

FINAL

**King County Marine Habitat Report
Prepared in support of the Wastewater Treatment Division
Habitat Conservation Plan and
the Brightwater Marine Outfall Siting Study**

**Appendix C
Washington State Department of Fish and Wildlife
Video and Trawl Data**

January 2001

Submitted to:

King County Department of Natural Resources
201 South Jackson Street
Seattle, WA 98104

Submitted by:

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WASHINGTON STATE DEPARTMENT OF FISH AND WILDLIFE
VIDEO AND TRAWL SURVEYS
(from Wayne Palsson, WDFW)

The following codes were used to describe information collected by the WDFW during video and trawl surveys performed between 1987 and 1995.

VIDEO SURVEY CODES

STATION

6 digit numeric (123456)

123 = last 3 digits of chart number

456 = station number

SUB1 (dominant substrate type)

SUB2 (secondary substrate type)

1 = artificial (pilings, tires, ships, etc)

2 = hardpan (e.g., sandstone)

3 = bedrock

4 = boulder (rocks >256 mm/10" diam.)

5 = cobble (rocks 64-256 mm diam.)

6 = mixed coarse (cobble/gravel/shell)

7 = gravel (small rocks and pebbles 4-64 mm diam.)

8 = sand (or sand/shell)

9 = mud (or mud/shell)

REEF (derived field from SUB1 and SUB2)

1 = Rocky reef (if SUB1 or SUB2 = 2, 3 or 4)

2 = Coarse (cobble, pebble, gravel)

3 = Fine sand/mud

4 = Artificial

BIO (derive field from BIO1 and BIO2)

1 = encrusting organism complex

0 = other

BIOCOVER 1 (BIO1) (dominant cover type)

BIOCOVER 2 (BIO2) (secondary cover type)

1 = bare (<10% cover)

2 = kelp

3 = ulva

4 = other algae

5 = algal mat

6 = scallops

7 = barnacles

8 = anemones (mainly *Metridium*)

9 = encrusting organism complex (e.g., barnacle/anemone/hydroid/Solus sp.-cucumber/bryozoan)

10 = eelgrass

11 = ophiuroids

12 = tube worms, worm tubes

13 = debris, detritus

14 = sea pens/sea whips

15 = sponges

99 = unidentified

Abbreviation	Species	HCP Target Species?
COP	copper rockfish	Yes
QB	quillback rockfish	Yes
BLK	black rockfish	Yes
BRN	brown rockfish	Yes
BLU	blue rockfish	Yes
TIG	tiger rockfish	Yes
YT	yellowtail rockfish	Yes
YE	yelloweye rockfish	Yes
PUG	puget sound rockfish	No
UNIDRF	unidentified rockfish	?
LC	lingcod	Yes
KG	kelp greenling	No
WSG	whitespotted greenling	No
PG	painted greenling	No
SSP	striped seaperch	No
PP	pile perch	No
SP	shiner perch	No
KP	kelp perch	No
FF	flatfish	No
RURC	red sea urchin	No
GURC	green urchin	No
CUC	red sea cucumber	No
DUNG	dungeness crab	No

Notes:

1. Depth is given in feet (not normalized to mean low tide)
2. Densities are given in fish per square meter
3. Video plots generally ranged from 20 to 60 square meters

TRAWL SURVEY CODES

STATIONID

5th place corresponds to depth:

- S = 5 – 20 fms
- T = 21 – 40 fms
- U = 41 – 60 fms
- V = > 60 fms

Notes:

1. Density is given in both individual and kg per hectare
2. Trawl station areas were generally 0.7 to 2 hectares
3. PACIFIC WHITING (HAKE) = Pacific Hake
4. ROCKFISH UNIDEN. = HCP target species?
5. SMELT UNIDEN. = HCP target species?

King County Marine Habitat Report - Appendix C
WDFW Video Data: Subset for King County HCP Area
GIS Number Codes for Figure 3-15, Figure 4-8, and Figure 5-9.

