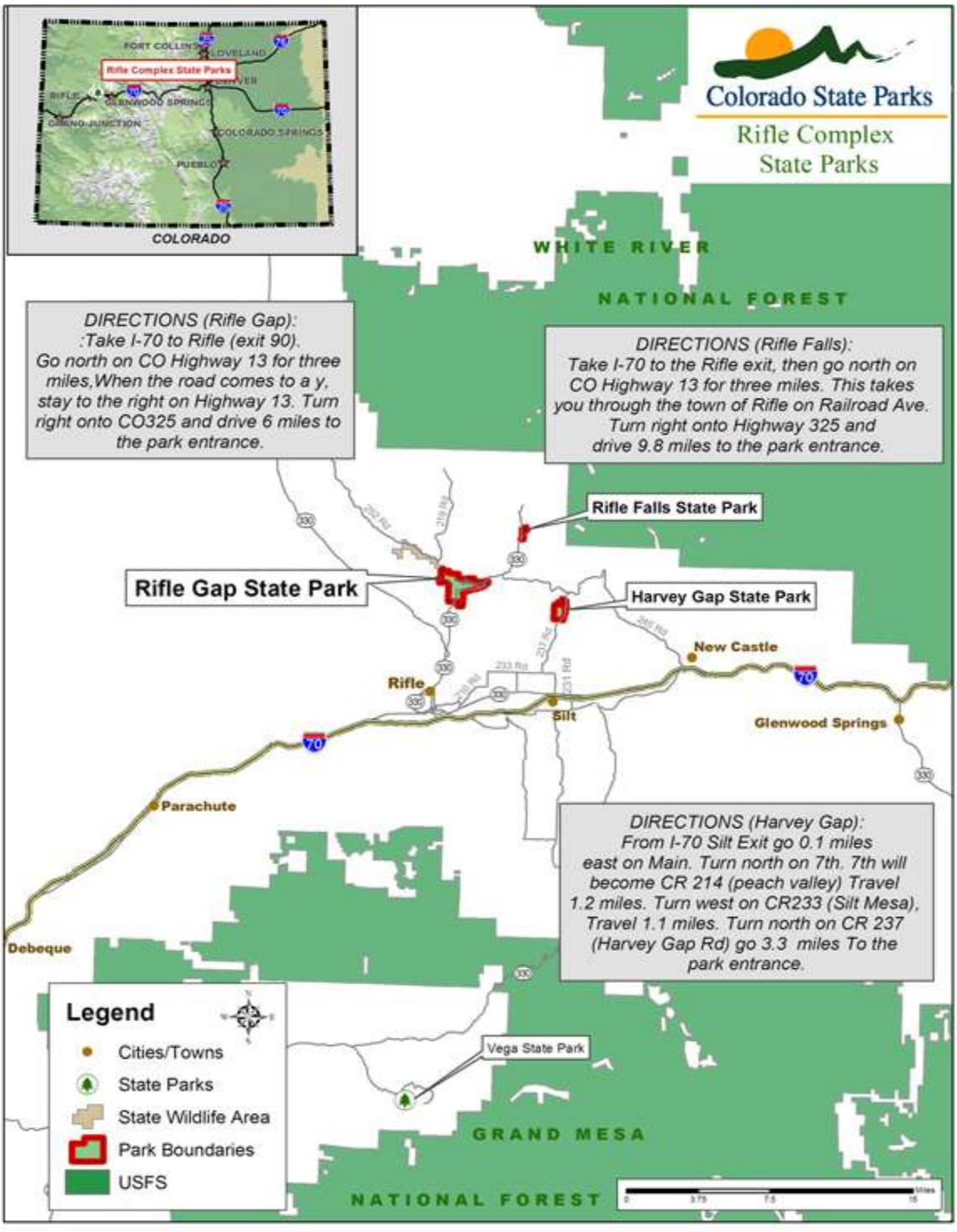
RECLAMATION
Managing Water in the West

Final Environmental Assessment
Rifle Creek Fish Screen Project

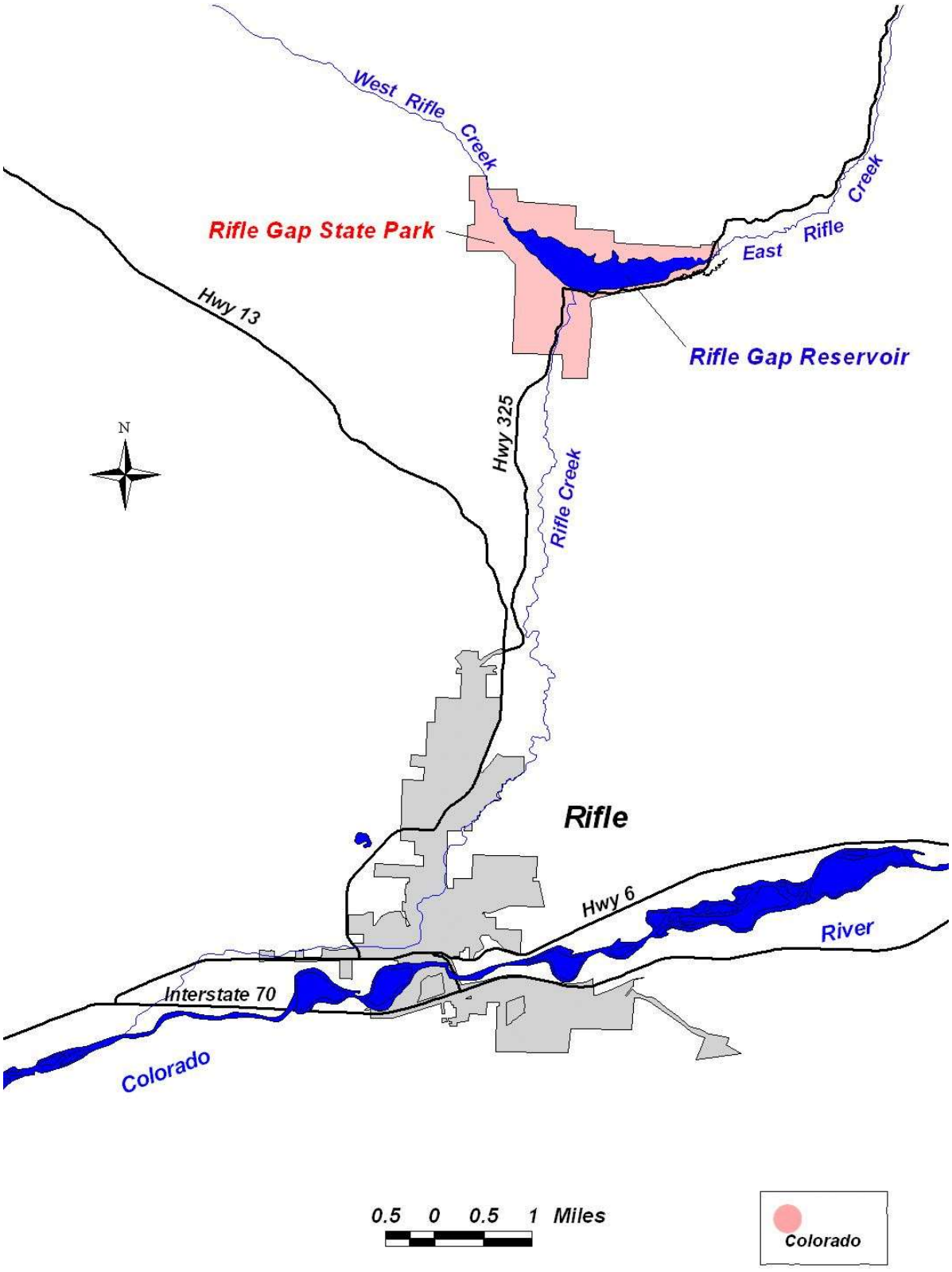
Western Colorado Area Office
Upper Colorado Region

U.S. Department of the Interior
Bureau of Reclamation

July 2011



Project Area Colorado State Parks Map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CHAPTER 1-- INTRODUCTION

PROPOSED ACTION

The Colorado Division of Wildlife (CDOW) is proposing to construct and operate a fish screen in Rifle Creek to prevent or minimize non-native fish from Rifle Gap Reservoir from entering the downstream Colorado River via Rifle Creek. The Bureau of Reclamation (Reclamation) will issue a License Agreement to allow the fish screen to be constructed on lands under the jurisdiction of Reclamation. Rifle Creek and Rifle Gap Reservoir are located in Garfield County, westcentral Colorado.[1]

NEED FOR AND PURPOSE OF ACTION

An action to prevent or minimize non-native fish from moving from Rifle Gap Reservoir to endangered fish habitat in the Colorado River is needed:

- to assist in recovery of the endangered fish in the Colorado River and
- to potentially facilitate management and stocking of the existing non-native recreational fishery in Rifle Gap Reservoir.

