

# **SCOPING NOTICE/OPPORTUNITY TO COMMENT**

## **Proposed Fish Barrier and Stock Pond Treatments in the O'Donnell Creek Watershed**

**U.S. Department of the Interior  
Bureau of Reclamation  
Bureau of Land Management**

**U.S. Department of Agriculture  
Forest Service, Coronado National Forest**

### **Introduction**

This Scoping Notice/Opportunity to Comment is being offered to the public to allow early and meaningful participation in the National Environmental Policy Act (NEPA) review of a Federal action proposed by the Bureau of Reclamation (Reclamation) and Bureau of Land Management (BLM), in cooperation with the Forest Service, Coronado National Forest (CNF), and the Arizona Game and Fish Department (AGFD). After the public scoping period has ended, the agencies will prepare an Environmental Assessment (EA) to evaluate the potential environmental consequences of the proposed project.

The BLM Tucson Field Office and Reclamation Phoenix Area Office are proposing stabilization of two small dams on O'Donnell Creek within the BLM-administered Las Cienegas National Conservation Area (NCA), Santa Cruz County, Arizona (Figure 1). The action would secure perennial segments of O'Donnell Creek against possible upstream incursion of nonnative fishes. As an alternative to the proposed project, Reclamation would construct a concrete fish barrier on a reach of O'Donnell Creek owned by The Nature Conservancy (TNC), approximately 125 feet upstream from the Las Cienegas NCA boundary. Use of the TNC site would require approval from the Arizona Chapter of TNC. All three sites are within the boundary of the Appleton-Whittell Research Ranch managed by the National Audubon Society (Figure 2).

O'Donnell Creek is currently protected against upstream invasion of nonnative fishes by two concrete dams erected in 1959 for wildlife conservation. These dams have historically provided adequate protection against upstream fish movements. However, both are in danger of failing due to headcut erosion of earthen material at the abutments. Should both dams fail, there no longer would be assured impediments to invasion of nonnative fishes that reside in downstream perennial reaches of the Babocomari River or other O'Donnell Creek tributaries such as Post Canyon.

The proposed project would also include mechanical and/or chemical treatment of stock ponds in the watershed above the dams to remove nonnative fishes that pose a potential threat to native species in O'Donnell Creek. Nonnative fish eradication would be performed by the AGFD with funding provided by Reclamation. Stock tank treatments on CNF lands would require Forest Service authorization. Any treatments on CNF would be coordinated with livestock grazing permittees who hold grazing allotments within the action area. Treatments on private property would be accomplished through cooperative agreements between AGFD and land owners.

## **Background**

The proposed O'Donnell Creek project is part of a larger program being implemented by Reclamation to construct a series of fish barriers within the Gila River basin to prevent nonnative fishes and other aquatic organisms from invading high-priority streams occupied by native fishes. This program is mandated by two U.S. Fish and Wildlife Service biological opinions on impacts of Central Arizona Project water transfers to the Gila River basin. The fish barrier construction program is one of several Reclamation conservation measures intended to assist with recovery of federally listed fishes.

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. Introduction and spread of nonnative fishes now is considered the most consequential factor preventing sustenance and recovery of imperiled native fishes in the Gila River basin and other drainages of the southwest.

Highest-priority streams under Reclamation's fish barrier construction program are those that can be secured to prevent extinction and stabilize rare stocks of native fishes, or that can be protected and renovated to replicate rare stocks of native fishes. O'Donnell Creek was chemically renovated in 2001 to remove nonnative green sunfish that became established and threatened the continued persistence of the endangered Gila chub (*Gila intermedia*) and other native fishes. Since that successful renovation, Gila topminnow (*Poeciliopsis occidentalis*) and longfin dace (*Agosia chrysogaster*) again have been found in the stream, and with Sonora sucker (*Catostomus insignis*) and Gila chub now comprise the native fish assemblage of the stream.

Gila chub historically was widespread and locally common in suitable habitat throughout central and southeastern Arizona, but much of that habitat has been lost, and only remnant populations restricted to tributaries persist today. Gila topminnow, once one of the most common species at lower elevations in its endemic distribution within the Gila River basin, now has less than one dozen natural populations remaining. O'Donnell Creek, therefore, meets the criteria of preventing extinction and stabilizing rare populations of Gila chub and Gila topminnow.

