The upper San Francisco Estuary (SFE) is simultaneously a central hub of water delivery in California and home to commercially important and endangered fishes, such as Chinook Salmon, Green Sturgeon, and Delta and Longfin Smelt. Extensive ecological monitoring has been conducted for over 50 years, mainly under the auspices of the Interagency Ecological Program for the San Francisco Estuary (https://iep.ca.gov/). We integrated water quality data from 11 boat-based long-term monitoring surveys in the upper SFE. This integrated dataset includes measurements of temperature (surface and bottom), conductivity (surface), salinity (surface), Secchi depth, qualitative concentration of the toxic alga *Microcystis* (surface), and Chlorophyll-a concentration (surface) from 1959 - 2020. The component surveys range in sampling frequency from thrice weekly to monthly and range in duration from 5 – 60 years. Most component surveys sample at fixed stations, but the Enhanced Delta Smelt Monitoring survey uses random sites and some stations (with “EZ” in the station name) of the Environmental Monitoring Program follow the salinity field. It is highly recommended to inspect the documentation of the component surveys for more information on their methods.