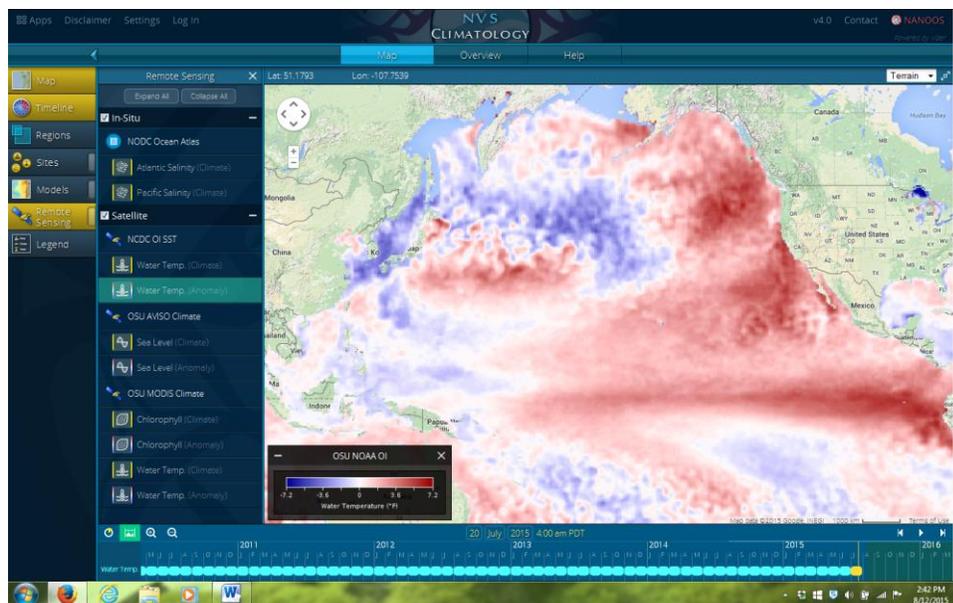


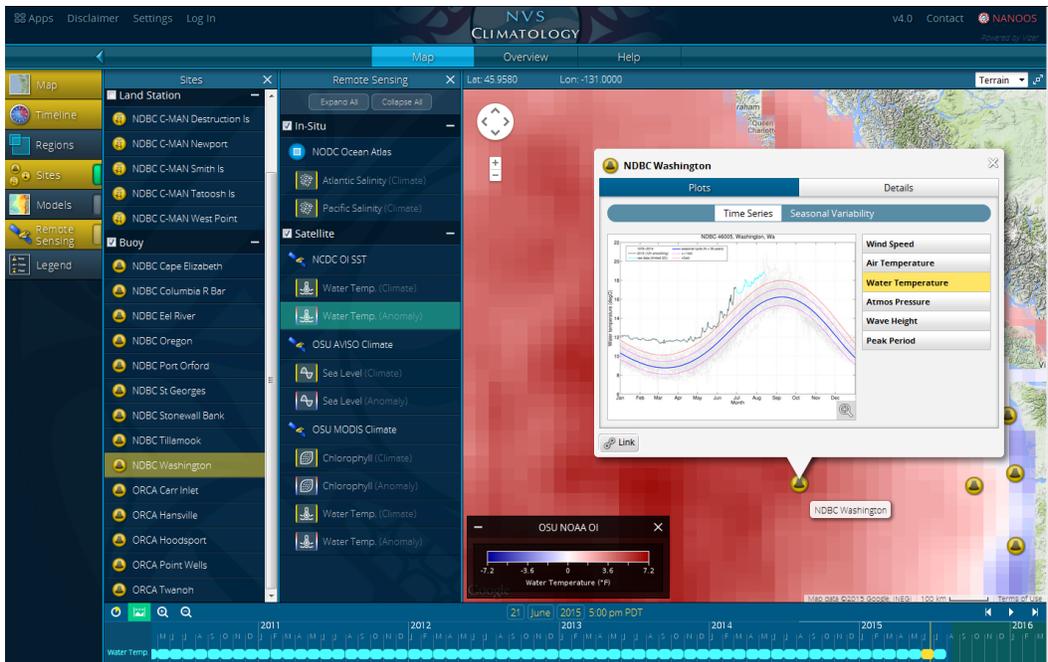
NANOOS continues to provide information for those wanting to track the unusually warm waters of the NE Pacific Ocean, known as the “blob” and to understand its effects on our coastal waters. The NVS Climatology App compares present observations with data from previous years, thus providing users with information on the intensity, size, and behavior of the “blob.” We feature data from satellites and buoys, in both cases with presentation of the typical conditions (climatology) and the departure from those conditions (anomaly). Here we provide information on what you can see and how to use this app to view blob effects on the ocean, coastal waters, and Pacific Northwest estuaries. At the end of this document, we provide some useful links to blob- related news stories.

