appropriate Law Enforcement Share/coordinate interagency law enforcement (civil, wildlife resources, and recreation public use regulations) between Uintah County, UDWR, and State Parks. Maintain law and order to protect the health and safety of persons using the area. Control litter, discourage vandalism, and perform search and rescue operations as appropriate. Notify county sheriffs and Reclamation immediately when there is a life-threatening situation, criminal act, project structure failure, resource contamination (oil or chemical spills), natural phenomenon (landslides and fires), cultural resource site(s), and/or human remains.	43 CFR Section 420.25.	Report safety hazards and other enforcement difficulties annually to involved entities.	State Parks, UDWR, and Uintah County.

AREA-WIDE MANAGEMENT DIRECTION

GENERAL MANAGEMENT AND PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Discharge of Firearms Prohibit discharge of firearms, bow and arrow, or air and gas weapons where appropriate in the Study Area.	The UDWR Big Game Proclamation.	Enforce.	State Parks, UDWR, and Uintah County Sheriff's Department.
Emergency Communications Provide emergency communication and coordinate with local law enforcement.	Reclamation Emergency Action Plan.	Maintain.	Documents on file with Reclamation, Provo Area Office.
Fire Regulations Ensure appropriate fire management regulations and procedures are in place and enforced in developed and dispersed areas.	Develop fire prevention programs. Construct fire breaks and/or manipulate vegetation as necessary to reduce the risk and spread of wildfires. Revegetate burned areas promptly with an appropriate seed mixture to reestablish vegetation and prevent erosion. Restrict fires to designated fire pits, grills, stoves, and lanterns. Post restrictions.	Contract/permitted entities will observe fuel conditions and apply appropriate action. Contract/permitted entities will monitor burned areas annually for revegetation success.	State Parks, Reclamation, UWCD, BLM, Uintah Basin Interagency Fire Center, and adjacent land owners.

AREA-WIDE MANAGEMENT DIRECTION

GENERAL MANAGEMENT AND PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Local, State, Federal, and Private Entities, Etc.			
Community and County Governments Support and encourage partnerships with the community governments of Vernal City, Uintah County, and others to facilitate best management of resources while providing benefits to partners. Work with local communities to determine activities they believe either benefit or adversely affect them. Strive to implement projects and programs beneficial to local communities that are also consistent with the RMP.		Document progress/need in Reservoir Management Reviews.	Reclamation, Vernal City, Uintah County, and other local communities.
Private, Conservation, Volunteer, and Other Groups Pursue new partnerships with private land owners, local water districts, local conservation, sporting, education, and volunteer groups to provide public awareness of and protect water quality, cultural, vegetation, and wildlife values. Consider formal partnerships for provision and maintenance of specific public recreation facilities and/or activities.		Document progress/need in Reservoir Management Reviews.	Reclamation, State Parks, UWCD, fishing organizations, adjacent land owners, local churches, schools, and others.
State and Federal Governments Pursue/continue partnerships to facilitate best management while providing benefits to partners.		Document progress/need in Reservoir Management Reviews.	Utah Department of Environmental Quality (UDEQ), Division of Water Quality (DWQ); Reclamation; State Parks; UDWR; UDOT; BLM; USFWS; and others.

AREA-WIDE MANAGEMENT DIRECTION

GENERAL MANAGEMENT AND PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Recreation Management			
Recreation Management Encourage other partners for recreation management responsibilities.	Accommodate public recreation as per PL 89-72 and Title 28 of PL 102-575. Current management is as a state park within the Utah State Park system.	Comply with current contracts and agreements. Evaluate prior to issuance of new agreements.	Document on file with Reclamation, Provo Area Office.
Water Quality			
Water Quality Coordinated Management Support partnership efforts to reduce undesirable water quality impacts in the watershed.	Sections R 317-2-14 and R 317-2-7.2 of UDWQ Standards (1997).	Participate with current efforts to improve water quality within the Study Area.	UDEQ/DWQ, State Parks, UDWR, Uintah County, BLM, USFWS, Reclamation, UWCD, and other interested parties.

WATER RESOURCES

Applicable Goals:
- **Protect and Improve Water Quality in Red Fleet Reservoir.**

Water Operations			
Care, Operation, and Maintenance Continue administration for dam and appurtenant construction works and factors affecting water integrity.	Operate by the: ‣ Annual Operating Plan ‣ Standing Operating Procedures ‣ Emergency Action Plan ‣ Designer's Operating Criteria ‣ Integrated Pest Management Plan	Refer to Documents.	Documents with contracts on file with Reclamation, Provo Area Office, and UWCD.
Reservoir Water Level Fluctuations Inform State Parks, Reclamation, and UDWR when sudden and major reservoir fluctuations are planned.			UWCD and Reclamation.

AREA-WIDE MANAGEMENT DIRECTION

WATER RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Watershed Protection			
Watershed Protection Management Encourage management practices in the Red Fleet Reservoir watershed that maintain or improve reservoir water quality and stream flows. Encourage neighboring jurisdictions to construct and maintain facilities to protect and improve water quality before it enters Red Fleet Reservoir.	Manage towards achieving reductions in total phosphorous levels and increases in dissolved oxygen levels.	Comply with current water quality standards. Document in Reservoir Management Reviews.	Reclamation, BLM, USFS, UDEQ/DWQ, UWCD, State of Utah, State Parks, Uintah County, and surrounding property owners.
Water Quality			
Best Management Practices (BMPs) Implement Best Management Practices (BMPs) relative to water quality in all resource activities and site-specific design of stormwater controls. Implement a public education program to interpret the benefits of water quality and to prevent activities that produce pollution. Coordinate with UDOT to ensure that controls to limit the impacts from highway spills (including hazardous materials spills) are implemented.	Comply with the State of Utah drinking water source protection rule. Where appropriate, meet or exceed state and federal water quality standards for domestic purposes with prior treatment, recreation, wildlife, fish, and agricultural uses. Coordinate with counties, water districts, and Reclamation to ensure BMPs are being implemented.	Comply with water quality standards and regulations. Document in Reservoir Management Reviews.	Reclamation, UWCD, UDEQ/DWQ, State Parks, UDWR, Uintah County, local communities, and others.

AREA-WIDE MANAGEMENT DIRECTION

WATER RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Facilities Construct facilities to meet federal, state, and county standards. Protect reservoir water quality from the impact of development and visitor use.	Provide for adequate restrooms and waste disposal. Control erosion and pollutant loading, including fuel spills.	Comply with current water quality standards, sanitation standards, and all applicable policies to maintain facilities. Document in reservoir management reviews.	Environmental Protection Agency (EPA), Utah Division of Environmental Response and Remediation, Reclamation, State Parks, UWCD, UDEQ, and DWQ.
Water Development and Conservation Implement water conservation measures.	Develop and implement water conservation measures.		Reclamation, State Parks, UWCD, and others.
Water Quality Protection Identify water quality impacts coming from inside the Study Area and determine mitigation strategies. Where possible, improve and maintain water quality and manage all areas to protect water quality.	Manage to meet beneficial use designations: 1C (drinking water), 2A (frequent primary contact recreation), 2B (infrequent primary contact recreation), 3A (coldwater fisheries), and 4 (irrigation) as necessary, limit or restrict other uses to protect water quality.	Comply with set standards or procedures. Document compliance or violations in Reservoir Management Reviews.	Reclamation, EPA, UWCD, UDEQ, and DWQ.

AREA-WIDE MANAGEMENT DIRECTION

RECREATIONAL AND VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Applicable Goals: ▸ **Increase Visitation and Revenue by Improving Existing Recreational Facilities, Expanding and Enhancing Recreation Opportunities, and Providing Access to Regional Recreation Resources.** ▸ **Provide for Safe, Quality Recreational Opportunities That Minimize Conflicts.** ▸ **Protect and Manage Visual Resources.**			
Concessions and Special Uses			
Applications Consider contracts with qualified private concessioners for provision of specific public recreation facilities and/or activities. Respond to recreation special-use applications according to the following priorities: 1. Public service operations. 2. Group type operations. 3. Private operations.	An application for permit may be denied if the authorizing office determines that: 1. The proposed use would be inconsistent or incompatible with the purposes for which the lands are managed, or with other uses, or 2. The proposed use would not be in the public interest, or 3. The applicant is not qualified, or 4. The use would be inconsistent with Reclamation policies and regulations. 5. The applicant does not or cannot demonstrate technical or financial capability.	Comply with special use agreements and contracts. Document in Reservoir Management Reviews.	Reclamation, State Parks, and UWCD.

AREA-WIDE MANAGEMENT DIRECTION

RECREATIONAL AND VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Recreation Development			
Facility Development and Renovation Recommend improvements to existing facilities to meet visitor needs. Recommend appropriate new recreational facilities at appropriate locations to meet demands for existing and potential recreation activity interests.	Refer to Specific Area Management Direction and WALROS classification. Generally place priority for construction and reconstruction or restoration of existing facilities that are presently below standards. Generally replace facilities when renovation costs are 50 percent or more of replacement costs or when existing facilities cease to be compatible with site design or Water and Land Recreation Opportunity Spectrum (WALROS) classification.	Evaluate facility condition. Assess ranking order. Comply in design and construction. Document in Reservoir Management Reviews or more often if needed.	State Parks, UWCD, and Reclamation.
Development Requirements Comply with applicable federal, state, and local laws, rules, and regulations in the development of facilities, including sanitation facilities. Develop facilities based on compatibility with authorized reservoir project purposes, long-term management and funding capability, management goals and objectives, and environmental protection factors. *See Specific Area Management Direction.*	Federal, state, and local laws, rules and regulations.	Document compliance in reservoir management reviews.	Reclamation, State Parks, UWCD, UDWR, and Uintah County.
	Guidelines and principles contained in PL 89-72 as amended by Title 28 102-575 and other laws and agreements as applicable.	Document compliance in reservoir management reviews.	Reclamation, State Parks, UWCD, UDWR, and Uintah County.

