PELAGIC ORGANISM DECLINE ELEMENT WORKPLAN 2005

Title: Condition and Diet (2005-3.c)

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Summary
Age-0 delta smelt, striped bass, inland silversides, longfin smelt, and threadfin shad have been collected by the Midsummer Townet Survey, Fall Midwater Trawl Survey, San Francisco Bay Study, and beach seine supplemental field sampling for examination of food habits in the Estuary. Feeding incidence (presence of prey items in guts) was high for delta smelt (100%) and inland silversides (95%), while striped bass had low feeding incidence (48%). Prey items numerically common for delta smelt were *Pseudodiaptomus forbesii* and *Acartiella*, for inland silversides were *Limnoithona spp.* and P*seudodiaptomus nauplii* and for striped bass were P*seudodiaptomus forbesii*. Processing of samples for diet analysis is ongoing.

A. Description and Study Approach

The goal of this project is to examine the condition and diet composition of age-0 delta smelt *Hypomesus transpacificus*, striped bass *Morone saxatilis*, inland silversides *Menidia beryllina*, and possibly, longfin smelt *Spirinchus thaleichthys*, and threadfin shad *Dorosoma petenense* in the Estuary.

B. Methods

Samples of age-0 specimens were collected by the Midsummer Townet Survey, Fall Midwater Trawl Survey, San Francisco Bay Study, and beach seine supplemental field sampling (project element 2005-066). All specimens were preserved in 10% formalin, labeled by survey and collection location, and returned to the laboratory (DFG CVBDB, Stockton, CA). Specimens assigned for processing were given a unique identification and measured to the nearest 0.1 mm fork length (FL) and standard length (SL) and weighed wet to the nearest 0.0001 g. If >5 specimens were in a sample then 5 were randomly selected for examination. A visual inspection of fish health included an external examination and a necropsy for parasites. No intricate analysis will be done for parasites (i.e.., no blood smears, etc). Gut tracts were removed and only the esophagus and stomach were examined for presence of prey items. The prey mass was removed and weighed wet to the nearest 0.0001 g and re-preserved in vials of buffered 5% formalin for identification. The prey types were identified to the lowest practical taxon and counted. Proportion by volume of each prey type was determined visually by use of a 1 mm grid (Bogusch slide). The gut contents were re-preserved upon completion of identification. Data was entered into a relational database.

C. Results

Number of fishes processed for length-weight (l-w) and diet (Table 1).

Consumption of prey measured by %N, %V, and % FO (Table 2).

Determination of prey consumption by area is not currently possible due to the few samples that have been processed.