In the [NVS Climatology App](#):

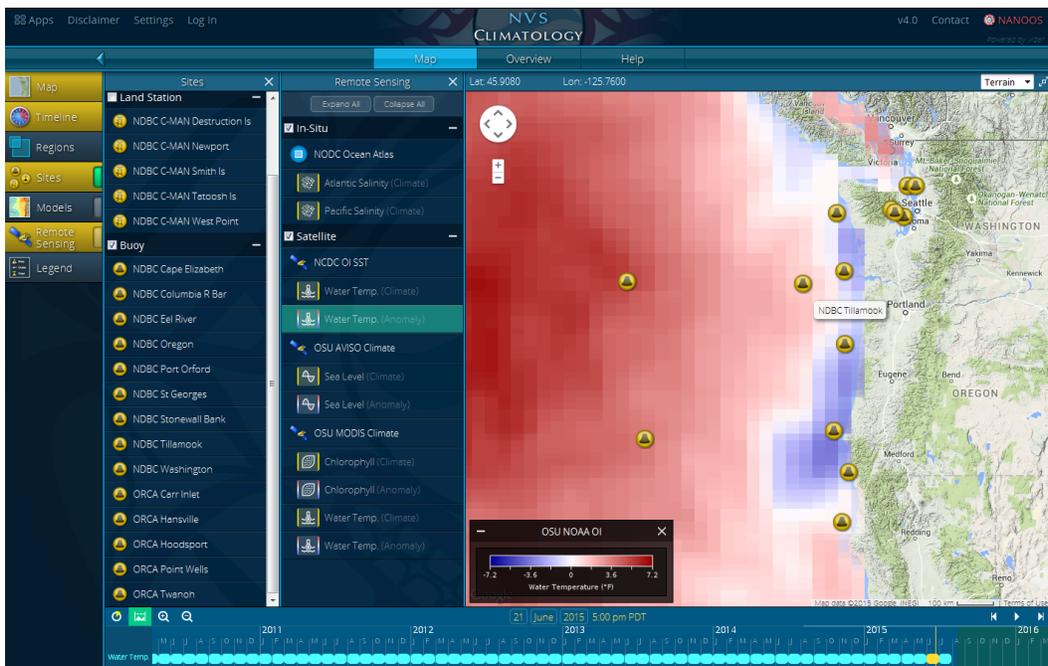
-- A satellite view shows a wide expanse of the ocean. Select either NCDC OI or OSU MODIS Water Temp. (Anomaly) under Satellite Remote Sensing. Temperature departures from normal (anomalies) show warmer than average waters as red. You can zoom in and out on the map and use the timeline at the bottom to compare months and years. Click the day, month, or year (yellow font) for easy comparison. The satellites are operated by NOAA (NCDC OI) and NASA (MODIS) with analysis by Oregon State University, a NANOOS partner.



--Buoys data from specific locations provide real-time conditions, with comparison to historical data and means. To see data from buoys in the offshore waters within the blob footprint, select either the NDBC Washington or NDBC Oregon buoy icon on the map or from the Sites list to the left. The pop-up screen allows users to compare real-time water temperature, as well as wind speed, air temperature, etc. to the 39-40-y records at these locations. Measurements spanning the entire record are in gray, the historical mean in blue, with +/- 1 standard deviation in magenta and + 2 standard deviations in red. QA/QC'd data from the current year is shown as a solid black line and raw data is cyan. These National Data Buoy Center buoys (NDBC) are operated by NOAA.



