RECLAMATION

Managing Water in the West

Red Fleet Reservoir Rotenone Treatment Final Environmental Assessment and Finding of No Significant Impact

PRO-EA-15-006

Central Utah Project
Uintah County, Utah
Provo Area Office

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

August 2015

FINDING OF NO SIGNIFICANT IMPACT
PROVO AREA OFFICE

Decision: It is my decision to authorize the Proposed Action identified in EA No. PRO-EA-15-006.

Finding of No Significant Impact: Based on the analysis of potential environmental impacts contained in the attached environmental assessment, I have determined that impacts are not expected to be significant and an environmental impact statement is not required.

Rationale for Decision: The decision to allow the Proposed Action does not result in any undue or unnecessary environmental degradation.

Recommended by:

for Mary Beth Reinhart
Chief, Environmental Group

8/20/15
Date

Concur:

Kerry Schwartz
Manager, Water and Environmental
Resources Division

8/20/15
Date

Approved by:

Wayne G. Pullan
Area Manager, Provo Area Office

8/20/15
Date

Introduction

In compliance with the National Environmental Policy Act of 1969, as amended (NEPA), the Bureau of Reclamation, Provo Area Office, Upper Colorado Region has conducted an Environmental Assessment (EA) for a Proposed Action to allow Utah Department of Natural resources, Division of Wildlife Resources (UDWR) in cooperation with the Upper Colorado River Endangered Fish Recovery Program (Recovery Program) to treat Red Fleet Reservoir with rotenone to remove unwanted fish in order to protect endangered fish species of the Green River. Reclamation is the responsible owner of Red Fleet Reservoir and is the lead agency for the purposes of compliance with NEPA for this Proposed Action.

The EA was prepared by Reclamation to address the need to eliminate Walleye and other unwanted sport fish from Red Fleet Reservoir. A rotenone treatment and reset of the fishery, coupled with the eventual construction of a fish barrier (not part of this Proposed Action) would eliminate the possibility that these unwanted fish would prey on or compete with the endangered fish species in the Green River, thereby assisting in the recovery effort.

Alternatives

The EA analyzed the No-Action Alternative and the Proposed Action Alternative to treat Red Fleet Reservoir with rotenone under conditions of the environmental commitments. Reclamation's decision is to implement the Proposed Action Alternative. All mitigation measures and terms and conditions that are integral to the alternative are included in the EA.

Related NEPA Documents

There are no other EAs or NEPA documents that are currently being prepared that are related to, but not part of the scope of this.

Decision and Finding of No Significant Impact

Based upon a review of the EA and supporting documents, I have determined that implementing the proposal will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the area. No environmental effects meet the definition of significance in context or intensity as defined at 40 CFR 1508.27. Therefore, an environmental impact statement is not required for this Proposed Action. This finding is based on consideration of the context and intensity as summarized here from the EA.

Context

The affected locality is the Jensen Unit of the Central Utah Project within the Upper Colorado Region.

Intensity

The following discussion is organized around the 10 significance criteria described in 40 CFR 1508.27. These criteria were incorporated into the resource analysis and issues considered in the EA.

1. Impacts may be both beneficial and adverse. The Proposed Action would not adversely impact resources of the human environment, in the short or long term. None of the environmental effects discussed in the EA are considered significant, nor do the effects rise to the level of needing to complete an Environmental Impact Statement.

2. The degree to which the selected alternative will affect public health or safety or a minority or low-income population. The proposal will have no significant impacts on public health or safety. No minority or low income community would be disproportionately affected by the Proposed Action.

3. Unique characteristics of the geographic area. There are no prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas that would be affected by the proposal. Red Fleet State Park will be impacted by visitor restrictions while treatment occurs. Environmental commitments are in place to offset or reduce negative impacts.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial. The effects on the proposal on the quality of the human environment are not highly controversial.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. There are no predicted effects on the human environment that are considered highly uncertain or that involve unique or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. This action would not establish a precedent for future actions with significant effects, because there are no significant effects as a result of this action. This action does not represent a decision in principle about a future consideration.

7. Whether the action is related to other actions which are individually insignificant but cumulatively significant. Cumulative effects are not predicted, as described in the EA.

8. The degree to which the action may adversely affect sites, districts, buildings, structures, and objects listed in or eligible for listing in the National Register of Historic Places. A determination of no historic properties affected was made based on the Proposed Action.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. There are no endangered or threatened species or critical habitat affected by this action. Therefore, a no effect determination is made.

10. Whether the action threatens a violation of Federal, state, local, or tribal law, regulation or policy imposed for the protection of the environment. The project does not violate any federal, state, local, or tribal law, regulation, or policy imposed for the protection of the environment. In addition, this project is consistent with applicable land management plans, policies, and programs.

Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated 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.

Red Fleet Reservoir Rotenone Treatment Final Environmental Assessment and Finding of No Significant Impact

PRO-EA-15-006

Central Utah Project
Uintah County, Utah
Upper Colorado Region
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Chapter 1 Need for Proposed Action and Background

1.1 Introduction

The Bureau of Reclamation, Provo Area Office has prepared an Environmental Assessment (EA) under the National Environmental Policy Act of 1969 (NEPA), Public Law 91-90, as amended, the Council on Environmental Quality, and Department of the Interior regulations implementing NEPA. This EA analyzes the potential effects of the Proposed Action, which would treat Red Fleet Reservoir with rotenone to remove unwanted fish in order to protect endangered fish species of the Green River. In comparison, under the No Action Alternative, the fishery would remain unchanged and would not be treated.

1.1.1 Overview

The Utah Department of Natural Resources, Division of Wildlife Resources (UDWR) is proposing to treat Red Fleet Reservoir with rotenone to eradicate illegally introduced fish species, specifically Walleye and Smallmouth Bass. The treatment would be reservoir wide and would include a drip station immediately above the inflow on Big Brush Creek, and a detoxification (detox) station immediately below the outlet of the dam. There would be no change in reservoir operations and no ground disturbance associated with the Proposed Action.

This EA analyzes the potential impacts of treating the reservoir. If potentially significant impacts to the human environment are identified, a Notice of Intent to prepare an Environmental Impact Statement (EIS) would be published in the Federal Register and an EIS would be prepared. If no significant impacts are identified, Reclamation would issue a Finding of No Significant Impact (FONSI).

1.2 Background

Red Fleet Reservoir is an impoundment of Big Brush Creek, located 10 miles north of Vernal, Utah, in Uintah County (Figure 1). Red Fleet is an irrigation storage reservoir that sits at an elevation of 5,608 feet at full pool. The reservoir is 521 surface acres and holds 26,015 acre-feet (AF) of water when full. Red Fleet began to store water in 1980 and reached full capacity in 1983.

Red Fleet Reservoir management is focused on family-oriented recreation and the fishery is managed to produce and grow fish to an acceptable size (10 inches and larger).

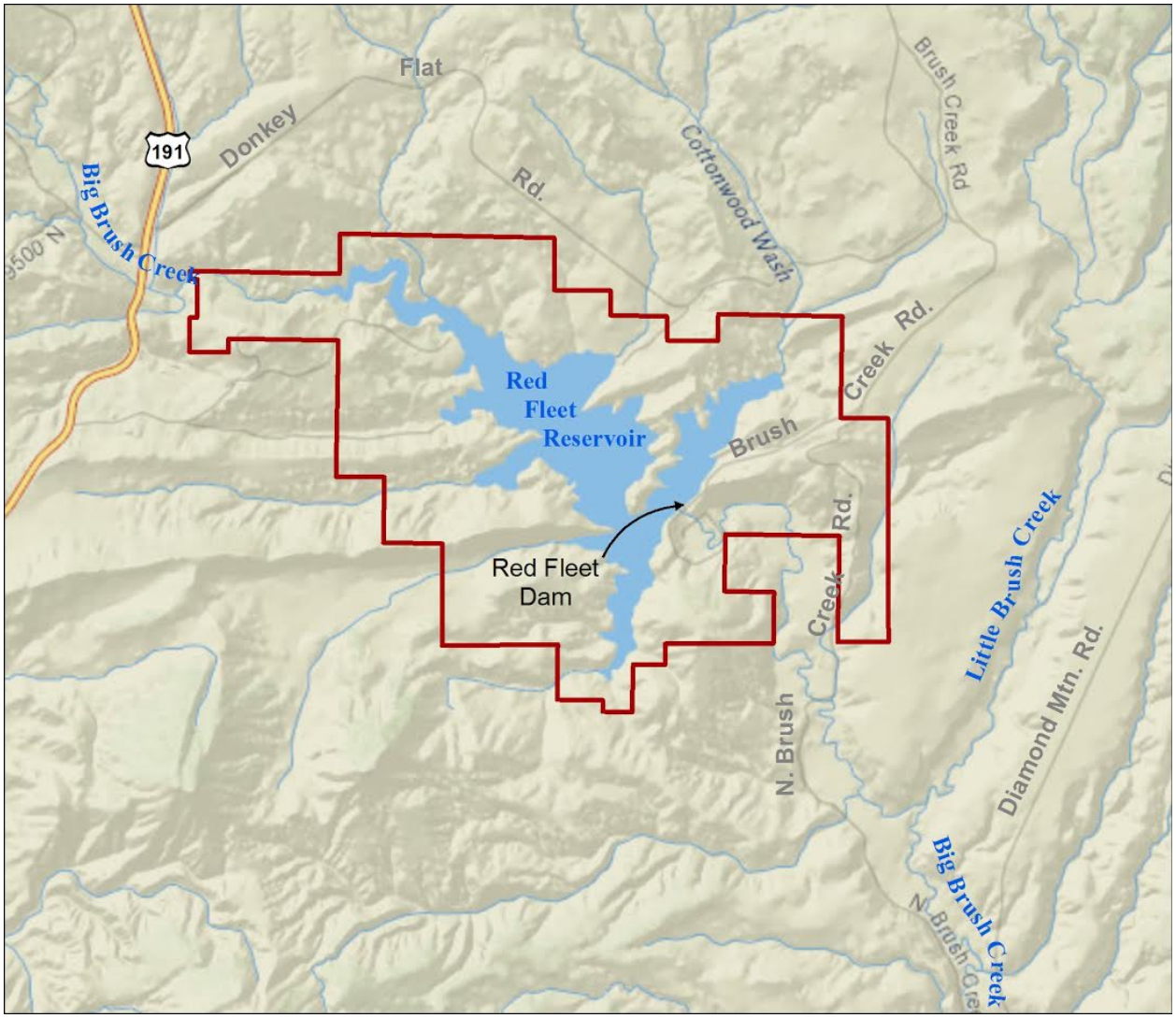

Figure 1. Red Fleet Reservoir and State Park

Historically, Red Fleet was stocked predominantly with fingerling Rainbow Trout (*Oncorhynchus mykiss*); however, the size was increased to 5 inches long in 1987, due to predation from Largemouth Bass (*Micropterus salmoides*) that were illegally introduced sometime during the 1980's (Ottenbacher 1986). Stocking rates have varied from 78 to 185 Rainbow Trout per acre per year, but are generally fewer in number as stocking size increases. Red Fleet has been open to year-round fishing since January 1985.

The Red Fleet fishery also contains other species of fish such as native Flannelmouth Sucker (*Catostomus latipinnis),* Mountain Sucker (*Catostomus platyrhinchus),* and non-native Brown Trout (*Salmo trutta*), that occur naturally in Brush Creek and Bluegill (*Lepomis macrochirus)* which were also illegally introduced. In 2002, Walleye (*Sander vitreus*) were first detected in the annual gillnetting conducted by the UDWR and have subsequently become established, with detection in greater numbers and multiple size classes since 2006. In

addition to Walleye increasing in numbers, Smallmouth Bass, which have been present in the reservoir in low numbers resulting from an illegal introduction in the 1980's, have slowly but steadily been increasing in numbers as well.

The UDWR is proposing a rotenone treatment for Red Fleet Reservoir October 2015 or 2016. Proposed treatment of the reservoir would be accomplished under current safety standards without affecting dam operations and the purposes of the Central Utah Project, which are: to provide water for Municipal and Industrial (M&I) and agricultural water use, fish and wildlife habitat, and flood control.

1.3 Purpose, Need, and Scope of Analysis

Illegal introductions are a problem for fishery managers across the United States. Bait bucket transfers and movement of sportfish captured by anglers between waters can move diseases, unwanted invertebrates, and unwanted plants, and have disastrous impacts to native biota and ecosystems (Elton [1958], Laycock [1966], Minckley and Deacon [1968], Moyle [1976], Taylor et al. [1984], Courtenay and Robins [1989], Minckley [1991], Courtenay [1993], and Canonico et al. [2005]). Illegal transfers of fish can have detrimental impacts to the sport fishery, as additional species can increase competition and predation. They can also negatively affect native fisheries upstream or downstream upon escapement from the reservoir.

Walleye were originally stocked into Starvation Reservoir by the UDWR to help control the Utah chub (*Gila atraria*) population. Walleye grow quickly and can become piscivorous (fish eating fish) at 6 to 8 inches long (Smith and Pycha 1960; Mathias and Li 1982; Knight et al. 1983; Kolar et al. 2003). Because of their voracious appetites, they can cause year-class failure of prey species (Knight et al. 1983; Lyons and Magnuson 1987) and potentially affect other predatory species via competition for prey species, if their population is able to proliferate (Fayrum et al. 2005).

Walleye were first detected in Red Fleet Reservoir in 2002. Since then, Walleye have impacted the UDWR's Rainbow Trout stocking program requiring managers to stock larger trout, meaning a 75 percent reduction in the quota from 2002 to keep costs the same. Other species in the reservoir include Bluegill, Largemouth Bass, Smallmouth Bass, and Brown Trout. Walleye have been observed preying upon all species in Red Fleet Reservoir, but predominantly young-of-year Largemouth Bass (Boren 2012) indicating that an increase in the Walleye population could influence other popular fisheries in the reservoir over time.

The Green River, below Red Fleet Reservoir, is designated as critical habitat for three of the four endangered Colorado River endangered fish, the Colorado Pikeminnow, the Razorback Sucker, and the Bonytail. Red Fleet Reservoir is not the main source of Walleye in the Green River; however, fish have escaped through the outlet works from Red Fleet Reservoir as young-of-year or age-1.

The Upper Colorado River Endangered Fish Recovery Program (Recovery Program), of which the Utah Department of Natural Resources (parent agency of the UDWR) is a signatory, has determined that the level of escapement is too great and must be addressed to protect the endangered fish.

Water from Red Fleet Reservoir flows downstream approximately 14 miles to the confluence with the Green River. Fish from Red Fleet can escape through the outlet works of the reservoir and make it downstream to the Green River where they can interact with the native endangered species. Depending upon the species, the interaction can vary from predation to competition, but will generally be a negative interaction due to limited resources in the Green River. It is this potential for negative interactions with the native endangered fish, in addition to Walleye in Red Fleet, which is triggering the need for the Proposed Action.

1.4 Summary of Scoping Issues

Issues raised by the public during the spring of 2013 and the spring of 2015 scoping and review of the Draft EA were similar. Comments included concern for the fishery, mainly either wanting Walleye to remain, or wanting Walleye removed; concern for application of rotenone in a drinking water source; fears of a post-treatment illegal introduction ruining our efforts; and not wanting a return of a Rainbow Trout only fishery post-treatment. Additional comments were generally a lack of support for spending money on a rotenone treatment at Red Fleet Reservoir, and a lack of confidence in the UDWR to provide a good fishery post-treatment.

