

Summary of Fish Catch Results for James Island E and James Island W, 2008 and 2009

Skagit River System Cooperative Research Program

December 2012

Beach seine sampling for fish was conducted at James Island E and James Island W 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*.

James Island E and James Island W are located on James Island within the San Juan Islands (Figure 1). Sets were made on both sides of the isthmus of the island (E and W) using large net beach seines after methods described in Skagit System Cooperative Research Department (2003). We made 28 beach seine sets over the two-year study period. Beach seining occurred monthly from March through September 2008 and April through October 2009.

The beach seine sites at both James Island E and James Island W consisted primarily of gravel to mixed coarse substrate. Vegetative cover consisted of eelgrass or mixed eelgrass and macroalgae 57% of the time, and was without any cover 43% of the time (both sites). Average maximum water depth was 2.79 meters and average salinity was 30.4 parts per thousand within the area seined at both sites. Water temperatures varied by month, but ranged from a low of 7.5 °C in April 2008 to a high of 12.8 °C in September 2008. The temperatures did not vary more than a half a degree C between the sites on each sampling day.

At James Island E we caught a total of 3,524 fish from 37 different species or species groupings over the two-year study period, including four species of juvenile salmon and two species of forage fish (Table 1). The most abundant fish species was an unidentified cod with a catch of 2,683 fish, present in 14.3 % of the beach seine sets. They accounted for 76.1% of the total catch. We kept count of Dungeness crab (3) caught by seines, as this species is of commercial and recreational interest.

At James Island W we caught a total of 6,943 fish from 38 different species or species groupings over the two-year study period, including three species of juvenile salmon and three species of forage fish (Table 2). The most abundant fish species was Pacific sand lance with a catch of 2,637 fish, present in 21.4 % of the beach seine sets. They accounted for 38.0% of the total catch. Dungeness crab were not caught at this site.

