

General Oceanographic terms:

Found the below definitions on: <https://www.marinebio.org/oceans/marine-science-glossary/>

bathymetry: the topography of the ocean floor.

bycatch: non-target marine species unintentionally caught during commercial fishing operations.

chlorophyll: the green pigment used by phytoplankton and algae to photosynthesize and produce energy.

continental slope: the steep slope between the continental shelf and the deep ocean floor.

downwelling: the downward movement of surface water, often carrying oxygen to deeper layers of the ocean.

eddy: circularly flowing surface currents that often form as offshoots from larger directional currents; they can be tens of miles in diameter.

front (oceanographic): a boundary between two water masses with different properties such as temperature or salinity.

longshore current: a current that moves parallel to the shore, generated by waves hitting the coast at an angle.

oceanography: the branch of science that deals with the physical and biological properties and phenomena of the sea.

physical oceanography: the study of the properties (temperature, density, etc.) and movement (waves, currents, tides) of seawater and its interactions with the atmosphere.

salinity: the measure of salt concentration in seawater, usually expressed in parts per thousand (ppt).

stratification: the formation of ocean layers based on temperature and salinity differences, affecting mixing and nutrient transport.

upwelling: the movement of deep, nutrient-rich water to the ocean surface, enhancing marine productivity.

And these here: <https://rwu.pressbooks.pub/webboceanography/back-matter/glossary-2/>

Gulf Stream: the major surface current flowing northward along the Atlantic coast of the U.S. and Canada.

boundary currents: ocean currents whose properties are influenced by the presence of a coastline.

density: mass per unit volume of a substance (e.g., g per cubic centimeter).

mixed layer: the topmost layer of the ocean where winds, waves, and currents mix the water so that conditions remain relatively constant.

thermocline: a region in the water column where there is a dramatic change in temperature over a small change in depth.

Remote sensing: the process of detecting and monitoring the physical characteristics of an area by measuring its reflected and emitted radiation at a distance (typically from satellite or

aircraft). Special cameras collect remotely sensed images, which help researchers "sense" things about the Earth. (definition from the [USGS](#))

Project Specific Terms

CTD Profile: A measurement of conductivity, temperature, and depth taken by an instrument lowered from the ocean surface to sea floor. These are used to understand how the properties of the ocean change with depth.

Anomaly: How much an observation is different from what we expect based upon historical averages. We will use a simple equation like: $\text{anomaly} = \text{observed value} - \text{average value over historical period}$. The "historical period" we use changes based upon things like *data availability* (how long do we have satellite observations of ocean temperature in this location?) and *known conditions* (maybe there is a range of years that we know were unusually cold, we probably would not want our baseline to be based solely on these years as it would skew the calculated anomaly).

Time Series: A record/visualization of how a specific variable changes over time.

Climatology: A derived record of the average conditions over the course of some period of time. This can have different temporal resolutions (the interval of time between each value). For example, we can have a daily climatology (which will have an average value for each day of the year), a monthly climatology (average monthly conditions for each month of the year), or a yearly climatology (a single average value representing the mean conditions for each full year in the record). We use these values to calculate our anomalies.

Fathoms: The unit of measurement for depth used by fishermen around New England (and the broader US). One fathom equals 6 feet.... which means 1 fathom = 1.8288 meters