In 2014, a UDWR sponsored angler survey was completed by over 300 individuals. The survey results showed that a rotenone treatment in Red Fleet Reservoir would be an unpopular action (refer to Appendix A for all angler survey responses). An outreach effort has begun to help the public understand this action and the proposed treatment.

1.5 Permits, Licenses, and Authorizations

Implementation of the Proposed Action may or may not require a number of permits or authorizations from state and Federal agencies. They are summarized below.

- Utah Pollution Discharge Elimination System (UPDES) Pesticide General Permit. This permit authorizes the point source discharge of pesticides into waters of the state of Utah. This permit would be obtained by the UDWR from the Utah Department of Environmental Quality (UDEQ), and complies with Section 402 of the Clean Water Act (CWA) for actions involving the discharge of pollutants into waters of the state of Utah.

- Section 7 Consultation - Consultation pursuant to Section 7 of the Endangered Species Act (ESA) with the United States Fish and Wildlife Service (USFWS).

1.6 Document Organization

This EA consists of the following chapters:

1. Need for Proposed Action and Background
2. Proposed Action and No Action Alternative
3. Affected Environment and Environmental Consequences
4. Environmental Commitments
5. Consultation and Coordination
6. Preparers
7. References

Appendix A - Angler Survey Responses
Appendix B - Scoping Responses
Appendix C - Comment Letter

Chapter 2 Proposed Action and No Action Alternative

2.1 Introduction

The purpose of the Proposed Action is to eliminate Walleye and other unwanted sport fish from Red Fleet Reservoir. A rotenone treatment and reset of the fishery, coupled with the eventual construction of a fish barrier (not part of this Proposed Action) would eliminate the possibility that these unwanted fish would prey on or compete with the endangered fish species in the Green River, thereby assisting in the recovery effort. This EA analyzes the potential effects to the human environment from the Proposed Action and will serve, along with other pertinent information, to guide Reclamation's decision regarding implementation of the Proposed Action.

The Proposed Action Alternative is analyzed in this EA, along with a No Action Alternative, to facilitate comparison of potential effects between the two.

2.2 No Action Alternative

The No Action Alternative would not change the fishery. Current conditions and threats to native fish species would continue.

2.3 Proposed Action

The Proposed Action, which is the preferred alternative, is to treat Red Fleet Reservoir with powdered rotenone at 1 parts per million (ppm) to eradicate illegally introduced fish species, specifically Walleye and Smallmouth Bass. The treatment would be reservoir wide and would include a drip station above the inflow on Big Brush Creek and a detox station using potassium permanganate ($KMnO_4$) immediately below the outlet of the dam. The detox station would run until sentinel fish immediately above the detox station remain alive for 4 hours as recommended in the AFS SOPs (Finlayson et al. 2010). There would be no ground disturbance and no change in dam operations associated with the Proposed Action.

2.3.1 Methodology

2.3.1.1 Pre-treatment

UDWR managers and biologists worked with a group of 12 anglers to finalize the Management Plan for the reservoir. The group's desired fish include sterile Walleye, Wipers, Tiger Trout, Colorado River Cutthroat Trout, Yellow Perch, Black Crappie, and Mountain Whitefish. The UDWR currently has adequate numbers of sterile Walleye and Rainbow Trout for stocking post-treatment in November 2015, and is working on plans to allow transfer of Yellow Perch from Fish Lake to Red Fleet overwinter. If these plans fall through, UDWR may not be able to proceed with the effort this year; however, given the ability to get all the desired fish by the desired times, the treatment would occur in October 2015. Other potential issues that may arise include lack of adequate budget and lack of available rotenone as the volume has increased over the 2015 irrigation season. For this reason, the project may be pushed back to October 2016, but will certainly be completed as soon as we have all of the necessary products.

Preparation for the treatment has begun, although nothing can be finalized until UDWR knows inflow rates, outflow rates, and the volume of water in the reservoir at the time of the treatment. For a treatment in 2015 with the currently projected water levels (16,000 AF), we will require eight boats, each with three operators. In addition, one person would operate the drip station on Big Brush Creek, another individual on the detoxification station, a law enforcement officer to help keep the public out of the project area, one individual as the main point of contact for all personnel, and potentially one or two people for transferring native species immediately upstream or downstream of the treatment area. Most probable native species include Flannelmouth Sucker and Mountain Sucker.

Rotenone would be delivered directly to Red Fleet State Park and kept in a locked storage facility until the treatment date. Two weeks before the treatment, bioassays would be completed on each batch of rotenone. One week before treatment, inflows on Big Brush Creek would be measured and the volume of Red Fleet would be obtained from the Uintah Water Conservancy District. In addition, outflows would be verified and the necessary quantity of $KMnO_4$ would be calculated. One day before the treatment, these numbers would be verified to ensure that rotenone and $KMnO_4$ amounts are still appropriate.

2.3.1.2 Treatment

Application of rotenone would occur in one day. The project is currently scheduled for October 13, 2015. The manufacturer would deliver rotenone directly to Red Fleet State Park and UDWR personnel would deliver all equipment and $KMnO_4$ to the State Park on October 12. Treatment would begin at 9:00 and would continue until all powdered rotenone (currently estimated to be 32,500 pounds) is applied, which is expected to be completed in 9 hours.

Work boats, including jon boats, v-hull boats, and modified v-hull boats (all equipped with outboards) would be used. Tyvek suits and breathe-easy respirators would be worn by all boat operators and powder applicators. All

rotenone applicators would have to possess a valid State of Utah Pesticide Applicators Permit (general and aquatics).

Dispersal of powdered rotenone would start at the same time as the drip station on Big Brush Creek. Also, the detoxification station would be set up on October 12 and would start upon initiation of rotenone dispersal. The detox station would be located just below the outlet stilling basin and would be within a locked gate. The detox station would continue to operate until hatchery sentinel fish (sterile rainbow trout) placed immediately above the detoxification station survive for 4 hours.

2.3.1.3 Post-treatment

After the completion of the treatment and detoxification, Red Fleet Reservoir would be immediately restocked with at least two of the desired fish species. Catchable Rainbow Trout are available, and sterile Walleye are also available for stocking and should be 6 to 8 inches by the stock date in late October. The remaining desired species would be stocked starting in 2016, and the longevity of the stocking program is dependent on whether they are a predator or prey species. For the predator species, Fingerling Wiper, sterile Walleye and Tiger Trout would be part of the reservoir's regular quota and would be stocked in summer each year. For prey items, Yellow Perch would be transferred overwinter 2015-2016 from Fish Lake and likely every year for 3 years to get them established. Mountain Whitefish and Fathead Minnow would be transferred during the summer 2016, and the next two summers, also to get them established. Black Crappie would be purchased from out of state and stocked during the summer of 2016, 2017, and 2018, also in an attempt to get them established in the reservoir. Annual monitoring for zooplankton and fish species would occur each year for 3 years to document re-establishment, reproduction, and persistence of desired species. The stocking request would be reviewed after 3 years to determine whether any species have been unsuccessful and should no longer be stocked into the reservoir. Sampling after that would likely continue to be done annually, just not as intensively once UDWR have information on the success of the species stocked.

Chapter 3 Affected Environment and Environmental Consequences

3.1 Introduction

This chapter describes the resources of the human environment that could be affected by the Proposed Action or No Action Alternatives and the predicted impacts of the actions. These impacts are discussed under the following resource issues: recreation; water resources; water quality; system operations; public safety, access, and transportation; visual resources; socioeconomics; wetlands and vegetation; fish and wildlife resources; and threatened, endangered, and sensitive species. A no effect determination was made for both cultural and paleontological resources because no surface disturbing activities would occur. The present condition or characteristics of each resource is discussed first, followed by a discussion of the predicted impacts under the No Action and Proposed Action Alternatives. The environmental effects are summarized in Table 2.

3.2 Affected Environment

3.2.1 Recreation

Red Fleet State Park was opened to the public in 1988 and is managed through a Memorandum of Agreement and subsequent agreements between Reclamation and State Parks. 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. The park has averaged 32,546 visitors annually between the years 2003 to 2014 and has an average of 924 visitors during the month of October when treatment would occur.

3.2.2 Water Resources

The Jensen Unit of the Central Utah Project serves Ashley Valley and the area extending east of the valley to the Green River. Red Fleet Dam and Reservoir, located on Big Brush Creek, is the primary feature of the Project and stores early spring runoff and surplus flows for irrigation, M&I water, fish and wildlife, recreation, and flood control. This multipurpose project stores about 22,600 AF of water annually: 18,000 AF for M&I uses and 4,600 AF for irrigation. Some 440 irrigable acres receive a full service water supply and 3,640 AF receive a supplemental water supply.

Demand for irrigation water is met by making releases from the dam to Big Brush Creek. Tyzack Pumping Plant, located near the downstream toe of the dam, meets the demands for M&I water when the supply from Ashley Springs is not potable, by pumping water from Red Fleet Reservoir through Tyzack Aqueduct Reach 1 to the Ashley Valley Water Treatment Plant. As demands for M&I water increase, the reservoir water is made available to meet the demand. The average annual amount of water pumped is 18,000 AF. Tyzack Aqueduct Reach 2 and Reach 3 distribute water treated at the Ashley Valley Water Treatment Plant to Vernal City, Jensen, Maeser, and the Ashley Valley Water and Sewer Improvement District.

3.2.3 Water Quality

The large, natural watershed originates above Oaks Park Reservoir in the Uinta Mountains. This is an area of heavily forested mountains, with the Precambrian rocks underlying the soil. As Big Brush Creek flows down from Oaks Park, it reaches younger softer sedimentary rocks, into which it has eroded a deep gorge. The creek disappears into the bedrock at one point, reappearing as numerous springs lower in the watershed. Little Brush Creek also flows into Big Brush Gorge by the same means. The deepest portion of the gorge is the near vertical walled section in Weber Sandstone. The gorge ends near the entrance to the Simplot phosphate mine at the US-191 crossing of Big Brush Creek, and then slices through the strike valleys where Red Fleet Reservoir impounds the stream. The drainage also includes segments of the strike valleys east and west of the reservoir.

The watershed high point, Trout Peak, 2 miles east of Trout Creek Peak, is 10,629 feet above sea level, thereby developing a complex slope of 4.8 percent to the reservoir. The average stream gradient in the Big Brush Creek is 3.8 percent (201 feet drop in elevation per mile). The outflow is Big Brush Creek, but a pumping station immediately below the dam transfers water into a pipeline to Ashley Creek, providing irrigation and culinary water to Ashley Valley. The watershed is made up of high mountains, foothills, plateaus, badlands, and valleys. The soil associations that compose the watershed have not been determined by the Utah Division of Water Quality (UDWQ). The vegetation communities consist of pine, spruce fir, oak-maple, pinyon-juniper, saltbrush, shadscale, greasewood, and sagebrush-grass. The watershed receives 10 to 25 inches of precipitation annually. The frost-free season around the reservoir is 120 to 140 days per year. Land use is private grazing land at lower elevations, multiple use on U.S. Forest Service and Bureau of Land Management land, and intensive recreation in the area immediately around the reservoir and at Oaks Park Reservoir. The Simplot phosphate mine occupies several square miles immediately above the reservoir.

The reservoir lies within the Uinta Basin Watershed Assessment Unit (UT-L-14060002-006). The reservoir is within the Ashley-Brush Watershed identified with 4th order (8-digit) Hydrologic Unit Code (HUC) – 14060002. Within the Ashley-Brush Watershed, Red Fleet Reservoir is situated in the Big Brush Creek

and Cottonwood Wash sub-watersheds. The surrounding 5th and 6th order HUCs and the main tributary to the reservoir, Big Brush Creek, are shown on Figure 2.

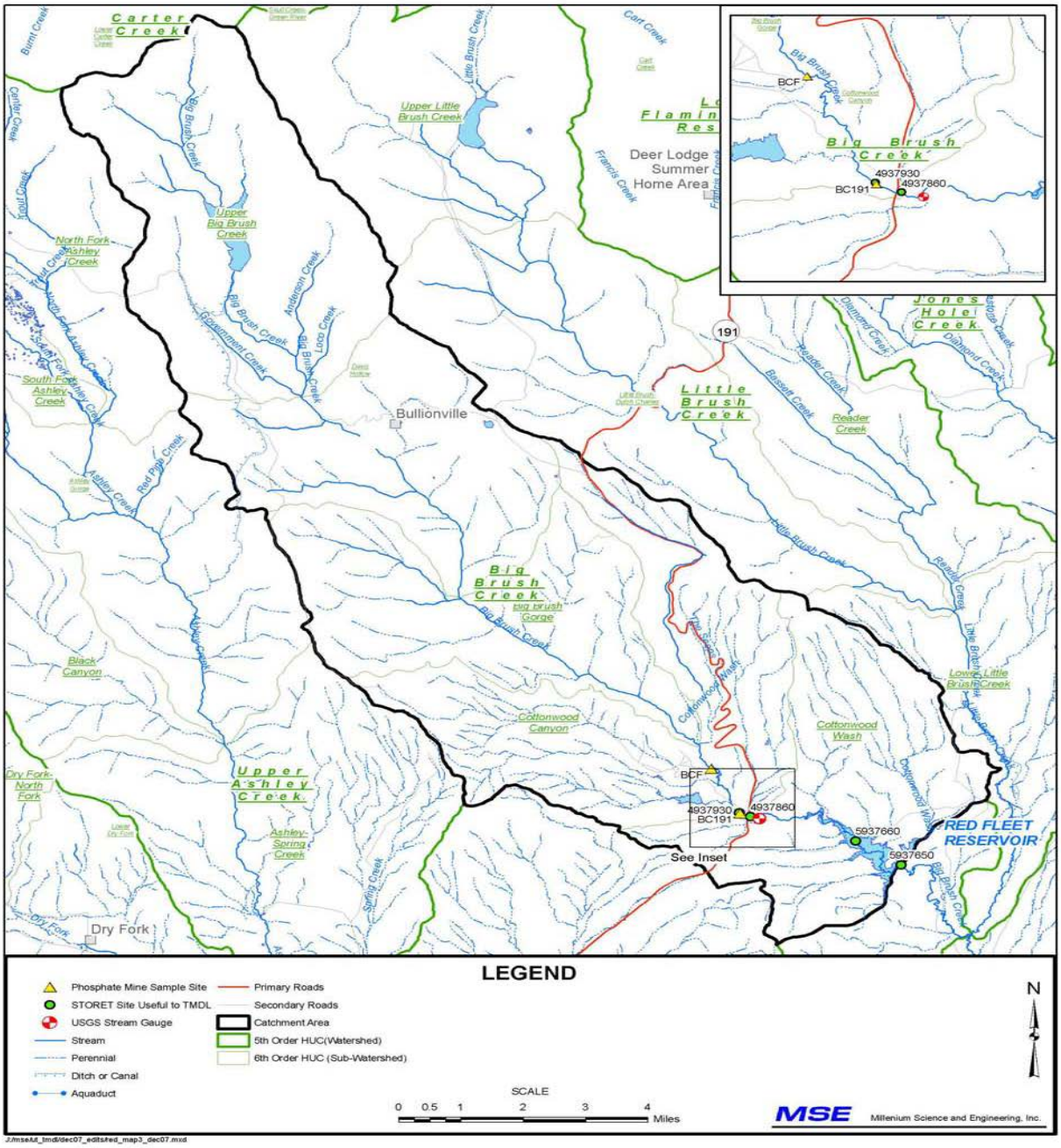

Figure 2. Watersheds

3.2.3.1 Water Quality Monitoring Data

UDWQ collects data from four STORET Stations for screening the water quality of Red Fleet Reservoir. These stations and the year that data was first collected for that location are listed below. Water Quality data collection is ongoing for all of these sites.

