

RECLAMATION

Managing Water in the West

Pyramid Lake Watercraft Inspection Station

Environmental Assessment LO-2014-1035



U.S. Department of the Interior
Bureau of Reclamation
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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitment to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Section 1 Introduction

1.1 Background

Pyramid Lake Reservation

The Pyramid Lake Reservation for the Pyramid Lake Paiute Tribe (PLPT/Tribe) is located approximately 35 miles (mi) northeast of Reno, Nevada. The Reservation covers 476,728 acres (ac) and was established in 1874. It contains Pyramid Lake and over 25 mi of the lower Truckee River, this terminal lake's primary tributary. Pyramid Lake is 350 feet (ft) deep, 15 mi long, 11 mi wide and has a surface area of approximately 112,000 ac (PLPT 2015a). Pyramid Lake and the Truckee River are habitat for Lahontan cutthroat trout (LCT, *Oncorhynchus clarkii henshawi*) and cui-ui (*Chasmistes cujus*), which are both listed under the Endangered Species Act of 1973, as amended (ESA; 16 United States Code 1531 et seq.). These fish are important to the culture of the Pyramid Lake Paiute People, and fishing and other recreational (day use, camping) activities by the public at Pyramid Lake contribute significantly to the Tribe's economy (PLPT 2015a).

Pyramid Lake Fisheries Department

The mission of PLPT's Pyramid Lake Fisheries Department (PLF) is to operate and maintain fishery facilities at Pyramid Lake and the lower Truckee River for the purpose of enhancing cui-ui and LCT populations, while creating a balance within natural resources management actions, which reflects the social, cultural, economic, and natural resource values of the Pyramid Lake Paiute People (PLF 2015). The goal of PLF is to maintain both a recreational and trophy fishery for LCT, while working collaboratively with partners to protect, conserve, and restore aquatic resources, fish habitats, and water quality within the Pyramid Lake-Truckee River watershed (PLF 2015).

Anaho Island

Anaho Island is a 247-ac, rocky island that rises from the waters of Pyramid Lake. The Anaho Island Reservation was set aside in 1913 as a "preserve and breeding ground for native birds" (Executive Order 1819), and it was formally designated as a national wildlife refuge in 1940 (U.S. Fish and Wildlife Service (Service) 2015a). In 1990, Public Law (P.L.) 101-618 §210(b)(2) more narrowly defined the purpose of the refuge, stating that it was to be managed and administered "for the benefit and protection of colonial nesting species and other migratory birds." P.L. 101-618 also recognized Anaho Island as part of the Pyramid Lake Reservation, which was to be managed and administered by the Service within the National Wildlife Refuge System. A memorandum of understanding between the Service and PLPT was signed in 1992 (Service 2015b).

Although the Service exercises primary jurisdiction over the island, no major deviations from current management practices occur without the consent of and coordination with PLPT, as per Resolution No. 19-90 of the PLPT Tribal Council and P.L. 101-618. The refuge is closed to public access to protect nesting birds, and boating is prohibited within 1,000 ft of the island. Anaho Island National Wildlife Refuge has a Natural Resource Management Plan (Service 2015c). This plan identifies invasive species as one of the

most critical threats to the refuge's conservation targets, although it focuses on threats from terrestrial wildlife and plant species.

Aquatic Invasive Species

Aquatic invasive species (AIS) are aquatic organisms that invade ecosystems beyond their natural, historical range (Service 2015d). Their presence may harm native ecosystems or commercial, agricultural, and recreational activities dependent on these ecosystems. Invasive zebra (*Dreissena polymorpha*) and quagga (*Dreissena rostriformis bugensis*) mussels have both rapidly spread from the eastern United States and are found as far west as California (Figure 1). Quagga mussels were found in Lake Mead, a U.S. Bureau of Reclamation (Reclamation) reservoir on the Colorado River, in 2007. There is consistent boater traffic arriving in northern Nevada from Lake Mead. Reclamation began monitoring water bodies associated with Reclamation facilities for invasive mussels starting in 2009, including several waters in northern Nevada (Pyramid Lake and Lahontan Reservoir) and California (Donner Lake and Boca, Prosser, and Stampede Reservoirs) that are within the Truckee River watershed. In 2011, water samples tested positive for quagga mussel veligers¹ at Lahontan Reservoir and Rye Patch Reservoir (Humboldt River watershed); no adults or confirmed positive veliger samples have been recorded since.

The Northern Nevada Quagga Task Force (NNQTF) is a coalition of approximately 20 entities, including tribes and federal, state and local agencies, under the leadership of the Nevada Department of Wildlife (NDOW). Both Reclamation and PLPT are members of NNQTF. There is a voluntary watercraft inspection program at both Lahontan and Rye Patch Reservoirs; AIS inspections are mandatory at Lake Tahoe, as well as Boca and Stampede Reservoirs. Boater interviews indicate that some watercraft may be launching at Pyramid Lake in order to avoid existing AIS inspection stations.

AIS of concern to PLPT include, but are not limited to: Quagga mussels, zebra mussels, New Zealand mudsnails (*Potamopyrgus antipodarum*), curly-leaf pondweed (*Potamogeton crispus*), Eurasian water milfoil (*Myriophyllum spicatum*), and Asian clams (*Corbicula fluminea*) (PLPT and PLF 2013). New Zealand mudsnails, curly-leaf pondweed, Eurasian water milfoil, and Asian clams are already established in either Lake Tahoe and/or the Truckee River. Therefore, preventing introductions of quagga and zebra mussels are of greatest concern to PLPT. The Tribe has developed and implemented an AIS management plan (PLPT and PLF 2013). The Tribe has also developed regulations for Reservation waters regarding watercraft inspections for AIS and decontamination of potentially-contaminated watercraft (PLPT 2015b). Other actions implemented by PLPT include measures to increase education of boaters and anglers regarding AIS.

