

## Cast Scalar Multi-Profile Plot

This data product is used for displaying profile data in a community orientated format. A profile is a series of measurements made throughout the water column grouped by each pass through the water, known as a 'cast', as opposed to continuous time series data. Profiles of the water column can be created by performing casts with instruments. Casts involve lowering an instrument down into the water and back up again while it is making measurements. Cast detection or delineation is performed automatically with manual oversight, [contact us](#) for further details. The measurements from the various sensors attached to and within the instrument are processed to filter, smooth, align, and average data into depth bins. Information about the data processing applied is included in the comment of the data product. Specifically, the default processing steps are:

- The alignment of oxygen to account for instrument response lags. This is instrument dependent.
- Chlorophyll is filtered using a 25 median point filter.
- Temperature and conductivity data is smoothed using a 5 point running mean.
- Practical salinity, sound speed, and density are calculated using smoothed temperature, smoothed conductivity, and pressure.
- Data is averaged into 1 m bins centred at 1 m intervals. Data is only averaged into its corresponding bin if 70% of the data within the bounds of the bin has a QAQC flag of 1.

The descending portion of the cast is then extracted (this will be user configuration in the future, as well as cast detection, alignment, binning parameters). This data product is only used with aligned and depth binned data and extracted down casts. Also, this data product includes data from sensors that are connected to the parent device. The naming convention for these plots informs what data has been included in that particular plot; the different types of data are delineated by two '\_'. At the end of the filename are the start and end dates of the cast which is separated by one '\_'. An example of the filename when the plot is created through datasearch can be seen below. These plots are also available through the geospatial map for community fishers, when these plots are downloaded from the geospatial map the filename has -large appended to the file name, there is also an example of these file formats below.

- SalishSeaMarineSurvivalProject\_Irvines\_Sechelt\_temperature\_\_practicalSalinity\_\_chlorophyll\_\_oxygenSaturation\_\_20180510T214842Z\_20180510T215129Z.png
- SalishSeaMarineSurvivalProject\_Irvines\_Sechelt\_temperature\_\_practicalSalinity\_\_chlorophyll\_\_oxygenSaturation\_\_20180607T222420Z\_20180607T222608Z-large.png

This data product is very similar to the Cast Profile plots, documented here: [56](#). The major difference is that each profile within the image is for one cast and one sensor. This data product is currently constrained to aligned and depth binned sensors on Community Fishers casting devices (CTD, oxygen sensor, fluorometer), and will only display the four major ocean properties: Temperature, Practical Salinity, Chlorophyll and Oxygen Saturation. An example of a Cast Scalar Multi-ProfilePlot can be seen below as figure 1.

Oceans 2.0 API filter: `dataProductCode=CSMPP`

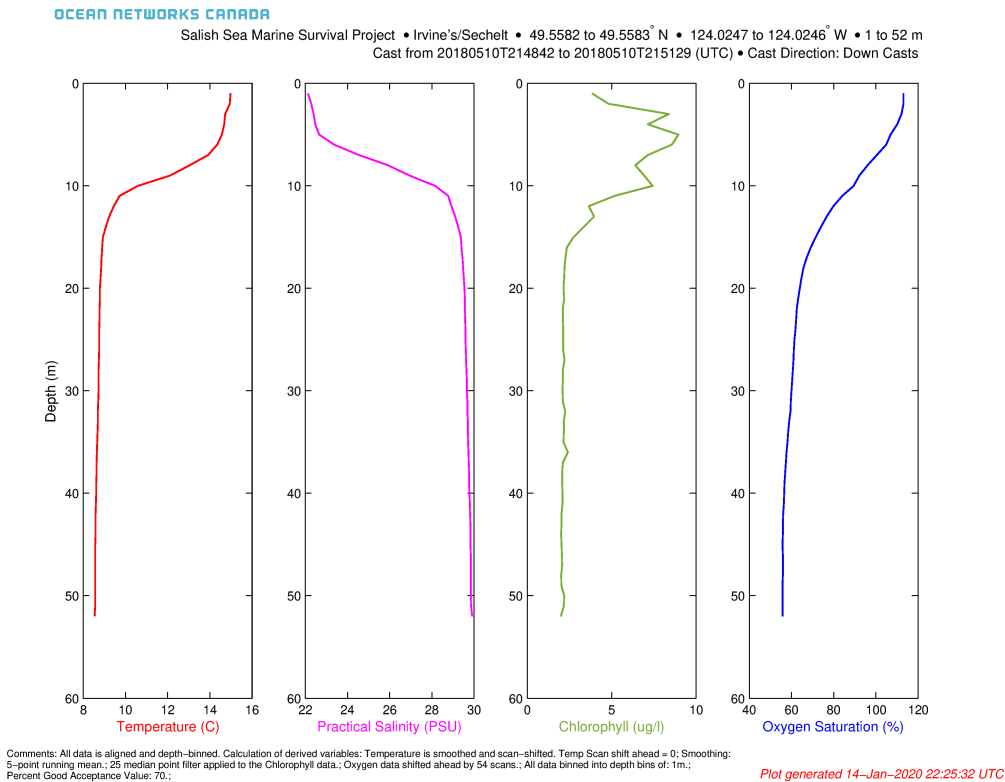


Figure 1. Example of device level cast scalar multi-profile plot

## Behaviour when no data is retrieved

If the requested search range does not contain any data a plot is created with "Missing Data Detected" displayed in each profile plot. These "Missing Data Detected" plots are generated for each deployment in the search range. An example of this type of missing data plot can be seen below as figure 2.

Figure 2. Example of "Missing Data Detected" plot

## Revision History

1. 20190601: Initial cast scalar multi-profile plot data products released
2. 20191101: Integration with Oceans 2.0 Datasearch

## Formats

### PNG / PDF

[Oceans 2.0 API filter](#): extension={png,pdf}

This data product is available in both PNG and PDF formats. If PDF is selected all plots created in one search will be collated into one PDF document, PNG format does not collate, the plots remain separate files.

## Data Product Options

There are two data product option sets for this data product when creating device level searches. These options are shown to represent the processing that is always applied to this data product and are therefore always selected. There are currently no dataproduct options for this dataproduct when creating sensor level searches.

Device-level options.

**Data Product Options**

Sensors to include:  Aligned and Depth Binned

Connected Sensors:  Include All Connected Sensors

[Oceans 2.0 API filter](#): includePiggybackSensors=0,sensorstoinclude=1

## Discussion

To comment on this product, click *Write a comment...* below.