Projected temperature increases due to global climate change are likely to have localized impacts on the San Francisco Estuary (SFE). Increased water temperature in the SFE will lead to challenges for managing water resources. Many native species, such as salmon and smelt, rely on cooler water, and will be further stressed by increased water temperature. While real-time water temperature is collected by several state and federal agencies in the San Francisco Estuary, a landscape-scale synthesis of available water temperature data has not been conducted for the SFE. For this dataset, we compiled continuous water temperature data and associated metadata from the SFE to generate an integrated and usable dataset of known quality for climate and ecological analysis.

Data were obtained from the California Data Exchange Center (CDEC; https://cdec.water.ca.gov/) for consistency (data are untreated) and efficiency (existing code to download data directly from CDEC). Data were integrated and standardized to hourly water temperature data in degrees Celsius. A series of quality control (QC) checks were then applied in a consistent manner to all stations. Datasets included in this package include raw hourly data, flagged data, and filtered data (where flagged data are removed). Additionally, information regarding current and historical sensors used for water temperature data collection was obtained from station managers for each station, and compiled in a metadata table.