STORET	Type	Description	Year First Sampled
4937860	River/Stream	Big Brush Creek at U44 Crossing	1996
4937930	River/Stream	Big Brush Creek above Phosphate Plant	2003
5937650	Lake	Red Fleet Reservoir Above Dam 01	1997
5937660	Lake	Red Fleet Reservoir Midlake 002	1997

For reservoir sampling, UDWQ collects depth profile data using a data sonde that records temperature, pH, specific conductivity, and dissolved oxygen at approximately 1 meter intervals through the water column. Combined with depth profile sampling, are grab samples collected at the surface, 1 meter above the thermocline, 1 meter below the thermocline, and 1 meter from the bottom of the reservoir. Secchi disk depth data are also collected. Water quality samples collected include total nutrients (total and dissolved phosphorus, nitrogen as nitrate + nitrite, nitrogen as ammonia), basic chemistry, turbidity, and chlorophyll. In evaluating the water quality of Red Fleet Reservoir, phosphorus is a parameter of primary interest, as it may be related to low dissolved oxygen, which is a recognized impairment to the designated beneficial use (coldwater fishery) of the reservoir (see Section 3.2.4.5).

3.2.3.2 Limnological Assessment

The water quality of Red Fleet Reservoir is very good. It is considered to be moderately hard with a hardness concentration value of approximately 128 mg/L calcium carbonate ($CaCO_3$). Although there are no overall water column concentrations that exceed State water quality standards, there are reported violations of parameters near the bottom of the lake. These parameters include phosphorus, dissolved oxygen and temperature. Although the average water column concentration of total phosphorus has never exceeded the State pollution indicator criteria of 25 mg/L, on occasion values have been reported in excess at various depths in the water column. There are no indications that nutrient concentrations are a problem in the reservoir. Dissolved oxygen deficiencies occur later in the year after the reservoir has stratified. It is not uncommon to have an oxygen limited condition in the bottom 7 meters of the water column. On occasion dissolved oxygen depletions have been more extensive but not as a regular occurrence. Late in the summer it is common for the temperature in the epilimnion to exceed the criteria for a coldwater fishery. The increase in water temperatures near the surface and the decrease in dissolved oxygen in the lower

depths of the reservoir can lead to a situation where coldwater fish are squeezed into a region in the middle of the reservoir. This area may become reduced enough to impact the current fishery present in the reservoir. Current data suggest that the reservoir is currently a nitrogen limited system. Trophic State Index (TSI) values indicate the reservoir is borderline oligotrophic-mesotrophic in a state of low productivity. The reservoir does stratify, and as the season progresses the stratification becomes stronger and more pronounced. The phytoplankton community is dominated by the presence of desmids and flagellates and some blue-green algae that are capable of fixing nitrogen in a nutrient limited system.

3.2.3.3 Pollution Assessment

There are no point sources of pollution in the watershed. Nonpoint pollution sources include grazing, logging, recreation, and mining. Grazing takes place throughout the watershed, but not in the vicinity of the reservoir. Substantial logging has taken place in this watershed, with large timber sales having occurred in the Oaks Park and East Park areas. Simplot Phosphate is a large phosphate surface mine operating on both sides of Big Brush Creek gorge west of U.S. 191. The mine practices revegetation of disturbed areas and has a large settling pond to remove solids from runoff. The UDWQ regulates Simplot phosphate mine via a groundwater discharge permit (UDWQ Groundwater Discharge Permit No. UGW470001). Sediment from the watershed is another source of nonpoint pollution. Heavy rains can wash substantial amounts of sediment from the watershed into the reservoir.

3.2.3.4 Beneficial Use Classifications for Red Fleet Reservoir

Water quality standards in Utah are established to protect the designated beneficial uses of State waters. Red Fleet Reservoir is classified and protected by the State of Utah for the following beneficial uses (Utah Administrative Code R317-2; Standards of Quality for Waters of the State):

> Class 1C -- Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water.
>
> Class 2A -- Protected for frequent primary contact recreation where there is a high likelihood of ingestion of water or a high degree of bodily contact with the water. Examples include, but are not limited to: swimming, rafting, kayaking, diving, and water skiing.
>
> Class 3A -- Protected for coldwater species of game fish and other coldwater aquatic life, including the necessary aquatic organisms in their food chain.
>
> Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

3.2.3.5 Beneficial Use Impairments for Red Fleet Reservoir

Water quality monitoring conducted since year 2000 by UDWQ, shows that Red Fleet Reservoir is not meeting its beneficial use for a coldwater fishery (Class 3A beneficial use), due to exceedances of the coldwater fisheries temperature standard of 68° degrees Celsius and low dissolved oxygen (the reservoir can go anoxic in the hypolimnion over the summer). The cause of low dissolved oxygen was attributed to excess algae growth as a result of phosphorus loading in the 2008 Total Maximum Daily Load (TMDL) Report created for Red Fleet Reservoir. (Utah Division of Water Quality, August 2008).

The Division of Water Quality's current 2012-2014 Draft Integrated Report lists Red Fleet Reservoir as being impaired for water temperature (UDWQ, Utah's 2012-2014 Draft Integrated Report).

Red Fleet Reservoir currently has a fish consumption advisory for mercury (UDWQ, Utah Mercury Fish Advisories). Due to high mercury levels found in Largemouth Bass and Walleye from Red Fleet Reservoir, Utah public health officials recommend that:

- Adults eat no more than six 8 ounce servings of these fish per month (nine 8 ounce servings per month for small Walleye).

- Pregnant women, nursing mothers, and children younger than 12 should eat no more than one 8 ounce serving of Largemouth Bass or Walleye per month.

- Women of child bearing age and children 6 to 16 years of age should eat no more than two 8 ounce servings per month (three 8 ounce servings per month for small Walleye).

3.2.4 System Operations

Water for the Jensen Unit is obtained by regulation of flows of Big Brush Creek. The project supply along with direct stream flows presently obtained from Big and Little Brush Creeks is used directly for irrigation and for M&I use. Project storage is provided in Red Fleet Reservoir on Big Brush Creek northeast of Vernal. The total capacity of Red Fleet Reservoir is 26,000 AF and the active capacity is 22,000 AF.

The natural flows of Big Brush Creek exceed the requirement of the presently irrigated lands during the spring snowmelt, but in most years shortages occur during the last half of the irrigation season. Red Fleet Reservoir stores the winter and spring runoff then releases take place during the summer and early fall. Releases are made under the direction of the State Engineer through the representative River Commissioner. The River Commissioner determines the limitation, amount, and status of all reservoir releases and storage rights.

Flood control regulations for Red Fleet Reservoir have been developed jointly by the U.S. Army Corps of Engineers (USACE) and Reclamation. In November 1996, the USACE issued the Water Control Manual for Red Fleet Dam and Reservoir. The USACE flood control activities at Red Fleet Dam are authorized by Section 7 of the Flood Control Act of 1944. The flood control reservation varies up to a maximum of 18,000 AF, based on the time of year and runoff forecast parameters. When water is stored within the portion of the joint use pool that the Water Control Manual for Red Fleet Dam and Reservoir indicates is required for flood control, releases would be made from the reservoir as rapidly as possible without causing flows in Big Brush Creek below the dam to exceed 200 cubic feet per second (cfs).

Forecasts of inflow to Red Fleet Reservoir are made by the Colorado Basin River Forecast Center in Salt Lake City. The forecasts are published at the first of each month from January to May, for expected inflow volumes into the reservoir occurring from April through the end of July. The average April through July inflow volume to Red Fleet Reservoir based on the period 1981-2010 is 21,000 AF. Inflow forecasts are used to determine reservoir operations in accordance with flood control regulations. The optimum operation is to fill the reservoir during the snowmelt runoff season and avoid using the spillway.

Since water year 1983 when Red Fleet Reservoir initially filled, it has filled in 20 different years (63 percent fill rate). However, the reservoir last filled in water year 2011, and since that time has steadily declined due to drought conditions and reached a historical low elevation of 5,553.5 feet (24 percent full) on August 22, 2014. As the reservoir is operated to avoid using the spillway, historical spills have been minimal, typically nothing more than lapping over the crest. Historical reservoir elevations are shown in the Figure 3.

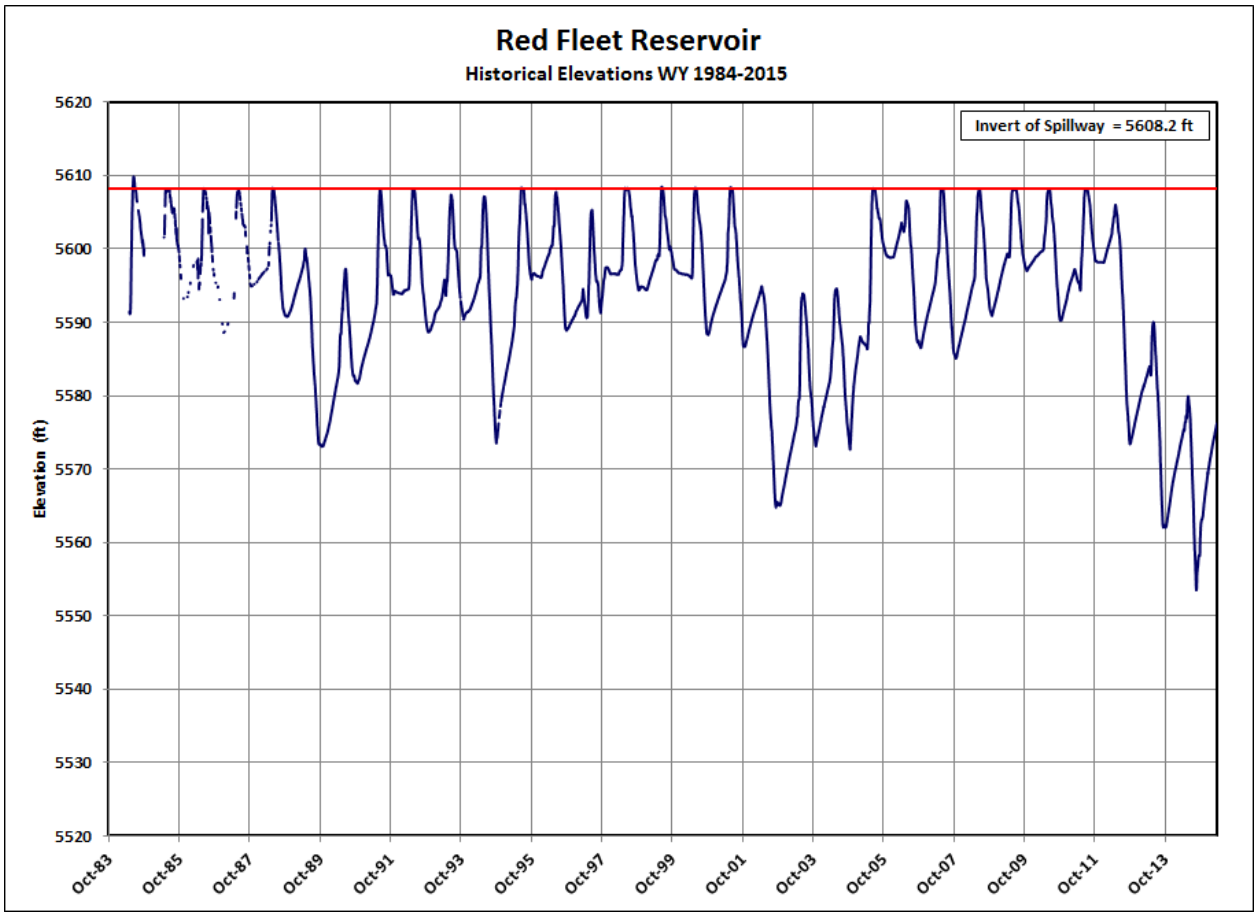

Figure 3. Red Fleet Reservoir Historic Elevations

3.2.5 Public Safety, Access, and Transportation

Red Fleet Dam is constructed on Big Brush Creek about 3.5 miles downstream from its crossing under U.S. 191, and about 10 miles northeast of Vernal, Utah. Red Fleet Reservoir lies within the boundaries of Red Fleet State Park. To the west of the State Park, U.S. 191 is just outside the State Park and runs north and south through this area (Figure 1). On the northern side of the State Park, County Road 1205, commonly known as Donkey Flat Road, exits U.S. 191 traveling northeast. The road turns easterly and serpentines around the northern boundary of the State Park to its eastern border. County Road 1320 turns off Donkey Flat Road and travels southwesterly into the State Park, traverses the crest of the dam embankment, and terminates at the toe area of the dam near the dam outlet works and water pumping plant. Other dirt roads, some of which exit U.S. 191, provide access to other public recreational sites located on the southern and northern portion of the reservoir. Recreation facilities at Red Fleet Reservoir are administered by the State Park. Recreation facilities consist of camping, hunting, fishing, boating, and water sports. There were 52,227 recreation use visits spent in the reservoir area during 1996.

3.2.6 Visual Resources

Red Fleet Reservoir sits in a rugged red rock setting, with sandstone cliffs and the Uinta Mountains as a backdrop. Red Fleet is known for the petroglyphs that adorn the surrounding area and for dinosaur trackways in the sandstone. The landscape is dominated by juniper, sagebrush, native grasses, and cactus.

3.2.7 Socioeconomics

Visitation days at Red Fleet State Park from 2010 to 2014 have averaged 992.6 for October and 330.2 for November*. As visitation day records do not separate anglers from boaters, campers, wildlife observers, etc. it is not possible from this data to determine exactly how many individuals came to Red Fleet State Park primarily for angling. A recent survey conducted by the UDWR in February and March 2014 showed that fishing for Walleye in the reservoir was a primary target of at least one-third of the 272 anglers who answered questions regarding which fish species they "target most often when fishing at Red Fleet Reservoir." The UDWR's Red Fleet Reservoir Creel Census conducted between April 2011 and March 2012 estimates that during this time period, approximately 17, 369 fish were caught in Red Fleet. Of all of the fish caught at Red Fleet Reservoir, approximately 62 percent were trout, 7 percent were bass, 4 percent were Bluegill, and less than 1 percent was Walleye. This seems to indicate that even though few Walleye are removed from Red Fleet annually, there are anglers who still make the attempt. *(http://stateparks.utah.gov/resources/about/park-visitation-data)

3.2.8 Wetlands and Vegetation

Within the proposed treatment area there are established wetland, riparian, and upland communities. Emergent marsh wetlands are found in bays of the reservoir where washes and riparian communities funnel toward the lake. These emergent marsh wetlands occur below the full pool elevation of the reservoir and are therefore periodically inundated. Dominant vegetation within these wetland communities is herbaceous and adapted to frequent or continual inundation. Species commonly found within emergent marsh wetlands include bulrush (*Schoenoplectus* spp.), cattail (*Typha* spp.), rush (*Juncus* spp.), pondweed (*Potamogeton* spp.), smartweed (*Polygonum* spp.), and canary grass (*Phalaris* spp.).

