FINDING OF NO SIGNIFICANT IMPACT

Renovation of Cibola High Levee Pond to Remove Non-native Fishes and Restock Native Fishes

The U.S. Fish and Wildlife Service (Service) proposes to restore and enhance the native fish community in the Lower Colorado River by eradicating non-native fish from Cibola High Levee Pond, Imperial County, California, and La Paz County, Arizona, and restocking the backwater with native fish, such as the endangered razorback sucker (*Xyrauchen texanus*) and bonytail chub (*Gila elegans*). Providing habitat for threatened and endangered species would aid in recovery of these species. Conservation and recovery actions that improve the status of species and reduce threats to the species is covered under the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (ESA). Currently, our ability to effectively conserve and manage native fish in the Lower Colorado River is limited due to the presence of non-native fish. Yet isolated backwaters such as High Levee Pond provide important habitat for endangered fishes and provide an opportunity to rear these species in a protected environment. This action would be undertaken cooperatively by the AZ Fish and Wildlife Conservation Office, Cibola National Wildlife Refuge, and in coordination with other partners. The Service has prepared an Environmental Assessment (EA) to evaluate different alternatives to achieve the purpose and need and to determine whether a full environmental impact statement is warranted (USFWS 2008). The EA is considered to be a supplement and tiered to the "Lower Colorado River National Wildlife Refuges Comprehensive Management Plan and Environmental Assessment 1994-2014" (USFWS 1994).

The Service has analyzed a number of alternatives to the proposal, including taking no action, removal of fishes using Primacord, mechanical removal of nonnative fishes and use of pumping to reduce water volume or to "dry" Cibola High Levee Pond.

- *No Action*: Under a No Action alternative, neither renovation nor repatriation of native fish in Cibola High Levee Pond would occur as proposed. The enclosed, lotic nature of Cibola High Levee Pond provides prime habitat for spawning and recruitment of non-native aquatic species such as common carp (*Cyprinus carpio*) and catfish (*Ictalurus* spp.). Therefore, if renovation does not occur, non-natives will continue to dominate the area, and we will be unable to manage this area for native fishes or other native aquatic species. There would be no cost for implementing the No Action Alternative.

- *Treatment of Cibola High Levee Pond using detonation cord (Primacord)*: Detonation cord has been used in some cases instead of piscicides due to its cost effectiveness under certain conditions, elimination of chemical residues associated with emulsifiers, carriers and detoxicants and the absence of piscicide escapement from the target area (Bass and Hilt 1979, Metzger and Shafland 1986, Platts 1974). More recent evaluation (Bayley and Austen 1988) concluded that in shallow impoundments use of detonation cord was inferior to rotenone (chemical piscicide) with respect to efficiency of fish removal, cost, personnel, and convenience. In addition, the potential effects to aquatic habitat are unknown. Due to the lack of information on how explosives may impact the complex system of inflows that create Cibola High Levee Pond, this alternative was eliminated from further analysis.

- *Mechanical Removal*: To date, nearly $4.4 million has been spent in the upper Colorado River basin (USFWS 1988-2003) to mechanically remove >1.5 million fish from open systems (Mueller 2005). Most of these fish were small cyprinids and removal costs ranged from $2 to $86 per fish. Increasing pressure from angler groups, land owners, and state resource agencies has restricted or limited removal of some recreational species; this has increased logistics and program costs (Swanson 2001). Recreational species salvaged from removal programs cost 2.5 to 10 times more than hatchery produced fish (Brooks et al. 2000) and are sometimes placed where they can re-invade treatment areas.

  Benefits to native fish populations from mechanical removal efforts are still uncertain. In a review of the Upper Colorado River basin effort, seven of the nine independent investigators concluded that were no tangible benefits to the native community. The one positive response was based solely on the presence of natives (Modde 1997). Six recommended removal efforts be intensified or expanded. Six studies reported no significant change while three reported a decline in large non-native predators (McAda 1997; Brooks et. al. 2000; Modde and Fuller 2002). Northern pike (*Exox lucius*) were substantially reduced because these fish originated as escapees from an upstream reservoir (McAda 1997). Channel catfish, on the other hand, do reproduce in the River and present a different dilemma. Biologists have successfully reduced the abundance of large channel catfish in the San Juan River (Davis 2003) through mechanical removal. However, because channel catfish actively reproduce in the River and mechanical removal tends to target larger life history stages, juveniles have become more plentiful, suggesting distribution has simply shifted toward smaller fish. In the San Juan, razorback suckers are being lost when they are only a few days old; this implies they are being lost to small or intermediate, not large, predators (Begon et al. 1996). If so, a shift toward more numerous smaller predators could actually worsen predation pressure for early life stages of native species. While mechanical removal by itself would not achieve the project goals, mechanical removal could be used as a tool in the ongoing management of Cibola High Levee Pond.