This final environmental assessment (EA) evaluates the effects on the human environment from constructing and operating the fish screen. Reclamation prepared this EA in cooperation with other federal and state agencies to comply with the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and related U.S. Department of the Interior policies and regulations. Based on this analysis, Reclamation has concluded the proposed action will have no significant impact on the human environment; and preparation of an Environmental Impact Statement will not be required before the action could be implemented.

[1] The Colorado Division of Wildlife and Colorado State Parks are now consolidating into the Colorado Division of Parks and Wildlife; references to the separate agencies have been retained in this final EA.

BACKGROUND INFORMATION

Rifle Gap Reservoir—Rifle Gap is the primary storage reservoir of the Silt Irrigation Project and is located 5 miles north of Rifle, Colorado on Rifle Creek. Rifle Creek flows for approximately eight miles downstream from the reservoir to the Colorado River. The dam and reservoir were completed in 1967 by Reclamation as a participating project authorized under the Colorado River Storage Project. Rifle Gap has an active storage capacity of 12,168 acre-feet and a surface area of 359 acres. The primary purpose of the reservoir is to store water for the irrigation of approximately 7,000 acres in the Silt and Rifle areas. Other uses include providing for fish and wildlife and recreation.

The dam and reservoir are operated by the Silt Water Conservancy District and recreational facilities at the reservoir are operated by Colorado State Parks. Fish and wildlife resources at the reservoir are managed by the CDOW.

Water is released from Rifle Gap Dam to either Rifle Creek or the Davie Ditch through outlet works consisting of several components. There is an intake structure in the reservoir which is followed by a pressurized pipe extending to the gate chamber; from the gate chamber one non-pressurized tunnel and one pressurized pipe extend to the downstream face of the dam. A non-pressurized tunnel extends from the gate chamber to the stilling basin. The other pressurized pipe extends from the gate chamber to the Davie Ditch Control House. A high pressure gate, controlling releases to the Davie Ditch Pipeline, is located in the control house. Discharges from the Rifle Creek outlet works enter the stilling basin that also serves the spillway. The Rifle Creek outlet works has a discharge capacity of 326 cubic feet per second (cfs).

Water can also flow from the reservoir over the uncontrolled spillway located on the left abutment. The spillway is designed to discharge up to 4,645 cfs. The spillway has a 283-foot long concrete chute and stilling basin.

Fish can enter Rifle Creek from the reservoir either via the outlet works or the spillway.

Upper Colorado River Recovery Program- In 1984, the Department of the Interior, Colorado, Wyoming, Utah, water users, and environmental groups formed a coordinating committee to discuss a process to recover the endangered fishes while new and existing water development proceeds in the Upper Colorado River Basin in compliance with Federal and State law and interstate compacts. The Secretary of the Interior; Governors of Wyoming, Colorado, and Utah; and the Administrator of the Western Area Power Administration (WAPA) signed a Cooperative Agreement in 1988 to implement the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin. Current participants in the Recovery Program include: the Fish and Wildlife Service, Reclamation, National Park Service, Western Area Power Administration, Colorado, Utah, Wyoming, Western Resource Advocates,

The Nature Conservancy, Colorado Water Congress, Utah Water Users Association, Wyoming Water Development Association, and the Colorado River Energy Distributors Association.

The goal of the Recovery Program is to recover the listed species while providing for new and existing water development in the Upper Colorado River Basin. Listed species are the humpback chub (*Gila cypha*), bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*). The program addresses several aspects of fish recovery:

- Instream flow identification and protection
- Habitat restoration
- Propagation and genetics management
- Program management
- Research and monitoring
- Nonnative fish management
- Information, education and public involvement

Many studies have been completed in the Colorado River Basin on endangered Colorado River fish and on the factors that led to the decline and listing of these species under the ESA. These studies have increased the understanding of actions needed to recover the fish (establish self-sustaining populations) throughout the Upper Colorado River Basin. Critical habitat was designated on March 21, 1994 (U.S. Fish and Wildlife Service 1994) and includes the Colorado River at and downstream from its confluence with Rifle Creek.

Colorado pikeminnow and razorback sucker are extremely rare throughout the Upper Colorado River Basins. One major factor that has led to the decline of native and endangered fish is competition with non-native fish. Non-native fish may be predators on young endangered fish or they may compete for the food supplies for native fish. In 2004, Recovery Program partners adopted a Nonnative Fish Management policy which formalizes an agreement to manage non-native fishes (Recovery Program 2009).

Rifle Gap Reservoir Lake Management Plan- The CDOW is preparing a lake management plan for Rifle Gap Reservoir to address changes in the reservoir fishery over the years, changes in the preferences of anglers, future management plans, and endangered fish issues. The plan will address stocking non-native warm water fish in addition to the continued stocking of trout. Because the proposed fish screen will minimize passage down Rifle Creek of fish that might escape from Rifle Gap Reservoir, the screen is considered an important element of the lake management plan. The stocking plans in the lake management plan will require approval of the Fish and Wildlife Service and the states of Colorado, Wyoming, and Utah before warm water non-native fish could be stocked in the reservoir (Recovery Program 2009). This review and approval process is designed to prevent or reduce numbers of non-native fish species becoming established in critical habitat for endangered fish.

SCOPING and DRAFT EA REVIEW

Initial scoping for the draft EA included discussions with the CDOW, Colorado State Parks, the Silt Water Conservancy District, the Fish and Wildlife Service, and members of the public. Also, in August 2010 the CDOW conducted a public meeting on Rifle Gap fisheries that provided information on anglers' preferences for the fishery. The following issues were identified to consider in preparing the EA and selecting the preferred alternative.

Water Rights—Rifle Creek carries irrigation water released/bypassed from Rifle Gap Reservoir. Operation of the fish screen should not interfere with water supplies, canal operations or affect the ability to divert water for irrigation.

Water Quality—During construction of the fish barrier, water quality downstream could be temporarily affected by increased levels of silt.

Protecting Existing Structures—The fish screen should not interfere with instrumentation downstream from Rifle Gap Dam, including flow gaging equipment, nor should it be located within the fenced and restricted area downstream from the dam.

Access—Construction and operational access should not cause unreasonable interference or cause safety problems with State Highway traffic.

Recreation—Protection and improvement of a warm/cool water fishery in Rifle Gap Reservoir is considered important to anglers.

Rifle Creek—Rifle Creek supports a sport fishery and recreation use that should be protected.

Rifle Gap Reservoir—Because of endangered fish concerns, stocking of some species of sport fish is not allowed at the reservoir, thus affecting the options available for managing Rifle Gap fishing.

Effects on Endangered Fishes—The Endangered Species Act (ESA) encourages Federal agencies to take actions to assist in the recovery of endangered species. Also, actions that affect (either adverse or beneficial) federally threatened or endangered species require consultation with the Fish and Wildlife Service under Section 7 of the ESA. The Service concludes consultation with written concurrence with the Biological Assessment or issuance of a Biological Opinion. Harm, injury or death to a listed species or their designated critical habitat as a result of the Proposed Action would constitute a "takings" and requires an "incidental take statement" to comply with the ESA.

Wildlife—Sections of Rifle Creek contain valuable riparian habitat that should be protected.

Historic Resource Preservation—Federal agencies are responsible for ensuring that they take into account the effects of their actions on significant cultural resources and for complying with the National Historic Preservation Act, 36 CFR Part 800, and other historic preservation requirements.

The draft EA was provided to agencies and the public in March 2011 for review. Comments received are discussed in Chapter 4. In general comments supported construction of the fish screen with the anticipation that this would provide the CDOW more flexibility in managing the Rifle Gap Reservoir fishery. In addition, design of the fish screen was refined to improve the operation of the screen and to protect upstream facilities from hydrologic effects of the screen.

CHAPTER 2 -- PROPOSED ACTION AND ALTERNATIVES

Alternatives evaluated in this EA include the No Action and three variations of Proposed Action Alternatives.

