



COOPERATIVE ECOSYSTEM STUDIES UNITS  
1849 C Street NW, Room 2737 • Washington, DC 20240 • 202.208.5972 • www.cesu.org

# Tracking Each Fish: Humpback Chub Reintroductions and PIT-tag Technology

The Bureau of Reclamation's ability to provide technical assistance and innovative monitoring methods highlight the purpose of the CESU Network: to draw upon interagency and institutional expertise to meet the needs and goals of resource managers and scientists.



■ **Reintroduction is just one step in conservation.** After years of planning, a biologist releases endangered humpback chubs into Shinumo Creek. The fish is endemic to the Colorado River basin, can live as long as 30 years, and is a member of the minnow family. (*Melissa Trammell/NPS*)

Over the course of three years, the Bureau of Reclamation, the National Park Service, the U.S. Fish and Wildlife Service, the Arizona Game and Fish Department,

## Colorado Plateau Cooperative Ecosystem Studies Unit

### ■ Project Partners



### ■ Project Contacts

Dr. Mark McKinstry  
mmckinstry@usbr.gov

Dave Speas  
dspeas@usbr.gov

Brian Healy  
brian\_healy@nps.gov

Peter Mackinnon  
peter.mackinnon@usu.edu

Phaedra Budy  
phaedra.budy@usu.edu

### ■ Project Website

[www.nps.gov/grca/naturescience/cynsk-v21.htm](http://www.nps.gov/grca/naturescience/cynsk-v21.htm)

### ■ Project Type

Research

Technical Assistance



■ **Using technology to track endangered species.** Utah State University fish detection specialist Peter Mackinnon reviews operational details of the PIT system job-box with cooperators. (Utah State University)

the U.S. Geological Survey's Utah Cooperative Fish and Wildlife Research Unit, and Utah State University's Fish Ecology Lab translocated the Humpback Chub (*Gila cypha*) to Shinumo Creek in Grand Canyon National Park. As part of interagency efforts to restore the endangered fish species, the cooperating agencies monitor abundance and movement of the translocated humpback chub community through the use of the Passive Integrated Transponder tag (PIT-tag) detection system.

Scientists collected humpback chub in the nearby Little Colorado River of Grand Canyon National Park, placed them in a fish hatchery, and monitored them for disease. Before release, biologists inserted a PIT in each fish, giving it a unique identifying number. After release, scientists tracked the movements of each fish as it

swam near an antennae attached to a solar-powered detector installed near the creek. The detector collected data on each individual, which scientists at Utah State then remotely downloaded via satellite uplink.

### Cooperative Conservation

Data from the PIT system revealed that about one-half of the fish population moved to the main channel of the Colorado River. Their movement indicated that translocated fish may contribute to the growth of the main channel humpback chub population. Despite the logistical challenges of working in such a remote location as the bottom of the Grand Canyon, Bureau of Reclamation considers this a "significant chapter in the cooperative conservation of humpback chub in Grand Canyon."



Stepanie Guerra wrote this project spotlight in August 2011. It was part of an education project between Colorado State University and the CESU Network National Office. Cooperative Ecosystem Studies Units provide research, technical assistance, and education to federal land management, environmental, and research agencies and their partners. Their broad scope includes the biological, physical, social, cultural, and engineering disciplines needed to address natural and cultural resource management issues at multiple scales and in an ecosystem context. There are seventeen CESUs, each composed of federal agencies, a host university, and partner institutions, which are linked together in a CESU network. For more information, see [www.cesu.org](http://www.cesu.org) or contact Dr. Thomas E. Fish, CESU National Coordinator, at [tom\\_fish@nps.gov](mailto:tom_fish@nps.gov).