AREA-WIDE MANAGEMENT DIRECTION

RECREATIONAL AND VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Private Exclusive Facilities Prohibit private, exclusive facilities by Reclamation, its managing partners, or other private entities. Phase out existing recreation facilities deemed to be exclusive use when lands are needed for greater public purposes.		Enforce. Document in reservoir management reviews.	Reclamation, State Parks, and UWCD.
Water and Land Water and Land Recreation Opportunity Spectrum (WALROS) Classification Provide recreation facilities appropriate for the established WALROS classification. Facilities may include water, power, sanitation, electricity, roads, camp sites, pavilions, etc. *See Specific Area Management Direction.*		Comply with contracts, agreements, and planning documents. Document in Reservoir Management Reviews.	Reclamation and State Parks.
Fishing Opportunities Work with UDWR to maintain and enhance fishing opportunities, particularly by improving shoreline fishing access.	Refer to Specific Area Management Direction and WALROS classification.	Document in reservoir management reviews.	Reclamation, State Parks, UWCD, and UDWR.
Trails Work with other entities to determine opportunities for connectivity of motorized and non-motorized trails. Construct appropriate pedestrian, bike, fishing, and access trails. Include sanitation and waste facilities as needed. *See Specific Area Management Direction.*		Comply with contracts, agreements, and planning documents. Document in Reservoir Management Reviews.	Reclamation, BLM, State Parks, Uintah County, Scenic Byway, and private land owners.

AREA-WIDE MANAGEMENT DIRECTION

RECREATIONAL AND VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Recreation Management			
Activities Manage for a year-round spectrum of recreation experiences while meeting the adopted WALROS class. *See Specific Area Management Direction.*	Bureau of Reclamation WALROS users' handbook.	Determine user profile and preference at RMP planning intervals (by State Parks). Prepare an annual recreation use data report.	State Parks, BLM, Reclamation, Uintah County, and UDWR.
Health and Safety Ensure appropriate law enforcement, waste, and fire management regulations and facilities are in place and enforced in recreation areas.		Enforce.	State Parks, UDWR, Uintah County, and Reclamation.
Maintenance in General Provide facility maintenance to ensure an acceptable level of public safety, health, and sanitation, and to protect natural resources.	Manage by an operation and maintenance plan that prescribes maintenance levels, schedules, and tasks.	Perform annual facility condition inventories and coordinate with Reclamation on conditions and needs. Document in Reservoir Management Reviews.	State Parks, Reclamation, and other interested parties.
Management by Others Encourage other qualified entities to assume recreation management responsibility.	Existing agreements and contracts.	Comply.	Reclamation and State Parks.
Management Agreement Manage recreation consistent with this Red Fleet Reservoir RMP and the current Recreation Management Agreement.	Federal Water Project Recreation Act (PL 89-72) and current amendments. Use a Memorandum of Agreement as the mechanism to formalize relationships and responsibilities.	Comply with agreements and plans. Document in Reservoir Management Reviews.	Reclamation, State Parks, and UWCD.
Overnight Camping Allow overnight camping in designated areas. *See Specific Area Management Direction.*		Document in Reservoir Management Reviews.	State Parks and Reclamation.

AREA-WIDE MANAGEMENT DIRECTION

RECREATIONAL AND VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Parking Below the High Water Mark Generally prohibit public motorized land vehicles from driving or parking on beaches or below the high water mark, with the exception of watercraft launching at approved sites.		Interpret and enforce.	State Parks, Reclamation, UDWR, and UWCD.
Picnicking Allow picnicking in designated areas. *See Specific Area Management Direction.*		Document in Reservoir Management Reviews.	State Parks and Reclamation.
Reservoir Water Quality Maintenance Restrict or terminate recreation uses that threaten or exceed standards for products, such as volatile and synthetic organic compounds.	EPA Safe Drinking Water Act rules and regulations.	Prescribe and conduct water quality and biological monitoring of Red Fleet Reservoir and its tributaries and releases as appropriate.	UDEQ/DWQ, UWCD, Reclamation, State Parks, and UDWR.
Special Events Give precedence to normal park activities/operations when scheduling special events.	Review special event requests by the recreation manager.	Comply before scheduling.	State Parks.
Use Conflicts Minimize recreation and environmental resource conflicts and promote user safety. As necessary, identify appropriate recreational use areas for various activities.	Refer to Specific Area Management Direction and WALROS classification.	Interpret and enforce.	State Parks.
User Fees Charge appropriate user fees based on cost-effective, year-round service. Provide cost-effective service.	User fees will be determined according to existing management agreements.	Monitor compliance annually.	State Parks Board approved fee structure and State Parks.

AREA-WIDE MANAGEMENT DIRECTION

RECREATIONAL AND VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Recreation Capacities Identify recreation capacities for both land-based and water-based recreation.	Provide multi-purpose opportunities with low to moderate potential for conflicts. Boating capacity will be based upon Strategic Boating Plan. Provide watercraft recreation administration by managing through the Utah State Boating Act. Utah Title 73, Chapter 18.	Enforce.	State Parks.
Watercraft Launching Restrict watercraft launching that requires motorized tow vehicles to designated boat ramps and permitted areas only. *See Specific Area Management Direction.*		Assess launching location. Document in Reservoir Management Reviews or more often if needed.	State Parks, UWCD, and Reclamation.
Wakeless/No Watercraft Zone Maintain and identify wakeless/no watercraft zones to protect reservoir resources and users.	Follow State Boating Guidelines.	Enforce.	State Parks.
Winter Recreational Opportunities As appropriate, provide fishing opportunities and reservoir access through the winter months.			State Parks, UDWR, UWCD, and Reclamation.

AREA-WIDE MANAGEMENT DIRECTION

RECREATIONAL AND VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Recreation Planning			
Inventory System Distinguish between developed and undeveloped (dispersed) use areas and management. Utilize Reclamation approved WALROS system appropriate to the scale of the project. Inventory the recreation resource and evaluate it as an integrated part of the planning and implementation process at detail WALROS mapping scales that address: 1. Physical setting 2. Social setting 3. Managerial setting	Bureau of Reclamation's WALROS User's Handbook. *See Specific Area Management Direction.*	Prepare an annual use data report.	Reclamation, State Parks, and UDWR. Inventory map on file at Reclamation.
Motorized Vehicle Use Allow motorized vehicle use where appropriate. Manage off-highway vehicle (OHV) use in accordance with federal regulations.	43 CFR 420. Generally, Study Area lands are closed to motorized uses, unless specifically designated as open.	Review proposals.	Reclamation, State Parks, UWCD, and Uintah County.
Visual Enhancement			
Development Achieve landscape enhancement through addition, deletion, or alteration of landscape elements. Examples of these include: ‣ Addition of vegetation species to introduce unique form, line, color, or texture to existing plant communities. ‣ Vegetation manipulation to open up vistas or screen out undesirable views. ‣ Addition of structures that enhance the natural landscapes.	BLM's Visual Resource Management System.	Field inspect.	Reclamation, State Parks, and other interested parties.

AREA-WIDE MANAGEMENT DIRECTION

RECREATIONAL AND VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Visual Management and Development			
Development Implement management activities to blend with or complement the characteristic landscape at the adopted VRM Class II when maintaining and/or designing new facilities. *Exceptions* The dam, because of its strong contrasts with the natural appearing environment.	BLM's Visual Resource Management System.	Document in Reservoir Management Reviews.	Reclamation.
Visual Planning			
Inventory Inventory the visual resource and integrate it as part of the planning process at detail mapping scales that address: 1. Scenic Quality Rating: the landscape's visual attractiveness, 2. Sensitivity levels: the public's scenic quality expectation, 3.Distance Zones: the landscape visibility from sensitive viewpoints, and 4. Visual Resource Class: the visual prescription for definitive land areas. 5. National Scenic Byway: compatibility with the designation of US-191.	BLM's Visual Resource Management System.	Document in reservoir management reviews.	Reclamation.
Visual Rehabilitation			
Rehabilitation Rehabilitate facilities and areas that do not meet the adopted VRM Class. *See Specific Area Management Direction.*	BLM's Visual Resource Management System .	Comply with desired visual condition. Document at project completion and in Reservoir Management Reviews.	Reclamation.

AREA-WIDE MANAGEMENT DIRECTION			
RECREATIONAL AND VISUAL RESOURCES			
MANAGEMENT DIRECTION	**STANDARD OR GUIDE**	**MONITORING**	**CONTACTS AND REFERENCE**
Priorities Set rehabilitation priorities for existing conditions, as follows: 1. Relative importance of the site and amount of deviation from the adopted VRM Class. Foreground areas have the first priority, middle ground areas have the second priority, and background areas have the third priority. 2. Length of time it will take natural processes to reduce the visual impacts so that they meet the adopted VRM Class. 3. Benefits to other resource management objectives gained through rehabilitation.		Field inspection.	Reclamation and other interested parties.

