2022 Citizen Science Herring Spawn Data Sheet

Email/hardcopy send with photos to Anne Shaffer anne.shaffer@coastawatershedinstitute.org, CWI, and Todd Sandell, WDFW; todd. sandell@dfw.wa.gov; Questions call Anne Shaffer 360.461.0799

Instructions of note: Quadrat should be square, 1/2 (0.5) meter on a side (see example photo attached). Photos please include at least 3 quadrat photos

Reporting Person Contact info: Name/Email/Phone:

Date:			Notes:			
Location:	Site name:					
	<u>Latitude:</u>		•			
	Longitude:					
White water Pho	otos Date and tim	ı <u>e</u>	<u>Number taken</u>	<u>Latitude</u>	<u>Longitude</u>	
Camera type:						
	of whitewater (num					
	per 10 feet (estima			•		
On the ground	<u>Photos</u>	Date and time	Number taken			
Туре						
Quadrat* numbe	Vegetation type	Quadrat % cover	Percent of	Percent of	<u>Notes</u>	
		<u>vegetation</u>	quadrat with	<u>vegetation</u>		
			<u>eggs</u>	with eggs		
-						
-						
l	l					

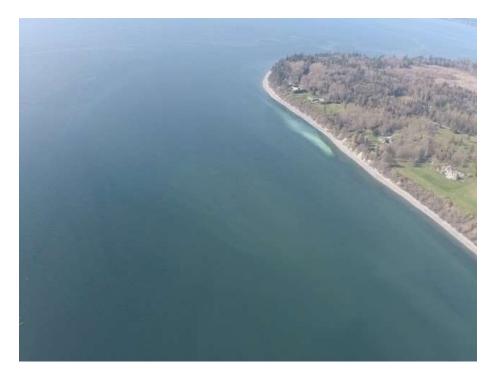
DOCUMENTED AND PEAK SPAWNING TIMES FOR WASHINGTON HERRING STOCKS

[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, sandlance) spawning events]

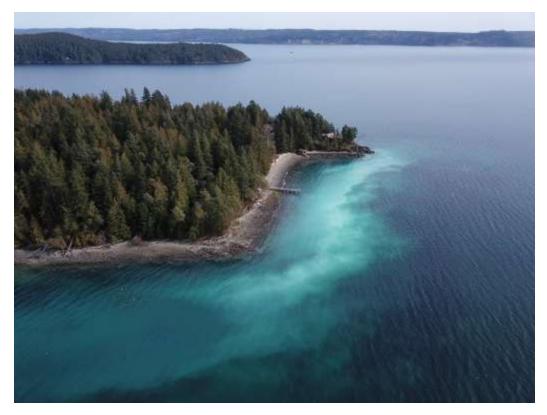
For more information on Washington herring stocks see: https://wdfw.wa.gov/sites/default/files/publications/02105/wdfw02105.pdf

	STOCK	=Spawning				=Peak				= Shift since 2012								
BASIN		Jan		Т	Feb		March			April			May			June		
	Squaxin Pass																	
South Puget	Purdy																	
Sound	Wollochet Bay																	
	Quartermaster Harbor																	
Central	Elliott Bay		1	T			F		-									
Pu get Sound	Port Orchard-Port Madison																	
Whidbey Basin	Port Susan															Т		
	Holmes Harbor															1	П	\Box
	Skagit Bay											_	1	1		1	П	\neg
Hood Canal	South Hood Canal	7,12					Т											
	Quilcene Bay	-				1	100					1	t	T	+	1		
	Port Gamble											-	╅	+	-	1	Н	\neg
Strait of	Kilisut Harbor			Ť								_	1	1-	-	╁	Н	
Juan de	Discovery Bay	12	2	-5		- 80				92		-	t	t	H	+		
Fuca	Dungeness/Sequim Bay						+			-		-	╁	-	-	╅╌	Н	\dashv
1 000	Interior San Juan Islands			H			H						+			+		
San Juan	NW San Juan Island					+	+			-		_	+	+		+		
Islands	_		- K	-						- 0			-	-		4-		\dashv
Strait of	Fidalgo Bay	-		-						-		_	4-	-		+	_	\dashv
Georgia ("North")	Samish/Portage Bay									-						╄		
	Semiahmoo Bay																	
	Cherry Point																	

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



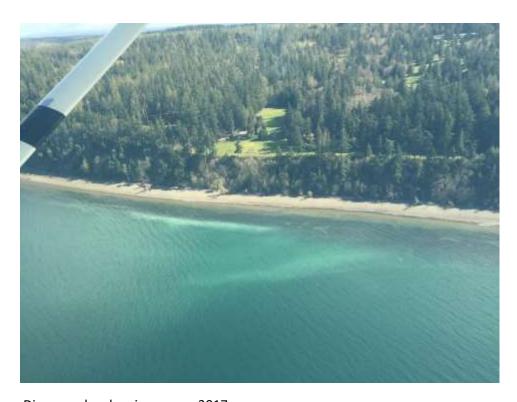
Above: Small herring spawning event at Birch Head 2019



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 andother 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).





