

**DRAFT ENVIRONMENTAL ASSESSMENT
FOR THE
DESIGNATION OF CRITICAL HABITAT
FOR THE
ZUNI BLUEHEAD SUCKER**



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U.S. Fish and Wildlife Service

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DATE: March 2015

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ACRONYMS AND ABBREVIATIONS

ac	Acres
AGFD	Arizona Game and Fish Department
ACEC	Area of Critical Environmental Concern
ASLD	Arizona State Land Department
AO	Authorized Official
BCR	Bird Conservation Region
BIA	Bureau of Indian Affairs
BO	Biological Opinion
BOR	Bureau of Reclamation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cm	centimeters
COE	U.S. Army Corps of Engineers
DOI	Department of the Interior
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order

EPA	Environmental Protection Agency
ESA	Endangered Species Act
FO	Field Office
FONSI	Finding of No Significant Impact
FR	Federal Register
ft	feet
ft/sec	feet per second
ha	hectares
IEM	Incremental Effects Memo
IPM	Integrated Pest Management
in	inches
km	kilometers
m	meters
m/sec	meters per second
mi	miles
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NMDGF	New Mexico Department of Game and Fish

NNDFW	Navajo Nation Department of Fish and Wildlife
NRCS	Natural Resources Conservation Service
OHV	Off-Highway Vehicle
ORV	Off-Road Vehicle
PCE	Primary Constituent Element
sec	second
TDL	Total Daily Load
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

INTRODUCTION

The purpose of this draft Environmental Assessment (EA) is to analyze the potential effects on physical and biological resources and social and economic conditions that may result from the designation of critical habitat for the Zuni bluehead sucker (*Catostomus discobolus yarrowi*). On January 25, 2013, the U.S. Fish and Wildlife Service (USFWS) published a proposed rule to list the Zuni bluehead sucker as endangered under the Endangered Species Act of 1973 (ESA), as amended (78 FR 5369) concurrently with a proposed rule to designate critical habitat for the species (78 FR 5351). The final rule to list the Zuni bluehead sucker as an endangered species was published on July 24, 2014 (79 FR 43131). The USFWS has determined that environmental assessments or environmental impact statements are not necessary for ESA listing (48 FR 49244) or for critical habitat designations outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit (48 FR 49244). However, the proposed critical habitat for the Zuni bluehead sucker occurs within the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit. The USFWS, under the ruling in *Catron County Board of Commissioners v. U.S. Fish and Wildlife Service*, 75F.3d 1429 (10th Cir. 1996) undertakes NEPA analysis for critical habitat designation within states under the jurisdiction of the Tenth Circuit, including New Mexico.

This draft Environmental Assessment (EA) will be used by the USFWS to decide whether critical habitat will be designated as proposed or if further refinements or analyses are needed. If the proposed action is selected as described, or with minimal changes, and no further environmental analyses are needed, a Finding of No Significant Impact (FONSI) would be prepared. If significant impacts are found, or major changes are needed, an Environmental Impact Statement would be prepared. This Draft EA presents the purpose of and need for critical habitat designation, the proposed action, and an evaluation of the direct, indirect, and cumulative effects of the alternatives pursuant to the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality (CEQ) regulations (40 CFR 1500, et seq.) and according to the U.S. Department of the Interior (DOI) NEPA procedures (43 CFR 46).

PURPOSE AND NEED FOR THE ACTION

Conservation of an endangered species requires protection of the species' habitat. Habitat protection and management is needed for Zuni bluehead sucker because the species is limited to a few small populations that are threatened by habitat loss and degradation, inadequate existing regulatory mechanisms, the spread of nonnative, invasive plants, and

other natural or manmade factors (78 FR 5351). Critical habitat designation is an effective means to provide protection and management of habitat that is essential to the conservation of listed species.

The purpose of the proposed action in this draft EA is to designate critical habitat for the Zuni bluehead sucker, an endangered species. This critical habitat designation delineates geographic areas that are essential for conservation of the Zuni bluehead sucker. The designation also describes primary constituent elements (PCEs), which are the physical and biological features that are essential to support conservation of the species and that define critical habitat for the species.

PROPOSED ACTION

The Proposed Action is to designate two geographic units as critical habitat for the Zuni bluehead sucker. These critical habitat units contain features that are essential to the conservation of the species. The critical habitat units are composed of subunits. Most subunits are occupied by the species and contain the PCEs, which are the physical and biological features that define critical habitat for a species. However, a minority of the subunits are outside the geographic range occupied by the Zuni bluehead sucker at the time of listing. These unoccupied subunits are within the historical range of the species, serve as an extension of habitat within an occupied unit, expand the geographic distribution within areas not occupied at the time of listing, and are connected to other occupied areas. The USFWS has determined that these areas are essential to the conservation of the species. The critical habitat designation also describes PCEs, which are the physical and biological features that define critical habitat for a species.

BACKGROUND

CRITICAL HABITAT

PROVISIONS OF THE ESA

Section 3(5)(A) of the ESA, defines critical habitat as, (i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the provisions of section 4 of the ESA, on which are found those physical or biological features (1) essential to the conservation of the species and (2) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed in accordance with the provisions of

Section 4 of the ESA, upon the determination by the Secretary of the Interior that such areas are essential for the conservation of the species.

Section 4(b)(2) of the ESA states that designation of critical habitat will be made, “on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat.” Section 4(a)(3) of the ESA states that critical habitat shall be designated to the maximum extent prudent and determinable and that such designation may be revised periodically as appropriate.

The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners.

SECTION 4(B)(2) EXCLUSION PROCESS

Section 4(b)(2) of the ESA states the Secretary of the Interior may exclude any area from the critical habitat designation after considering the economic, national security, or other relevant impacts of designating the area as critical habitat or if the Secretary determines that the benefit of excluding the area exceeds the benefit of designating it as critical habitat, unless he determines, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.

SECTION 7 CONSULTATION

The primary means by which critical habitat designation may serve to protect the Zuni bluehead sucker is through the section 7 consultation process. Section 7(a)(2) of the ESA requires federal agencies to consult with the USFWS to “insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined to be critical.” section 7 of the ESA does not apply to tribal, state, local, or private land unless there is a federal nexus (i.e., federal funding, authorization, or permitting).

A Federal agency responsible for a proposed action begins the section 7 consultation process by determining the effects of the proposed action on both listed species and designated critical habitat. If the federal action agency determines that there would be no

effect on listed species or designated critical habitat, then no further consultation is necessary. If the federal action agency determines that their proposed action may affect listed species or designated critical habitat, consultation with the USFWS is initiated. The Federal action agency may then conduct informal consultation with the USFWS to modify the project to reduce or eliminate impacts to the species or critical habitat. If these measures are not sufficient to eliminate adverse effects on the species or critical habitat, or informal consultation is not undertaken, the federal agency will then begin formal consultation with the USFWS.

Formal consultation is initiated when it is determined that the proposed federal action is likely to adversely affect listed species or critical habitat (50 CFR Part 402.14). Formal consultation assesses whether the proposed federal action is likely to jeopardize the continued existence of a listed species or to destroy or adversely modify critical habitat (50 CFR Part 402.14[h]). Formal consultation concludes with a biological opinion issued by the USFWS on whether the proposed federal action is likely to jeopardize the continued existence of a listed species or to destroy or adversely modify critical habitat (50 CFR Part 402.14[h])

There are some differences in the way impacts are assessed for a species (the jeopardy standard) versus critical habitat (an adverse modification standard). In *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir. 2004), the court held that while the jeopardy standard concerns the survival of a species or its risk of extinction, the adverse modification standard concerns the value of critical habitat for the recovery, or eventual delisting, of a species. To evaluate the impacts on critical habitat, the USFWS examines how the proposed federal action will affect the PCEs.

A “nonjeopardy” or “no adverse modification” opinion concludes consultation, and the proposed action may proceed under the ESA. The USFWS may prepare an incidental take statement with reasonable and prudent measures to minimize take of non-plant species and associated, mandatory terms and conditions that describe the methods for accomplishing the reasonable and prudent measures. Discretionary conservation recommendations may be included in a biological opinion based on the effects on the species. Conservation recommendations, whether they relate to the jeopardy or adverse modification standard, are discretionary actions recommended by the USFWS. These recommendations may minimize adverse effects on listed species or critical habitat, identify studies or monitoring, or suggest how action agencies can assist species under their own authorities and section 7(a)(1) of the ESA. There are no ESA section 9 prohibitions for critical habitat. Therefore, a biological opinion that concludes there is no anticipated destruction or adverse modification of critical habitat may contain conservation recommendations but would not include an incidental take statement, reasonable and prudent measures, or other terms and conditions.

In a biological opinion that results in a jeopardy or adverse modification conclusion, the USFWS develops mandatory reasonable and prudent alternatives to the proposed action. Reasonable and prudent alternatives are actions that the federal agency can take to avoid jeopardizing the continued existence of the species or adversely modifying the critical habitat. Reasonable and prudent alternatives may vary from minimal project changes to extensive redesign or relocation of the project, depending on the situations involved. Reasonable and prudent alternatives must be consistent with the intended purpose of the proposed action, and they also must be consistent with the scope of the federal agency's legal authority. Furthermore, the reasonable and prudent alternatives must be economically and technically feasible. A biological opinion that results in an adverse modification finding (but no jeopardy to the species) may include reasonable and prudent alternatives and conservation recommendations but no incidental take statement or associated reasonable and prudent measures and terms and conditions.

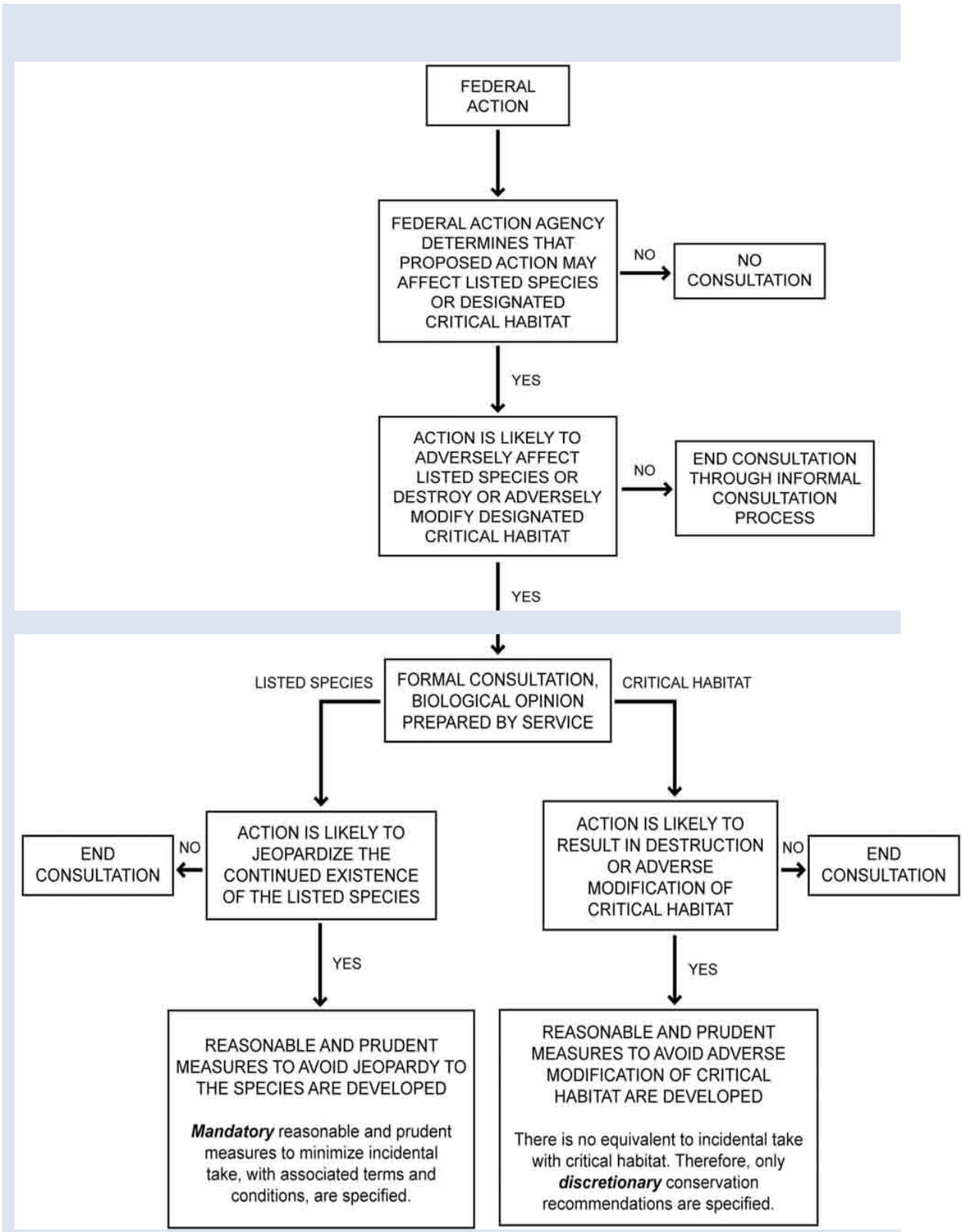


Figure 1. Simplified Diagram of the ESA Section 7 Consultation Process.

Table 1. Comparison of ESA listing only and listing with critical habitat designation.

	ESA listing only (without Critical Habitat)	In addition to ESA listing, Critical Habitat designation adds
Section 7 Consultation Process must consider	Jeopardy to the continued existence of the species (survival or risk of extinction)	Destruction or adverse modification, based on whether the affected critical habitat would continue to serve its intended conservation role for the species (77 FR 49913)
Type of impact a project may have	Take	Destruction or adverse modification, based on whether, the affected critical habitat would continue to serve its intended conservation role for the species (77 FR 49913)
Incidental Take	Incidental Take may be granted by The USFWS	Incidental Take does not apply to Critical Habitat
Activities that may result in an impact	Actions that would result in “take” of individuals.	Actions that would significantly alter the PCEs

In general, designation of critical habitat could potentially have three effects on section 7 consultations: 1) increasing the number of new consultations or reinitiated consultations, 2) changing the outcome of consultations, or 3) increasing the complexity of consultations.

The number of new and reinitiated consultations could be increased with the designation of critical habitat because section 7 consultations may be needed for projects that affect critical habitat and not the species itself. This is only likely to occur in the unoccupied critical habitat units. The outcome of consultations could be different with critical habitat designation if reasonable and prudent measures, or reasonable and prudent alternatives are developed for protecting critical habitat in areas that are not occupied by the species. Increased complexity of consultations stems from the need to analyze potential adverse modification of critical habitat in addition to analyzing potential jeopardy to the species. This additional analysis would require additional administrative costs for evaluating impacts to critical habitat as well as to the species.

ZUNI BLUEHEAD SUCKER

SPECIES DESCRIPTION

The Zuni bluehead sucker has a fusiform (torpedo-shaped), slender body with a subterminal mouth (mouth is set back from the tip of the snout) (Propst 1999). Most individuals do not exceed 20.3 centimeters (cm) (8 inches [in]) in total length, although the species has been known to exceed 25 cm (9 in) in total length (Propst and Hobbes 1996). The Zuni bluehead sucker has a bluish head, silvery-tan to dark green back, and yellowish to silvery white sides and abdomen. Adults are mottled slate-gray to almost black dorsally (upper part of the body) and cream-white ventrally (toward the abdomen). During the spawning season, males may be differentiated by coarse tubercles (wart-like projections) on the rear fins and the caudal peduncle (the narrow part of the fish's body to which the tail fin is attached). Males also have distinctive breeding coloration, becoming intensely black dorsally with a bright red horizontal band and a white abdomen (Propst 1999, Propst et al. 2001).

DISTRIBUTION

The Zuni bluehead sucker historically inhabited headwater streams of the Little Colorado River in east-central Arizona and west-central New Mexico (Smith 1966, Smith et al., 1983, Crabtree and Buth, 1987). The Zuni bluehead sucker's distribution has been greatly reduced. In New Mexico, Zuni bluehead sucker distribution has been reduced by an estimated 95 percent in the last 30 years (Propst 1999, p. 51; NMDGF 2004, p. 15; Service 2014a, pers. comm.). The extent of potential range reduction in Arizona is not known. The entire Kinlichee Creek watershed encompasses approximately 47 km (29 mi) (Smith *et al.* 1983, p. 39; Crabtree and Buth

1987, p. 843; Hobbes 2000, pp. 9-16). It is unlikely that the entirety of the Kinlichee Creek watershed is occupied because the streams are susceptible to drying during drought. The number of Zuni bluehead sucker found in the Kinlichee Creek watershed in Arizona range from zero to 664 individuals between 2000 and 2012 (Hobbes 2000, pp. 9-16; Albert 2001, pp. 10-14; NMDGF *et al.* 2003, p. 6-10); David 2006, p. 35, Kitcheyan and Mata 2013, pp. 10-11). The subspecies is restricted to three isolated populations in the upper Rio Nutria watershed in west-central New Mexico (Carman 2008, pp. 2-3).