NO ACTION ALTERNATIVE

Under this alternative, Reclamation would not issue a License Agreement to the CDOW to construct and operate a fish screen on Rifle Creek within lands administered by Reclamation. It is possible, but unlikely, that the screen could be constructed on Rifle Creek where it crosses private lands further downstream.

PROPOSED ACTION

Under the Proposed Action, Reclamation will execute a License Agreement to the CDOW to construct and operate a fish screen at one of three locations (upstream location, middle location, or downstream location) on Rifle Creek as shown in the Figure 1.

Fish Screen Design Final design of the fish screen has not been completed; however, general details are available. The design would include a concrete structure placed in the streambed and containing two "coanda-effect" screens. The overall structure would be approximately 60-feet long by 23-feet wide and would contain two 50-feet long by 5-foot wide screens designed to screen a total of 200 cfs. The two screens would be installed parallel to each other to help minimize the overall structure size. The screened fish and debris would be swept to the sides and collected in concrete toe-troughs. The screen will be designed to filter fish out of the creek at flows below 200 cfs.

The creek channel for approximately 100 feet downstream and 200 feet upstream would be shaped to more efficiently carry the flow. The improved channel would be stabilized with a fabric covered by local materials.

Figure 1 Alternative Location of Fish Screens on Rifle Creek

Figures 2 and 3 provide a general picture of how a coanda-effect screen operates, and appendix A contains a detailed drawing of the Rifle Creek structure.

The screens are installed on the downstream faces of an overflow weir. Flow passes over the crest of the weir, across a solid acceleration plate, and then across the screen panel, which is constructed of wedge-wire with the wires oriented horizontally, perpendicular to the flow across the screen. The crest of the weir and acceleration plate can be either an ogee-shaped profile or a simple circular arc; the primary objective is to provide a smooth acceleration of the flow as it drops over the crest, and to deliver the flow tangent to the screen surface at its upstream edge. Flow passing through the screen is collected in a conveyance channel below the screen and then returned to the creek, while overflow, debris, and fish pass off the lower end of the screen and are collected in a concrete trough.

The screen area would be fenced and public access would not be permitted. Fencing would consist of 6-foot chain link fencing material surrounding the structure.

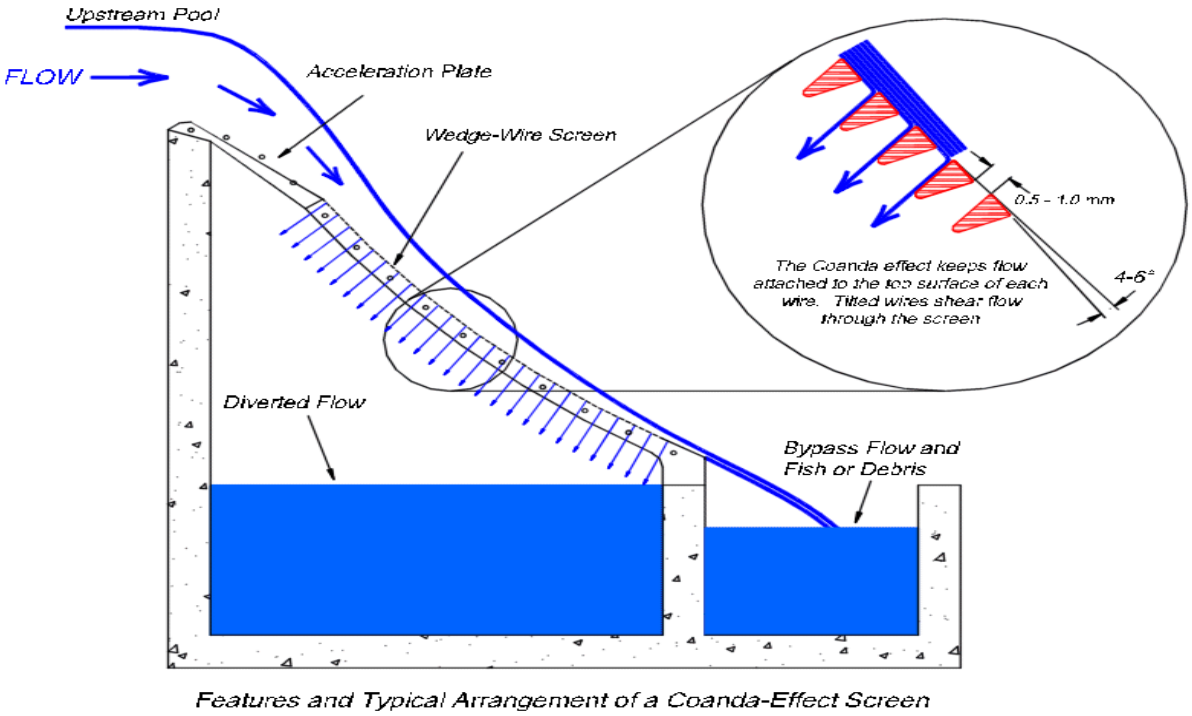


Figure 2 Coanda-Effect Screen

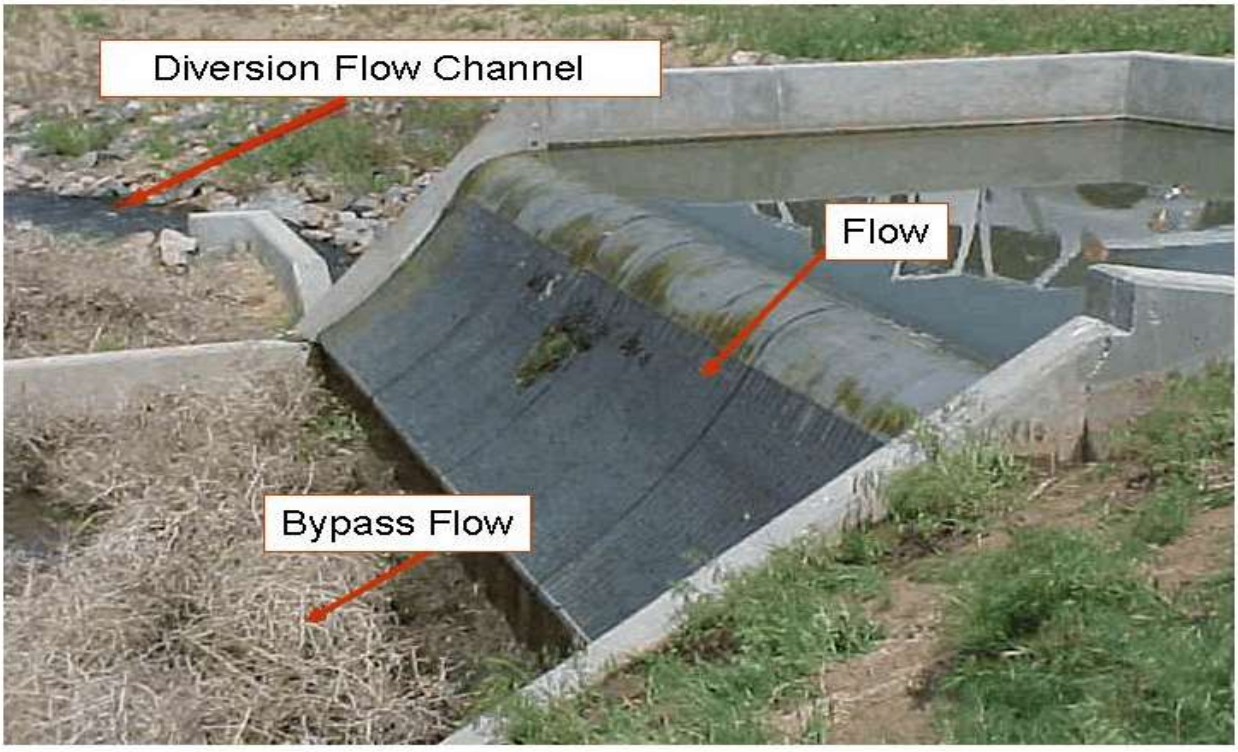


Figure 3 Coanda-Effect Screen in Operation **CDOW Photo**

Fish Screen Construction The screen would be constructed by the CDOW at an approximate cost of $300,000. The CDOW would be responsible for compliance with the Clean Water Act, including obtaining permits under Section 404 and 402 of the Act. Construction would most likely occur in the fall at the end of the irrigation season or in the early spring prior to the irrigation season. The construction site would be cleared of vegetation and dewatered. Following construction, the site would be cleaned, graded, and reseeded.