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>

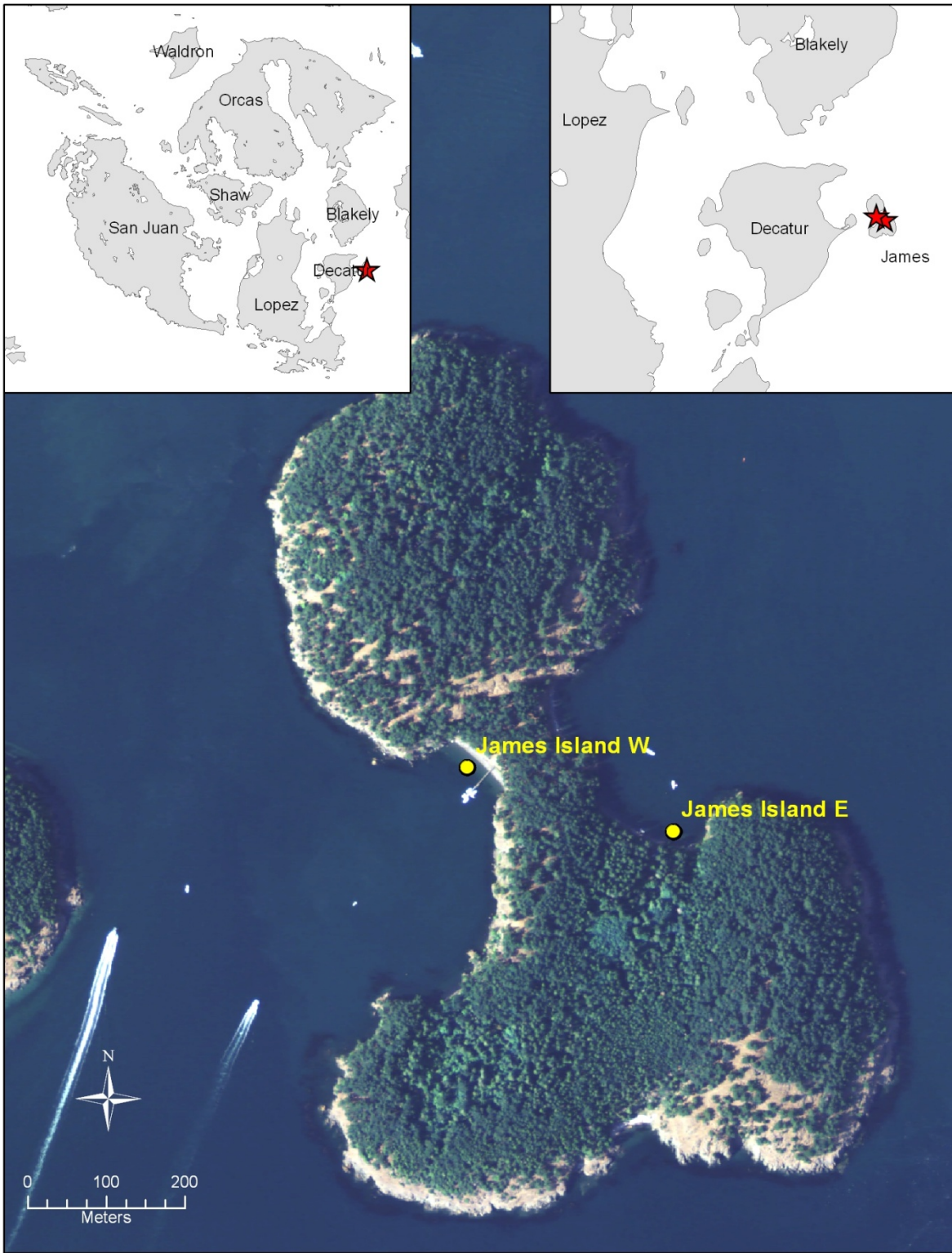


Figure 1. Location of James Island E and James Island W beach seine sites.

Table 1. Fish catch summary for James Island E 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	Cancridae	Cancer magister <6.5"	Dungeness crab, sublegal size	DUNGI small	3	0.21	7.1%
Flatfish	Pleuronectiformes	Pleuronichthys coenosus	CO sole	CO SOLE	1	0.07	7.1%
Forage fishes	Ammodytidae	Ammodytes hexapterus adult body form	Pacific sand lance, adult body form	LANCE a	4	0.29	14.3%
	Clupeidae	Clupea pallasii adult body form	Pacific herring, adult body form	HERR a	52	3.71	14.3%
Greenlings/ lingcod	Hexagrammidae	Hexagrammos decagrammus	Kelp greenling	KELP GRNLNG	1	0.07	7.1%
		Hexagrammos lagocephalus	Rock greenling	ROCK GREENLING	1	0.07	7.1%
		Ophiodon elongatus	Lingcod	LINGCOD	2	0.14	14.3%
		Hexagrammos stelleri	Whitespot greenling	WHITESPOT GR	26	1.86	35.7%
		Hexagrammos spp	Unidentified greenling species	O/U GREENLING	64	4.57	50.0%
Gunnels and Pricklebacks	Pholidae	Pholis ornata	Saddleback gunnel	SADLBCK GUNL	4	0.29	21.4%
		Pholis laeta	Crescent gunnel	CRES GUNL	13	0.93	14.3%
		Apodichthys flavidus	Penpoint gunnel	PENPT GUNL	18	1.29	28.6%
		Unidentified Gunnel Species	Unidentified gunnel species	GUNNEL	31	2.21	42.9%
	Stichaeidae	Xiphister atropurpureus	Black prickleback	BLK PRICKLE	1	0.07	7.1%
Other - marine	Aulorhynchidae	Aulorhynchus flavidus	Tubesnout	TUBESNT	5	0.36	14.3%
	Syngnathidae	Syngnathus griseolineatus	Bay pipefish	PIPEFISH	4	0.29	21.4%
Other - unknown	Unclassified Larval Fish	Larval Fish	Unidentified larval fish	O/U LARVAL FISH	1	0.07	7.1%
Pacific salmon	Salmonidae	Oncorhynchus tshawytscha age 0+ no external mark	Chinook salmon, wild subyearling	CK 0+ nem	2	0.14	7.1%
		Oncorhynchus tshawytscha age 0+ external mark	Chinook salmon, hatchery marked subyearling	CK 0+ em	2	0.14	7.1%
		Oncorhynchus kisutch age 1+ no external mark	Coho salmon, wild yearling	CO 1+ nem	2	0.14	7.1%
		Oncorhynchus keta age 0+	Chum salmon, subyearling	CH 0+	192	13.71	21.4%
		Oncorhynchus gorbuscha age 0+	Pink salmon, subyearling	PK 0+	214	15.29	28.6%
Rockfish	Scorpaenidae	Other or unknown Scorpaenids	Unidentified rockfish species	O/U ROCKFISH	1	0.07	7.1%
		Sebastes maliger	Quillback rockfish	QUILLBACK ROCKFISH	1	0.07	7.1%
Sculpins	Cottidae	Enophrys bison	Buffalo sculpin	BUFF	1	0.07	7.1%