¹ Veligers are planktonic larvae of bi-valve molluscs (clams) and snails.

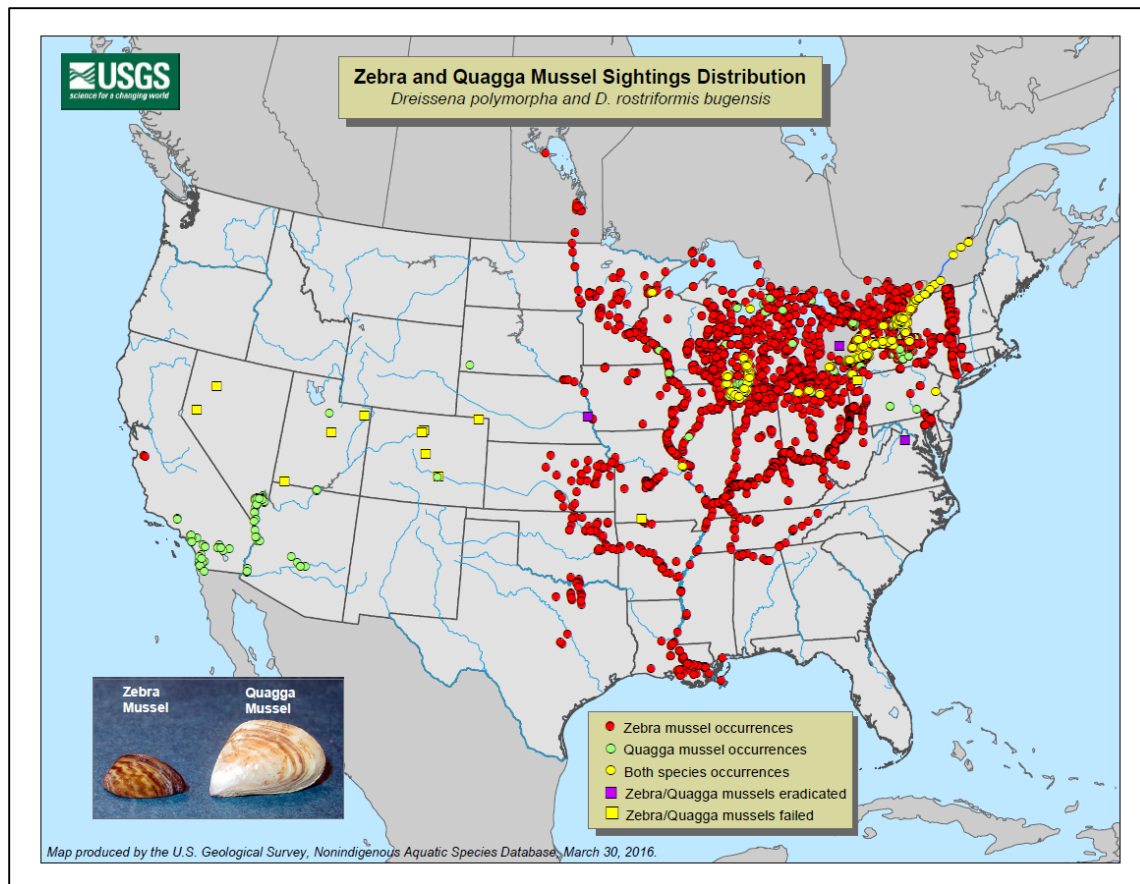


Figure 1. Zebra and Quagga Mussel Sightings Distribution Map (U.S. Geological Survey 2016).

The following information on the impacts of invasive mussels is directly from Benson *et al.* (2016):

“Quaggas are prodigious water filterers, removing substantial amounts of phytoplankton and suspended particulate from the water. As such, their impacts are similar to those of the zebra mussel. By removing the phytoplankton, quaggas in turn decrease the food source for zooplankton, therefore altering the food web. Impacts associated with the filtration of water include increases in water transparency, decreases in mean chlorophyll *a* concentrations, and accumulation of pseudofeces (Claxton *et al.* 1998). Water clarity increases light penetration causing a proliferation of aquatic plants that can change species dominance and alter the entire ecosystem. The pseudofeces that is produced from filtering the water accumulates and creates a foul environment. As the waste particles decompose, oxygen is used up, and the pH becomes very acidic and toxic byproducts are produced. In addition, quagga mussels accumulate organic pollutants within their tissues to levels more than 300,000 times greater than concentrations in the environment and these pollutants are found in their pseudofeces, which can be passed up the food chain, therefore increasing wildlife exposure to organic pollutants (Snyder *et al.* 1997).”

“*Dreissena* species ability to rapidly colonize hard surfaces causes serious economic problems. These major biofouling organisms can clog water intake structures, such as pipes and screens, therefore reducing pumping capabilities for power and water treatment plants, costing industries, companies, and communities. Recreation-based industries and activities have also been impacted; docks, breakwalls, buoys, boats, and beaches have all been heavily colonized. Quaggas are able to colonize both hard and soft substrata.”

Environmental Assessment

This Environmental Assessment (EA) describes the existing resources in the Proposed Action area and evaluates the effects of the Proposed Action and No Action Alternative on those resources. This EA was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA; 42 United States Code §§ 4321–4370h), Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500–1508), and Department of the Interior Regulations (43 CFR Part 46).

1.2 Need for the Proposal

The purpose of the Proposed Action is to prevent the introduction of AIS into Pyramid Lake. As seen in other portions of the United States (*e.g.*, Great Lakes), AIS infestations are capable of affecting entire aquatic ecosystems (Glassner-Shwayder and Myers 2014). Although multiple AIS are found nearby in California and Nevada waters, excluding quagga and zebra mussels is of greatest concern to PLPT. Pyramid Lake has been identified as having a high risk for mussel introductions (Pucherelli and Hosler 2012).