LIFE HISTORY

Zuni bluehead sucker feed primarily on algae scraped from rocks, rubble, and gravel substrates (Winter 1979, Sublette *et al.* 1990). They also feed on small midge (two-winged fly) larvae, caddisfly larvae, mayfly larvae, flatworms, small terrestrial insects, fish scales, gastropods (snails and mussels), and insect eggs (Smith and Koehn 1979). Larval bluehead suckers (less than 25 millimeters (mm) (approx. 1 inch [in] total length)) feed on diatoms (a type of algae), zooplankton (small floating or swimming organisms that drift with water currents), and dipteran larvae (true fly larvae) in stream areas with low velocity or in backwater habitats (Muth and Snyder 1995). Siltation can reduce the suitability of the habitat for these prey species.

Zuni bluehead sucker spawn from early April to early June when water temperatures are 6 to 15 degrees Celsius (°C) (43 to 59 degrees Fahrenheit [°F]), peaking around 10 °C (50 °F) (Propst 1999, Propst *et al.* 2001). Zuni bluehead sucker may have two spawning periods, with the majority of the spawning effort expended early in the season (Propst *et al.* 2001). Most females produce 200 to 300 eggs (Propst 1999). Clean substrate, such as gravel and coarse sand, free of silt, is necessary for spawning and egg development (Maddux and Kepner 1988). Juvenile bluehead sucker occupy nearshore and shallow areas before moving out into deeper water and faster flowing areas (Childs *et al.* 1998). Zuni bluehead suckers may live 4 or 5 years and maturity is attained at 2 years (Propst 1999).

Nonnative predatory fish have displaced or eliminated the Zuni bluehead sucker from areas of its historical range (NMGDF 2004). Green sunfish (*Lepomis cyanellus*) and fathead minnow (*Pimephales promelas*) are nonnative predators of the Zuni bluehead sucker. Other nonnative predatory fish that prey on suckers include brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis*), largemouth bass (*Micropterus salmoides*), rainbow trout (*Oncorhynchus mykiss*), northern pike (*Esox lucius*), and channel catfish (*Ictalurus punctatus*) (Marsh and Brooks 1989, Johnson *et al.* 1993, Brooks *et al.* 2000, Ward and Bonar 2003). Crayfish also are known to prey upon native fish eggs, and likely prey upon the eggs of the Zuni bluehead sucker. Two species of nonnative crayfish have

been documented in the Little Colorado River drainage: northern crayfish (*Orconectes virilis*) and red swamp crayfish (*Procambarus clarkii*) (Childs 1999). Zuni bluehead sucker also are susceptible to predation by bullfrogs (*Rana catesbiana*), especially when young (Albert 2001).

Diseases affecting Zuni bluehead sucker are poorly known. Parasites found in bluehead sucker include black grub (*Neascus* spp.), a parasitic larval fluke, which are spread by birds and use mollusks as intermediate hosts (Quist et al. 2007).

HABITAT

Zuni bluehead sucker live in small desert streams, small headwater springs, and mainstem rivers (Gilbert and Carman 2011). They occupy streams with overhanging vegetation and boulders that provide shade. The shade prevents extreme fluctuations in water temperatures. Overhanging vegetation also provides organic material for invertebrates and algae preyed upon by the Zuni bluehead sucker.

Stream segments occupied by Zuni bluehead sucker contain pools, runs, and riffles 0.2-2 meters (m) (7.9-78.7 in) deep with water velocity less than 0.35 meters/second (m/sec) (1.15 feet/second [ft/sec]) (Hanson 1980, Propst and Hobbs 1996, Gilbert and Carman 2011). Water temperatures range from 9.9 to 25.2 °C (49.8 to 77.3 °F) in occupied areas (Propst et al. 2001, Gilbert and Carman 2011).

Spawning habitat includes clean substrates such as gravel and coarse sand (Maddux and Kepner 1988). These substrates must be free of silt, as silt can clog the small spaces between the particles and prevent the free flow of oxygenated water. Periodic flooding removes excess silt and fine sand, and is therefore important for maintaining spawning habitat. Maddux and Kepner (1988) reported spawning depressions were from 10 to 23 centimeters (cm) wide ($X = 14.8 \pm 5.7$ cm) and 21 to 37 cm long ($X = 29.2 \pm 7.5$ cm); water depth over spawning depressions was 9 to 29 cm ($X = 16.1 \pm 5.7$ cm) and speed of flow was constant at 0.34 to 0.35 m/s. Water temperatures range from 18.2 to 24.6 °C (Maddux and Kepner 1988).

PRIMARY CONSTITUENT ELEMENTS FOR THE ZUNI BLUEHEAD SUCKER

The PCEs of critical habitat are contained within the riverine ecosystem formed by the wetted channel and the adjacent floodplains within 91.4 lateral m (300 lateral ft) on either side of bankfull stage, except where bounded by canyon walls. The PCEs include:

(1) A riverine system with habitat to support all life stages of Zuni bluehead sucker (egg, larval, juvenile, and adult), which includes:

- a. Dynamic flows that allow for periodic changes in channel morphology and adequate river functions, such as channel reshaping and delivery of coarse sediments.
- b. Stream courses with perennial flows, or areas that may be periodically dewatered but serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted;
- c. Stream microhabitat types including runs, riffles, and pools with substrate ranging from gravel, cobble, and bedrock substrates with low or moderate amounts of fine sediment and substrate embeddedness;
- d. Streams with depths generally less than 2 m (3.3 ft), and with slow to swift flow velocities less than 35 cm/sec (1.1 ft/sec);
- e. Clear, cool water with low turbidity and temperatures in the general range of 9.0 to 28.0 °C (48.2 to 82.4 °F).
- f. No harmful levels of pollutants; and
- g. Adequate riparian shading to reduce water temperatures when ambient temperatures are high and provide protective cover from predators.

(2) An abundant aquatic insect food base consisting of fine particulate organic material, filamentous algae, midge larvae, caddisfly larvae, mayfly larvae, flatworms, and small terrestrial insects.

(3) Areas devoid of nonnative aquatic species or areas that are maintained to keep nonnative species at a level that allows the Zuni bluehead sucker to continue to survive and reproduce.

Developed areas such as lands covered by bridges, docks, aqueducts, and other structures are excluded because such lands lack physical or biological features for the Zuni bluehead sucker. These areas are excluded by text in the proposed rule (78 FR 5357).

RELATED LAWS, AUTHORIZATIONS, AND PLANS

The New Mexico Department of Game and Fish has developed a state recovery plan for the Zuni Bluehead Sucker (NMDGF 2004). In addition, both Arizona and New Mexico

list Zuni bluehead sucker as a “Species of Greatest Conservation Need” in their comprehensive wildlife conservation strategies (AGFD 2006, NMDGF 2006). Both Arizona and New Mexico prohibit fishing of Zuni bluehead sucker (AGFD 2011, NMDGF 1998).

The Navajo Nation does not list the Zuni bluehead sucker subspecies. However, the bluehead sucker is listed as a Group 4 (G4) Species, which is defined as “Any species or subspecies for which the Navajo Nation Department of Fish and Wildlife (NNDFW) does not currently have sufficient information to support their being listed in G2 or G3 but has reason to consider them.” The Navajo Nation Natural Heritage Program recommends the following avoidance for the bluehead sucker: “Within occupied habitat, no surface disturbance year-round within 30-60 m of top of streambank (depending on stream category, per Navajo Natural Heritage Program, 1994), and prevent changes to water chemistry or quantity” (Navajo Natural Heritage Program 2008). The Navajo Nation plans to include the Zuni bluehead sucker on their list of threatened and endangered species, since the USFWS listed the Zuni bluehead sucker as endangered on July 24, 2014.

The Zuni Pueblo does not have an endangered or sensitive species list. However, the Tribe has a riparian restoration program and a wildlife habitat restoration program, which could improve habitat for the species. The Zuni bluehead sucker is protected from fishing in Zuni Pueblo lakes (Zuni Pueblo Law and Order Code S7-5-3 paragraph 36). In addition, stream fishing is prohibited on the Pueblo.

The Navajo Nation has an equivalent environmental process to that of National Environmental Protection Agency (NEPA) under applicable Navajo law, including the Navajo Environmental Policy Act, and for its independent surface leasing authority done pursuant to Federal regulations. There are several plans and policies that have been developed by the Navajo Nation Department of Fish and Wildlife, the Navajo Nation Environmental Protection Agency (NNEPA) and the Navajo Nation Forestry Department. The Biological Resources Land Use Clearance Policies and Procedures categorizes the Navajo Nation into six categories of sensitivity ranging from High Sensitivity, Moderate Sensitivity, Community Development Areas, Recreation Areas, and Biological Preserves. The Highly Sensitive areas and Biological preserves are areas that are the most protected on the Navajo Nation. The RCP outlines the policies and procedures required for any projects to occur within high sensitive areas. All of the drainages that are proposed for critical habitat for the Zuni bluehead suckers are Highly Sensitive Areas (Area 1). Area 1 is considered a Highly Sensitive Area, and contains the best habitat available for endangered and rare plant, animal and game species, and has the highest concentration of these species on the Navajo Nation.

The Navajo Nation Water Quality Standards of 2007 were developed by the Water Quality program within the NNEPA (NNEPA 2008, p. 1). The Water Quality Standards are regulations that were adopted pursuant to the Navajo Nation Clean Water Act (4 Navajo Nation Code (NNC) 104(b), 201). These regulations establish surface water quality standards applicable to the surface waters of the Navajo Nation pursuant to the Federal Clean Water Act (CWA) 33 USC Section 1251.

The Navajo Nation Aquatic Resource Protection Program, March 1994, establishes regulatory standards for protection of rivers, streams, lakes, wetlands, riparian areas and other sensitive aquatic features on Navajo lands.

The Navajo Nation also has a 10-year Forest Management Plan. The Forest Management Plan identifies Special Management Areas (SMAs); SMAs were created in an effort to treat critical wildlife and forest resources areas differently from the rest of the forest. All of the streams that contain bluehead suckers are within SMAs.

The National Forest Management Act of 1976 (16 USC §1600 et seq.) directs the U.S. Forest Service (USFS, Forest Service) to prepare programmatic-level management plans to guide long-term resource management decisions. In addition, the Forest Service is required to manage habitat to maintain viable populations of existing native and desired nonnative vertebrate species in planning areas (36 CFR §219.19). The Cibola National Forest is currently revising the Forest Plan for the “mountain districts” including the Mt. Taylor Ranger District (USFS 2013a). The Mt. Taylor Ranger District travel management plan analyzed effects on the Zuni bluehead sucker, but did not consider critical habitat. The Zuni Mountain Collaborative Forest Project has improving Zuni bluehead sucker habitat as a goal, and has identified specific strategies to improve watershed conditions for the species (USFS 2012).

The U.S. Army Corps of Engineers (COE) regulates the discharge of fill material to waters of the United States, including most of the Zuni bluehead sucker habitat, pursuant to Section 404 of the CWA, and issues permits for actions proposed within such waters. Jurisdictional, nontidal waters of the United States regulated by the COE are defined in 33 CFR 328.4(c) as those that comprise the area of a water course that extends up to the ordinary high-water mark.

ISSUES FROM PUBLIC COMMENTS

Six comments were received on the docket. Topics addressed in comments were sorted into two categories 1) issues related to critical habitat and 2) non-issues or issues not related to critical habitat. Issues are defined as a concern or debate about the effects of the proposal. Comments not considered issues to analyze in the EA were those that are:

1. Outside of the scope of the proposed action/purpose and need, and thus irrelevant to the decision being made, including many comments about the proposed listing;
2. Already decided by law, regulation, or other higher-level authority.

TOPICS ANALYZED IN DETAIL IN THIS ENVIRONMENTAL ASSESSMENT

Several resources have been identified as potentially affected by the proposed designation during internal scoping and the public comment period. These resources, which are analyzed in Chapter 3.0 of this EA, are as follows:

- Fish, Wildlife, and Plants
- Water Resources
- Floodplains and Wetlands
- Fire Management
- Construction
- Livestock Grazing
- Recreation
- Cultural or Historic Resources, Including Indian Sacred Sites
- Socioeconomics
- Environmental Justice

TOPICS DISMISSED FROM DETAILED ANALYSIS

Federal regulations (40 CFR §1500 et seq.) require that certain topics be addressed as part of a NEPA analysis. The USFWS reviewed the mandatory topics listed below and determined that the proposed action has no potential to affect them. These topics have been dismissed from detailed analysis in this document.

ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

Critical habitat designation for the Zuni bluehead sucker is not likely to have any effect on energy consumption.

URBAN QUALITY AND DESIGN OF THE BUILT ENVIRONMENT

The proposed critical habitat segments specifically exclude urban or other built environments by text and therefore no critical habitat would be designated in urban areas. One urban environment (Zuni Pueblo) occurs downstream of the proposed critical habitat, but this area would not be affected by critical habitat designation. There are no urban environments upstream of critical habitat that may be affected by restrictions on streambank stabilization or other conservation measures for critical habitat.

PRIME AND UNIQUE AGRICULTURAL LANDS

Prime agricultural land is defined (7 U.S.C. 4202(a)) as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and also is available for these uses. No prime agricultural land occurs within the proposed critical habitat (NRCS 1997).

PUBLIC HEALTH AND SAFETY

Actions taken to protect and manage critical habitat for the Zuni bluehead sucker would not introduce dangers likely to threaten public health or safety.

CLIMATE CHANGE

Climate change could have an effect of unknown strength on the species. However, any effects of designation of critical habitat on climate change are likely to be insignificant.

Conservation actions taken to recover the population may involve driving, which would increase production of greenhouse gasses. However, given the scale of critical habitat, the production would be minor especially compared to other sources of greenhouse gasses. It is unlikely that designation of critical habitat would result in conservation actions being taken in addition to the actions taken for recovering the population. Therefore, the impact of critical habitat designation on climate change would be insignificant.

ECOLOGICALLY CRITICAL AREAS, WILDERNESS, WILD AND SCENIC RIVERS, OR OTHER UNIQUE NATURAL AREAS

No Areas of Critical Environmental Concern, Wild and Scenic Rivers, Wilderness, or other unique natural areas occur within or adjacent to the area proposed for designation as critical habitat.

DECISION TO BE MADE

The decision to be made by the Secretary of the Department of the Interior is whether to designate critical habitat for the Zuni bluehead sucker, and if critical habitat is designated, which lands will be critical habitat.

CHAPTER 2: ALTERNATIVES

DEVELOPMENT OF ALTERNATIVES

Three alternatives are proposed in this EA. Alternative A, a no action alternative, is required by NEPA. Alternative B proposes critical habitat designation as described in the proposed rule (78 FR 5369), but with the associated modifications as stated in the notice of availability. In developing the proposed rule, the USFWS used the best scientific and commercial data available to propose areas for critical habitat within the geographical area occupied at the time of listing that contain the features essential to the conservation of the Zuni bluehead sucker. Alternative C excludes tribal lands from critical habitat designation.

ALTERNATIVE A: NO ACTION ALTERNATIVE

No critical habitat would be designated under this alternative. Zuni bluehead sucker would remain protected as an endangered species under the Endangered Species Act of 1973, as amended, but critical habitat would not be designated. An analysis of a No Action Alternative is required by NEPA, and provides a baseline for analyzing effects of the action alternatives. Analysis of this alternative describes the existing environment and consequences that are anticipated as a result of the proposed listing of the species without the designation of critical habitat.

ALTERNATIVE B: CRITICAL HABITAT DESIGNATION

Approximately 228.4 km (141.9 mi) of critical habitat would be designated in two units (Tables 1 and 2) under this alternative. Zuni bluehead sucker also would remain listed and protected as an endangered species under the Endangered Species Act of 1973, as amended. All occupied units proposed as critical habitat units contain the PCEs essential to support the life-history needs of the species. All unoccupied units are essential to the conservation of the species. The three areas originally proposed as critical habitat include: (1) Zuni River Unit in Cibola and McKinley Counties, New Mexico; (2) Kinlichee Creek Unit on the Navajo Reservation in Apache County, Arizona; and (3) San Juan River Unit in the Canyon de Chelly area of the Navajo Reservation in Apache County, Arizona and San Juan County, New Mexico (78 FR 5358). However, as stated in the subsequent notice of availability, we have removed from the revised proposed critical habitat designation a portion of the proposed Zuni River Unit (Unit 1) because it does not meet the definition of critical habitat and the entire San Juan River Unit (Unit 3)

because this area is not current or historical habitat for the species. The remaining proposed critical habitat units (Units 1 and 2) would occur on the Navajo Indian Reservation, Zuni Pueblo, and federal, state and private lands (Figures 2-4; Table 3). Approximately 161.1 km (100.1 mi) of the designated units are occupied by the species, representing 70 percent of the total critical habitat designation. USFWS has determined the remaining 67.2 km (41.8 mi) of unoccupied stream segments are essential to the conservation of the species.

