

SHSTMP_PS_Marine_Over_Water_Structures_2021.shp

NOAA Fisheries developed this polygon layer as part of the Salmon Habitat Status and Trend Monitoring Program (SHSTMP) in order to evaluate the status of over water structures by count, area, and other features in the nearshore of Puget Sound and greater Salish Sea shoreline. This layer was originally modified from a DNR marine overwater structure layer created with imagery dating from 2002-2006 (WDNR 2007). We made several updates to the DNR layer and created a new protocol to reduce variability and provide a comprehensive baseline layer for Puget Sound and Salish Sea shorelines. The first survey was completed in 2017 using imagery ranging from 2013-2016. In 2023, we conducted another full survey of OWS using imagery collected in 2021 (primarily).

We define marine overwater structures as human-built structures that shade out inter-tidal zones in the nearshore up to 200 meters inland of the shoreline or visible high-water mark. In the first iteration (using imagery dating 2013-2016), structures were digitized at a 1:300 - 1:1000 scale using less than 0.5-meter resolution true-color Google satellite and aerial imagery. In 2023, we made updates to this layer using 2021 HxGN Imagery Program 0.15m aerial imagery. For both iterations, we supplemented with Google Earth aerial imagery and the Washington State Department of Ecology Coastal Atlas Program's oblique shoreline photos (<https://apps.ecology.wa.gov/shorephotoviewer>) where needed.

In some cases there were multiple entries made under one structure id. This was done if significant differences were observed between years in order to track changes over time.

Field Name	Description	Units
OWS_ID	Unique structure identifier	
Area_M	Area of structure	meters
Perimeter	Perimeter of structure	meters
Structure	Structure type: Aquaculture Boat Rail Bridge Buoy/Float Dock/Pier Log Boom	
Decking	Cover of the structure is either: Complete, Partial, or None	
Building	Presence of a building on the structure: Yes or No	
Boat	Presence of a boat: Yes or No	
Complexity	Additional detail about the structure: boat rail boat ramp bridge building	

	buoy culvert float largedock (> 560m ²) log boom marina net pen pillings shellfish smalldock (< 560m ²) staircase unknown	
Observer	Cartographer's last name	
Img_Source	Source of the aerial imagery used to digitize the structure	
County	WA state county	
GNIS_WB_NM	Geographic Names Information Water Body Name - USGS classification system	
Img_Year	Year of the image used to digitize structure	
LCC	Dominant land cover class developed using C-CAP 2010 data (NOAA, 2014), aggregated into classes using methods in Beechie et al. 2017: Ag - agriculture D - developed F - forest/wetland M - mixed	
MarinBasin	Marine Basins of Puget Sound (NMFS 2007 and 2011, Rice et al. 2011): Striat of Juan de Fuca Hood Canal North Puget Sound Whidbey Basin South Central Puget Sound	
DNR2002_2006	Column representing the presence (1) or absence (0) of a structure during the survey period which used imagery	

	between the years of 2003-2006	
2013_2016	Column representing the presence (1) or absence (0) of a structure during the survey period which used imagery between the years of 2013-2016	
2021	Column representing the presence (1) or absence (0) of a structure during the survey period which used imagery taken in 2021	
DigDate	Date the structure was digitized	

References

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- NMFS (National Marine Fisheries Service). 2007. Puget Sound Salmon Recovery Plan, volume 1. Shared Strategy for Puget Sound, Seattle.
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- WDNR (Washington State Department of Natural Resources) 2007. Overwater Structures in Marine Waters of Washington State. http://data-wadnr.opendata.arcgis.com/datasets/435072fe451e43ea93144e3ec08e93e5_2