As described above, quagga and zebra mussels filter phytoplankton and other materials from the water, altering the food web and aquatic habitat for native species. Ultimately, they could impact the fisheries in Pyramid Lake, including ESA-listed fish species, as well as the birds and other wildlife that rely on the lake for resources. Mussel infestations in other areas of the United States have also made beaches essentially unusable by the public due to sharp shells washing ashore and odors from rotting mollusks (Figure 2). There is the potential for significant economic impacts to PLPT from AIS invasions associated with lost public recreational use revenue and impacts to PLF hatchery water intake structures, as well as significant cultural implications.

The LCT fishing season at Pyramid Lake runs from October 1 to June 30, while fishing for Sacramento perch (*Archoplites interruptus*) is open year round. Memorial Day weekend is the opening of the general recreational use season. This year-round watercraft use brings with it the potential for year-round AIS introductions, which can only be addressed through an inspection and decontamination station that is able to operate year round.

1.3 Potential Resource Issues

This EA will analyze the affected environment under the Proposed Action and No Action Alternative in order to determine the potential impacts and cumulative effects to the resources listed below.

- Biological Resources
- Environmental Justice
- Cultural Resources
- Indian Trust Assets
- Recreation
- Soils
- Threatened and Endangered Species
- Water Resources



Figure 2. Fish and Quagga Mussel Shells on a Great Lakes Beach.

1.4 Resources Not Analyzed in Detail

Effects on multiple other resources were examined and found to be minor. As a result, the following resources were eliminated from further discussion in this EA: Air quality, geology, global climate change, land use, noise, and wetlands.

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Section 2 Proposed Action and Alternatives

2.1 Proposed Action

Funding

The Proposed Action is to allow PLF to use National Fish and Wildlife Foundation (NFWF) sub-grant funding to construct a permanent watercraft inspection and decontamination station for AIS on the Reservation. The source of the original funding to NFWF is Reclamation's Desert Terminal Lakes Program (P.L. 107-171, as amended by P.L. 110-246, Section 2807; P.L. 111-85, Section 207; and P.L. 112-74, Title II, Division B, Section 208(a)). PLPT permit fees will fund the long-term costs of station operation. Reservation visitors are required to purchase daily, multi-day, or seasonal use permits (day use, camping), and boaters (including jet skis) and anglers must purchase additional activity-specific permits (PLPT 2016).

Location

The Proposed Action would be implemented on a parcel of PLPT land in Sutcliffe, Nevada, near the intersection of Nevada State Route (SR) 445 (Pyramid Lake Road) and Sutcliffe Drive (Figures 3 and 4). The site is located on the east-west centerline in the south half of section 15, Township 24 North, Range 21 East, of the Mount Diablo Baseline and Meridian. The site has been used as a PLPT Ranger Station previously and most recently for temporary sales of various visitor use permits on busy holiday weekends.

Access

Visitors have limited access routes into the Reservation. The primary paved Reservation access routes are from the south via SR 445 and SR 447. Vehicle access into the site is provided by an existing paved cutoff road connecting SR 445 and Sutcliffe Drive. Sutcliffe Drive provides access to the Sutcliffe Marina, as well as the current Ranger Station and visitor center. The Pelican Point boat ramp is also accessed from SR 445 just north of Sutcliffe. Thus, this site is ideally located to intercept the majority of watercraft from nearby urban areas that use launch facilities on the west shoreline of Pyramid Lake. Pyramid Lake recreationists would be directed to the AIS station by existing AIS educational highway billboards and new signs at the station entrance.

Inspection and Decontamination Process

All vehicles with watercraft would enter the AIS station via the cutoff road. The existing asphalt surface would be utilized for temporary vehicle parking while initial inspections are conducted. Similar to AIS stations elsewhere in the Truckee River watershed, a PLPT inspector would approach recreationists, explain the inspection process, interview them regarding their watercraft's usage history, and visually inspect the watercraft and trailer for any standing water and signs of AIS. Clean, drained, and dry watercraft with no recent history of use in AIS-occupied waters would be diverted to the station exit and



Figure 3. Overview Map of Pyramid Lake Watercraft Inspection Station Project Area, Sutcliffe, Nevada.