Table 2. Critical habitat units for the Zuni bluehead sucker.

Unit	Subunit	Segment	Land Ownership	Length of unit (km)	Length of unit (mi)	Occupied
Zuni River	Zuni River Headwaters	Agua Remora	USFS	6.6	4.1	y
Zuni River	Zuni River Headwaters	Agua Remora	Private	2.4	1.5	y
Zuni River	Zuni River Headwaters	Rio Nutria	Zuni Pueblo	38.9	24.2	y
Zuni River	Zuni River Headwaters	Rio Nutria	USFS	4.1	2.5	y
Zuni River	Zuni River Headwaters	Rio Nutria	State of New Mexico	1.8	1.1	y
Zuni River	Zuni River Headwaters	Rio Nutria	Private	14.2	8.8	y
Zuni River	Zuni River Headwaters	Tampico Draw	USFS	2.3	1.4	y
Zuni River	Zuni River Headwaters	Tampico Draw	Private	3.7	2.3	y
Zuni River	Zuni River Headwaters	Tampico Spring	Private	0.2	0.1	y
Zuni River	Zuni River Mainstem	Zuni River	Zuni Pueblo	7.4	4.6	n
Zuni River	Zuni River Mainstem	Rio Pescado	Zuni Pueblo	18.3	11.4	n
Zuni River	Zuni River Mainstem	Cebolla Creek	Zuni Pueblo	3.7	2.3	n
Zuni River	Zuni River Mainstem	Cebolla Creek	State of New Mexico	0.4	0.2	n
Zuni River	Zuni River Mainstem	Cebolla Creek	USFS	6.4	4.0	n
Zuni River	Zuni River Mainstem	Cebolla Creek	Private	21.4	13.3	n
Kinlichee Creek	Kinlichee Creek	Black Soil Wash	Navajo Nation	21.6	13.4	y
Kinlichee Creek	Kinlichee Creek	Kinlichee Creek	Navajo Nation	47.1	29.3	y
Kinlichee Creek	Kinlichee Creek	Scattered Willow Wash	Navajo Nation	18.2	11.3	y
Kinlichee Creek	Red Clay Wash	Red Clay Wash	Navajo Nation	9.6	6.0	n

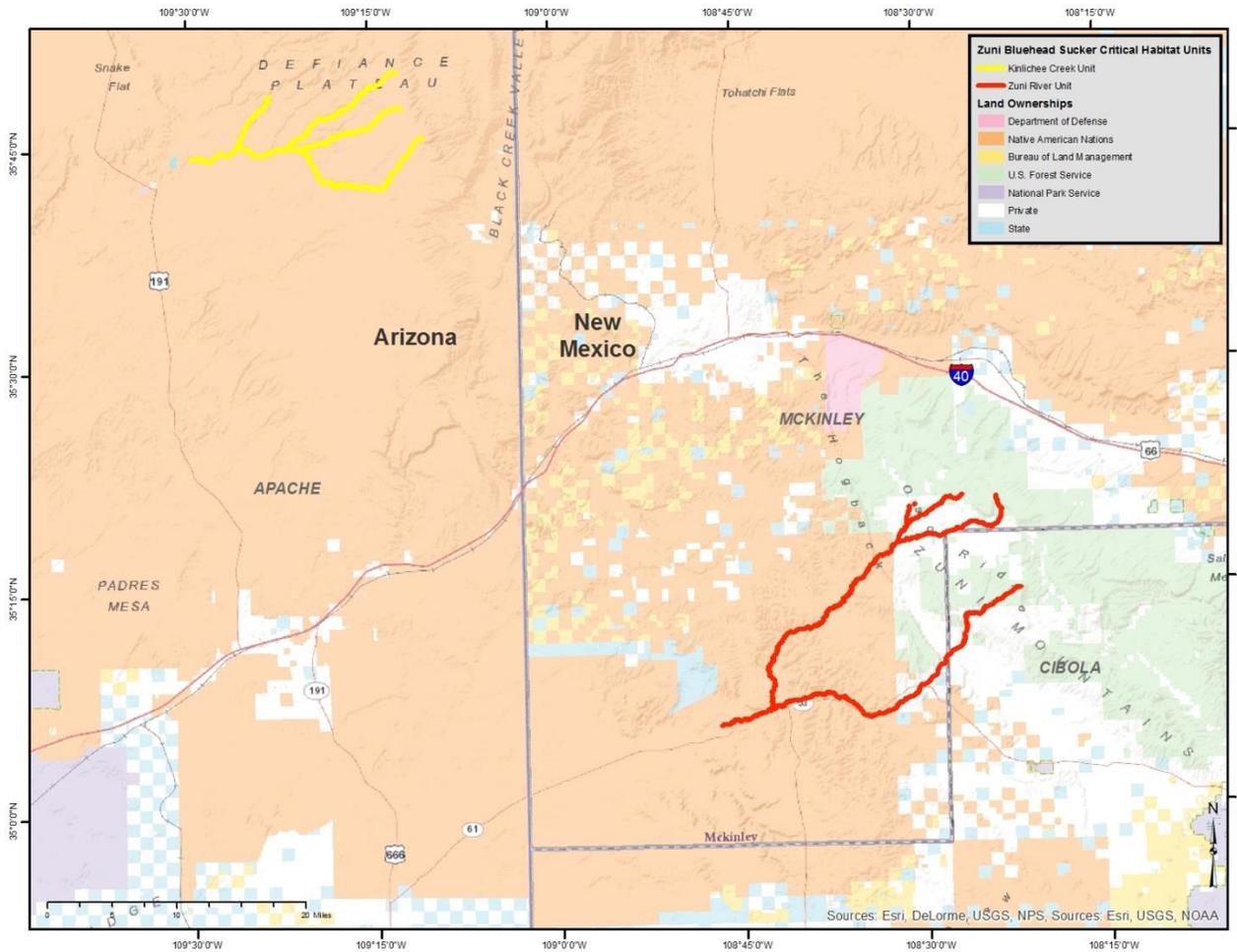


Figure 2. Zuni bluehead sucker critical habitat units, Apache County, Arizona and San Juan, McKinley, and Cibola Counties, New Mexico.

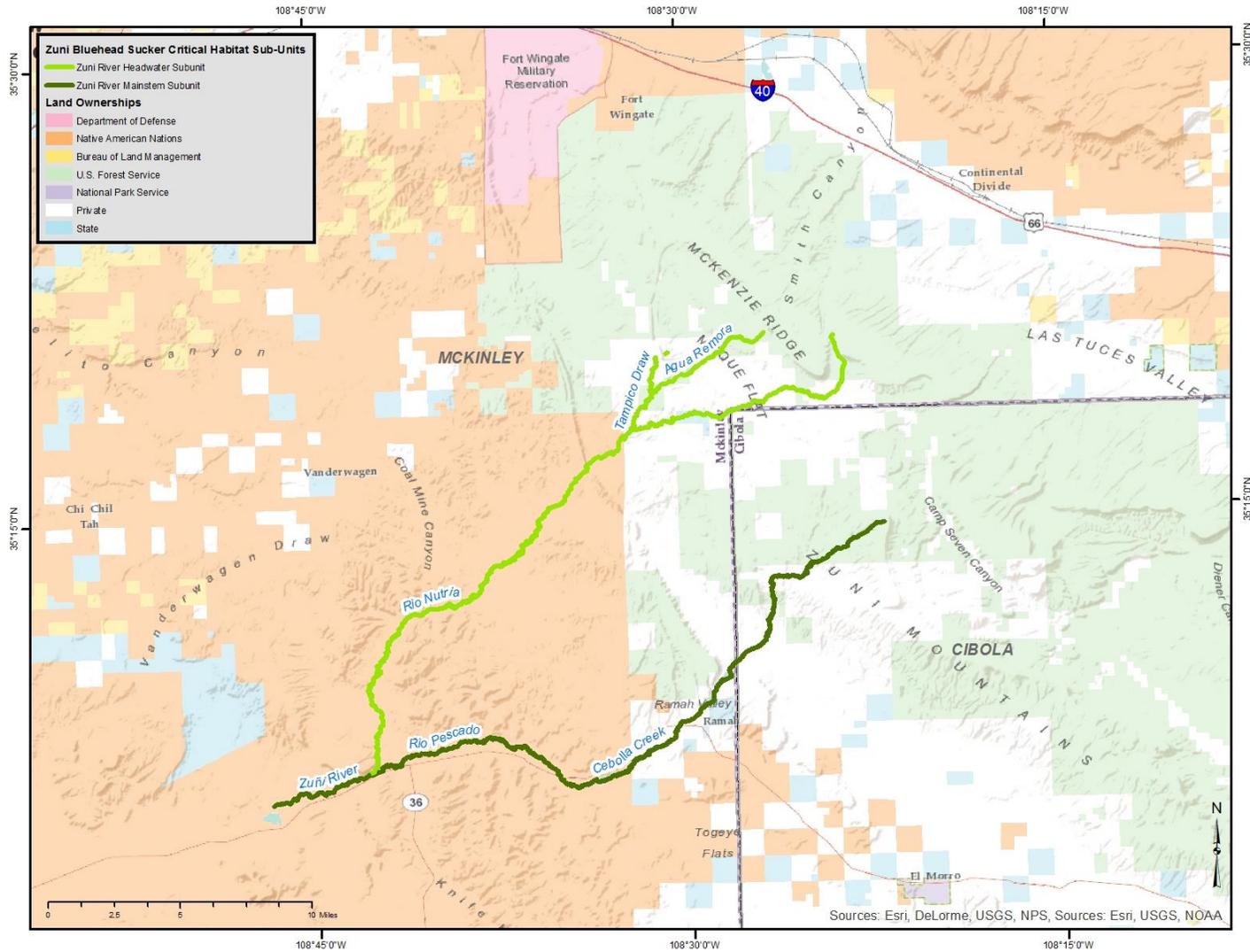


Figure 3. Zuni River critical habitat unit, Cibola and McKinley Counties, New Mexico.

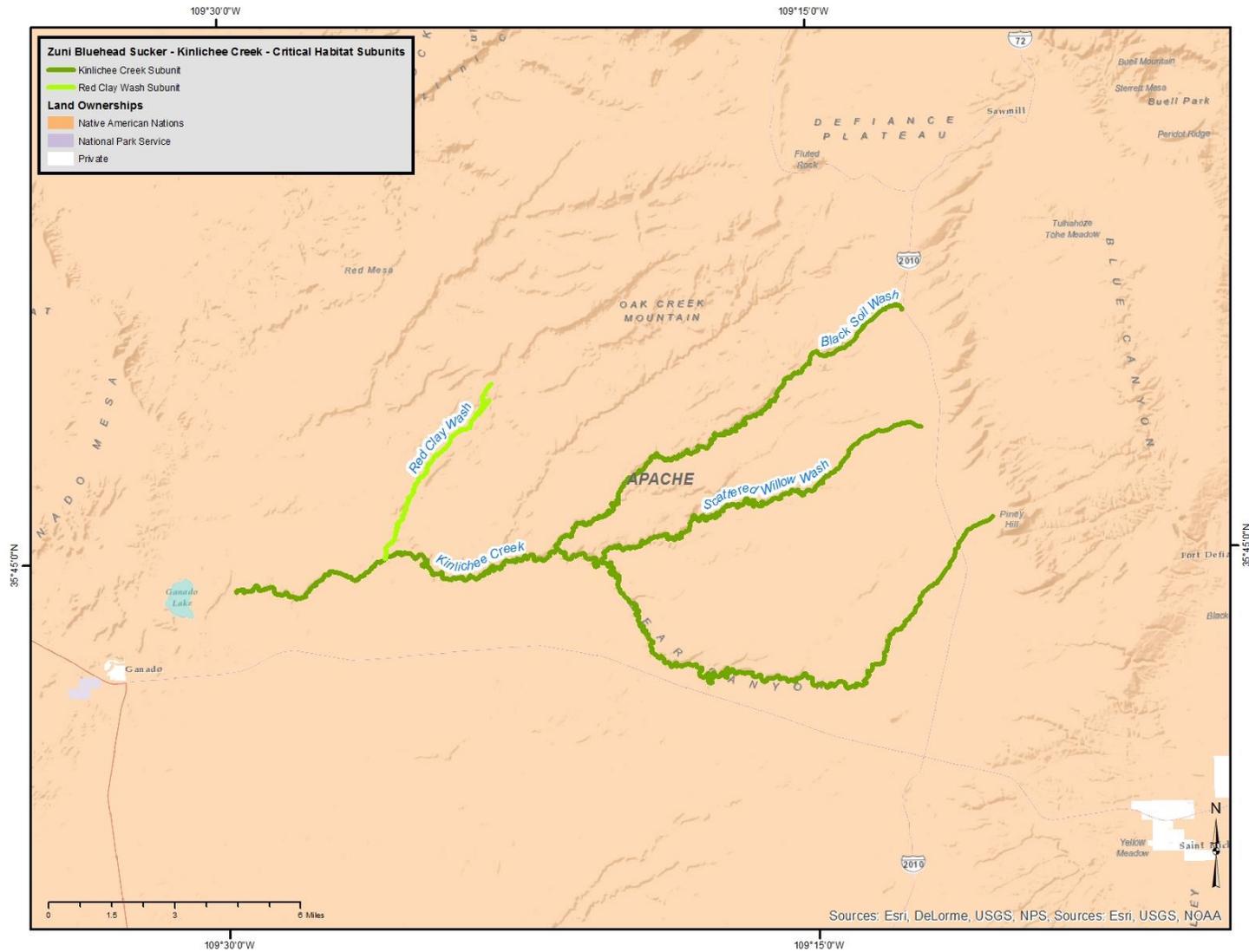


Figure 4. Kinlichee Creek critical habitat unit, Apache County, Arizona.

Table 3. Zuni bluehead sucker critical habitat distribution among two units under Alternative B.

Units	Length (km)	Length (mi)	Percent
Kinlichee Creek	96.6	60.0	42
Zuni River	131.8	81.9	58
Total	228.4	141.9	

Table 4. Zuni bluehead sucker critical habitat by land ownership under Alternative B.

Land Ownership	Length (km)	Length (mi)	Percent
Navajo Nation	96.6	60.0	42
Private	41.9	26.0	18
State of New Mexico	2.2	1.3	1
USFS	19.5	12.1	8
Zuni Pueblo	68.3	42.4	30
Total	228.4	141.9	

ALTERNATIVE C: DESIGNATION OF CRITICAL HABITAT WITH EXCLUSION OF NAVAJO RESERVATION AND ZUNI PUEBLO

Zuni bluehead sucker would remain listed and protected as an endangered species under the Endangered Species Act of 1973, as amended. Approximately 63.5 km (39.4 mi) of stream segments would be designated as critical habitat for the Zuni bluehead sucker under this alternative, all within the Zuni River Unit. Occupied segments contain the PCEs essential to support the life-history needs of the species. All Navajo Reservation (96.5 km, 60.0 mi) and Zuni

Pueblo lands (68.3 km, 42.5 mi) would be excluded from critical habitat designation. These excluded lands together total 164.8 km (102.5 mi), or 72 percent of the critical habitat designation described in Alternative B.

Areas owned by the Zuni Pueblo that would be excluded from the critical habitat designation include 38.9 km (24.2 mi) in Subunit 1a and 29.4 km (18.3 mi) in Subunit 1b. Lastly, the Navajo Nation manages 86.9 km (54 mi) of the proposed critical habitat in Subunit 2a and 9.6 km (6.0 mi) in Subunit 2b. The USFWS also is considering all of these Navajo Nation lands for exclusion under section 4(b)(2) of the Act.

The USFWS is considering excluding these areas due to our cooperative working relationship with the Tribes. Please refer to the *Consideration of Impacts under Section 4(b)(2) of the Act* section of the notice of availability for further detail on the rationale for exclusion of these areas. Under section 4(b)(2) of the ESA, the USFWS may exclude areas from critical habitat designation if the benefit of excluding the area outweighs the benefit of its inclusion in the designation, so long as the exclusion will not result in the extinction of the species. In addition, in accordance with EO12898, USFWS looks at Tribal management in recognition of their desire and capability to appropriately manage their own resources, and considers the government-to-government relationship of the United States with Tribal entities.