AREA-WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Fisheries Management			
Applicable Goals: ▸ **Protect and Enhance the Quality of the Fishery and Fishing Opportunities.** ▸ **Protect and Enhance Native Vegetation and Wildlife Habitat.** ▸ **Identify, Protect, and Enhance Special Status and Other Wildlife Species of Interest and Their Habitats** ▸ **Control Erosion.** ▸ **Protect and Manage Paleontological Resources.** ▸ **Protect and Manage Cultural Resources.**			
Fisheries Management Work with UDWR to identify a desired fish species composition, fishery enhancement opportunities, and develop a Fisheries Management Plan.	Determine and consider the status of the state-listed flannelmouth sucker (Catostomus latipinnis) when developing the Fishery Management Plan. Include objectives to monitor accumulations of selenium and mercury and provide adequate public information and education. Include objectives to monitor and prevent introduction of Aquatic Invasive Species and pathogens.	Document in Reservoir Management Reviews.	UDWR, State Parks, UWCD, and Reclamation.

AREA-WIDE MANAGEMENT DIRECTION			
NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES			
MANAGEMENT DIRECTION	**STANDARD OR GUIDE**	**MONITORING**	**CONTACTS AND REFERENCE**
Vegetation and Wildlife Habitat			
Habitat Management Plan Work with UDWR and other appropriate entities to identify and protect sensitive vegetation areas and conserve long-term wildlife habitat by developing a Habitat Management Plan.	In developing the plan: 1. Consider plantings of additional native beneficial aquatic plants in vegetated shallows and native shrubs and trees along shorelines and riparian areas. 2. Identify and prioritize areas for potentially restoring, enhancing, or conserving habitat for special status species (federal or state listed) and general wildlife of interest. 3. Develop habitat management objectives consistent with the Utah Wildlife Action Plan. 4. Consider improving floodplain and riparian functions of Big Brush Creek below the dam. 5. Identify appropriate locations for signage to minimize vegetation trampling and disturbance to wildlife. 6. Specify suitable recreation within designated Natural Areas and target areas previously impacted by dispersed recreation that are in need of restoration. 7. Include appropriate provisions to manage habitat according to the *Utah Conservation Plan for Greater Sage-grouse.* This plan has also been adopted by Uintah County.	Document in Reservoir Management Reviews.	Reclamation, State Parks, UDWR, and Uintah County.
Protection of Migratory Birds In completing site-specific environmental clearances, coordinate with USFWS regarding provisions to avoid and minimize impacts to migratory birds.	Migratory Bird Treaty Act and Executive Order 13186.	Comply in planning and management.	Reclamation and USFWS.

AREA-WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Threatened and Endangered Species Where activities or uses may affect threatened and endangered species or their habitats, initiate consultation procedures with USFWS and integrate the results to determine viability of activity or use.	Endangered Species Act.	Comply in planning and management.	Reclamation and USFWS.
Livestock Grazing No lands within Reclamation boundaries are open to grazing at Red Fleet Reservoir.	Install, maintain, and upgrade boundary fencing, gates, and cattle guards as needed to prevent trespass.	Document in Reservoir Management Reviews.	Reclamation and State Parks.
Revegetate Disturbed Areas Revegetate disturbed or damaged areas.	Rehabilitate decommissioned user-created motorized trails to approximate original contour, drain, seed, and sign.	Comply in project planning and during implementation. Document in Reservoir Management Reviews.	Reclamation, State Parks, and other interested parties.
Surface-Disturbing Activities Minimize surface- disturbing activities that alter vegetative cover.	Restrict use or close sites where erosion or environmental damage is occurring.	Document vegetative condition during Reservoir Management Reviews.	Reclamation, State Parks, and other interested parties.
Developed Area Landscaping Develop an appropriate plant list for future landscaping, erosion control, and water conservation for recreation facility and public access areas.		Implement in site specific design. Document in Reservoir Management Reviews.	Reclamation and State Parks.

AREA-WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Wetlands and Floodplains Provide effective protection and management of wetlands and floodplains.	Prior to implementation of surface-disturbing activity, delineate and evaluate riparian and/or wetlands that may be impacted. Determine impacts to wetlands and, if required, obtain U.S. Army Corps of Engineers Clean Water Act 404 permit for wetlands disturbance. Executive Orders 11988 and 11990.	Comply in planning and management. Document in Reservoir Management Reviews.	Reclamation and State Parks.
Nuisance and Invasive Species Identify the location and extent of noxious and invading weeds, pests, and any other nuisance species and implement appropriate control measures.	Coordinate with State of Utah and Uintah County Pest Control and other interested parties to regulate undesirable or invasive pests. Apply restricted-use pesticides under the direction of certified applicators. Follow label instructions.	Document in Reservoir Management Reviews.	Reclamation, State Parks, local pest control officials, adjacent landowners, concessionaires, and other interested parties.

AREA-WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Integrated Pest Management Plan Develop and implement an Integrated Pest Management Plan for long-term control of nuisance and invasive species control.	In developing the plan: 1. Require control of noxious/invasive species during periods of construction or other ground disturbing activity.. 2. Consider removal of redundant/unnecessary fence lines as part of the Integrated Pest Management Plan which would provide some weed management benefit. The Plan should also address weed control strategies that would be implemented along existing and future boundary and access control fences.	Document in Reservoir Management Reviews.	Reclamation, State Parks, Uintah County, local pest control officials, adjacent landowners, concessionaires, and other interested parties.
Geology/Soils			
Geologic Hazards During construction and/or ground-disturbing activities, avoid geologic hazards where possible.	Analyze site-specific geologic hazards prior to locating permanent facilities.	Comply in design and construction.	Reclamation.

AREA-WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Soil Erosion Minimize adverse impacts to the soil resource, including accelerated erosion, compaction, contamination, and displacement.	Inventory erosion problem locations and causes. Address erosion problem locations through Best Management Practices for site-specific design and construction. Work with partner agencies, adjacent landowners, and other entities to implement erosion-control strategies.	Document compliance at project completion and during Reservoir Management Reviews.	Reclamation, State Parks, BLM, SITLA, UDWR, UWCD, and other interested parties.
Shoreline Protection As appropriate, implement Erosion Control measures that reduce shoreline erosion.		Monitor and document in Reservoir Management Reviews.	Reclamation, State Parks, and UWCD.
Cultural/Paleontological			
Inventories Perform appropriate Class 1, 2, or 3 surveys to determine areas of high and low potential for cultural and paleontological resources where development is proposed.	36 CFR 800. Perform site-specific Class III surveys in areas prior to development and consult with SHPO before project approval.	Enforce.	Reclamation and SHPO.

AREA-WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Listed Sites Protect and find adaptive use for, and/or interpret cultural and paleontological resources that are listed on the National Register of Historical Places (NRHP), the National Register of Historic Landmarks, or	36 CFR 800.	Determine damage/destruction from unauthorized activities and uncontrollable natural agents.	Reclamation and SHPO.
which may be determined to be eligible for the national registers. Restrict use on areas where protected sites may occur. Develop and implement a cultural and paleontological resources interpretation and education program as funds become available.	36 CFR 800.	Monitor and Document in Reservoir Management Reviews.	U.S. National Parks Service, Reclamation, SHPO, and State Parks.
Evaluate and inventory all sites with significant potential for listing as cultural or historical sites according to SHPO and/or NRHP guidelines. Listed sites would be restored in accordance with SHPO and Advisory Council recommendations and developed for uses consistent with their historic stature. Determine damage/destruction from unauthorized and uncontrollable natural agents.	SHPO and/or NRHP guidelines.		SHPO, NRHP, and Advisory Council.

AREA-WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCE
Management Protect and foster public use and enjoyment of cultural and paleontological resources: 1. Conduct appropriate studies to provide information necessary for an adequate review of the effect a proposed undertaking may have on cultural values. 2. Collect and record information from sites where appropriate. 3. Issue antiquities permits to qualifying academic institutions or other approved organization for the study and research of sites. 4. Interpret sites as appropriate, and foster public appreciation of these resources. 5. Develop a plan for stabilization and protection of identified resource localities.	Executive Order 11593. 43 CFR 3, 7. 36 CFR 800.	Determine damage/ destruction from unauthorized activities and uncontrollable natural agents. Document in Reservoir Management Reviews.	Reclamation.
Nomination Nominate or recommend cultural or paleontological sites to the NRHP or National Natural Landmarks in the following priority: 1. Sites representing multiple themes, 2. Sites representing those that are not currently on the NRHP within the State, or 3. Sites representing themes that are currently represented by single sites.	36 CFR 60. 36 CFR 800.	Nominate as appropriate. Document in Reservoir Management Reviews.	Reclamation.

