

Summary of Fish Catch Results for Deer Harbor SE, 2008 and 2009

Skagit River System Cooperative Research Program

December 2012

Beach seine sampling for fish was conducted at Deer Harbor SE 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*.

Deer Harbor SE is located on the southwest side of Orcas Island within the San Juan Islands (Figure 1). Large and small net beach seines were used at Deer Harbor SE after methods described in Skagit System Cooperative Research Department (2003). We made 18 beach seine sets over the two-year study period. Only large nets were used in 2008; in 2009 we used a combination of large and small nets. Beach seining occurred monthly March through September 2008 and April through October 2009 (with the exception of July 2009).

The beach seine site within Deer Harbor SE consisted of sand to mixed coarse substrate. Vegetative cover consisted of a mixture of eelgrass and other macro algae (33% of the time) or was without any cover (67% of the time). Average maximum water depth was 1.17 meters and average salinity was 30.3 parts per thousand within the area seined. Water temperature varied by month, but ranged from a low of 7.6 °C in March 2008 to a high of 15.5 °C in June 2009.

We caught a total of 1,090 fish from 25 different species or species groupings over the two-year study period, including one species of juvenile salmon and one species of forage fish (Table 1). The most abundant fish species was Pacific staghorn sculpin with a catch of 286 fish, present in 77.8 % of beach seine sets. They accounted for 26.2% of the total catch at this site. We kept count of Dungeness crab (43) caught by seines, as this species is 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>

