Fig. 1. Aerial stratification (polygons) and sampling locations (circles) for the Fall Midwater Trawl survey within the Sacramento-San Joaquin Delta, 1967-2012. Areas 2, 6, and 9 are not shown because they have not been consistently sampled and thus are not used by the California Department of Fish and Wildlife for estimation of relative abundance indices. Figure adapted from Newman (2008).
Fig. 2. Standardized indices of relative abundance (estimated mean count-per-tow) and associated coefficients of variation (CV) based on zero-inflated generalized linear models applied to Fall Midwater Trawl survey data, 1967-2012, for (A) delta smelt, (B) longfin smelt, (C) age-0 striped bass, and (D) threadfin shad. No sampling occurred in 1974, September 1976, December 1976, and 1979. Note break in left y-axis for longfin smelt.
Fig. 3. Predicted relative abundance (estimated mean count-per-tow) by sampling month, area, and across the range of standardized Secchi depths, respectively, based on zero-inflated generalized linear models applied to Fall Midwater Trawl survey data, 1967-2012, for (A-C) delta smelt, (D-F) longfin smelt, (G-I) age-0 striped bass, and (J-L) threadfin shad. No sampling occurred in 1974, September 1976, December 1976, and 1979.
Fig. 4. Annualized trends (estimated mean) and associated coefficients of variation (CV) based on various generalized linear models fitted to zooplankton and discrete water quality data, 1976-2010, for (A) zooplankton combined (adult calanoid copepod and adult cyclopoid), (B) adult calanoid, (C) adult cyclopoid, (D) mysid, (E) chl-a, (F) summer water temperature (Jul-Sep), (G) winter water temperature (Jan-Mar), (H) total suspended solid, (I) volatile suspended solid, and (J) turbidity.
Fig. 5. Annualized trends in flow averaged monthly from January-June and March-May for (A) historical inflow, (B) historical outflow, (C) unimpaired inflow, and (D) unimpaired outflow. Flow variables lagged by 1-year are not shown.
Fig. 6. Observed count-per-tow with zero-inflated generalized linear model based predicted count-per-tow, predicted probabilities of false zeros, and 95% prediction intervals across standardized TSS for (A-C) delta smelt, (D-F) longfin smelt, (G-I) age-0 striped bass, and (J-L) threadfin shad.