

# Summary of Fish Catch Results for San Juan County Park N and San Juan County Park S, 2009

Skagit River System Cooperative Research Program

January 2013

Beach seine sampling for fish was conducted at San Juan County Park N and San Juan County Park S 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*.

San Juan County Park is located on the west side of San Juan Island within the San Juan Islands (Figure 1). Two sites were sampled, one on either side of the peninsula. Large net and small net beach seines were used after methods described in Skagit System Cooperative Research Department (2003). Eight large net sets were made at San Juan County Park N and 15 small net sets were made at San Juan County Park S during the one-year study period. Beach seining occurred monthly April through June and August through October at San Juan County Park N, and monthly April through September at San Juan County Park S.

The beach seine site at both locations varied from sand to gravel to mixed coarse substrate. The vegetative cover within the set area at San Juan County Park N was either a mixture of algae or eelgrass and kelp (63% of the time) or was without cover (38% of the time). At San Juan County Park S the dominant vegetative cover varied from detritus (40% of the time) to green algae (20% of the time); there was no vegetative cover 40% of the time. The average maximum water depth was 3.80 meters (m) at San Juan County Park N and 0.72 m at San Juan County Park S. The average salinity within the area seined was 28.1 parts per thousand (ppt) at San Juan County Park N and 28.9 ppt at San Juan County Park S. The water temperature was similar at both sites and varied by month, ranging from a low of 8.3 °C in April to a high of 12.1 °C in September.

At San Juan County Park N we caught a total of 15,906 fish from 27 different species or species groupings over the one-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 catch of 7,597 fish, present in 25.0% of the beach seine sets. They were all caught in two sets in September and October (71 fish and 7,526 fish, respectively) and accounted for 47.8% of the total catch at this site.

At San Juan County Park S we caught a total of 1,338 fish from 18 different species or species groupings over the one-year study period, including two species of juvenile salmon and two species of forage fish (Table 2). The most abundant fish species was subyearling chum salmon with a catch of 481 fish, present in 26.7% of beach seine sets. They accounted for 35.9% of the total catch. We kept count of Dungeness crab (9) and red rock crab (2) 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>.