Provisions would be needed to maintain streamflow in Rifle Creek during construction. This would likely be accomplished by building a temporary buried bypass pipe around the construction site. The bypass would likely be approximately 300 feet in length and consist of a pipe of sufficient diameter to carry approximately 10 cfs. A temporary cofferdam would direct flow into the pipeline.

Figures 4-6 show the 3 locations considered for the fish screen.

Upstream site: The existing dam access road would provide construction and maintenance access to the upstream site. The site would be fenced. The facility would be designed and located so as not to interfere with upstream streamflow monitoring equipment or Rifle Gap Dam facilities. A minimum streamflow would be maintained during construction by use of a bypass pipe. The exact upstream screen location may be adjusted during final design to address backwater elevation increases which could affect measurement instruments near the dam.

Middle site: Access to the site would be through the Cristo Day Use Area. The site would be fenced and downstream minimum flows would be maintained by construction of a pipeline around the worksite.

Downstream site: A new access and turnoff would be constructed from State Highway 325 similar to the existing access to the Cristo day use site. The site would be fenced and downstream minimum flows would be maintained by construction of a bypass pipeline around the worksite.

Figure 4 Initial Upstream Location of Fish Screen; exact location may be moved downstream during final design.

Figure 5 Middle Location of Fish Screen

Figure 6 Downstream Location of Fish Screen

Fish Screen Operation The screen would be operated and maintained under an agreement between the CDOW and Colorado State Parks. Operations would involve periodic inspections, cleaning of screen, and disposal of trash. It is estimated that the screen area would need to be cleaned 2 to 3 times per week.

Monitoring Prior to construction, the CDOW would inventory Rifle Creek upstream and downstream from the screen to determine relative abundance of fish and species present. Following construction, CDOW would annually monitor the fishery in the creek downstream to help assess the effectiveness of the screen (CDOW 2010c). In addition, the screen operations would be reviewed annually and any problems or revisions documented. Annual monitoring should be conducted for 5 years.

OTHER ALTERNATIVES CONSIDERED

Screening the reservoir intake tower and the reservoir spillway were briefly considered but would have significant operation problems and a higher cost of construction.

SUMMARY

Table 1 Summary of Alternatives

	No Action Alternative	Upper Alternative*	Middle Alternative	Downstream Alternative
New Access from State Highway 325 needed	No	No	No	Yes
Wetlands affected (acres) Temporary Permanent	 No effect No effect	 0.28 0.15	 0.6 0.3	 0.6 0.3
Road construction (feet)	None	20	40	50
Length of Public stream fishing on Rifle Creek affected	0	1 mile	700 feet	200 feet
Reservoir Fishery/Recreation Benefited through more stocking options	No	Potentially Yes	Potentially Yes	Potentially Yes
Water Rights/streamflow affected	No	No	No	No
Endangered Fish	Potentially adversely affected	Potentially benefitted	Potentially benefitted	Potentially benefitted
Water Supply affected	No	No	No	No
Cultural Resources affected	No	No	No	No

*Upstream location may be adjusted during final design resulting in minor changes to information in Table 1.

CHAPTER 3 -- AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter discusses resources that may be affected by actions taken to construct and operate a fish screen in Rifle Creek. During preparation of this EA, information on issues and concerns was received from resource agencies, affected water users, recreation interests, and other interested parties.

For each resource the potentially affected area and/or interests are identified, existing conditions described, and impacts predicted under the No Action and Proposed Action Alternatives. This chapter is concluded with a summary comparison of the alternatives and a list of mitigation measures.

SILT PROJECT OPERATIONS

Existing Conditions: Rifle Gap Reservoir has provided irrigation water since its completion in 1967. The reservoir is filled by snowmelt runoff entering from East Rifle Creek and West Rifle Creek. The goal is to fill the reservoir annually in order to provide irrigation water and to carry water over through the winter to protect against drought.

Impacts:

No Action: Under the No Action Alternative, there will not be changes to operations or irrigation benefits of the Silt Project.

Proposed Action, All Locations: The fish screen will be designed and located so that it would not interfere with operation of the Silt Project. No changes in operation will be required and facilities downstream from the dam, such as the creek gaging station, will not be affected. The Silt Water Conservancy District staff will not be required to fund, operate, or maintain the fish screen.

WATER RESOURCES

Existing Conditions: The reservoir is operated to store spring runoff while honoring senior water rights. In general, the reservoir fills in the spring and is lowered as irrigation releases are made through the summer. During drought periods, the reservoir may not fill. The following figure shows reservoir elevations between 1989 and 2009. The drought period of 2002+ is apparent in the figure.

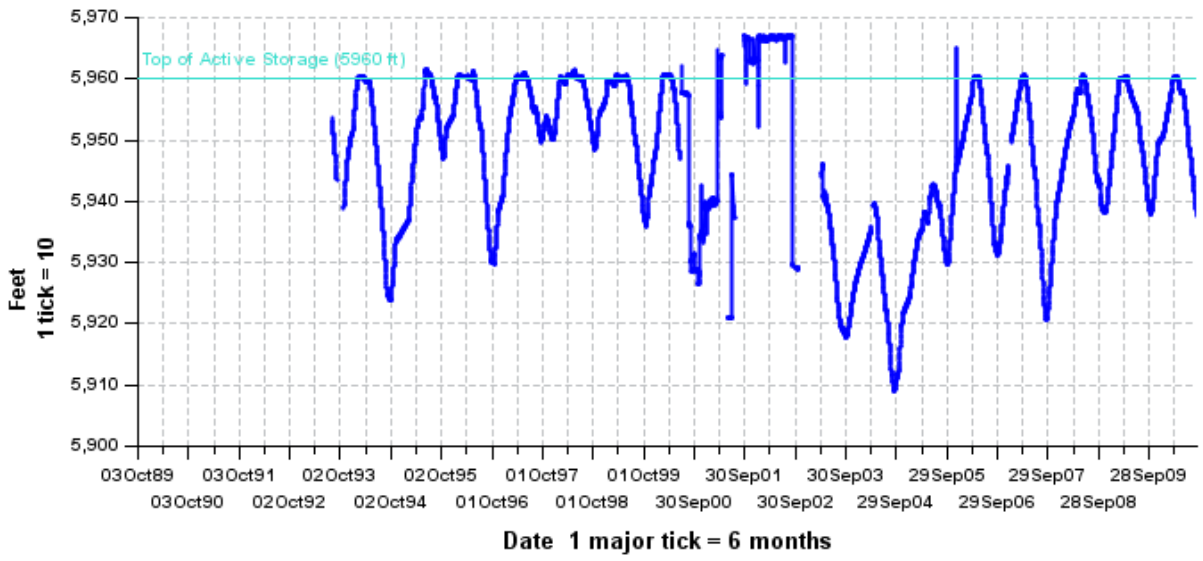


Figure 7 Rifle Gap Water Elevation-1989-2009

Releases or bypasses are made from the reservoir for project irrigation and to meet senior water rights. Releases are also made for downstream replacement of irrigation water so water can be diverted upstream from the reservoir from East Rifle Creek to Harvey Gap Reservoir through the Grass Valley Canal. Figure 8 shows releases to Rifle Creek over a 10-year period. Releases did not exceed 160 cfs during this period which is typical of operations. In 2011 flows reached approximately 140 cfs for several days. Figure 9 shows flows in the creek during 2010 in what would be considered a fairly typical operation.