## **Action Area**

The action area for the proposed project encompasses lands owned by the BLM, Forest Service, TNC, and possibly other entities. The two BLM dams and potential alternative TNC fish barrier site are on an 800-foot reach of O'Donnell Creek within the southeast quarter of Section 28, Township 21 South and Range 18 East. The 15-square-mile upper watershed where stock tank treatments would occur is located on CNF and possibly private land (Figure 3).

O'Donnell Creek is a tributary to the Babocomari River, which flows into the San Pedro River. The O'Donnell Creek watershed drains 15.3 square miles upstream of the Las Cienegas NCA. The maximum elevation of the drainage is 6,171 feet at Lookout Knoll. The BLM dams and the potential TNC fish barrier site are at an approximate elevation of 4,825 feet. There are about 1.5 miles of perennial stream upstream of the lower dam.

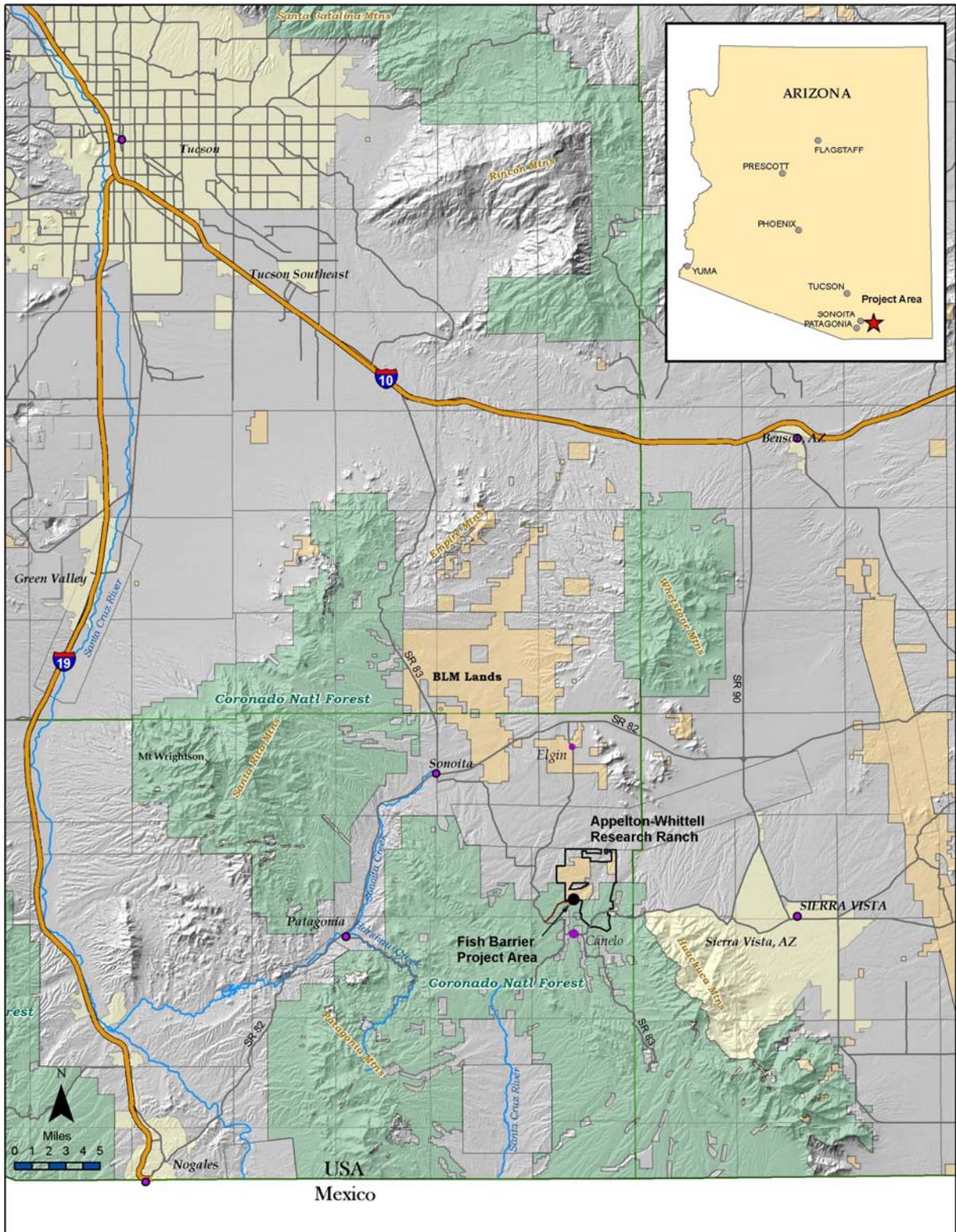


Figure 1. Project location map.

