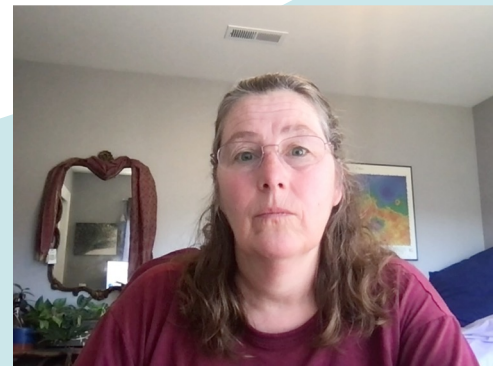


Tools and strategies for your satellite data project

NOAA Coastwatch Satellite Course

Last Updated: 4/28/21



Accessing satellite data can be challenging

A short list of data servers

NASA Jet Propulsion Laboratory PO.DAAC

NASA Ocean Biology (OB.DAAC)

NASA Goddard Space Flight Center

NOAA Center for Satellite Applications and Res.

NOAA CoastWatch Central Operations

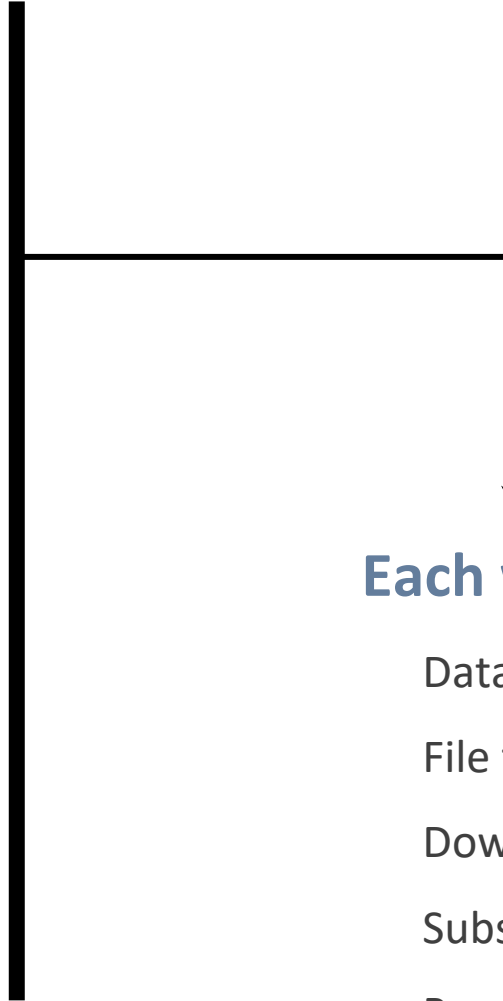
NOAA Office of Satellite and Products

NOAA National Centers for Environmental Info.