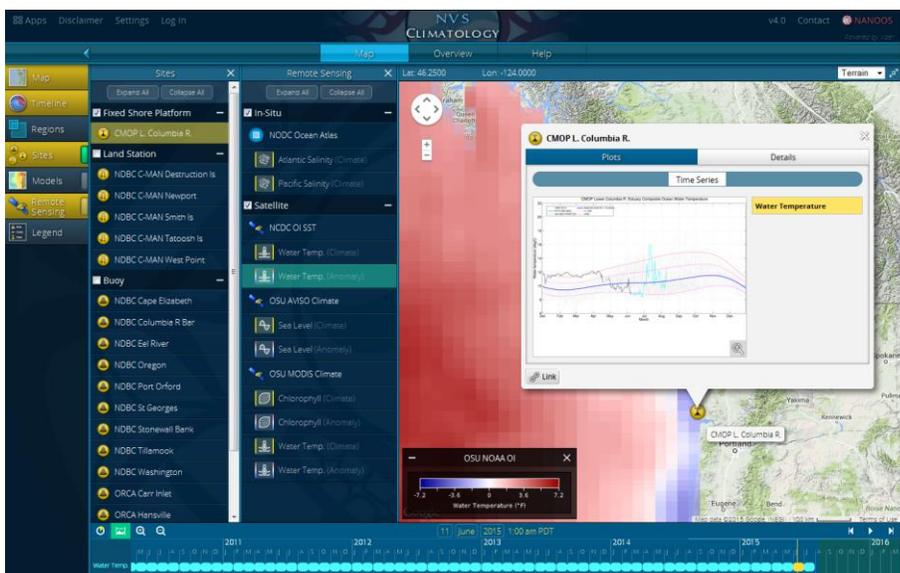
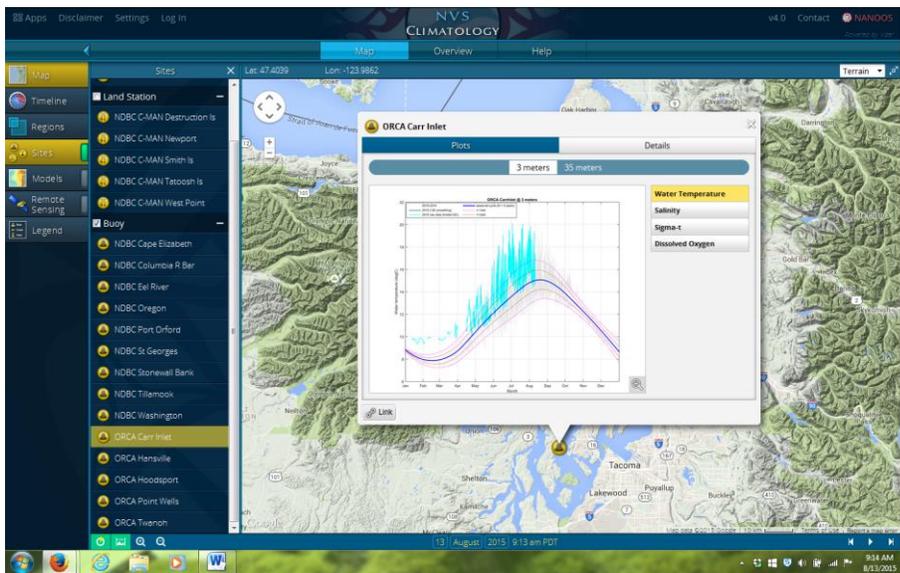
--For real-time conditions along the coast, such as determining if upwelling is keeping surface waters cool and the blob pushed offshore, users can look at records from seven NDBC coastal buoys in Washington, Oregon and Northern California (from north to south: Cape Elizabeth, Columbia River Bar, Tillamook, Stonewall Bank, Port Orford, St. Georges, and Eel River). These buoy historical records vary from 11 to 33 years. These National Data Buoy Center buoys (NDBC) are operated by NOAA.