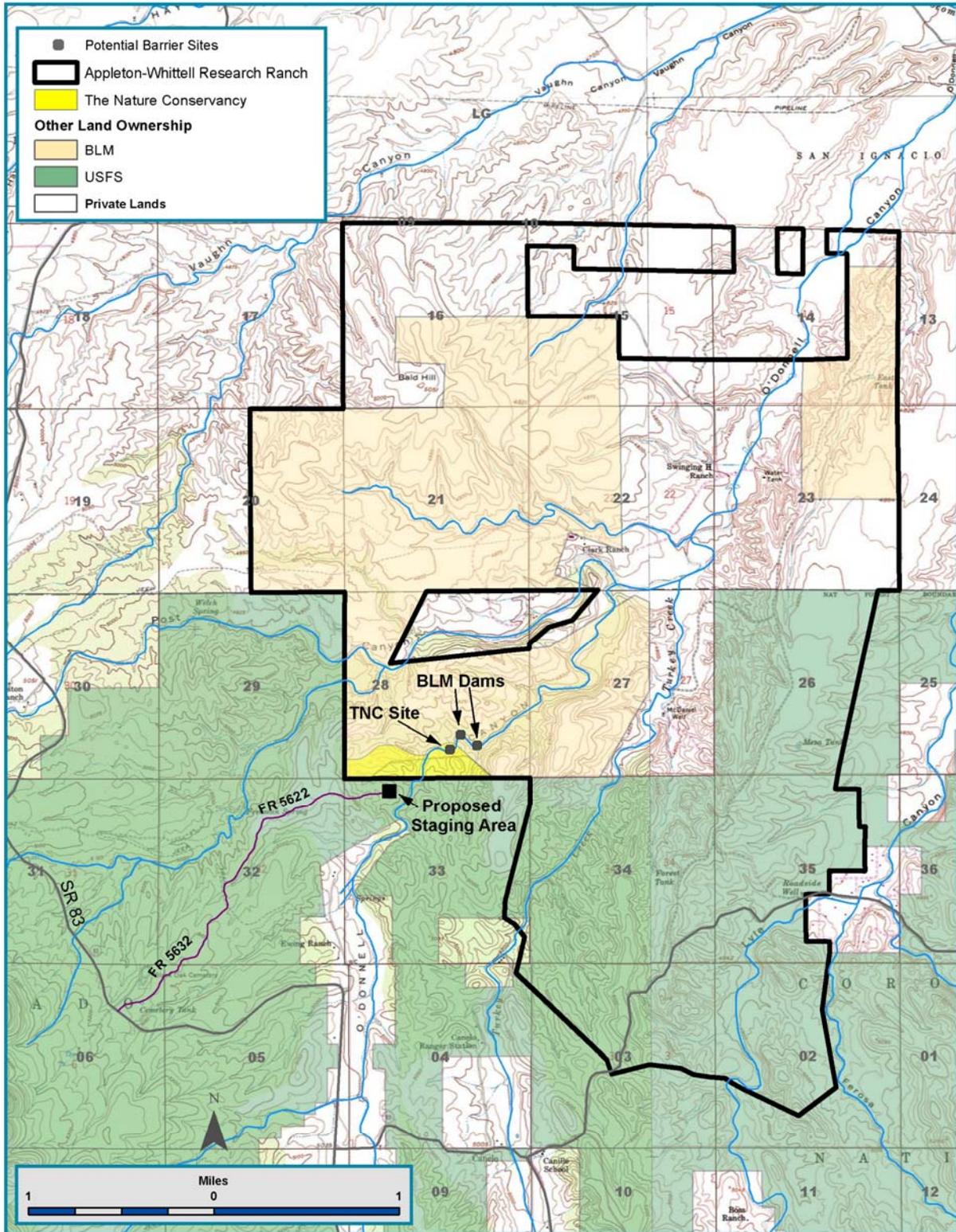


Figure 2. Fish Barrier construction impact area.