NOAA Comprehensive Large Array-data Stewardship System

European Space Agency

Japan Aerospace Exploration Agency



Each with its own

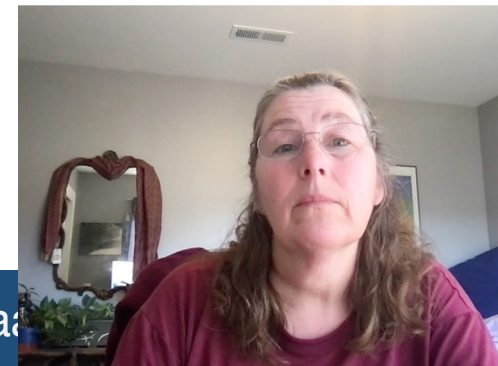
Data products

File formats

Download protocols

Subsetting abilities

Previewing abilities



Getting data should not be difficult

THE TOPICS TO COVER IN THIS PRESENTATION

Data viewers and file formats

Introduction to tools for the course



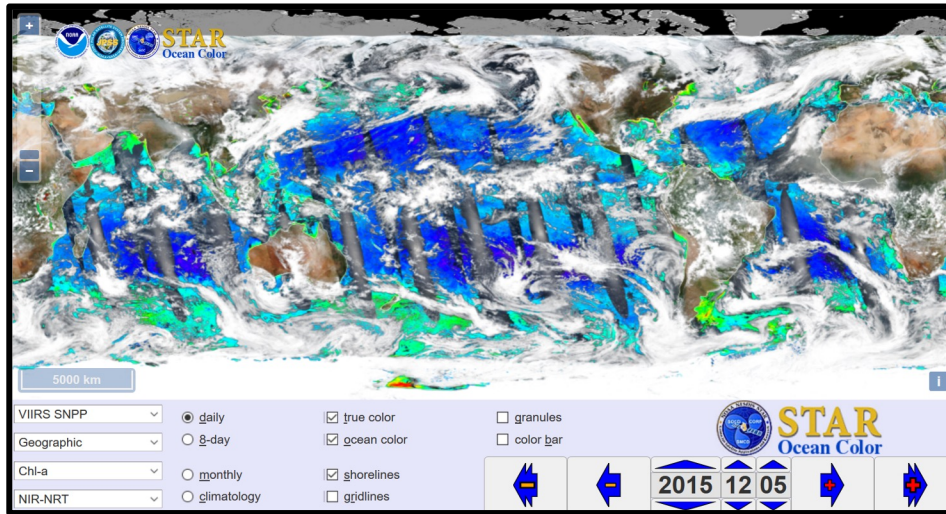
Advanced tools

Class participation – Using the ERDDAP data server



Data Viewers are a good place to start for exploring data

OCView



CoastWatch Data Viewer

coastwatch.noaa.gov/cw_html/cwViewer.html

OCView (NOAA/NESDIS STAR)

star.nesdis.noaa.gov/sod/mecb/color/ocview/ocview.html

State of the Ocean - SOTO (NASA PO.DAAC)

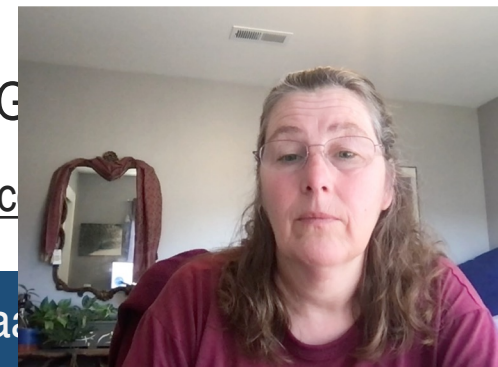
podaac-tools.jpl.nasa.gov/soto/

Worldview (NASA EOSDIS)

worldview.earthdata.nasa.gov/

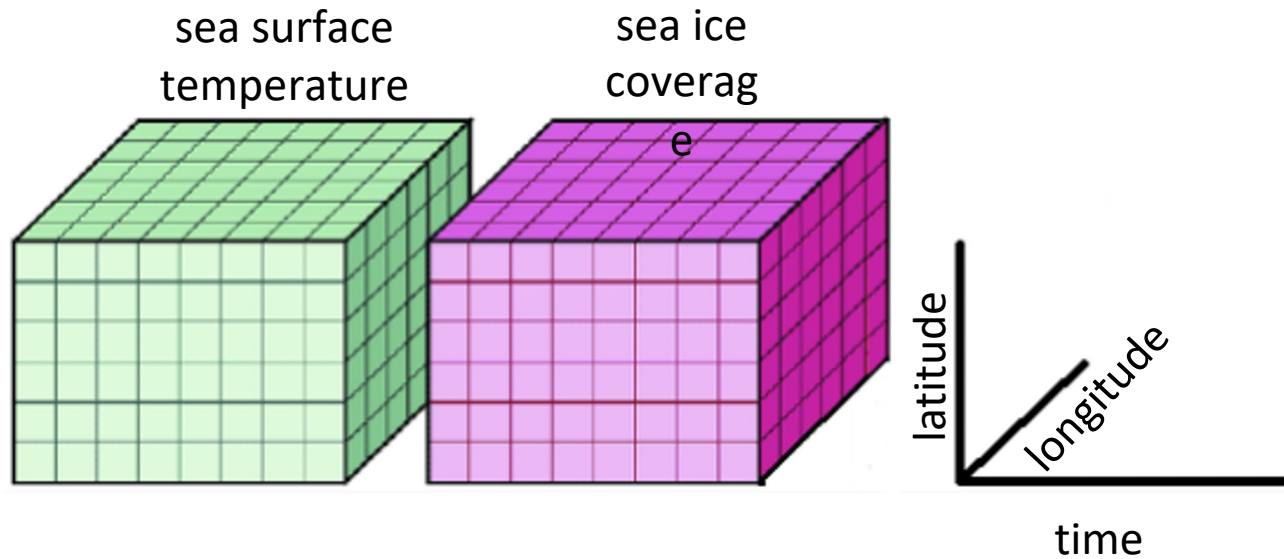
OceanViewer (CoastWatch Caribbean/GOM)