GIS Number	Date	Year	Station	GMR	Latitude (N)	Longitude (W)	Depth	SUB1	SUB2	REEF	BIO	BIO1	BIO2	COP	QB	BLK	BRN	BLU	TIG	YT	YE	PUG
1	7/7/95	95	473002.3	5	47.68708	-122.40567	29	7	4	1	1	2	0	0.000	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	7/7/95	95	473003.3	5	47.74982	-122.38598	66	7	4	1	1	2	0	0.000	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	7/7/95	95	473003.4	5	47.75005	-122.38593	48	4	9	1	1	8	0	0.000	2.122	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	7/10/95	95	473001.0	5	47.99990	-122.31008	47	4	8	1	1	8	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	7/10/95	95	473003.0	5	47.99970	-122.31112	46	4	8	1	1	9	0	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	7/11/95	95	473005.0	5	47.89770	-122.39428	0	4	8	1	1	9	0	0.159	0.000	0.000	0.080	0.000	0.000	0.000	0.000	0.000
39	7/12/95	95	473040.0	5	47.96270	-122.62722	44	5	4	1	1	9	0	0.168	0.102	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46	7/12/95	95	473078.2	5	47.96415	-122.62055	37	3	8	1	0	4	0	0.168	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
62	7/17/95	95	473001.2	5	47.67273	-122.42313	69	8	1	4	0	1	0	0.283	0.849	0.000	0.141	0.000	0.000	0.000	0.000	0.000
63	7/17/95	95	473001.3	5	47.67907	-122.41238	18	3	3	1	1	2	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	7/17/95	95	473002.1	5	47.68338	-122.40772	21	7	4	1	1	2	0	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
69	7/17/95	95	473005.1	5	47.80795	-122.39405	17	4	8	1	1	2	0	0.000	0.424	0.000	0.000	0.000	0.000	0.000	0.000	0.000
71	7/17/95	95	473005.3	5	47.81245	-122.38840	41	9	1	4	1	2	4	0.106	0.318	0.000	0.000	0.000	0.000	0.000	0.000	0.000
87	7/18/95	95	473033.0	5	47.90445	-122.42630	60	9	8	3	0	1	0	0.042	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000
113	7/20/95	95	474002.0	5	47.64055	-122.42722	77	1	8	4	1	9	8	0.000	0.239	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120	7/20/95	95	474007.0	5	47.62717	-122.39315	30	4	4	1	1	2	0	0.063	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
123	7/20/95	95	474005.0	5	47.62098	-122.36603	43	4	9	1	1	9	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
128	7/20/95	95	474010.0	5	47.62650	-122.37935	39	8	1	4	1	9	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140	8/1/95	95	471019.0	5	48.09152	-122.69007	35	1	8	4	0	0	0	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142	8/1/95	95	471026.0	5	48.04358	-122.59623	20	7	4	1	1	2	0	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
173	8/2/95	95	471014.0	5	48.13763	-122.75987	29	8	8	3	1	2	0	0.260	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180	8/3/95	95	471003.0	5	48.13687	-122.68113	100	4	3	1	1	8	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
187	8/3/95	95	471022.0	5	48.13575	-122.66738	113	7	4	1	1	9	0	0.106	0.141	0.000	0.000	0.000	0.000	0.000	0.000	0.000
190	8/3/95	95	471004.0	5	48.15680	-122.67093	28	4	7	1	1	8	2	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.181
196	8/3/95	95	471009.0	5	48.16155	-122.68555	30	7	7	2	1	2	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
215	8/17/95	95	472021.0	5	48.40987	-122.63520	62	3	4	1	1	9	0	0.000	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.106
249	8/22/95	95	441003.0	5	48.18688	-122.53775	54	4	1	4	1	8	0	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.000
250	8/22/95	95	441004.0	5	48.05447	-122.37083	120	2	4	1	1	8	0	0.255	0.611	0.000	0.000	0.000	0.000	0.000	0.000	0.000
253	8/22/95	95	441002.0	5	48.18648	-122.53813	52	1	9	4	1	8	0	0.030	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000
260	8/23/95	95	441006.0	5	48.05778	-122.37857	120	8	8	3	0	1	0	0.126	0.505	0.000	0.000	0.000	0.000	0.000	0.000	0.000
261	8/23/95	95	441007.0	5	48.05678	-122.35597	78	9	3	1	0	1	0	0.102	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
263	8/28/95	95	474086.0	5	47.59870	-122.49585	47	4	8	1	1	2	8	0.000	0.000	0.000	0.080	0.000	0.000	0.000	0.000	0.000
264	8/28/95	95	474087.0	5	47.59955	-122.49627	52	4	4	1	0	1	0	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
281	8/29/95	95	474082.0	5	47.59870	-122.48240	55	8	8	3	1	8	0	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
292	8/29/95	95	474079.0	5	47.59428	-122.47745	41	3	4	1	1	9	0	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
293	8/29/95	95	474081.0	5	47.59723	-122.48100	35	3	4	1	1	2	0	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
313	8/31/95	95	474067.0	5	47.56547	-122.53150	33	1	6	4	1	9	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
323	8/31/95	95	474071.0	5	47.56832	-122.51642	59	9	4	1	1	8	4	0.253	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
327	9/5/95	95	474012.0	5	47.59813	-122.34122	85	4	9	1	0	1	0	0.000	0.000	0.000	0.042	0.000	0.000	0.000	0.000	0.042
329	9/5/95	95	474013.0	5	47.59022	-122.34735	39	9	4	1	0	4	0	0.000	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000
333	9/5/95	95	474017.0	5	47.58678	-122.36152	52	9	1	4	1	8	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
338	9/6/95	95	474019.0	5	47.57160	-122.42062	79	5	1	4	1	8	0	0.051	0.153	0.000	0.153	0.000	0.000	0.000	0.000	0.000
339	9/6/95	95	474020.0	5	47.55775	-122.40920	52	4	4	1	1	8	9	0.000	0.084	0.000	0.000	0.000	0.000	0.000	0.000	0.000
340	9/6/95	95	474020.0	5	47.55737	-122.40772	45	4	4	1	1	9	0	0.000	0.000	0.000	0.106	0.000	0.000	0.000	0.000	0.000
341	9/6/95	95	474021.0	5	47.55650	-122.40710	66	4	4	1	1	8	9	0.051	0.051	0.000	0.051	0.000	0.000	0.000	0.000	0.000

