

# RECLAMATION

*Managing Water in the West*

**PROPOSED  
O'DONNELL CANYON FISH BARRIER**

**Santa Cruz County, Arizona**

**Scoping Information  
and  
Opportunity to Comment**

**U.S. Department of the Interior  
Bureau of Reclamation  
Phoenix Area Office**



**October 2013**

## **Introduction**

This Scoping Notice/Opportunity to Comment is being offered to the public to allow early and meaningful participation in a proposal by the Bureau of Reclamation to construct a fish barrier to protect federally endangered Gila topminnow and Gila Chub in O'Donnell Canyon, Santa Cruz County, Arizona (Figure 1). Two alternative fish barrier sites (identified as the Upper BLM Dam Site and CNF Site) are being considered, as shown in Figure 2. After the public scoping period has ended, Reclamation will prepare an Environmental Assessment (EA) to evaluate the potential environmental consequences of the action and no action alternatives.

## **Background**

The proposed project complements other conservation measures being implemented by Reclamation to assist with the recovery and conservation of federally listed fish and amphibian species in the Gila River Basin. These measures are mandated by biological opinions issued by the U.S. Fish and Wildlife Service (FWS) in 1994, 2001, and 2008 on impacts of Central Arizona Project (CAP) water transfers to the Gila River Basin.<sup>1</sup> O'Donnell Canyon is a tributary to the Babocomari River within the San Pedro River watershed. The San Pedro River watershed forms part of the middle Gila River Basin.

Human induced changes in aquatic habitat and interaction with nonnative species have had a profound impact on native fishes in Arizona. Habitat destruction and alteration were the principal causes for declines of native fishes in the American southwest prior to the mid-1900s; however, in the past several decades, it has become apparent that the presence of nonnative fishes precludes or negates benefits from habitat protection and restoration (e.g., Marks et al. 2010). Avenues of impact to native fishes include predation, competitive exclusion, niche displacement, hybridization, and pathogen transmission (Mooney and Cleland 2001, Strauss et al. 2006). Introduction and spread of nonnative fishes now are considered the most consequential factors preventing sustenance and recovery of imperiled native fishes in the Gila River Basin and other drainages of the southwest (Moyle et al. 1986, Minckley 1991, Minckley and Marsh 2009, Clarkson et al. 2012). The cumulative impact of physical and biological stressors to aquatic habitats, especially in mainstem rivers, has fostered a pattern where native species now persist primarily in the upper reaches of tributary drainages. Consequently, the segregation of native and nonnative fishes in these tributary systems (or isolation management; Novinger and Rahel 2003) via the emplacement of fish barriers to prevent mixing of the two kinds has become a primary management tool to assist with recovery of native fishes.

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<sup>1</sup> The 1994, 2001, and 2008 biological opinions on CAP water transfers to the Gila River Basin are available at <http://www.fws.gov/southwest/es/arizona/biological.htm>.

Reclamation's fish barrier construction program emphasizes streams that can be secured to prevent extinction and stabilize existing rare stocks of native fishes. O'Donnell Canyon is considered important for the conservation and recovery of the Gila chub and Gila topminnow, two species whose habitat has been significantly degraded or destroyed range-wide. Controlling the introduction of nonnative fishes to streams containing Gila chub or Gila topminnow is vital to their survival. In addition, the proposed fish barrier construction project is anticipated to benefit the federally-threatened Chiricahua leopard frog and the recently proposed-for-listing northern Mexican gartersnake, species that are similarly affected by nonnative fishes and may be present in the project area.

## **Purpose and Need**

The purpose of the project is to satisfy a key conservation measure of the 2008 CAP biological opinion which requires Reclamation to construct a fish barrier in O'Donnell Canyon "to protect existing populations of Gila chub [and] Gila Topminnow" (FWS 2008). O'Donnell Canyon is currently protected against upstream fish incursion by two (upper and lower) Bureau of Land Management (BLM) dams that were constructed in 1959 to provide for livestock watering. These dams are separated by a 450-foot reach of stream. Both dams are in danger of failing because of erosion of earthen material at the abutments. Failure of both dams would remove the only assured impediment to invasion of nonnative fishes that reside in downstream tributaries of O'Donnell Canyon such as Turkey Creek and Post Canyon. Nonnative fishes have repeatedly been observed at the base of the lower BLM dam. A strategically placed fish barrier or repair of an existing BLM dam would protect perennial reaches of O'Donnell Canyon from upstream invasion of non-native fishes for the foreseeable future.