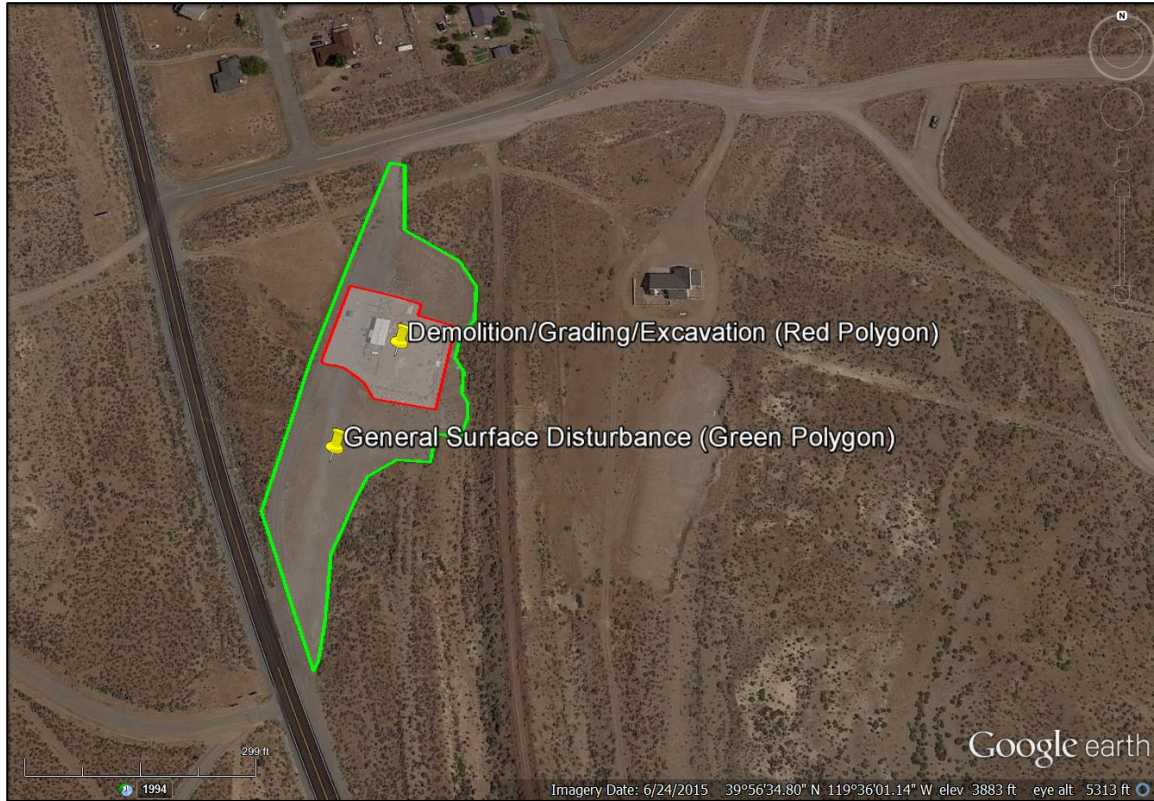


Figure 4. Site Map of Pyramid Lake Watercraft Inspection Station Project Area, Sutcliffe, Nevada.

allowed to proceed to launch areas. Suspect watercraft would be directed into the station for decontamination.

The decontamination process would involve: (1) Spraying a watercraft's exterior hull for 10 seconds with hot (140 degree Fahrenheit (°F)) water at high pressure (2,500 pounds per square inch) to target adult mussels; (2) spraying the trailer for 70 seconds with hot water at high pressure to target adult mussels; (3) flushing the motor with hot water at low pressure to target veligers; (4) spraying the gimbal² area for 132 seconds with hot water at low pressure to target adults; (5) flushing or low-pressure spraying of all interior compartments (*e.g.*, live well, bait well, bilge tank, ballast tank) and pumps with warm (120 °F) water for 130 seconds to target veligers; and (6) spraying personal flotation devices, anchors, and paddles for 10 seconds with hot water at low pressure to target adults and veligers (Elwell and Phillips 2016). Adult mussels are killed by a 10-second exposure to 140 °F water; mussel veligers are instantly killed by exposure to water at 95 °F and above (Minnesota Department of Natural Resources 2013).

² The area of attachment for an outboard motor.

Station Design, Construction, and Operation

Pre-construction site preparation for the AIS station would involve the demolition and removal of the old Ranger Station, consisting of a 1960s vintage mobile home set on a concrete block foundation, followed by removal of a chain-link fence and debris and rough grading of the station construction zone (Figure 4).

The general design concept of the proposed AIS station is somewhat similar to an open air car wash facility, which automatically collects, cleans, and recycles the majority of the water used. Within the existing level gravel area adjacent to the asphalt of the cutoff road, a new concrete pad would be constructed measuring 42 ft 6 inches (in) wide by 40 ft long. The pad would consist of two watercraft wash bays (each 15 ft 6 in wide by 40 ft long), separated by a center bay (11 ft 6 in wide by 40 ft long) (Figure 5). The center bay would hold an 8-ft wide by 20-ft long metal cargo shipping container that would house the boiler; heat exchanger; water pumps, hoses, and other plumbing components; electrical panels; and associated equipment. This structure would help protect the decontamination equipment from freezing temperatures and could be secured to protect equipment from theft or vandalism. It would also provide station staff with some protection from the elements during inclement weather.

The perimeter of the pad would have a combination of concrete curbing and raised entry/exit aprons to contain the wash water runoff on the pad. Each watercraft wash bay would have a central, 10-ft-long, precast drainage trench, covered with a metal traffic grate. The trenches would collect the wash water and send it directly into small, under-pad, precast concrete catch basins (3 ft 3 in long by 3 ft 4 in wide by 4 ft high). Water from the catch basins would flow by gravity into a single 6-in diameter, SDR-35 PVC pipe³ connected to a series of two 1,500-gallon, precast concrete interceptor tanks.

The first tank would settle out sand and other solid particles from the wash water. Hydrocarbons (*e.g.*, gasoline and oil residues) would then be physically separated from the wash water in the second tank using a skimmer at the water's surface. Reclaimed water exiting from the second tank would be pumped back to the center bay's storage container where it would flow into the boiler/heat exchanger and enter a temporary storage tank where a distribution pump would then send it to the spray hoses upon demand. With this recycling process, the wash water can be reused for decontamination purposes numerous times. During inactive periods at the station (*e.g.*, when high winds and associated lake wave heights commonly restrict use of small watercraft), the majority of the wash water would remain underground in the interceptor tanks.

The second interceptor tank would also have a pipe extension reaching downslope to the headwall of a 24-ft long evaporation pond (3:1 side slopes). The evaporation pond would be used periodically whenever tank evacuation is required for station maintenance or

³ Standard Direct Ratio-35 polyvinyl chloride pipe is often used for gravity sewers; categorized based on the ratio of average outside wall thickness to minimum wall thickness.

refreshing the station's water supply. Accumulated solids and hydrocarbon-bearing materials would be removed from the tanks periodically, as needed, and shipped to authorized disposal sites off of the Reservation. Each pad's drainage trench would have a shutoff valve to close when the station is not in operation to prevent water from precipitation events being captured and flooding the catch basins and tanks.