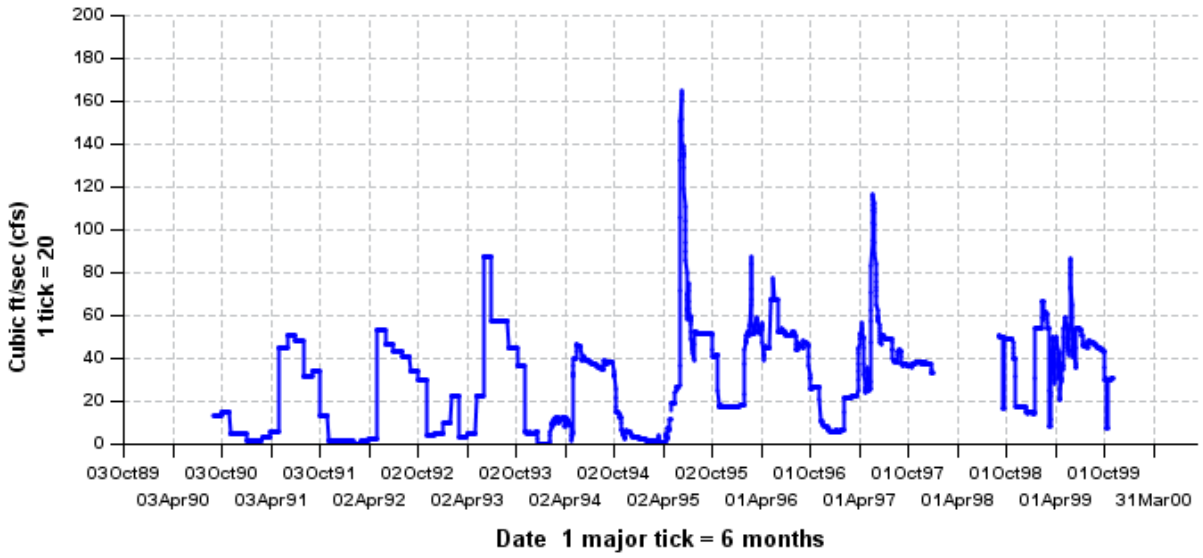


Figure 8 Rifle Creek Flows (cfs) 1989-2000

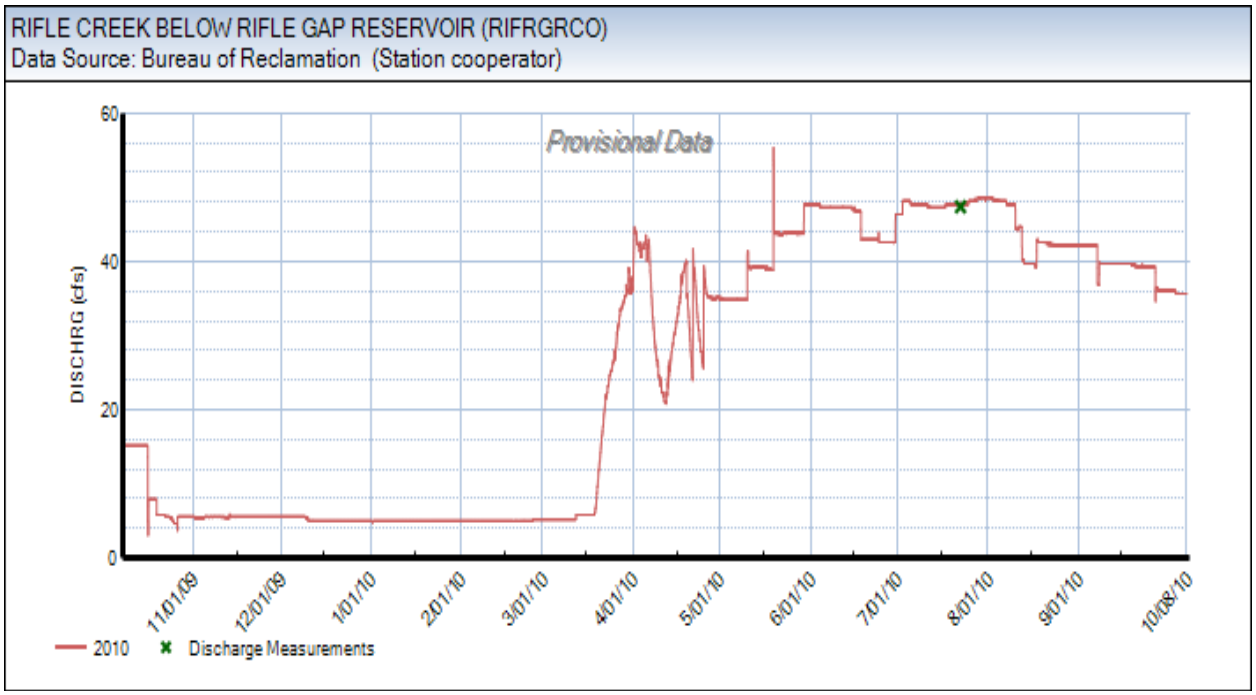


Figure 9 Rifle Creek Flows (cfs) in 2010

Higher releases to Rifle Creek can occur as a result of high inflows to the reservoir from snowpack or thunderstorms; however, this would occur infrequently. For example, the spillway

is designed to carry up to 3,645 cfs from the reservoir, although this would be a very infrequent event. The fish screen is designed to treat flows up to 200 cfs. This flow has not been exceeded over the last 20 years but may occur in the future. A flow exceedance graph is included as appendix B.

There are numerous irrigation diversions on Rifle Creek between the reservoir and the Colorado River and sections of the creek are occasionally dewatered during the irrigation season.

Impacts:

No Action and Proposed Action: There will be no change in operation of Rifle Gap Reservoir, in provision of irrigation water, or in flows of Rifle Creek under any alternative.

VEGETATION

Existing Conditions: The area around Rifle Colorado is typical of western Colorado valleys with low precipitation, warm summers, and generally moderate winters. Pinon-juniper woodlands interspersed with open areas of sagebrush and other shrubs dominate native vegetation in the project area. Waterways such as Rifle Creek support a diversity of wetland and riparian vegetation, but acreage is small.

Wetland hydrology downstream from the dam is supplied by surface flows and groundwater in Rifle Creek. Emergent wetlands occur in depressions along Rifle Creek and support common reed, reed canarygrass, broad-leaved cattail, and wooly sedge. The stream bank supports riparian species such as box elder, sandbar willow, river birch, Indian-hemp, and Virgin's bower in addition to a narrow wetland fringe, three to ten feet wide, composed of common reed and reed canary grass.

Vegetation at the upper screen site has the most limited riparian and wetland vegetation and the streambank, characterized as scrub-shrub wetland, is dominated by greasewood and sagebrush with limited willow, rabbitbrush, skunkbush sumac, and tamarisk. Tamarisk occurs but is not common. Common reed and reed canarygrass occur along the streambank. Further downstream, the riparian area expands. At the downstream sites, a broader healthy riparian zone has developed and includes forested wetlands. Gambel's oak, river/water birch, box elder, wild rose, willow, and skunkbush sumac are common at these lower sites. (Colorado Department of Natural Resources 1995).

Impacts:

No Action**:** Vegetation resources are not expected to change along Rifle Creek under the No Action Alternative.

Proposed Action: Temporary wetland/riparian losses during construction will be less than one acre at each site and are estimated at 0.28 acres at the upper site and 0.6 acres at the lower sites. Long term wetland/riparian losses will be due to new access roadways, the screen structure itself, and water backing up behind the screen structures and will be approximately 0.15 acres at the upper site and 0.3 acres at the lower sites. Greatest impacts will occur at the furthest downstream site where the new access from the highway will involve filling low areas with material to provide access. The temporary diversion pipeline will affect 0.16 acres of sagebrush/greasewood at the upper site and a similar acreage of riparian forest at the lower sites. As noted previously, the upstream location may be adjusted resulting in minor changes in vegetation impacts. Wetland losses will be replaced by CDOW through enhancement of existing lands under state ownership along Rifle Creek or its tributaries or through acquisition of mitigation credits offsite.

FISH AND WILDLIFE

*Existing Conditions***:** The fishery at Rifle Gap Reservoir is managed by the CDOW. Fish community surveys and angler creel surveys are conducted to provide management data. At the present time, catchable rainbow trout are stocked annually (approximately 40,000 per year); stocking of non-native, warm and cool water fish is not conducted at this time due to concerns that non-native fish will escape from the reservoir and enter the Colorado River where they could compete with native fish.

Yellow perch and rainbow trout are most abundant making up 85 percent of the fishery based on June-October sampling (CDOW 2010a). Walleye and northern pike are the top predators. Walleye are not recruiting and may eventually disappear from the fish community; however, northern pike are maintaining or increasing in the reservoir.

In earlier years, the fishery was comprised mostly of trout, walleye, and smallmouth bass; however, illegal introductions of yellow perch and northern pike in the 1990's drastically changed the fisheries composition of the reservoir. Walleye have declined significantly; it is likely that yellow perch feed on walleye eggs, fry, and larvae and northern pike feed on small walleye. Yellow perch are now the most common species present (CDOW 2010b).