AREA-WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Applicable Goals: ▸ **Provide Appropriate and Safe Access to Public Use Areas.** ▸ **Address Fencing and Trespass Issues.** ▸ **Manage Mineral Development.**			
Fire Suppression			
Fire Suppression Employ best wildfire prevention techniques. Control wildfires at all intensity levels.		Control wildfires. Document in Reservoir Management Reviews or more often if needed.	Reclamation, State Parks, BLM, Uintah County, and other interested parties.
Lands			
Boundary Fences Construct fences where needed to conform with acceptable standards in order to control trespass and to restrict access to sensitive areas. Prioritize fencing maintenance efforts to keep livestock and off-road vehicles out of sensitive areas.	The BLM 1995 Fencing Manual Handbook H-1741-1. Provide for passage and migration of wildlife.	Inspect fence conditions annually; identify maintenance and/or repair needs. Contact livestock owners and take other appropriate action when animals are in trespass. Document in Reservoir Management Reviews.	Reclamation, State Parks, BLM, and UDWR.
Land Acquisition/Use Consider requests for exchanges on a case-by-case basis when it benefits Reclamation.		Record in the Foundation Information for Real Property Management (FIRMS) or current land management system. Document in Reservoir Management Reviews.	Reclamation, UWCD, BLM, and State Parks.
Land Disposal Dispose of lands that are no longer needed for project purposes.	Disposal based on federal Property and Administrative Services Act of 1949 and 41 CFR 101-47.	Record in FIRMS or current land management system. Document in Reservoir Management Reviews.	Reclamation, UWCD, BLM, and State Parks.

AREA-WIDE MANAGEMENT DIRECTION			
LAND MANAGEMENT			
MANAGEMENT DIRECTION	**STANDARD OR GUIDE**	**MONITORING**	**CONTACTS AND REFERENCES**
Land/Easement Acquisition Identify and evaluate lands and/or easements necessary to pursue Reclamation purposes according to the following priorities: 1. Where lands or easements are needed to meet project or resource management goals and objectives. 2. Lands that provide habitat for threatened and endangered species of animals and plants. 3. Lands having historical or cultural resources, outstanding scenic values or critical ecosystems, when these resources are threatened by change of use.		Record in the FIRMS or current land management system. Document in Reservoir Management Reviews.	Reclamation, UWCD, and other interested parties.
Land Withdrawals, Disposals, and Fee Title Lands Retain existing withdrawals and lands needed for project purposes. Relinquish existing withdrawals and lands no longer needed for project purposes.	Section 204 of the federal Land Policy and Management Act of 1976 (43 USC 1714). Disposal based on federal Property and Administration Services Act of 1959 and 41CFR 101-47.	Conduct informal withdrawal reviews to evaluate the continuation of Reclamation withdrawals (20-year intervals, generally). Record relinquishments in the FIRMS or current land management system. Document in Reservoir Management Reviews.	Reclamation, UWCD, BLM, and State Parks.

AREA-WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Non-Recreation Special Use Management Act on special-use applications according to the following priorities: 1. Land and use activity requests relating to public safety, health and welfare; for example, highways, power lines, and public service improvements. 2. Land and use activities that benefit only private users; for example, road permits, rights-of-way for power lines, telephone lines, and water lines.	Section 10 of the Reclamation Project Act of 1939 and 43 CFR 429. Discretionary consideration to deny a permit could include the following: 1. The proposed use would be incompatible with the purpose(s) for which the lands are managed, or with other uses, or 2. The proposed use would not be in the public interest, or 3. The applicant is not qualified, or 4. The use would be inconsistent with applicable federal and/or State laws, or 5. The applicant does not demonstrate technical or financial capability.	Review special-use permits, leases, license, easements, applications, amendments, transfers, and administration for compliance.	Reclamation, UWCD, State Parks, and other interested parties.
Off-site Influences to Recreation Sites Approve special-use applications for areas adjacent to recreation sites when the proposed use is compatible with project purposes and use of the recreation site.	Section 10 of the Reclamation Project Act of 1939 and 43 CFR 429.	Evaluate recreation setting, experience, and management objectives.	Reclamation, EPA, State Parks, and other interested parties.
Pollution Control and Abatement Verify that all activities requiring a Spill Prevention Control and Counter Measure Plan are in compliance.	Report oil and chemical spills to the EPA National Response Center in Denver, Colorado; the Utah Emergency Response Center in Salt Lake City; Uintah County Sheriff's Department; and Reclamation, as directed by the Emergency Action Plan.	Comply with the Emergency Action Plan.	Reclamation, EPA, State of Utah, and Uintah County.

AREA-WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Resource Activities Comply with the intent of project purposes in the design and implementation of resource development activities.	Verify crossing agreements, out grants, unauthorized uses, and health and safety hazards. Identify lands not needed for project purposes.	Update Land Use Inventories annually. Document in Reservoir Management Reviews.	Reclamation, UWCD, State Parks, UDWR, and other interested parties.
Utility Lines Encourage burying utility lines, except when: 1. Visual quality objectives of the area can be met using an overhead line. 2. Burial is not feasible because of soil erosion, geological hazard, or unfavorable geologic conditions. 3. Greater long-term site disturbance would result. 4. It is not technically feasible or economically reasonable.		Conduct on-site inspections.	Reclamation, State Parks, and other entities.

AREA-WIDE MANAGEMENT DIRECTION			
LAND MANAGEMENT			
MANAGEMENT DIRECTION	**STANDARD OR GUIDE**	**MONITORING**	**CONTACTS AND REFERENCES**
Minerals			
Appropriate Minerals Management Ensure that mineral development is permissible and compatible with project purposes. Ensure that mineral activities do not adversely affect planned or current uses. Determine appropriate land uses for existing borrow pit areas. Identify mineral rights for Reclamation lands and address future mineral development, if any, through appropriate lease stipulations. Coordinate with appropriate entities managing surrounding lands regarding any potential indirect effects of mineral development on Reclamation lands and the reservoir.	Leasable Minerals: Reclamation withdrawn lands are restricted from minerals entry by Commissioner's order of 8-22-1952 and PLO-3676, 6-10-1965. Other lands are subject to Mineral Leasing Act of 1920, as amended and supplemented (30 U.S. Code [USC] 181, et. seq.), the Mineral Leasing Act for Acquired Lands as amended (30 USC 351-359), and the Geo-thermal Steam Act of 1970 (30 USC 1001-1025). Coordinate with BLM through an interagency agreement between Reclamation and BLM, 3-25-83. Locatable Minerals: Subject to the 1872 Mining Law, amended by 30 USC Ch. 2. Salable Minerals: Subject to Reclamation's discretion for review and issuance of permits. Act of July 31, 1947, amended (30 USC 601 et. seq.), the Act of July 23, 1955 (30 USC 601), the Act of September 28, 1962 (30 USC 611), and Section 10 of Reclamation Projects Act of 1939 (43 USC 387).	Ensure compliance where Reclamation has control. Document in Reservoir Management Reviews.	Reclamation, BLM, State Parks, Utah Division of Oil, Gas, and Mining, and other interested parties.

AREA-WIDE MANAGEMENT DIRECTION			
LAND MANAGEMENT			
MANAGEMENT DIRECTION	**STANDARD OR GUIDE**	**MONITORING**	**CONTACTS AND REFERENCES**
Roads/Trails			
Private Purpose Roads Put roads under special-use permits or Right-of-Way easements that are needed for private uses. Exceptions are for public travel and administration.	Section 10 of the Reclamation Project Act of 1939 and 43 CFR 429.	Record in FIRMS or current land management systems. Document in Reservoir Management Reviews.	Reclamation, State Parks, and other interested parties.
Roads Across Private Lands Where appropriate, acquire rights-of-way for roads and trails that cross private lands.		Record in the FIRMS or current land management system. Document in Reservoir Management Reviews.	Reclamation, State Parks, and other interested parties.
Road Maintenance and Use 1. Pursue agreements with private or public entities to provide ongoing maintenance of roads and parking areas. 2. Restrict vehicular traffic from using user-created unimproved roads. 3. Close roads when unacceptable environmental or road damage is occurring. 4. Maintain structures, bridges, cattle guards, etc., to be structurally sound and safe for use. 5. Coordinate with the State of Utah and Uintah County to assure safe ingress and egress from the state highway and county roads.		Document in Reservoir Management Reviews. Comply with agreements and permits. Document road condition. Conduct on-site inspections.	Reclamation, State Parks, and Uintah County.
Road Rehabilitation As appropriate, convert roads not needed for authorized activities to trails, or rehabilitate the road to approximate predisturbed conditions.		Record in FIRMS or current land management system. Document at Reservoir Management Reviews.	Reclamation, UWCD, and State Parks.

AREA-WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Special Purpose Roads and Trails Meet existing and potential needs by encouraging development of roads or trails when constructed or reconstructed for special purposes.		Comply with existing contracts and agreements.	Reclamation and State Parks.
Specific Purpose Roads and Trails Construct or reconstruct local roads and trails to provide access for specific resource activities such as campgrounds, trailheads, wildlife management, and leases. Fit roads/trails to the topography and minimize the amount of surface disturbance. *See Specific Area Management Direction.*		Comply with existing contracts and agreements.	Reclamation, UWCD, State Parks, and other entities.
Trail Maintenance and Use Maintain trails for designated uses and restrict trails from inappropriate uses.		Determine trail condition and travel status. Document in Reservoir Management Reviews.	Reclamation, State Parks, and other interested parties.
Travel/Access			
Automobile/Motorized Vehicle Travel Prohibit vehicles from traveling and parking outside designated roads and parking areas.	43 CFR 420.		Reclamation, UDOT, State Parks, and Uintah County Sheriff's Department.
Disability Access Construct accessible facilities that meet current guidelines.	Americans with Disabilities Act Accessibility Guidelines and Uniform Federal Accessibility Standards.	Comply. Document in Reservoir Management Reviews.	Reclamation and State Parks.
Land Trespass Where practicable, resolve land ownership, roads, and trespass issues.	Identify land owners, involved management entities, roles, and issues. Encourage coordination and cooperation among all involved entities.	Monitor in reservoir reviews.	Reclamation, State Parks, and other interested parties.