King County Marine Habitat Report - Appendix C
WDFW Video Data: Subset for King County HCP Area
GIS Number Codes for Figure 3-15, Figure 4-8, and Figure 5-9.

GIS Number	Date	Year	Station	GMR	Latitude (N)	Longitude (W)	Depth	SUB1	SUB2	REEF	BIO	BIO1	BIO2	COP	QB	BLK	BRN	BLU	TIG	YT	YE	PUG
342	9/6/95	95	474022.0	5	47.54007	-122.40038	34	8	1	4	1	2	0	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
343	9/6/95	95	474065.0	5	47.52873	-122.49168	62	5	1	4	1	8	0	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
347	9/6/95	95	474065.0	5	47.52973	-122.49490	59	1	5	4	1	9	0	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
349	9/6/95	95	474075.0	5	47.59237	-122.47537	43	6	1	4	0	4	0	0.102	0.000	0.000	0.102	0.000	0.000	0.000	0.000	0.000
352	9/7/95	95	474064.0	5	47.51880	-122.47193	64	4	5	1	1	8	0	0.181	0.181	0.000	0.000	0.000	0.000	0.000	0.000	0.000
353	9/7/95	95	474133.0	5	47.52060	-122.47378	71	5	4	1	1	9	0	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
354	9/7/95	95	474134.0	5	47.51788	-122.47237	56	5	4	1	1	9	0	0.000	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000
357	10/3/95	95	473004.2	5	47.78395	-122.39623	34	1	8	4	1	8	0	0.052	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000
362	10/4/95	95	473039.0	5	47.96658	-122.67508	68	7	4	1	1	9	0	0.030	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000
367	10/4/95	95	473078.4	5	47.95943	-122.67673	50	3	4	1	1	2	0	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
369	10/4/95	95	473081.0	5	47.90595	-122.37608	40	3	4	1	1	2	4	0.301	0.000	0.121	0.000	0.000	0.000	0.000	0.000	0.000

King County Marine Habitat Report - Appendix C
WDFW Video Data: Subset for King County HCP Area
GIS Number Codes for Figure 3-15, Figure 4-8, and Figure 5-9.

