This collection contains information about water extent and water depth across the Sacramento Valley, California, which can be used to assess habitat suitability for shorebirds. It also provides the methods to produce these datasets.

1) Spring water extent

Spring water extent across the entire Sacramento Valley was mapped from 1982 – 2019 using satellite imagery. A water extent map is available every ~6-10 days during the spring season for each year based on available satellite imagery.

These maps are the products associated with the article “Three decades of Landsat-derived spring surface water dynamics in an agricultural wetland mosaic; Implications for migratory shorebirds”, published in the journal Remote Sensing of Environment.

2) Wetland water depth

Water depth was measured directly within selected managed wetlands from February 2015 – May 2016. Using on-site water depth sensors, 24 wetlands were monitored scattered throughout the Sacramento National Wildlife Refuge Complex managed by the U.S. Fish and Wildlife Service.

The following files are available for each of the 24 sites:
a) A set of .csv files contain point measurements of water depth collected by a water depth sensor every 4 hours from the date it was deployed through May 2016.
b) A 5-m digital elevation model (DEM)
c) A point shapefile containing the location and ground surface elevation of the water depth sensor.

d) A polygon delineating the boundaries of the edge of the monitored wetland.

3) Water depth code

Two scripts with inputs and outputs are included associated with the article “Quantifying shorebird habitat in managed wetlands by modeling shallow water depth dynamics”, published in the journal Ecological Applications. The scripts use both water depth measurements and satellite based water extent information to evaluate habitat suitability for shorebirds in managed wetlands.

A read me file contains additional information about data collection and analysis methods.