AREA-WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Off-highway Vehicles (OHV) Where possible and practicable, regulate OHV use on Reclamation lands consistent with adjoining public and private land use. Provide OHV enforcement through federal, state, county, or local law enforcement agencies.	OHV Use Designations: All Reclamation lands are closed to OHV use, except for areas or trails specifically designated as open.	Evaluate the necessity of all roads and trails. Complete interagency coordination to assure that OHV uses on Reclamation lands are consistent with applicable state laws and county ordinances. Document in Reservoir Management Reviews.	Reclamation, State Parks, Uintah County, BLM, SITLA, and other interested parties.
Visitor Access Provide appropriate access. *See Specific Area Management Direction.*			State Parks and Reclamation.

SPECIFIC AREA MANAGEMENT DIRECTION

PRIMARY JURISDICTION AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
General Management and Partnerships			
Area Management Restrict public access as appropriate to protect public health, safety and welfare. Manage primarily for water operations and maintenance.		Comply with and manage for water related project purposes.	UWCD and Reclamation.
Water Resources			
Water Operations Operate according to contracts between Reclamation and UWCD.	Agreements between Reclamation and UWCD.	Review plans and agreements as often as needed.	Reclamation and UWCD.
Water Quality Establish/support partnerships with all appropriate parties to ensure that contaminant levels do not approach maximum levels established by the EPA. As appropriate, determine the effects of reservoir water operations on reservoir resources.	Comply with current water quality and sanitation standards and reporting requirements.	Review plans and agreements as often as needed.	Reclamation, UWCD, and UDEQ/DWQ.
Recreational and Visual Resources			
Appropriate Water and Land Recreation Opportunity Spectrum (WALROS) Management Generally prohibit public activities in the Primary Jurisdiction Area.	(WALROS RD5) Rural Developed The area provides occasional opportunities to see, hear, or smell the natural resources (e.g. vegetation, wildlife, aesthetics), but development, human activity, and natural resource modifications are common and frequently encountered. The area is less developed and more tranquil than a suburban setting.	Enforce.	Reclamation, State Parks, and UWCD.

SPECIFIC AREA MANAGEMENT DIRECTION

PRIMARY JURISDICTION AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Visual Resources Management Retain the existing character of the landscape.	[Visual Resource Class II] The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.		Reclamation and UWCD.
Natural and Cultural Resources *See Area-Wide Management Direction.*			
Land Management			
Access Generally, do not develop or maintain public access points within the Primary Jurisdiction Area.	Maintain existing access restrictions.	Monitor and document in Reservoir Management Reviews.	Reclamation, UWCD, and State Parks.

STATE PARK AREA

General Management and Partnerships			
Area Management Manage as a Developed Overnight Recreation Area, Developed Day Use Recreation Area, Administration Area, and Undeveloped Day Use Recreation Area. Allow uses that protect reservoir water quality and that compliment day use and overnight recreation activities. Allow private concessions that compliment recreation uses and do not conflict with water operations.	Comply with water and related project agreements and purposes while managing primarily for developed recreation.	Document in Reservoir Management Reviews.	State Parks and Reclamation.

SPECIFIC AREA MANAGEMENT DIRECTION

STATE PARK AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Water Resources			
Facilities Control erosion and pollutant loading including fuel spills.	Comply with current water quality and sanitation standards and reporting requirements. Comply with all applicable regulations regarding fuel storage.	Inspect fuel storage facilities. Document in Reservoir Management Reviews.	State Parks, Reclamation, federal, State, and Uintah County water and sanitation entities.
Septic Systems In site-specific design, follow local and state regulations concerning septic tank renovations/expansion.	Comply with local and state regulations.	Include in site-specific design/environmental analysis. Document in Reservoir Management Reviews.	Reclamation and State Parks.
Water Conservation and Development Apply water conservation techniques in the development of restrooms, drinking water, and landscape irrigation facilities.		Document in Reservoir Management Reviews or as needed.	State Parks, UWCD, Reclamation, Uintah County, and sanitation entities.
Recreational and Visual Resources			
Appropriate Water and Land Recreation Opportunity Spectrum (WALROS) Management Manage for a Rural Developed recreation opportunity experience.	(WALROS RD4) Rural Developed The area provides occasional opportunities to see, hear, or smell the natural resources (e.g. vegetation, wildlife, aesthetics), but development, human activity, and natural resource modifications are common and frequently encountered. The area is less developed and more tranquil than a suburban setting. The opportunity to experience brief periods of solitude is important but the presence of other visitors is expected. The array of recreation activities may be diverse.	Evaluate WALROS condition and development scale. Document in Reservoir Management Reviews.	State Parks and Reclamation.

SPECIFIC AREA MANAGEMENT DIRECTION

STATE PARK AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Facility Development Improve existing facilities. Consider providing amenities such as new pavilions, landscaping, restrooms, trails, and parking. Provide environmental and cultural resource interpretation information as appropriate.	Encourage the use of formal walks and hard-surfaced use areas. Plant material may be foreign to the environment in developed areas, including turf.	Evaluate WALROS condition and development scale. Document in reservoir management reviews.	State Parks and Reclamation.
Recreational Opportunities Continued uses could include picnicking, camping, hiking, interpretation, and access to water-based recreation activities. Boating capacity would be determined by land-based facility constraints (e.g., parking facilities).		Document in reservoir management reviews.	State Parks and Reclamation.
Visual Management Retain the existing character of the landscape.	[Visual Resource Class II] The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.	Evaluate site condition. Document in Reservoir Management Reviews.	State Parks and Reclamation.
Natural and Cultural Resources *See Area-Wide Management Direction.*			
Land Management			
Site Protection Determine specific location of the Study Area boundary and provide fencing as needed.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.

SPECIFIC AREA MANAGEMENT DIRECTION

NORTH BEACH AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
General Management and Partnerships			
Area Management Manage as Administrative Area, Developed Day-Use Recreation Area, Developed Overnight Recreation Area, Undeveloped Day-Use Recreation Area. Allow uses that protect water quality, reduce trespass, and are compatible recreation day-use activities.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.
Water Resources			
Water Quality Protection *See Area-Wide Management Direction.*			
Recreational and Visual Resources			
Appropriate Water and Land Recreation Opportunity Spectrum (WALROS) Management Manage for a Rural Natural recreation opportunity experience.	(WALROS RN8) Rural Natural The area provides frequent opportunities to see, hear, or smell the natural resources (e.g. vegetation, wildlife, aesthetics), as development, human activity, and natural resource modifications are only occasional and infrequent. The area is noticeably more natural, less developed, and more tranquil than an urban setting. The opportunity to get away from an infrastructure environment is important. The recreation opportunity experiences tend to be more resource dependent.	Evaluate WALROS condition and development scale. Document in reservoir management reviews.	State Parks and Reclamation.

SPECIFIC AREA MANAGEMENT DIRECTION

NORTH BEACH AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Visual Management Retain the existing character of the landscape.	[Visual Resource Class II] The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks and Reclamation.
Natural and Cultural Resources			
Cultural Site Protection *See Area-Wide Management Direction.*			
Erosion Control *See Area-Wide Management Direction.*			
Noxious Weeds and Pests *See Area-Wide Management Direction.*			
Vegetation and Wildlife Habitat Identify and protect sensitive vegetation areas and conserve long-term wildlife habitat.		Enforce and review. Document in Reservoir Management Reviews.	State Parks and UDWR.
Land Management			
Access Maintain existing trails and access points as needed.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.
Site Protection Determine specific boundary location and control trespass.		Monitor and document in Reservoir Management Reviews.	State Parks, Reclamation, BLM, SITLA, Uintah County, and adjacent private landowners.

SPECIFIC AREA MANAGEMENT DIRECTION

SOUTH BEACH AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
General Management and Partnerships			
Area Management Manage as Developed Overnight and Day-Use Group Recreation Area and Undeveloped Day-Use Recreation Area. Allow uses that protect water quality, reduce trespass, and are compatible recreation activities.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.
Water Resources			
Water Quality Protection *See Area-Wide Management Direction.*			
Recreational and Visual Resources			
Appropriate Water and Land Recreation Opportunity Spectrum (WALROS) Management Manage for Rural Natural recreation opportunity experience.	(WALROS RN8) Rural Natural The area provides frequent opportunities to see, hear, or smell the natural resources (e.g. vegetation, wildlife, aesthetics), as development, human activity, and natural resource modifications are only occasional and infrequent. The area is noticeably more natural, less developed, and more tranquil than an urban setting. The opportunity to get away from an infrastructure environment is important. The recreation opportunity experiences tend to be more resource dependent.	Evaluate WALROS condition and development scale. Document in reservoir management reviews.	State Parks and Reclamation.