Native and invasive riparian vegetative communities are found along the Brush Creek inflow to the reservoir, Brush Creek outflow below the dam, and natural drainage areas around the reservoir. Wetland vegetation is also found within these areas. Native species commonly found within riparian communities include 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*). Invasive riparian species within the reservoir area include Russian olive (*Elaeagnus angustifolia*) and saltcedar (*Tamarix* spp.).

The reservoir is surrounded by upland vegetation communities. Common species found within these upland communities include pinyon pine (*Pinus edulis*), Utah juniper (*Juniperus osteosperma*), black sagebrush (*Artemisia nova*), Wyoming big sagebrush (*Artemisia tridentata* spp. *wyomingensis*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), and blackbrush (*Coleogyne ramosissima*).

3.2.9 Fish and Wildlife Resources

3.2.9.1 Fish

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 aquatic 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 exceed state pollution thresholds (UDWQ 2008).

The shoreline habitat of Red Fleet Reservoir has intermixed vegetated and non-vegetated 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.

Red Fleet Reservoir is managed primarily as a put-and-take fishery for Rainbow Trout, although there are Brown Trout 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 warm water 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 due to increased predation (Boren 2012).

Fish assemblages for Red Fleet Reservoir have varied historically but currently support eight species of fish. Coldwater fish species in the reservoir include Rainbow Trout and Brown Trout. Warm water species include Largemouth Bass, Smallmouth Bass, Green Sunfish, Bluegill, 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.

In Big Brush Creek, approximately 4 to 5 miles below the dam, sampling by the UDWR demonstrated the presence of mottled sculpin (*Cottus bairdii*) and

Mountain Sucker (*Catostomus platyrhynchus*). These fish are likely present in Big Brush Creek up to the dam.

3.2.9.2 Birds

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 project 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 project 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 project area include common loon (*Gavia immer*), piedbilled 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.

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 project area, particularly in the cottonwood (*Populus sp.*) around the reservoir edges. Peregrine falcon (*Falco peregrinus*) have nested near the project 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.

Songbirds using habitat in the project 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 project 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*).

3.2.9.3 Wildlife

The project area provides habitat for a number of mammal species, including big game, small mammals, bats, and others. The pinyon-juniper, sagebrush and grassland habitats around the reservoir 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. They also use the reservoir, inlet, and outlets for free water sources. Big game hunting is not allowed within the project area, which may provide important refuge for these species during hunting season.

Other mammals potentially found within the project 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 (*Peromyscus maniculatus*), 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 project area also 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*).

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 project area, particularly those that are tolerant of arid conditions, such as the Great Basin spadefoot (*Spea intermontana*).

3.2.10 Threatened, Endangered, and Sensitive Species

3.2.10.1 Plants

There is a possibility that multiple Threatened (T), Endangered (E), and Sensitive (S) plant species could occur in and around the project area. Potential occurrence of these species is based on the existence of appropriate habitats. Complete surveys of the project and surrounding areas have not been completed, largely due to the fact that the Proposed Action is a rotenone treatment of the water in Red Fleet Reservoir. The following species could potentially be found in Uintah County and the project area. Bedrock Canyon and Tableland vegetation type has the potential to support Graham's columbine (*Aquilegia grahamii* - S), Canyonlands sedge (*Carex curatorum* - S), Flowers' penstemon (*Penstemon flowersii* - S), and alcove death camas (*Zigadenus vaginatus* - S). Pinyon-Juniper Woodland has the potential to support park rockcress (*Arabis vivariensis* - S), Hamilton's milkvetch (*Astragalus hamiltonii* - S*)*, Ownbey thistle (*Cirsium ownbeyi* - S), Graham's cryptantha (*Cryptantha grahamii* - S), White River penstemon (*Penstemon scariosus var. albifluvis* - S), Uinta wirelettuce (*Stephanomeria tenuifolia var. uintaensis* - S), and sterile yucca (*Yucca sterilis* - S). Sagebrush shrubland has the potential to support horseshoe milkvetch (*Astragalus equisolensis* - S), Ownbey thistle, Graham's cryptantha, Garrett bladderpod (*Lesquerella garrettii - S*), White River penstemon (*Penstemon scariosus var. albifluvis* - S), 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* - S), Uinta parrya (*Parrya rydbergii* - S), alcove bog-orchid (*Platanthera zothecina* - S), 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* - S), Graham's penstemon, shrubby reed-mustard, pariette cactus, and Uinta basin hookless cactus. Riparian areas have the potential to support giant helleborine (*Epipactis gigantean* - S), and Ute ladies'-tresses (*Spiranthes diluvialis* - T). Subalpine meadow has the potential to support Garrett bladderpod, and large yellow evening primrose (*Oenothera flava var. acutissima* - S).

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.

3.2.10.2 Fish and Wildlife

There are a total of seven federally listed fish and wildlife species that could potentially occur in the project area. Three species will not be analyzed because they are not currently found in the area, or the habitat is not present to support the species based on life history requirements: Mexican spotted owl (*Strix occidentalis lucida* – T), yellow-billed cuckoo (*Coccyzus americanus* – T), and Canada lynx (*Lynx canadensis* – T). The remaining four federally listed species and additional sensitive species are delineated in Table 1.

Table 1
Threatened, Endangered, and Sensitive Species Potentially Found in the Project Area

Common name	Scientific Name	Status
Birds		
American White Pelican	*Pelecanus erythrorhynchos*	Sensitive
Bald Eagle	*Haliaeetus leucocephalus*	Sensitive
Burrowing Owl	*Athene cunicularia*	Sensitive
Ferruginous Hawk	*Buteo regalis*	Sensitive
Greater Sage-Grouse	*Centrocercus urophasianus*	Sensitive
Mammals		
Big Free-tailed Bat	*Nyctinomops macrotis*	Sensitive
Spotted Bat	*Euderma maculatum*	Sensitive
Townsend's Big-eared Bat	*Corynorhinus townsendii*	Sensitive
White-tailed Prairie Dog	*Cynomys leucurus*	Sensitive
Fish		
Flannelmouth Sucker	*Catostomus latipinnis*	Sensitive
Bonytail	*Gila elegans*	Endangered - ESA
Colorado Pikeminnow	*Ptychocheilus lucius*	Endangered - ESA
Humpback Chub	*Gila cypha*	Endangered - ESA
Razorback Sucker	*Xyrauchen texanus*	Endangered - ESA

The four endangered Colorado River fish species are not found in Red Fleet Reservoir, or in the downstream 14 miles of Big Brush Creek to the confluence with the Green River. These fish are occasionally observed where the Big Brush Creek meets the Green River. In addition, the only sensitive species found in the inlet and in the reservoir is the Flannelmouth Sucker. It is likely that these suckers were impounded in the reservoir, but due to the fact that there are

multiple age classes and a few fish that have been aged were less than the age of the dam, spawning is occurring in Big Brush Creek. Preliminary information from the UDWR suggests that spawning habitat occurs near the inlet of the reservoir with Big Brush Creek. The rest of the sensitive species in Table 1 may use the reservoir, inlet, or outlet for a free water source, but they are not found at the reservoir consistently throughout the day or the calendar year.

3.3 Environmental Effects of Alternatives

3.3.1 Recreation

3.3.1.1 No Action Alternative

There would be no changes to recreation at Red Fleet Reservoir and results in no impacts within the Study Area.

3.3.1.2 Proposed Action

Under the Proposed Action Alternative, there would be some impacts to recreation. The impacts to recreation would be mostly to those who come to the reservoir for fishing post treatment. While the fishing is expected to recover in less than 2 years, the fishing would be slower during that time period due to stocking of smaller prey fish, though prey fish would be stocked at the maximum possible numbers. Since fish would be restocked immediately following the treatment, fishermen would have the opportunity to catch fish, but at a slower rate. The slower rate should be limited to approximately 1 or 2 years, depending on species success.

Another impact to the park would be the potential of having to close the park for safety purposes. To avoid the potential of the public getting into the reservoir while the treatment is taking place, the park may have to be closed during the treatment and detoxification period. This timeframe is potentially up to 3 weeks. This would have a minor impact to the park visitation. Visitation numbers to the park during the month of October is approximately 924 visitors with an average annual visitation number of 32,546.

Another possible impact to the park would be the dead fish that would be visible to the park visitors. When the treatment is done approximately one third of the population of deceased fish are anticipated to float to the surface while the remaining two thirds would either sink to the bottom or remain suspended in the water column for a short time. The fish that rise to the surface could provide a negative visitor experience because of the decaying fish smell and the sight of dead fish. To help reduce the impact to the visitor's, large groups of fish that are found floating should be sunk to the bottom, or removed from the water body.

3.3.2 Water Resources

3.3.2.1 No Action Alternative

The No Action Alternative would have no effect on water resources.

3.3.2.2 Proposed Action

The Proposed Action would have no effect on water resources. Current management and dam operations would continue and water resources would not change.

3.3.3 Water Quality

3.3.3.1 No Action Alternative

The No Action Alternative would not change the water quality of the reservoir. Current management and dam operations would continue, and water quality impacts would not change.

3.3.3.2 Proposed Action – Direct and Indirect Effects

There would be short-term direct effects to water quality as a result of the chemical treatment with rotenone. The primary direct effect is caused by the toxicity of rotenone to aquatic organisms. Rotenone naturally detoxifies in flowing waters relatively rapidly (often within 24 hours) due to dilution and increased rates of hydrolysis and photolysis (Finlayson et. al 2000). In standing cold water, toxic effects may occur for up to 4 to 5 weeks (Bradbury 1986).

One of the primary indirect water quality concerns related to rotenone treatments is the impact to benthic macroinvertebrate communities. Rotenone was historically used as an insecticide; therefore it has a dramatic short-term impact on aquatic macroinvertebrates. The primary concern arises from the population and taxonomic diversity level.

Unfortunately, although many rotenone treatments have been monitored, little is known about the true effects of rotenone treatments on macroinvertebrate communities (Vinson et al. 2010). It is believed that rotenone impacts macroinvertebrates similarly to other natural disturbances such as floods, or drought. Although the mechanisms may be different, all of these events cause catastrophic drift and/or very high mortality for a majority of benthic taxa. For example, when a flood occurs, the catastrophic drift appears to be caused by the initiation of the bedload transport (Gibbins et al., 2007). High proportions of drifting 4 to 2 macroinvertebrates are dead during these events (Dinger and Marks 2007; Gibbins et al. 2007). Numbers of aquatic invertebrates important to the aquatic ecosystem are locally suppressed for variable periods of time after disturbance. Refuge from disturbance, such as areas upstream, offstream habitats (Hynes 1972) and the hyporheic zone (Marmonier et al. 1997) provide a source for recolonization.

UDWR expects a similar benthic macroinvertebrate response with the implementation of a rotenone treatment, with some exceptions. Unlike floods,

which directly impact almost all benthic taxa, Mangum and Madrigal (1999) reported rotenone resistance in 9 to 33 percent of the taxa that occurred in the Strawberry River.

A large body of literature exists regarding the recovery of aquatic macroinvertebrate populations after a rotenone treatment (see Vinson et al. 2010). Most of the studies have been short-term and likely have not been intensive enough to adequately answer the long-term questions (Vinson et al. 2010). In general, abundance of macroinvertebrates returns to pretreatment densities within a few months to a year. However, recovery times of taxa richness or diversity appear to be much slower. The longest-term monitoring studies reviewed by Vinson et al. (2010), ranged from 2 to 5 years. Most of the invertebrate species would repopulate the treated area within 1 or 2 years (California Department of Fish and Game 1994). In the Strawberry River drainage, where the target concentration of rotenone 3 parts per million (ppm) was greater than that planned for the project area, and where an attempt was made to treat all water in the drainage, 22 to 53 percent of the taxa recovered after 1 year, but 7 to 14 percent of the taxa were still missing after 5 years. (Mangum and Madrigal 1999). Whelan (2002) monitored the effects of the 1995 and 1996 rotenone treatments on Manning Creek, Utah. The Manning Creek treatment had lower target concentrations of rotenone and lower application times than the Strawberry treatment studied by Mangum and Madrigal (1999).

Whelan (2002) indicated that leaving fishless stream reaches untreated and using the minimum rotenone concentration and treatment time necessary to achieve the objectives of trout removal, were reasonably effective mitigation measures to speed aquatic macroinvertebrate recovery, when compared to the Strawberry treatment. The majority of taxa recovered and were found in the post-treatment samples. Many taxa were only found posttreatment and a few taxa were missing post-treatment. The Whelan study provides an example of the shortcomings of most macroinvertebrate monitoring studies. Vinson et al. (2010) provide the results of a long-term (10 year) macroinvertebrate dataset collected at monthly intervals in the Logan River. They found that, on average, 27.5 genera were found per sample. However, the genera accumulation curve indicates that over 80 different genera have been found over the study period, and new genera are still being found.

Engstrom-Heg et al. (1978) conducted a laboratory study of the rotenone tolerance of aquatic macroinvertebrates. They felt that a treatment of less than 10 ppm-hours would generally result in only mild and temporary reduction of the aquatic macroinvertebrate community. This is a somewhat lower treatment level than the Manning Creek treatment was, but is within the general application rate and time of rotenone treatments conducted in recent years in southern Utah since the Manning Creek treatment. During collections of aquatic macroinvertebrate samples from Pine Creek in southern Utah, only 5 days following a rotenone treatment at this lowest application level many live aquatic macroinvertebrates were found.

Recent literature suggests that acute (as opposed to chronic) exposure to rotenone is not harmful to mammals, including humans, at the concentrations used to control fish (see elsewhere in this document for a fuller discussion of rotenone toxicity). It has been estimated that a 132 pound person would have to consume over 60,000 liters of treated water at one sitting to receive a lethal dose (Sousa et al. 1987). Using a safety factor of 1,000 X and the most conservative safe intake level, a person could still drink 14 liters of treated water per day. Extensive testing has not shown rotenone to be carcinogenic (Bradbury 1986). Even though rotenone in the concentrations used for fish control has not been linked to acute toxicity to humans, as a matter of policy, the EPA does not set tolerances for pesticides in potable water. The State of California (California Department Of Fish And Game 1994) and the National Academy of Science (1983), have computed "safe" levels of rotenone in drinking water that are roughly equivalent to the detection level of rotenone in water (0.005 ppm pure rotenone).

The mobility of rotenone in soil is low. In fact, the leaching distance of rotenone is only three quarters of an inch in most types of soils. This is because rotenone is strongly bound to organic matter, making it unlikely that it would enter groundwater. At the same time, rotenone breaks down rapidly into temporary residues that would not persist as pollutants of groundwater (Turner et al. 2007). Ultimately, rotenone breaks down into carbon dioxide and water.

