

Summary of Fish Catch Results for West Sound N, 2008 and 2009

Skagit River System Cooperative Research Program

January 2013

Beach seine sampling for fish was conducted at West Sound N 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*.

West Sound N is located on the north end of West Sound on Orcas Island within the San Juan Islands (Figure 1). Large net beach seines were used after methods described in Skagit System Cooperative Research Department (2003). Fifteen sets were made during the two-year study period. Beach seining at West Sound N occurred monthly from March through September 2008 and April through October 2009.

The beach seine site varied from sand to gravel to mixed coarse substrate. The vegetative cover at West Sound N consisted of eelgrass or eelgrass mixed with kelp or algae (73% of the time), or green algae (7% of the time). The site was without vegetative cover within the set area 20% of the time. The average maximum water depth was 2.41 meters; the average salinity 30.0 parts per thousand. The water temperatures varied by month, ranging from an average low of 7.2 °C in April 2009 to a high of 22.2 °C in May 2008.

At West Sound N we caught a total of 5,029 fish from 42 different species or species groupings over the two-year study period, including three species of juvenile salmon and three species of forage fish (Table 1). The most abundant fish species was shiner perch with a catch of 1,683 fish, present in 66.7% of beach seine sets. They accounted for 33.5% of the total catch at this site. We kept count of Dungeness crab (27) caught by seines, as this species is 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>

