WHY USE OCEANOGRAPHIC DATA?

Ocean conditions can greatly affect coastal biology. Many intertidal organisms live in the ocean during the larval stage of their lives. Upwelling brings nutrients to the surface increasing primary productivity along the California coast. Decreases in ocean pH can impede animals from their calcium-carbonate shells. For all these reasons, LiMPETS wants to help you find oceanographic data that will best answer your research question.

ENVIRONMENTAL FACTORS

Sea-surface temperature Sea-level rise Fresh water input Cloud cover pH (measure of CO2 in the water) Chlorophyll (indicates primary productivity) Air temperature

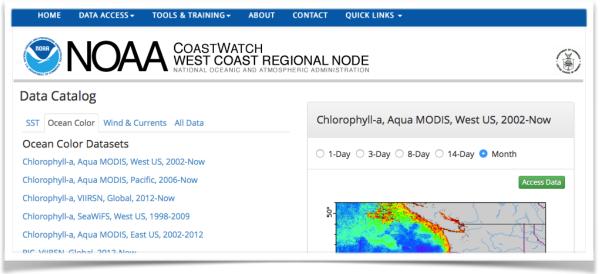
HUMAN FACTORS

Marine Protected Areas Population

Number of visitors Marine Reserves

STEP 1: FIND POTENTIAL DATA SOURCES

The National Oceanic and Atmospheric Administration (NOAA) is a trusted government source for environmental data. It has a combination of locally-taken measurements as well as measurements from satellites.



http://coastwatch.pfel.noaa.gov/data.html

Finding the right dataset can be challenging. Go to the <u>LiMPETS Student Resources</u> for a list of good websites for oceanographic data related to LiMPETS.

STEP 2: QUERY A DATASET

Once you found a good source, you need to 'query' for the data you want. Query means to request a smaller amount of information from a large dataset based on parameters that you indicate. Usually, there will be a dropdown menus to choose and/or blank fields for you to

LIMPETS - USING OCEANOGRAPHIC DATA

answer. Here are some common parameters that you will be asked by the database query webpage:

Geographic region - LiMPETS sites are within 38.5 to 32.5 in latitude and -123.2 to - 117.0 in longitude. To find the exact coordinates of your site, go to <u>Rocky Intertidal Monitoring Site Map</u> or <u>Sandy</u> <u>Beach Monitoring Site Map</u>.

Time range - Are you looking at long-term data trends, seasonality, or day-by-day interactions?

Salinity figure	search
Grids	○ 1° ○ 1/4°
Time Span	All averaged decades
Field Name	Climatology \$
Time Period	Annual \$
Depth	Surface \$
	Show Figure

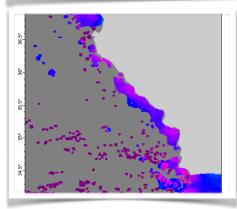
Resolution - Are you looking at localized trends or big general global trends?

Other Fields - Some fields on a data request webpage are for advanced users of the data. If you are ever confused by a question, don't change the default answer or leave the field blank.

STEP 3: DOWNLOAD THE DATA

Time to export the data. Your output format can be anything from a simple worksheet to a file that needs special software to use. Some data sources can give you an image output, like a map from CoastWatch.

CoastWatch Browser		CoastWatch West Coast Regional Node	
Create custom maps and downloa	ad oceanographic data. [Help]	Home CWBrowser Sites Feedback	
Edit:	OThe Map OGrid Data OContour Data Vector Data OStation Vector Data OStation Data 1	Station Data 2	
1) Select a data set:	SST, NOAA POES AVHRR, LAC, 0.0125 degrees, West US, Day and Night*		
2) Select a time period:	O1 day O3 day O8 day O14 day O1 month		
3) Select a centered time (GMT):	2015-05-25 12:00:00 🗘 < - + > Or, 2015 🗘 05 🗘 25 🗘 12:00:00 🗘		
Select the units:	odegree C ⊖degree F		
5) Select a palette:	Rainbow Scale: Linear S Min: 8.0 - + Max: 32.0 - +		
Download the grid data:	.asc ESRI .asc Google Earth .grd .hdf .mat .nc .ncHeader .tif .xyz FGDC File Type	Info GET Queries OPeNDAP Data Set Info	
7) Optional:	Enter a longitude and latitude or click on the map to see a time series of "	Time Period' averages.	



http://coastwatch.pfeg.noaa.gov/coastwatch

If you want to make your own graphs or tables with the data, keep it simple with files that will work in Excel, including the extensions: .csv, .xls, .xlsx, and .txt.