## **Study Area**

The study area for the fish barrier project encompasses two potential fish barrier sites, one on the Las Cienegas National Conservation Area (NCA) at the upper BLM dam (see Alternative A) and the other on National Forest System (NFS) land administered by Coronado National Forest (CNF) (see Alternative B). Neither site is directly accessible by road.

The study area consists of a patchwork of public and private land administered by the BLM, the U.S. Forest Service (USFS), and The Nature Conservancy (TNC). The southern portion of the Las Cienegas NCA, including the upper BLM dam and adjoining TNC property, are within the administrative boundary of the Appleton-Whittell Research Ranch managed by the National Audubon Society in partnership with BLM. NFS land occupies the area south of the Appleton-Whittell Research Ranch.

The 1.5-mile reach of O'Donnell Canyon upstream of the upper BLM dam consists of a complex of cienega pools separated by dry reaches or shallow runs, with stable silt banks supporting grasses and woody vegetation. Stability of this reach is aided by the presence of bedrock intrusions, the BLM dams, and a grade control structure on a second parcel of TNC land approximately 1.2 miles upstream of the upper BLM dam. A large cienega immediately upstream of the grade control structure is a prominent feature of the stream and forms the nucleus of TNC's Canelo Hills Preserve. The cienega is fed by several springs emerging on the preserve adjacent to O'Donnell Canyon.

