

Ideas for Future Management of Piute Ponds  
(Judy Hohman – USFWS, 29 Apr 2011)

Piute Ponds is a collection of man-made aquatic habitats that resulted from the discharge of wastewater from the Lancaster Wastewater Treatment Plant. It is located along and near the terminus of Amargosa Creek, which because of human development in the Palmdale and Lancaster areas, is no longer a functioning aquatic, wetland, and riparian ecosystem.

Ideas for future management of Piute Ponds include planning, designing, implementing, managing, and monitoring Piute Ponds primarily for its ecosystem values to support the plants, invertebrates, fish, amphibians, reptiles, birds, and mammals endemic or previously endemic to the area. This includes restoring those habitat values and functions lost from the lower Amargosa Creek drainage and increasing species diversity by increasing habitat diversity.

- The types of habitat that would occur at the Piute Ponds are under the management plan would be lotic and various types of lentic (e.g., deep, shallow, etc.), wetland (including various types of perennial and ephemeral), riparian (e.g. willow, cottonwood, mesquite). The last habitat type will add vertical structure to the habitats which should increase the habitat complexity and species diversity;
- Control structures should be added; and
- A water storage area or reservoir should be constructed to temporarily hold excess water that can be used later in the year to supply water to the various types of habitats.

Please consider including the following in the development of the management plan:

- To accommodate habitat diversity, construct additional berms in the current wetted area of Piute Ponds;
- Ensure that there are two or more areas of the same habitat type to ensure that when one area is not available (e.g., maintenance activities, controlling invasive species or disease, etc.), the other area with that habitat type is available;
- Include redundancy of control structures. If one becomes non-functional, the other is operational to manage the water going to or leaving that habitat type;
- When the water enters the Piute Ponds area, it should be able to be diverted to the holding reservoir and to the two or more major pathways that will deliver it to the series of lentic, lotic, wetland, and riparian habitats;
- Consider using keystone species for each habitat type and subtype to help in designing the physical requirements need by that species for feeding, breeding, and/or shelter;
- Design two of the impounded areas with the floor contoured in terraces. When full, it would be deep and shallow lentic habitat. When drawn down, it would be mud flats, shallows, and shallow lentic habitat; and
- Design and locate the habitats such that they can be implemented in phases as money is available.

Compatible human uses should be considered in the management plan. The following human uses should be considered and incorporated into the design and implementation of the management plan:

- Bird hunting (e.g., waterfowl, dove, quail)
- Bird watching

- Hiking and walking
- Wildlife viewing
- Art (e.g., photography, sketching, painting)
- Research
- Educational opportunities for elementary school through college
- Experiencing nature's sights, sounds, and scents (e.g., solitude, visual experiences, etc.)

Keystone species: We have been coordinating with Edwards Air Force Base to establish a population of Mohave tui chubs at Piute Ponds. Although not recently known to occur in the Amargosa Creek drainage, they were likely present in Pluvial times. To accomplish this, as a minimum we would need two small deep ponds (e.g., 2 acres each and preferable 5 feet deep). We are available to discuss the details of what would be needed to meet the physical, chemical, and biological needs of the Mohave tui chub and to avoid or minimize effects from non-native predatory aquatic species and pathogens. As previously discussed with EAFB, the base would be issued a biological opinion from the Service on the day the Mohave tui chubs would be placed in the pond(s) to cover any take associated with management of the ponds and EAFB's mission.

Please consider the following keystone species and their habitat requirements in developing the management plan to maximize habitat and species diversity. Many of these are species of special concern:

- Mohave tui chub – (juveniles and adults) small deep lentic habitat with some submerged vegetation
- Yellow-breasted chat – early successional riparian habitat
- Western snowy plover – mudflats
- Tri-colored and yellow-headed blackbirds- wetlands with tall emergent vegetation, open water, and nearby seasonal pools
- Vermillion flycatcher – mature riparian vegetation
- Redhead – deep wetlands with scattered emergent vegetation (breeding and wintering)
- Black tern – shallow wetland with short emergent vegetation
- White-faced ibis – shallow lentic habitat with islands and seasonally flooded areas

Please consider using the California Department of Fish and Game's San Jacinto Wildlife Area as an example of what the Piute Ponds area could become through implementation of a management plan. Although much larger in area than Piute Ponds, the San Jacinto Wildlife Area is a collection of diverse habitat types using reclaimed water. Information of the Wildlife Area is at:

<http://www.dfg.ca.gov/lands/wa/region6/sanjacinto/index.html>

Staff in the Ventura Fish and Wildlife Office have offered to help in the development of the Piute Ponds Management Plan. Please advise us of any questions or information needs you may have in the development of this plan.