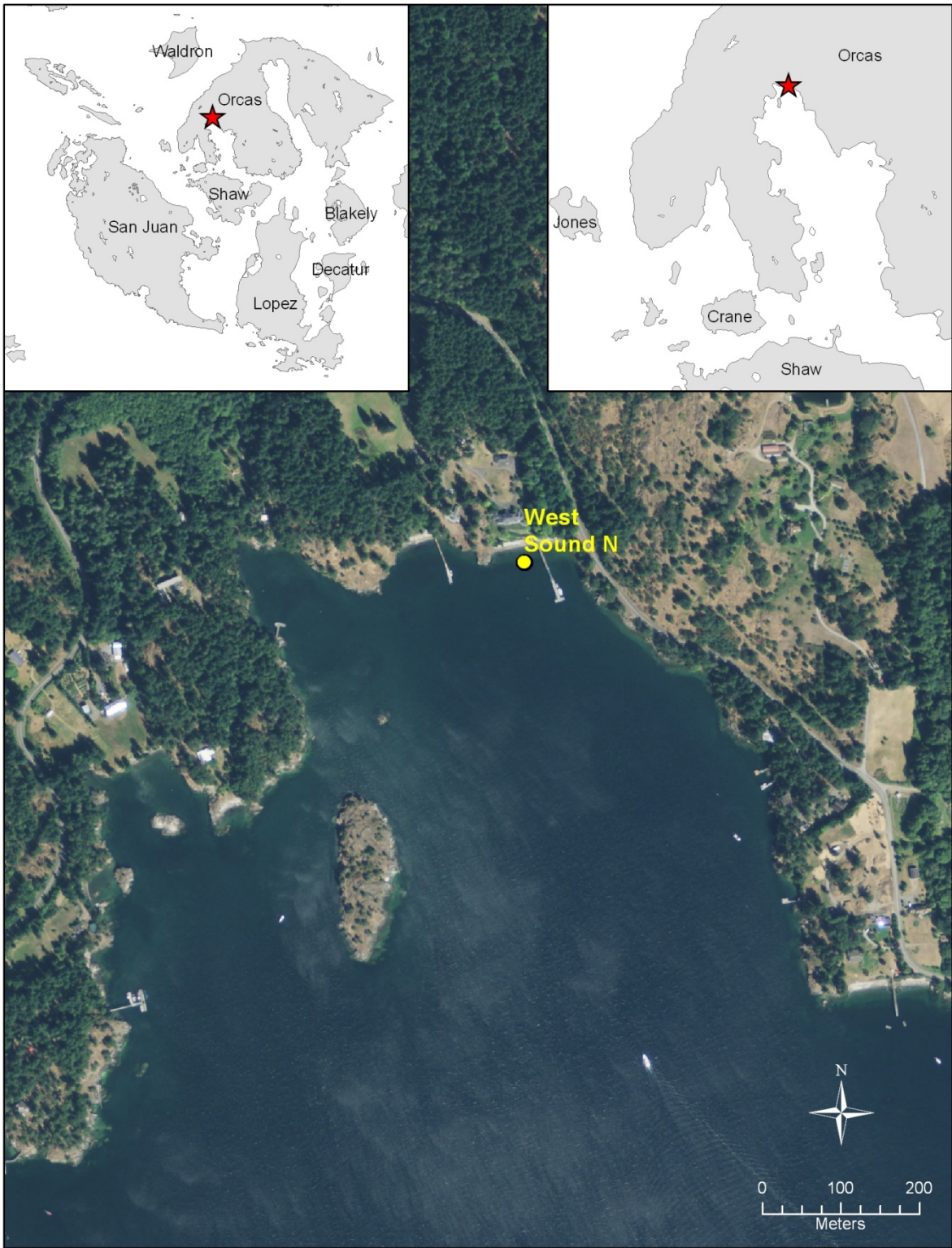


Figure 1. Location of West Sound N beach seine site.

Table 1. Fish catch summary for West Sound N 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 |
|--------------------------|-------------------|---------------------------------------|---|----------------------|-------------|---------------|--------------------|
| Crabs and shrimp | Cancriidae | Cancer magister <6.5" | Dungeness crab, sublegal size | DUNGI small | 27 | 1.80 | 40.0% |
| | Varunidae | Hemigrapsus nudus | Shore crab | SHORE CRAB | 4 | 0.27 | 6.7% |
| Flatfish | Bothidae | Psetichthys melanostictus | Sand sole | SAND SOLE | 2 | 0.13 | 13.3% |
| | Pleuronectiformes | Pleuronichthys coenosus | CO sole | CO SOLE | 1 | 0.07 | 6.7% |
| | | Lepidopsetta bilineata | Rock sole | ROCK SOLE | 1 | 0.07 | 6.7% |
| | | Parophrys vetulus | English sole | ENG SOLE | 3 | 0.20 | 13.3% |
| | | Platichthys stellatus | Starry flounder | STARRY | 7 | 0.47 | 26.7% |
| | | Other or unknown flatfish post larval | Unidentified post larval flatfish species | O/U FLAT pl | 3 | 0.20 | 6.7% |
| | | Other or unknown flatfish | Unidentified flatfish species | O/U FLAT | 11 | 0.73 | 26.7% |
| Forage fishes | Ammodytidae | Ammodytes hexapterus adult body form | Pacific sand lance, adult body form | LANCE a | 573 | 38.20 | 20.0% |
| | Clupeidae | Clupea pallasii post larval | Pacific herring, post larval juvenile | HERR pl | 1 | 0.07 | 6.7% |
| | | Clupea pallasii adult body form | Pacific herring, adult body form | HERR a | 51 | 3.40 | 6.7% |
| | Osmeridae | Hypomesus pretiosus post larval | Surf smelt, post larval juvenile | SMELT pl | 3 | 0.20 | 13.3% |
| | | Hypomesus pretiosus adult body form | Surf smelt, adult body form | SMELT a | 8 | 0.53 | 6.7% |
| Greenlings/lingcod | Hexagrammidae | Hexagrammos stelleri | Whitespot greenling | WHITESPOT GR | 11 | 0.73 | 13.3% |
| | | Ophiodon elongatus | Lingcod | LINGCOD | 14 | 0.93 | 26.7% |
| | | Hexagrammos spp | Unidentified greenling species | O/U GREENLING | 28 | 1.87 | 53.3% |
| Gunnels and Pricklebacks | Pholidae | Pholis ornata | Saddleback gunnel | SADLBCK GUNL | 9 | 0.60 | 20.0% |
| | | Apodichthys flavidus | Penpoint gunnel | PENPT GUNL | 16 | 1.07 | 33.3% |
| | | Pholis laeta | Crescent gunnel | CRES GUNL | 100 | 6.67 | 40.0% |
| | | Unidentified Gunnel Species | Unidentified gunnel species | GUNNEL | 207 | 13.80 | 40.0% |
| | Stichaeidae | Lumpenus sagitta | Snake prickleback | SNAKE | 96 | 6.40 | 46.7% |
| Other - marine | Aulorhynchidae | Aulorhynchus flavidus | Tubesnout | TUBESNT | 18 | 1.20 | 20.0% |
| | Batrachoididae | Porichthys notatus | Plainfin midshipman | MIDSHIPMAN | 217 | 14.47 | 53.3% |
| | Syngnathidae | Syngnathus griseolineatus | Bay pipefish | PIPEFISH | 264 | 17.60 | 80.0% |