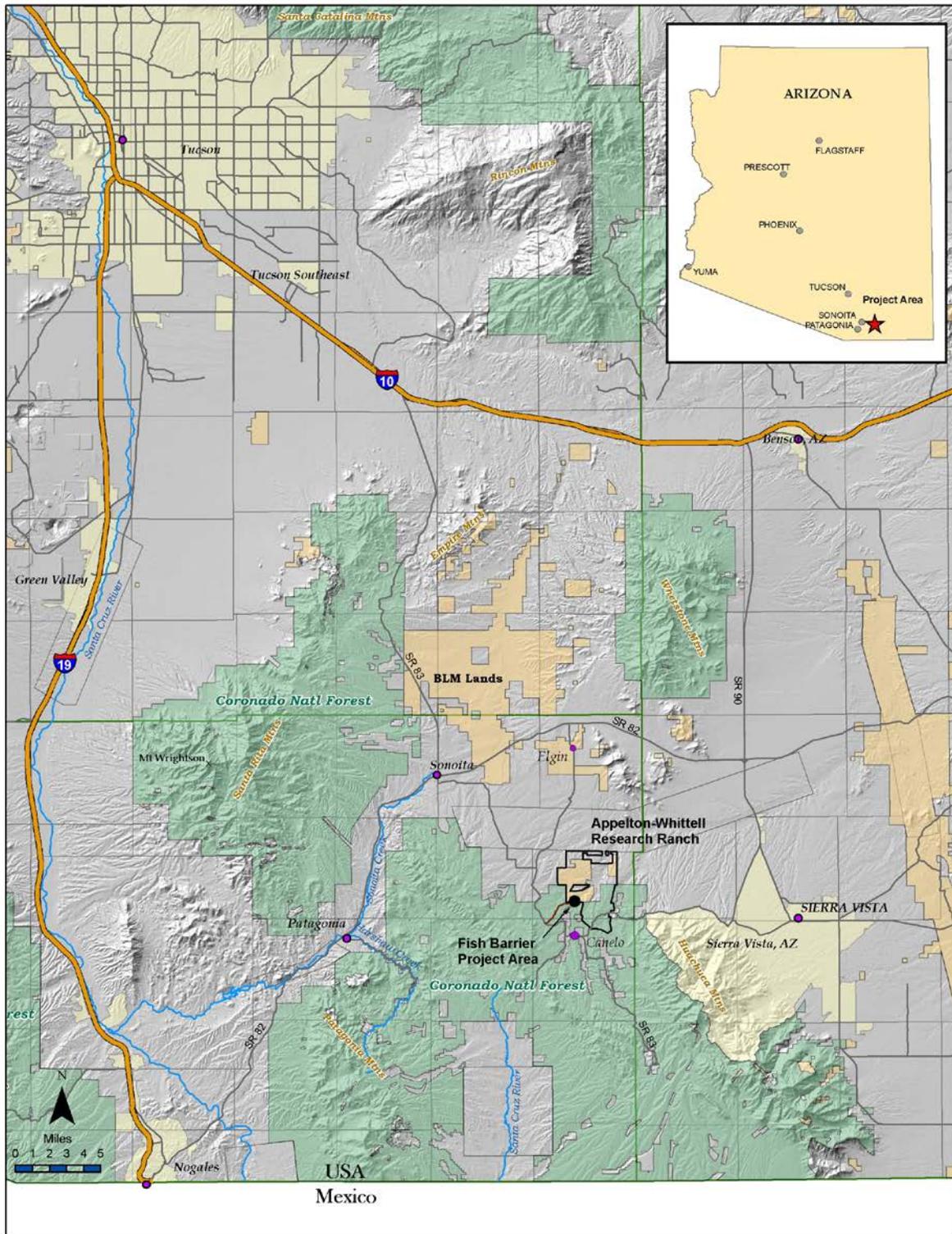


Figure 1. Project location map.

