

## 1. DATA AND INFORMATION TYPES

### A. Provide a contextual description of the data stream.

These data include the general extents of canopy-forming kelp from 1989 to 2016 along the coast of California. Canopy-forming kelp includes species of the genera *Nereocystis* (bull kelp) and *Macrocystis* (giant kelp). It does not include the understory kelp genera, such as *Laminaria* or *Alaria*. The source data were created from remote-sensing surveys (aerial photos and digital imagery) which often used different survey methods from area to area or year to year. The data depict all kelp observations from all surveys, merged into continuous polygons.

The data are available in the CeNCOOS data portal: <https://laxds.co/2HHmot3>

### B. How many station locations are there for this data stream?

N/A

### C. What are the specific parameters of the data.

The parameters of this data include: percent cover of canopy-forming kelps.

### D. Provide information about the sampling platform or instrumentation.

The source data were created from remote-sensing surveys (aerial photos and digital imagery) which often used different survey methods from area to area or year to year.

## 2. DATA PATHWAY

### A. Is a data sharing agreement required?

Data are available publically.

### B. In which format(s) was data received by CeNCOOS?

Data were received from the originator's website:  
[ftp://ftp.dfg.ca.gov/R7\\_MR/BIOLOGICAL/Kelp/](ftp://ftp.dfg.ca.gov/R7_MR/BIOLOGICAL/Kelp/).

### C. How can the information be accessed?

The data are available through the CeNCOOS data portal, where it can be viewed using interactive visualizations. Data files are not available for download.

### D. What file formats will be used for sharing data, if different from original?

The data are available through the CeNCOOS data portal, where it can be viewed using interactive visualizations. Data files are not available for download.

### E. Describe how the data is ingested(e.g. the flow of data from source to CeNCOOS data portals) and any transformations or modifications made to share data in the CeNCOOS data portal.

The data were delivered directly to CeNCOOS by the originator, imported to PostgreSQL, and then visualized with custom JSON REST service (JAVA). For interactive visualizations of kelp percent coverage, flat tables were restructured into a relational database and a geometry was created from latitude and longitude values. Lookup tables were generated for user to explore the attributes of interest. Additionally, kelp observations were mapped to labels. These observations were then summarized into a hexagonal heat map with coverage at 15 zoom levels. Observations were summarized into colored hexagons at each zoom level. The color of the hexagon varies relative to the total number of observations/percent coverage within that hexagon.

**F. What metadata or contextual information is provided with the data?**

Metadata are shared in the CeNCOOS portal with descriptive narratives describing the data and linking back to the originator's site.

**G. Are there ethical restrictions to data sharing?**

No

**a. If so, how will these be resolved?**

N/A

**H. Who holds intellectual property rights (IPR) to the data?**

California Department of Fish and Wildlife

**I. Describe any effect of IPR on data access.**

None

**3. DATA SOURCE AND QUALITY CONTROL**

**A. Indicate the data source type (i.e. Federal, Non-Federal, University, State Agency, Local Municipality, Military Establishment (branch), private industry, NGO, non-Profit, Citizen Science, Private individual)**

State

**a. If Federal data source, were changes applied to the data?**

N/A

**b. If Yes, describe any changes to the data that require documentation?**

N/A

**B. Indicate the data reporting type (e.g. real-time, historical).**

Historical

**C. If real-time, list the QARTOD procedures that are currently applied.**

Not required

**D. If real-time, list the QARTOD procedures that are planned for implementation.**

N/A

**E. What is the status of the reported data? (e.g. raw, some QC, incomplete, delayed mode processed but not QC'd)**

Some QC as delivered from the originator(s) and presented with metadata.

**F. Describe the data control procedures that were applied by the originator.**

QC methods are described and reported in the metadata.

**a. Provide a link to any documented procedures.**

N/A

**G. Describe the data control procedures that were applied by CeNCOOS.**

N/A

**a. Provide a link to any documented procedures.**

N/A

**H. List the procedures taken for data that could not be QC'd as directed.**

N/A

#### **4. STEWARDSHIP AND PRESERVATION POLICIES**

**A. Who is responsible for long-term data archiving?**

Data was aggregated for visualization and exploration with other layers in the CeNCOOS data portal. If the data provider chooses to archive these data at a national archive in the future, they may do it directly, or using the CeNCOOS-facilitated pathway to NCEI.

**B. Which long-term data storage facility will be used for preservation?**

N/A

**C. Describe any transformation necessary for data preservation.**

N/A

**D. List the metadata or other documentation that will be archived with the data.**

N/A