

# Summary of Fish Catch Results for NE Orcas, 2008 and 2009

Skagit River System Cooperative Research Program

January 2013

Beach seine sampling for fish was conducted at NE Orcas 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*.

NE Orcas is located on the northeast side of Orcas Island within the San Juan Islands (Figure 1). Large and small net beach seines were used at NE Orcas after methods described in Skagit System Cooperative Research Department (2003). We made 10 beach seine sets (9 large net and 1 small net) over the two-year study period. Beach seining occurred in April, May, July and August of 2008 and monthly from May through October in 2009.

The beach seine site at NE Orcas varied from mixed coarse to cobble substrate, usually with kelp as the dominant cover (80% of the time). Average maximum water depth was 5.42 meters and average salinity was 28.7 parts per thousand within the area seined. The water temperature varied by month, ranging from a low of 8.6 °C in April 2008 to a high of 17.0 °C in August 2009.

At NE Orcas we caught a total of 14,402 fish from 26 different species or species groupings over the two-year study period, including four species of juvenile salmon and three species of forage fish (Table 1). The most abundant fish species was Alaska pollock with a catch of 13,128 fish, present in 20.0% of the beach seine sets. The pollock were caught in two sets in May and June 2009 and accounted for 91.2% of the total catch.

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 NE Orcas beach seine site.

Table 1. Fish catch summary for NE Orcas 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
Forage fishes	Ammodytidae	Ammodytes hexapterus adult body form	Pacific sand lance, adult body form	LANCE a	79	7.90	20.0%
	Clupeidae	Clupea pallasii adult body form	Pacific herring, adult body form	HERR a	1	0.10	10.0%
	Osmeridae	Hypomesus pretiosus adult body form	Surf smelt, adult body form	SMELT a	1	0.10	10.0%
Greenlings/ lingcod	Hexagrammidae	Hexagrammos spp	Unidentified greenling species	O/U GREENLING	5	0.50	30.0%
Gunnels and Pricklebacks	Pholidae	Pholis laeta	Crescent gunnel	CRES GUNL	1	0.10	10.0%
		Unidentified Gunnel Species	Unidentified gunnel species	GUNNEL	6	0.60	20.0%
		Apodichthys flavidus	Penpoint gunnel	PENPT GUNL	9	0.90	40.0%
Other - marine	Aulorhynchidae	Aulorhynchus flavidus	Tubesnout	TUBESNT	2	0.20	20.0%
	Syngnathidae	Syngnathus griseolineatus	Bay pipefish	PIPEFISH	2	0.20	10.0%
Other - unknown	Unclassified Larval Fish	Larval Fish	Unidentified larval fish	O/U LARVAL FISH	1	0.10	10.0%
Pacific salmon	Salmonidae	Oncorhynchus tshawytscha age 0+ no external mark	Chinook salmon, wild subyearling	CK 0+ nem	7	0.70	30.0%
		Oncorhynchus tshawytscha age 0+ external mark	Chinook salmon, hatchery marked subyearling	CK 0+ em	1	0.10	10.0%
		Oncorhynchus gorbuscha age 0+	Pink salmon, subyearling	PK 0+	4	0.40	30.0%
		Oncorhynchus nerka age 0+	Sockeye salmon, subyearling	SOCK 0+	7	0.70	10.0%
		Oncorhynchus keta age 0+	Chum salmon, subyearling	CH 0+	838	83.80	30.0%
Sculpins	Cottidae	Enophrys bison	Buffalo sculpin	BUFF	1	0.10	10.0%
		Myoxocephalus polyacanthocephalus	Great sculpin	GRT SCULP	1	0.10	10.0%
		Artedius fenestralis	Padded sculpin	PADD SCULP	1	0.10	10.0%
		Other or unknown Cottid	Unidentified sculpin species	O/U SCULP	11	1.10	50.0%
		Clinocottus acuticeps	Sharpnose sculpin	SHARPNOSE	11	1.10	50.0%
Sea perches	Embiotocidae	Embiotoca lateralis	Striped seaperch	STRIPED	2	0.20	10.0%

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Sea perches	Embiotocidae	Cymatogaster aggregata	Shiner perch	SHINER	3	0.30	20.0%
		Brachyistius frenatus	Kelp perch	KELP PERCH	4	0.40	20.0%
Sticklebacks	Gasterosteidae	Gasterosteus aculeatus	Three spined stickleback	STICKL	9	0.90	30.0%
True cods	Gadidae	Microgadus proximus	Pacific tomcod	TOMCOD	52	5.20	30.0%
		Other or unknown Cod	Unidentified true cod species	O/U COD	215	21.50	20.0%
		Theragra chalcogramma	Alaska pollock	POLLOCK	13128	1312.80	20.0%