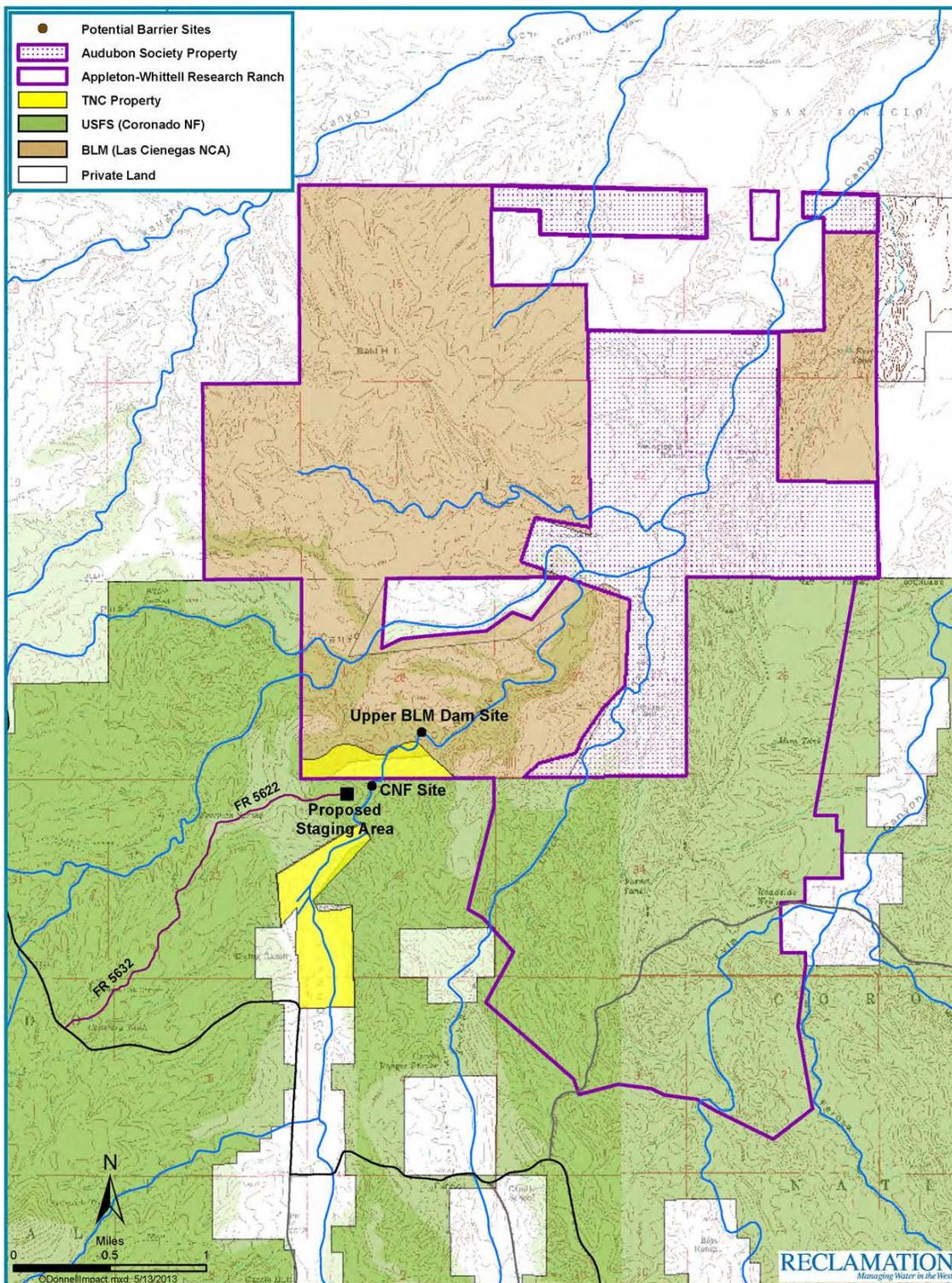


Figure 2. Proposed staging area and alternative fish barrier sites.

## Description of Project Alternatives

### No Action Alternative

Section 102(2)(E) of NEPA requires that no action must be considered as an alternative in an environmental review whenever there are unresolved conflicts about the proposed action with respect to alternative uses of available resources. A description of no action is also customarily used in EAs to provide the baseline for comparison of environmental effects of the action alternatives against reasonably foreseeable future conditions that are representative of the status quo. Under the No Action Alternative, no fish barrier would be constructed.

### Alternative A (Stabilization of Upper BLM Dam)

Alternative A is situated in the southeast quarter of Section 28, Township 21 South, Range 18 East, Gila and Salt River Base Line and Meridian. This site is on BLM land within the boundary of the Las Cienegas NCA and Appleton-Whittell Research Area of Critical Environmental Concern. The BLM dam site is also within the administrative boundary of the Appleton-Whittell Research Ranch managed by the National Audubon Society in partnership with BLM.

The upper BLM dam is a 5-foot high, 40-foot long concrete arch that ties to the bedrock embankment along the left abutment and a smaller bedrock feature near the right abutment. Base flows pass over the crest of the dam. A concrete wing wall angles upstream from the right abutment part way through a terrace. The wing wall is 3.3 feet higher than the dam, and appears to have been built to redirect minor overbank flood flows away from the right terrace toward the crest of the dam. However, higher level flood flows have eroded a headcut from the downstream channel through the terrace and beyond the end of the wing wall. Continued headcutting would eventually shift the stream channel around the right abutment, enabling nonnative fishes to bypass the dam and move upstream. In the event that the lower BLM dam fails, implementation of Alternative A would provide long-term protection against upstream incursion of nonnative fishes.

Stabilization of the upper BLM dam would require the extension of the existing wing wall with a reinforced concrete wall that would tie into a rock outcrop at the far right bank, a distance of approximately 60 feet (Figure 3). Emplacement of the extension wall would prevent further upstream migration of the headcut and preserve the functional utility of the dam as a fish barrier.

Construction access to Alternative A is provided by Highway 83 and Forest Service Roads (FSR) 5632 and 5622. A turnaround at the end of a short spur road connected to FSR 5622 would be used for staging of construction equipment and materials. Staging activities include parking, unloading and storage of materials, supplies, and equipment. The staging area would not exceed 0.2 acre in size. Construction personnel would utilize an existing path

to walk from the staging area to the work site. This path crosses approximately 1,000 feet of NFS land and 2,000 feet of TNC land. Alternatively, an upland pedestrian route could be selected to avoid TNC property.

Batched concrete would be delivered by commercial mixer trucks to the staging area. From there, it would be transferred to a helicopter sling-load bucket for air transport to the work site. Concrete would be placed directly from the sling-load bucket into the formwork of the wing wall extension. Helicopter transport would also be used for delivery of other material or equipment that could not be hand-carried from the staging area to the work site (e.g., power generator, compressor, compressed air hammer/drill, and steel reinforcing bar).

