

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

Skagit River System Cooperative Research Program

December 2012

Beach seine sampling for fish was conducted at Barlow 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*.

Barlow Bay is located on the southwest side of Lopez Island within the San Juan Islands (Figure 1). Large and small net beach seines were used at Barlow Bay after methods described in Skagit System Cooperative Research Department (2003). We made 37 beach seine sets over the two-year study period. Beach seining occurred monthly from March through September in both 2008 and 2009.

The beach seine site within Barlow Bay consisted of gravel to mixed coarse substrate, usually with green algae as the vegetative cover. Average maximum water depth was 1.08 meters deep and average salinity was 28.9 parts per thousand within the area seined. Water temperature varied by month, but ranged from a low of 7.5 °C in March 2009 to a high of 16.6 °C in July 2008. Water temperature declined after the month of July in 2008, cooling down to 12.9 °C by September.

We caught a total of 7,470 fish from 23 different species or species groupings over the two-year study period, including two species of juvenile salmon and two species of forage fish (Table 1). The most abundant fish species was Pacific herring with a total catch of 2,369 fish, present in 8.1% of the beach seine sets. Ninety-eight percent (2,332) of the herring were caught in one set on July 14, 2008. We kept count of Dungeness (46) and red rock crab (15) 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 Barlow Bay beach seine site.

Table 1. Fish catch summary for Barlow Bay 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	Cancridae	Cancer productus	Red rock crab	RED ROCK CRAB	15	0.41	5.4%
		Cancer magister <6.5"	Dungeness crab, sublegal size	DUNGI small	46	1.24	13.5%
Flatfish	Pleuronectiformes	Other or unknown flatfish post larval	Unidentified post larval flatfish species	O/U FLAT pl	4	0.11	5.4%
		Platichthys stellatus	Starry flounder	STARRY	16	0.43	13.5%
		Parophrys vetulus	English sole	ENG SOLE	140	3.78	32.4%
Forage fishes	Clupeidae	Clupea pallasii adult body form	Pacific herring, adult body form	HERR a	2369	64.03	8.1%
	Osmeridae	Hypomesus pretiosus adult body form	Surf smelt, adult body form	SMELT a	560	15.14	8.1%
	Osmeridae	Hypomesus pretiosus post larval	Surf smelt, post larval juvenile	SMELT pl	1219	32.95	21.6%
Greenlings/lingcod	Hexagrammidae	Hexagrammos stelleri	Whitespot greenling	WHITESPOT GR	1	0.03	2.7%
		Hexagrammos spp	Unidentified greenling species	O/U GREENLING	4	0.11	8.1%
Gunnels and Pricklebacks	Pholidae	Pholis schultzi	Red gunnel	RED GUNNEL	3	0.08	2.7%
		Pholis laeta	Crescent gunnel	CRES GUNL	17	0.46	13.5%
		Apodichthys flavidus	Penpoint gunnel	PENPT GUNL	75	2.03	21.6%
		Pholis ornata	Saddleback gunnel	SADLBCK GUNL	150	4.05	13.5%
	Stichaeidae	Lumpenus sagitta	Snake prickleback	SNAKE	5	0.14	2.7%
Other - marine	Gobiidae	Clevelandia ios	Arrow goby	ARROW GOBI	1	0.03	2.7%
Pacific salmon	Salmonidae	Oncorhynchus keta age 0+	Chum salmon, subyearling	CH 0+	1	0.03	2.7%
		Oncorhynchus gorbuscha age 0+	Pink salmon, subyearling	PK 0+	4	0.11	5.4%
Sculpins	Cottidae	Blepsias cirrhosus	Silverspotted sculpin	SILVER SPOT SC	1	0.03	2.7%
		Artedius fenestralis	Padded sculpin	PADD SCULP	2	0.05	5.4%
		Enophrys bison	Buffalo sculpin	BUFF	4	0.11	2.7%
		Myoxocephalus polyacanthocephalus	Great sculpin	GRT SCULP	10	0.27	5.4%
		Clinocottus acuticeps	Sharpnose sculpin	SHARPNOSE	85	2.30	40.5%
		Leptocottus armatus	Pacific staghorn sculpin	STAG	1846	49.89	97.3%
Sea perches	Embiotocidae	Cymatogaster aggregata	Shiner perch	SHINER	932	25.19	21.6%
Sticklebacks	Gasterosteidae	Gasterosteus aculeatus	Three spined stickleback	STICKL	21	0.57	29.7%