

Summary of Fish Catch Results for Culver Cove, 2008 and 2009

Skagit River System Cooperative Research Program

December 2012

Beach seine sampling for fish was conducted at Culver Cove 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*.

Culver Cove is located on the east side of Orcas Island (Figure 1). Small net beach seines were used at Culver Cove after methods described in Skagit System Cooperative Research Department (2003). We made 17 beach seine sets over the two-year study period. Beach seining occurred monthly from May through September in 2008 and April through September in 2009.

The beach seine site within Culver Cove consisted of gravel to mixed coarse and cobble substrate, usually without vegetative cover (such as eelgrass, kelp or other macro algae). Average maximum water depth was 1.04 meters deep and average salinity was 29.1 parts per thousand within the area seined. Water temperature varied by month, but ranged from a low of 8.1 °C in April 2009 to a high of 14.1 °C in July 2009. By the end of sampling season the water temperature cooled from the mid-summer highs to approximately 11 °C in both years.

We caught a total of 424 fish from 22 different species or species groupings over the two-year study period, including four species of juvenile salmon. Forage fish were not caught in either year (Table 1). The most abundant fish species was subyearling chum salmon with a catch of 131 fish, present in 17.6 % of the beach seine sets. The second most abundant fish species was subyearling pink salmon with a catch of 109 fish, also present in 17.6 % of the beach seine sets.

