

# Summary of Fish Catch Results for Doe Bay, 2008 and 2009

Skagit River System Cooperative Research Program

December 2012

Beach seine sampling for fish was conducted at Doe 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*.

Doe Bay is located on the east side of Orcas Island within the San Juan Islands (Figure 1). Small net beach seines were used at Doe Bay after methods described in Skagit System Cooperative Research Department (2003). We made 22 beach seine sets over the two-year study period. Beach seining occurred monthly March through September in 2008 and April through September in 2009.

The beach seine site within Doe Bay consisted of sand to gravel substrate, usually without vegetative cover (such as eelgrass, kelp or other macro algae). Average maximum water depth was 0.82 meters deep and average salinity was 23.4 parts per thousand within the area seined. Water temperature varied by month, but ranged from a low of 7.2 °C in March 2008 to a high of 19.1 °C in July 2009. Water temperatures remained high through August of each year and then cooled to around 11 °C by the end of the sampling periods in September.

We caught a total of 2,705 fish from 16 different species or species groupings over the two-year study period, including two 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 2,146 fish, present in 95.5 % of beach seine sets. They accounted for 79.3% 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 Doe Bay beach seine site.

Table 1. Fish catch summary for Doe 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
Flatfish	Pleuronectiformes	Other or unknown flatfish	Unidentified flatfish species	O/U FLAT	1	0.05	4.5%
		Platichthys stellatus	Starry flounder	STARRY	1	0.05	4.5%
		Parophrys vetulus	English sole	ENG SOLE	5	0.23	9.1%
Forage fishes	Osmeridae	Hypomesus pretiosus post larval	Surf smelt, post larval juvenile	SMELT pl	18	0.82	4.5%
Greenlings/lingcod	Hexagrammidae	Hexagrammos spp	Unidentified greenling species	O/U GREEN-LING	1	0.05	4.5%
Gunnels and Pricklebacks	Pholidae	Apodichthys flavidus	Penpoint gunnel	PENPT GUNL	1	0.05	4.5%
		Unidentified Gunnel Species	Unidentified gunnel species	GUNNEL	21	0.95	9.1%
	Stichaeidae	Lumpenus sagitta	Snake prickleback	SNAKE	40	1.82	22.7%
Pacific salmon	Salmonidae	Oncorhynchus kisutch age 0+	Coho salmon, subyearling	CO 0+	1	0.05	4.5%
		Oncorhynchus keta age 0+	Chum salmon, subyearling	CH 0+	201	9.14	27.3%
Sculpins	Cottidae	Myoxocephalus polyacanthocephalus	Great sculpin	GRT SCULP	6	0.27	18.2%
		Clinocottus acuticeps	Sharpnose sculpin	SHARP-NOSE	28	1.27	27.3%
		Other or unknown Cottid	Unidentified sculpin species	O/U SCULP	75	3.41	31.8%
		Leptocottus armatus	Pacific staghorn sculpin	STAG	2146	97.55	95.5%
Sea perches	Embiotocidae	Cymatogaster aggregata	Shiner perch	SHINER	151	6.86	27.3%
Sticklebacks	Gasterosteidae	Gasterosteus aculeatus	Three spined stickleback	STICKL	9	0.41	22.7%