CDOW surveys show that the hours spent at recreational fishing at the reservoir have declined 32 percent since 1987 although, due to the high number of yellow perch, total catch has increased. Angler preference surveys indicate strong public interest in having a fishery during

the open water season for walleye, northern pike, yellow perch, and rainbow trout in that order. Ice fishing anglers rate yellow perch and walleye fishing high (CDOW 2010a).
Rifle Creek immediately downstream from the reservoir is managed as a trout fishery. Minimum winter releases to the creek are around 5 cfs with irrigation season releases in the 30-50 cfs range. Instream flow rights have been acquired by the Colorado Water Conservation Board to protect minimum flows in Rifle Creek downstream from the reservoir. These rights have a priority date of 1980 and are for 5 cfs between October and May and 9 cfs between May and October.

Lower Rifle Creek and the Colorado River downstream from the Rifle Creek confluence are managed for native fish. Colorado River native fish in the area include the roundtail chub, flannelmouth sucker, bluehead sucker, and speckled dace. According to the CDOW, non-native species including walleye, smallmouth bass, largemouth bass, northern pike, black crappie, yellow perch, and bluegill have been found in the Colorado River downstream from Rifle Creek and Rifle Gap Reservoir is suspected of being the source of some of these fish (CDOW 2010c). The Colorado River is considered critical habitat for endangered fish downstream from the Rifle Creek confluence – humpback chub, bonytail, razorback sucker, and Colorado pikeminnow.

The CDOW is currently preparing a new lake management plan for Rifle Gap. Alternative management scenarios will largely be determined by needs for protection of native fish, angler preferences**,** and conclusions on whether warm and cool water non-native fish in addition to non-native trout can be stocked. Alternatives initially considered for the lake management plan include maintaining the status quo, modifying stocking plans for trout, and potential stocking and management of selected warm water fish.

Rifle Gap Reservoir is used by a variety of shorebirds and waterfowl. The riparian area along Rifle Creek provides valuable wildlife habitat particularly at the middle and downstream alternative sites. The downstream sites have very limited human disturbance and the diverse vegetation provides excellent nesting habitat for birds.

*Impacts***:**

No Action**:** Direct effects on fish and wildlife resources would not occur under the No Action Alternative. Fish from Rifle Gap Reservoir could occasionally escape downstream into Rifle Creek and may provide trout fishing in the creek and a possible source of other non-native fish to the Colorado River. Options for changes in management of Rifle Gap Reservoir would be limited as it is doubtful that non-native fish stocking, other than trout, could occur without harming downstream endangered fish. The potential for escapement of non-native fish to the Colorado River would continue.

Proposed Action**:** Under any alternative, the chances of escapement of non-native fish from Rifle Gap Reservoir to the Colorado River will be greatly reduced. This may allow some flexibility for the CDOW to stock warm and cool water non-native fish in Rifle Gap Reservoir

but this is not a certainty. Stocking plans that use sterile fish would have a higher probability of being approved.

Under the upstream screen location, the movement of trout from the reservoir downstream into Rifle Creek will be greatly reduced or eliminated and this will have a negative impact on recreational fishing in the stream on public lands within the state park. This impact will affect a smaller length of stream at the downstream two sites. This impact could be partially or fully mitigated by the CDOW stocking trout in the creek downstream from the screens.

There will be adverse impacts on riparian habitat resulting from construction and operation of the downstream locations for the screen. The downstream site would involve the largest area and the highest quality riparian habitat. Impacts would occur primarily to nesting birds and these impacts could be offset by improvements in the riparian habitat at an upstream location.

RECREATION

Existing Conditions: Rifle Gap Reservoir supports around 230,000 recreation visitors per year and fishing is a major factor in this visitation. Facilities have recently been updated and expanded by Reclamation and Colorado State Parks to meet recreation demand. The reservoir provides for boating, fishing, camping, swimming, scuba diving, and windsurfing. Ice-fishing has become a very popular activity (Reclamation 2001). Surveys indicate an angler preference for walleye, yellow perch, northern pike, and rainbow trout fishing (CDOW 2010a). At the present time, only trout are stocked.

While recreation use is concentrated around the reservoir, there is also a newly rehabilitated day use area (Cristo Day Use) along Rifle Creek downstream from the reservoir. This site provides a special accessible stream fishing opportunity for anglers with disabilities. In addition, this reach of Rifle Creek provides about 1 mile of public small stream fishing.

Impacts:

No Action: The No Action alternative would not have any direct effect on recreation. The possibility for stocking and management of non-native fish such as walleye would be precluded or greatly reduced and this could reduce options for fishery management and could affect recreational fishing and perhaps visitation in the long term. Under No Action, the recreational fishery may decline and this could reduce recreation use and the quality of recreation.

Fishing opportunities in downstream Rifle Creek should not be affected under the No Action alternative.

Proposed Action**:** With the fish screen in place, CDOW may have more options and flexibility in stocking and managing the fishery. This would allow CDOW to better provide a sustainable recreational fishery and could support existing and future increased recreation.

With the upstream fish screen in operation, movement of trout from the reservoir into downstream Rifle Creek will be eliminated or greatly decreased and this would be expected to reduce stream fishing opportunities. This impact could be reduced or totally offset by the CDOW stocking trout downstream from the fish screen locations.

THREATENED AND ENDANGERED SPECIES

*Existing Conditions***:** Table 2 contains a list of threatened, endangered, proposed, and candidate species that may occur in Garfield County according to the Fish and Wildlife Service (http://www.fws.gov/mountain-prairie/endspp/).

Table 2 Special Status Species in Garfield County

Common Name	Scientific Name	Status	General habitat
Bonytail	Gila elegans	Endangered	Colorado River
Canada lynx	Lynx canadensis	Threatened	High elevation forest
Colorado hookless cactus	Sclerocactus glaucus	Threatened	River benches, xeric slopes with cobbles, pebbles
Colorado pikeminnow	Ptychocheilus lucius	Endangered	Colorado River
De Beque phacelia	Phacelia submutica	Proposed	Steep slopes of Wasatch Formation
Greater sage grouse	Centrocercus urophasianus	Candidate	Sagebrush/meadows
Greenback cutthroat trout	Oncorhynchus clarki stomias	Threatened	Small, high elevation streams
Humpback chub	Gila cypha	Endangered	Colorado River
Mexican spotted owl	Strix occidentalis lucida	Threatened	Canyon, coniferous forest
Parachute beardtongue	Penstemon debilis	Proposed	Oil shale outcrops
Razorback sucker	Xyrauchen texanus	Endangered	Colorado River
Ute ladies-tresses orchid	Spiranthes diluvialis	Threatened	Wet meadows
Yellow-billed cuckoo	Coccyzus americanus	Candidate	Riparian, cottonwood woodland

There are no known special status species in the vicinity of the fish screen construction sites. The Colorado River downstream from the town of Rifle is designated critical habitat for the razorback and Colorado pikeminnow. Further downstream, critical habitat for humpback chub and bonytail occurs. These four fish are endangered, most likely for a variety of reasons; however water depletions and competition with non-native fish are generally considered the most significant problems.

The Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, finalized in 1987, is designed to protect and restore populations of the endangered fish. Primary strategies include habitat protection and management through river flow improvements, propagation and stocking, construction of fish ladders and screens, and control of non-native fish.

The proposed fish screen on Rifle Creek is one of many projects designed to address the non-native fish problem. One goal of resource agencies is to reduce the problems with non-native fishes while maintaining opportunities for anglers. Historically, there were only 14 species of native fish in the upper Colorado River Basin. Over the last 100 years, however, over 40 non-native species have been introduced to the upper basin where they compete with native fish for food and space and native fish also can be prey for non-natives such as walleye, northern pike, and smallmouth bass.

The Recovery Program has developed stocking procedures that are agreed to by the states of Colorado, Utah, Wyoming, and the Fish and Wildlife Service (Procedures for Stocking NonNative Fish Species in the Upper Colorado River Basin, Recovery Program 2009). In summary, the procedures ensure that stocking of non-native fish is consistent with the recovery of endangered fish—basically meaning that stocked fish cannot enter endangered fish habitat. Stocking proposals and lake management plans are reviewed by the states of Colorado, Wyoming, and Utah and the Fish and Wildlife Service with the goal of reaching consensus on stocking plans. If consensus is not reached, these organizations can object to the stocking proposal.

Impacts:

No Action**:** Under the No Action alternative, the potential for fish escaping Rifle Gap Reservoir and traveling to the Colorado River would continue. If escaping fish, such as walleye, smallmouth bass, and/or northern pike became established in the Colorado River, they could compete with and prey on endangered fish. This would likely cause adverse effects to endangered fish and their designated critical habitat.