GIS Number	Date	Year	Station	UNIDRF	LC	KG	WSG	PG	SSP	PP	SP	KP	FF	RURC	GURC	CUC	DUNG
1	7/7/95	95	473002.3	0.000	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	7/7/95	95	473003.3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	7/7/95	95	473003.4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	7/10/95	95	473001.0	0.495	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	7/10/95	95	473003.0	0.000	0.000	0.000	0.000	0.306	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	7/11/95	95	473005.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39	7/12/95	95	473040.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46	7/12/95	95	473078.2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
62	7/17/95	95	473001.2	0.990	0.000	0.141	0.000	0.000	0.000	0.000	0.000	0.000	0.283	0.000	0.000	0.000	0.000
63	7/17/95	95	473001.3	0.141	0.000	0.000	0.000	0.000	0.000	0.141	0.000	0.141	0.000	0.000	0.000	0.000	0.000
65	7/17/95	95	473002.1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
69	7/17/95	95	473005.1	0.212	0.000	0.000	0.000	0.106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
71	7/17/95	95	473005.3	0.000	0.106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.106	0.000
87	7/18/95	95	473033.0	0.084	0.000	0.000	0.000	0.000	0.168	0.000	0.000	0.000	0.126	0.000	0.000	0.000	0.000
113	7/20/95	95	474002.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120	7/20/95	95	474007.0	0.000	0.000	0.000	0.000	0.000	0.252	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
123	7/20/95	95	474005.0	0.000	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
128	7/20/95	95	474010.0	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140	8/1/95	95	471019.0	0.000	0.084	0.000	0.000	0.000	0.000	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142	8/1/95	95	471026.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.000	0.000	0.000	0.000	0.000
173	8/2/95	95	471014.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180	8/3/95	95	471003.0	0.000	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
187	8/3/95	95	471022.0	0.000	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
190	8/3/95	95	471004.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
196	8/3/95	95	471009.0	0.000	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
215	8/17/95	95	427021.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.212	0.000	0.000
249	8/22/95	95	441003.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
250	8/22/95	95	441004.0	0.255	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
253	8/22/95	95	441002.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.000
260	8/23/95	95	441006.0	0.253	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
261	8/23/95	95	441007.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.051
263	8/28/95	95	474086.0	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.477	0.000	0.000	0.000	0.000	0.000	0.000
264	8/28/95	95	474087.0	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
281	8/29/95	95	474082.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
292	8/29/95	95	474079.0	0.030	0.000	0.000	0.000	0.181	0.151	0.000	0.060	0.000	0.000	0.000	0.000	0.121	0.000
293	8/29/95	95	474081.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.318	0.035	0.000	0.000	0.000	0.000	0.000
313	8/31/95	95	474067.0	0.000	0.000	0.000	0.000	0.000	0.248	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
323	8/31/95	95	474071.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
327	9/5/95	95	474012.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
329	9/5/95	95	474013.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
333	9/5/95	95	474017.0	0.000	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.253	0.000	0.000	0.000	0.000	0.042
338	9/6/95	95	474019.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
339	9/6/95	95	474020.0	0.000	0.000	0.000	0.000	0.000	0.253	0.126	42.049	0.000	0.000	0.000	0.000	0.000	0.000
340	9/6/95	95	474020.0	0.000	0.000	0.000	0.000	0.000	0.283	0.000	0.460	0.000	0.000	0.000	0.000	0.035	0.000
341	9/6/95	95	474021.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.102	0.102	0.000	0.000	0.000	0.000	0.000

King County Marine Habitat Report - Appendix C
WDFW Video Data: Subset for King County HCP Area
GIS Number Codes for Figure 3-15, Figure 4-8, and Figure 5-9.

GIS Number	Date	Year	Station	UNIDRF	LC	KG	WSG	PG	SSP	PP	SP	KP	FF	RURC	GURC	CUC	DUNG
342	9/6/95	95	474022.0	0.030	0.000	0.000	0.000	0.000	0.121	0.090	0.060	0.000	0.060	0.000	0.000	0.000	0.000
343	9/6/95	95	474065.0	0.000	0.000	0.000	0.000	0.000	0.000	0.177	0.000	0.000	0.000	0.000	0.000	0.000	0.000
347	9/6/95	95	474065.0	0.000	0.000	0.000	0.000	0.000	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
349	9/6/95	95	474075.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
352	9/7/95	95	474064.0	0.000	0.000	0.000	0.000	0.030	0.723	0.151	0.000	0.000	0.000	0.000	0.000	0.000	0.000
353	9/7/95	95	474133.0	0.000	0.000	0.000	0.000	0.000	0.141	0.212	0.000	0.000	0.035	0.000	0.000	0.000	0.000
354	9/7/95	95	474134.0	0.000	0.000	0.000	0.000	0.000	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
357	10/3/95	95	473004.2	0.078	0.026	0.000	0.000	0.000	0.338	0.130	0.130	0.000	0.000	0.000	0.000	0.000	0.000
362	10/4/95	95	473039.0	0.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
367	10/4/95	95	473078.4	0.071	0.000	0.035	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.071	0.000
369	10/4/95	95	473081.0	0.000	0.000	0.000	0.000	0.090	0.241	0.151	0.000	0.000	0.000	0.000	0.000	0.000	0.000