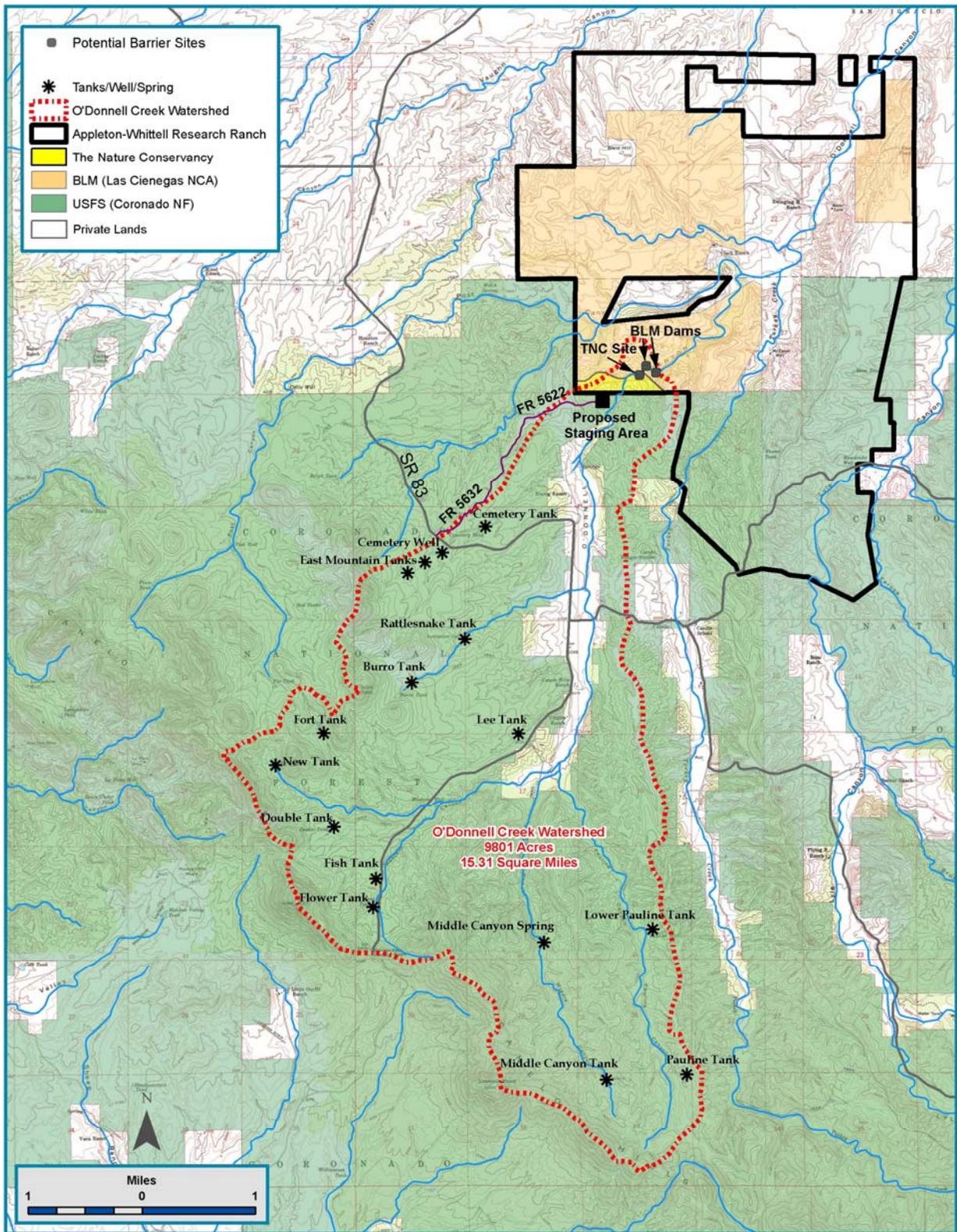
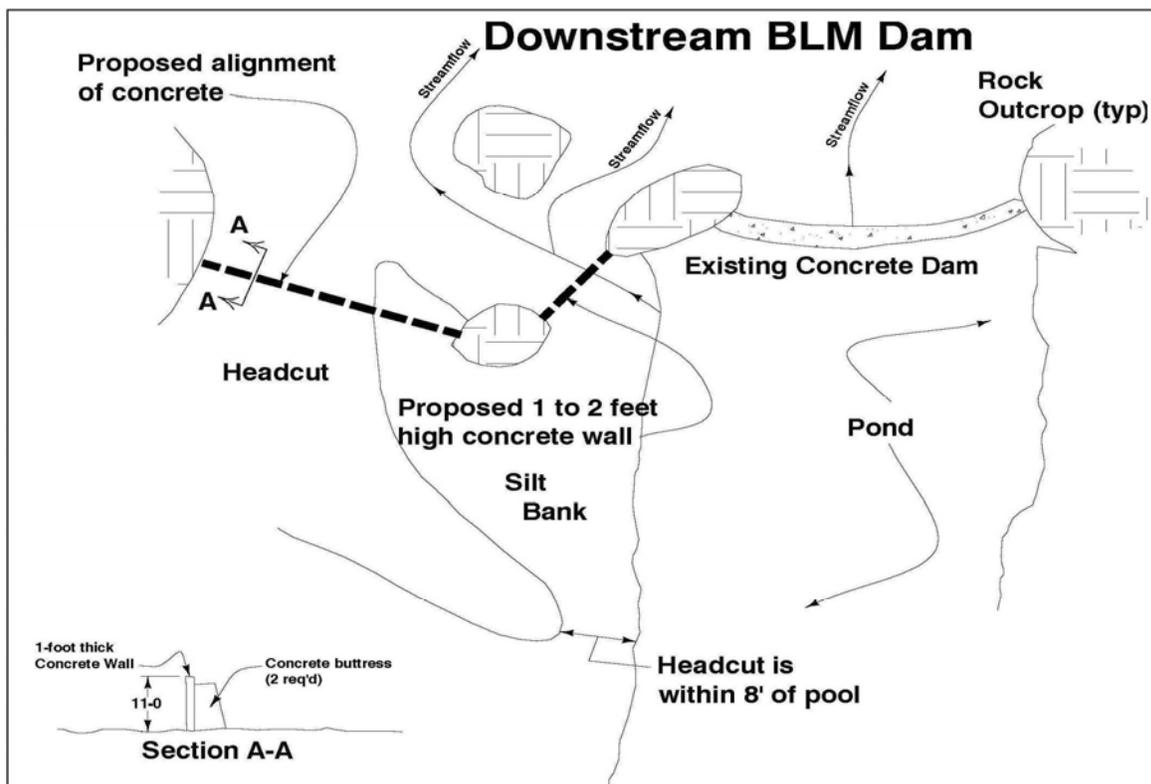


