

Summary of Fish Catch Results for Watmough Bay, 2008 and 2009

Skagit River System Cooperative Research Program

May 2012

Beach seine sampling for fish was conducted at Watmough Bay as part of Washington State's Salmon Recovery Funding Board Project # 07-1863 N: *WRIA2 Habitat Based Assessment of Juvenile Salmon*, also locally known as the *Big Picture Project*.

Watmough Bay is located on the southeast side of Lopez Island within the San Juan Islands (Figure 1). Large and small net beach seines were used at Watmough Bay after methods described in Skagit System Cooperative Research Department (2003). We made 29 beach seine sets over the two-year study period. Beach seining occurred monthly March through September 2008 and April through October 2009.

The beach seine site at Watmough Bay consisted of gravel to mixed coarse substrate, usually without vegetative cover (such as eelgrass, kelp or other macro algae). Average maximum water depth was 2.2 meters and average salinity was 28.2 parts per thousand within the area seined. Water temperatures varied by month, ranging from a low of 8.2 °C in March 2008 to a high of 14.2 °C in July 2008. Water temperatures declined after the month of July in 2008, but in 2009 they remained high into October, averaging slightly less than 12 °C.

We caught a total of 53,038 fish from 44 different species or species groupings over the two-year study period, including five species of juvenile salmon and three species of forage fish (Table 1). The most abundant fish species was Pacific sand lance; a single beach seine set on June 8, 2008 captured 48,123 fish. We kept count of Dungeness (420) and red rock crab (16) caught by seines, as these species are of commercial and recreational interest.

Please refer to Beamer and Fresh (2012) for more information regarding timing, abundance, and habitat selection of focal fish species for the Big Picture Project. The focal species are: Chinook salmon, chum salmon, pink salmon, Pacific herring, surf smelt, Pacific sand lance, and hexagrammids (greenlings and lingcod).

References

Beamer, EM and KL Fresh. 2012. Juvenile Salmon and Forage Fish Presence and Abundance in Shoreline Habitats of the San Juan Islands, 2008-2009: Map Applications for selected fish species. Report to San Juan County Department of Community Development and Planning and San Juan County Marine Resources Committee. Friday Harbor, WA.

Skagit System Cooperative Research Department. 2003. Estuarine fish sampling methods. Skagit River System Cooperative. LaConner, WA. Available: <http://www.skagitcoop.org/documents>

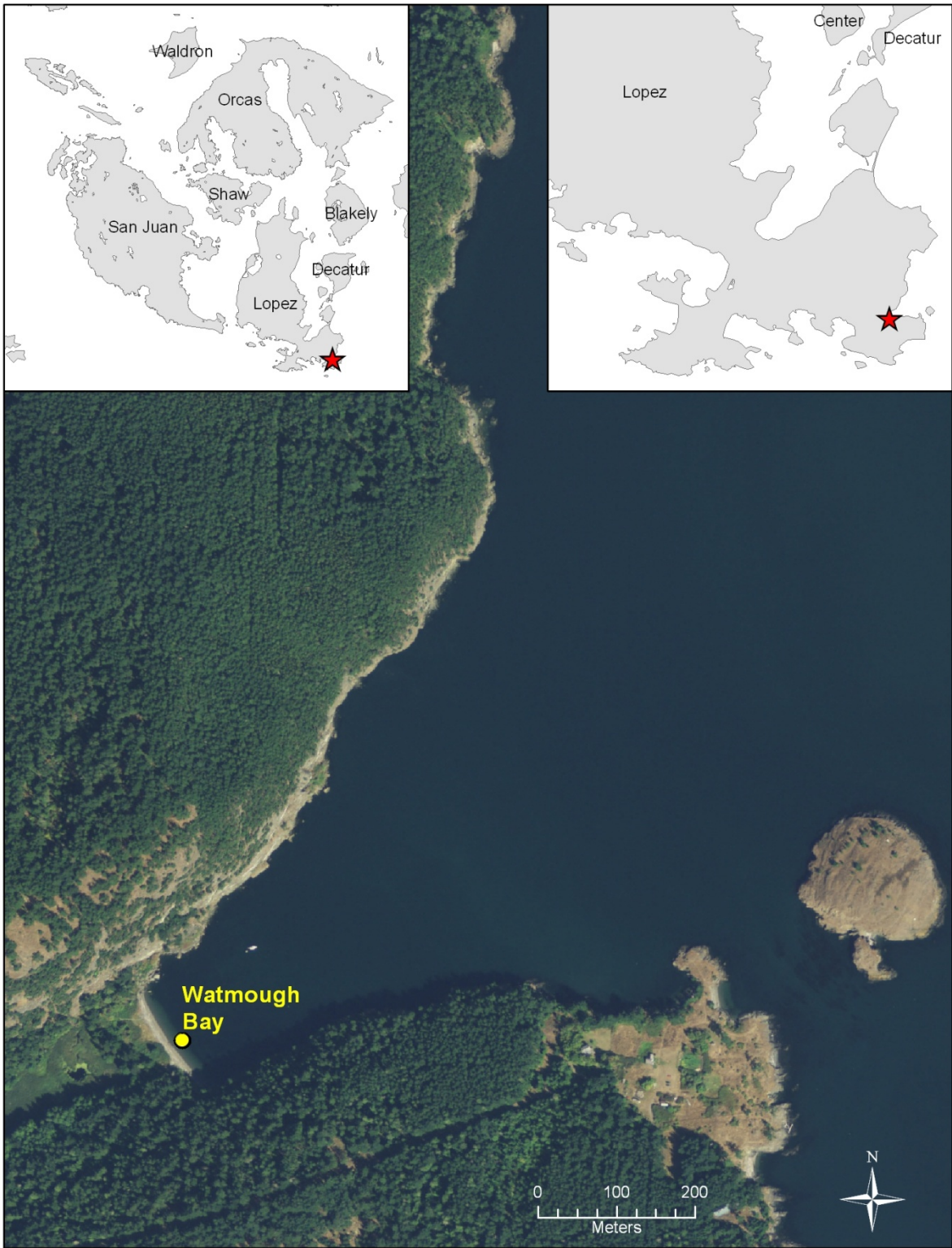


Figure 1. Location of Watmough Bay beach seine site.