A secondary indirect effect of the treatment would be a temporary increase in the nutrient input to the water as a result of decomposition of fish that are killed. This effect would occur for a period of approximately two weeks while decomposition occurred. However, natural mortality has always occurred and the increase attributable to rotenone treatments would be negligible with respect to the ecosystem. Some of the nutrients would likely be rapidly assimilated by rebounding aquatic macroinvertebrate populations.

The UDWR does not believe that changes in water quality during the project would impair other uses. Rotenone would not affect plants, and treated water would still be of suitable quality for use by deer/elk and livestock, and other mammals and birds (Turner et al. 2007).

Potassium permanganate would degrade to nontoxic, common compounds or elements shortly after application at the concentrations used. The neutralization is not immediate in space, but requires a short mixing zone where the $KMnO_4$ is in contact with and oxidizes the rotenone. Downstream of this mixing zone, both fish and aquatic macroinvertebrates would not be affected.

Drinking water supplies would not be affected by the use of $KMnO_4$ because it rapidly breaks down into potassium, manganese, and water**.** Because $KMnO_4$ is commonly used to treat drinking water at levels comparable to those used to neutralize rotenone, there would be no effect to drinking water supplies (Holdaway 2010).

3.3.4 System Operations

3.3.4.1 No Action Alternative
The No Action Alternative would have no effect on system operations.

3.3.4.2 Proposed Action
The Proposed Action would have no effect on system operations.

3.3.5 Public Safety, Access, and Transportation

3.3.5.1 No Action Alternative
The No Action Alternative would have no impact on public safety, access, and transportation.

3.3.5.2 Proposed Action
The Proposed Action would have no effect on public safety, access, and transportation as a result of the following preventative measures:

The UDWR would serve as or designate a project Safety Office, typically a staff member from the Law Enforcement section, to monitor all actions associated with the project, and take corrective action to remedy unsafe activities. All personnel involved with the project have received, or would have received safety training prior to the treatment day. Training would cover safe application and transportation of rotenone and potassium permanganate, including potential hazards of the project. Personnel applying chemicals would have obtained their pesticide applicator license from the Utah Department of Agriculture. All personnel would have reviewed the safety precautions for each product level before the application and all project participants would be involved in identifying other hazards and actions that may jeopardize safety during the project.

Each applicator would receive two personal eye wash bottles for immediate response to eye contact with a chemical. Water, including additional eye wash stations, showers, and drinking water would be available at the base camp at the main boat ramp. Anyone experiencing chemical exposure would be asked to perform immediate triage on the water, but then return to the boat ramp for further treatment as quickly as possible.

Applicators dispensing powdered rotenone from boats would be given tyvek suits, nitrile gloves, and “Breathe Easy” respirators. Additional batteries would be available for the Breathe Easy respirators due to the anticipated length of the treatment. Liquid applicators, the detox station, and anyone dispensing chemical in preparation for the treatment would be required to wear long sleeves, half-mask respirators with vapor cartridges, eye protection, and nitrile gloves.

3.3.5.2.1 Site Security
According to AFS Standard Operating Procedures (Finlayson et al. 2010), UDWR would place signs around the reservoir denoting that the reservoir is closed due to the use of rotenone. Signs would include closure period dates, formulation used,

and purpose of the treatment. The Safety Officer any State Parks personnel present would be in charge of discussing the treatment with any members of the public arriving onsite during the treatment.

3.3.5.2.2 Fish Disposal After Treatment

Dead fish would be sampled for length and weight post-treatment. Fish sampled would either be sunk in the lake or removed and disposed of properly.

3.3.5.2.3 Spill Contingency

All mixing operations would be conducted within boats at the reservoir or within a cattle trough near the water's edge. If a spill occurs, the first priority would be to contain the spilled material. Shovels would be used for immediate containment or to channelize the spilled material (liquid) into a containment area. The following actions would be taken as necessary to contain a spill on the ground:

1. Stopping the spillage at its source;

2. Diking in pools as appropriate;

3. Using materials such as clay or soil to absorb standing rotenone by pump or sponge and deposition into target area;

4. Neutralizing the spill site with $KMnO_4$ and suitable disposal of neutralized material.

The Safety Officer would be responsible for immediately reporting ground spills of liquid rotenone over 20 gallons and $KMnO_4$ to the following entities:

1. Vernal Office Division Regional Supervisor

2. Uintah County Sheriff's Office

3.3.6 Visual Resources

3.3.6.1 No Action Alternative

There would be no changes in visual resources; therefore a no effect determination was made.

3.3.6.2 Proposed Action

There would be no changes in visual resources; therefore a no effect determination was made.

3.3.7 Socioeconomics

3.3.7.1 No Action Alternative

Under a No Action Alternative, there would be no changes to irrigation or M&I water deliveries, and anglers would continue to visit Red Fleet Reservoir in the

same manner as they have for many years. There would be no change in the socioeconomic status in the area.

3.3.7.2 Proposed Action

The Proposed Action would not affect irrigation deliveries, or the delivery of water for M&I purposes in the Uintah Water Conservancy District's service area. However, there is potential for impacts to local recreation related to fishing. Visitation days at Red Fleet State Park from 2010 to 2014 have averaged 992.6 for October and 330.2 for November. As visitation day records do not separate anglers from boaters, campers, wildlife observers, etc. it is not possible from this data to determine exactly how many individuals came to Red Fleet State Park primarily for angling. A survey conducted by the UDWR in February and March 2014 showed that fishing for Walleye in the reservoir was a primary target of at least one-third of the 272 anglers who answered questions regarding which fish species they "target most often when fishing at Red Fleet Reservoir." The UDWR's Red Fleet Reservoir Creel Census conducted between April 2011 and March 2012 estimates that during this time period, approximately 17, 369 fish were caught in Red Fleet. Of all of the fish caught at Red Fleet Reservoir, approximately 62 percent were trout, 7 percent were bass, 4 percent were Bluegill, and less than 1 percent were Walleye. This seems to indicate that even though few Walleye are removed from Red Fleet annually, there are anglers who still make the attempt.

With sufficient notice being given of the Proposed Action, many anglers have the option to bump up their recreating dates and fish Red Fleet in September and the first part of October, or visit neighboring Steinaker Reservoir (9 miles) which also holds trout, Bluegill and Largemouth Bass or Flaming Gorge Reservoir (30 miles) which is a very popular fishery for both trout and Smallmouth Bass. No jobs would be created or eliminated due to this action.

3.3.8 Wetlands and Vegetation

3.3.8.1 No Action Alternative

The No Action Alternative would have no effect on wetlands and vegetative communities within the proposed treatment area.

3.3.8.2 Proposed Action

The Proposed Action Alternative would have no effect on wetlands and vegetative communities within the proposed treatment area. Rotenone is a naturally occurring chemical obtained from the roots of several tropical and subtropical plant species. Rotenone is a selective, non-specific, organic insecticide that is used in home gardens to control chewing insects, on pets and livestock for external parasite control, and for fish eradications as part of fisheries management. Rotenone works by inhibiting the transfer of oxygen from the gills to the rest of the body. This makes rotenone extremely effective on organisms that breathe through gills. Rotenone is not readily absorbed by mammals or vegetation (American Fisheries Society).

3.3.9 Fish and Wildlife Resources

3.3.9.1 No Action Alternative

Under the No Action Alternative, the rotenone treatment would not be completed and the current conditions would remain the same. More specifically the fishery, comprised mainly of illegal introductions, would remain unchanged. In addition, the threat of non-native Walleye, entering Big Brush Creek and eventually the Green River, due to a spill event would continue. As for birds and other wildlife, under the No Action Alternative, conditions would also remain the same.

3.3.9.2 Proposed Action

3.3.9.2.1 Fish

As a result of implementation of the Proposed Action, the fish in Red Fleet would die, meeting the intent of the treatment. Some would float to the top (approximately 30 percent) but the majority would sink to the bottom. As the treatment is non-discriminatory, all fish, warm or coldwater species, native or non-native, including some aquatic invertebrates, would likely be killed. This would remove the threat of Walleye and any other non-native predatory fish species (of sensitive or threatened and endangered fish species) from escaping the reservoir due to a spill event or through the outlet works. There would not be any long-term effects of the treatment on future fish planted in the reservoir. After a few days the rotenone loses its effectiveness and new fish species can be safely reintroduced.

After the completion of the treatment, the detoxification of releases, and the documentation of a fall zooplankton bloom, Red Fleet Reservoir would be immediately restocked with 520 six to eight inch long sterile Walleye and 10,000 ten inch long Rainbow Trout. UDWR would also pursue transferring a number of forage species including Black Crappie, Yellow Perch, and Mountain Whitefish. These fish would be transferred to Red Fleet from other waters around the state pending Aquatic Invasive Species (AIS) and disease certification results of the transferring water. Transfers may occur as early as winter 2015-2016, or as late as summer 2016. Restocking of additional predator species including Wipers and Tiger Trout would occur in limited numbers beginning summer 2016.

Annual monitoring for zooplankton and fish species would occur for 3 years to document re-establishment, reproduction and persistence of desired species. The stocking request would be reviewed after 3 years to determine whether any species have been unsuccessful and should no longer be stocked into the reservoir. Sampling after that would likely continue to be done annually, just not as intensively once UDWR have information on the success of the species stocked.

3.3.9.2.2 Birds

Negative effects to birds during the treatment would be minimal. There would likely be direct effects of temporary displacement of birds from the area due to the

number of boats and personnel out on the water. Due to the proposed timing of the treatment in the fall, most migratory birds would have already left the area. There would be a greater probability of displacing ducks and water-dependent bird species, than upland and passerine species. Regardless, displacing birds makes them more susceptible to predation and could cause them to select less suitable or marginal habitat. In addition, some raptor or scavenging bird species could consume dead or dying fish, amphibians, or aquatic insects. The probability or threat of these indirect effects are minimal and would be short in duration. As evidenced by other rotenone treatments, recovery of the system is relatively quick and effects to bird species would likely be negligible.

3.3.9.2.3 Wildlife

Most wildlife species, including birds, mammals, reptiles, adult amphibians, and some invertebrates are not susceptible to rotenone at the concentrations that would be used in the treatment. There may be a short-term temporary impacts to insects used as prey by bats, but overall the treatment will affect the fish species targeted. Even if rotenone-killed fish were consumed by mammals, there would be no adverse effects because the rotenone at low dosages is expected to be degraded by enzymes in the animals' digestive tracts (Finlayson et al. 2000; USEPA 2007). There would be minimal to no effect to wildlife.

3.3.10 Threatened, Endangered, and Sensitive Species

3.3.10.1 No Action Alternative

Under the No Action Alternative, the rotenone treatment would not be completed and the current conditions would remain the same. There would be a continued threat of non-native predatory fish escaping Red Fleet reservoir and potentially entering the Green River where the four Colorado River endangered fish reside.

3.3.10.2 Proposed Action

3.3.10.2.1 Plants

Under the Proposed Action, there would be no effect to Ute ladies'-tresses (T), if present near or around the reservoir. Uptake of the chemicals would not kill the plant or render them incapable of reproduction. The treatment is designed to kill gill-breathing animals (mainly fish) in the reservoir and would not affect plant species near or around the reservoir.

3.3.10.2.2 Fish and Wildlife

Under the Proposed Action, $KMnO_4$ would be used below the dam in Big Brush Creek to neutralize any rotenone leaving the reservoir. This would minimize effects to extant fish, including any sensitive species downstream. It is estimated that the neutralized section, and therefore any minimal adverse effects to fish species, would occur 1 mile downstream of the dam. There would be no effect to any aquatic species beyond that neutralization zone. If any of the four endangered Colorado River fish species were within the first mile of Big Brush Creek near the confluence with the Green River, there would be a 14 mile buffer between them

and the treatment. Due to this rationale there would be no effect to the four Colorado River endangered fish species. In addition, as there is no critical habitat in area, there would be no adverse effect to critical habitat.

The only sensitive species found in the inlet and in the reservoir is the Flannelmouth Sucker. It appears that spawning is occurring in habitat near the inlet of the reservoir with Big Brush Creek. Any fish in the reservoir during the treatment time would die as a result of the treatment. However, naturally occurring suckers in Big Brush Creek would likely replace those killed in the treatment over a few years' time. Though this would negatively affect Flannelmouth Suckers in the short-term, it would not contribute toward a trend of listing the species. All agencies involved including the UDWR, USFWS, and the Recovery Program believe the overall positive cumulative effect far outweighs the short-term negative effect of losing the sucker in the reservoir for a short period of time.

3.4 Summary of Environmental Effects

Table 2 below describes environmental effects under the No Action Alternative and the Proposed Action Alternative.

Table 2
Summary of Environmental Effects of the Red Fleet Reservoir Rotenone Treatment Project

Resource Issue	No Action Alternative	Proposed Action
Recreation	No effect	Minimal and temporary effects during treatment
Water Resources	No effect	No effect
Water Quality	No effect	Minimal impacts
System Operations	No effect	No effect
Public Safety, Access, and Transportation	No effect	Minimal short term impacts during treatment
Visual Resources	No effect	No effect
Socioeconomics	No effect	Minimal impacts
Wetlands and Vegetation	No effect	No effect
Fish and Wildlife Resources	No effect	Minimal and temporary effects during treatment
Threatened, Endangered, and Sensitive Species	No effect	No effect to Threatened and Endangered Species and minimal impacts to State Sensitive Species during treatment

3.5 Indian Trust Assets

Indian Trust Assets are legal interests in property held in trust by the United States for Federally recognized Indian Tribes or Indian individuals. Assets can be real property, physical assets, or intangible property rights, such as lands, minerals, hunting and fishing rights, and water rights. The United States has an Indian trust responsibility to protect and maintain rights reserved by or granted to such tribes or individuals by treaties, statutes, and executive orders. These rights are sometimes further interpreted through court decisions and regulations. This trust responsibility requires that all Federal agencies take all actions reasonably necessary to protect trust assets. Reclamation carries out its activities in a manner which protects these assets and avoids adverse impacts when possible. When impacts cannot be avoided, Reclamation would provide appropriate mitigation or compensation. Implementation of the Proposed Action Alternative would have no foreseeable negative impacts on Indian Trust Assets.

3.6 Environmental Justice

Executive Order 12898, established Environmental Justice as a Federal agency priority to ensure that minority and low-income groups are not disproportionately affected by Federal actions. Implementation of the Proposed Action would not disproportionately (unequally) affect any low-income or minority communities within the project area. The reason for this is that the proposed project would not involve major facility construction, population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts. This action would therefore have no adverse human health or environmental effects on minority and low-income populations.

3.7 Cumulative Effects

In addition to project-specific impacts, Reclamation analyzed the potential for significant cumulative impacts to resources affected by the project and by other past, present, and reasonably foreseeable activities within the watershed. According to the Council on Environmental Quality's regulations for implementing NEPA (50 CFR §1508.7), a “cumulative impact” is an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. It focuses on whether the Proposed Action, considered together with any known or reasonably foreseeable actions by Reclamation, other Federal or state agencies, or some other entity combined to cause an effect. There is no defined area for potential cumulative effects.

Based on Reclamation and UDWR resource specialists' review of the Proposed Action Alternative, Reclamation has determined that this action would not have a significant adverse cumulative effect on any resources.