Figure 3. Upper O'Donnell Creek watershed.

## Proposed Action

**Stabilization of Downstream BLM Dam.** The downstream dam is a 7-foot-high, 35-foot-long concrete arch that ties to the bedrock embankment along the right abutment and a smaller bedrock feature near the left abutment. Beyond the left abutment is a 7-foot-deep, 60-foot-wide headcut channel that has eroded partway through the floodplain along the toe of a vertically oriented outcrop of bedrock. This bedrock forms the far left embankment of the floodplain. Base flow and higher flows within the low-flow channel pass over the crest of the dam and a shallow bedrock saddle at the left abutment before plunging approximately 7 vertical feet to the lower stream channel.<sup>1</sup> However, flows associated with relatively minor floods overtop the left bank of a small pond at the dam and discharge into the headcut channel. Recurrent overbank flooding has caused the headcut to migrate within 8 feet of the pond. Continued headcutting into the pond would eventually shift the stream channel around the left abutment, enabling fish to bypass the dam and move upstream.

The proposed work would consist of constructing a 60-foot-long, 11-foot-high reinforced concrete wall across the headcut channel, and a 1- to 2-foot-high concrete plug in the bedrock saddle at the left abutment.<sup>2</sup> The wall would prevent further migration of the headcut and preserve the functional utility of the dam as a fish barrier.