| Assemblage Groupings | Taxonomic group | Genus species, age & mark | Common name | Species abbreviation | Total catch | Catch per set | Frequency in catch |
|----------------------|--------------------------|--|----------------------------------|----------------------|-------------|---------------|--------------------|
| Other - unknown | Unclassified Larval Fish | Larval Fish | Unidentified larval fish | O/U LARVAL FISH | 1 | 0.07 | 6.7% |
| Pacific salmon | Salmonidae | Oncorhynchus tshawytscha age 0+ no external mark | Chinook salmon, wild subyearling | CK 0+ nem | 2 | 0.13 | 6.7% |
| | | Oncorhynchus keta age 0+ | Chum salmon, subyearling | CH 0+ | 2 | 0.13 | 6.7% |
| | | Oncorhynchus gorbuscha age 0+ | Pink salmon, subyearling | PK 0+ | 3 | 0.20 | 13.3% |
| Rockfish | Scorpaenidae | Sebastes maliger | Quillback rockfish | QUILLBACK ROCKFISH | 1 | 0.07 | 6.7% |
| Sculpins | Cottidae | Enophrys bison | Buffalo sculpin | BUFF | 1 | 0.07 | 6.7% |
| | | Gilbertidia sigalutes | Soft sculpin | SOFT SCULP | 2 | 0.13 | 6.7% |
| | | Hemilepidotus hemilepidotus | Red Irish lord | RED IRISH LORD | 3 | 0.20 | 6.7% |
| | | Blepsias cirrhosus | Silverspotted sculpin | SILVER SPOT SC | 9 | 0.60 | 26.7% |
| | | Myoxocephalus polyacanthocephalus | Great sculpin | GRT SCULP | 13 | 0.87 | 53.3% |
| | | Artedius fenestralis | Padded sculpin | PADD SCULP | 17 | 1.13 | 20.0% |
| | | Leptocottus armatus | Pacific staghorn sculpin | STAG | 97 | 6.47 | 86.7% |
| | | Clinocottus acuticeps | Sharpnose sculpin | SHARPNOSE | 159 | 10.60 | 73.3% |
| | Other or unknown Cottid | Unidentified sculpin species | O/U SCULP | 165 | 11.00 | 73.3% | |
| | Hemitripterae | Nautichthys oculofasciatus | Sailfin sculpin | SAILFIN | 15 | 1.00 | 20.0% |
| Sea perches | Embiotocidae | Rhacochilus vacca | Pile perch | PILE PERCH | 1 | 0.07 | 6.7% |
| | | Embiotoca lateralis | Striped seaperch | STRIPED | 5 | 0.33 | 20.0% |
| | | Brachyistius frenatus | Kelp perch | KELP PERCH | 29 | 1.93 | 26.7% |
| | | Cymatogaster aggregata | Shiner perch | SHINER | 1683 | 112.20 | 66.7% |
| Sticklebacks | Gasterosteidae | Gasterosteus aculeatus | Three spined stickleback | STICKL | 1174 | 78.27 | 66.7% |
| True cods | Gadidae | Other or unknown Cod | Unidentified true cod species | O/U COD | 1 | 0.07 | 6.7% |
| | | Microgadus proximus | Pacific tomcod | TOMCOD | 2 | 0.13 | 13.3% |