Chapter 4 Environmental Commitments

The following environmental commitments would be implemented as an integral part of the Proposed Action.

1. **Additional Analyses** - If the Proposed Action were to change significantly from that described in the EA, because of additional or new information, additional environmental analysis including cultural and paleontological analyses would be undertaken if necessary.

2. **Utah Pollutant Discharge Elimination System Pesticide General Permit -** This permit would be obtained by the UDWR from the UDEQ before any pesticide discharges were made into Red Fleet Reservoir or Brush Creek. This permit complies with Section 402 of the CWA for actions involving the discharge of pollutants into waters of the state of Utah.

3. **Construction Restrictions** - Treatment and staging activities would be confined to previously disturbed areas, to the extent practicable.

4. **Public Access** - Activity areas would be closed to public access during treatment. Reclamation and the UDWR would coordinate with State Parks personnel, as necessary, to ensure public safety.

5. **Invasive Species** - Appropriate steps would be taken to prevent the spread of, and to otherwise control undesirable plants and animals within areas affected by activities. Equipment used for the project would be inspected for reproductive and vegetative parts, foreign soil, mud or other debris that may cause the spread of weeds, invasive species and other pests. Such material would be removed before moving vehicles and equipment onto any Federal land and water. Upon the completion of work, decontamination would be performed within the work area before the vehicle and/or equipment are removed from Federal project lands and water.

6. **Vegetation** - Design and treatment activities would ensure that vegetation would be protected with no long-term adverse effects. Staging areas would be in previously disturbed areas to the extent possible.

7. **Raptor Guidelines** – UDWR would adhere to the Romin and Muck (2002) Utah, raptor guidelines by placing seasonal and spatial “no construction” buffers, along with daily timing restrictions around all active raptor nests or winter roosting bald eagles. If unknown nests are located during construction, the same guidelines would be implemented.

8. **Water Quality** – The Division of Drinking Water approves the application under the following conditions: UDWR's application be in accordance with the manufacturer's recommendation; UDWR's application occur after the Central Utah Water Conservancy District (CUWCD) ceases use of the Red Fleet Reservoir at the end of the 2015 Summer season; and UDWR receive confirmation from CUWCD that they have ceased use of the Red Fleet Reservoir for the 2015 season, prior to the rotenone application.

Chapter 5 Consultation and Coordination

5.1 Introduction

This chapter details the consultation and coordination between Reclamation, UDWR, and other Federal, state, and local Government agencies, Native American Tribes, and the public during the preparation of this EA. Compliance with NEPA is a Federal responsibility that involves the participation of all of these entities in the planning process. NEPA requires full disclosure about major actions taken by Federal agencies and accompanying alternatives, impacts, and potential mitigation of impacts.

5.2 Public Involvement

The UDWR has coordinated with all cooperators on this Proposed Action including: Utah State Parks, Reclamation, the CUWCD, the Uintah Water Conservancy District, the USFWS, the Upper Colorado Endangered Fish Recovery Program, the BLM, Vernal City, and Uintah County.

Scoping began with a public meeting on January 15, 2013. Over 40 people attended this meeting and provided comments. Over the course of the next few months, UDWR collected additional comments from individuals submitting through the Division front desk. Appendix B is a compilation of all comments received during scoping. The EA team, comprised of representatives from all pertinent agencies, met on January 8, 2015, reviewed the comments received, reviewed the proposal, and analyzed resources that would be impacted by the project.

The UDWR solicited comments via newspaper article on February 19, 2015, a "Utah Reservoir Fisheries" blogpost on January 31, 2015, and multiple public meetings including a presentation to Vernal City on April 1, 2015, and Uintah County on April 7, 2015, on the scope of the Proposed Action. Three comments were received. Comments were considered and pertinent comments were incorporated into the Draft EA.

A public scoping meeting was held on April 8, 2015, at the UDWR office in Vernal, Utah. Sixteen members of the public attended and questions regarding the project were answered and instructions on how to provide comments as detailed in the scoping letter were reviewed.

Reclamation invited interested parties to comment on the Draft EA. A notice was sent to municipalities, organizations, agencies, and the public with interest in the project for a 30 day comment period ending July 22, 2015. One comment was received from the State of Utah. Concerns in this comment were addressed.

Interested parties may view a copy of the Final EA and FONSI on the internet at www.usbr.gov/uc/envdocs/index.html. They may also obtain a CD or hard copy by calling or submitting a written request to Ms. Trina Hedrick, Utah Division of Wildlife Resources, Vernal Field Office. The address is 318 North, Vernal Avenue, Vernal, Utah 84078, phone number 435-781-9453 or e-mail: fishnero@utah.gov. Summary of scoping issues are in Section 1.4.

Chapter 6 Preparers

The following are contributors to the EA

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Appendix A

Angler Survey Responses

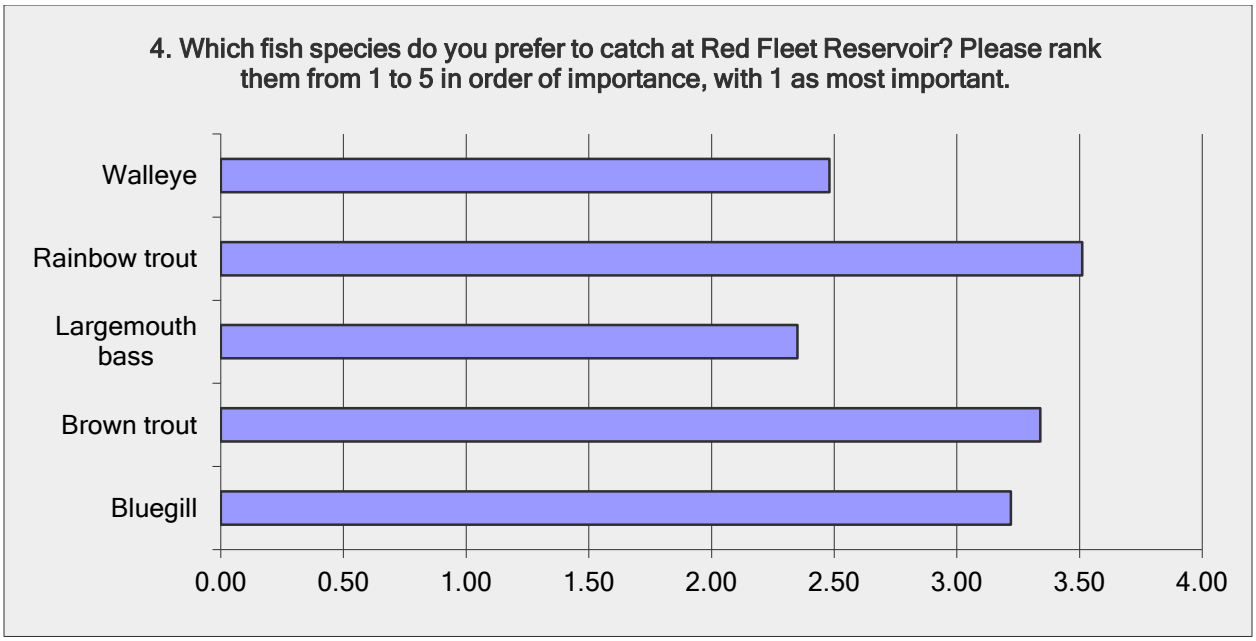
Appendix A
Red Fleet Reservoir Survey Summary
February-March 2014

We had 329 total respondents to the survey.

1. How often do you fish at Red Fleet Reservoir?		
Answer Options	**Response Percent**	**Response Count**
Never	15.2%	50
Less than 5 days per year	47.1%	155
5 to 10 days per year	21.3%	70
More than 10 days per year	16.4%	54
	answered question	329
	skipped question	0

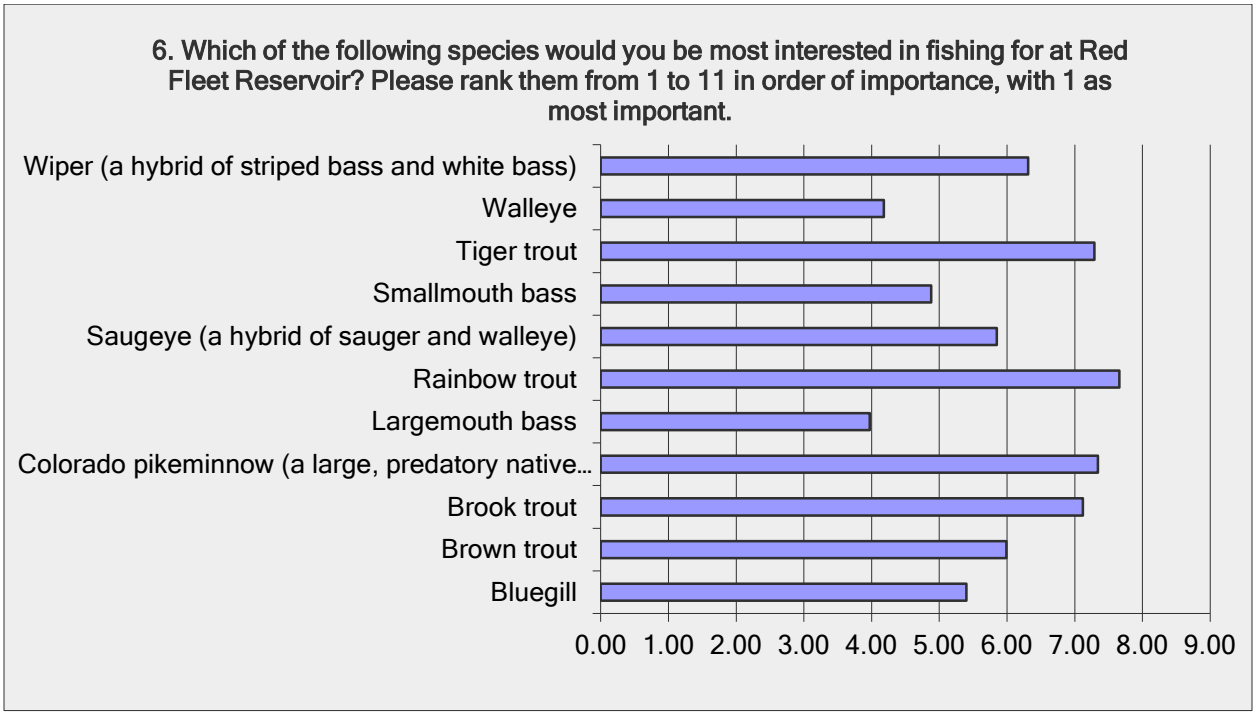
2. How would you rank the quality of the fishery at Red Fleet Reservoir?		
Answer Options	**Response Percent**	**Response Count**
Excellent	10.2%	28
Good	46.7%	128
Fair	36.5%	100
Poor	3.6%	10
No opinion	2.9%	8
	answered question	274
	skipped question	55

3. Which of the following species do you target most often when fishing at Red Fleet Reservoir? (Check one.)		
Answer Options	**Response Percent**	**Response Count**
Bluegill	4.8%	13
Brown trout	2.2%	6
Largemouth bass	33.5%	91
Rainbow trout	10.3%	28
Walleye	35.3%	96
No specific species	14.0%	38
	answered question	272
	skipped question	57



Question #4 is an average rating and shows that largemouth bass received the most #1 selections with walleye a close second. Bluegill received many #3 selections, brown trout #4 and rainbow trout were most often selected as a #5 preference.

Question #5 asked whether the individual would be more likely to fish Red Fleet Reservoir if there were additional species present. The response was split exactly down the middle with 126 respondents answering “yes” and 126 respondents answer “no.”



Highest preference for Question #6 was given in the following order:
Largemouth bass
Walleye
Smallmouth bass
Bluegill
Saugeye
Brown trout
Wiper
Brook trout
Tiger trout
Colorado pikeminnow
Rainbow trout

Species mentioned in #7 include yellow perch (19), tiger muskie (17), black crappie (11), northern pike (7), channel catfish (5), splake (3), shad (3), kokanee (3), lake trout (2), smallmouth bass (2), spotted bass (2), white bass (1), peacock bass (1), true muskie (1), native fish (1), Kamloops rainbows (1), razorback sucker (1), northern perch (1), white crappie (1), cutbow (1), food for black bass (1), the most extensive forage base possible (1), golden trout (1). Eighty-eight total respondents.

8. The Green River, below Red Fleet Reservoir, has many unique native species that are highly vulnerable to non-native predators such as walleye. Which of the following would you support to help protect the river's native fish? (Check all that apply.)

Answer Options	Response Percent	Response Count
Use of sterile sportfish	41.4%	104
Chemical eradication of walleye	12.4%	31
Regulations to encourage fishing for illegally introduced fish	69.7%	175
Regulations to discourage the illegal introduction of fish (e.g., no harvest allowed)	29.5%	74
Other (please specify)		48
answered question		251
skipped question		78

“Other” responses to this one included the following (copied and pasted verbatim except for one use of an ‘*’:
provide an array of sport fish angles are interested in- that will grealy help curb illegal stocking, othewise anglers manage the fishey and you don't.
Saugeyes
let nature take it's course
leave the lake alone
Why do you think walleye are there?
Why is it that walleye are the enemy they co-exist in lakes everywhere?
let nature take its course. I don't like bucket biology, but don't think we should eliminate fish upstream if they are already in the Green river drainage.
load of BS, Quite spending our money on crap!!
Dont Know
just leave the water as is. walleye were put there because people like to fish for them and eat them!!!!!!!!
Walleye are the best fish anglers can harvest

Chemical eradication - everyone loses. If it's the only way, I would support it though.
control escapement of fish out of the reservoir
Better management of water use and natural rearing areas to help influences better reproduction of native fish.
loaded question - are walleye from Red Fleet a threat to these fish?
Outflow structure to prevent escapement
Native predators such as Colorado Pike Minnow
I think it is hogwash and a trick to get water to California.
Grate on outlet chemicals kill all fish
Nothing. They will survive, they have this long.
leave it alone
walleyees have been in green river for decades, listed as native in lake powell, they were in river when lake established, why all this cattering to usfws?
An end to you guys supporting the Fish and Wildlife on the endangered fish program and kicking them off our rivers. Let the sportsmen demand how the fisheries are managed, not the federal government and biologists that support native fish that most of us consider rough fish.
F*ck the recovery program we hate it. It should have no bearing on how our lakes or rivers or managed.
No more killing our lakes and rivers. Favor sportfish over chubs, suckers, and squawfish.
no new regulations.
None of the above. I was required to check one. You won't get rid of the walleye. Accept it and manage them. Stop wasting money on stocker trout.
Largemouth Bass, Smallmouth Bass and Walleye thrive in other Utah lakes. Why waste the time and money to eliminate Walleye and possibly ruin a good warm water fishery?
A screen at the outlet. What would be nice is if we could actually have a selective harvest on natives that aren't endangered, like flannel mouths.
Leave the fish alone
Native better rid the states of their dams to go back native,oh and who is the responsible party for the striper in lake Powell wait until they figure out there in a river!
Leave the walleye alone. It's a gov. BOONDOGGLE
Most anglers don't give a damn about the native trash fish. We want game fish all the way and all efforts to kill gamefish in the rivers or lakes will be met by the general public with vehement opposition.
leave the walleye there they are a hell of a lot better than the carp your trying to protect
must keep all walleye caught
Don't Poison the water, why would killing everything even be an option. Walleye are great to eat. Monitor the regulations and get people out fishing for them.
I would like to see more warm water species stocked and slot limits put in place to manage them.
Ease the BS state regs and encourage walleye tournaments
Screen below Red Fleet to stop fish from traveling down stream.
Control measures to keep unwanted fish from traveling through the red fleet dam.
Make the green a sport fishery not a T&E sanctuary. I know this we be a tough sale.
utah game fisheries should not be burdened with policy that does not in support them
spear- fishing
None. Leave it as it is.