cwcgom.aoml.noaa.gov/cgom/OceanViewer.html



NetCDF¹ file format: Most satellite data are distributed in NetCDF

WHY?



Self-Describing

Contains the information and metadata that you need to use the data

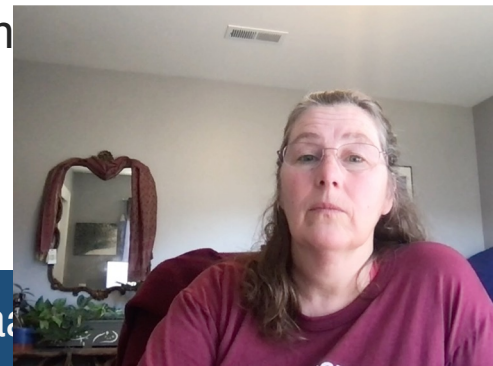
Portable

Can be used by all computer platforms (Mac, OC, Linux)

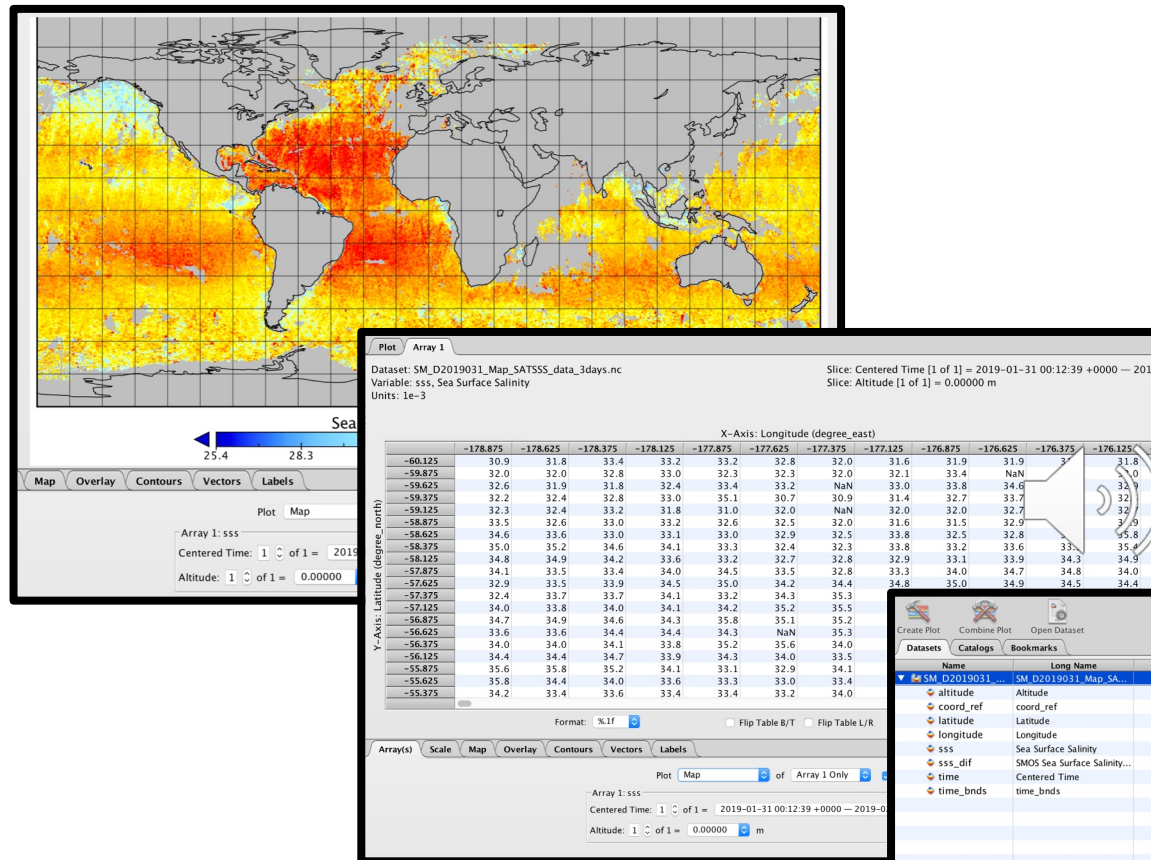
Compact

