# Work Task C53: Sonic Telemetry of Juvenile Flannelmouth Suckers in Reach 3

| FY16 Estimate | FY16 Actual Obligations | Cumulative Expenditures Through FY16 | FY17 Approved Estimate | FY18 Proposed Estimate | FY19 Proposed Estimate | FY20 Proposed Estimate |
|---|---|---|---|---|---|---|
| $120,000 | $112,896.35 | $533,775.74 | $100,000 | $40,000 | $0 | $0 |

**Contact:** Jeff Lantow, (702) 293-8557, jlantow@usbr.gov

**Start Date:** FY12

**Expected Duration:** FY18

**Long-Term Goal:** Support flannelmouth sucker (*Catostomus latipinnis*) conservation

**Conservation Measures:** FLSU1 and FLSU3

**Location:** Reach 3, Arizona/Nevada/California

**Purpose:** To evaluate juvenile flannelmouth sucker habitat selection and use in Reach 3 and provide recommendations to enhance juvenile flannelmouth sucker habitats as a requirement of LCR MSCP habitat creation goals

**Connections with Other Work Tasks (Past and Future):** Work conducted under this task is related to Work Tasks C15 (closed) and C45 (closed).

**Project Description:** Flannelmouth suckers were reintroduced into the Colorado River below Davis Dam by the Arizona Game and Fish Department in 1976 by transfer of fish captured at the confluence of the Colorado and Paria Rivers at Lee's Ferry, Arizona. This stock has persisted for three decades and now represents the only known population of this native species in the Colorado River downstream from Davis Dam.

Five years of research on this population of flannelmouth suckers was completed under the LCR MSCP. All life stages of this species were contacted, and telemetry of adults provided insight on the movements and habitat use of adult flannelmouth suckers. Inference may be limited, as only nine juvenile flannelmouth suckers > 100 millimeters and < 350 millimeters total length were contacted during this study. Similar difficulties contacting juveniles were encountered during studies undertaken by the U.S. Geological Survey in the 20 river miles above Lake Havasu, but it was found that, while flannelmouth sucker contacts were rare, the majority (85%) of flannelmouth suckers captured

consisted of these smaller size classes. The habitats used by these younger fish will be better defined and will add to the current knowledge base for this species in Reach 3.

**Previous Activities:** A surrogate population of flannelmouth suckers from the Colorado River at the Lake Mead inflow was used to initiate telemetry work in FY13. In March 2013, 20 subadult fish were surgically implanted with a 90-day sonic transmitter, held at the Lake Mead Fish Hatchery and observed until determined healthy, then released downstream from Laughlin, Nevada. Active tracking using boats and manually controlled receivers was initiated immediately following release accompanied by submersible ultrasonic receivers (SURs) to help determine fish locations. Fish were tracked and habitat data recorded until mid-June. Fish proved difficult to track with manual equipment, and the majority of detections was from SURs. Seven fish were either mortalities or never detected, and the majority of active tags (10 of 13) was only detected by SURs. Fish were detected in a mix of backwater and riverine habitats.

Work in FY14 was similar to that in FY13 but included the tagging of 30 subadult flannelmouth suckers with sonic transmitters and an additional 8 with 100-day radio transmitters. The increased number of tagged fish, more SURs, and the use of radio tags resulted in an increase in manual tracking detections of fish during the field season. Sonic and radio tags were both effective, and habitat data were collected on 5 radio- and 13 sonic-tagged fish. In lower turbidity environments (i.e., main channel and select backwaters), fish were associated with stands of bulrush (*Schoenoplectus americanus***)**. Fish remained concealed during daylight hours and moved out during the evenings and night, presumably to forage, and then returned to similar locations each day. This association with emergent vegetation was not seen in habitats with higher turbidity; fish in these environments remained stationary in the open water of the backwater. Multiple fish were detected for extended periods of time within the backwater at the Big Bend Conservation Area.

Efforts in FY15 were similar to those in 2014; 30 subadult flannelmouth suckers were surgically implanted with 90-day sonic tags, and 12 were implanted with 100-day low-frequency radio transmitters. All tagged fish (sonic and radio) were released into Laughlin Lagoon in late April 2015. Manual tracking and deployment of SURs was initiated immediately following release of the SURs to help determine fish locations. Tracking and habitat data collections continued until late July. Sonic and radio tags were both effective, and habitat data were collected on 5 radio- and 18 sonic-tagged fish. Detections indicated that habitat use in turbid and low turbidity environments was similar to data from previous years. In addition, active tracking indicated that fish were moving around in open water in backwaters at night and were tracked up to a mile upstream and downstream from the Laughlin Lagoon entrance in the river channel. Fish would

return to similar locations of bulrush stands by daybreak. Three fish moved from Laughlin Lagoon to the Big Bend Conservation Area and spent from 1–3 weeks in the backwater.

**FY16 Accomplishments:** Efforts in FY16 shifted to the lower half of Reach 3 into the large backwater/marsh habitats found in the 20 river miles immediately upstream of Lake Havasu in Topock Gorge. Age-0 flannelmouth suckers have been detected in seine hauls within this area, and subadults have sporadically been captured during other research and monitoring. Based on recent telemetry research and available habitats, this section of the river presumably serves as nursery habitat for the Reach 3 flannelmouth sucker population. Subadult flannelmouth sucker surrogates were again collected from the Lake Mead inflow. Thirty of these were surgically implanted with 90-day sonic tags, and 12 were implanted with 100-day low-frequency radio transmitters. An initial release of 10 radio- and 18 sonic-tagged fish into the Pulpit Rock backwater took place in early March. A second release into Trampas Wash included 2 radio- and 12 sonic-tagged fish in mid-April. Manual tracking and deployment of SURs was initiated immediately following release of the fish to help determine their locations. Tracking and habitat data collections continued biweekly until late June. Sonic and radio tags were both effective in this lower stretch of the river. Habitat data were collected on four radio and seven sonic-tagged fish. Active tracking and SURs indicated that the majority of movements in channel and backwater habitats was at night, and fish would return to bulrush stands during daylight hours.

**FY17 Activities:** Activities will be similar to those in FY16; however, manual tracking activities will take place from late night into early morning in an attempt to increase detections of fish in open water habitats and track them to their daytime habitats where they remain in cover throughout the day.

**Proposed FY18 Activities:** Activities will be similar to those in FY17; specifics may vary depending on FY17 results.

This work task will be closed in FY18.

**Pertinent Reports:** A summary report will be posted on the LCR MSCP Web site upon completion.