Table 5. Land ownership of critical habitat units under Alternative C.

Land ownership	Length (km)	Length (mi)	Percent
Private	41.9	26.0	66
State of New Mexico	2.2	1.3	3
USFS	19.5	12.1	31
Total	63.5	39.4	

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

METHODOLOGY

Descriptions of the affected environment presented in this section are based on a number of sources. These include:

- Published literature

- Available state, tribal, and federal agency reports and management plans
- The proposed rule for designation of critical habitat
- The final rule listing the Zuni bluehead sucker as an endangered species
- The draft economic analysis

The evaluation of impacts in this chapter focuses on costs and outcomes of the potential increase in section 7 consultations resulting from the designation of critical habitat for the Zuni bluehead sucker over and above those needed as a result of the species being listed under ESA and how those costs and outcomes affect the human environment. The designation itself does not produce or authorize direct physical impacts to the environment as this action imposes no universal rules or restrictions on land use, nor does it automatically prohibit or alter any land use or water development activity.

In general, designation of critical habitat could potentially have three effects on section 7 consultations: 1) increasing the number of new consultations or reinitiated consultations, 2) changing the outcome of consultations, or 3) increasing the complexity of consultations. The number of new consultations could be increased with the designation of critical habitat because section 7 consultations may be needed for projects that affect critical habitat and not the species itself. This is only likely to occur in the unoccupied critical habitat subunits. Critical habitat designation could change the outcome of consultations if conservation measures, reasonable and prudent measures, or reasonable and prudent alternatives, are developed only for avoiding adverse modification to critical habitat and not for avoiding jeopardy. This is also only likely to occur in the unoccupied critical habitat subunits because actions taken to avoid jeopardy of the species are also likely to coincidentally protect critical habitat in occupied areas. Increased complexity of consultations stems from the need to analyze potential adverse modification of critical habitat as well as analyzing jeopardy in occupied areas. This extra analysis would require additional administrative costs for evaluating impacts to critical habitat as well as to the species.

ECONOMIC ANALYSIS

For this particular designation, USFWS developed an Incremental Effects Memorandum (IEM) considering the probable incremental economic impacts that may result from this proposed designation of critical habitat (USFWS 2013c). The information contained in the IEM was then used to develop a screening analysis of the probable effects of the designation of critical habitat for the Zuni bluehead sucker (IEc 2014). The purpose of the screening analysis is to filter out the geographic areas in which the critical habitat designation is unlikely to result in probable incremental economic impacts. In particular, the screening analysis considers baseline costs (i.e. absent critical habitat designation) and includes probable economic impacts where land and water use may be subject to conservation plans, land management plans, best management practices, or regulations that protect the habitat area as a result of the Federal listing status of the species. The screening analysis filters out particular areas of critical habitat that are already

subject to such protections and assesses whether units are unoccupied by the species and may require additional management or conservation efforts as a result of the critical habitat designation for the species.

FISH, WILDLIFE, AND VEGETATION

EXISTING CONDITIONS

The critical habitat units include parts of three counties in two states and therefore span a wide range of elevations, precipitation patterns, and vegetation communities. The critical habitat units are within the Arizona-New Mexico Mountains Semidesert--Open Woodland-- Coniferous Forest--Alpine Meadow Province (ecoregion) (USFS 2013b). This ecoregion consists mostly of steep foothills and mountains, but includes some deeply dissected high plateaus in a wide range of elevations. USFS (2013b) describes vegetation of the ecoregion as follows: *The foothill zone, which reaches as high as 7,000 ft (2,100 m), is characterized by mixed grasses, chaparral brush, oak-juniper woodland, and pinyon-juniper woodland. At about 7,000 ft (2,100 m), open forests of ponderosa pine are found, although pinyon and juniper occupy southfacing slopes. In Arizona, the pine forests of this zone are strongly infused with Mexican species, including Chihuahuan and Apache pine. Pine forest is replaced at about 8,000 ft (2,400 m) on northfacing slopes (a little higher elsewhere) by Douglas-fir. Aspen is common in this zone and limber pine grows in places that are rockier and drier. At about 9,000 ft (2,700 m), the Douglas-fir zone merges into a zone of Engelmann spruce and corkbark fir. Limber pines and bristlecone pines grow in the rockier places. An alpine belt covers relatively small areas above 11,000 ft (3,400 m).*

This wide range of elevation, climate, and vegetation results in a diversity of plant and animals throughout the region.

THREATENED, ENDANGERED, AND CANDIDATE SPECIES

Twenty-one federally-listed threatened, endangered, and candidate species occur in Apache County, Arizona; McKinley County, New Mexico; and Cibola County, New Mexico (Table 6).

Table 6. Threatened, endangered, and candidate species in Apache County, Arizona; McKinley County, New Mexico; and Cibola County, New Mexico (USFWS 2013a;b).

COMMON NAME	SCIENTIFIC NAME	TAXONOMIC GROUP	STATUS*
Chiricahua leopard frog	<i>Lithobates chiricahuensis</i>	Amphibian	T
California condor	<i>Gymnogyps californianus</i>	Bird	E
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Bird	T
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Bird	E
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Bird	C
Apache trout	<i>Oncorhynchus gilae apache</i>	Fish	T
Little Colorado spinedace	<i>Lepidomeda vittata</i>	Fish	T
Loach minnow	<i>Tiaroga cobitis</i>	Fish	E
Roundtail chub	<i>Gila robusta</i>	Fish	C
Three Forks springsnail	<i>Pyrgulopsis trivialis</i>	Invertebrate	E
Black-footed ferret	<i>Mustela nigripes</i>	Mammal	E
New Mexico meadow jumping mouse	<i>Zapus hudsonius luteus</i>	Mammal	C
Mexican gray wolf	<i>Canis lupus baileyi</i>	Mammal	E
Arizona willow	<i>Salix arizonica</i>	Plant	CA

Gooddings onion	<i>Allium gooddingii</i>	Plant	CA
Welsh's milkweed	<i>Asclepias welshii</i>	Plant	T
Navajo sedge	<i>Carex specuicola</i>	Plant	T
Pecos sunflower	<i>Pecos sunflower</i>	Plant	T
Zuni fleabane	<i>Erigeron rhizomatus</i>	Plant	T
Northern Mexican gartersnake	<i>Thamnophis eques megalops</i>	Reptile	T
Narrow-headed gartersnake	<i>Thamnophis rufipunctatus</i>	Reptile	T

*E = endangered, T=threatened, C=candidate, CA=conservation agreement, PE=proposed endangered, PT=proposed threatened, NEP = nonessential experimental population

The only federally-listed species with critical habitat geographically overlapping the proposed critical habitat for Zuni bluehead sucker is the Mexican spotted owl. Critical habitat for Mexican spotted owl occurs along the upper reaches of Cebolla Creek, Rio Nutria, and Agua Remora subunits. Mexican spotted owl requires conifer forests with multiple canopy layers. Nesting and roosting habitat typically occurs either in well-structured forests with high canopy cover, large trees, and other late seral characteristics, or in steep and narrow rocky canyons formed by parallel cliffs with numerous caves and/or ledges within specific geologic formations (USFWS 2012b).

OTHER SPECIAL STATUS SPECIES

USFS Region 3 Sensitive species found on the Mt. Taylor Ranger District (Zuni critical habitat unit) include Northern goshawk (*Accipiter gentilis atricapillus*), bald eagle (*Haliaeetus leucocephalus*), American peregrine falcon (*Falco peregrinus anatum*), spotted bat (*Euderma maculatum*), Merriam's shrew (*Sorex merriami*), Gunnison's prairie dog (*Cynomys gunnisoni*), Cebolletta Southern pocket gopher (*Thomomys umbrinus paguatae*), Mt. Taylor Northern pocket

gopher (*Thomomys talpoides taylori*) Northern leopard frog (*Rana pipiens*), Rio Grande sucker (*Catostomus plebeius*), Zuni milkvetch (*Astragalus accumbens*), Villous groundcover milkvetch (*Astragalus humistratus* var. *crispulus*), and Sivinski's fleabane (*Erigeron sivinskii*) (USFS 2010).

Also within the Zuni critical habitat unit, New Mexico Department of Game and Fish Species of Greatest Conservation Need in perennial 1st and 2nd order streams in the Zuni watershed include yellow warbler (*Setophaga petechia*), American beaver (*Castor canadensis*), western chorus frog (*Pseudacris triseriata*), Northern leopard frog, and *Hyalella* spp. (crustaceans) (NMDGF 2006).

Navajo Nation listed species are likely to occur in the Kinlichee Creek unit. Groups 2 and 3 species are considered "Endangered," which includes any species or subspecies whose prospects of survival or recruitment within the Navajo Nation are in jeopardy or are likely within the foreseeable future to become so (Navajo Natural Heritage Program 2008). Group 2 species include: Black-footed Ferret (*Mustela nigripes*), Yellow-billed Cuckoo (*Coccyzus americanus*), Southwestern Willow Flycatcher (*Empidonax traillii extimus*), Bald Eagle (*Haliaeetus leucocephalus*), Northern Leopard Frog (*Lithobates pipiens*), Humpback Chub (*Gila cypha*), Roundtail Chub (*Gila robusta*), Colorado Pikeminnow (*Ptychocheilus lucius*), Razorback Sucker (*Xyrauchen texanus*), Cutler's Milk-vetch (*Astragalus cutleri*), Mancos Milk-vetch (*Astragalus humillimus*), Rhizome Fleabane (*Erigeron rhizomatus*), Brady Pincushion Cactus (*Pediocactus bradyi*), Mesa Verde Cactus (*Sclerocactus mesae-verdae*). Group 3 species include: Pronghorn (*Antilocapra americana*) Bighorn Sheep (*Ovis canadensis*), Golden Eagle (*Aquila chrysaetos*), Ferruginous Hawk (*Buteo regalis*), American Dipper (*Cinclus mexicanus*), Mexican Spotted Owl (*Strix occidentalis lucida*), Western Seep Fritillary (*Speyeria nokomis*), Gooding's Onion (*Allium gooddingii*), Welsh's Milkweed (*Asclepias welshii*), Marble Canyon Milk-vetch (*Astragalus cremnophylax* var. *hevroni*), Cronquist Milk-vetch (*Astragalus cronquistii*), Naturita Milk-vetch (*Astragalus naturitensis*), Navajo Sedge (*Carex specuicola*), Acoma Fleabane (*Erigeron acomanus*), Round Dunebroom (*Errazurizia rotundata*), Navajo Bladderpod (*Lesquerella navajoensis*), Fickeisen Plains Cactus (*Pediocactus peeblesianus* ssp. *fickeiseniae*), Navajo Penstemon (*Penstemon navajoa*), Alcove Rock Daisy (*Perityle specuicola*), Alcove Bog-orchid (*Platanthera zothecina*), Alcove Death Camas (*Zigadenus vaginatus*).

Many of the AGFD Species of Greatest Conservation Need in the Arizona-New Mexico Mountain Ecoregion that occur in wetlands/springs or streams/rivers also occur within the proposed critical habitat units (AGFD 2012).

BIRDS OF CONSERVATION CONCERN

All agencies are required to consider in planning documents, including NEPA documents, all Birds of Conservation Concern by Executive Order 13186. Proposed Critical Habitat units for

the Zuni bluehead sucker are in Bird Conservation Region (BCR) Number 16 (USFWS 2008). Birds of Conservation Concern occurring within the critical habitat units are typical of the BCR.

MIGRATORY BIRDS

The Migratory Bird Treaty Act makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition, this act serves to protect environmental conditions for migratory birds from pollution or other ecosystem degradations.

Nearly all bird species occurring on the proposed critical habitat are protected under this act (USFWS 2012a). Exceptions include nonnative species such as House sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*).

BALD AND GOLDEN EAGLES

Bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are protected under the Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668-668c). The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles, including their parts, nests, or eggs. The Bald and Golden Eagle Protection Act provides for civil and criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle, ... alive or dead, or any part, nest, or egg thereof.” The act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” “Disturb” is further defined by regulation as: “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

Migrant bald eagles use various lakes on the Navajo Nation, including: Wheatfields, Tsaile, Many Farms, Morgan, Red and Black Lakes, and various lakes in the Chuska Mountains. Wintering eagles occur along the San Juan and Colorado Rivers (Mikesic 2008).

(COMMON) WILDLIFE

The most common large mammal of the ecoregion is mule deer (*Odocoileus hemionus*). Mammalian predators include mountain lions (*Puma concolor*), coyotes (*Canis latrans*), and bobcats (*Lynx rufus*) (USFS 2013b). Common small mammals include deer mouse (*Peromyscus maniculatus*), long-tailed weasel (*Mustela frenata*), porcupine (*Erethizon dorsatum couesi*), golden-mantled ground squirrel (*Callospermophilus lateralis*), red squirrel (*Tamiasciurus hudsonicus*), and Abert's squirrel (*Sciurus aberti*) (USFS 2013b). The ponderosa pine forests support a varied mammal community consisting of several notable species such as Abert's squirrel, black bear (*Ursus alllericanus*), coyote, bobcat, mountain lion, mule deer, and Rocky Mountain elk (*Cervus elaphus*) (BOR 2006).

Birds of prey that likely frequent the Zuni River Unit include red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), American kestrel (*Falco sparverius*), peregrine falcon, osprey (*Pandion haliaetus*), turkey vulture (*Cathartes aura*), great horned owl (*Bubo virginianus*), and northern sawwhet owl (*Aegolius acadicus*) (BOR 2006). Other birds in the area include wild turkey (*Meleagrus gallopavo*), belted kingfisher (*Ceryle alcyon*), Steller's jay (*Cyanocitta stelleri*), mountain bluebird (*Sialia currucoides*), hairy woodpecker (*Picoides villosus*), Northern flicker (*Colaptes auratus*), rufous hummingbird (*Selasphorus rufous*), and common raven (*Corvus corax*) (BOR 2006).

(COMMON) FISH

Native fish are uncommon in the lakes and reservoirs of the area, all of which have been stocked with nonnative species. Red Lake is located on the west side of Navajo Route 12, which is within the Little Colorado River drainage. Red lake was home of channel catfish, largemouth bass, and northern pike. Currently, Red Lake is dry due to needed repairs in the dam. After dam renovations are completed, the lake will be filled again and stock with largemouth bass, bluegill (*Lepomis macrochirus*) and channel catfish. In an adjacent watershed, Tsaile Reservoir is maintained as a recreational fishery by the NNDFW and is stocked with rainbow trout (*Oncorhynchus mykiss*), cutthroat trout (*Oncorhynchus clarkii*), brown trout (*Salmo trutta*), and channel catfish (BIA 2012). In addition to stocked species, Tsaile Reservoir also is known to contain green sunfish (*Lepomis cyanellus*), bullhead (*Ameiurus* sp.), and goldfish (*Carassius auratus*) (BIA 2012). The NDFW stocks trout in Wheatfields, Tsaile, Asaayi, Whiskey, Chuska, Trout, Berland, Aspen, Antelope, and Round Rock Reservoirs; catfish in Tsaile, Ganado, Red Lake, Many Farms, Morgan, and Round Rock Reservoirs; and bass in Ganado, Red Lake, Many Farms, and Morgan Reservoirs (Navajo Nation Department of Water Resources 2003).

INVERTEBRATES

Use and transport of crayfish as bait has resulted in rapid expansion of at least two species throughout Arizona (Childs 1999). Nonnative crayfish found in the area of proposed critical habitat for Zuni bluehead sucker include the northern crayfish (*Orconectes virilis*) and the red swamp crayfish (*Procambarus clarkii*). The northern crayfish is found in much of the proposed critical habitat and is tolerant of a wide range of habitats and may be a threat to Zuni bluehead sucker through competition or predation (FR 5380). Introduction of crayfish to Arizona has been detrimental to native aquatic communities (Childs 1999). Crayfish forage on plants and invertebrates, destroy aquatic vegetation, prey upon various life-stages of vertebrates and may outcompete fish for food and shelter (Childs 1999).

Elimination of crayfish is difficult because chemical toxicants need to be applied at levels detrimental to fish (Childs 1999). Physical traps are also ineffective. Modified minnow traps set in 2004 captured Zuni bluehead sucker as well as crayfish (Carman 2009).

VEGETATION

Overstory vegetation in the Zuni River Unit consists primarily of open stands of ponderosa pine (*Pinus ponderosa*), mixed pinyon (*Pinus edulis*) and juniper (*Juniperus* spp.) woodlands, wet mixed coniferous forest and dry coniferous forest (BOR 2006, USFS 2012). Each forest vegetation community of the Mt. Taylor Ranger District is targeted for planned restoration under the Zuni Mountain Landscape Strategy (USFS 2012).