Binary data and com

¹Network Common Data Format



Software for visualizing NetCDF files – NASA Panoply



Visualize data from netCDF and HDF files

Reproject the visualization

View the metadata

View the data

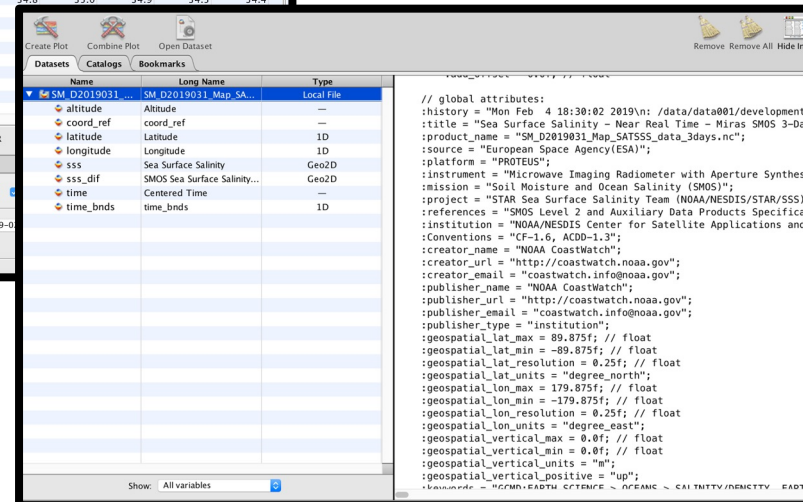
Freeware

Example netCDF salinity file

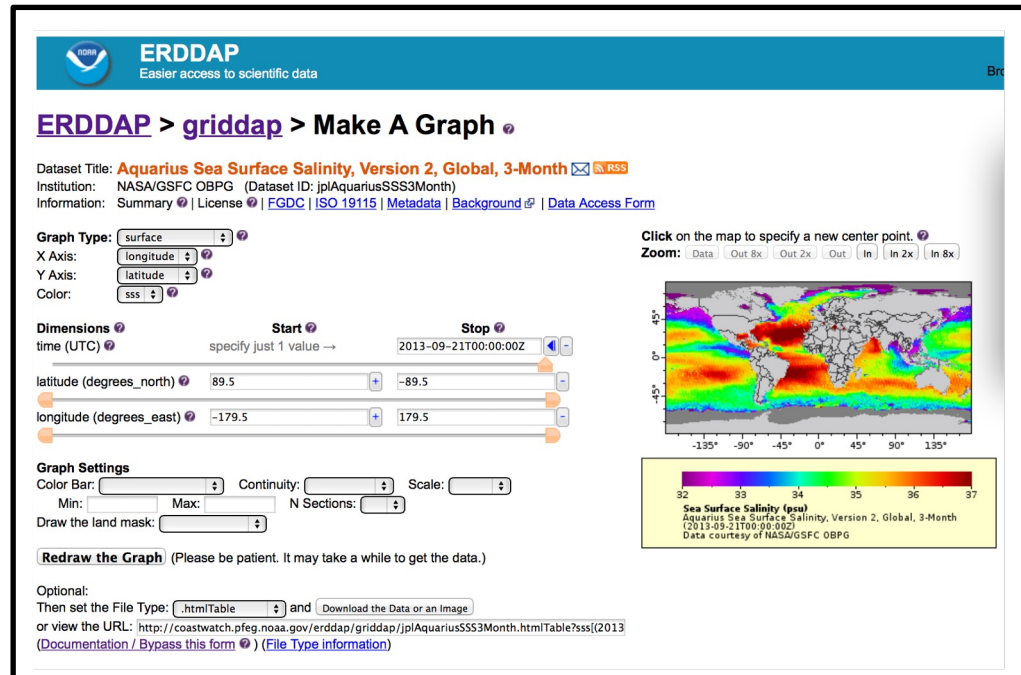
(SM D2019031 Map SATSSS data 3days.nc)

