

# Summary of Fish Catch Results for Garrison Creek, 2008 and 2009

Skagit River System Cooperative Research Program

January 2013

Beach seine sampling for fish was conducted at Garrison Creek 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*.

Garrison Creek is located in the Garrison Bay area on the northwest side of San Juan Island within the San Juan Islands (Figure 1). Small net beach seines were used after methods described in Skagit System Cooperative Research Department (2003). Ten sets were made during the two-year study period. Beach seining at Garrison Creek occurred in April and May 2008 and then monthly from March through September 2009.

The beach seine site consisted of either mud (60% of the time) or mixed fines (40% of the time) substrate, always without vegetative cover (such as eelgrass, kelp or other macro algae) within the set area. The average maximum water depth was 0.37 meters; the average salinity within the area seined was 17.4 parts per thousand. The water temperatures varied by month, ranging from an average low of 7.0 °C in March 2009 to a high of 24.4 °C in July 2009. At the end of sampling in 2009 the temperature had cooled down to 13.3 °C. In 2008 the temperature was 10.8 °C in April and 13.7 °C in May.

At Garrison Creek we caught a total of 7,133 fish from 6 different species or species groupings over the two-year study period, including two species of forage fish (Table 1). Juvenile salmon were not caught. The most abundant fish species was surf smelt with a combined age class catch of 6,601 fish, present in 20.0% of beach seine sets. They accounted for 92.5% of the total catch at this site. All of the smelt were caught in 2008.

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>

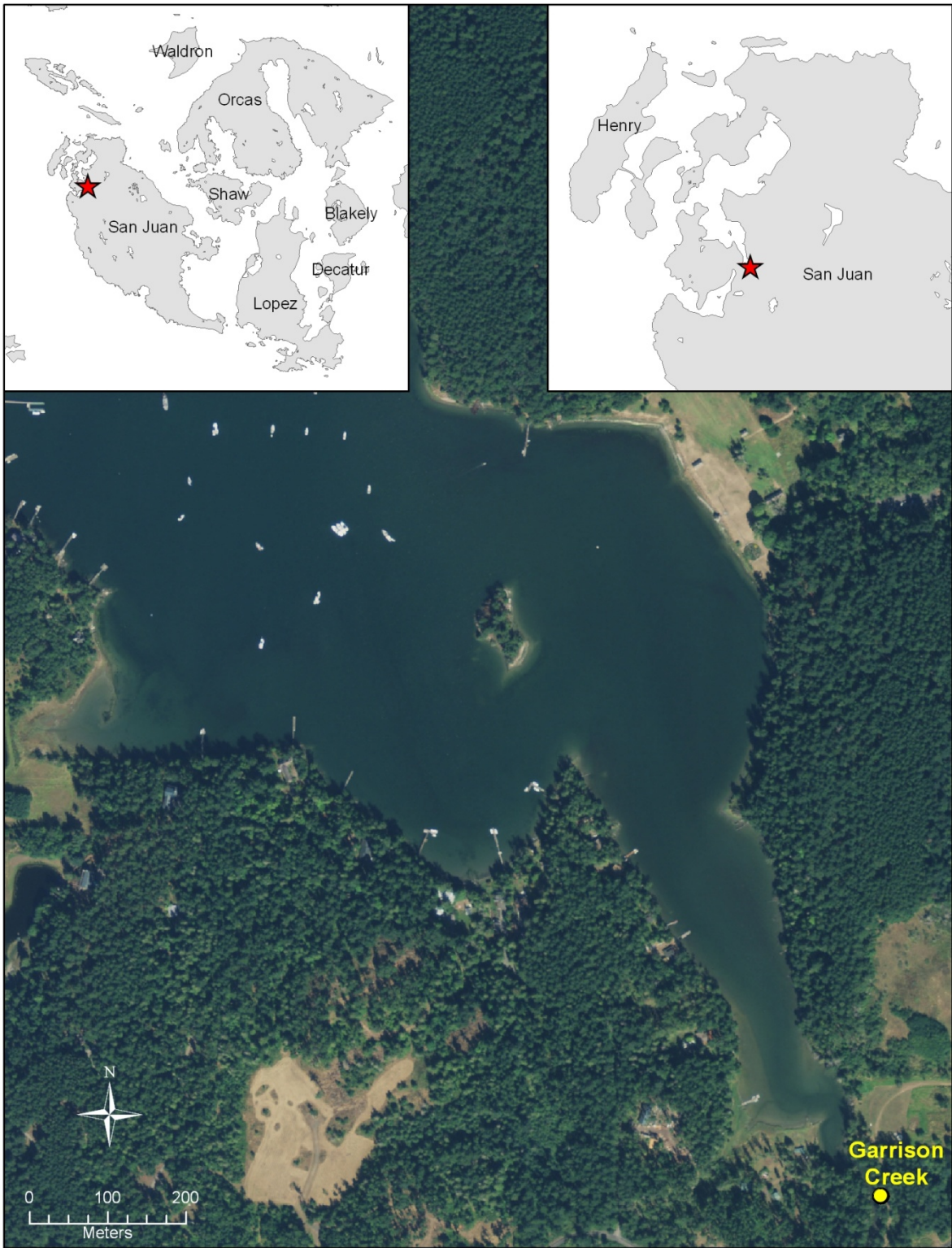


Figure 1. Location of Garrison Creek beach seine site.

Table 1. Fish catch summary for Garrison Creek 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	Clupeidae	Clupea pallasii adult body form	Pacific herring, adult body form	HERR a	21	2.10	10.0%
	Osmeridae	Hypomesus pretiosus post larval	Surf smelt, post larval juvenile	SMELT pl	1515	151.50	20.0%
		Hypomesus pretiosus adult body form	Surf smelt, adult body form	SMELT a	5086	508.60	20.0%
Gunnels and Pricklebacks	Stichaeidae	Lumpenus sagitta	Snake prickleback	SNAKE	42	4.20	10.0%
Other - marine	Gobiidae	Clevelandia ios	Arrow goby	ARROW GOBI	47	4.70	20.0%
Sculpins	Cottidae	Leptocottus armatus	Pacific staghorn sculpin	STAG	335	33.50	100.0%
Sea perches	Embiotocidae	Cymatogaster aggregata	Shiner perch	SHINER	87	8.70	20.0%