The Piñon-Juniper (PJ) vegetation community is collectively composed of the Juniper Grassland, PJ Grassland, PJ Sagebrush, PJ Evergreen Shrub, and PJ Woodland (persistent) Potential Natural Vegetation Types (USFS 2012). These generally occur at elevations between approximately 1372 and 2286 m (4500 and 7500 ft). They are dominated by one or more species of piñon pine and/or juniper and can occur with a grass/forb dominated understory, a shrub dominated understory (sagebrush/evergreen shrub), or a sparse discontinuous understory of some grasses and/or shrubs (PJ persistent woodland). Species composition and stand structure vary by location primarily due to precipitation, elevation, temperature, and soil type (USFS 2012).

At the landscape scale (greater than 4,050 ha [10,000 ac]), the ponderosa pine forest vegetation community is composed of trees from structural stages ranging from young to old. “Old growth” is well distributed in the landscape. Forest appearance is variable but generally uneven-aged and open; occasional areas of even-aged structure are present. The forest arrangement is in individual trees, small clumps, and groups of trees interspersed within variably-sized openings of grass/forbs/shrubs vegetation associations similar to historic patterns. Openings typically range from 10 percent in more productive sites to 70 percent in the less productive sites. Size, shape,

number of trees per group, and number of groups per area are variable across the landscape. In the Gambel oak sub-type, all sizes and ages of oak trees are present. Denser tree conditions exist in some locations such as north facing slopes and canyon bottoms (USFS 2012).

At the landscape scale (greater than 4,050 ha [10,000 ac]), the dry mixed conifer vegetation community is a mosaic of forest conditions composed of structural stages ranging from young to old trees. Old-growth is well-distributed in the landscape. Forest appearance is variable but generally uneven-aged and open; occasional patches of even-aged structure are present. The forest arrangement is in small clumps and groups of trees interspersed within variably-sized openings of grass/forb/shrub vegetation associations similar to historic patterns. Size, shape, number of trees per group, and number of groups per area are variable across the landscape. Where they naturally occur, groups or patches of aspen and all structural stages of oak are present. Denser tree conditions exist in some locations such as north facing slopes and canyon bottoms (USFS 2012).

The Wet Mixed Conifer forest vegetation community is a mosaic of structural and seral stages ranging from young trees through old. The landscape arrangement is an assemblage of variably-sized and aged groups and patches of trees and other vegetation associations similar to historic patterns. Tree groups and patches are comprised of variable species composition depending on forest seral stages. An approximate balance of seral stages is present across the landscape, each seral stage characterized by distinct dominant species composition and biophysical conditions. Old-growth is well-distributed in the landscape. Canopies are generally more closed than in dry mixed conifer. An understory consisting of native grass, forbs, and/or shrubs is present.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE A (NO ACTION)

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. Potential new consultations could occur on USFS general management plans, wildlife habitat improvements (USFWS and NRCS), USFS aquatic restoration projects and native fish and frog reestablishment, and habitat conservation plans and safe harbor agreements (USFWS 2013c).

In addition to these new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Reinitiated consultations may include those on vegetation management including control of invasive plants and fire management plans. Analysis under the adverse modification standard would not be required in these new and reinitiated consultations because no critical habitat would be designated.

Management of ecosystems for recovery of the Zuni bluehead sucker would likely benefit most fish, wildlife, and plants. Other ESA listed species and special status species are likely to benefit from the improvements in riparian vegetation and streambed structure resulting from Zuni bluehead sucker recovery actions. Many migratory birds and Birds of Conservation Concern also are found in riparian areas and are likely to benefit from improved riparian conditions. Native fish and amphibians would benefit from riparian restoration, maintenance of instream flows, and removal of nonnative species. On the other hand, recovery actions for the Zuni bluehead sucker will likely strive to reduce nonnative crayfish and nonnative fish predators such as largemouth bass, rainbow trout, brown trout, brook trout, northern pike, and channel catfish (see the recreation topic below for additional discussion of nonnative sport fish). Nonnative sport fish (predators of the Zuni bluehead sucker) are a major prey item for bald eagles. The eagles would need to prey upon other sport fish, which are abundant and widely-distributed, and a variety of other prey, such as prairie dogs and waterfowl.

ALTERNATIVE B (DESIGNATION OF CRITICAL HABITAT)

Under this alternative, federally supported actions to manage fish, wildlife and plants would require section 7 consultations under both the jeopardy standard and the adverse modification standard. Existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker.

In occupied critical habitat units, both new and reinitiated consultations would require slightly more administrative cost than in Alternative A because action agencies and USFWS would need to determine if the proposed actions would cause adverse modification to critical habitat in addition to determining if the actions would cause jeopardy to the species. This increase in administrative costs is likely to be minimal because the biologists analyzing effects on critical habitat would already have reviewed the location and description of the proposed action and determined how it may affect Zuni bluehead sucker habitat as part of jeopardy analysis. Project modifications would not likely differ from Alternative A because project modifications that minimize effects to the Zuni bluehead sucker would coincidentally minimize effects to designated critical habitat (USFWS 2013c).

Special management or protection that may occur to benefit the Zuni bluehead sucker in occupied critical habitat may include stream fencing and erosion control structures along roads and during construction (78 FR 5359). These actions are not likely to have a negative effect on any federally-listed threatened, endangered or candidate species. Upland restoration projects designed to reduce erosion and siltation and watershed hydrology would benefit many federally-listed species. Special management or protection actions that may occur within riparian or riverine systems include maintaining instream flows, nonnative species removal, and reservoir management (78 FR 5359).

In unoccupied critical habitat units, consultations would be required for new projects to analyze their potential to cause adverse modification to critical habitat. In addition, existing consultations for other listed species on ongoing projects may need to be reinitiated to consider adverse modification to Zuni bluehead sucker critical habitat. The number of these new and reinitiated consultations due solely to critical habitat designation is likely to be a small proportion of consultations overall because only 30 percent of the critical habitat area (67.2 km, 41.8 mi) is unoccupied. In addition, Navajo Nation, Zuni Pueblo, BIA, and Forest Service biologists were unaware of projects that may affect unoccupied critical habitat (USFWS 2013c).

Some proposed projects encompass both unoccupied and occupied critical habitat units. These projects would require section 7 consultation under the jeopardy standard. Additional administrative costs may be required to analyze effects in the unoccupied critical habitat units, but this increase in cost is likely to be minor in relationship to the overall cost required to evaluate the project across its range. Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under both the jeopardy standard and the adverse modification standard. Consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate analysis of effects on the Zuni bluehead sucker and critical habitat. As with Alternative A, recovery actions and conservation measures to promote Zuni bluehead sucker recovery would be implemented.

Management or protection for unoccupied critical habitat units could include a number of project modifications including riparian vegetation management, and changes to nonnative fish stocking (USFWS 2013c). On federally-managed lands these benefits would be more likely to occur in unoccupied reaches if critical habitat is designated. Possible project modifications that could be sought to avoid adverse modification within unoccupied areas of critical habitat (USFWS 2013c):

1. Altering dam operations to more closely mimic a natural hydrograph (Subunit 1b - Zuni Pueblo only).
2. Altering dam operation to improve the overall longevity of habitat within the conservation space of a habitat above and below the dam (Subunit 1b - Zuni Pueblo only).
3. Modify dam outlets to ensure nonnative fish are not accidentally introduced into unoccupied sites (Subunits 1b - Zuni Pueblo only).
4. Reducing or retiring of other water consumptive stressors (such as water diversion or ground water pumping) to offset impacts (Subunits 1b).
5. Modify grazing operation through fencing, reconfiguration of grazing units, off-site water development, and seasons of use (Subunits 1b and 2b).

6. Modify ORV management through fencing, signage, education, areas and timing of use (Subunit 1b).
7. Improve the development of native riparian vegetation through reducing land- and water-management stressors (Subunits 1b and 2b).
8. Retain riparian vegetation (Subunits 1b and 2b).
9. Alter or prohibit nonnative stocking practices (Subunits 1b).

Both Zuni bluehead sucker and Mexican spotted owl would benefit from conservation measures to reduce the severity of wildfires, but both species also may be negatively affected by ash and potential removal of woody overstory associated with prescribed fire. It is unlikely that measures taken to reduce the impacts of prescribed fire treatments on Zuni bluehead sucker would have a negative impact on Mexican spotted owl or its critical habitat, and may have a positive effect on critical habitat for the Mexican spotted owl. Other management or protection action taken to protect Zuni bluehead sucker critical habitat, such as watershed-level erosion control and stream fencing, would likely benefit the Mexican spotted owl, its prey, and its critical habitat by improving understory plant composition and structure. The upper reaches of Cebolla Creek is the only area that would be subjected to these conservation actions to protect Zuni bluehead sucker critical habitat that also are Mexican spotted owl critical habitat and would not receive treatments in absence of Zuni bluehead sucker critical habitat designation because they are not currently occupied by the Zuni bluehead sucker.

Each of possible project modifications listed above is likely to benefit riparian vegetation, riverine habitat, and special status species dependent on riparian and riverine communities. Migratory birds and Birds of Conservation Concern also would likely benefit from these project modifications to protect Zuni bluehead sucker critical habitat. Many migratory birds are dependent on insect-rich riparian vegetation and would benefit from the vegetation changes likely to accompany stream protection. Bald and Golden Eagles also would likely benefit from conservation actions that may increase their prey base and improve habitat structure. On the other hand, nonnative sport fish (predators of the Zuni bluehead sucker) are a major prey item for bald eagles. The bald eagles' prey base would be affected if these nonnative sport fish populations are effectively removed. The eagles would need to prey upon other sport fish and a variety of other prey, such as prairie dogs and waterfowl. Because the prey base is diverse, effects on bald eagles are likely to be minor.

Native fish and amphibians would benefit from riparian restoration, maintenance of instream flows, and removal of nonnative species. On the other hand, conservation recommendations will likely include reducing nonnative crayfish and nonnative fish predators such as largemouth bass, rainbow trout, brown trout, brook trout, northern pike, and channel catfish (see the recreation topic below for additional discussion of nonnative sport fish). Because control efforts for crayfish are ineffective, there is not likely to be any impact on crayfish.

The Navajo Nation identified their Forest Management Plan as a project which may require section 7 consultation (USFWS 2013c). Recommendations could include those to reduce siltation.

ALTERNATIVE C (DESIGNATION OF CRITICAL HABITAT WITH EXCLUSIONS)

The effects of this alternative on fish, wildlife, and plants would be the same as for alternative B except: 1) fewer consultations on tribal lands would be necessary because only areas occupied by the Zuni bluehead sucker would need to be considered, and 2) consultations on occupied areas would not need to analyze adverse modification to critical habitat. Section 7 consultations would still be required under the jeopardy standard on projects involving a federal nexus and affecting occupied stream segments. The number of new and reinitiated consultations due solely to critical habitat designation is fewer than in Alternative B because the overall length of unoccupied units is less than in Alternative B (28.2 km, 17.5 mi).

As with Alternative B, other native species are likely to benefit from the improvements in riparian vegetation, streambed structure, flows, and aquatic species composition resulting from designation of critical habitat on non-tribal lands. Habitat improvements for Zuni bluehead sucker on unoccupied reaches of the tribal areas excluded from critical habitat designation in this alternative (approximately 39.0 km [24.3 mi]) would be due to management efforts expected to be initiated by the Navajo Nation and Zuni Pueblo rather than due to critical habitat designation.

WATER RESOURCES

EXISTING CONDITIONS

The Arizona-New Mexico Mountains ecoregion is influenced by a moisture deficit in late spring until the arrival of summer rains and thunderstorms, followed by rains in early autumn and winter (USFS 2013b). Stream discharges are influenced by snowmelt and monsoon storms that produce high flows in early spring and flashy and unpredictable flows in late summer. Monsoon storms typically account for about 40 percent of the precipitation within the drainage (BIA 2012).

The Kinlichee Creek critical habitat unit is within Cottonwood Wash watershed (HUC 15020011). The watershed is 4164.0 sq km (1,028,966.3 ac). Cottonwood wash is a tributary to the Little Colorado River and is within the Little Colorado Basin (HUC 150200).

The Zuni River critical habitat unit is within the Zuni watershed (HUC 15020004). The watershed is 7138.7 sq km (1,764,023.2 ac). The watershed originates in the Zuni Mountains. The Zuni watershed is part of the Little Colorado River Basin (HUC 150200). The Zuni River

flows through the Zuni Pueblo to join the Little Colorado River in eastern Arizona. The Zuni River is approximately 145 km long (90 mi). Tributaries of the Zuni River include the Rio Nutria and Rio Pescado. The Rio Nutria is in turn fed by Tampico Draw and Agua Remora. The Rio Pescado is in turn fed by Cebolla Creek. The combination of drought, groundwater depletion, water withdrawal, and impoundments has resulted in the absence of sufficient perennial water necessary to sustain the functionality of stream ecosystems of the Zuni Watershed (NMDGF 2006). McGaffey lake, at the upper headwaters of the Rio Nutria, is impaired for pH and nutrient levels (EPA 2013) but no other water quality impairments are noted in the Zuni watershed.

Several springs are also included in the critical habitat designation including Agua Remora spring and Tampico spring.

Reservoirs in the watersheds include:

- Zuni River Black Rock
- Eustace Reservoirs
- Lower Río Nutria Upper Nutria Diversion
- Nutria Reservoirs
- Río Pescado Ramah and Pescado Reservoirs,
- Ramah reservoir on Cebolla Creek
- Red Lake

Climate change may affect the abundance, distribution, and duration of surface and groundwater in the watersheds. The potential impacts of climate change on frequency, duration, and timing of flows in the main watercourses of the area are unknown. However, precipitation is projected to drop by five percent by century's end (relative to average precipitation over the last three decades of the 20th century) for much of Arizona and New Mexico, based on results from 18 global climate models (Seager et al. 2007). Winter storms could enter the western United States in a more northerly position, bypassing the Southwest more often than it currently does. Summer precipitation may also decrease, but is more difficult to predict (Lenart 2008). Meanwhile, hotter temperatures are likely to bring higher evaporation rates. As a result, dry spells between rains can have more severe impacts on the landscape, especially in spring and summer (Lenart 2008). It is possible some smaller current water sources may dry out in spring and summer. While the region is expected to dry out, it paradoxically is likely to see larger, more destructive flooding. Because warm air holds more water vapor than cooler air, climate models project a future increase in atmospheric water vapor along with the increase in global temperature. This creates conditions that potentially could lead to larger and more frequent floods by causing more intense, heavy rainfall events (Lenart 2008).

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE A

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. Potential new consultations could occur on COE projects such as bridge projects, stream restoration, or CWA Section 404 permits. Other potential consultations could include:

- COE (bridge projects, stream restoration, and urban development).
- BIA (renewable energy development, grazing permits, road projects, utility developments, and upgrades).
- U.S. Bureau of Reclamation (transportation and delivery of water).

In addition to these new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Reinitiated consultations may include those with Bureau of Reclamation on Navajo Reservoir operations and consultations on well construction, water withdrawal, and bank stabilization (USFWS 2013c). Analysis under the adverse modification standard would not be required in these new and reinitiated consultations because no critical habitat would be designated.

To avoid jeopardy in occupied areas, the USFWS may issue recommendations on flow volume, duration and frequency below dams. Examples include (but are not limited to):

- Operate dams and diversions to mimic natural hydrograph.
- Operate dams and diversions to maintain flows year-round to maintain perennial streams below.
- Reduce sedimentation downstream of dams, diversions, and other activities.
- Maintain suitable water temperatures by adjusting release times from dams.
- Maintain riparian vegetation and suitable substrates through manipulation of flows.
- Maintain groundwater levels suitable for maintaining flows in springs.

Recovery actions for the Zuni bluehead sucker affecting water resources could include maintaining instream flows through reservoir management or other means.

ALTERNATIVE B

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under both the jeopardy standard and the adverse

modification standard. Existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker.

In occupied critical habitat units, both new and reinitiated consultations would require slightly more administrative costs than in Alternative A because action agencies and USFWS would need to determine if the proposed actions would cause adverse modification to critical habitat in addition to determining if the actions would cause jeopardy to the species. This increase in administrative costs is likely to be minimal because the biologists analyzing effects on critical habitat would already have reviewed the location and description of the proposed action and determined how it may affect Zuni bluehead sucker habitat as part of jeopardy analysis. Project modifications would not likely differ from Alternative A because project modifications that minimize effects to the Zuni bluehead sucker would coincidentally minimize effects to designated critical habitat (USFWS 2013c). Examples of projects related to water resources that are likely to occur in occupied critical habitat units are discussed in Alternative A.