Existing power lines that once supplied the Ranger Station will be repurposed for the AIS station. However, the electrical system (single-phase) will be upgraded to provide three-phase power for the new boiler and water pumps. This requires that three-phase power be routed in conduit from the existing utility vault near Sutcliffe Drive to the existing transformer area adjacent to the Ranger Station and in a series from there to a secondary utility box and a switchboard panel within the container. The Sutcliffe community water supply will provide potable water directly to the container. Limited localized trenching will be necessary to safely provide reliable utility services on site (Figures 4 and 5).

The proposed permanent AIS station is designed to withstand winter operations. Pyramid Lake sees a substantial amount of winter visitation. The LCT fishing season at Pyramid Lake runs from October 1 to June 30, and Sacramento perch fishing is open year round. Memorial Day is the opening of the recreational summer-use season. A permanent station would allow greater protection from the elements for the inspectors and would also reduce maintenance costs and reduce down time for cold-weather-related problems. The majority of the wash water would remain underground in the tanks when not in use, which would prevent issues with freezing that would occur aboveground.

2.2 No Action Alternative

Under the No Action Alternative, Reclamation would not allow PLF to use NFWF sub-grant funding to establish the inspection and decontamination station. PLF could potentially obtain funding from other sources to establish the station, but station construction and implementation of inspections would likely be delayed.

2.3 Other Alternatives Considered

Another alternative that would meet the need of this action would be to close Pyramid Lake to watercraft use. This alternative was dropped from further consideration because of the economic implications to the Tribe; significant revenue is generated from boating and fishing permits.

Section 3 **Affected Environment and Environmental Consequences**

This section identifies the potentially affected environmental resources and the environmental consequences that could result from the Proposed Action and the No Action Alternative.

3.1 Biological Resources

Vegetation

The proposed site is located within a salt desert shrub community. Predominant shrub species on site are shadscale saltbush (*Atriplex confertifolia*) and greasewood (*Sarcobatus vermiculatus*), with minimal coverage of grass and forb species in the understory. Indian ricegrass (*Oryzopsis hymenoides*) is the dominant native perennial grass in the understory. Cheatgrass (*Bromus tectorum*) and filaree (*Erodium cicutarium*) are the common non-native species on site. Rubber rabbitbrush (*Ericameria nauseosa*) and big sagebrush (*Artemisia tridentata*) are found along the access road as well as along the abandoned railroad bed on the southern boundary of the proposed site.

Fish and Wildlife

Wildlife species expected to be present in salt desert shrub communities include mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), and various small mammals, as well as a variety of smaller birds and lizards.

Pyramid Lake has a native fish community comprised of four species: Cui-ui, LCT, Lahontan tui chub (*Siphateles bicolor obesa* and *Siphateles bicolor pectinifer*), and Tahoe sucker (*Catostomus tahoensis*). The cui-ui is federally listed as endangered under the ESA, and LCT is federally listed as threatened (See **3.8 Threatened and Endangered Species**). The tui chub is the most abundant fish in Pyramid Lake, and it is the primary prey of LCT. Sacramento perch, common carp (*Cyprinus carpio*), kokanee (*Oncorhynchus nerka*), and channel catfish (*Ictalurus punctatus*) are non-native fish species present in the lake.

Anaho Island provides year round habitat for birds, lizards, snakes, rodents, and insects. It also supports seasonal breeding colonies of American white pelicans (*Pelecanus erythrorhynchos*), double-crested cormorants (*Phalacrocorax auritus*), California gulls (*Larus californicus*), Caspian terns (*Hydroprogne caspia*), great blue herons (*Ardea herodias*), black-crowned night herons (*Nycticorax nycticorax*), and snowy egrets (*Egretta thula*). Double-crested cormorants, California gulls, and great blue herons winter in other areas and return to Anaho Island each spring to nest and raise their young. The diet of these birds includes fish, crayfish, amphibians, crustaceans, baby birds, small mammals, reptiles, and insects.

The pelican colony on Anaho Island is one of the largest colonies in the western United States (Service 2015a). On average 8,500 adult pelicans return to Anaho Island each spring from wintering areas in southern California and Baja, Mexico. These birds rely heavily on the spring spawning runs of cui-ui and LCT from Pyramid Lake into the lower Truckee River, as well as the fish in numerous shallow lakes and wetlands within the Lahontan Valley. The adult pelicans return daily to feed their chicks. Once the chicks are able to fly, they follow the adults to feeding areas, and by late August most pelicans have dispersed from the Reservation.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, no biological resources in the action area vicinity will be removed or disturbed from the construction and operation of the AIS station. However, if AIS become established in Pyramid Lake there will be direct and indirect adverse impacts to wildlife within and around the lake. A single adult quagga mussel measuring 1 inch long can filter 0.26 gallon of water per day, and they typically reproduce rapidly and spread into dense mats (Oregon Department of Fish and Wildlife 2011). Water filtering removes the phytoplankton and nutrients that native aquatic species such as zooplankton, invertebrates, and larval and juvenile fish feed on. These small native species in turn feed larger fish and waterfowl. By removing the lower layer of the food web, invasive mussels have the potential to impact multiple species of aquatic and terrestrial wildlife. Beds of non-native invasive plant species may also become established through introductions via contaminated watercraft. Increased lake water clarity due to mussel water filtering could enable non-native and native aquatic vegetation to proliferate, potentially further altering the Pyramid Lake ecosystem.

Proposed Action

Reusing the old Ranger Station location for construction of the AIS station would minimize impacts to vegetation by concentrating ground disturbance on previously disturbed land. Placing some of the station components underground (*e.g.*, interceptor tanks) would also minimize the amount of impermeable surfaces created and allow vegetation regrowth, which would eventually restore a small amount of wildlife habitat. Wildlife disturbance from construction will be short term and temporary. Ongoing disturbance of local wildlife would occur year round during station operation, due to the associated human activity, vehicle traffic, and equipment noise. This type of disturbance is similar to what has occurred in the past during Ranger Station operations and holiday permit sales. However, reducing the risk of AIS invasion would be beneficial to native wildlife and vegetation at a much larger, ecosystem scale.