GIS Number	Survey ID	Year	Region	Station ID	Haul ID	Date	Name	Density (Ind./hectare)	Density (kg/hectare)	Average Latitude (N)	Average Longitude (W)
231	87CS	1987	CS	87CSV01	CS-H035	87/10/09	PACIFIC COD	11.7958	7.9040	48.04234	-122.63575
231	87CS	1987	CS	87CSV01	CS-H035	87/10/09	WALLEYE POLLOCK	11.2594	0.7296	48.04234	-122.63575
231	87CS	1987	CS	87CSV01	CS-H035	87/10/09	LINGCOD	1.0723	2.6265	48.04234	-122.63575
231	87CS	1987	CS	87CSV01	CS-H035	87/10/09	QUILLBACK ROCKFISH	24.6634	16.8295	48.04234	-122.63575
231	87CS	1987	CS	87CSV01	CS-H035	87/10/09	REDSTRIPE ROCKFISH	0.5362	0.0730	48.04234	-122.63575
232	87CS	1987	CS	87CST01	CS-H036	87/10/09	PACIFIC COD	16.9576	7.4497	47.99675	-122.65675
232	87CS	1987	CS	87CST01	CS-H036	87/10/09	QUILLBACK ROCKFISH	12.7182	6.3843	47.99675	-122.65675
234	87CS	1987	CS	87CSS01	CS-H037	87/10/09	PACIFIC HERRING	34.2713	0.5623	48.00633	-122.71025
234	87CS	1987	CS	87CSS01	CS-H037	87/10/09	PACIFIC COD	6.5626	0.3738	48.00633	-122.71025
234	87CS	1987	CS	87CSS01	CS-H037	87/10/09	WALLEYE POLLOCK	5.8334	0.0629	48.00633	-122.71025
236	87CS	1987	CS	87CSV02	CS-H039	87/10/09	WALLEYE POLLOCK	14.1785	4.5938	47.87842	-122.35833
236	87CS	1987	CS	87CSV02	CS-H039	87/10/09	PACIFIC WHITING (HAKE)	6.7516	3.1544	47.87842	-122.35833
236	87CS	1987	CS	87CSV02	CS-H039	87/10/09	QUILLBACK ROCKFISH	0.6752	0.4287	47.87842	-122.35833
237	87CS	1987	CS	87CSV03	CS-H040	87/10/12	PACIFIC COD	1.1574	1.8375	47.73133	-122.40292
237	87CS	1987	CS	87CSV03	CS-H040	87/10/12	WALLEYE POLLOCK	28.3570	5.3813	47.73133	-122.40292
237	87CS	1987	CS	87CSV03	CS-H040	87/10/12	PACIFIC WHITING (HAKE)	6.3659	3.1501	47.73133	-122.40292
238	87CS	1987	CS	87CSS02	CS-H041	87/10/12	PACIFIC COD	1.1218	0.6361	47.70725	-122.39042
238	87CS	1987	CS	87CSS02	CS-H041	87/10/12	QUILLBACK ROCKFISH	1.6827	0.0255	47.70725	-122.39042
258	87CS	1987	CS	87CSV04	CS-H056	87/10/15	WALLEYE POLLOCK	19.3931	4.9613	47.98625	-122.29367
258	87CS	1987	CS	87CSV04	CS-H056	87/10/15	PACIFIC WHITING (HAKE)	12.4116	7.7410	47.98625	-122.29367
258	87CS	1987	CS	87CSV04	CS-H056	87/10/15	QUILLBACK ROCKFISH	6.2058	2.6390	47.98625	-122.29367
259	87CS	1987	CS	87CSV05	CS-H057	87/10/15	WALLEYE POLLOCK	17.4803	4.8480	48.00934	-122.34375
259	87CS	1987	CS	87CSV05	CS-H057	87/10/15	PACIFIC WHITING (HAKE)	18.9786	3.7380	48.00934	-122.34375
259	87CS	1987	CS	87CSV05	CS-H057	87/10/15	QUILLBACK ROCKFISH	0.9989	0.7249	48.00934	-122.34375