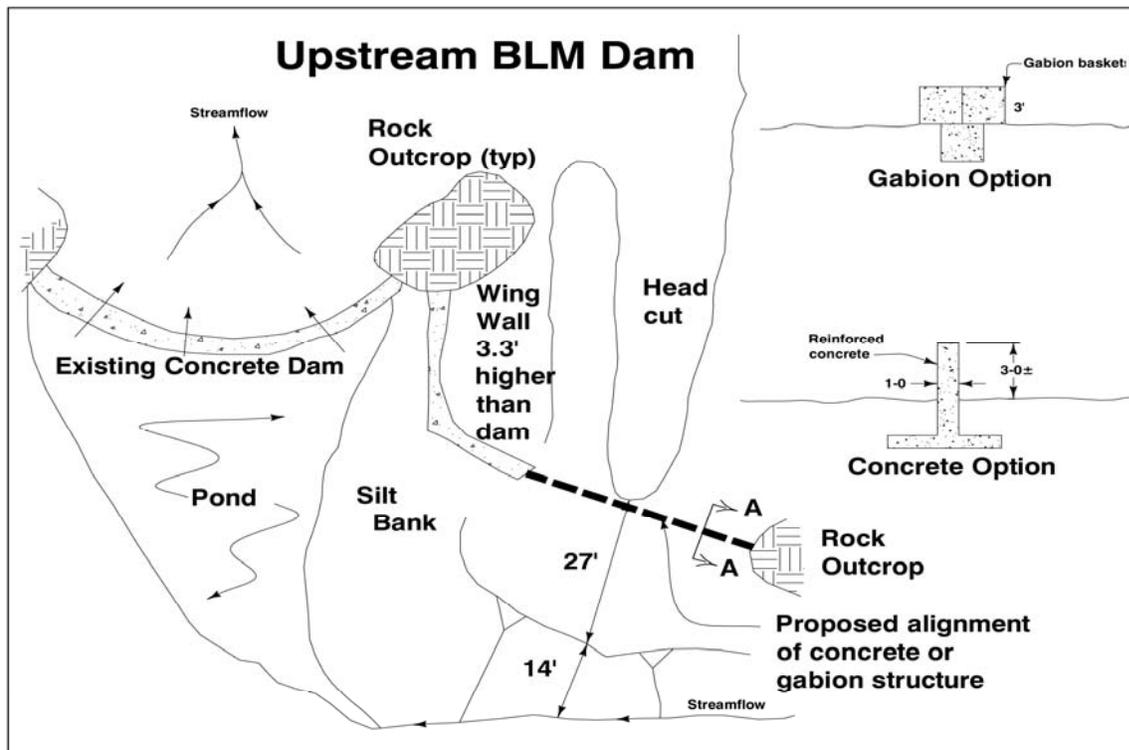
<sup>1</sup> The saddle is approximately 3 to 4 inches lower than the crest of the dam.

<sup>2</sup> The maximum height of the cutoff structure measured from the invert of the headcut channel to the top of the wall would be 11 feet. The wall would be anchored to bedrock along its foundation and at the left abutment of the dam and the far left embankment.

**Stabilization of Upstream BLM Dam.** The upstream 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 the floodplain. The wing wall is 3.3 feet higher than the dam, and appears to have been built to direct flows away from the right terrace and over the dam. High flows have eroded a headcut from the downstream channel through the floodplain to about the upstream end of the wing wall, an estimated distance of 30 feet. Continued headcutting could shift the stream channel laterally around the right abutment of the dam, negating its utility as a fish barrier.

Stabilization of the upstream dam would involve extending the wing wall with a 3-foot-high gabion or reinforced concrete wall across the floodplain to a rock outcrop at the far right bank, a distance of approximately 60 feet. The wall would be anchored to bedrock at the right bank and bedrock underlying the foundation. The purpose of the proposed cutoff wall is to prevent further migration of the headcut.

Construction at the two dams would occur concurrently and require approximately 2 months for completion.



**Construction Access, Staging, and Vehicle Use.** Access to the proposed construction area is provided by Highway 83, Forest Service Road (FSR) 5632, and FSR 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, except concrete. Wet concrete would be air delivered to the work area by helicopter sling-load bucket. Concrete would be poured directly from the sling-load bucket into the formwork at the construction site.

Staging activities include unloading and storage of materials and supplies, equipment storage, and parking. The staging area on the FSR 5622 spur road would not exceed 1/2 acre in size. All equipment and material, including a backhoe, would be delivered to the work area by helicopter sling load. Temporary lay down of construction materials may occur on the floodplain next to both dams, but no hazardous materials would be stored there. The backhoe and gabion rock would be power washed prior to being airlifted to the work area to reduce the risk of spreading weed seeds. Construction personnel would utilize an existing 0.7-mile-long foot trail from the spur road, through TNC property, to access the dams.

Construction of the cutoff walls would require excavation of a foundation trench through floodplain soils at both dam sites. These trenches would be excavated with a backhoe to the depth needed to sufficiently anchor the walls. Minimal travel of the backhoe would be required within the work area. No excavation would occur within the active low-flow channel.