9. Would you be in favor of chemically removing fertile walleye from Red Fleet Reservoir in order to stock sterile walleye? (Sterile fish can be more easily managed to maintain a higher-quality fishery.)

Answer Options	Response Percent	Response Count
Yes	27.5%	69
No	58.2%	146
Don't know	8.0%	20
No opinion	6.4%	16
answered question		251
skipped question		78

We received additional comments from 135 respondents. The comments are as follows (again, copied and pasted verbatim):

-There is currently a war mentality between some anglers and DWR. This really isn't desirable for anyone. DWR needs to determine what anglers want and make significant progress at delivering that. This survey is a great step in the right direction. It is vey important to provide variety in reasonable travel distances- it's too expensive to travel a long ways and burning all that gas makes little environmental sense. When DWR works hard to provide this variety, there will be support to increase greater penalties for illegal stocking- which there needs to be. Catch and kill regs is just a tit-for-tat, so there type of regulation. Push and people push back. It doesn't matter who started it, the shoving just continues. When managing for ANY predatory species, you MUST address forage fish to sustain the predators, whatever species the predators might be (trout, walleye, etc.) Chemically treating Red Fleet is incredibly expensive. If you haven't got a plan that is supported by anglers- they will simply implement their own- AGAIN. Without question, success in the future will occur when anglers and DWR mutually agree upon a management strategy that will provide the fishing the anglers want. DWR needs to be the sole managers; to get thee you need to provide what the customers want. It is difficult to maintain coherence without too much repetition. You should make the comment box bigger so we can read all comments without scrolling. Thank you so much for the survey. You're headed in the right direction.

-I have a comment about the Colorado Pikeminnow on this list in question #6. Isn't it one of "Utah's unique & highly vulnerable species"? If the state is so worried about the Walleyes getting into the Green River then why would it even be a possibility to introduce the Colorado Pikeminnow into waters that contain non-native predatory species? Even though it is a predatory fish, it is still an endangered species and it is not classified as a game fish.

-It's an awesome reservoir in terms of location and scenery. It would be great to provide a fishery that was unique to the area, being it has almost the same species as Steinaker Resevoir, just down the highway. I also think it would benefit the region having a unique suite of fish, like wipers and crappie. Consider providing a suitable forage, such as gizzard shad being they are already in the drainage. Shad abundance could be controlled with naturally recruiting crappie and largemouth bass, and stocked wipers. Rainbow trout and/or brown trout could also be stocked for a two story fishery, depending on zooplankton availability.

-Remove bag/possession limits on illegally stocked fish.

-Quit worring about trout and manage your walleye lakes better!!!!!!!!!!!!!!!

-Please no more trout. I love to eat fish and I would rather catch one walleye to ten trout species!

-Poisoning lakes is futile and wasteful, , what about gill nets.

-Abandon stocking program altogether and concentrate on other state parks

-leave redfleet alone let it do its thing..all you are gona do is by getting rid or tring to eradicate walleyes is make those that break the law do it again somewhere else..its kinda simple if you look at it

-walleyes more... I think we are all happy with the hundreds of thousands of trout that taste like hell. That goes for many other lakes, anglers want walleyes and panfish

-Listen to the anglers here.

-I think you should try and promote a walleye lake somewhere in utah make walleye the fish that people come to fish then monitor the lakes usage and compare to non walleye lakes you might be suprised.

-If possible, I would like to see Red Fleet become like Starvation.

-Have more warm water fish

-I like having another walleye lake in the Uintah basin. I think if the numbers and size increase it would help benifit the local economy.

-Just moved to the state and would like to fish it.

-I don't think leaving the walleye in that lake would be a bad thing. Leave it like it is for another 10 years and see what happens, it could be a good thing, just like it was for Starvation.

-Keep the lake a place that is easy for children to fish. Panfish are needed for this. Walleye simply cause a boom and bust cycle. I prefer consistent fish populations.

-IT WAS UNFORTUNATE THAT WALLEYE WERE UNLAWFULLY INTRODUCED BUT UTAH NEEDS MORE WALLEYE LAKES IN A BAD WAY

-none, leave it alone!!

-leave it alone

-This survey is worthless. Why not propose options for individuals.

-leave it be. there are more than enough lake that are full of trout. utah needs more lakes with other fish besides trout!!!!!!!!!!!!
-I would like to see walleye stay in the lake, if the walleye are not in there I would not fish as often as I do for walleye, I would travel to starvation
-more water
-I love to catch and keep Walleye and have focused on them at Red fleet for 3 straight days from my boat last year. Total caught was Zero Walleye, many trout, and tons of Blue gill. Great trip but I did not see a Walleye problem.
-I've only fished there once and it was a fantastic trip for us. It was before the Walleye were being talked about a number of years back and we have very much wanted to return. What appealed to me the most about that lake that pulled me there in the first place was both the mix of the "little lake powell" look & feel that it has as well as the non-trout species (bluegill and largemouth). When we got there that is what we caught and it was great fun for the whole family. So while I like to also catch walleye (and trout too) I'd not like to see the gills or other species lost out on.
-Red Fleet is really a really nice area and catching brookies from the cold water that flows in would be really neat. I know it's already a slight possibility, but to actually manage for a population of them would be special. Tigers are everywhere, but a sterile hybrid might serve well to control problems. Hopefully the current biomass will support another predator. Chemical treatment should be avoided, if possible. There are already trophy sized game fish in the reservoir and perhaps that should be embraced. I realize the walleye weren't invited, but they're there and supposedly growing well. Maybe the addition of wipers (another open water predator) would provide an opportunity to keep their numbers in check once they take hold. Stop stocking rainbows. They're a dime a dozen and it might open a niche for other species to advance. It's not my lake and I hardly go there, but I'd like a reason to make more trips that way.
-Lower limits. Encourage catch and release.
-get rid of the trout and start a warm water fishery including white bass, walleye, and other fish besides every reservoir in Utah as a trout fishery
-Plant wipers
-Very few stillwater reservoir waters in Utah are actually managed for trophy brown trout. I support this. Introduction of sterile brook tout if it makes biological sense would be awesome!
-let nature manage it man can always mess things up
-I know Colorado has many small lakes about the same size and elevation as red Fleet that are managed as cold and cool water fisheries. They have their ups and downs but for the most part a very productive. My friend in Colorado brags about going out and getting walleye, wiper, trout and largemouth all from one body of water and it is managed that way. And these are not small fish; he gets wiper to over 10lbs, trout in the 5lb range, nice walleye and largemouth bass also. It has a forage base from what I understand; I believe it is gizzard shad. But I know the feds will freak out about that idea. Just hate to see a potentially great fishery be wasted. As a kid I use to catch big rainbows and Largemouth out of Red fleet, but that seemed to go downhill over 15 years ago. I would hate to treat the lake to go back to 10 inch rainbows as the best you can do.
-open up the spawning streams for taking of walleye during the spawn so they are easier to catch. Like it is a Willard Bay.
-Walleye seems to be a very popular sport fish in Red Fleet. If they truely are a threat to native and even TE fishes downstream in the Green then lets remove the problem if in fact that is an issue.
-none at the moment
-I agree with trying to minimize the walleyes and concentrating on the bass and trout fisheries.
-I HEARD THAT THEY WANT TO KILL THE FISHERY BECAUSE OF WALLEYE.. I THINK THAT THIS IS A BAD IDEA BECAUSE IT WOULD TAKE SO LONG FOR THE BASS TO COME BACK. I FISH AT YUBA AND THE STATE MANAGES THIS FISHERY FOR WALLEY AND THE WALLEY STILL HAVE A HARD TIME POPULATING THE LAKE. I BELIEVE IF THEY SET SOME LIMITS OR EVEN MANDATORY NO RELEASE ON THE WALLEY THAT THIS WOULD BE ENOUGH TO KEEP THE POPULATION DOWN.
-Why not nurture the walleye in redfleet, there are already walleye in the green river below that will never get removed, just basically do what starvation did, make a better fishery
-Wold like to see Red Fleet managed as a warm water fishery. If the lake starts to produce bigger and a more abundant large and small mouth bass fishery it will become a place of destination for many bass

anglers through out the state much the same as Sand Hallow has become.

-Warm Water fishery are far and few between trout are rapidly falling back in the taste test

-Add perch

-i believe that the trout are the healthiest they have ever been in and the walleye have helped create a healthy balance in the lake currently. That could change, however if the harvest of walleye is no longer encouraged.

-Whatever action is taken at Redfleet, the public must be supportive or we will wind up in the same boat we are now.

-The addition of a prey species would increase the support capacity of sportfish. There are very few warm water fisheries in Utah (especially northern) and the pressure on these fisheries has increase Dramatically in the last 10 years. PLEASE DO NOT ELIMINATE or manage to cold water fishery. As you and I know - if the DNR created and managed to more warm water fisheries in Utah (especially Northern) it would likely help to lower this illegal introduction of warm water species into fisheries that are not managed for such. As you and I know (I am sure your statistics show) that the supply of warm water fisheries in northern Utah has not kept pace with the demand by anglers for these fisheries/species and unfortunately people then "take matters into their own hands" to try and find a way to increase supply of the species they perfer. An honest look to increase the warm water fisheries in Utah - especially within 90 minutes of SLC, since that is where majority of anglers reside - is a necessary at this point as demand has outstripped supply and is unfortunately leading to "bucket biology" that is increasing the management difficulties for DNR. Thank you for your time and consideration of this input as I feel it is important for anglers and fisheries management alike - as we need to be on the same team and work together to improve the fisheries and sport in the state.

Please quit with the trash fish story being the issue. There are 2 reasons they are struggling. 1 is dams that are not going away in that the water has changed and 2. it is all about water for California and having to have more in the rivers to protect these trash fish.

-More info on chemical eradication.

-I like to fish for sport fish, but I also feel that conservation of native species are important.

-Leave the walleye

-Start planting sterile walleye now and use regulation to catch non sterile walleye also add perch for walleye food. We also have a lot of other lakes for trout fishing lets have something a little more diverse closer to vernal.

-Stop poising fisheries. Waste of tax money

-Stop wasting tax money on regulating the walleye

-manage the current walleye population with the introduction of perch and northern pike

-We have enough trout lakes and reservoirs in the area. People travel a long ways to fish for walleye specifically. We need place regulations allowing them to grow larger and encourage the largemouth bass as well.

-We have lots of fisheries that are good quality for trout It is nice to have a variety of fishing opportunities here in the basin. I would think that the lower green is infected with Walleye because of Lake powell and Starvation. I don't think that it would be cost effective to try and remove them.

-better ramp in low water

-screen the spillway so walleyes cannot escape. problem solved

-Sterile fish suck and don't make for better fisheries. Naturally reproducing sportfish are best because never enough steriles are stocked. Quit threatening to kill our lakes and stop shocking the rivers. Leave the sportfish and let the squawfish and suckers go extinct. I would imagine that bucket biology would go down if shocking and poisoning stopped.

-Stop killing our lakes and rivers. Stop removing sport fish from our rivers in favor of the natives that years ago you guys poisoned. The natives are not sport fish.

-Native fish are very important to me. I can fish for non-natives anywhere. The Colorado River fish are unique and deserve more respect.

-Do not poison. Bass fishing is worth conservation.

-QUESTION # 8 GIVES YOU NO CHOICE BUT TO ACCEPT ONE OF YOUR CHOICES INSTEAD OF BEING ABLE TO ENTER ANOTHER CHOICE. RED FLLET SHOULD BE MANAGED AS A QUALITY BASS AND WALLEYE FISHERY NOT AS A PUT AND TAKE TROUT FISHERY.

-Quit trying to play god. You don't need sterile fish just so you can be in control. Let the walleye thrive.

-T&E fish are very important.
-Although I really like to fish for walleye, I realize they can create problems in a reservoir such as Red Fleet. With Starvation successfully being managed for walleye, I don't see a pressing need to develop another walleye fishery in the basin.
-Leave it as is and let it continue to grow as another great warm water fishery in Utah.
-I love it as is.
-Remove the walleye by fisherman. No limit set on them.
-Rehabilitate brush creek into a more productive fishery.
-This state needs way more naturally sustaining sport fisheries just like red fleet. Don't fix something that is not broken.
-Shad
-Lets not kill the fish that are in RF just to get rid of walleye. Just make a no limit on them and ask people to take them home.
-I would like to see a good bass and walleye fishery
-Leave it alone it's fine. Do not waste time and money fixing a problem we don't have.
-No fish killing by the state.
-Game fish like bass and walleye bring in more money to the state than those "native green river" fish. -
-Think about the fishing public, not some minnow in a river.
-Leave the walleye in the lake they thrive there with out help it cost nothing to replant them unlike the trout
-Leave it alone thank you
-Manage what is there without chemicals. killing the lake is no answer...
-None. Bass are starting to thrive. Utah needs more warm water lakes and not less. Let Americas #1 sport fish the bass grow. I visit vernal often just to fish for your bass. Red fleet is just starting to become a good fishery.
-Quit this endangered fish boondoggle! A fish can't be endangered when they can be produced by the millions. What a Fraudulant use of tax payer money!
-Quit trying to shove sterile gamefish and native trash fish down our throats. Rotenone rarely achieves a 100% kill in fisheries where it is used (see Panguitch, Strawberry, Lake John, Lake Davis, ponds even). The State of Utah needs to take a strong stand and say NO to gamefish removal or stocking restrictions as part of the recovery program for the trash fish. Illegal introductions are the fault of fishery managers who won't manage for the gamefish that WE demand, and due to removal projects in the rivers (though they are relatively ineffective). Continued removals and continued threats to kill fisheries will resort in MORE illegal stocking and more hatred of fishery managers in Colorado and Utah, which are already some of the most loathed in the nation. It's your fault, not anglers.
-Thank you for actually asking the public!!! Please tell Colorado to follow your footsteps!
-See it managed for trophy bass
-More largemouth bass
-Walleye and bass need to stay in redfleet just for the sport of catching them
-Slot limit on bass
-Red Fleet has shown that it provides a natural habitat for walleye and many other game fish that naturally propagate in this environment. This saves the DWR a lot of monies that it would otherwise spend on stocking of desirable species here and elsewhere. Remember that this is taxpayer and sportsmen's (and women's) dollars you are spending, please. It would be good to show good stewardship of this reservoir to encourage activities that would add to the economy of the area (e.g., fishing tournaments, open house for activities at the lake, kids' activities, etc.) This is a beautiful reservoir and has an outstanding park that was developed and is managed well by the State of Utah. It should be used to bring guests in to enjoy its offerings.
-Red Fleet is just starting to produce quality fish. Let the lake run its course. Hold Walleye tournaments on the Reservoir to harvest as many walleye a year as possible. People come from Colorado, wyoming, utah to fish at starvation and Red fleet. It is becoming a great fishery. Leave the water alone.
I'd like to see fertile walleye stocked in red fleet along with fertile smallmouth bass, possibly northern pike, and channel catfish.
-Warm water species fish provide great opportunities for families to enjoy the outdoors and brings in a lot of money for the state and surrounding businesses, so removing a species in a manner that would

affect other game fish would drastically hurt the lake and commerce that it provides

-manage the lake as a warm water fishery, do not poison it.

