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What's new on the menu? Regional feeding patterns of delta smelt in a wet year.

Abstract: In 2011, delta smelt collected by Department of Fish and Game (DFG) in August by Summer Towner (survey 6) and September-December by Fall Midwater Trawl were preserved for a suite of physical examinations, including a diet study, as part of the Fall Low Salinity Habitat Study work. The DFG diet study will report feeding incidence, stomach fullness, and prey item composition of delta smelt collected from stations grouped by regions of salinity defined as >6, 1-6, and <1 ppt and also from the Cache Slough/Sacramento Deep Water Ship Channel (CS/SDWSC) region. The results of food use from this study (in the wet year of 2011) are planned for compare/contrast summaries with the previous dry year of 2010 and other paired dry-wet years such as 2005 and 2006. Delta smelt in the fall of 2011 had a high feeding incidence (>98%) from all regions, with only 4 of 261 stomachs found empty. Mean stomach fullness increased August through November and for several months the highest mean fullness occurred in the low salinity zone (1-6 ppt) and the lowest mean fullness occurred in CS/SDWSC. Prey items contributing to stomach contents included a diverse mix of copepods, amphipods, mysids, and cladocerans. Major food items by number were calanoid copepods (*Pseudodiaptomus forbesi* and *Acartiella sinensis*) and cyclopoid copepods (*Limnoithona* spp. and other species). Other numerically important food items included harpacticoid copepods and cladocerans. Amphipods and mysids contributed little to diet composition by number, but being larger than copepods, contributed considerably to diet by weight. Prey use varied by region with CS/SDWSC dominated numerically by calanoid copepods, whereas prey use was more diverse downstream. This work is currently underway and additional results are pending.

Statement of Relevance: This study, as part of the Fall Low Salinity Habitat work, will focus on delta smelt use of available pelagic invertebrate food resources and whether a wet fall provided demonstrable benefits in production of food and condition of fish.