

Non-Native Fish Management

Introduction of nonnative fish species into Utah Lake, which began in the late 1800s, has changed the lake's fish community dramatically. Originally, 13 native fish species occurred in Utah Lake. Today only two of those are still present in the lake, the June sucker and the Utah sucker.

Over 20 different non-native fish species have been introduced into Utah Lake and several have become established as self-sustaining populations. Those that have been particularly successful include the common carp, white bass, black bullhead, channel catfish, and walleye. Recently Northern pike have been illegally introduced to Utah Lake and if a population becomes established could be destructive to the entire lake's ecosystem.

The establishment of these non-native fish species in Utah Lake has contributed to the demise the native species that once thrived in the lake. This demise has happened through predation, competitive interactions, and habitat alteration. Common carp, a non-native species introduced in the late 1880's, have been especially destructive and contributed to dramatic changes to the lake's ecosystem.

Recovering the June sucker and restoring balance to the Utah Lake fish community requires active management of these non-native fish species. The reduction and control of common carp represents a significant challenge. In the early 2000's, research indicated that common carp represented an overwhelming 91 percent of the fish biomass in the lake. While complete eradication of this species from such a large lake system is not feasible at this time, recovery efforts have been focused on the removal of common carp from Utah Lake. Since 2009, over 24 million pounds of carp have been removed from Utah Lake, resulting in over 50% decrease in the carp population. Removal efforts are ongoing and studies have shown that changes in a shallow lake ecosystem can be achieved with a 75% reduction in the carp population, as long as the reduced numbers can be maintained.

Common carp in Utah Lake are a destructive force within the energy network of the lake's ecosystem and cause conditions that promote their survival over other species. Total elimination of carp from such a large lake system is not feasible at this time. However, studies have shown that benefits to shallow lake systems can often be achieved with a 75 percent reduction in bottom-feeding fish populations as long as the reduced numbers can be maintained.

Habitat Development and Maintenance

Habitat within the Utah Lake ecosystem has been significantly altered since early settlers first arrived in the valley. Human induced habitat changes that have affected the June sucker include channelization and diking of tributaries, diversion structures that limit access to potential spawning and nursery areas, filling of tributary floodplain habitats and wetlands, and reduced habitat for early life stages of June sucker.

Recovery efforts have been focused on restoring natural stream functions to Utah Lake tributaries. These restoration projects involve stream habitat improvements, modification of irrigation diversions, and reconnecting the stream to its floodplain to allow the development of diverse habitat types. These restoration efforts have resulted in improvements in June sucker spawning numbers and improved the chances of survival for early life stages.

The most extensive habitat restoration projects have been completed on Hobbie Creek, where the connection between the creek and Utah Lake has been restored. This project involved construction of a new channel and associated floodplain wetlands to support June sucker. Prior to the project being implemented, June sucker were not observed spawning in Hobbie Creek. Restoring the connection between to the lake allowed June sucker access to previously inaccessible spawning habitat and hundreds of adult suckers have been observed spawning in the creek.

Similar restoration efforts are needed on other Utah Lake tributaries, particularly the Provo River, where the majority of June sucker spawning occurs. The Provo River Delta Restoration Project has been initiated to restore the connection between the Provo River and Utah Lake. This large-scale project will provide the habitat needed to support the millions of larval suckers spawned in the Provo River each year. The project will also provide habitat for other species and benefit the Utah Lake ecosystem.

Water Management and Protection

The development of water resources within the Utah Lake Basin has resulted in the alteration of the hydrology of Utah Lake and its tributaries. This alteration has impacted the June sucker, particularly the changes to the hydrology of tributaries. The dewatering of tributaries can result in adult fish being stranded in pools within the tributaries or prevent larval fish from reaching Utah Lake. Managing and protecting water resources in order to prevent these potential issues has been a significant challenge for recovery efforts.

Partners to the June Sucker Recovery Implementation Program have been successful at acquiring water to supplement flows in some Utah Lake tributaries to support June sucker spawning and recruitment. Water has been acquired through direct purchase, water conservation, and environmental commitments associated with new water development projects. Of particular importance are the Provo River and Hobble Creek which can receive supplemental water to provide conditions necessary to support June sucker. These supplemental flows have not only benefited June sucker, but all other species that rely on these tributaries.

Genetic Integrity and Augmentation

In an effort to prevent extinction of the June sucker, starting in the 1980's, wild June sucker were captured from the Provo River and artificially spawned. The purpose of this effort was to develop a captive brood stock that could be used to produce June sucker in hatcheries. Considerable effort has been extended to ensure this brood stock represents, to the maximum extent possible, the genetic composition of the wild population.

This captive brood stock started providing young June sucker for stocking into Utah Lake in the mid 1990's. Stocking efforts have increased over time, supported by the construction of a June sucker rearing facility in the early 2000's. Currently approximately 80,000 June sucker are stocked into Utah Lake on an annual basis. These stocked fish have shown the ability to survive in the lake and have contributed to increases in the June sucker population.

Research Monitoring and Data Management

As with most rare and sensitive species, little information on the basic biology and habitat needs of June sucker was known when the species was listed as endangered. The limited number of individuals remaining in the wild and the altered environmental conditions of Utah Lake made research on June sucker difficult. Over the years, a variety of research projects have been conducted on both captive and wild June sucker to increase the knowledge about what is needed to recover the species.

Results from these research projects have guided recovery actions and the data generated from population monitoring efforts have been used to determine the success of those actions. The primary research activity continues to be the annual monitoring of the June sucker population in Utah Lake and its associated tributaries.

Information and Outreach

Public opinion surveys conducted in the early 2000's revealed that Utah Lake was widely regarded as a polluted body of water that was underutilized. Those same surveys also indicated that while the local public generally supported the Endangered Species Act, they had low regard for the June sucker and the potential for its recovery. Following those surveys, some recovery efforts with directed towards informational and educational efforts highlighting the value of Utah Lake, its ecosystem, and the benefits of June sucker recovery. These early efforts resulted in the publication of the book and documentary "Utah Lake: Legacy", which chronicles the history of Utah Lake and the various changes that have occurred since the Utah Valley was settled.

Over the years, these informational efforts have morphed to include symposia on the lake, public festivals, and coordinated efforts to highlight the challenges and benefits of Utah Lake.