3.2 Environmental Justice

Executive Order No. 12898, Environmental Justice, is intended "to promote nondiscrimination in Federal programs substantially affecting human health and the environment, and to provide minority and low-income communities access to public

information on, and an opportunity for participation in, matters relating to human health and the environment.” It requires each federal agency to achieve environmental justice as part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects, including social and economic effects, of its programs, policies, and activities on minority and low-income populations. Environmental Protection Agency guidelines for evaluating potential adverse environmental effects of projects require specific identification of minority populations when a minority population either exceeds 50 percent of the population of the affected area or represents a meaningfully greater increment of the affected population than of the population of some other appropriate geographic unit. The race, ethnicity, and poverty data reported in this section were acquired from the U.S. Census Bureau (2015) and represent data collected between 2010 and 2014. The poverty level was based on the Office of the Assistant Secretary for Planning and Evaluation’s 2014 Poverty Guidelines.

The Reservation community of Sutcliffe surrounds the proposed station site, which is within Washoe County. Census data from 2014 for Washoe County include: Population estimate 440,078; Racial and Ethnic Minorities 14.7 percent; and Persons in Poverty 15.4 percent. Census data from 2014 for the 89510 Zip Code area (covering Sutcliffe and most of the Reservation, as well as surrounding lands) include: Population estimate 1,740; Racial and Ethnic Minorities 22.2 percent; and Persons in Poverty 10.2 percent.

Environmental Consequences

No Action Alternative

Under the No Action Alternative the eventual introduction and establishment of AIS, especially quagga and zebra mussels, could result in decreased public visitation to the Reservation and Pyramid Lake. Reduced public use would negatively impact the Tribe’s ability to generate revenue from fishing and recreation permit sales. The No Action Alternative would also not provide the potential new tribal employment opportunities associated with operating and maintaining the AIS station.

Proposed Action

The NFWF sub-grant proposal for the Proposed Action was submitted by and would be implemented by the PLPT. The station may provide new local employment opportunities for a small number of tribal members. Prevention of AIS introductions would likely sustain the general trend of increasing public visitation to the Reservation and Pyramid Lake specifically. This would maintain tribal revenue streams from permit sales. Implementation of the Proposed Action would not have disproportionately high or adverse human health or environmental effects, including social and economic effects, on minority or low-income populations surrounding the proposed station site.

3.3 Cultural Resources

Cultural resources is a term used to describe both ‘archaeological sites’ depicting evidence of past human use of the landscape and the ‘built environment,’ which is

represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act of 1966 (NHPA) is the primary legislation which outlines federal agencies' responsibilities to consider cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of its undertakings on historic properties, which are cultural resources listed or eligible for listing on the National Register of Historic Places (National Register).

Implementing regulations for Section 106 (36 CFR Part 800) describe the process that Federal agencies must use to identify historic properties and determine the level of effect that a proposed undertaking would have on such properties. In summary, it must first be determined whether the action is the type of activity that has the potential to affect historic properties. If the action is that type of activity, then the agency must identify the area of potential effects (APE), determine if historic properties are present within the APE, determine the effect that the undertaking would have on historic properties, and seek to resolve any adverse effects through consultation with the State or Tribal Historic Preservation Officer and any other consulting parties.

To identify cultural resources and to evaluate those resources for eligibility for listing on the National Register, Reclamation conducted archival and record searches and a Class III intensive pedestrian survey of the entire direct area of potential effects (Collis 2016). Reclamation also requested information from PLPT regarding resources of cultural or religious significance.

The identification efforts undertaken for this project resulted in the evaluation of two previously unrecorded cultural resources: a small lithic scatter and an abandoned railroad grade. Both of these resources were determined to be ineligible for the National Register, and Reclamation found that there would be no historic properties affected by the proposed project. The Tribal Historic Preservation Officer for PLPT formally concurred with these determinations on February 8, 2016.

3.4 Indian Trust Assets

Indian Trust Assets (ITA) are legal interests in property or natural resources held in trust by the United States for Indian Tribes or individuals. ITAs can include, but are not limited to, land, minerals, federally reserved hunting and fishing rights, federally reserved water rights, instream flows associated with trust land, water quality, fisheries, native plants, wildlife resources, and cultural sites. These resources are important for both cultural and traditional practices. The Secretary of the Interior is the trustee for the United States on behalf of Indian Tribes; all Interior bureaus share the Secretary's duty to act responsibly to protect and maintain ITAs reserved by or granted to Indian Tribes or individuals by treaties, statutes, and executive orders.

One federally recognized Indian Tribe is potentially affected by the Proposed Action – the Pyramid Lake Paiute Tribe of the Pyramid Lake Reservation, Nevada (Bureau of Indian Affairs 2015). Pyramid Lake is the ancestral home of the Pyramid Lake Paiute People of the Northern Nevada region. The Federal actions that set aside the Pyramid

Lake Reservation explicitly reserved Pyramid Lake for the Tribe's benefit. P.L. 101–618 affirmed that “all existing property rights or interests, all of the trust land within the exterior boundaries of the Pyramid Lake Indian Reservation shall be permanently held by the United States for the sole use and benefit of the Pyramid Tribe (Section 210[b][1]).” The Tribe is also allocated water rights from the Truckee River for irrigation, including up to 4.71 af per acre for 3,130 ac of bottomland farm (14,742 af) (Claim No. 1) and another 5.59 af per acre for 2,745 ac of benchlands (15,345 af) (Claim No. 2).

