**Tracy Research Technical Report Abstract**

***Volume 32***  
Wang, J.C.S., and R.C. Reyes. 2007. *A Key to Early Life Stages and Early Life Histories of Cyprinids in the Sacramento-San Joaquin Delta, California: with Emphasis on Splittail, Pogonichthys macrolepidotus, Spawning in the Suisun Bay and Delta*. Tracy Fish Collection Facility Studies. Volume 32. U.S. Bureau of Reclamation, Mid-Pacific Region. 150 pp.

Dichotomous keys were developed from examination of preserved and live specimens to identify the early life stages for 11 species of cyprinid fish (minnows) residing in Suisun Bay (the Bay) and the extended area associated with the Sacramento-San Joaquin River Delta (Delta). Three keys were developed for each of the 11 species based on 3 defined life stages: prolarvae-postlarvae, late postlarvae-prejuvenile, and early juvenile. Keys are presented for goldfish, *Carassius auratus*; red shiner, *Cyprinella lutrensis*; common carp, *Cyprinus carpio*; California roach, *Hesperoleucus symmetricus*; hitch, *Lavinia exilicauda*; hardhead, *Mylopharodon conocephalus*; golden shiner, *Notemigonus crysoleucas*; Sacramento blackfish, *Orthodon microlepidotus*; fathead minnow, *Pimephales promelas*; splittail, *Pogonichthys macrolepidotus*; and Sacramento pikeminnow, *Ptychocheilus grandis*. A description of spawning habits, developmental biology, and life histories for each species are also included. This report places special emphasis on the early life stages and spawning of splittail. Catch and salvage of adult splittail in spawning condition, observed behavior of newly hatched larvae, and the widespread collection of prolarvae suggest that the Bay and Delta are both used for spawning. Based on data presented in this report, we conclude that splittail are not all potamodromous: some reside and spawn each year in the suitable habitat of the Bay and Delta.