Proposed Action**:** Construction and operation of a fish screen will occur upstream of critical and occupied habitat and therefore would have no direct effect on any endangered species. Under all screening alternative locations, the potential for fish escaping Rifle Gap Reservoir and traveling to the Colorado River and critical habitat for endangered fish will be reduced. This could prevent future impacts on endangered fish in the river from non-native fishes escaping Rifle Gap Reservoir. Prior to additional stocking of Rifle Gap Reservoir, the CDOW will complete the lake management plan, which should prevent creating new problems with non-native fish. The Plan will be reviewed and approved by the Fish and Wildlife Service and the appropriate States. Overall, the screening alternatives are likely to provide beneficial effects to endangered fish and their designated critical habitat.

The Fish and Wildlife Service (2011) concluded that "Installation of a fish screen in Rifle Creek should contribute to the recovery of the Colorado River endangered fishes because it will reduce the potential for fish that escape Rifle Gap Reservoir to reach critical habitat. The Service has reviewed Reclamation's biological determination and concurs that the proposed project, may affect, but is not likely to adversely affect the endangered Colorado pikeminnow, razorback sucker, humpback chub, bonytail or their critical habitat."

INDIAN TRUST ASSETS & ENVIRONMENTAL JUSTICE

Indian trust assets (ITAs) are legal interests in property held by the United States for Indian Tribes or individuals. Reclamation and other Federal agencies share the responsibility to protect these assets. There are no potentially affected ITA's in the project area and therefore no impacts are projected.

Executive Order 12898 on Environmental Justice provides that Federal agencies analyze programs to assure that they do not disproportionately adversely affect minority or low income populations or Indian Tribes. There are no potentially affected minorities or low income populations or Indian Tribes affected by the project; therefore no impacts are predicted under alternatives.

SOCIOECONOMIC CONDTIONS

Existing Conditions:--Irrigation water supplied by the Silt Project supports farming on up to 7,000 acres on 125 farms with major crops being alfalfa, small grain, and hay for livestock feed being most important. Recreation at the reservoir is important economically in the immediate area and in the region.

Impacts:

No Action**:** Under the No Action alternative, flexibility in managing the fishery in Rifle Gap Reservoir would continue to be minimized. This could reduce angling use and general recreation use in the long-term and could have adverse effects on the local economy and on funding for the State Park. There would be no effect on irrigation supplies and related economic activity.

Proposed Action: There would be short-term localized economic benefits during the construction of the fish screen. In the long-term, the fish screen may provide CDOW with more flexibility in fish stocking and management at Rifle Gap Reservoir. This could increase angler use and satisfaction and have related economic benefits, including stabilized or increased

visitation to Rifle Gap Reservoir. There would be no effect on irrigation supplies and related economic activity.

CULTURAL RESOURCES

*Existing Conditions***:** Cultural resource surveys have been completed around Rifle Gap Reservoir, including downstream Rifle Creek (Grand River Institute 1992). No cultural resources were identified along Rifle Creek within the project area. In the general area, studies suggest human occupation for the past 12,000 years, with the Ute Indians being the final prehistoric inhabitants. In the late 1800's, ranching and coal mining began in the area. Overviews of the prehistory and history of the region are provided in the Colorado Historical Society's publications entitled "Northwest Colorado Prehistoric Context" (Grady 1984) and "Colorado Plateau Country Historic Context" (Husband 1984).

Impacts:

No Action**:** The No Action alternative would not affect cultural or historic resources.

Proposed Action**:** There have been no cultural resources identified that could be impacted by the proposed action. The State Historic Preservation Officer has concurred with the conclusion of no historic properties affected (SHPO 2011). Contract specifications will require halting work, if cultural resources are discovered during excavation, until the resource can be evaluated and protected.

CUMULATIVE IMPACTS

Cumulative impacts are impacts on the environment, which result from the incremental impact of the action, when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The construction of a fish screen will represent one of many projects designed collectively to assist in recovery of endangered native fish.

SUMMARY AND ENVIRONMENTAL COMMITMENTS

In summary, the primary effect of the proposed action will be to minimize the potential for warm and cool water non-native fish in Rifle Gap Reservoir from moving downstream to the Colorado River where they could compete with native, endangered fish in critical habitat. The action also may provide the CDOW more flexibility in stocking and managing warm and cool water fishes in Rifle Gap Reservoir. This flexibility would result in the CDOW's increased ability to accommodate angler preferences, thereby providing an improved recreation fishery.

Mitigation Measures

1) Section 402 (Construction Dewatering) and 404 permits will be obtained by the CDOW as needed by the construction contractor prior to initiating construction activities. These permits may require special conditions for environmental protection.
2) Wetland losses will be replaced by CDOW through enhancement of existing lands under state ownership along Rifle Creek or its tributaries or through acquisition of mitigation credits offsite.
3) Areas disturbed during construction will be revegetated with appropriate plant species as approved by Reclamation.
4) In the event of a discovery ("discovery" means any previously unidentified or incorrectly identified cultural resources including but not limited to archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices), all operations in the immediate vicinity of the discovery must cease, and the State Historic Preservation Officer must be notified.
5) If the upstream screen site is constructed, a trout stocking program will be initiated downstream from the site by the CDOW.
6) Streamflows of approximately 5 cfs will be maintained in Rifle Creek during construction.
7) Prior to construction, the CDOW will inventory Rifle Creek upstream and downstream from the screen to determine relative abundance of fish and species present. Following construction, CDOW will annually monitor the creek downstream to help assess the effectiveness of the screen.
8) Appropriate operation and maintenance agreements will be arranged prior to the start of construction.

CHAPTER 4 -- CONSULATATION AND COORDINATION

GENERAL

Reclamation staff consulted with the Fish and Wildlife Service and CDOW to comply with the Endangered Species Act. CDOW provided information on fish screen design and location, sport fisheries and recreational angling. Potential impacts were discussed with Colorado State Parks and the Silt Water Conservancy District.

DISTRIBUTION LIST

News Releases announced the availability of this final EA, and the EA was placed on Reclamation's website at: www.usbr.gov/uc/ under environmental documents. The EA was distributed electronically to email addresses collected at the Colorado Division of Wildlife Rifle Gap fishery management meeting in 2010 and from comments on the draft EA. Copies of the Finding of No Significant Impact will be distributed to the following:

Colorado State Representatives, Districts 57 and 61
Colorado State Senator, District 8
Colorado Division of Water Resources, Glenwood Springs CO
Colorado Division of Wildlife, Grand Junction, Denver, and Glenwood Springs CO
Colorado State Parks, Rifle and Clifton CO
Colorado State Historic Preservation Officer, Denver CO
Silt Water Conservancy, Rifle CO
Garfield County Commission, Glenwood Springs CO
Citizen Telegram, Rifle CO
Glenwood Springs Post, Glenwood Springs CO
Daily Sentinel, Grand Junction CO
Downstream landowners
Fish and Wildlife Service, Grand Junction CO

Upper Colorado River Recovery Program, Denver and Grand Junction CO
Corps of Engineers, Grand Junction CO
U.S. Environmental Protection Agency, Denver CO
Bureau of Land Management, Glenwood Springs CO
Colorado Sportsman Wildlife Fund, Grand Junction CO
Colorado Trout Unlimited, Boulder CO

COMMENTS ON DRAFT EA

Only 9 comments were received concerning the draft EA. The State Historic Preservation Officer concurred that historical and archeological sites would not be affected. In addition it was recommended that the project include provisions to protect unidentified cultural resources that might be discovered during construction.

Other comments expressed support for the project with the hope and/or expectation that with the fish screen in place, there would be more flexibility for the CDOW to manage a warmwater fishery in Rifle Gap Reservoir.

REFERENCES

Colorado Department of Natural Resources. 1995. Wetland Resources of Rifle Gap State Park. In conjunction with Colorado Division of Parks and Outdoor Recreation and Colorado Natural Areas Program. Denver CO.

Colorado Division of Wildlife. 2010a. Power Point Presentation at Rifle Colorado-Fisheries Management at Rifle Gap and Harvey Gap Reservoirs. August 31.

_____. 2010b. Fishing, Five-Year Review Water Specific Background Information Colorado Division of Wildlife. Prepared for Colorado Wildlife Commission. Denver, CO.

_____. 2010c. Colorado Division of Wildlife Proposal for Rifle Creek In-stream Fish Screen Barrier, May 14 2010. Unpublished manuscript, Grand Junction, CO.