Information and download

www.giss.nasa.gov/tools/panoply/



The ERDDAP data server simplifies data access

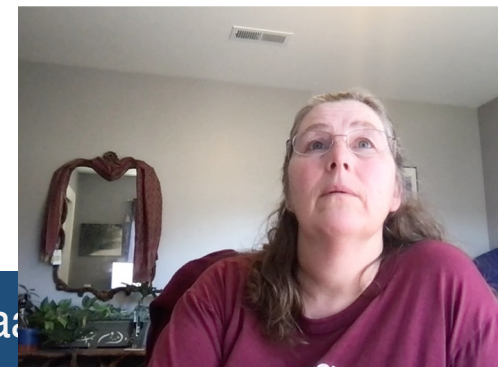


WC Node's ERDDAP server gives you:

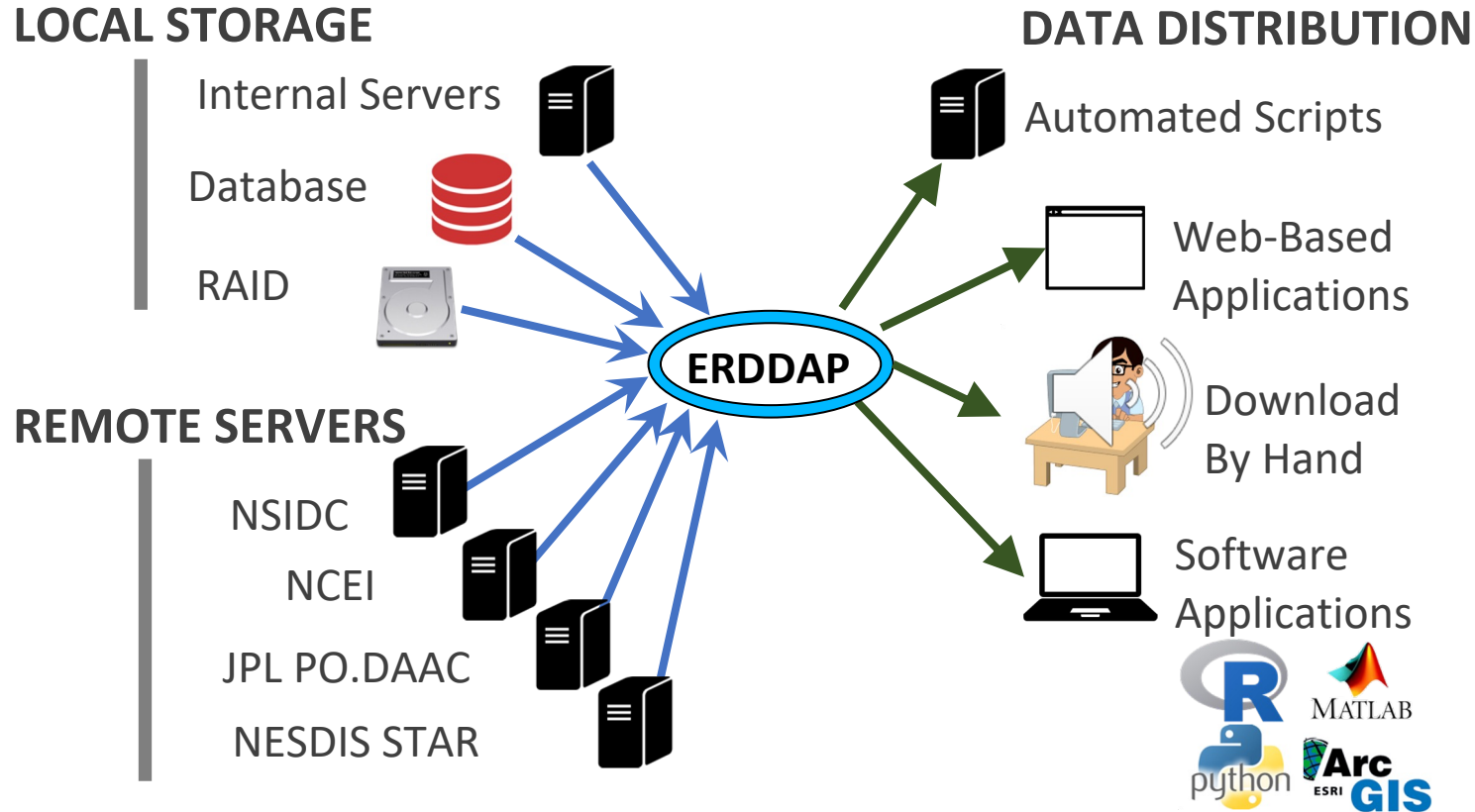
A simple, consistent way to download data