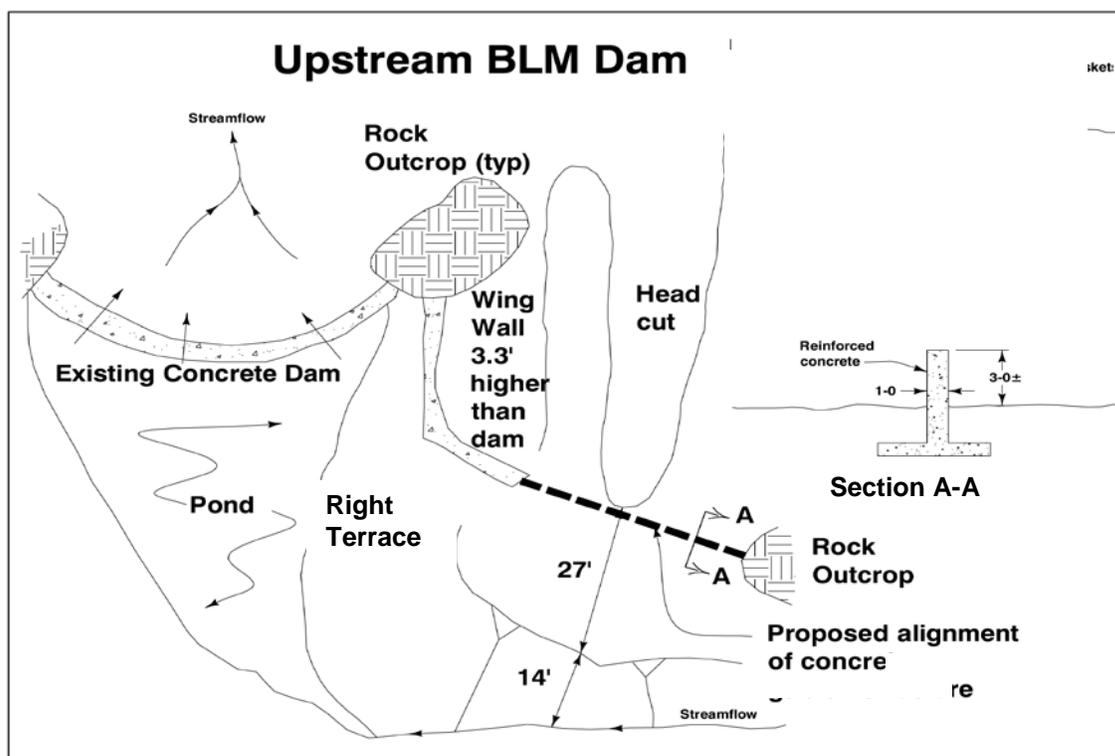


Figure 3. Proposed wing wall extension at upper BLM dam.

Onsite work would include excavation of a 60-foot long foundation trench for placement of formwork, reinforcing/anchor bars, and wet concrete. Excavation would be performed using hand tools. The 1-foot thick extension wall would be anchored to bedrock and extend approximately 3 feet above the surface of the terrace. The depth to bedrock is expected to be 6 feet or less. Excavated material would be used as backfill once the wall is emplaced and formwork has been removed.

Construction would require approximately 2 months.

### **Alternative B (Construction of Fish Barrier on CNF Site)**

Implementation of Alternative B would provide long-term protection against upstream incursion of nonnative fishes in the event that both BLM dams failed. Alternative B is situated on an outcrop of bedrock that bisects and constricts the low flow channel of O'Donnell Canyon. This site is on land administered by the CNF in the northwest quarter of Section 33, very near Section 28, Township 21 South, Range 18 East.

A fish barrier constructed on this site would tie directly into bedrock along its entire axis (Figure 4). Construction would entail minor reshaping of some of the rock attachment points, installing formwork and steel reinforcing bar/anchors, and placing wet concrete. During this process, stream flow if present would be piped around the formwork.