In unoccupied critical habitat units, consultations would be required for new projects to analyze their potential to cause adverse modification to critical habitat. In addition, existing consultations on ongoing projects for other listed species may need to be reinitiated to consider adverse modification to Zuni bluehead sucker critical habitat. The number of these new and reinitiated consultations due solely to critical habitat designation is likely to be a small proportion of consultations overall because only 30 percent of the critical habitat area (67.2 km, 41.8 mi) is unoccupied. In addition, Navajo Nation, Zuni Pueblo, BIA, and Forest Service biologists were unaware of projects that may affect unoccupied critical habitat (USFWS 2013c). Possible project modifications that could be sought to avoid adverse modification within unoccupied areas of critical habitat could include (USFWS 2013c):

1. Altering dam operations to more closely mimic a natural hydrograph (Subunit 1b - Zuni Pueblo only).
2. Altering dam operation to improve the overall longevity of habitat within the conservation space of a habitat above and below the dam (Subunit 1b - Zuni Pueblo only).
3. Modify dam outlets to ensure nonnative fish are not accidentally introduced into unoccupied sites (Subunits 1b - Zuni Pueblo only).
4. Reducing or retiring of other water consumptive stressors (such as water diversion or ground water pumping) to offset impacts (Subunit 1b).

These project modifications may have a minor to moderate impact on the costs of dam operation or reconstruction projects. Altering dam operations and retiring water consumptive stressors are intended to restore hydrological function, which would have beneficial effects on water resources.

Some proposed projects encompass both unoccupied and occupied critical habitat units. These projects would require section 7 consultation under the jeopardy standard. Additional

administrative costs may be required to analyze effects in the unoccupied critical habitat units, but this increase in cost is likely to be minor in relationship to the overall cost required to evaluate the project across its range.

ALTERNATIVE C

The effects of this alternative on water resources would be the same as for alternative B except: 1) fewer consultations on tribal lands would be necessary because only areas occupied by the Zuni bluehead sucker would need to be considered, and 2) consultations on occupied areas would not need to analyze adverse modification to critical habitat. Section 7 consultations would still be required under the jeopardy standard on projects involving a federal nexus and affecting occupied stream segments. The number of new and reinitiated consultations due solely to critical habitat designation would be fewer than in Alternative B because the overall length of unoccupied units is less than in Alternative B (28.2 km, 17.5 mi).

FLOODPLAINS AND WETLANDS

EXISTING CONDITIONS

Because the critical habitat units include the riverine ecosystem formed by the wetted channel and the adjacent floodplains within 91.4 lateral m (300 lateral ft) on either side of bankfull stage, except where bounded by canyon walls, floodplains are included in the proposed critical habitat. Condition of the floodplains have been affected by historic and current land management practices in the watersheds, as described in the water resources section above.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE A

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. Conservation actions that may impact wetlands would require delineation of jurisdictional wetlands and an Army Corps of Engineers Section 404 permit and have a federal nexus requiring section 7 consultation under the ESA. Potential new consultations could occur on wildlife habitat improvements, stream restoration projects, aquatic habitat restoration projects,

habitat conservation plans, and safe harbor agreements that could be designed to improve floodplains and wetlands (USFWS 2013c).

In addition to these new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Reinitiated consultations may include those on bank stabilization, urban development, well construction, water withdrawal, and Navajo reservoir operations. Analysis under the adverse modification standard would not be required in these new and reinitiated consultations because no critical habitat would be designated.

Actions designed to recover the Zuni bluehead sucker could include maintaining instream flows and restoration of a natural hydrograph as well as restoration of riparian vegetation. Streamside fencing may also be implemented. Each of these actions is likely to benefit wetlands and floodplains.

ALTERNATIVE B

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under both the jeopardy standard and the adverse modification standard. Existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker.

In occupied critical habitat units, both new and reinitiated consultations would require slightly more administrative costs than in Alternative A because action agencies and USFWS would need to determine if the proposed actions would cause adverse modification to critical habitat in addition to determining if the actions would cause jeopardy to the species. This increase in administrative costs is likely to be minimal because the biologists analyzing effects on critical habitat would already have reviewed the location and description of the proposed action and determined how it may affect Zuni bluehead sucker habitat as part of jeopardy analysis. Project modifications would not likely differ from Alternative A because project modifications that minimize effects to the Zuni bluehead sucker would coincidentally minimize effects to designated critical habitat (USFWS 2013c). Examples of floodplain restoration projects that would occur in occupied critical habitat units and incur these minor increases in administrative costs are discussed in Alternative A.

In unoccupied critical habitat units, new and reinitiated consultations would be required for new projects to analyze their potential to cause adverse modification to critical habitat. In addition, existing consultations on ongoing projects for other listed species may need to be reinitiated to consider adverse modification to Zuni bluehead sucker critical habitat. The number of these new and reinitiated consultations due solely to critical habitat designation is likely to be a small proportion of consultations overall because only 30 percent of the critical habitat area (67.2 km,

41.8 mi) is unoccupied. In addition, Navajo Nation, Zuni Pueblo, BIA, and Forest Service biologists were unaware of projects that may affect unoccupied critical habitat (USFWS 2013c). Management or protection for unoccupied critical habitat units could include a number of project modifications that may benefit floodplains and wetlands including:

1. Altering dam operations to more closely mimic a natural hydrograph (Subunit 1b - Zuni Pueblo only).
2. Altering dam operation to improve the overall longevity of habitat within the conservation space of a habitat above and below the dam (Subunit 1b - Zuni Pueblo only).
3. Modify dam outlets to ensure nonnative fish are not accidentally introduced into unoccupied sites (Subunits 1b - Zuni Pueblo only).
4. Reducing or retiring of other water consumptive stressors (such as water diversion or ground water pumping) to offset impacts (Subunits 1b).

Each of these project modifications would likely to benefit wetlands and floodplains by restoring natural hydrographs.

Some proposed projects encompass both unoccupied and occupied critical habitat units. These projects would require section 7 consultation under the jeopardy standard. Additional administrative costs may be required to analyze effects in the unoccupied critical habitat units, but this increase in cost is likely to be minor in relationship to the overall cost required to evaluate the project across its range. Examples of consultations of projects that may affect floodplains and wetlands that include both occupied and unoccupied units include land and resource management plan development (USFS), grazing management (USFS), management of invasive plants (USFS), forest landscape restoration (USFS), and the Navajo Nation Forest Management Plan (BIA).

ALTERNATIVE C

The effects of this alternative on floodplains and wetlands would be the same as for alternative B except: 1) fewer consultations on tribal lands would be necessary because only areas occupied by the Zuni bluehead sucker would need to be considered, and 2) consultations on occupied areas would not need to analyze adverse modification to critical habitat. Section 7 consultations would still be required under the jeopardy standard on projects involving a federal nexus and affecting occupied stream segments. The number of new and reinitiated consultations due solely to critical habitat designation would be fewer than in Alternative B because the overall length of unoccupied units is less than in Alternative B (28.2 km, 17.5 mi).

FIRE MANAGEMENT

EXISTING CONDITIONS

Parts of the Zuni River critical habitat unit occur on the Mt. Taylor Ranger District of the Cibola National Forest. The Mt. Taylor Ranger District recently received funding to implement the Zuni Mountain Landscape Strategy, a cooperative project between USFS and partners to restore forested ecosystem structure and processes and reduce fire danger (USFS 2012). This strategy includes two units: the Rio Puerco Collaborative Forest Landscape Restoration Program, and Bluewater Ecosystem Management. One goal of this plan is to protect Zuni bluehead sucker populations by reducing post crown fire erosion events, reducing unauthorized use of roads near populations, and establishing vegetation conditions to increase water availability (USFS 2012). This plan relies on seven previous NEPA documents for implementation.

Fire Management on the Zuni Pueblo is administered by the BIA Zuni Agency Branch of Forestry/Fire Management. Fire Management on the Navajo Nation is administered by the Navajo Region BIA Division of Forestry/Fire Management. The division is located in Fort Defiance, AZ.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE A

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. Potential new consultations could occur on USFS fire management plans, fire suppression, and fuel reductions treatments (USFWS 2013c).

In addition to these new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Reinitiated consultations may include those on aerial use of fire retardant and fire management plans (USFWS 2013c). Analysis under the adverse modification standard would not be required in these new and reinitiated consultations because no critical habitat would be designated.

Because the Zuni Mountain Landscape Strategy has Zuni bluehead sucker protection as a goal, conservation measures or recommendations would likely be minimal but could include stream fencing, erosion control structures along roads and during construction, or nonnative species removal. None of these actions would impact fire management.

ALTERNATIVE B

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under both the jeopardy standard and the adverse modification standard. Existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker.

In occupied critical habitat units, both new and reinitiated consultations would require slightly more administrative costs than in Alternative A because action agencies and USFWS would need to determine if the proposed actions would cause adverse modification to critical habitat in addition to determining if the actions would cause jeopardy to the species. This increase in administrative costs is likely to be minimal because the biologists analyzing effects on critical habitat would already have reviewed the location and description of the proposed action and determined how it may affect Zuni bluehead sucker habitat as part of jeopardy analysis. Project modifications would not likely differ from Alternative A because project modifications that minimize effects to the Zuni bluehead sucker would coincidentally minimize effects to designated critical habitat (USFWS 2013c). Examples of fire management projects that would occur in occupied critical habitat units and incur these minor increases in administrative costs are discussed in Alternative A.

In unoccupied critical habitat units, new and reinitiated consultations would be required for new projects to analyze their potential to cause adverse modification to critical habitat. In addition, existing consultations on ongoing projects for other listed species may need to be reinitiated to consider adverse modification to Zuni bluehead sucker critical habitat. The number of these new and reinitiated consultations due solely to critical habitat designation is likely to be a small proportion of consultations overall because only 30 percent of the critical habitat area (67.2 km, 41.8 mi) is unoccupied. In addition, Navajo Nation, Zuni Pueblo, BIA, and Forest Service biologists were unaware of projects that may affect unoccupied critical habitat (USFWS 2013c). Management or protection for unoccupied critical habitat units could include a number of project modifications including water management, grazing management, ORV management, riparian vegetation management, and changes to nonnative fish stocking (USFWS 2013c). Project modifications could include retaining riparian vegetation, and improving the development of native riparian vegetation through reducing land and water management stressors (USFWS 2013c). Because the Zuni Mountain Landscape Strategy has Zuni bluehead sucker protection as a goal, these project modifications would likely already be incorporated in the plan. No project modifications negatively affecting fire management are anticipated.

Some proposed projects encompass both unoccupied and occupied critical habitat units. These projects would require section 7 consultation under the jeopardy standard. Additional administrative costs may be required to analyze effects in the unoccupied critical habitat units, but this increase in cost is likely to be minor in relationship to the overall cost required to evaluate the project across its range. Examples of consultations related to fire management that include both occupied and unoccupied units include aerial use of fire retardant, the Rio Puerco

Collaborative Forest Landscape Restoration Program, and Bluewater Ecosystem Management (USFWS 2013c).

ALTERNATIVE C

The effects of this alternative on fire management would be the same as for alternative B except: 1) fewer consultations on tribal lands would be necessary because only areas occupied by the Zuni bluehead sucker would need to be considered, and 2) consultations on occupied areas would not need to analyze adverse modification to critical habitat. Section 7 consultations would still be required under the jeopardy standard on projects involving a federal nexus and affecting occupied stream segments. The number of new and reinitiated consultations due solely to critical habitat designation would be fewer than in Alternative B because the overall length of unoccupied units is less than in Alternative B (28.2 km, 17.5 mi).

CONSTRUCTION

EXISTING CONDITIONS

The critical habitat area is sparsely populated. Most construction is road building, fence building, and water developments. The USFS has recently acquired the land on which the Tampico Springs Ranch development (Phase 2) was proposed, and therefore this development will not occur.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE A

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. Potential new consultations affecting construction could occur on (USFWS 2013c):

- travel management plans (involving road construction; USFS),
- road and highway projects (BIA, USFS, U.S. Department of Transportation),
- road and bridge maintenance (U.S. Department of Transportation),

- recreation management projects (BIA, and USFS),
- wildlife habitat improvements involving construction (NRCS, USFWS),
- bridge projects (COE, U.S. Department of Transportation),
- stream restoration (COE),
- urban development (COE 404permits),
- renewable energy development (BIA),
- utility developments, and upgrades (BIA),
- mining permits (USFS), and
- habitat conservation plans and safe harbor agreements (USFWS).

In addition to these new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Reinitiated consultations that could affect construction may include those on bank stabilization, urban development, well construction, and water withdrawal. (USFWS 2013c). Analysis under the adverse modification standard would not be required in these new and reinitiated consultations because no critical habitat would be designated.

ALTERNATIVE B

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under both the jeopardy standard and the adverse modification standard. Existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker.

In occupied critical habitat units, both new and reinitiated consultations would require slightly more administrative costs than in Alternative A because action agencies and USFWS would need to determine if the proposed actions would cause adverse modification to critical habitat in addition to determining if the actions would cause jeopardy to the species. This increase in administrative costs is likely to be minimal because the biologists analyzing effects on critical habitat would already have reviewed the location and description of the proposed action and determined how it may affect Zuni bluehead sucker habitat as part of jeopardy analysis. Project modifications would not likely differ from Alternative A because project modifications that minimize effects to the Zuni bluehead sucker would coincidentally minimize effects to

designated critical habitat (USFWS 2013c). Examples of consultations in occupied units that may exhibit this minor increase in administrative costs are listed in Alternative A.

In unoccupied critical habitat units, new and reinitiated consultations would be required for new projects to analyze their potential to cause adverse modification to critical habitat. In addition, existing consultations on ongoing projects for other listed species may need to be reinitiated to consider adverse modification to Zuni bluehead sucker critical habitat. The number of these new and reinitiated consultations due solely to critical habitat designation is likely to be a small proportion of consultations overall because only 30 percent of the critical habitat area (67.2 km, 41.8 mi) is unoccupied. In addition, Navajo Nation, Zuni Pueblo, BIA, and Forest Service biologists were unaware of projects that may affect unoccupied critical habitat (USFWS 2013c).

Some proposed projects encompass both unoccupied and occupied critical habitat units. These projects would require section 7 consultation under the jeopardy standard. Additional administrative costs may be required to analyze effects in the unoccupied critical habitat units, but this increase in cost is likely to be minor in relationship to the overall cost required to evaluate the project across its range. Examples of consultations related to construction that include both occupied and unoccupied units include USFS Travel Management (USFWS 2013c).

ALTERNATIVE C

The effects of this alternative on construction would be the same as for alternative B except: 1) fewer consultations on tribal lands would be necessary because only areas occupied by the Zuni bluehead sucker would need to be considered, and 2) consultations on occupied areas would not need to analyze adverse modification to critical habitat. Section 7 consultations would still be required under the jeopardy standard on projects involving a federal nexus and affecting occupied stream segments. The number of new and reinitiated consultations due solely to critical habitat designation would be fewer than in Alternative B because the overall length of unoccupied units is less than in Alternative B (28.2 km, 17.5 mi).

LIVESTOCK GRAZING

EXISTING CONDITIONS

The USFS administers grazing on the Mt. Taylor Ranger District. The Tribal Ranches Program oversees Navajo Nation Ranch lands by administering and ensuring all Tribal Ranch regulations and lease agreements are in compliance with Navajo Nation Law (Navajo Nation Department of Agriculture 2013). The Navajo Region BIA also administers some grazing. Much of the Navajo

Nation is severely overgrazed (Einbender-VelezLeGrand 2010). Grazing is poorly distributed, and often concentrated in riparian zones (NRCS 2000). The BIA administers grazing on the Zuni Pueblo.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE A

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. Potential new consultations could occur on NRCS projects, BIA grazing permits, and USFS livestock grazing allotment management plans (USFWS2013c).

In addition to these new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Analysis under the adverse modification standard would not be required in these new and reinitiated consultations because no critical habitat would be designated.

ALTERNATIVE B

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under both the jeopardy standard and the adverse modification standard. Existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker.

In occupied critical habitat units, both new and reinitiated consultations would require slightly more administrative costs than in Alternative A because action agencies and USFWS would need to determine if the proposed actions would cause adverse modification to critical habitat in addition to determining if the actions would cause jeopardy to the species. This increase in administrative costs is likely to be minimal because the biologists analyzing effects on critical habitat would already have reviewed the location and description of the proposed action and determined how it may affect Zuni bluehead sucker habitat as part of jeopardy analysis. Project modifications would not likely differ from Alternative A because project modifications that minimize effects to the Zuni bluehead sucker would coincidentally minimize effects to designated critical habitat (USFWS 2013c). Examples of livestock grazing projects that would occur in occupied critical habitat units and incur these minor increases in administrative costs are listed under Alternative A.