-I didn't know bass were there. Now I want to fish it.

-Manage as a great fishery, do not kill

-There are enough trout fisheries in this state..We need more warm water fisheries, I come and stay in vernal and fish red fleet for the Bass..Please leave it be..

-Killing the walleye just kills everything else too

-Encourage walleye tournaments instead of regulating by unnecessary fees. You have no problem killing Burbot and supporting those activities, but fail to use the same tool on Red Fleet eyes.

DO NOT KILL THIS LAKE OFF. IT IS STARTING TO BECOME A GREAT FISHERY. JUST PUT BIGGER BAG LIMITS ON THE WALLEYE TO CONTROL THEM

-I love fishing these waters. I don't want to waste good fishing time or the states money on chemically 'killing" all the fish in the reservoir. I believe we should embrace the new species to the water and realize that killing is not the answer to conservation! Maybe finding a way for them to live together is a better answer to the so called problem.

-Quit wasting $1000's worrying about quagga mussels. Larry Dalton has retired so start to use some real science, not scare tactics.

-kill all walleye they are trash fish like carp

-I love walleye!!..but making them sterile, might be a good option.

-are you going to rottnot poison the res. because of the walleyes ??

-Take the limit off the walleye

-There is way to many trout fishery's in Utah. We need more bass fishery's here. And there is way more money in bass fishing

-leave it alone and see how it does.it seems that the more govt help we get ,the worse things become.

-Walleye are already in the Green, they were there before they were in Red Fleet. I DO NOT not support managing Red Fleet to satisfy US Fish and Wildlife. I really enjoy the walleye, large and smallmouth. I almost never fish for trout in Red Fleet. Walleye 1st. Largemouth 2nd, Smallmouth 3rd.

-Manage the lake for variety not just trout

-More spearfishing encouragement. Possibly a tournament that limited its focused on the fish species that is wanted for removal. I.e. the spearfishing tournament at Deer Creek that focuses on carp.

-Keep the Walleye. It's unfortunate that they were illegally introduced, however, now that they are there it's nice to have a place to catch them in the immediate Vernal area.

-Introduction of yellow perch or other small game/bait species to support walleye and big trout.

-Spotted bass

-The fishery should be managed for anglers, not for what a few DWR employees want. Perhaps the DWR should look at "why" fish are being moved by anglers illegally, instead of fixing the problem after the fact. Not everyone wants to fish for rainbows. If you want accurate creel surveys, stop asking anglers using green powerbait what they like to catch. Seems pretty straightforward.

-24 hour spearfishing for illegal plants.

-Just for your information if you didnt know there is already smallmouth bass in red fleet. I would not like to see the lake chemically treated, because it would take years to get the lake to be half the fishery it already is.

-Don't kill the fish in red fleet. Kill the fish in utah lake

-Not so much the fish but add a couple of docks to fish from other than what's already there

-Walleye and bass are what makes Red Fleet a lake worth traveling to. I support the idea of sterile walleye, sauger, or wipers as long as they are stocked enough to provide quick and relatively easy fishing. Thanks for providing us with opportunity to voice our opinion.

-I am tired of all of the fisheries in Northeast Utah being so focused on the trout species. I would like to see a fishery slightly more like Lake Powell... Sans-trout.

-I hate walleye. They are perfect for the lakes environment but I'd rather see a T&E species in their stead. I'm a fisheries major at USU and would just love to catch pikes.

-Lake trout also please

-I would much rather see "no limits" than chemical eradication

-Removing walleye will not have much impact the native species in the Green River. Walleye are

already in Lake Powell and they can simply swim upstream.

-Please leave the walleye alone people enjoy catching them

-Improved access areas. There is only one good access being the boat ramp. East side has two areas that could be improved and be closer to the shoreline. Release public data on website showing walleye capture surveys.

-Manage Red Fleet for trophy Walleye

-continue as a multi level fishery

-Get rid of walleye that were illegally introduced to set a presedence on illegal stocking!

-Dont poison all the fish in there just raise the limit on walleye etc and let the anglers do the job.

-wait til a crash occurs to fix walleye problem

Sixty-eight respondents said they would like to serve on a committee to help update the fishery management for the reservoir. We narrowed these respondents down by species preferences, frequency with which they fish Red Fleet Reservoir, and have a resulting 10-member Management Planning Team that began meeting in September 2014. The Management Plan for the reservoir is scheduled to be presented to the Division's NER Resource Advisory Committee at the May meeting. We received 115 email addresses and will keep these folks in the loop regardless of whether they wish to serve on the committee or not.

Appendix B

Scoping Responses

Appendix B
Red Fleet Reservoir Public Scoping Meeting
1/16/2013

Comments written on large post-its during the meeting:

Future fishery? Plans for Red Fleet?
Wait until bass population crashes; then decide what to stock.
Leave it alone (x3)
Money concerns re: a rotenone treatment
Won't people just put walleye back after a treatment?
I support a walleye fishery. That's why I fish Red Fleet.
More and more people are excited about learning how to fish for walleye.
Manage it for a walleye fishery and annually stock forage.
Concerns about chemical/contamination from SIMPLOT.
Provide the best variety possible, then let people know (advertise).
Give it time, see how it fishes, then make a management decision.
Bass angler says doesn't want us to treat – period.
If we don't pus bass back in, someone will.
One angler likes diversity.
Drinking water concerns (water treatment plant)
Treatment timing (water treatment plant)
Have not got enough walleye fisheries
More variety: tiger musky, wipers, keep LMB, likes meeting format
Stock gizzard shad for forage.
Stock sterile walleye.
LM bass back in.
Likes diversity to fish, but tends to prefer warmwater fishes.
Likes the idea of a warm water fishery close to Vernal.
We have many trout fisheries in the area.
Introduce some forage fish so walleye can survive. Crappie or perch.
Don't kill off waste of a good opportunity.
Potential for increased tourism.
Don't waste taxpayer dollars.
Against treatment – likes walleye. From Colorado bass club member.

Comments submitted via postcards:

Ron Reynolds states: "Since there in there I like the walleye in a lake in this area. We have plenty of trout waters. I also understand that they could cause the fishing to collapse. However it seems to me that a watch and wait approach would be better and poison after a collapse than before. Also if it is to keep the walleye out of the Green River, they are already there. My son caught on by the bridge going to the powerplant last spring. Thanks.

Keep walleye, introduce perch. Let lake be like Starvation.

I like trout. I like them in Red Fleet. Thad Beal

We need to keep the walleye in Red Fleet, it is close to town where senior citizens can go for a evening fishing. We like to eat the walleye and some other places are hard for us to get into. Thanks, C. Holmes

I think they need to keep walleye in the lake. It's close to Vernal and we enjoy fishing for them and eating them. Thank you, Kenneth Holmes

Like the diversity walleye offer but only if quality fish can be maintained (13-18"+). Would love to see other warm water species legally introduced (crappie, perch, musky, wiper, etc.) here or in other area waters. Would also like to see forage species introduced (shad, others) if possible. I really enjoy all the great cold and warmwater fisheries here in Basin. Thanks DWR!

Fished Red Fleet several times this year because of the addition of walleye to the fish population. On numerous occasions caught walleye, large and smallmouth bass, bluegill and trout in the same location. All seemed to be doing quite well. Would suggest you do your thing with trout and leave the rest along. Tom Schulz.

Jamie Sperger made two comments – one at the meeting and one afterwards via postcard. Really enjoy the walleye and largemouth. Have no use for and will not fish a trout (rainbow) only fishery. If reservoir is doomed to crash, then the walleyes must go. Largemouth should be restocked as they've done well there for many years. Use variety of forage types. Don't just use rainbows that provide no variety. Perhaps establish a quality pan fishery—not just stunted bluegill. Bonus (manageable) fish like tiger musky might work – don't know. Thanks.

After the meeting, Jamie brought in another card… Plan A – Keep the walleyes, I enjoy fishing for them. However, if the reservoir is certain to crash, then Plan B. Two tier fishery for trout and largemouth bass with suitable forage. Use some trout that will be interesting (browns, cutts, tigers, etc.), not just more of the same old average sized rainbows. Boring! Would love a crappie fishery in the Basin if the forage would support it. I enjoy variety and challenge but not at expense of quality.

I feel like it is important to remove species that harm the natural ecosystem so if the data supports this rotenone treatment, I support it. Dan Roper (sp?)

Thank for the meeting in Vernal. Everyone I talked to was very polite and very pleasant to talk to. If at all possible manage Red Fleet as a warm water fishery. Have you ever considered putting walleye in Flaming Gorge. We have enough trout fisherys. If you do treat Red Fleet. I have 19' boat. I would like to help. Shiflettray@stratanet.com

1. Let's take the wait and see approach. 2. Collect more data; walleye are (to me) hit & miss.

Why kill of the walleye? Look at the overall cost when the lake is down look at the cost of planting larger trout as 10" Starvation Lake. Don't plant hundreds of small trout, that's what you

have done before get in the real world. What would a young fisherman rather have 8 small trout or 1 large trout???? I am 71 years of age, and have watched you people ruin our deer herds, now the elk hunts pheasant hunts and now the fisheries see what the sportsman want? You can arrive at any conclusion on your own studies. You people put tiger trout, muskey and splake???

Bart Murray stopped by on Feb 7th and I talked with him extensively. He enjoys bass fishing there and is happy to see such big bass in there right now. He also fishes brown trout and hates rainbows. I will add his contact info to the sheet as I did get his email address.

I also received the following comments on postcards on Feb 7th – one via mail, the other turned in to the front counter:

1. Leave it alone
2. We have trout everywhere walleye not so much
3. You can't get rid of them anyways- chem.. are only semi successful.

And: 1-more studies needed; leave it as is

On 2/8, I received two more postcards:

1. I want trout. I don't want walleye. Thank you. Ben Beal of Roosevelt, UT 435-722-2944
2. Trout rule. No walleye. 435-823-8029. Gabe Beal

CUWCD and Mike Weyland submitted separate comments.

There was also an editorial in the paper that last week of comments – week of Feb 11th. That is included in the file and basically asks us to wait until the fishery crashes.

Unrelated comments:

Need to change the season on spearfishing so they can't spear a bass on a spawning bed. Caught red eyed bass?

We had another angler drop by after the Feb 15th end date for comments. He says (in a nutshell as summarized by Ron) that everyone is a walleye fisherman that he has talked to. That going an hour to fish for walleye is too far. That he is catching 12" long fish mainly (and up to 2 pounds). These are not big walleye, but are edible according to the mercury advisory.

Appendix C

Comment Letter and Response

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Office of the Governor
PUBLIC LANDS POLICY COORDINATING OFFICE

KATHLEEN CLARKE
Director

July 20, 2015

Submitted via email: fishnero@utah.gov

Utah Division of Wildlife Resources
Vernal Field Office
Attention: Trina Hedrick
318 North Vernal Avenue
Vernal, UT 84078

Subject: Red Fleet Reservoir Rotenone Treatment
RDCC Project No. 48962

Dear Ms. Hedrick:

The Public Lands Policy Coordinating Office received the following comments from Utah Division of Parks and Recreation (DPR) concerning the Red Fleet Reservoir Rotenone Treatment in Uintah County.

The treatment plan proposes a possible three week closure of Red Fleet State Park and the reservoir as a public safety measure. Closing the park would substantially affect DPR's income. DPR proposes another option rather than park closure such as, park signage as well as public notices in the local paper and on the radio. Signage could be posted at all areas of the park warning people not to fish or swim. The park has a confirmed tour group reservation for 21 camp units in October. This tour group reserves camp units every October and, a park closure would compromise this year's reservation and possibly future business. If the park is closed in October, DPR would lose approximately $2,000.00, which is significant revenue for the park during DPR's shoulder season.

Missing from the treatment plan, DPR recommends removing all of the dead fish from the water and shoreline in all areas of the main park. Dead and decaying fish repel park visitors.

The fishing community is financially important to DPR making up approximately 50 percent of Red Fleet State Park's visitors. DPR supports restocking the fishery as quickly as

possible and encourages public relations promoting fishing for rainbow trout and walleye. Without fishing, the park could lose as much as $35,000.00 annually. DPR urges the Division of Wildlife to stock fish every year until the fishery recovers.

Thank you for the opportunity to provide comment on the proposed treating of the Red Fleet Reservoir. Please direct any other written questions regarding this correspondence to the Public Lands Policy Coordinating Office at the address below, or call to discuss any questions or concerns.

Sincerely,

Kathleen Clarke
Director

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Wildlife Resources
GREGORY SHEEHAN
Division Director

August 6, 2015

Kathleen Clarke, Director
Public Lands Policy Coordinating Office
5110 State Office Building
PO Box 141107
Salt Lake City, UT 84114-1107

Dear Ms. Clarke:

Thank you for your comments on the Red Fleet Reservoir rotenone treatment project. I wanted to take some time to respond directly to each of your concerns, and to explain how we now plan to proceed.

The Division of Wildlife Resources agrees that a three-week closure of the park could represent an undesired impact to the State Park's winter revenue. As a sister agency and a partner to the Division of Parks and Recreation, we do not want that to happen. We can ensure that the State Park does not need to be closed to camping, hiking, biking, or other non-aquatic recreation during this time period. Only aquatically oriented recreation needs to be temporarily limited. I will discuss this issue with the park manager and determine the best way to allow people into the park, while keeping them out of the water. This will likely require signage and increased enforcement presence, but can be worked out.

Once the water level goes up, dead and decaying fish usually disappear from sight. However, with these unusual water years, water levels may fluctuate in ways we do not expect. Because of this, my staff and I have a full day scheduled for fish removal following the rotenone treatment. We will remove as many fish as possible that day, focusing on larger fish and the more accessible locations first. It is not likely that we will be able to remove all dead fish, but we will remove as many as we can.

Finally, our reputation as a fisheries staff here in the region is dependent upon stocking the fish described in the management plan back into Red Fleet Reservoir to support building a *great* fishery. We understand that the State Park has a lot at stake in this project, too. We are confident that within a few years, we will have a "destination fishery" that will bring more people in to Red Fleet than in any prior year. Angler interest for rainbow trout is declining, but interest in variety, quality, and both warm- and cool-water species is increasing. We believe the short-term effects on fishing will prove worthwhile in the long run, as a good fishery is replaced with something much more highly prized by anglers.

We thank you for your support in this project, and for your interest in helping mitigate the effects.

Sincerely,

Trina Hedrick, Northeastern Region Aquatics Manager

cc: Peter Crookston, Bureau of Reclamation
Bill James, Utah Division of Wildlife Resources

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UTAH DNR WILDLIFE RESOURCES