*Stock Tank Treatments.* In concert with the proposed dam stabilization work, the Forest Service would have an action to approve the mechanical and/or chemical treatment of stock ponds on the CNF by AGFD, which would include (a) the application of a piscicide (antimycin A and/or rotenone); and/or, (b) seining, netting, giggering, pumping, or other mechanical methods to remove nonnative fishes. AGFD would inspect stock ponds for the presence of nonnative fishes and native amphibians. If a piscicide is applied, any native amphibians inhabiting ponds that also harbor nonnative fishes would be captured, held off site, and returned following treatment.

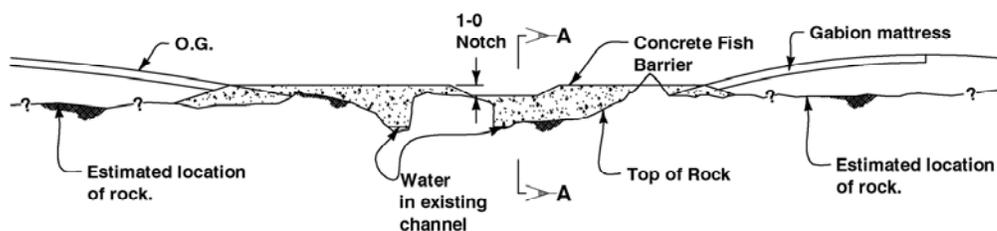
## **Alternative Action**

*Constructed Fish Barrier on TNC Site.* In lieu of the Proposed Action, and with permission from TNC, Reclamation would construct a reinforced concrete fish barrier on TNC's Canelo Hills Preserve, approximately 375 feet upstream from the upper BLM dam (and 125 feet upstream from the Las Cienegas NCA boundary). The structure would consist of a low-profile concrete wall that fills the gaps between the spines of a bedrock intrusion that bisects the stream. A center notch would be constructed to ensure base flow discharges over a section of the barrier that provides the full 4-foot drop, impinging on a downstream concrete apron.

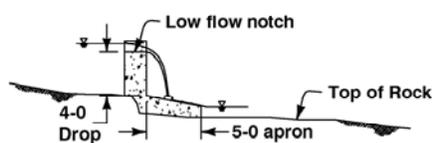
Concrete would be poured in two phases to allow for stream diversion: the first phase would construct approximately two-thirds of the structure, and the second phase would complete the project. Stream flow would be diverted around active work areas with pumps or temporary dikes consisting of channel alluvium.

The visible portion of the fish barrier would be approximately 45 feet across the stream channel and vary in height above the original ground surface by 1 to 4 feet. Gabion mattresses or riprap armoring would be placed on the embankments at the left and right abutments for scour protection and to ensure the stream does not erode laterally around the barrier during floods. Construction would require about 1 month.

The logistical elements of this alternative, including construction staging at the end of FSR 5622, equipment/material delivery, and stock tank treatments would be similar to the Proposed Action.



**TNC Barrier Site**  
Looking Downstream



**Section A-A**

## How to Comment and Timeframe

You are encouraged to offer comments on the scope of the upcoming EA, including potential issues, concerns, and alternatives to the proposed project. Reclamation and BLM will accept comments until December 31, 2007. Please include your full name and address and project title (O'Donnell Creek Fish Barrier) with your comments.<sup>3</sup> Comments should be submitted to Mr. John McGlothlen, Bureau of Reclamation, 6150 West Thunderbird Road, Glendale, Arizona 85306. Facsimiles may be sent to Mr. McGlothlen at 623-773-6486. Hand-delivered written comments may be submitted to the above address, Monday through Friday, between 7:30 a.m. and 4:00 p.m., excluding Federal holidays. Electronic (e-mail) comments may be submitted to [jwmcglothlen@lc.usbr.gov](mailto:jwmcglothlen@lc.usbr.gov). Please include your full name and address with your email.

For additional information concerning the proposed project, please feel free to contact Mr. John McGlothlen at the address above, by telephone at 623-773-6256, or by e-mail at [jwmcglothlen@lc.usbr.gov](mailto:jwmcglothlen@lc.usbr.gov).

<sup>3</sup> Before including your name, address, 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 review, we cannot guarantee that we will be able to do so.