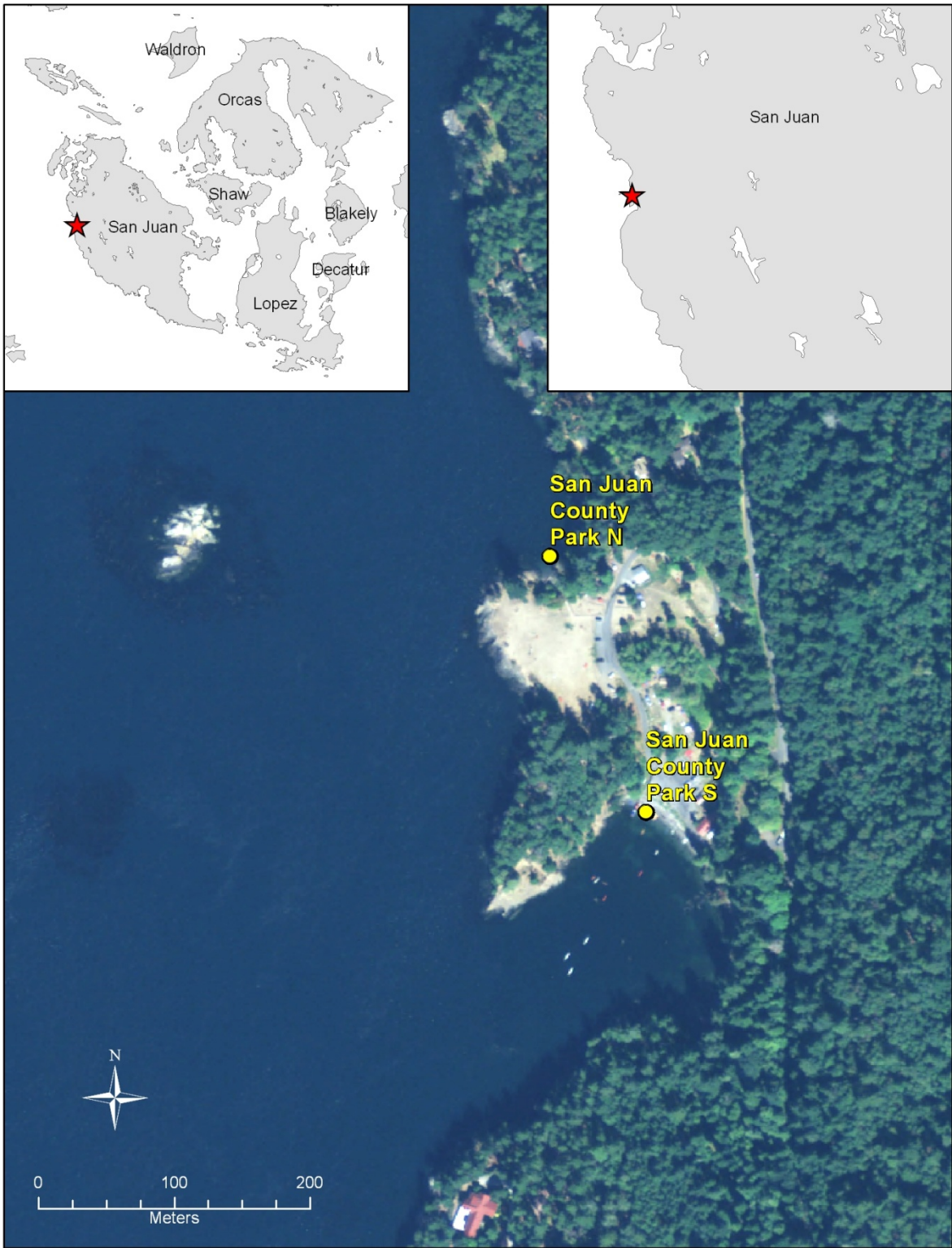


Figure 1. Location of San Juan County Park N and San Juan County Park S beach seine sites.

Table 1. Fish catch summary for San Juan County Park N beach seining, 2009.

Assemblage Groupings	Taxonomic group	Genus species, age & mark	Common name	Species abbreviation	Total catch	Catch per set	Frequency in catch
Flatfish	Pleuronectiformes	Pleuronichthys coenosus	CO sole	CO SOLE	1	0.13	12.5%
Forage fishes	Ammodytidae	Ammodytes hexapterus adult body form	Pacific sand lance, adult body form	LANCE a	272	34.00	37.5%
	Clupeidae	Clupea pallasii adult body form	Pacific herring, adult body form	HERR a	7597	949.63	25.0%
Greenlings/ lingcod	Hexagrammidae	Ophiodon elongatus	Lingcod	LINGCOD	4	0.50	25.0%
		Hexagrammos stelleri	Whitespot greenling	WHITESPOT GR	13	1.63	75.0%
		Hexagrammos decagrammus	Kelp greenling	KELP GRNLNG	17	2.13	62.5%
		Hexagrammos spp	Unidentified greenling species	O/U GREENLING	45	5.63	50.0%
Gunnels and Pricklebacks	Pholidae	Pholis ornata	Saddleback gunnel	SADLBCK GUNL	5	0.63	12.5%
		Pholis laeta	Crescent gunnel	CRES GUNL	8	1.00	37.5%
		Apodichthys flavidus	Penpoint gunnel	PENPT GUNL	23	2.88	62.5%
	Stichaeidae	Xiphister atropurpureus	Black prickleback	BLK PRICKLE	1	0.13	12.5%
Other - marine	Syngnathidae	Syngnathus griseolineatus	Bay pipefish	PIPEFISH	1	0.13	12.5%
	Trichodontidae	Trichodon trichodon	Pacific sandfish	SANDFISH	1	0.13	12.5%
Other - unknown	Unclassified Larval Fish	Larval Fish	Unidentified larval fish	O/U LARVAL FISH	1	0.13	12.5%
Pacific salmon	Salmonidae	Oncorhynchus kisutch age 1+ no external mark	Coho salmon, wild yearling	CO 1+ nem	1	0.13	12.5%
		Oncorhynchus keta age 0+	Chum salmon, subyearling	CH 0+	641	80.13	50.0%
Rockfish	Scorpaenidae	Sebastes caurinus	Copper rockfish	COPPER ROCKFSH	1	0.13	12.5%
Sculpins	Cottidae	Enophrys bison	Buffalo sculpin	BUFF	1	0.13	12.5%
		Other or unknown Cottid	Unidentified sculpin species	O/U SCULP	1	0.13	12.5%
		Gilbertidia sigalutes	Soft sculpin	SOFT SCULP	1	0.13	12.5%
		Arteidius fenestralis	Padded sculpin	PADD SCULP	6	0.75	37.5%
		Myoxocephalus polyacanthocephalus	Great sculpin	GRT SCULP	12	1.50	75.0%
		Blepsias cirrhosus	Silverspotted sculpin	SILVER SPOT SC	27	3.38	62.5%
Sea perches	Embiotocidae	Cymatogaster aggregata	Shiner perch	SHINER	3	0.38	25.0%
True cods	Gadidae	Theragra chalcogramma	Alaska pollock	POLLOCK	3	0.38	12.5%
		Other or unknown Cod	Unidentified true cod species	O/U COD	685	85.63	12.5%
		Gadus macrocephalus	Pacific cod	PACIFIC COD	6535	816.88	50.0%