260	87CS	1987	CS	87CSU01	CS-H058	87/10/15	PACIFIC COD	3.0382	6.2016	48.06417	-122.31192
260	87CS	1987	CS	87CSU01	CS-H058	87/10/15	WALLEYE POLLOCK	11.3934	4.0311	48.06417	-122.31192
260	87CS	1987	CS	87CSU01	CS-H058	87/10/15	PACIFIC WHITING (HAKE)	218.7536	54.4364	48.06417	-122.31192
260	87CS	1987	CS	87CSU01	CS-H058	87/10/15	QUILLBACK ROCKFISH	15.1912	6.2361	48.06417	-122.31192
260	87CS	1987	CS	87CSU01	CS-H058	87/10/15	REDSTRIPE ROCKFISH	0.7596	0.1034	48.06417	-122.31192
261	87CS	1987	CS	87CST02	CS-H059	87/10/15	PACIFIC COD	2.0637	4.8989	48.13775	-122.43067
261	87CS	1987	CS	87CST02	CS-H059	87/10/15	WALLEYE POLLOCK	1.3758	0.0312	48.13775	-122.43067
261	87CS	1987	CS	87CST02	CS-H059	87/10/15	PACIFIC WHITING (HAKE)	66.0388	6.2718	48.13775	-122.43067
261	87CS	1987	CS	87CST02	CS-H059	87/10/15	SMELT UNIDEN.	0.6879	0.0156	48.13775	-122.43067
262	87CS	1987	CS	87CSU02	CS-H060	87/10/16	PACIFIC COD	8.1847	8.1001	47.84817	-122.49067
262	87CS	1987	CS	87CSU02	CS-H060	87/10/16	WALLEYE POLLOCK	46.1320	11.9477	47.84817	-122.49067
262	87CS	1987	CS	87CSU02	CS-H060	87/10/16	PACIFIC WHITING (HAKE)	63.9895	32.2317	47.84817	-122.49067
262	87CS	1987	CS	87CSU02	CS-H060	87/10/16	QUILLBACK ROCKFISH	4.4844	1.1475	47.84817	-122.49067
263	87CS	1987	CS	87CST03	CS-H061	87/10/16	PACIFIC HERRING	36.4590	2.0290	47.83267	-122.49350
263	87CS	1987	CS	87CST03	CS-H061	87/10/16	PACIFIC COD	3.5057	2.7319	47.83267	-122.49350
263	87CS	1987	CS	87CST03	CS-H061	87/10/16	WALLEYE POLLOCK	241.1902	2.7319	47.83267	-122.49350
263	87CS	1987	CS	87CST03	CS-H061	87/10/16	PACIFIC WHITING (HAKE)	20.3329	1.7174	47.83267	-122.49350
263	87CS	1987	CS	87CST03	CS-H061	87/10/16	QUILLBACK ROCKFISH	53.2862	16.4709	47.83267	-122.49350
264	87CS	1987	CS	87CSU03	CS-H062	87/10/16	PACIFIC HERRING	15.5288	1.7028	47.96667	-122.49317
264	87CS	1987	CS	87CSU03	CS-H062	87/10/16	WALLEYE POLLOCK	43.8957	11.6438	47.96667	-122.49317
264	87CS	1987	CS	87CSU03	CS-H062	87/10/16	PACIFIC WHITING (HAKE)	72.2428	5.5370	47.96667	-122.49317
264	87CS	1987	CS	87CSU03	CS-H062	87/10/16	ROCKFISH UNIDEN.	9.4523	1.4210	47.96667	-122.49317
265	87CS	1987	CS	87CSS08	CS-H063	87/10/16	PACIFIC HERRING	229.0560	6.0722	47.97375	-122.50625
265	87CS	1987	CS	87CSS08	CS-H063	87/10/16	PACIFIC COD	4.7555	6.0722	47.97375	-122.50625
275	87CS	1987	CS	87CSV06	CS-H071	87/10/22	PACIFIC COD	5.3169	5.1681	47.86450	-122.39559
275	87CS	1987	CS	87CSV06	CS-H071	87/10/22	WALLEYE POLLOCK	3.0382	1.3093	47.86450	-122.39559