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>

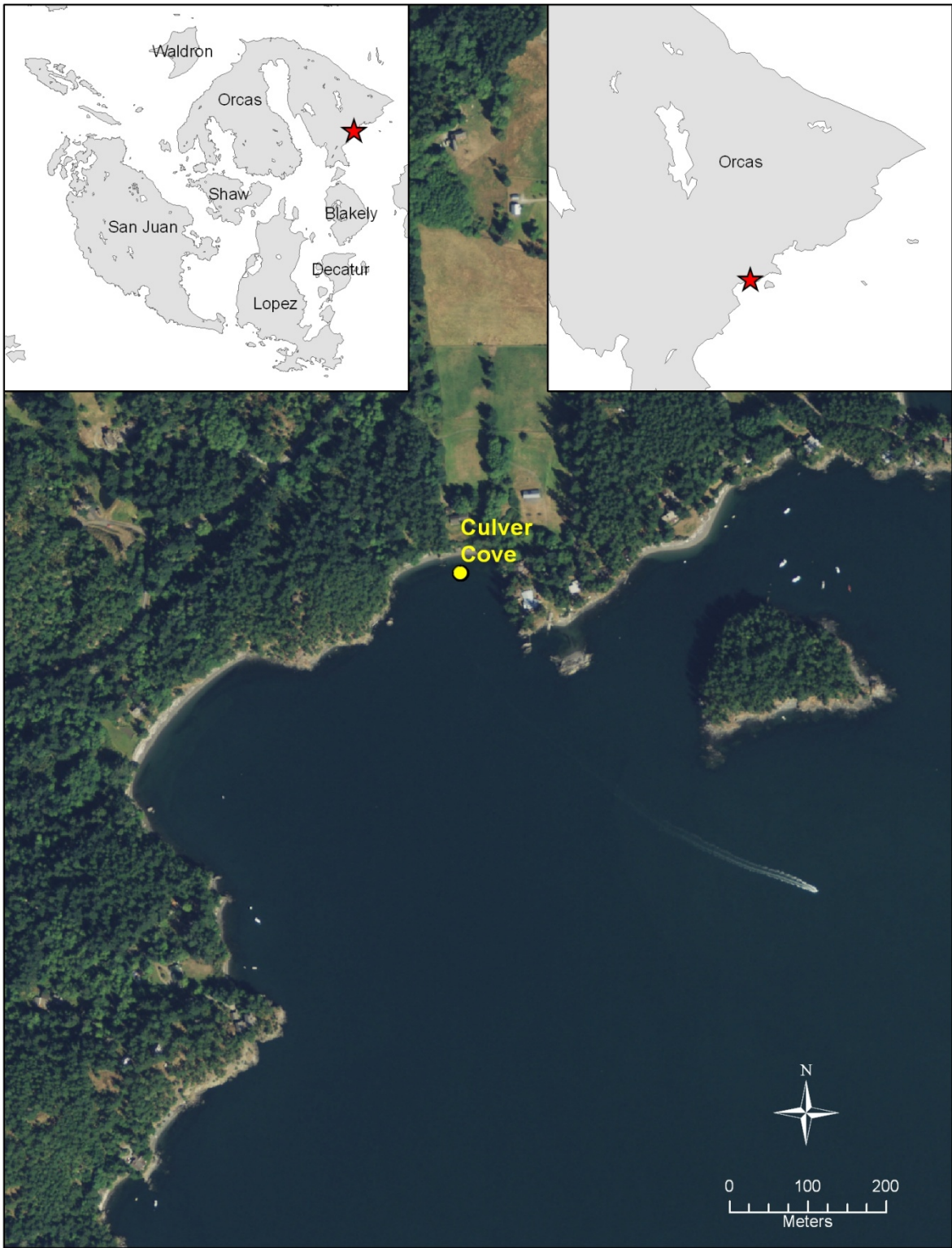


Figure 1. Location of Culver Cove beach seine site.

Table 1. Fish catch summary for Culver Cove 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
Flatfish	Pleuronectiformes	<i>Platichthys stellatus</i>	Starry flounder	STARRY	1	0.06	5.9%
		Other or unknown flatfish	Unidentified flatfish species	O/U FLAT	5	0.29	5.9%
Greenlings/ lingcod	Hexagrammidae	<i>Hexagrammos</i> spp	Unidentified greenling species	O/U GREEN-LING	9	0.53	11.8%
Gunnels and Pricklebacks	Pholidae	<i>Apodichthys flavidus</i>	Penpoint gunnel	PENPT GUNL	3	0.18	11.8%
		Unidentified Gunnel Species	Unidentified gunnel species	GUNNEL	8	0.47	29.4%
	Stichaeidae	<i>Lumpenus sagitta</i>	Snake prickleback	SNAKE	3	0.18	5.9%
Pacific salmon	Salmonidae	<i>Oncorhynchus tshawytscha</i> age 0+ no external mark	Chinook salmon, wild subyearling	CK 0+ nem	7	0.41	5.9%
		<i>Oncorhynchus tshawytscha</i> age 0+ external mark	Chinook salmon, hatchery marked subyearling	CK 0+ em	1	0.06	5.9%
		<i>Oncorhynchus kisutch</i> age 0+	Coho salmon, subyearling	CO 0+	5	0.29	5.9%
		<i>Oncorhynchus keta</i> age 0+	Chum salmon, subyearling	CH 0+	131	7.71	17.6%
		<i>Oncorhynchus gorbuscha</i> age 0+	Pink salmon, subyearling	PK 0+	109	6.41	17.6%
Sculpins	Cottidae	<i>Enophrys bison</i>	Buffalo sculpin	BUFF	1	0.06	5.9%
		<i>Myoxocephalus polyacanthocephalus</i>	Great sculpin	GRT SCULP	2	0.12	11.8%
		<i>Leptocottus armatus</i>	Pacific staghorn sculpin	STAG	2	0.12	5.9%
		<i>Blepsias cirrhosus</i>	Silverspotted sculpin	SILVER SPOT SC	4	0.24	11.8%
		<i>Gilbertidia sigalutes</i>	Soft sculpin	SOFT SCULP	4	0.24	5.9%
		Other or unknown Cottid	Unidentified sculpin species	O/U SCULP	47	2.76	11.8%
		<i>Clinocottus acuticeps</i>	Sharpnose sculpin	SHARP-NOSE	55	3.24	76.5%
	Hemipteridae	<i>Nautichthys oculofasciatus</i>	Sailfin sculpin	SAILFIN	8	0.47	5.9%
Sea perches	Embiotocidae	<i>Cymatogaster aggregata</i>	Shiner perch	SHINER	2	0.12	5.9%
Sticklebacks	Gasterosteidae	<i>Gasterosteus aculeatus</i>	Three spined stickleback	STICKL	4	0.24	11.8%
True cods	Gadidae	<i>Theragra chalcogramma</i>	Alaska pollock	POLLOCK	1	0.06	5.9%
		<i>Microgadus proximus</i>	Pacific tomcod	TOMCOD	12	0.71	5.9%