

WDFW Marine Beach Spawning Fish Ecology Maps

This WDFW map displays sand lance, smelt, herring spawning areas, herring pre-spawner holding areas, and the forage fish spawning survey beaches in Washington State.

San Juan County is attempting to obtain the San Juan County map files so they can be easily accessed from Polaris or the critical areas implementation webpage. Until then, the maps may be accessed at the following WDFW webpage:

http://wdfw.wa.gov/conservation/research/projects/marine_beach_spawning/

You must scroll down on the page to find the fish spawning maps. Click on San Juan County and use the zoom tool to focus on area of interest. At the bottom of the map you may click “view larger map” to improve your view of the details. Click on the details and legend tabs to learn more about the map.

The map looks like this with aerial photography as a background. Other background selections are available.



Fish Spawning Information from the Maps is Provided Below:

Forage Fish Spawning Map

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Sand lance (*Ammodytes hexapterus*), Surf smelt (*Hypomesus pretiosus*), and Pacific herring (*Clupea pallasii*), are part of a larger ecological group collectively referred to as forage fish. Forage fish are small, pelagic schooling fish which are important as forage for predatory fish, birds, and mammals. They provide an important link in the food chain between zooplankton and piscivorous (fish-eating) animals.

Sand Lance and Surf Smelt

WDFW and others conduct spawning habitat surveys for Pacific sand lance (*Ammodytes hexapterus*) and Surf smelt (*Hypomesus pretiosus*) along the marine shorelines of Washington State. Survey results have been summarized as presence or absence (lack of detection) of spawn for each species and estimated length (parallel to shore) of suitable habitat where spawn has been detected (beach length). Sand lance and Surf smelt spawn in the intertidal zone of beaches comprised of mixed sand and gravel. These spawning beaches are susceptible to nearshore development where substrate coarsening may reduce fine-grained spawning substrates and removal of vegetation may increase egg mortality. The accurate representation of forage fish spawning habitat and delivery of those data to public sources is necessary for the conservation of these species. These data represent more than 30 years of spawning habitat surveys.

Pacific Herring

Locations of documented Pacific herring (*Clupea pallasii*) spawning areas through 1991 (WDFW, 1984, as amended 1986). The polygons were later edited by Kurt Stick, and digitized by Dale Gombert, both WDFW, 12/2003, and most recently (2012) by Adam Lindquist . Polygons show documented Pacific herring spawning areas at specific sites throughout Puget Sound and Washington coastal areas and bays. Along the Washington coast, small populations spawn in Willapa Bay and Grays Harbor, and some spawning has been reported, but not documented by WDFW, in the Columbia River estuary (Monaco et al. 1990). Herring deposit their eggs primarily on marine vegetation: eelgrass and various algae, in the shallow subtidal and intertidal zone generally at tidal elevations from +3 feet to -20 feet Mean Low Waterline (MLLW). Because herring often migrate considerable distances from their spawning grounds, impact on the critical habitats they utilize in one area could affect harvest or the food chain at other locations. The data represent a complete inventory of documented herring spawning grounds within Washington State through 2012.