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### Biologists to see if latest experiment on Colorado River helped fish habitat



An experiment regarding fluctuating flows in the Colorado River below the Glen Canyon Dam ended last week.

Now, biologists will begin collecting data to see if the fluctuating flows actually helped the endangered humpbacked chub.

In November 2004, a second high-flow experiment, which involved the release of 41,000 cubic feet per second during an 60-hour period, was conducted in an attempt to scour the beaches and shorelines through the Grand Canyon, and to help the endangered humpback chub.

Scientists hoped to redistribute 800,000 metric tons of sediment through the Grand Canyon to create and resurface beaches, build substrate used by plants and backwaters and pools to help the fish breed.

Then, from early January through April 8, flows were periodically changed, from roughly 5,000 cfs to 20,000 cfs.

Chubs, over eons of time, have adapted to the fluctuating flows of the Colorado River, while non-native species, such as trout, have not.

What biologists found after the high release of 41,000 cfs, however, was that there were 63 percent fewer juvenile chubs in the river than before the release.

The belief was that the fish were either washed downstream or were holding in areas not studied.

The chubs are the last of four endangered fish still living in the river running through the Grand Canyon.

Consensus was that fluctuating flows would keep the non-native fish, such as rainbow and brown trout, out of the river and holding in tributaries. This would stop the trout from competing against the chubs for food, and would stop the trout from preying on young chubs and eggs.

Biologists also believe that the fluctuating flows would thin the trout population, which is overgrowing the available habitat between the dam and Lee's Ferry, which is approximately 16 miles of very popular fishing waters.

Researchers have found that since 1991, when such

fluctuations ended, the trout population dramatically grew at the probable expense of the native chub population.

Scientists are trying to determine if the fluctuating flows can keep the trout population in check by impacting their spawning and other aspects of their lifecycle

Additionally, another ongoing experiment has been the mechanical removal of non-native fish, primarily trout, near the confluence of the Little Colorado River and the mainstream Colorado River. The area is prime humpback chub habitat as the endangered fish move between both rivers. The removal effort, using electro-fishing techniques, reduces competition by physically removing trout. Early indicators from last summer's work have shown positive results.

The initial portion of the experiment was conducted this year from January through March and resulted in removing 7,573 fish, with 6,703 of them rainbow trout. There were also 130 brown trout and 135 common carp removed.

"Now we will have to monitor to determine if reduced non-native numbers result in a benefit to the humpback chub. That's why it is called adaptive management. You try something, if it works, you can repeat or expand the process to achieve greater results. If it doesn't work, you move on and try something else," said Steve Gloss, a scientist with the U.S. Geological Survey.

The endangered humpback chub is one of eight native fish species that were once abundant in the 277-miles of river flowing through the Grand Canyon.

The humpback chub is a "big-river" fish that grows to 20 inches. It is superbly adapted to survive in the wild and turbulent Colorado River that had historic flows ranging from 500 to 300,000 cfs.

As with earlier releases, biologists and scientists will now collect needed data to see if, in fact, the experiment worked.

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