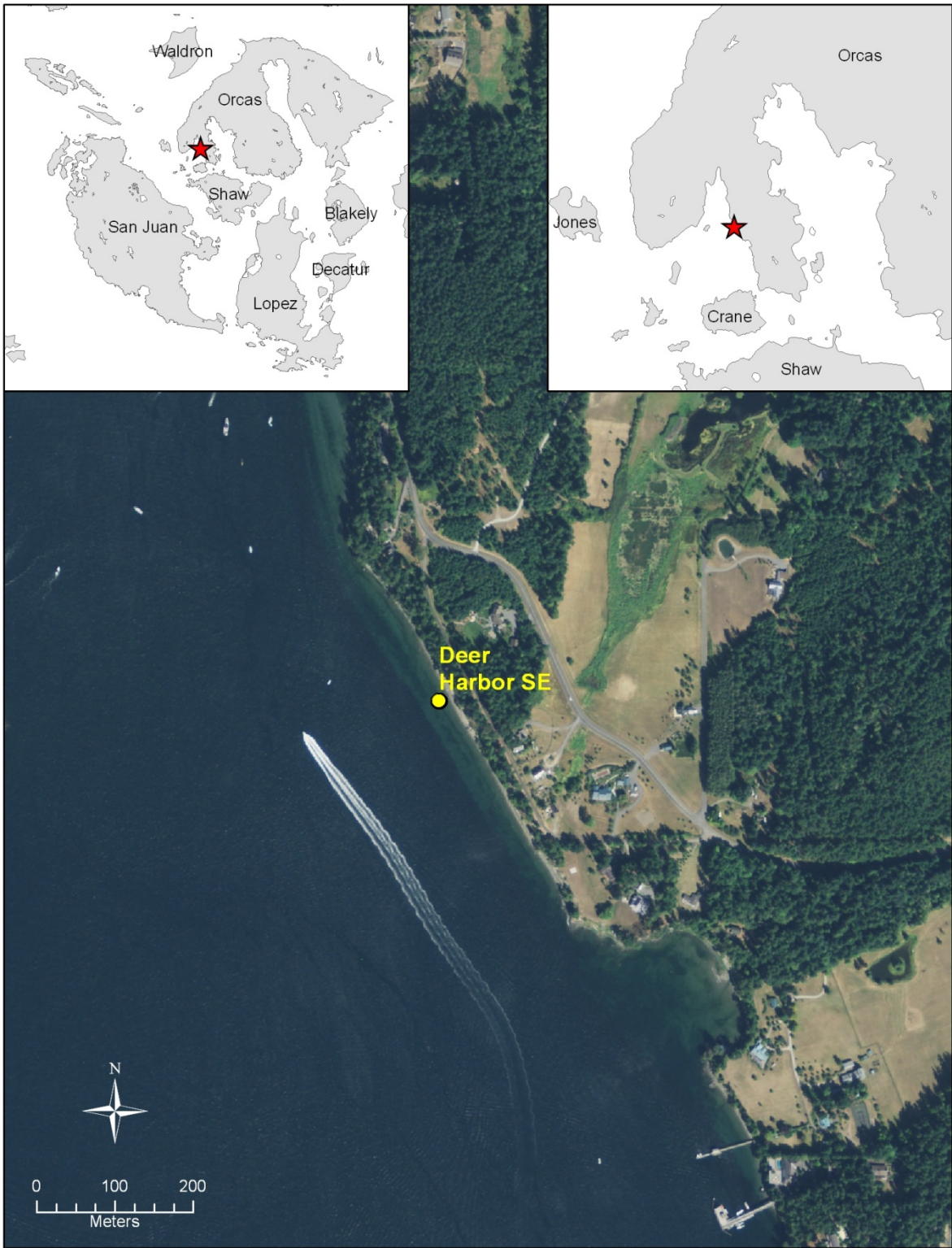


Figure 1. Location of Deer Harbor SE beach seine site.

Table 1. Fish catch summary for Deer Harbor SE beach seining, 2008 and 2009.

Assemblage Groupings	Taxonomic group	Genus species, age & mark	Common name	Species abbreviation	Total catch	Catch per set	Frequency in catch
Crabs and shrimp	Canceridae	Cancer magister <6.5"	Dungeness crab, sublegal size	DUNGI small	43	2.39	11.1%
Flatfish	Pleuronectiformes	Other or unknown flatfish post larval	Unidentified post larval flatfish species	O/U FLAT pl	3	0.17	5.6%
		Platichthys stellatus	Starry flounder	STARRY	8	0.44	33.3%
		Parophrys vetulus	English sole	ENG SOLE	24	1.33	33.3%
		Other or unknown flatfish	Unidentified flatfish species	O/U FLAT	27	1.50	33.3%
Forage fishes	Osmeridae	Hypomesus pretiosus post larval	Surf smelt, post larval juvenile	SMELT pl	1	0.06	5.6%
Greenlings/lingcod	Hexagrammidae	Hexagrammos spp	Unidentified greenling species	O/U GREEN-LING	13	0.72	22.2%
Gunnels and Pricklebacks	Pholidae	Apodichthys flavidus	Penpoint gunnel	PENPT GUNL	3	0.17	11.1%
		Pholis ornata	Saddleback gunnel	SADLBCK GUNL	3	0.17	11.1%
		Unidentified Gunnel Species	Unidentified gunnel species	GUNNEL	171	9.50	27.8%
	Stichaeidae	Lumpenus sagitta	Snake prickleback	SNAKE	30	1.67	22.2%
Other - marine	Aulorhynchidae	Aulorhynchus flavidus	Tubesnout	TUBESNT	1	0.06	5.6%
	Batrachoididae	Porichthys notatus	Plainfin midshipman	MIDSHIP-MAN	1	0.06	5.6%
	Cyclopteridae	Eumicrotremus orbis	Pacific spiny lumpsucker	LUMP	1	0.06	5.6%
	Syngnathidae	Syngnathus griseolineatus	Bay pipefish	PIPEFISH	9	0.50	16.7%
Pacific salmon	Salmonidae	Oncorhynchus gorbuscha age 0+	Pink salmon, subyearling	PK 0+	1	0.06	5.6%
Sculpins	Cottidae	Myoxocephalus polyacanthocephalus	Great sculpin	GRT SCULP	1	0.06	5.6%
		Blepsias cirrhosus	Silverspotted sculpin	SILVER SPOT SC	31	1.72	5.6%
		Clinocottus acuticeps	Sharpnose sculpin	SHARP-NOSE	47	2.61	61.1%
		Gilbertidia sigalutes	Soft sculpin	SOFT SCULP	48	2.67	11.1%
		Other or unknown Cottid	Unidentified sculpin species	O/U SCULP	231	12.83	33.3%
		Leptocottus armatus	Pacific staghorn sculpin	STAG	286	15.89	77.8%
	Hemitripteridae	Nautichthys oculo-fasciatus	Sailfin sculpin	SAILFIN	38	2.11	16.7%
Sea perches	Embiotocidae	Cymatogaster aggregata	Shiner perch	SHINER	36	2.00	27.8%
Sticklebacks	Gasterosteidae	Gasterosteus aculeatus	Three spined stickleback	STICKL	13	0.72	27.8%
True cods	Gadidae	Microgadus proximus	Pacific tomcod	TOMCOD	2	0.11	5.6%
		Other or unknown Cod	Unidentified true cod species	O/U COD	61	3.39	5.6%