

## Work Task C34: Characterization of Zooplankton Communities in Off-channel Native Fish Habitats

FY11 Estimate	FY11 Actual Obligations	Cumulative Expenditures Through FY11	FY12 Approved Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate	FY15 Proposed Estimate
\$10,000	\$12,304.81	\$124,019.12	\$0	\$0	\$0	\$0

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**Start Date:** FY09

**Expected Duration:** FY11

**Long-term Goal:** To maintain effectiveness of restored fish habitats.

**Conservation Measures:** BONY5, RASU6

**Location:** Various off-channel fish grow-out ponds and native fish refugia.

**Purpose:** To determine the relative abundance of zooplankton in off-channel ponds being used to support native fish communities within the Colorado River floodplain.

**Connections with Other Work Tasks (past and future):** This work is related to Lake-Side Rearing Ponds (B7), Overton Wildlife Management Area (B11), Imperial Ponds Native Fish Research (C25), Post-Development Monitoring of Fish at Conservation Areas (F5), and Adaptive Management Research Projects (G3).

**Project Description:** This study will characterize the existing zooplankton communities of the various flood-plain ponds being used within the LCR to hold and/or rear RASU and/or BONY. Off-channel habitats, including both man-made and natural flood-plain ponds are being used to support communities of RASU and BONY. In some ponds the fish are fed prepared feeds, in some cases the ponds are only fertilized with the assumption that this act boosts development of zooplankton for food, and in some cases neither feed nor fertilizer are added to the ponds and the fish must subsist on whatever food is naturally available.

To maximize management of these habitats, the amounts of zooplankton in these ponds must be determined. This study will collect and analyze zooplankton samples from such ponds quarterly over a 2-year period to characterize these zooplankton communities. Future investigations may be developed to evaluate ways to manipulate zooplankton communities to benefit native fishes.

**Previous Activities:** Preliminary samples were collected from lake-side rearing ponds (B7) on Lake Mohave, AZ/NV. This effort was conducted to refine sampling procedures and develop a study design for the three year study. A written protocol for sample collection, including necessary equipment and procedures, was developed.

Quarterly zooplankton samples were collected from a total of 33 native fish ponds during FY09 and FY10. Samples were analyzed and zooplankton community structures were characterized and identified to the division, genus, and species levels.

**FY11 Accomplishments:** Efforts during the last year of the study were focused on summarizing and interpreting data from two years of sampling. A literature search for publications detailing the known food and feeding habits of native fish was also completed, and a comparison between the observed zooplankton community of these ponds and what was found in the literature was begun. A short series of feeding trials was conducted in the laboratory to evaluate the food preference of larval RASU. Zooplankton were sampled from Lake Mead using standard methods and introduced into tanks containing known numbers of larval RASU. Larval RASU appeared to feed solely on zooplankton of the *Bosmina* genus. This finding reflects information found within previously published literature.

**FY12 Activities:** Closed in FY11.

**Proposed FY13 Activities:** Closed in FY11.

**Pertinent Reports:** An outline for the final project report, *Characterization of Zooplankton Communities in Off-Channel Native Fish Habitats*, has been drafted and all pertinent data sets have been prepared. It is anticipated that the report will be available through the LCR MSCP website in 2012.