- *Use of pumping to reduce water volume or to "dry" Cibola High Levee Pond*: Cibola High Levee Pond is thought to be at "steady state," where inflow through the levee on the Lower Colorado River side is balanced by flow under the levee near Pretty Water. Therefore any pumping would need to overcome the inflow to make progress at significantly reducing the water level in Cibola High Levee Pond. In addition, there is 10 feet (3 meters) of elevation head that a pump would need to overcome to disperse the water downstream. A pumping capacity of 54,000 gallons/hour would be required to stay ahead of the 2 cfs of inflow

The chemical renovation method was selected instead of these other alternatives because this method has a very localized effect and impact and the Service has the expertise to implement this project successfully under the purpose and need. In addition, the preferred alternative has the highest chance of success and is the most fiscally conservative option of those alternatives analyzed.

Implementation of the proposal would be expected to have little social or economic impacts because sportfishing opportunities are available in multiple locations throughout Cibola National Wildlife Refuges, including immediately downstream. The environmental impacts would be short-term and localized in the immediate project area only and consist of dead or dying fish. Personnel on site will remove and properly dispose of any fish remaining on the surface after the piscicide has been applied.

Measures to mitigate and/or minimize adverse effects have been incorporated into the proposal. For sportfish currently residing in Cibola High Levee Pond, fish salvage operations would commence two to three days prior treatment of Cibola High Levee Pond. Using a combination of electrofishing and nets, desirable sportfish such as flathead catfish, largemouth bass, smallmouth bass, and channel catfish would be captured and restocked into approved waters of the state at the discretion of the Arizona Game & Fish Department, California Department of Game and Fish, and Cibola National Wildlife Refuge. These fish will be re-located to areas where anglers may better utilize them. Since there is a possibility of also capturing native fishes, any native species would be released downstream of the Cibola High Levee Pond outflow into the Lower Colorado River. Once the chemical has been released, if native fishes are affected, they will be collected and revived in a freshwater bath to try and reverse the effects of the chemical. Once they have recovered, they will be released into the Colorado River. Other mitigation measures will include:

- Public information and education materials describing project effects and benefits would be prepared and distributed to local residents and through the media.

- Crews working on Cibola High Levee Pond during salvage, renovation, and monitoring activities would practice "leave no trace" camping techniques.

- Strict adherence to the piscicide label would be required for transportation, storage, mixing, and personal protective equipment.

- Daily use records would be kept to document the use of the piscicide, as required.

- Dead fish removed whether by mechanical or chemical means would be collected and buried on site.

Sodium or potassium permanganate would be used to detoxify the fish toxicant, to ensure that downstream water quality and public safety concerns are met. A detoxification drip station would be established downstream of the Cibola High Levee Pond outflow (where Prettywater begins) to apply either aqueous potassium permanganate ($KMnO_4$) or sodium permanganate ($NaMnO_4$) into the area during the course of each piscicide treatment to ensure detoxification. Although we believe the piscicide will not move out of the Pond via subsurface flows, an additional detoxification station would also be established within the Colorado River. For each station, a cage with sentinel fish would be placed approximately 100 yards downstream of the detoxification area to ensure that the detoxification is occurring as intended.

The proposal is not expected to have any significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988 because the Koc of rotenone is around 10,000, reducing its potential for movement through an organic substrate to the river essentially to zero. The half-life of rotenone is between 1 and 3 days with essentially all toxicity gone in 5 to 6 days and there is no surface connection between the Colorado River and the pond where rotenone will be used. Finally, while there will be some limited cattail removal associated with this project (to ensure rotenone reaches shallow areas), regrowth during late summer is expected to be rapid.

The proposal is not expected to have any significant effects on the human environment because rotenone impedes the oxygen update on organisms using oxygen via gills. Rotenone has been shown to not have any impacts to humans and is even used for organic gardening as a natural pest control. In addition, the immediate, localized project area will be well signed and monitored by project personnel throughout the duration of the chemical application.

The proposal has been thoroughly coordinated with all interested and/or affected parties. Parties contacted including the Cibola National Wildlife Refuge, Arizona Game and Fish Department. The draft EA and this FONSI will be noticed in the local paper and be available for public comment for 30 days at http://www.fws.gov/region2/cibolaHLPEA. A copy of the final documents may be requested in writing from Pam Sponholtz, USFWS, 323 N. Leroux Suite 401, Flagstaff, AZ 86001.

Therefore, it is our determination that the proposal does not constitute a major Federal action significantly affecting the quality of the human environment under the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969 (as amended). As such, an environmental impact statement is not required. An environmental assessment has been prepared in support of this finding and is available upon request to the Service facility identified above.

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Refuge Manager, Cibola National Wildlife Refuge Date

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Project Leader, AZ Fish & Wildlife Conservation Office Date