SPECIFIC AREA MANAGEMENT DIRECTION

SOUTH BEACH AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Visual Management Retain the existing character of the landscape.	[Visual Resource Class II] The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks and Reclamation.
Natural and Cultural Resources			
Cultural Site Protection *See Area-Wide Management Direction.*			
Erosion Control *See Area-Wide Management Direction.*			
Noxious Weeds and Pests *See Area-Wide Management Direction.*			
Vegetation and Wildlife Habitat Identify and protect sensitive vegetation areas and conserve long-term wildlife habitat.		Enforce and review. Document in Reservoir Management Reviews.	State Parks and UDWR.
Land Management			
Access Maintain existing trails and access points as needed.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.
Site Protection Determine specific boundary location and control trespass.		Monitor and document in Reservoir Management Reviews.	State Parks, Reclamation, and Uintah County.

SPECIFIC AREA MANAGEMENT DIRECTION

SOUTH SIDE AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
General Management and Partnerships			
Area Management Manage as Undeveloped Day-Use Recreation Area. Allow uses that protect water quality, reduce trespass, and are compatible recreation activities.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.
Water Resources			
Water Quality Protection *See Area-Wide Management Direction.*			
Recreational and Visual Resources			
Appropriate Water and Land Recreation Opportunity Spectrum (WALROS) Management Manage for Rural Natural recreation opportunity experience.	(WALROS RN8) Rural Natural The area provides frequent opportunities to see, hear, or smell the natural resources (e.g. vegetation, wildlife, aesthetics), as development, human activity, and natural resource modifications are only occasional and infrequent. The area is noticeably more natural, less developed, and more tranquil than an urban setting. The opportunity to get away from an infrastructure environment is important. The recreation opportunity experiences tend to be more resource dependent.	Evaluate WALROS condition and development scale. Document in Reservoir Management Reviews.	State Parks and Reclamation.

SPECIFIC AREA MANAGEMENT DIRECTION

SOUTH SIDE AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Visual Management Retain the existing character of the landscape.	[Visual Resource Class II] The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks and Reclamation.
Natural and Cultural Resources			
Cultural Site Protection *See Area-Wide Management Direction.*			
Erosion Control *See Area-Wide Management Direction.*			
Noxious Weeds and Pests *See Area-Wide Management Direction.*			
Vegetation and Wildlife Habitat Identify and protect sensitive vegetation areas and conserve long-term wildlife habitat.		Enforce and review. Document in Reservoir Management Reviews.	State Parks and UDWR.
Land Management			
Access Maintain existing trails and access points as needed.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.
Site Protection Determine specific boundary location and control trespass.		Monitor and document in Reservoir Management Reviews.	State Parks, Reclamation, and Uintah County.

SPECIFIC AREA MANAGEMENT DIRECTION

EAST SIDE AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
General Management and Partnerships			
Area Management Manage as Natural Area. Allow uses that protect water quality, reduce trespass, and are compatible recreation activities.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.
Water Resources			
Water Quality Protection *See Area-Wide Management Direction.*			
Recreational and Visual Resources			
Appropriate Water and Land Recreation Opportunity Spectrum (WALROS) Management Manage for Semi-Primitive recreation opportunity experience.	(WALROS SP8) Semi-Primitive The area provides widespread and prevalent opportunities to see, hear, or smell the natural resources (e.g. vegetation, wildlife, aesthetics), since development, human activity, and natural resource modifications are seldom encountered. The opportunity to experience a natural ecosystem with little human imprint is important. The recreation opportunity experiences tend to be more adventure based.	Evaluate WALROS condition and development scale. Document in Reservoir Management Reviews.	State Parks and Reclamation.
Visual Management Retain the existing character of the landscape.	[Visual Resource Class II] The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks and Reclamation.

SPECIFIC AREA MANAGEMENT DIRECTION

EAST SIDE AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Natural and Cultural Resources			
Cultural Site Protection *See Area-Wide Management Direction.*			
Erosion Control *See Area-Wide Management Direction.*			
Noxious Weeds and Pests *See Area-Wide Management Direction.*			
Vegetation and Wildlife Habitat Identify and protect sensitive vegetation areas and conserve long-term wildlife habitat.		Enforce and review. Document in Reservoir Management Reviews.	State Parks and UDWR.
Land Management			
Access Maintain existing trails and access points as needed.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.
Site Protection Determine specific boundary location and control trespass.		Monitor and document in Reservoir Management Reviews.	State Parks, Reclamation, and Uintah County.

INFLOW AREA

General Management and Partnerships			
Area Management Manage as Natural Area. Allow uses that protect water quality, reduce trespass, and are compatible recreation activities.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.
Water Resources			
Water Quality Protection *See Area-Wide Management Direction.*			

SPECIFIC AREA MANAGEMENT DIRECTION

INFLOW AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Recreational and Visual Resources			
Appropriate Water and Land Recreation Opportunity Spectrum (WALROS) Management Manage for Rural Natural recreation opportunity experience.	(WALROS RN8) Rural Natural The area provides frequent opportunities to see, hear, or smell the natural resources (e.g. vegetation, wildlife, aesthetics), as development, human activity, and natural resource modifications are only occasional and infrequent. The area is noticeably more natural, less developed, and more tranquil than an urban setting. The opportunity to get away from an infrastructure environment is important. The recreation opportunity experiences tend to be more resource dependent.	Evaluate WALROS condition and development scale. Document in Reservoir Management Reviews.	State Parks and Reclamation.
Visual Management Retain the existing character of the landscape.	[Visual Resource Class II] The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks and Reclamation.
Natural and Cultural Resources			
Cultural Site Protection *See Area-Wide Management Direction.*			
Erosion Control *See Area-Wide Management Direction.*			

SPECIFIC AREA MANAGEMENT DIRECTION

INFLOW AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Noxious Weeds and Pests *See Area-Wide Management Direction.*			
Vegetation and Wildlife Habitat Identify and protect sensitive vegetation areas and conserve long-term wildlife habitat.		Enforce and review. Document in Reservoir Management Reviews.	State Parks and UDWR.
Land Management			
Access Maintain existing trails and access points as needed.		Monitor and document in Reservoir Management Reviews.	State Parks and Reclamation.

RESERVOIR INUNDATION AREA

General Management and Partnerships			
Area Management Manage for project and recreation purposes.	Agreements between Reclamation, UWCD, State Parks, and UDWR.	Monitor and document in Reservoir Management Reviews.	Reclamation, UWCD, State Parks, and UDWR.
Water Resources			
Water Operations Operate according to contracts between Reclamation and UWCD.		Review plans and agreements as often as needed.	Reclamation and UWCD.
Water Quality *See Area-Wide Management Direction.* Support partnerships with all appropriate parties to ensure that contaminant levels do not approach maximum levels establish by the EPA. Determine the effects of reservoir water operations on reservoir resources.	Comply with current water quality and sanitation standards and reporting requirements.	Review plans and agreements as often as needed.	Reclamation, UWCD, UDEQ/DWQ, and USFWS.

SPECIFIC AREA MANAGEMENT DIRECTION

RESERVOIR INUNDATION AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Recreational and Visual Resources			
Appropriate Water and Land Recreation Opportunity Spectrum (WALROS) Management Manage for Rural Natural recreation opportunity experience.	(WALROS RN6) Rural Natural The area provides frequent opportunities to see, hear, or smell the natural resources (e.g. vegetation, wildlife, aesthetics), as development, human activity, and natural resource modifications are only occasional and infrequent. The area is noticeably more natural, less developed, and more tranquil than an urban setting. The opportunity to get away from an infrastructure environment is important. The recreation opportunity experiences tend to be more resource dependent.	Evaluate WALROS condition and development scale. Document in Reservoir Management Reviews.	State Parks and Reclamation.
Facility Development *See adjacent land management areas.*		Document in Reservoir Management Reviews.	State Parks and Reclamation.
Recreational Opportunities Provide for water-based recreation activities such as swimming, boating, skiing, sailing, and fishing. Manage portions of Red Fleet Reservoir near the North Beach Area, State Park Area, and South Beach Area as wakeless.	Follow State Boating Guidelines.	Enforce. Document in Reservoir Management Reviews.	State Parks.
Natural and Cultural Resources			
Erosion Control *See Area-Wide Management Direction.*			

SPECIFIC AREA MANAGEMENT DIRECTION			
RESERVOIR INUNDATION AREA			
MANAGEMENT DIRECTION	**STANDARD OR GUIDE**	**MONITORING**	**CONTACTS AND REFERENCES**
Fishery Coordinate and cooperate with UDWR and other appropriate agencies to develop a fishery management program that provides appropriate fishing opportunities.		Review and document in Reservoir Management Reviews.	Reclamation, State Parks, and UDWR.
Shoreline Protection *See Area-Wide Management Direction.*			
Land Management			
Access As needed, maintain and improve the existing boat ramp access at the State Park Area and any new boating access locations that may be developed.		Monitor and document in the Reservoir Management Reviews.	Reclamation and State Parks.

APPENDIX C: ENVIRONMENTAL COMMITMENTS

APPENDIX C: ENVIRONMENTAL COMMITMENTS

The following environmental commitments (mitigation measures) will be implemented to avoid potential adverse effects to resources within the Red Fleet Reservoir RMP Study Area as part of implementing the recommended alternative.