In unoccupied critical habitat units, new and reinitiated consultations would be required for new projects to analyze their potential to cause adverse modification to critical habitat. In addition, existing consultations on ongoing projects for other listed species may need to be reinitiated to consider adverse modification to Zuni bluehead sucker critical habitat. The number of these new

and reinitiated consultations due solely to critical habitat designation is likely to be a small proportion of consultations overall because only 30 percent of the critical habitat area. In addition, Navajo Nation, Zuni Pueblo, BIA, and Forest Service biologists were unaware of projects that may affect unoccupied critical habitat (USFWS 2013c).

Management or protection on the 67.2 km (41.8 mi) of unoccupied critical habitat units could include a number of project modifications including fencing, reconfiguration of grazing units, off-site water development, and altering seasons of use (USFWS 2013c). Protection could also include retaining riparian vegetation and improving the development of native riparian vegetation through reducing land and water management stressors (USFWS 2013c). Those stressors could include grazing. Grazing would not likely be eliminated, but could incur additional costs for fencing, water developments, and additional management. Because significant forage occurs outside of riparian areas and alternative water sources could be provided, it is unlikely that streamside fencing would have a significant negative impact on livestock grazing. These effects are likely to occur on USFS lands and grazing administered by the BIA. Grazing on the Navajo Reservation and Zuni Pueblo lacking a federal nexus would not be affected. Because effects are limited and localized, overall effects of critical habitat designation on livestock grazing are likely to be minor to moderate.

Some proposed projects encompass both unoccupied and occupied critical habitat units. These projects would require section 7 consultation under the jeopardy standard. Additional administrative costs may be required to analyze effects in the unoccupied critical habitat units, but this increase in cost is likely to be minor in relationship to the overall cost required to evaluate the project across its range. Examples of consultations related to livestock grazing that include both occupied and unoccupied units include Cibola National Forest Land and Resource Management Plan, and Cibola National Forest grazing management (USFWS 2013c).

ALTERNATIVE C

The effects of this alternative on livestock grazing would be the same as for alternative B except: 1) fewer consultations on tribal lands would be necessary because only areas occupied by the Zuni bluehead sucker would need to be considered, and 2) consultations on occupied areas would not need to analyze adverse modification to critical habitat. Section 7 consultations would still be required under the jeopardy standard on projects involving a federal nexus and affecting occupied stream segments. The number of new and reinitiated consultations due solely to critical habitat designation would be fewer than in Alternative B because the overall length of unoccupied units is less than in Alternative B (28.2 km, 17.5 mi).

RECREATION

EXISTING CONDITIONS

Navajo reservation lands are generally closed to non-Navajos, unless they have a valid camping, hiking, backcountry, hunting, or fishing permit.

Recreation on the Zuni Pueblo includes fishing, hunting, picnicking, and hiking, visiting the Pueblo, or viewing archeological sites with a guide.

Parts of the Zuni River critical habitat unit occur on the Mt. Taylor Ranger District of the Cibola National Forest. The Mt. Taylor Ranger District is used for hunting, sightseeing, camping, hiking, mountain biking, and fishing (USFS 2013a). The Mt. Taylor Ranger District recently completed a travel management plan, which addressed roads needed for these uses and analyzed effects on the Zuni bluehead sucker. Also, the Cibola NF is currently revising the Forest Plan for the “mountain districts” including the Mt. Taylor Ranger District (USFS 2013a). This Forest Plan Revision may change the amount and types of recreational use on the district.

Fishing is a popular recreational use on all these lands. To facilitate a recreational fishery, the state wildlife agencies stock sport fish in streams and reservoirs on federal and some state lands within the area. The USFWS stocks sport fish in streams and reservoirs on tribal lands as a federal responsibility to the tribes. On the Zuni Pueblo, three lakes (Nutria #4, Eustice, and Ojo Caliente) are stocked with rainbow trout and channel catfish (Zuni Pueblo 2013a). Ojo Caliente is also stocked with largemouth bass. In the Zuni River drainage, several species have been introduced as sport fish, including northern pike (*Esox lucius*) and rainbow trout (*Oncorhynchus mykiss*) (NMDGF 2004). Nonnative sport fish that are potential predators of Zuni bluehead sucker include largemouth bass, rainbow trout, brown trout, brook trout, northern pike, and channel catfish.

Fishing is regulated by AGFD and New Mexico Game and Fish Department on federal, state, and private property within the respective states. Regulations prohibit fishing Zuni bluehead sucker in both states, and the fish must be immediately returned to the water unharmed if caught (AGFD 2011, NMDGF 1998). Nonnative fish used as bait, including sunfishes, tilapia, carp, golden shiner, and goldfish are not allowed in Apache County, AZ (AGFD 2011). It is also unlawful to transport live crayfish in Arizona (except for that part of southwestern Arizona south of I-10 and west of Highway 95) (AGFD 2011).

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE A

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. Potential new consultations could occur on recreation management plans and travel management plans (USFS) (USFWS2013c).

In addition to these new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Analysis under the adverse modification standard would not be required in these new and reinitiated consultations because no critical habitat would be designated.

Recovery actions and conservation measures to promote Zuni bluehead sucker recovery would be implemented. Recovery actions are not expected to impact upland recreational uses, with the possible exception of road closures to reduce sedimentation and erosion. State agencies (which receive federal funding) and Federal agencies would need to reinitiate consultations on sport fisheries. Nonnative sport fish that are potential predators of Zuni bluehead sucker (largemouth bass, rainbow trout, brown trout, brook trout, northern pike, and channel catfish) could impact Zuni bluehead sucker populations. Recommendations may include treating perennial streams and lakes for these species.

ALTERNATIVE B

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under both the jeopardy standard and the adverse modification standard. Consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker.

In occupied critical habitat units, both new and reinitiated consultations would require slightly more administrative costs than in Alternative A because action agencies and USFWS would need to determine if the proposed actions would cause adverse modification to critical habitat in addition to determining if the actions would cause jeopardy to the species. This increase in administrative costs is likely to be minimal because the biologists analyzing effects on critical habitat would already have reviewed the location and description of the proposed action and determined how it may affect Zuni bluehead sucker habitat as part of jeopardy analysis. Project modifications would not likely differ from Alternative A because project modifications that minimize effects to the Zuni bluehead sucker would coincidentally minimize effects to designated critical habitat (USFWS 2013c).

In unoccupied critical habitat units, new consultations would be required for new projects to analyze their potential to cause adverse modification to critical habitat. In addition, consultations on ongoing projects for other listed species may need to be reinitiated to consider adverse modification to Zuni bluehead sucker critical habitat. The number of these new and reinitiated consultations due solely to critical habitat designation is likely to be a small proportion of

consultations overall because only 30 percent of the critical habitat area (67.2 km, 41.8 mi) is unoccupied. In addition, Navajo Nation, Zuni Pueblo, BIA, and Forest Service biologists were unaware of projects that may affect unoccupied critical habitat (USFWS 2013c). Management or protection for unoccupied critical habitat units could include a number of project modifications including altering dam operations (which may indirectly affect recreation through altering seasons and levels of reservoirs); modifying ORV management through fencing, signage, education, areas and timing of use; and altering or prohibiting nonnative (fish and crayfish) stocking practices (USFWS 2013c).

The USFWS may recommend conservation efforts that would include removal of non-native fish in perennial streams. Sport fish removal could have an impact on recreational fishing. Sport fish that could prey upon Zuni bluehead sucker include largemouth bass, rainbow trout, brown trout, brook trout, northern pike, or catfish. Possible project modifications that could be sought to avoid adverse modification within unoccupied areas of critical habitat include altering or prohibiting nonnative stocking practices (Subunits 1b and) (USFWS 2013c). However, it is likely that some sport fisheries would remain. Because much of the area is occupied and some sport fishery is likely to remain, the overall effect on recreational fishing is likely to be minor to moderate.

Some proposed projects encompass both unoccupied and occupied critical habitat units. These projects would require section 7 consultation under the jeopardy standard. Additional administrative costs may be required to analyze effects in the unoccupied critical habitat units, but this increase in cost is likely to be minor in relationship to the overall cost required to evaluate the project across its range. Examples of such projects encompassing both occupied and unoccupied units are the Mt. Taylor Travel Management Plan and the Cibola National Forest Land and Resource Management Plan. However, only 6.4 km (4 mi) of Cebolla Creek is unoccupied on USFS lands. Similarly, consultations on dams administered by the Bureau of Reclamation and USFS would need to be reinitiated. As described in the water resources section above, conservation measures in the unoccupied areas could influence operation of the dams, which may in turn affect the reservoirs' suitability for recreational uses such as fishing, swimming, and boating. However, because the area is small, the overall effect on these recreational uses is likely to be minor.

ALTERNATIVE C

The effects of this alternative on recreation would be the same as for alternative B except: 1) fewer consultations on tribal lands would be necessary because only areas occupied by the Zuni bluehead sucker would need to be considered, and 2) consultations on occupied areas would not need to analyze adverse modification to critical habitat. Section 7 consultations would still be required under the jeopardy standard on projects involving a federal nexus and affecting

occupied stream segments. The number of new and reinitiated consultations due solely to critical habitat designation would be fewer than in Alternative B because the overall length of unoccupied units is less than in Alternative B (28.2 km, 17.5 mi).

CULTURAL OR HISTORIC RESOURCES (1502.16)

EXISTING CONDITIONS

Archaeological and cultural resources are abundant in the area.

Zuni Pueblo is the most well-known Zuni cultural site, but ancient sites and areas, sacred points and shrines, and places of pilgrimage central to Zuni life and history also occur outside the Nation's boundary (Zuni Pueblo 2013b). "Zuni Pueblo is the most well-known Zuni cultural site, but ancient sites and areas, sacred points and shrines, and places of pilgrimage central to Zuni life and history also occur outside the Nation boundary (Zuni Pueblo 2013b). Since time immemorial, the Zuni believe the Colorado River within the Grand Canyon is a sacred area that signifies the evolution of the Zuni people. All life forms present within this area are a representation of the people. Activities conducted within these sacred areas such as electrofishing impacts their cultural beliefs and long-term survivorship. As result, these ongoing activities within the Grand Canyon have prohibited the use of electrofishing on the Zuni River. Therefore monitoring fish populations or removing nonnative species is not initiated because it is contrary to Zuni cultural beliefs (M. Mata, USFWS, personal communication, 2013).

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE A

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. Potential new consultations could occur on USFS general management plans, and recreation management projects (USFWS 2013c).

In addition to these new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Analysis under the adverse modification standard would not be required in these new and reinitiated consultations because no critical habitat would be designated.

Recovery actions and conservation measures to promote Zuni bluehead sucker recovery would be implemented. Ground-disturbing actions could include stream fencing, riparian vegetation

restoration, and alteration of stream channels to recreate historic channel structures and hydroperiods (the period of time in which the channel is wetted). Any ground-disturbing actions would require cultural and archaeological surveys and be subject to separate cultural resource and NEPA analysis. However, conservation actions to recover the Zuni bluehead sucker would likely reduce erosion and restore natural hydrographs, which would protect cultural and archeological resources from erosion and flooding.

ALTERNATIVE B

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under both the jeopardy standard and the adverse modification standard. Existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker.

In occupied critical habitat units, both new and reinitiated consultations would require slightly more administrative costs than in Alternative A because action agencies and USFWS would need to determine if the proposed actions would cause adverse modification to critical habitat in addition to determining if the actions would cause jeopardy to the species. This increase in administrative costs is likely to be minimal because the biologists analyzing effects on critical habitat would already have reviewed the location and description of the proposed action and determined how it may affect Zuni bluehead sucker habitat as part of jeopardy analysis. Project modifications would not likely differ from Alternative A because project modifications that minimize effects to the Zuni bluehead sucker would coincidentally minimize effects to designated critical habitat (USFWS 2013c).

In unoccupied critical habitat units, new and reinitiated consultations would be required for new projects to analyze their potential to cause adverse modification to critical habitat. In addition, existing consultations on ongoing projects for other listed species may need to be reinitiated to consider adverse modification to Zuni bluehead sucker critical habitat. The number of these new and reinitiated consultations due solely to critical habitat designation is likely to be a small proportion of consultations overall because only 30 percent of the critical habitat area (67.2 km, 41.8 mi) is unoccupied. In addition, Navajo Nation, Zuni Pueblo, BIA, and Forest Service biologists were unaware of projects that may affect unoccupied critical habitat (USFWS 2013c). Management or protection for unoccupied critical habitat units could include a number of project modifications (for other projects) including altering dam operations to more closely mimic a natural hydrograph, which may serve to protect some cultural resources. Project modifications including fencing riparian areas may also protect cultural resources. No project modifications negatively affecting cultural or historic resources are anticipated. Overall, designation of critical habitat is likely to have a minor positive effect on cultural resources.

Some proposed projects encompass both unoccupied and occupied critical habitat units. These projects would require section 7 consultation under the jeopardy standard. Additional administrative cost may be required to analyze effects in the unoccupied critical habitat units, but this increase in cost is likely to be minor in relationship to the overall cost required to evaluate the project across its range.

ALTERNATIVE C

The effects of this alternative on cultural resources would be the same as for alternative B except: 1) fewer consultations on tribal lands would be necessary because only areas occupied by the Zuni bluehead sucker would need to be considered, and 2) consultations on occupied areas would not need to analyze adverse modification to critical habitat. Section 7 consultations would still be required under the jeopardy standard on projects involving a federal nexus and affecting occupied stream segments. The number of new and reinitiated consultations due solely to critical habitat designation would be fewer than in Alternative B because the overall length of unoccupied units is less than in Alternative B (28.2 km, 17.5 mi).

SOCIOECONOMICS

EXISTING CONDITIONS

Educational services, health care, and social assistance employ the most people within all three counties affected by the critical habitat designation (Table 7). Educational services, health care, and social assistance also employ the most people on the Zuni Pueblo and Navajo Reservation (Table 7). Industries most likely to be impacted by critical habitat designation include construction, agriculture (grazing), forestry, and fishing. Construction employs up to 12 percent of civilians in the four counties and two sovereign nations (Table 7). Agriculture, forestry, fishing and hunting employ less than six percent of civilians in all counties (Table 7).

Table 7. Employment by industry in the counties, states, and tribal lands proposed for critical habitat (U.S. Census Bureau 2013a).

Industry	Arizona	New Mexico	Apache Co., AZ	Cibola Co., NM	McKinley Co., NM	Zuni Pueblo, NM	Navajo Nation Reservation and off-reservation trust lands
Civilian employed population 16 years and over	2,739,077	886,857	19,203	8,648	24,125	4,152	44,438
Agriculture, forestry, fishing and hunting, and mining	1.4%	4.4%	3.3%	5.2%	2.3%	4.5%	3.6%
Construction	8.0%	8.0%	11.6%	8.7%	6.9%	6.3%	10.1%
Manufacturing	7.6%	5.2%	2.0%	3.1%	9.4%	16.0%	4.2%
Wholesale trade	2.6%	2.2%	0.7%	1.5%	2.0%	0.0%	0.6%
Retail trade	12.2%	11.4%	8.3%	13.5%	15.6%	18.6%	9.7%
Transportation and warehousing, and utilities	4.9%	4.5%	7.5%	5.2%	2.6%	0.0%	5.8%
Information	1.8%	1.9%	0.7%	0.8%	1.0%	0.0%	0.5%
Finance and insurance, and real estate and rental and leasing	8.0%	5.0%	2.4%	2.3%	3.9%	2.5%	2.3%
Professional, scientific, and management, and administrative and waste management services	11.3%	10.9%	2.9%	4.6%	3.3%	0.3%	2.3%
Educational services, and health care and social assistance	21.1%	24.0%	37.0%	24.4%	30.4%	37.3%	37.0%
Arts, entertainment, and recreation, and accommodation and food services	10.5%	10.4%	9.7%	13.2%	9.4%	3.5%	10.5%
Other services, except public	4.8%	4.6%	3.1%	4.8%	4.4%	4.4%	3.0%

administration							
Public administration	5.6%	7.6%	11.0%	12.7%	8.8%	6.6%	10.3%

ENVIRONMENTAL CONSEQUENCES

A separate economic analysis was conducted (IEc 2014). The effects of listing alone are considered baseline costs in the economic analysis. Effects of designation of critical habitat are considered incremental costs.

ALTERNATIVE A

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. In addition to these new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Baseline costs resulting from listing of the Zuni bluehead sucker include consultation costs for section 7 consultation under the jeopardy standard and the costs of implementing conservation measures or conservation recommendations. Analysis under the adverse modification standard would not be required in these new and reinitiated consultations because no critical habitat would be designated.