- For the area and time period of interest
- In the format that works with your analysis tools

ERDDAP works for humans and machines



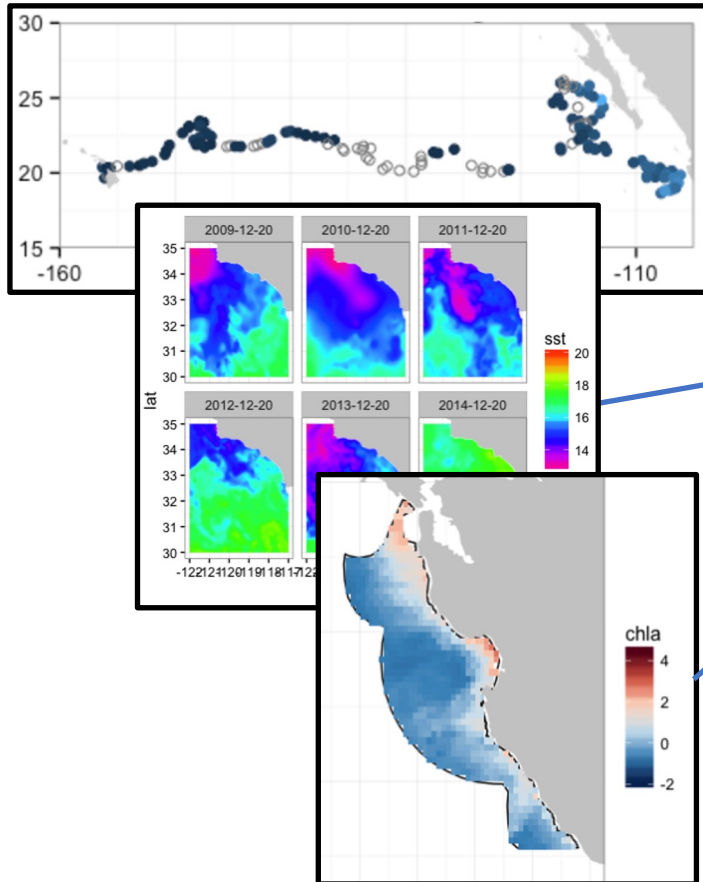
ERDDAP allows one-stop data shopping



**FLEXIBLE DISTRIBUTION IS
POSSIBLE BECAUSE DATA
QUERIES ARE COMPLETELY
DEFINED WITHIN A URL**

Xtractomatic R scripts talk to ERDDAP for you

CREATE AND EXECUTE ERDDAP DATA REQUESTS - DO COMMON TASKS



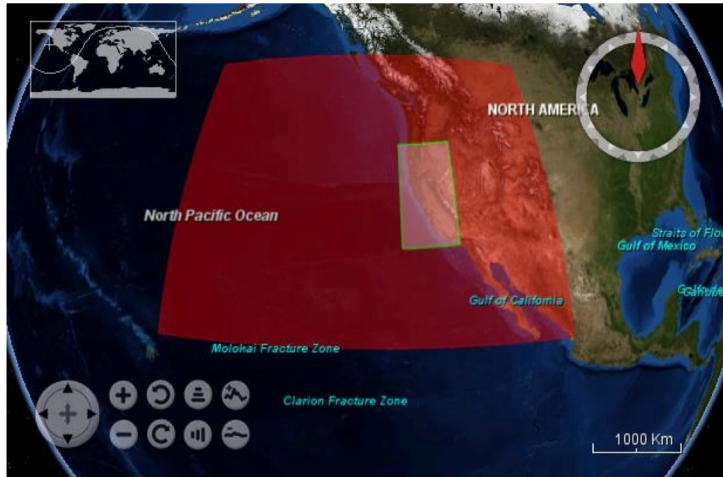
Premade scripts that perform common functions

Extract data around ship stations or animal tracks

Extract data for rectangular area over time

Extract data for any area (polygon) over time

Environmental Data Connector: a plug-in for ArcGIS users