Assemblage Groupings	Taxonomic group	Genus species, age & mark	Common name	Species abbreviation	Total catch	Catch per set	Frequency in catch
Sculpins	Cottidae	Hemilepidotus hemilepidotus	Red Irish lord	RED IRISH LORD	1	0.07	7.1%
		Hemilepidotus spinosus	Brown Irish lord	BROWN IR LORD	2	0.14	7.1%
		Blepsias cirrhosus	Silverspotted sculpin	SILVER SPOT SC	3	0.21	21.4%
		Leptocottus armatus	Pacific staghorn sculpin	STAG	4	0.29	14.3%
		Artedius fenestralis	Padded sculpin	PADD SCULP	16	1.14	28.6%
		Other or unknown Cottid	Unidentified sculpin species	O/U SCULP	19	1.36	42.9%
		Myoxocephalus polyacanthocephalus	Great sculpin	GRT SCULP	23	1.64	42.9%
		Clinocottus acuticeps	Sharpnose sculpin	SHARPNOSE	47	3.36	64.3%
	Hemitripteraidae	Nautichthys oculofasciatus	Sailfin sculpin	SAILFIN	7	0.50	7.1%
Liparidae	Snailfish spp	Unidentified snailfish species	SNAILFISH	1	0.07	7.1%	
Sticklebacks	Gasterosteidae	Gasterosteus aculeatus	Three spined stickleback	STICKL	1	0.07	7.1%
True cods	Gadidae	Theragra chalcogramma	Alaska pollock	POLLOCK	7	0.50	21.4%
		Microgadus proximus	Pacific tomcod	TOMCOD	67	4.79	28.6%
		Other or unknown Cod	Unidentified true cod species	O/U COD	2683	191.64	14.3%