GIS Number	Survey ID	Year	Region	Station ID	Haul ID	Date	Name	Density (Ind./hectare)	Density (kg/hectare)	Average Latitude (N)	Average Longitude (W)
275	87CS	1987	CS	87CSV06	CS-H071	87/10/22	PACIFIC WHITING (HAKE)	19.7486	9.1302	47.86450	-122.39559
276	87CS	1987	CS	87CSV04	CS-H072	87/10/23	PACIFIC WHITING (HAKE)	13.6040	6.0473	48.22400	-122.59367
278	87CS	1987	CS	87CSV05	CS-H073	87/10/23	PACIFIC COD	0.7292	2.4807	48.22784	-122.55708
278	87CS	1987	CS	87CSV05	CS-H073	87/10/23	WALLEYE POLLOCK	2.1875	0.8600	48.22784	-122.55708
278	87CS	1987	CS	87CSV05	CS-H073	87/10/23	PACIFIC WHITING (HAKE)	8.7501	5.3912	48.22784	-122.55708
278	87CS	1987	CS	87CSV05	CS-H073	87/10/23	QUILLBACK ROCKFISH	0.7292	0.2976	48.22784	-122.55708
279	87CS	1987	CS	87CSV03	CS-H074	87/10/23	PACIFIC HERRING	2.1136	0.1918	48.25642	-122.56134
279	87CS	1987	CS	87CSV03	CS-H074	87/10/23	PACIFIC WHITING (HAKE)	5.8123	2.5166	48.25642	-122.56134
281	87CS	1987	CS	87CSV04	CS-H075	87/10/23	PACIFIC COD	1.0723	2.3834	48.15225	-122.54084
281	87CS	1987	CS	87CSV04	CS-H075	87/10/23	WALLEYE POLLOCK	2.1446	1.2646	48.15225	-122.54084
281	87CS	1987	CS	87CSV04	CS-H075	87/10/23	PACIFIC WHITING (HAKE)	164.6016	68.0234	48.15225	-122.54084
281	87CS	1987	CS	87CSV04	CS-H075	87/10/23	QUILLBACK ROCKFISH	7.5063	6.0314	48.15225	-122.54084
283	87CS	1987	CS	87CSV07	CS-H077	87/10/23	WALLEYE POLLOCK	7.1488	3.7291	48.09909	-122.46217
283	87CS	1987	CS	87CSV07	CS-H077	87/10/23	PACIFIC WHITING (HAKE)	20.0166	9.3389	48.09909	-122.46217
283	87CS	1987	CS	87CSV07	CS-H077	87/10/23	QUILLBACK ROCKFISH	2.8595	1.7835	48.09909	-122.46217
285	87CS	1987	CS	87CSV05	CS-H078	87/10/23	PACIFIC COD	0.7926	1.2583	48.07158	-122.44067
285	87CS	1987	CS	87CSV05	CS-H078	87/10/23	WALLEYE POLLOCK	6.3407	3.1637	48.07158	-122.44067
285	87CS	1987	CS	87CSV05	CS-H078	87/10/23	PACIFIC WHITING (HAKE)	64.9917	25.7052	48.07158	-122.44067
285	87CS	1987	CS	87CSV05	CS-H078	87/10/23	QUILLBACK ROCKFISH	21.3997	9.8866	48.07158	-122.44067
305	87CS	1987	CS	87CSV06	CS-H094	87/10/29	WALLEYE POLLOCK	114.3463	8.0432	47.76209	-122.39309
305	87CS	1987	CS	87CSV06	CS-H094	87/10/29	PACIFIC WHITING (HAKE)	124.2895	87.1970	47.76209	-122.39309
305	87CS	1987	CS	87CSV06	CS-H094	87/10/29	QUILLBACK ROCKFISH	8.2860	2.2551	47.76209	-122.39309
307	87CS	1987	CS	87CSV05	CS-H096	87/10/29	PACIFIC COD	2.8045	0.1272	47.62942	-122.40125
307	87CS	1987	CS	87CSV05	CS-H096	87/10/29	QUILLBACK ROCKFISH	16.8270	0.4452	47.62942	-122.40125
308	87CS	1987	CS	87CSV08	CS-H097	87/10/29	PACIFIC COD	1.6204	1.9845	47.54600	-122.40942
308	87CS	1987	CS	87CSV08	CS-H097	87/10/29	WALLEYE POLLOCK	31.5979	11.2089	47.54600	-122.40942
308	87CS	1987	CS	87CSV08	CS-H097	87/10/29	PACIFIC WHITING (HAKE)	21.0653	11.5029	47.54600	-122.40942
311	87CS	1987	CS	87CSV09	CS-H100	87/10/29	QUILLBACK ROCKFISH	1.6204	0.6247	47.54600	-122.40942
311	87CS	1987	CS	87CSV09	CS-H100	87/10/29	PACIFIC COD	2.8045	4.1026	47.62750	-122.45142
311	87CS	1987	CS	87CSV09	CS-H100	87/10/29	WALLEYE POLLOCK	32.2522	9.5410	47.62750	-122.45142
313	87CS	1987	CS	87CSV06	CS-H101	87/10/30	PACIFIC COD	275.0497	206.5336	47.64625	-122.50084
313	87CS	1987	CS	87CSV06	CS-H101	87/10/30	WALLEYE POLLOCK	2.7516	0.6553	47.64625	-122.50084
313	87CS	1987	CS	87CSV06	CS-H101	87/10/30	QUILLBACK ROCKFISH	0.8879	0.1560	47.64625	-122.50084
315	87CS	1987	CS	87CSV07	CS-H102	87/10/30	PACIFIC HERRING	61.5244	0.4479	47.71709	-122.53825
315	87CS	1987	CS	87CSV07	CS-H102	87/10/30	PACIFIC COD	12.1530	4.4790	47.71709	-122.53825
315	87CS	1987	CS	87CSV07	CS-H102	87/10/30	LINGCOD	0.7596	4.8235	47.71709	-122.53825
315	87CS	1987	CS	87CSV07	CS-H102	87/10/30	QUILLBACK ROCKFISH	6.0765	3.2731	47.71709	-122.53825
326	89CS	1989	CS	89CSV01	CS-H010	89/04/26	PACIFIC HERRING	0.7479	0.0170	48.00184	-122.70967
327	89CS	1989	CS	89CSV01	CS-H011	89/04/26	PACIFIC COD	14.0226	2.9683	48.00087	-122.66242
327	89CS	1989	CS	89CSV01	CS-H011	89/04/26	ROCKFISH UNIDEN.	99.0932	5.3006	48.00087	-122.66242
327	89CS	1989	CS	89CSV01	CS-H011	89/04/26	QUILLBACK ROCKFISH	3.7394	0.1272	48.00087	-122.66242
328	89CS	1989	CS	89CSV01	CS-H012	89/04/26	WALLEYE POLLOCK	0.5928	0.3764	47.96617	-122.49534
328	89CS	1989	CS	89CSV01	CS-H012	89/04/26	PACIFIC WHITING (HAKE)	3.5570	0.1882	47.96617	-122.49534
328	89CS	1989	CS	89CSV01	CS-H012	89/04/26	ROCKFISH UNIDEN.	0.5928	0.0269	47.96617	-122.49534
328	89CS	1989	CS	89CSV01	CS-H012	89/04/26	QUILLBACK ROCKFISH	0.5928	0.1345	47.96617	-122.49534
328	89CS	1989	CS	89CSV01	CS-H013	89/04/26	WALLEYE POLLOCK	0.5787	0.1575	47.86917	-122.37934
329	89CS	1989	CS	89CSV01	CS-H013	89/04/26	PACIFIC WHITING (HAKE)	9.8381	9.7126	47.86917	-122.37934
329	89CS	1989	CS	89CSV01	CS-H013	89/04/26	ROCKFISH UNIDEN.	0.5787	0.0263	47.86917	-122.37934
329	89CS	1989	CS	89CSV01	CS-H013	89/04/26	QUILLBACK ROCKFISH	1.1574	0.4462	47.86917	-122.37934

