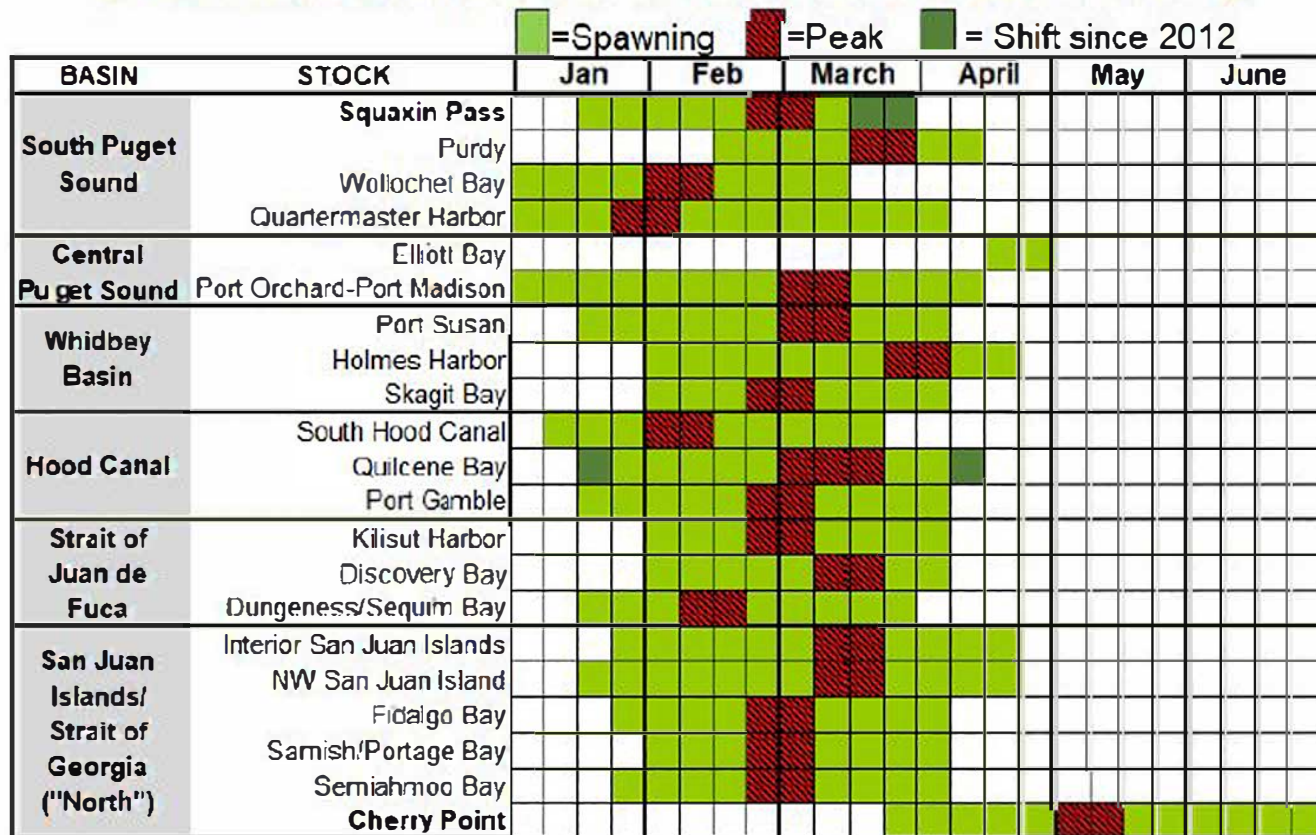


[illegible]

DOCUMENTED AND PEAK SPAWNING TIMES FOR WASHINGTON HERRING STOCKS

[Note: Herring spawn in Puget Sound mainly from January-April. One unusual stock spawn in central basin later in April, and the Cherry Point stock (Strait of Georgia) spawns very late, in April-mid June. Events similar to the ones depicted below occurring during other parts of the year are likely shellfish or other forage fish (smelt, sand lance) spawning events]

For more information on Washington herring stocks see: <https://wdfw.wa.gov/sites/default/files/publications/02105/wdfw02105.pdf>



Examples of aerial images of herring spawn 'white water'-and NOT white water...



Above: Small herring spawning event at Birch Head 2019



Jackson cove drone footage, Hood Canal, 2019 (**extremely heavy** spawn, rare in Puget Sound)



Above: small “spot spawn” at Pt Whitehorn, 2019 (picture taken from the bluff)



Discovery bay herring spawn 2017

Examples of false herring spawn events (often these are wave action mixing up shoreline sediment, rainfall runoff point sources creating off-color plumes, or sometimes phytoplankton blooms. Clams and other benthic organisms also have large scale, coordinated spawning events that can resemble herring “whitewater”).



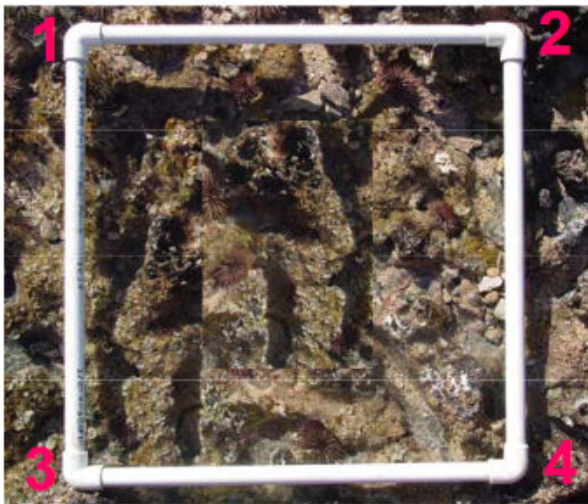
Above: SJI- algal (phytoplankton) bloom in upper left. Note greenish cast. Also, herring spawn on aquatic vegetation in the nearshore (0-20 feet in general), so events in deep water are unlikely to be herring spawn, as are events on sandy spits with no vegetation present (plumes in these locations tend to be generated by wave action).



Above: Wave action along left (South) side of Mud Bay, SJI. ***Not herring spawn***.



Above: false spawn near Lopez ferry dock, SJI. Likely a sediment plume caused by stormwater runoff- unusual to see the center of herring “whitewater” extend out into deeper water than either of the edges.



Quadrat (0.5m per side).