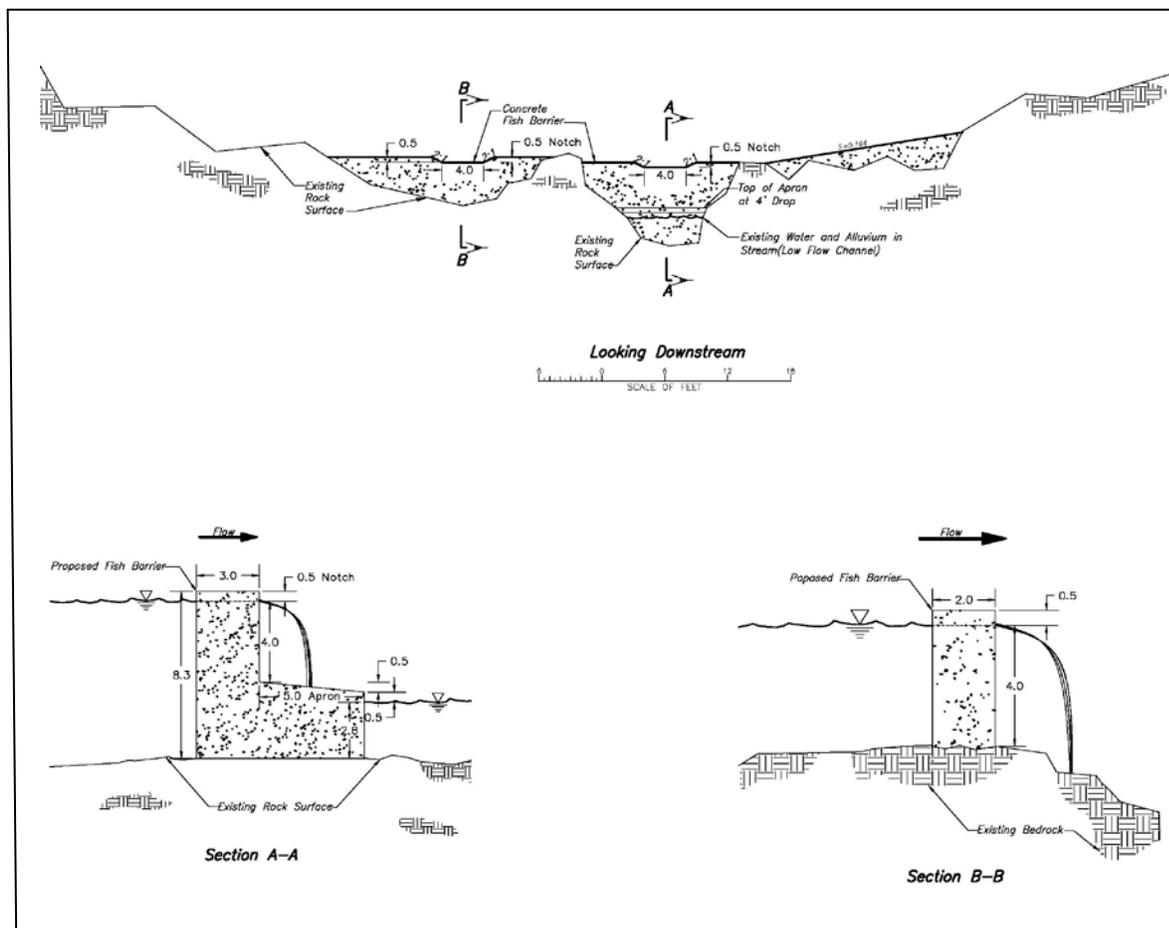


Figure 4. Proposed fish barrier at CNF site.

A road that formerly extended from the FSR 5622 staging area to O'Donnell Canyon would be temporarily reopened to accommodate direct delivery of batched concrete by commercial mixer trucks. Approximately 700 feet of road would be reopened. This road would also

facilitate direct delivery of other equipment and material such as a power generator, compressor, compressed air hammer/drill, and steel reinforcing bar. Following construction, an existing wire fence adjacent to the staging area would be re-established and the temporary road would be reclaimed with appropriate erosion control and reseeding in accordance with CNF guidelines.

Staging activities at the end of FSR 5622 would be similar to those described for Alternative A. Direct delivery of equipment and material to the work site would preclude the need for helicopter support.

Construction would require approximately 2 months.