The Pyramid Lake fishery remains one of the cultural mainstays of the Tribe. The Tribe has a complex of five fish hatcheries located between Wadsworth and Sutcliffe. Each year, tribal hatcheries produce up to 1,000,000 LCT for release into Pyramid Lake and the lower Truckee River. Two of the hatcheries rear cui-ui for conservation purposes. Along with rearing fish, the Tribe manages fishing and hunting on the Reservation.

Environmental Consequences

No Action Alternative

No ITAs would be directly affected under the No Action Alternative. However, the No Action Alternative may result in indirect effects on ITAs due to the eventual infestation of Pyramid Lake by AIS. AIS are likely to have negative impacts on ITAs such as water quality, fish and wildlife resources, and cultural sites within and around the lake, as well as on hatchery operations that support the tribal fishery.

Proposed Action

The site for the Proposed Action is located on Reservation land. Therefore, trust lands of the Tribe would be directly affected by construction of the AIS station, with additional minor local impacts to vegetation and wildlife. The use of domestic water supplies from the Sutcliffe community water system during AIS station operation would have no impact on tribal water rights. In addition, there would be no adverse effects to Pyramid Lake water quality from station operation due to the self-contained water recycling system and off-Reservation disposal of any hazardous materials (*e.g.*, hydrocarbons) collected in the interceptor tanks. Operation of the AIS station would help to prevent the introduction and establishment of AIS in Pyramid Lake. Absent AIS, the native fisheries would continue to recover, allowing the Tribe to benefit financially and culturally from these resources. Wildlife resources and habitats in and around Pyramid Lake that are used by the Tribe would also be maintained and benefit from implementation of the Proposed Action. Cultural sites within and surrounding the lake would remain free of mussel shells and other debris washing ashore from submerged beds of invasive species.

3.5 Recreation

The Tribe sells seasonal, multi-day, and single-day use permits to non-tribal members for specific to recreational activities. Pyramid Lake is popular with numerous forms of recreationists including boaters, jet skis, campers, anglers, wildlife watchers, water skiers, swimmers, and beach goers. Non-motorized watercraft such as kayaks, standup

paddleboards, and kite boards also use Pyramid Lake. The LCT fishing season runs from October 1 thru June 30; Sacramento perch fishing is open all year round. Pyramid Lake is popular with bird watchers due to the variety and abundance of nesting bird species and its use as a migratory stopover.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, all permitted watercraft would continue to be allowed to launch at Pyramid Lake. If invasive mussels were to become established in the lake, watercraft using Pyramid Lake would likely have to be decontaminated prior to using other local water bodies. The impacts of an invasion to Pyramid Lake fisheries could be significant, and recreational and tribal fishing would suffer. If the lake-based hatchery facilities were affected by mussels clogging water intakes, fish production could be reduced which would also affect recreational fishing. Eventually the impacts to fish populations and other aquatic organisms due to mussels would affect the waterfowl and shorebird populations. Bird watching would then likely be impacted at Pyramid Lake and also at areas where these bird species winter. Most beach-oriented recreation at the lake would be adversely impacted by mussel shells washing ashore.

Proposed Action

Under the Proposed Action, users of motorized and non-motorized watercraft that are capable of retaining water would be required to visit the inspection station before launching at Pyramid Lake. Most boaters in Nevada are familiar with the AIS inspection process, as NDOW requires an AIS decal as part of their annual boat registration. Many other local water bodies also have AIS inspection facilities. Watercraft that arrive at the AIS station cleaned, drained, and dry or that are Pyramid-only users would be able to skip the decontamination process and would have shorter wait times. Implementing the Proposed Action and taking AIS prevention measures would allow all existing types of recreation to continue. Permit fees collected from recreationists would help offset the Tribe's cost of operating the AIS station.

3.6 Soils

The majority (approximately 95 percent) of the soils within the proposed AIS station site are of the Wrango-Ruhe complex, 4 to 8 percent slopes (Map Unit 1600) (Natural Resources Conservation Service (NRCS) 2016). There is a small area at the northern end of the access road that is Kayo stony sandy loam, 4 to 8 percent slopes (Map Unit 961) (NRCS 2016). These soil units are comprised of alluvial deposits and are mostly gravelly sandy/loamy in texture. They range from non-saline to slightly saline and are classified as excessively drained and considered to be 'not prime farmland.' The runoff classes for the soil map units present at the proposed station site are low and medium (NRCS 2016).

Environmental Consequences

No Action Alternative

No impacts to soils would occur under the No Action Alternative as there would be no ground disturbance from construction.

Proposed Action

Under the Proposed Action, some soil within the station site would be disturbed during construction of the station pad, and other excavation associated with installation of the water and power lines, interceptor tanks, and evaporation pond. Best Management Practices (BMPs) would be implemented to minimize soil disturbance during construction and subsequent erosion of exposed soils. These BMPs and use of a water recycling system during station operation would minimize future impacts to soils from water runoff. In addition, the AIS station site is approximately 0.5 mile away from Pyramid Lake, depending on the lake's water elevation.

3.7 Threatened and Endangered Species

There are no known threatened and endangered species or critical habitat within or immediately adjacent to the proposed AIS station location. Pyramid Lake is home to the endangered cui-ui and the threatened LCT, but it is not designated as critical habitat for either species.

The cui-ui was listed as endangered on March 3, 1967 (32 FR 4001). As summarized from the species' recovery plan (Service 1992), the cui-ui is a large, long-lived, highly fecund sucker species. Adult and larval cui-ui are primarily planktivorous (Miller and Smith 1981, Moyle 2002, Scoppettone *et al.* 1986). Although cui-ui are lake dwellers, they are obligate stream spawners. Historically, cui-ui may have spawned throughout the lower 40 mi of the Truckee River (Service 1992). The formation of a sediment delta at the mouth of the Truckee River and lowered Pyramid Lake surface elevations resulting from river flow reductions (diversions) have restricted cui-ui upstream passage (Scoppettone *et al.* 1986, U.S. Army Corps of Engineers 1995). Dams and other in-river structures have further limited cui-ui spawning to the lowermost 12.4 mi of the Truckee River.