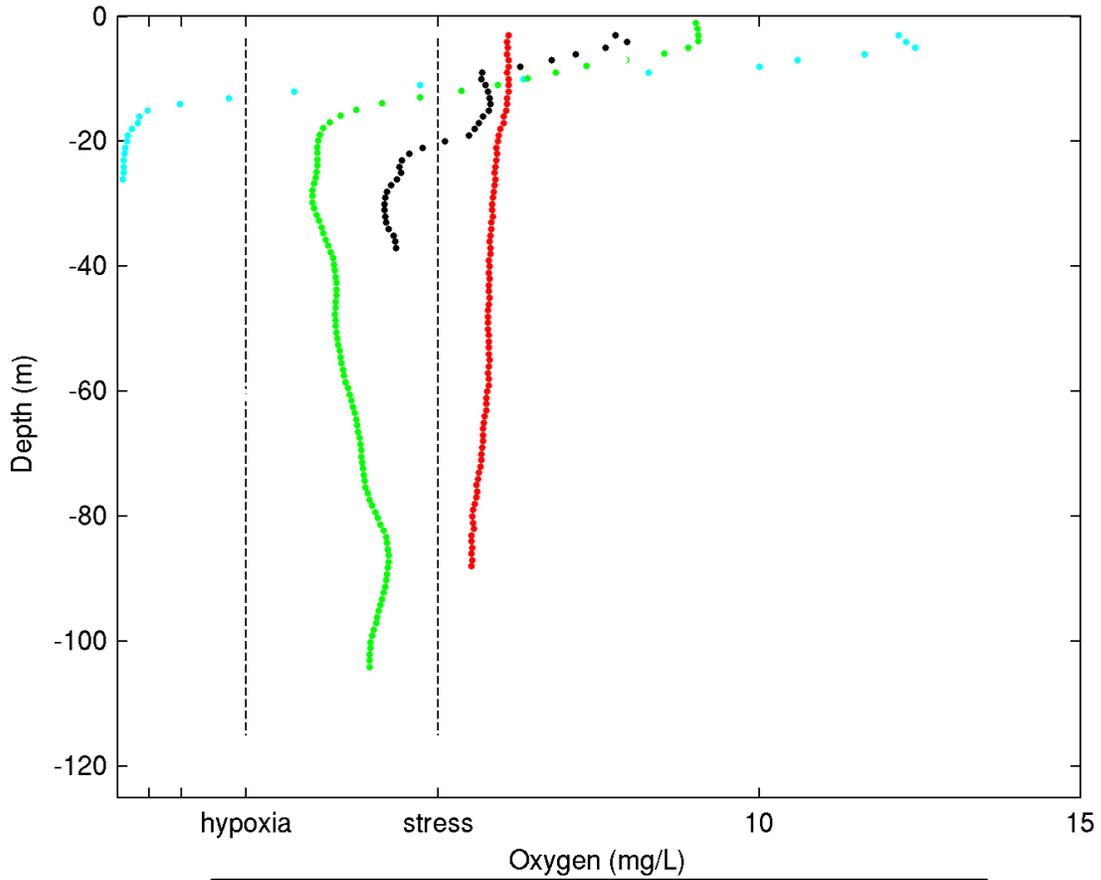
--To see the blob's effect on estuaries:

-- For Puget Sound, select one of the five Oceanic Remote Chemical Analyzer (ORCA) buoys moored throughout the estuary: Hansville near the entrance to Puget Sound, Hoodspout and Twanoh in lower Hood Canal, Point Wells north of Seattle, and Carr Inlet in South Sound. These buoys also indicate oxygen and salinity values. These records are much shorter, 4-9 years. ORCA buoys are operated by the University of Washington, with partial NANOOS support.

--For the Columbia River estuary, select the CMOP fixed shore platform at the Lower Columbia River estuary to see the 19-y record of water temperature. The National Science Foundation's Center for Coastal Margin Observation and Prediction (CMOP) platforms are operated by Oregon Health and Science University with partial NANOOS support.



--For a more detailed view of the oxygen profiles throughout Puget Sound, visit the ORCA website at <http://orca.ocean.washington.edu/> and select Deep Oxygen Concentrations on the right side of the page.



- hypoxia (2 mg/L)
- biological stress (5 mg/L)
- Twano (Hood Canal), Aug.13,2015 08:14:00
- No recent Hoodsport (Hood Canal) profile
- Dabob Bay (Hood Canal), Aug.13,2015 13:26:24
- Hansville (North Hood Canal), Aug.13,2015 08:21:25
- Carr Inlet (South Sound), Aug.13,2015 08:13:47
- No recent Point Wells (Main Basin) profile

Local media stories regarding the blob in the Pacific Northwest:

- KING 5 <http://www.king5.com/story/news/local/2015/07/30/blob-in-puget-sound/30916753/>
- Seattle Times <http://www.seattletimes.com/seattle-news/weather/the-blob-warms-puget-sounds-waters-hurts-marine-life/>
- KOMO radio <http://www.nanoos.org/media/audio/newton-komo-interview-150730.mp3>
- UW Today <http://www.washington.edu/news/blog/odd-puget-sound-conditions-prompt-multi-agency-awareness-day/>
- NANOOS Educational blog <http://nanooseducation.blogspot.com/>
- Ecology blog <http://ecologywa.blogspot.com/2015/07/puget-sound-waters-left-sweltering.html>
- AOOB "Blob Blog" <https://alaskapacificblob.wordpress.com/>