WATER RESOURCES

Potential impacts to water quality associated with RMP action alternatives (Alternative B or C) will be mitigated through proper design, installation, and maintenance of stormwater best management practices (BMPs), placement of vault toilet facilities in high-use recreation areas, and use of animal-proof garbage receptacles. Any development of the South Beach Management Area will include removal of existing invasive plants and restoration of native riparian vegetation.

As a component of a Habitat Management Plan to be developed under Alternative B or C, a plan for improving floodplain and riparian functions of Big Brush Creek below the dam will be considered.

Under any alternative, Reclamation will continue existing interagency partnerships that maintain Study Area water quality and will participate in any future interagency coordination and partnership efforts associated with the Big Brush Creek watershed.

RECREATION AND VISUAL RESOURCES

In site specific design, visual impacts can be reduced or eliminated by using design and land planning techniques that borrow from naturally established line, form, color, and texture. Design considerations include building materials, size and scale, color, location, screening, and distance from critical viewpoints or transportation corridors. Visual resource values must be considered throughout the RMP implementation process as the assignment of visual management classes is based on the management decisions made in the RMP. All proposed actions that would result in surface disturbances must consider the importance of the visual resource and the impacts the project may have on the characteristic landscape. Management decisions must reflect the importance of visual resources within the Study Area while also giving consideration to other resource values and uses.

GEOLOGY AND SOILS

Erosion control and shoreline stabilization measures will be installed where appropriate to prevent further erosion in high-use areas. Under either action alternative, mitigation measures for facility development or rehabilitation will include requiring a Storm Water Pollution Prevention Plan for all construction operations that disturb 1.0 or more acres; this will include use of published BMPs for controlling erosion and sedimentation from stormwater runoff and will address runoff from all roads (paved and unpaved), trails, campgrounds, parking lots, and administrative buildings.

VEGETATION, INCLUDING WETLANDS

Mitigation measures for either action alternative will include the development of noxious and invasive weed control strategies as a part of an Integrated Pest Management Plan. Fence lines can facilitate weed invasion as winds blow invasive vegetation against fences, where it becomes trapped and releases seed. Therefore, including a provision for removal of redundant/unnecessary fence lines as part of the Integrated Pest Management Plan would provide some weed management benefit. Additionally, the plan should address weed control strategies to be implemented along all existing and future boundary and access control fences in the Study Area.

After site-specific environmental assessment and design, appropriate sediment and erosion control strategies would be implemented during construction activities to limit impacts to the upland and riparian-wetland vegetation communities. Restored areas would be replanted with appropriate native species. Should it be found that any site specific projects would involve filling of wetlands, Reclamation would comply with Section 404 of the Clean Water Act. Section 404 requires wetland impacts be mitigated and that no net loss of wetland occurs. The Section 404 permitting and mitigation process is under the jurisdiction of the U.S. Army Corps of Engineers.

WILDLIFE AND FISHERIES

Mitigation measures that will minimize or avoid impacts to wildlife are recommended below. These measures will be integrated into development of a Habitat Management Plan if either action alternative were selected for the RMP:

- At appropriate locations, signs will be posted to encourage recreationists to stay on the trail and within developed recreation facility boundaries to minimize the amount of vegetation trampling and disturbance to wildlife.

- Wetland and riparian habitats will be protected in accordance with existing federal regulations. During the development and expansion of recreation facilities, construction will, to the extent possible, avoid disturbance (both directly and indirectly) of wetland and riparian areas.

- Wildlife management will be coordinated between Reclamation and appropriate partner agencies to specify suitable recreation within the Natural Areas and identify measures to target areas that were previously impacted by recreationists and are in need of restoration.

Under Alternative B or C, Reclamation will engage partners, particularly State Parks and UDWR, in developing a Fishery Management Plan. Among other elements, the Fishery Management Plan will include goals to emphasize aquatic invasive species awareness and preventive measures for the Study Area.

THREATENED, ENDANGERED, AND OTHER SPECIAL STATUS SPECIES

Mitigation measures for special status species are inclusive of those previously described for vegetation, wildlife, and fisheries. Surveys for special status species would be completed as a component of site-specific environmental analysis prior to implementing any recreation facility developments. With implementation of Alternative B or C, Reclamation will encourage UDWR to include objectives in a Fishery Management Plan to determine the status of the flannelmouth sucker (*Catostomus latipinnis*) population in the Study Area.

CULTURAL RESOURCES

Reclamation will ensure the completion of cultural resource compliance for all site-specific undertakings as a means to fulfill Section 106 of the National Historic Preservation Act, as well as to avoid, reduce, or mitigate impacts to the integrity of cultural resources. Avoidance is the preferred method of cultural resource mitigation. If historic properties are located within the area of potential effects associated with a specific undertaking, and if they would be impacted by activities associated with the undertaking, a Memorandum of Agreement (MOA) would be developed. The MOA would be among Reclamation, the Utah State Historic Preservation Office, the Advisory Council on Historic Preservation (if it chooses to participate), and any other party that assumes responsibility under the agreement. The MOA would include the terms and conditions agreed upon to resolve (mitigate) the impacts of the undertaking upon historic properties.

PALEONTOLOGICAL RESOURCES

Reclamation will ensure the completion of paleontological resource compliance for all site-specific projects as a means to fulfill Section 6302 of the Paleontological Resources Preservation Act, as well as to avoid, reduce, or mitigate impacts to the condition of paleontological resources. Avoidance is the preferred method of paleontological resource mitigation. If avoidance of paleontological resources is not possible, a mitigation plan would be developed. The mitigation plan would include the terms and conditions agreed upon to resolve (mitigate) the impacts to paleontological resources.

INDIAN TRUST ASSETS

Reclamation will ensure the completion of Indian Trust Asset (ITA) compliance for all site-specific projects as a means to fulfill both U.S. Department of Interior (512 DM 2) and Reclamation policies regarding ITAs, as well as to avoid, reduce, or mitigate impacts to ITAs. Avoidance is the preferred method of ITA mitigation. If avoidance of ITAs is not possible, a mitigation plan would be developed. The mitigation plan would include the terms and conditions agreed upon to resolve (mitigate) the impacts to ITAs.

ENERGY, MINERALS, AND OTHER EXTRACTIVE RESOURCES

No mitigation measures for locatable, saleable, or leasable mineral resources are necessary as there are no impacts to the exploration and development of the resources in the Study Area.

WASTEWATER, SOLID WASTE, AND HAZARDOUS MATERIALS

Under Alternative C and pending site specific environmental analysis and design, local and state regulations concerning septic tank renovations would be followed during the possible expansion of the existing septic systems in the Developed Overnight Recreation Area. Additionally, providing frequent and adequate refuse collection frequency at all refuse collection locations in the Study Area will help reduce the potential for groundwater, soil, or surface water contamination from litter and trash.

APPENDIX D: LETTERS OF COMMENT ON THE DRAFT ENVIRONMENTAL ASSESSMENT AND BUREAU OF RECLAMATION RESPONSES

APPENDIX D: LETTERS OF COMMENT ON THE DRAFT ENVIRONMENTAL ASSESSMENT AND BUREAU OF RECLAMATION RESPONSES

This appendix contains the comment letters received from Federal and State agencies and the general public for the Red Fleet Reservoir Resource Management Plan Draft Environmental Assessment released in March 2013. Each comment letter is presented first, with graphical indications to show the location of the specific remarks. On the following pages, those remarks are quoted and the responses provided.

COMMENT LETTER 1

UINTAH COUNTY

STATE OF UTAH

Our past is the nation's future

April 30, 2013

Bureau of Reclamation
Water & Environmental Resources Division
Attn: Kerry Schwartz
302 East 1860 South
Provo, UT 84606-7317
email: kschwartz@usbr.gov

RE: Red Fleet Reservoir & Steinaker Reservoir Draft Resource Management Plan Environmental Assessments (EA's)

Dear Mr. Schwartz,

Thank you for the opportunity to comment on the proposed Drafts for the Red Fleet Reservoir and Steinaker Reservoir Resource Management Plan Environmental Assessments (EA's).

Regarding the Draft Red Fleet Reservoir Management Plan EA.

Wildlife

Comment 1A: The greater sage-grouse should be managed according to the *Conservation Plan for Greater Sage-grouse in Utah*, as implemented by the State of Utah. This plan has also been adopted by Uintah County.

Transportation and Access

Comment 1B: The Draft EA appears to define unimproved roads as "roads that are not designated as county roads or that are not used for administrative access purposes." This term should be used consistently within the Draft EA. As you are aware, Uintah County is responsible to maintain public access on public rights-of-way. As such all roads designated on the Uintah County Transportation Map must remain open. Particularly, Uintah County continues to assert its claims on the following roads:

Comment 1C: "Red Fleet Access Road" is a primary access road to the State Park and is a county paved Class "B" maintained road.

Comment 1D: The Class D Road that provides access to the South Beach area should remain open having a parking area for fishing access only at the bottom. Before the reservoir was built this road connected to the North Beach road on the northern side of the reservoir.

COUNTY BUILDING • 152 EAST 100 NORTH • VERNAL, UTAH 84078

COMMENT LETTER 1

Comment 1D (cont.) The county Class D road providing access to the Cottonwood Wash area should remain open allowing closer access to the lake.