Free graphical interface for browsing, sub-setting, and downloading data from OPeNDAP, SOS, THREDDS, and ERDDAP

User guide and download

 coastwatch.pfeg.noaa.gov/EDC/index.html

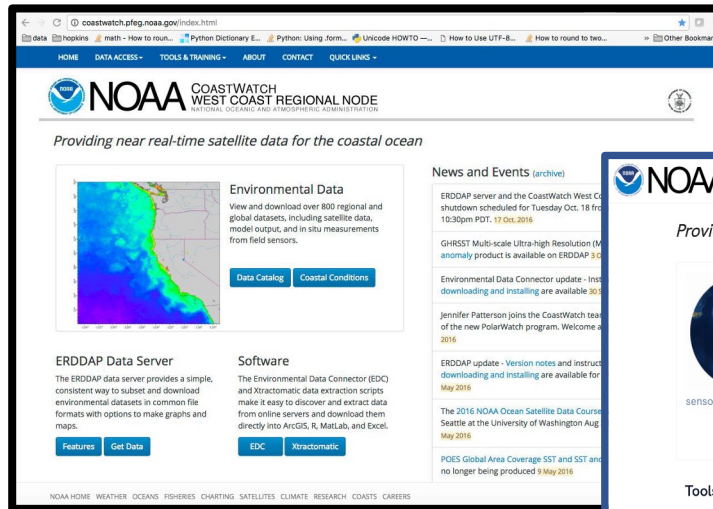
Tutorial

www.youtube.com/watch?v=czr6M0877gE

Visit the CoastWatch Websites

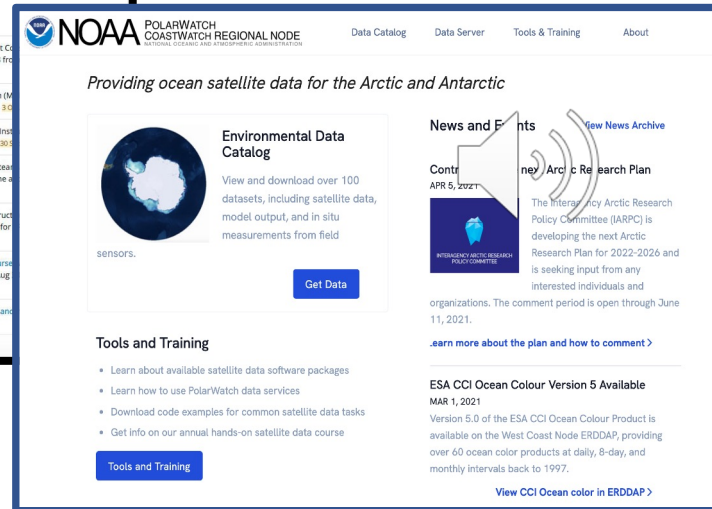
FOR DATA, INFORMATION, TUTORIALS, SOFTWARE, AND MORE

West Coast Node



coastwatch.pfeg.noaa.gov

PolarWatch



polarwatch.noaa.gov

Any CoastWatch Node

Central Pacific

oceanwatch.pifsc.noaa.gov

Caribbean

cwcaribbean.aoml.noaa.gov

East Coast

eastcoast.coastwatch.noaa.gov

Great Lakes

coastwatch.glerl.noaa.gov

CoastWatch Central

coastwatch.noaa.gov