Table 2. Fish catch summary for San Juan County Park S beach seining, 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	2	0.13	6.7%
		Cancer magister <6.5"	Dungeness crab, sublegal size	DUNGI small	9	0.60	20.0%
Flatfish	Pleuronectiformes	Platichthys stellatus	Starry flounder	STARRY	5	0.33	6.7%
		Parophrys vetulus	English sole	ENG SOLE	37	2.47	20.0%
Forage fishes	Ammodytidae	Ammodytes hexapterus post larval	Pacific sand lance, post larval juvenile	LANCE pl	4	0.27	6.7%
	Clupeidae	Clupea pallasii adult body form	Pacific herring, adult body form	HERR a	30	2.00	6.7%
Greenlings /lingcod	Hexagrammidae	Hexagrammos stelleri	Whitespot greenling	WHITESPOT GR	1	0.07	6.7%
Gunnels and Pricklebacks	Pholidae	Pholis laeta	Crescent gunnel	CRES GUNL	9	0.60	13.3%
	Pholidae	Apodichthys flavidus	Penpoint gunnel	PENPT GUNL	18	1.20	26.7%
	Pholidae	Pholis ornata	Saddleback gunnel	SADLBCK GUNL	42	2.80	33.3%
Pacific salmon	Salmonidae	Oncorhynchus tshawytscha age 0+ no external mark	Chinook salmon, wild subyearling	CK 0+ nem	1	0.07	6.7%
		Oncorhynchus keta age 0+	Chum salmon, subyearling	CH 0+	481	32.07	26.7%
Rockfish	Scorpaenidae	Other or unknown Scorpaenids	Unidentified rockfish species	O/U ROCKFISH	3	0.20	13.3%
Sculpins	Cottidae	Artedius fenestralis	Padded sculpin	PADD SCULP	1	0.07	6.7%
		Blepsias cirrhosus	Silverspotted sculpin	SILVER SPOT SC	4	0.27	13.3%
		Myoxocephalus polyacanthocephalus	Great sculpin	GRT SCULP	50	3.33	53.3%
		Other or unknown Cottid	Unidentified sculpin species	O/U SCULP	51	3.40	33.3%
		Leptocottus armatus	Pacific staghorn sculpin	STAG	239	15.93	86.7%
		Clinocottus acuticeps	Sharpnose sculpin	SHARPNOSE	358	23.87	80.0%
	Liparidae	Snailfish spp	Unidentified snailfish species	SNAILFISH	4	0.27	13.3%