Regarding the Draft Steinaker Reservoir Management Plan:

Wildlife

The greater sage-grouse should be managed according to the *Conservation Plan for Greater Sage-grouse in Utah*, as implemented by the State of Utah. This plan has also been adopted by Uintah County.

Transportation and Access

The Draft EA appears to define unimproved roads as "roads that are not designated as county roads or that are not used for administrative access purposes." This term should be used consistently within the Draft EA. As you are aware, Uintah County is responsible to maintain public access on public rights-of-way. As such all roads designated on the Uintah County Transportation Map must remain open. In addition to public rights-of-way, Uintah County is opposed to any limitation to the public's use of the Honda Hills area. This area has been used by the public for decades as a popular OHV area. Uintah County believes that this area should remain open for OHV use. Having a defined area for the public to be able to enjoy this type of recreation is wise land management.

Uintah County supports the Recreational Development Emphasis Alternative C for the Red Fleet and Steinaker Resource Management Plans Environmental Assessments.

We have no further comments to make at this time but reserve the right to comment at a later date, if warranted.

Sincerely,

UINTAH COUNTY COMMISSION

Mark D. Raymond

Mark D. Raymond, Chairman

Michael J. McKee

Michael J. McKee

Darlene R. Burns

Darlene R. Burns

RESPONSES TO COMMENT LETTER 1

Comment 1A: "The greater sage-grouse should be managed according to the Conservation Plan for Greater Sage-grouse in Utah, as implemented by the State of Utah. This plan has also been adopted by Uintah County."

Response to Comment 1A: Thank you for your comment. The sage-grouse conservation plan has been referenced in the Final Environmental Assessment and the Resource Management Plan documents, and Uintah County has been included in the list of appropriate entities to involve in developing a Habitat Management Plan for Red Fleet Reservoir.

Comment 1B: "The Draft EA appears to define unimproved roads as 'roads that are not designated as county roads or that are not used for administrative access purposes.' This term should be used consistently within the Draft EA. As you are aware, Uintah County is responsible to maintain public access on public rights-of-way. As such all roads designated on the Uintah County Transportation Map must remain open."

Response to Comment 1B: Thank you for your comment. For clarification, the Final Environmental Assessment defines an unimproved road as a road that does not have a paved or gravel surface and is irregularly maintained or not maintained. With Alternative B or C, Reclamation proposes to decommission unimproved roads only if they are not county roads and are not needed for administrative access purposes.

Comment 1C: "'Red Fleet Access Road' is a primary access road to the State Park and is a county paved Class 'B' maintained road."

Response to Comment 1C: "The RMP (Appendix B of the Draft EA) includes management direction for Reclamation to 'coordinate with the State of Utah and Uintah County to assure safe ingress and egress from the state highway and county roads' (p. B-31) and to 'encourage appropriate maintenance of access roads to Red Fleet Reservoir' (p. B-2). Under this management direction, Reclamation will continue to coordinate with Uintah County regarding access and road maintenance responsibilities at Red Fleet Reservoir.

Comment 1D: "The Class D Road that provides access to the South Beach area should remain open having a parking area for fishing access only at the bottom. Before the reservoir was built this road connected to the North Beach road on the northern side of the reservoir.

"The county Class D road providing access to the Cottonwood Wash area should remain open allowing closer access to the lake."

Response to Comment 1D: As you are likely aware, roads to the South Beach and Cottonwood Wash areas are currently gated in order to control recreational boat access to the lake as a preventative measure in controlling aquatic invasive species (through cooperative management between Reclamation, State Parks, Utah Division of Wildlife Resources, Uintah Water Conservancy District, and Uintah County) and due to unsafe road conditions.

COMMENT LETTER 2

From: Trina Hedrick <trinahedrick@utah.gov>
Date: Mon, May 6, 2013 at 3:09 PM
Subject: Re: Comments on Red Fleet/Steinaker draft EAs
To: "Schwartz, Kerry" <kschwartz@usbr.gov>

Thanks, Kerry. I had submitted these to our Habitat guys, but missed the RDCC deadline of April 23rd apparently. Anyway, only one major comment, the first one for Red Fleet. Let me know what you think.

Red Fleet

Comment 2A

--DWR certainly supports additional recreational facilities and fishing access as proposed in Alternative C, the Preferred Alternative. However, the addition of a boat ramp that does not pass by the wash station is difficult for us to swallow in light of the previous quagga mussel detection there and the finding of multiple life stages of mussels at Lake Powell. In 2012, four of 304 boaters interviewed had previously been to Lake Powell. This may seem like a low number, but it just takes one introduction sometimes to get them established in a new water. We would like to see the road from the new boat ramp go by the wash station or else the addition of a second boat ramp removed from this alternative.

Comment 2B

--Page 90 (RF) and page 85 (Steinaker), the text suggests that the rainbow trout fishery may be susceptible to whirling disease if ever found there. While rainbow trout are susceptible to WD, it is more detrimental to smaller fish and it is unlikely that the catchable fish stocked there would see any deformities. This should probably be reworded.

Steinaker
--We have confirmed American bullfrogs at Steinaker Reservoir in 2012. This could be added to the AIS list on page 85.

That's it. Thanks again,
Trina

RESPONSES TO COMMENT LETTER 2

Comment 2A: "DWR certainly supports additional recreational facilities and fishing access as proposed in Alternative C, the Preferred Alternative. However, the addition of a boat ramp that does not pass by the wash station is difficult for us to swallow in light of the previous quagga mussel detection there and the finding of multiple life stages of mussels at Lake Powell. In 2012, four of 304 boaters interviewed had previously been to Lake Powell. This may seem like a low number, but it just takes one introduction sometimes to get them established in a new water. We would like to see the road from the new boat ramp go by the wash station or else the addition of a second boat ramp removed from this alternative."

Response to Comment 2A: Thank you for your comment. The Resource Management Plan includes direction for Reclamation and its partners to "Work with UDWR to identify a desired fish species composition, fishery enhancement opportunities, and develop a Fisheries Management Plan," and in doing so to, "include objectives to monitor and prevent introduction of Aquatic Invasive Species and pathogens" (p. B-19). Under this management direction, Reclamation will work with the Utah Division of Wildlife Resources to either delay implementation of a second boat ramp location until such time that boat washing is no longer required or to determine a means of requiring boat washing by users of the second boat ramp location.

Comment 2B: "[On page 90 of the Draft Environmental Assessment] the text suggests that the rainbow trout fishery may be susceptible to whirling disease if ever found there. While rainbow trout are susceptible to WD, it is more detrimental to smaller fish and it is unlikely that the catchable fish stocked there would see any deformities. This should probably be reworded."

Response to Comment 2B: Thank you for the clarification. The text in the Final EA has been reworded as suggested.

COMMENT LETTER 3

From: Amy Defreese <amy_defreese@fws.gov>
Date: Mon, May 13, 2013 at 10:31 AM
Subject: Reservoir RMPs
To: kschwartz@usbr.gov

Hi Kerry,
I wasn't able to submit written comments to the Red Fleet and Steinaker RMP Draft EA by the 30th as requested. I'm looking through the draft EAs now, and I am wondering if you would be interested in including some programmatic language to protect migratory birds during the nesting season. I'm thinking specifically of seasonal and spatial buffers during construction activity at the reservoirs. If so, I can work with [BIO-WEST] to provide some language.

Comment 3A

It was also a little unclear to me what the determination is/was for Spiranthes. There may be some activities that don't require a 404 permit that would provide a nexus for Section 7 consultation, correct? I'm thinking about introducing human presence to areas that may house the plant, or I imagine construction equipment could find its way into wetlands. Do you anticipate submitting a BA and effect determination for this species at any point?

Comment 3B

Best regards,
Amy

Amy Defreese, Ecologist
Utah Field Office
U.S. Fish and Wildlife Service
2369 W. Orton Circle, Suite 50
West Valley City, Utah 84119

Email: amy_defreese@fws.gov
Phone: 801-975-3330 x 128

RESPONSES TO COMMENT LETTER 3

Comment 3A: "I am wondering if you would be interested in including some programmatic language to protect migratory birds during the nesting season. I'm thinking specifically of seasonal and spatial buffers during construction activity at the reservoirs."

Response to Comment 3A: Thank you for your comment. Reclamation has added general management direction in the Resource Management Plan to coordinate with the U.S. Fish and Wildlife Service regarding provisions to avoid and minimize impacts to migratory birds. Specific actions for doing so would be determined in site-specific environmental clearances. Under the Migratory Bird Treaty Act and Executive Order 13186, Reclamation would coordinate with the U.S. Fish and Wildlife Service in identifying the appropriate actions.

Comment 3B: "It was also a little unclear to me what the determination is/was for Spiranthes. There may be some activities that don't require a 404 permit that would provide a nexus for Section 7 consultation, correct? I'm thinking about introducing human presence to areas that may house the plant, or I imagine construction equipment could find its way into wetlands. Do you anticipate submitting a BA and effect determination for this species at any point?"

Response to Comment 3B: Thank you for your comment. Reclamation will consult U.S. Fish and Wildlife Service as appropriate during site-specific National Environmental Policy Act analyses. General management direction has been added to the Resource Management Plan.