Table 2. Fish catch summary for James Island W 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	Isopsetta isolepis	Butter sole	BUTTER SOLE	1	0.07	7.1%
		Other or unknown flatfish	Unidentified flatfish species	O/U FLAT	1	0.07	7.1%
Forage fishes	Ammodytidae	Ammodytes hexapterus adult body form	Pacific sand lance, adult body form	LANCE a	2637	188.36	21.4%
	Clupeidae	Clupea pallasii adult body form	Pacific herring, adult body form	HERR a	3	0.21	14.3%
	Osmeridae	Hypomesus pretiosus adult body form	Surf smelt, adult body form	SMELT a	4	0.29	7.1%
Greenlings/ lingcod	Hexagrammidae	Hexagrammos spp	Unidentified greenling species	O/U GREENLING	38	2.71	50.0%
		Hexagrammos stelleri	Whitespot greenling	WHITESPOT GR	17	1.21	35.7%
		Ophiodon elongatus	Lingcod	LINGCOD	2	0.14	14.3%
Gunnels and Pricklebacks	Pholidae	Apodichthys flavidus	Penpoint gunnel	PENPT GUNL	35	2.50	35.7%
		Pholis laeta	Crescent gunnel	CRES GUNL	74	5.29	28.6%
		Pholis ornata	Saddleback gunnel	SADLBCK GUNL	11	0.79	28.6%
		Unidentified Gunnel Species	Unidentified gunnel species	GUNNEL	31	2.21	42.9%
Other - marine	Aulorhynchidae	Aulorhynchus flavidus	Tubesnout	TUBESNT	79	5.64	50.0%
	Cyclopteridae	Eumicrotremus orbis	Pacific spiny lumpsucker	LUMP	1	0.07	7.1%
	Agonidae	Other or unknown Agonid	Unidentified poacher species	O/U POACHER	1	0.07	7.1%
	Syngnathidae	Syngnathus griseolineatus	Bay pipefish	PIPEFISH	2	0.14	14.3%
Other - unknown	Unclassified Larval Fish	Larval Fish	Unidentified larval fish	O/U LARVAL FISH	1	0.07	7.1%
Pacific salmon	Salmonidae	Oncorhynchus gorbuscha age 0+	Pink salmon, subyearling	PK 0+	284	20.29	28.6%
		Oncorhynchus keta age 0+	Chum salmon, subyearling	CH 0+	216	15.43	28.6%
		Oncorhynchus tshawytscha age 0+ no external mark	Chinook salmon, wild subyearling	CK 0+ nem	1	0.07	7.1%

Assemblage Groupings	Taxonomic group	Genus species, age & mark	Common name	Species abbreviation	Total catch	Catch per set	Frequency in catch
Rockfish	Scorpaenidae	Other or unknown Scorpaenids	Unidentified rockfish species	O/U ROCKFISH	2	0.14	7.1%
		Sebastes maliger	Quillback rockfish	QUILLBACK ROCKFISH	2	0.14	7.1%
Sculpins	Cottidae	Arteidius fenestralis	Padded sculpin	PADD SCULP	22	1.57	35.7%
		Blepsias cirrhosus	Silverspotted sculpin	SILVER SPOT SC	14	1.00	35.7%
		Clinocottus acuticeps	Sharpnose sculpin	SHARPNOSE	93	6.64	78.6%
		Enophrys bison	Buffalo sculpin	BUFF	2	0.14	14.3%
		Hemilepidotus hemilepidotus	Red Irish lord	RED IRISH LORD	4	0.29	14.3%
		Hemilepidotus spinosus	Brown Irish lord	BROWN IR LORD	5	0.36	7.1%
		Leptocottus armatus	Pacific staghorn sculpin	STAG	14	1.00	35.7%
		Myoxocephalus polyacanthocephalus	Great sculpin	GRT SCULP	32	2.29	57.1%
		Other or unknown Cottid	Unidentified sculpin species	O/U SCULP	50	3.57	50.0%
	Liparidae	Snailfish spp	Unidentified snailfish species	SNAILFISH	5	0.36	7.1%
Sea perches	Embiotocidae	Cymatogaster aggregata	Shiner perch	SHINER	5	0.36	14.3%
		Embiotoca lateralis	Striped seaperch	STRIPED	7	0.50	28.6%
Sticklebacks	Gasterosteidae	Gasterosteus aculeatus	Three spined stickleback	STICKL	8	0.57	21.4%
True cods	Gadidae	Microgadus proximus	Pacific tomcod	TOMCOD	57	4.07	28.6%
		Other or unknown Cod	Unidentified true cod species	O/U COD	2265	161.79	14.3%
		Theragra chalcogramma	Alaska pollock	POLLOCK	917	65.50	21.4%