Table 1. Fish catch summary for Watmough Bay beach seining, 2008 and 2009.

Assemblage Groupings	Taxonomic family	Genus species, age & mark	Common name	Total catch	Catch per set	Frequency in catch
Crabs	Canceridae	Cancer magister <6.5"	Dungeness crab, sublegal size	420	15.00	28.6%
		Cancer productus	Red rock crab	16	0.57	21.4%
Flatfish	Pleuronectiformes	Parophrys vetulus	English sole	32	1.14	50.0%
		Platichthys stellatus	Starry flounder	8	0.29	28.6%
	Bothidae	Citharichthys sordidus	Pacific sanddab	2	0.07	3.6%
	Pleuronectiformes	Other or unknown flatfish	Unidentified flatfish species	2	0.07	7.1%
Forage fishes	Ammodytidae	Ammodytes hexapterus adult body form	Pacific sand lance, adult body form	48593	1735.46	46.4%
	Clupeidae	Clupea pallasii adult body form	Pacific herring, adult body form	234	8.36	10.7%
	Osmeridae	Hypomesus pretiosus adult body form	Surf smelt, adult body form	50	1.79	28.6%
Greenlings/lingcod	Hexagrammidae	Hexagrammos spp	Unidentified greenling species	448	16.00	46.4%
		Hexagrammos stelleri	Whitespot greenling	79	2.82	32.1%
		Ophiodon elongatus	Lingcod	31	1.11	14.3%
		Hexagrammos decagrammus	Kelp greenling	27	0.96	25.0%
Gunnels and Pricklebacks	Stichaeidae	Lumpenus sagitta	Snake prickleback	1459	52.11	53.6%
	Pholidae	Apodichthys flavidus	Penpoint gunnel	83	2.96	42.9%
		Pholis laeta	Crescent gunnel	58	2.07	42.9%
		Pholis ornata	Saddleback gunnel	42	1.50	35.7%
		Pholis schultzi	Red gunnel	3	0.11	7.1%
Other – marine	Aulorhynchidae	Aulorhynchus flavidus	Tubesnout	3	0.11	3.6%
	Cyclopteridae	Eumicrotremus orbis	Pacific spiny lumpsucker	2	0.07	7.1%
	Syngnathidae	Syngnathus griseolineatus	Bay pipefish	1	0.04	3.6%
	Agonidae	Agonus acipenserinus	Sturgeon poacher	1	0.04	3.6%
Other – unknown	Unclassified Larval Fish	Larval Fish	Unidentified larval fish	240	8.57	14.3%
Pacific salmon	Salmonidae	Oncorhynchus keta age 0+	Chum salmon, subyearling	182	6.50	25.0%
		Oncorhynchus gorbuscha 0+	Pink salmon, subyearling	126	4.50	14.3%
		Oncorhynchus tshawytscha age 0+ no external mark	Chinook salmon, wild subyearling	40	1.43	35.7%
		Oncorhynchus tshawytscha age 0+ external mark	Chinook salmon, hatchery marked subyearling	12	0.43	17.9%
		Oncorhynchus kisutch age 1+ no external mark	Coho salmon, wild yearling	6	0.21	14.3%
		Oncorhynchus kisutch age 1+ external mark	Coho salmon, hatchery marked yearling	3	0.11	10.7%
		Oncorhynchus kisutch age 1+ cwt only	Coho salmon, hatchery marked yearling	1	0.04	3.6%
		Oncorhynchus nerka age 1+> no external mark	Sockeye salmon, wild yearling or older	1	0.04	3.6%
Rockfish	Scorpaenidae	Sebastes caurinus	Copper rockfish	1	0.04	3.6%
Sculpins	Cottidae	Unidentified cottid	Unidentified sculpin species	500	17.86	50.0%
		Gilbertidia sigalutes	Soft sculpin	172	6.14	25.0%
		Leptocottus armatus	Pacific staghorn sculpin	105	3.75	64.3%
		Myoxocephalus polyacanthocephalus	Great sculpin	68	2.43	50.0%
		Clinocottus acuticeps	Sharpnose sculpin	37	1.32	28.6%
		Enophrys bison	Buffalo sculpin	34	1.21	35.7%
		Arteidius fenestralis	Padded sculpin	28	1.00	28.6%
		Blepsias cirrhosus	Silverspotted sculpin	13	0.46	35.7%
	Liparidae	Snailfish spp	Unidentified snailfish species	13	0.46	10.7%
	Cottidae	Hemilepidotus spinosus	Brown Irish lord	2	0.07	3.6%
Hemitripteridae	Nautichthys oculofasciatus	Sailfin sculpin	1	0.04	3.6%	
Sea perches	Embiotocidae	Cymatogaster aggregata	Shiner perch	84	3.00	21.4%
		Embiotoca lateralis	Striped seaperch	1	0.04	3.6%
Sticklebacks	Gasterosteidae	Gasterosteus aculeatus	Three spined stickleback	9	0.32	17.9%
True cods	Gadidae	Unidentified gadid	Unidentified true cod species	193	6.89	14.3%
		Microgadus proximus	Pacific tomcod	7	0.25	3.6%
		Gadus macrocephalus	Pacific cod	1	0.04	3.6%