Grady, James. 1984. Northwest Colorado Prehistoric Context. Colorado Historical Society, Denver, CO.

Grand River Institute. 1992. Cultural Resources Inventory Report on the Class III Survey of 550 Acres at Rifle Gap Reservoir in Garfield County, Colorado. Prepared for Bureau of Reclamation, Grand Junction, CO.

_____. 1999. Class III Cultural Resource Inventory Report of a 160 Acre Block Area as part of the Rehabilitation Planning for Recreational Facilities at Rifle Gap Reservoir in Garfield County, Colorado. Prepared for Bureau of Reclamation, Grand Junction, CO.

Husband, Michael. 1984. Colorado Plateau Country Historic Context. Colorado Historical Society, Denver, CO.

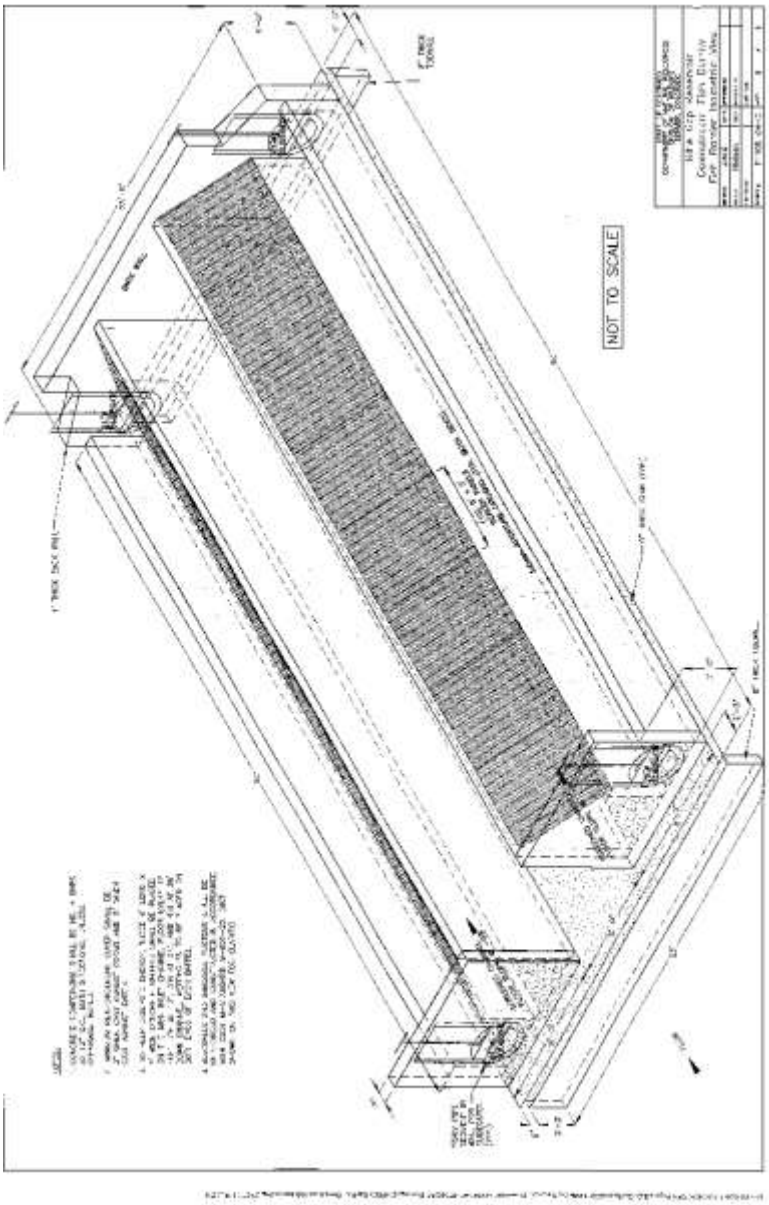
Reclamation. 2001. Final Environmental Assessment-Rehabilitation of Recreation Facilities at Rifle Gap Reservoir. Grand Junction, CO.

Recovery Program. 2009. Procedures for Stocking Nonnative Fish Species in the Upper Colorado River Basin (Colorado Division of Wildlife, Utah Division of Wildlife Resources, Wyoming Game and Fish Commission, and U.S. Fish and Wildlife Service). Denver, CO.

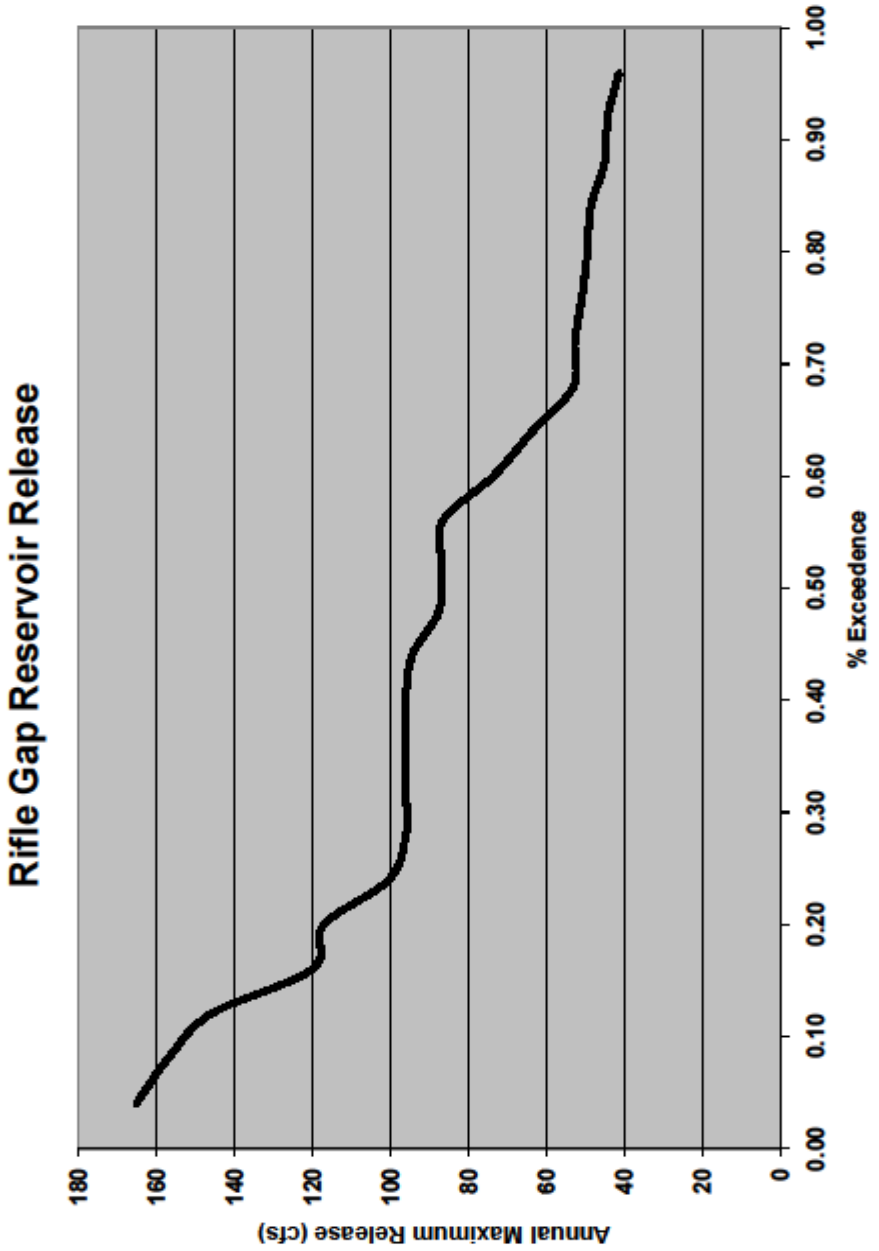
State Historic Preservation Officer. 2011. Letter to Area Manager, May 3, 2011. Denver CO.

U.S. Fish and Wildlife Service. 1994. Endangered and threatened wildlife and plants: determination of critical habitat for the Colorado River endangered fishes: razorback sucker, Colorado Squawfish, humpback chub, and bonytail chub. Federal Register 59: 113374-13400.

_____. 2011. Memorandum to Area Manager, Western Colorado Area Office, Bureau of Reclamation from Western Colorado Supervisor, Ecological Services, June 21 2011.



Appendix A. Rifle Creek Fish Screen



Appendix B. Flow Exceedance – Rifle Creek downstream from Rifle Gap