LCT historically occupied large freshwater and alkaline lakes, small mountain streams and lakes, small tributary streams, and major rivers of the Lahontan basin of northern Nevada, eastern California, and southern Oregon (Service 1995). They have resident, fluvial, and lacustrine life histories (Service 1995). They reproduce in the spring and are obligatory stream spawners. The Pyramid Lake population migrated as far as 100 mi upstream within the Truckee River watershed (Sumner 1940, Peacock and Kirchoff 2007). By 1944, the original Pyramid Lake strain of LCT was extinct in its historical habitat (Gerstung 1988). Hatchery programs, beginning in 1949, restored the Pyramid Lake fishery. The LCT was reclassified from endangered to threatened in 1975, and a 4(d) rule under the ESA was also published to facilitate management and allow regulated

angling (40 FR 29,863). Each year, the PLF hatchery system produces between 600,000 and 1,000,000 LCT for release into Pyramid Lake and the lower Truckee River. In lakes, small LCT feed largely on insects and zooplankton (Calhoun 1942, McAfee 1966, Lea 1968). In Pyramid Lake, LCT start switching to piscivory when they reach 7.9 in long, and fish represent almost 100 percent of the diet of LCT over 19.7 in long (Sigler *et al.* 1983).

Environmental Consequences

No Action Alternative

Under the No Action Alternative, there are no direct impacts to listed fish in Pyramid Lake from not constructing the AIS station. However, indirect impacts caused by potentially not preventing the spread of AIS from contaminated watercraft could affect the listed fish. Dreissenid mussels filter substantial amounts of water and remove phytoplankton, competing with zooplankton utilizing this food source and then impacting other small aquatic organisms such as small fish and invertebrates which prey on zooplankton. This has indirect impacts on both larval and adult cui-ui and LCT food sources. There could also be indirect effects to the listed fish from habitat modifications due to changes in water quality and aquatic vegetation. Stocking of listed species in the lower Truckee River and Pyramid Lake could also be affected if mussels clog hatchery water intakes and affect fish production.

Proposed Action

Implementation of the Proposed Action would have no direct effects on listed species. The AIS station site is approximately 0.5 mile away from Pyramid Lake, depending on the lake's water elevation. The Proposed Action is intended to prevent the introduction of AIS into Pyramid Lake, which would have indirect benefits to listed fish by maintaining the natural ecosystem, including the food web. The self-contained AIS station design would ensure that no decontamination wash water leaves the station site.

3.8 Water Resources

There are no natural water resources within or in the immediate vicinity of the proposed station site. The distance from the proposed station site to Pyramid Lake varies depending on water levels, but is approximately 0.5 mile. The depth to groundwater at the proposed station site is unknown. However, the soil map unit descriptions indicate that the distance to the water table is in excess of 80 in (NRCS 2016). There is an existing hand pump water faucet near the old Ranger Station, which provided potable water from the Sutcliffe community water supply.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, potable water from the Sutcliffe community water system would not be used to supply the AIS station. The water quality in Pyramid Lake would remain at risk of quagga and zebra mussel introduction and establishment. If

mussels became established, they would filter lake water and remove phytoplankton and suspended particulates, and overall water clarity would increase. Water quality would decrease in association with established mussel beds due to the accumulation of their waste products, resulting in reduced dissolved oxygen, lowered pH, and potential releases of byproducts that may facilitate biomagnification of pollutants (*e.g.*, mercury, pesticides, heavy metals) up the food chain. As the lake water becomes clearer and allows sunlight to reach lower depths, aquatic plants would proliferate and further alter the lake ecosystem. Adult mussels would likely clog water intakes and reduce the availability and quality of lake water used in fish hatchery facilities, increasing operation and maintenance costs.

Proposed Action

Under the Proposed Action, water for the AIS station would be supplied from the Sutcliffe community water system. Wash water at the station would be reused numerous times, so use of clean potable water would be minimized. Station installation and the subsequent decontamination of watercraft would help to maintain water quality in Pyramid Lake by preventing the introduction of AIS. Preventing the introduction of AIS would also avoid increasing the maintenance and operation costs for fish hatchery facilities with lake water intakes.

3.9 Cumulative Effects

CEQ regulations implementing NEPA require that the cumulative impacts of a proposed action be assessed (40 CFR Parts 1500–1508). CEQ also provides guidance on cumulative impact analysis in *Considering Cumulative Impacts under the National Environmental Policy Act* (CEQ 1997). A cumulative impact is defined as:

“...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” (40 CFR § 1508.7).

This section addresses the potential cumulative impacts that may result when the Proposed Action is combined with the incremental impacts of other past, present, and reasonable foreseeable future actions. If a project would not result in a direct or indirect impact on a resource, it would not contribute to a cumulative impact on that resource, and no further evaluation from a cumulative impact perspective is warranted.

There are no adverse impacts associated with implementing the Proposed Action, and therefore, there are no cumulative effects to consider.

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Section 4 Consultation and Coordination

4.1 Public Involvement and Agency Coordination

Reclamation prepared this EA in coordination with PLF. The EA will be made available to the public for a 30-day review period. Reclamation is issuing a news release on the availability of the EA. The EA will be posted on Reclamation's Mid-Pacific Region website, and a hard copy will be available to the public for viewing at Reclamation's Lahontan Basin Area Office in Carson City, Nevada. Notifications will also be provided to Federal agencies, Indian Tribes, the Nevada State Clearinghouse, and other interested parties.

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