## **Decision Framework**

The Responsible Official for Reclamation (Area Manager of the Phoenix Area Office) must make a determination regarding the environmental effects associated with implementation of each alternative including no action. If the EA demonstrates that there are no significant environmental effects, the Area Manager would record this determination in a Finding of No Significant Impact (FONSI) and approve the expenditure of funds to implement either Alternative A or Alternative B. Reclamation's FONSI would be posted at <http://www.usbr.gov/lc/phoenix>.

The Responsible Official for the BLM (Manager of the Tucson Field Office) would consider the environmental effects associated with implementation of each alternative including no action. If the environmental analysis demonstrates that there are no significant effects of Alternative A and it is chosen as the best alternative to meet the purpose and need of the project, with consideration of the potential impacts, then the Manager would record this determination in a FONSI. Following the FONSI determination the Manager would use it and the EA to prepare a Decision Record approving the use of BLM land with any stipulations and mitigation related to the implementation of Alternative A.

The Responsible Official for the USFS (Sierra Vista District Ranger) would consider the environmental effects associated with implementation of each alternative including no action. If the environmental analysis demonstrates that there are no significant effects of Alternative B and it is chosen as the best alternative to meet the purpose and need of the project, with consideration of the potential impacts, then the District Ranger would record this determination in a FONSI. Following the FONSI determination that District Ranger would use it and the EA to prepare a Decision Notice approving the use of NFS land with any stipulations and mitigation related to the implementation of Alternative B.

## **Preliminary Issues**

In accordance with Department of the Interior NEPA regulations at 43 CFR 46.300, Reclamation has determined that an EA is the appropriate level of NEPA compliance to evaluate the potential environmental consequences of the proposed project. NEPA applies to Federal actions; therefore, the first step in determining the scope of the EA is to identify relevant issues related to the effects of the proposed Federal action on the existing environment. Public input during this initial scoping process will help us focus the EA on those issues.

The Interdisciplinary Team determined the following issues were important to assess in detail in the EA:

- effects to biological resources, including special status species
- effects to cultural resources
- effects to water resources
- effects to soils and sedimentation
- effects to land use

## **Consistency with Resource Management Plans and Policy**

The BLM manages the Las Cienegas NCA in accordance with the Las Cienegas National Conservation Area Act of 2000 (Public Law 106-538), the Federal Land Policy and Management Act of 1997, the Las Cienegas Resource Management Plan (RMP 2003) and other national policies, including BLM Manual section 1601 – Land Use Planning. Management of the Appleton-Whittell Research Area of Critical Environmental Concern unit of the Las Cienegas NCA is also guided by the 1986 Cooperative Agreement between the BLM and the National Audubon Society. Management actions prescribed in the Las Cienegas RMP include mitigation to protect listed and sensitive species. No amendments to the RMP would be necessary to implement Alternative A.

The USFS manages NFS lands in the O'Donnell Canyon watershed in accordance with the Coronado National Forest Land and Resource Management Plan (LRMP 1986, as amended) and other national policy and direction, including the Endangered Species Act (ESA). The LRMP provides direction for the CNF to allow the management of habitat as needed to support populations of threatened and endangered species. No amendments to the LRMP would be necessary to implement Alternative B.

The proposed project responds to the following BLM and USFS resource management goals and objectives:

- Manage suitable habitat for the recovery or reestablishment of native populations (Las Cienegas RMP).
- Improve the habitat of and the protection for local populations of threatened and endangered species to meet the goals of ESA (CNF LRMP).

## **How to Comment and Timeframe**

You are encouraged to offer comments on the scope of the upcoming EA, including potential alternatives to the proposed project that would meet the stated purpose and need. To be most helpful, comments should be as specific as possible. Please mail your comments to Mr. John McGlothlen, Bureau of Reclamation, 6150 West Thunderbird Road, Glendale, Arizona 85306, or e-mail your comments to [jmcglothlen@usbr.gov](mailto:jmcglothlen@usbr.gov). Comments may also be faxed to 623-773-6486. To be considered in the EA, comments must be submitted no later than November 22, 2013. Before including your name, address, telephone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public view, we cannot guarantee that we will be able to do so.

For additional information concerning the proposed project, please contact Mr. McGlothlen at 623-773-6256, or by email.

## Literature Cited

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