ALTERNATIVE B

Under this alternative, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under both the jeopardy standard and the adverse modification standard. Existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker.

The economic effects of designating critical habitat, above and beyond the effects of listing the species under the ESA, are called “incremental effects.” Incremental effects, determined by a separate economic analysis, are possible on a few subunits (Table 8). However, effects are not likely to be more than \$100 million in a single year (IEc 2014).

For projects within occupied critical habitat units, both new and reinitiated consultations would require slightly more administrative cost than in Alternative A because action agencies and USFWS would need to determine if the proposed actions would cause adverse modification to critical habitat in addition to determining if the actions would cause jeopardy to the species. This increase in administrative cost is likely to be minimal because the biologists analyzing effects on critical habitat would already have reviewed the location and description of the proposed action and determined how it may affect Zuni bluehead sucker habitat as part of jeopardy analysis.

Incremental effects would be limited to this increase in administrative cost and other associated costs (IEc 2014).

For projects within unoccupied units, costs would be for section 7 consultation or implementation of conservation measures or recommendations to avoid adverse modification of critical habitat. The Tribes have indicated to USFWS that they know of no planned actions that would require section 7 consultation (USFWS 2013c). Therefore, there is no expected economic impact of the proposed critical habitat designation. However, unexpected projects could result in costs of up to \$10,000 per consultation, distributed across all parties (IEc 2013). The total cost of these unexpected consultations is unlikely to exceed \$100 million in a single year (IEc 2013). Costs of implementing conservation measures or recommendations in unoccupied units are unknown, but likely to be minor.

Table 8. Expected economic impacts of critical habitat designation (IEc 2013).

Subunit Number	Subunit Name	Expected impacts	Notes
1a	Zuni River Headwaters	Limited administrative costs only	Occupied unit. No incremental project modifications expected in occupied critical habitat.
1b	Zuni River Mainstem	Limited incremental impacts expected	Unoccupied unit. Occurs on USFS, State, private, and Zuni Pueblo lands: Small number of USFS consultations anticipated. No Zuni Pueblo activities expected to result in consultation. Limited economic activity requiring consultation expected on State and private lands.
2a	Kinlichee Creek	Limited administrative costs only	Occupied unit. No incremental impacts expected in occupied critical habitat.
2b	Red Clay Wash	Incremental impacts possible but unlikely	Unoccupied unit. Comprised of Navajo Nation lands; no known activities expected to result in consultation. Future impacts possible.
3a	Canyon de Chelly	Limited administrative costs only	Occupied unit. No incremental impacts expected in occupied critical habitat.
3b	Little Whiskey Creek	Incremental impacts possible but unlikely	Unoccupied unit. Occurs on Navajo Nation lands. No activities expected to result in consultation. Future impacts possible.

ALTERNATIVE C

The effects of this alternative on socioeconomics would be the same as for alternative B except: 1) fewer consultations on tribal lands would be necessary because only areas occupied by the Zuni bluehead sucker would need to be considered, and 2) consultations on occupied areas would not need to analyze adverse modification to critical habitat. Section 7 consultations would still be required under the jeopardy standard on projects involving a federal nexus and affecting occupied stream segments. The number of new and reinitiated consultations due solely to critical habitat designation would be fewer than in Alternative B because the overall length of unoccupied units is less than in Alternative B (28.2 km, 17.5 mi).

Critical habitat would be on private, State of New Mexico, and USFS lands. It is unlikely that future development requiring a Federal permit will occur on the private lands (IEc 2013). Agricultural operations on State of New Mexico lands also lack a federal nexus (IEc 2013). The USFS has also indicated that it has “has no plans to undertake actions that would significantly decrease expansion areas, reduce the ability of the species to expand within its historical range, or preclude the ability of the fish to connect to other occupied areas” (USFWS 2013c). Therefore no consultations for projects affecting unoccupied units are expected. However, unexpected projects could result in costs of up to \$10,000 per consultation, distributed across all parties (IEc 2014). The total cost of these unexpected consultations is unlikely to exceed \$100 million in a single year (IEc 2014). Cost of implementing conservation measures or recommendations in unoccupied units are unknown, but likely to be minor.

ENVIRONMENTAL JUSTICE

Federal agencies are required to “*identify and address disproportionately high and adverse human health or environmental effects*” of their programs and actions on minority populations and low-income populations, as directed by Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations).

EXISTING CONDITIONS

The majority of the proposed critical habitat is on tribal lands including the Navajo Reservation, Zuni Pueblo, and lands of the Ramah Chapter of the Navajo Nation (Table 4). Over 99 percent of the people of these lands are Native American (Table 9). These lands clearly have a larger minority population in comparison to the rest of New Mexico and Arizona (Table 9). Each of the counties affected by the proposed critical habitat designation also has a higher percentage of Native Americans in relationship to the states of Arizona and New Mexico (Table 9).

The Navajo Reservation and the Zuni Pueblo each have higher poverty rates and lower incomes than the states of Arizona or New Mexico (Tables 10 and 11). Incomes in these counties are low in relation to Arizona and New Mexico as a whole (Table 10). Poverty rates are accordingly high in comparison to statewide averages. The Navajo people experience especially high poverty rates, with 38 percent of people having incomes at or below the poverty level (Table 11).

Table 9. Race and ethnicity in the counties, states, and tribal lands proposed for critical habitat (U.S. Census Bureau 2013b).

	Arizona	New Mexico	Apache County, AZ	Cibola County, NM	McKinley County, NM	Zuni Pueblo, New Mexico	Navajo Nation Reservation and Off-Reservation Trust Land, AZ and NM
Total population	6,337,373	2,037,136	70,906	27,316	71,290	10,527	169,888
One race	97.3%	97.0%	98.8%	97.9%	96.8%	99.1%	99.0%
White	78.7%	72.0%	24.5%	47.0%	17.0%	0.3%	2.8%
Black or African American	4.0%	2.0%	0.4%	0.6%	0.8%	0.0%	0.2%
American Indian and Alaska Native	4.4%	9.3%	72.4%	42.5%	74.3%	95.6%	95.2%
Cherokee tribal grouping	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%
Chippewa tribal grouping	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Navajo tribal grouping	2.2%	5.4%	69.6%	10.5%	55.7%	0.7%	91.8%
Sioux tribal grouping	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%
Asian	2.7%	1.3%	0.3%	0.1%	0.8%	0.0%	0.5%
Native Hawaiian and Other Pacific Islander	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Two or more races	2.7%	3.0%	1.2%	2.1%	3.2%	0.9%	1.0%
White and Black or African American	0.5%	0.4%	0.2%	0.0%	0.3%	0.0%	0.1%
White and American Indian and Alaska Native	0.6%	0.9%	0.8%	0.9%	1.4%	0.6%	0.5%
White and Asian	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Black or African American and American Indian and Alaska Native	0.1%	0.1%	0.1%	0.0%	0.4%	0.2%	0.1%
Hispanic or Latino (of any race)	29.4%	45.9%	6.1%	36.3%	13.6%	4.1%	1.6%

Table 10. Income statistics for counties, states, and tribal lands proposed for critical habitat (U.S. Census Bureau 2013b).

Income	Arizona	New Mexico	Apache County, Arizona	Cibola County, New Mexico	McKinley County, New Mexico	Zuni Pueblo CDP, New Mexico	Navajo Nation Reservation and Off-Reservation Trust Land, AZ--NM--UT
Median household income (dollars)	50,752	44,631	31,011	36,020	31,947	35,409	27,022
Mean household income (dollars)	67,885	60,880	41,584	43,342	45,215	48,164	37,834
Median family income (dollars)	60,237	53,956	38,290	39,945	40,330	46,806	32,182
Mean family income (dollars)	77,760	70,064	48,668	48,046	51,440	50,401	42,758
Per capita income (dollars)	25,784	23,537	12,626	14,859	13,196	10,883	10,864

Table 11. Poverty statistics for states, counties, and tribal areas proposed for critical habitat (U.S. Census Bureau 2013b).

Percentage Of Families And People Whose Income In The Past 12 Months Is Below The Poverty Level	Arizona	New Mexico	Apache County, Arizona	Cibola County, New Mexico	McKinley County, New Mexico	Zuni Pueblo CDP, New Mexico	Navajo Nation Reservation and Off-Reservation Trust Land, AZ--NM--UT
All families	11.7%	14.4%	28.4%	18.9%	25.5%	25.9%	33.8%
All people	16.2%	19.0%	34.7%	25.9%	30.7%	30.4%	38.1%

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE A

Under the No Action alternative, no critical habitat would be designated. However, as stated above, federally supported actions that may affect the Zuni bluehead sucker would require section 7 consultations under the jeopardy standard in all areas occupied by the species. In addition to any new consultations, existing consultations on ongoing projects affecting other listed species would need to be reinitiated to incorporate an analysis of effects on the Zuni bluehead sucker. Wherever a Federal agency action may have particular consequences for socioeconomic resources or human health and safety, a potential for environmental justice impact could exist. As it relates to environmental justice impacts, such actions could involve consultations on:

- Water Resources development;
- Recreation Planning (sportfish management and travel management activities);
- Habitat restoration – stream restoration, vegetation management; and
- Construction/development activities – transportation, infrastructure, residential.

If these projects were to be proposed near individual residential Native American communities in which populations of concern for environmental justice effects are found in greater numbers, the potential for differential and disproportionate impacts to minority or low-income populations would increase. However, any environmental justice impacts of such actions would be localized in nature and could be addressed by the action agency more effectively at the site-specific level. At this time, we are not aware of any federally supported actions requiring section 7 consultation under the jeopardy standard that may affect the Zuni bluehead sucker and that could lead to disproportionate effects to low income or minority communities.

ALTERNATIVE B

Because most of the proposed critical habitat is on the Navajo Reservation and Zuni Pueblo, sovereign nations with populations that are over 99 percent Native American, any negative impacts from designation of critical habitat for the Zuni bluehead sucker would clearly have an effect on minority (Native American) populations. Because negative impacts on human health or the natural environment are not anticipated; the only possible negative impacts would be economic impacts to the human environment, as stated above.

Under Alternative B, the potential for economic impacts that disproportionately affect low income or minority communities could be higher than it would be under Alternative A. This is the result of additional or reinitiated section 7 consultations that would be required to address the adverse modification standard due to the designation of critical habitat. As described above, the

Tribes have indicated to USFWS that they know of no planned actions that would require section 7 consultation (USFWS 2013c). Therefore, there is no expected economic impact of the proposed critical habitat designation; because there is no expected economic impact, there is also no expected environmental justice impact. However, unexpected projects could result in costs of up to \$10,000 per consultation, distributed across all parties (IEc 2013).

The potential for economic impacts that disproportionately effect low income or minority communities exists for the types of activities listed under Alternative A, to the extent that there are employment and payroll impacts of reductions on economic activity, and those impacts are concentrated in the minority or low income communities. Since no specific projects are mandated or authorized by this designation of critical habitat, and the designation does not directly restrict land use or land management activities, it is not possible to predict whether such impacts will in fact occur. However, it is likely that any such impacts would be, at most, minor, in the context of the entire designation, because: (1) the economic impacts associated with individual relevant projects or actions would be relatively small; and (2) there would be only a small number of projects throughout the designation which would create such impacts.

ALTERNATIVE C

This alternative would exclude all tribal lands from critical habitat designation and therefore eliminate economic impacts to tribal governments. The remaining critical habitat would be on private, State of New Mexico, and USFS lands in Cibola and McKinley Counties, New Mexico. These two counties have higher poverty rates and lower incomes than New Mexico as a whole (Tables 10 and 11). They also have higher proportions of Native Americans than the states of AZ or NM (Table 9). Therefore potential for a disproportionate impact on low-income and minority populations still exist, but it would be smaller than that of Alternative B. As with Alternative B, economic impacts are likely to be less than \$100 million in any one year (IEc 2014). These impacts would be restricted to slightly increased administrative costs of section 7 consultation on occupied units (IEc 2014), which would likely affect the federal consulting agencies and not low-income or minority individuals of the community. As described in the socioeconomic section, projects affecting unoccupied units are not expected, and therefore costs from conservation measures or recommendations are likely to be limited to a few unplanned consultations (IEc 2014). Costs of implementing conservation measures or recommendations is not likely to impact low-income or minority populations because: 1) only a few, unplanned consultations are likely, 2) little area is involved, and 3) costs would be distributed among multiple agencies and private parties. Therefore, it is likely that there would be no impact to environmental justice resulting from Alternative C..

CHAPTER 4: COUNCIL ON ENVIRONMENTAL QUALITY ANALYSIS OF SIGNIFICANCE

The primary purpose of preparing an environmental assessment under NEPA is to determine whether a proposed action would have significant impacts on the human environment. If significant impacts may result from a proposed action, then an environmental impact statement is required (40 CFR §1502.3). Whether a proposed action exceeds a threshold of significance is determined by analyzing the *context* and the *intensity* of the proposed action (40 CFR §1508.27). Context refers to the setting of the proposed action and potential impacts of that action. The context of a significance determination may be society as a whole (human, national), the affected region, the affected interests, or the locality. Intensity refers to the severity of the impacts.

The context of short and long-term impacts of the proposed designation of critical habitat for the Zuni bluehead sucker includes two critical habitat units that include portions of McKinley and Cibola, in New Mexico and Apache County in Arizona. Under regulations of the Council of Environmental Quality (CEQ), which is responsible for ensuring compliance with NEPA, intensity is determined by considering 10 criteria (CFR 40 §1508.27[b]): (1) beneficial and adverse impacts; (2) the degree of impacts on health and safety; (3) impacts on the unique characteristics of the area; (4) the degree to which the impacts would likely be highly controversial; (5) the degree to which the proposed action would impose unique, unknown, or uncertain risks; (6) the degree to which the proposed action might establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration; (7) whether the proposed action is related to other actions, which cumulatively could produce significant impacts; (8) the degree to which the proposed action might adversely affect locales, objects, or structures eligible for listing in the National Register of Historic Places; (9) the degree to which the proposed action might adversely affect an endangered or threatened species or its habitat, as determined to be critical under the ESA of 1973; and (10) whether the proposed action threatens a violation of federal, state, or local law. We consider each of these ten points below:

1. Potential impacts on environmental resources, both beneficial and adverse, would be minor. Impacts of critical habitat designation on natural resources within the areas proposed as Zuni bluehead sucker critical habitat were analyzed and discussed in Chapter 3 of this EA. Applying the analysis of impacts to the significance criteria identified above, The USFWS concludes that the adverse impacts of critical habitat designation would not be significant.
2. There would be no impacts on public health or safety from the proposed designation of critical habitat and no impacts on unique characteristics of the geographic area. No impacts on fire management activities would occur.
3. Impacts to the unique characteristics of the area would be negligible. There are no Wild and Scenic Rivers, Wilderness Areas, or Areas of Critical Environmental

Concern near the critical habitat units. We have analyzed potential impacts on unique cultural and historic resources in the area and found no impacts.

4. The impacts will not likely be highly controversial because the area affected is small and few people are involved.
5. The impacts do not pose any uncertain, unique, or unknown risks. New activities with a federal nexus would result in section 7 consultations. Actions once undertaken without consideration of Zuni bluehead sucker may not be able to proceed as they have in the past.
6. The designation of critical habitat by USFWS for the conservation of threatened species is not a precedent-setting action with significant effects. The agency has designated critical habitat for numerous other species.
7. The proposed action is not related to other actions which cumulatively could produce significant impacts. There would not be significant cumulative impacts because the cumulative impacts would be limited to section 7 consultation outcomes.
8. Critical habitat designation is not likely to affect sites, objects, or structures of historical, scientific, or cultural significance. The proposed designation would not result in any ground-disturbing activities that have the potential to affect archeological or other cultural resources. Potential conservation measures or project modifications to protect critical habitat PCEs would not modify or pose risk of harm to any historic properties listed in or eligible for the National Register of Historic Places.
9. Critical habitat designation would not adversely affect an endangered or threatened species or its habitat. Designation will have long-term, beneficial, conservation-related impacts on the Zuni bluehead sucker survival and recovery through maintenance of PCEs. Designation would not negatively impact, and may positively impact, other listed species.
10. Proposed critical habitat designation would not violate any federal, state, or local laws. The designation of critical habitat is required by law in order to comply with the ESA.

CHAPTER 5: COORDINATION WITH THE PUBLIC

The proposed rule for listing the Zuni bluehead sucker as an endangered species and designating critical habitat was published in the Federal Register on 25 January 2013. Public comments were solicited in the Federal Register notice. Comments were accepted until 26 March 2013. Six comments were received during this period and issues identified by comments were included in Chapter 1. This Draft EA will be available for public review for 30 days and comments received will be incorporated into the final EA.

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October 22, 2014

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