GIS Number	Survey ID	Year	Region	Station ID	Haul ID	Date	Name	Density (Ind./hectare)	Density (kg/hectare)	Average Latitude (N)	Average Longitude (W)
330	89CS	1989	CS	89CSU02	CS-H015	89/04/27	PACIFIC HERRING	3.8127	0.3026	47.85208	-122.49325
330	89CS	1989	CS	89CSU02	CS-H015	89/04/27	QUILLBACK ROCKFISH	27.6420	7.5662	47.85208	-122.49325
330	89CS	1989	CS	89CSU02	CS-H015	89/04/27	REDSTRIPE ROCKFISH	0.9532	0.1729	47.85208	-122.49325
331	89CS	1989	CS	89CSU02	CS-H016	89/04/27	QUILLBACK ROCKFISH	1.8004	0.0817	47.75942	-122.38859
332	89CS	1989	CS	89CSU02	CS-H017	89/04/27	WALLEYE POLLOCK	1.1048	0.5763	47.72075	-122.41875
332	89CS	1989	CS	89CSU02	CS-H017	89/04/27	PACIFIC WHITING (HAKE)	3.3145	0.5262	47.72075	-122.41875
333	89CS	1989	CS	89CSU02	CS-H019	89/04/29	QUILLBACK ROCKFISH	3.6827	2.9400	47.63334	-122.41025
334	89CS	1989	CS	89CSU03	CS-H020	89/04/29	WALLEYE POLLOCK	9.1505	1.0377	47.61792	-122.45592
335	89CS	1989	CS	89CSU03	CS-H021	89/04/29	PACIFIC WHITING (HAKE)	9.1505	1.0377	47.61792	-122.45592
336	89CS	1989	CS	89CSU03	CS-H022	89/04/29	LINGCOD	1.6763	14.0664	47.71859	-122.54042
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC HERRING	0.7969	0.0036	47.70575	-122.39334
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC COD	2.3148	5.5126	47.98967	-122.30225
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	WALLEYE POLLOCK	1.1574	0.4200	47.98967	-122.30225
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	71.7801	29.7939	47.98967	-122.30225
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	QUILLBACK ROCKFISH	4.6297	3.5438	47.98967	-122.30225
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	58.6692	5.6076	48.14025	-122.43567
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	SMELT UNIDEN.	0.8381	0.0381	48.14025	-122.43567
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC HERRING	0.4910	0.0668	48.06467	-122.31259
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	61.3786	2.7841	48.06467	-122.31259
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	QUILLBACK ROCKFISH	0.4910	0.2673	48.06467	-122.31259
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	LINGCOD	0.4960	1.8000	48.06142	-122.53825
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC COD	0.5787	1.5750	48.10175	-122.45725
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	32.9867	6.7463	48.10175	-122.45725
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC HERRING	11.7692	1.2302	48.15734	-122.54650
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	WALLEYE POLLOCK	0.5117	0.2785	48.15734	-122.54650
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	34.7960	2.3675	48.15734	-122.54650
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC HERRING	11.3428	0.7595	48.21600	-122.59658
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	WALLEYE POLLOCK	0.5401	0.3920	48.21600	-122.59658
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	5.4013	0.2940	48.21600	-122.59658
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	SMELT UNIDEN.	5.4013	0.0735	48.21600	-122.59658
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC HERRING	11.0481	0.2506	48.25467	-122.58250
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	SMELT UNIDEN.	2.2096	0.0101	48.25467	-122.58250
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	3016.9716	75.2738	48.15383	-122.54234
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	QUILLBACK ROCKFISH	12.1530	9.2611	48.15383	-122.54234
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC HERRING	5.3355	0.2151	48.00142	-122.70975
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	REDSTRIPE ROCKFISH	28.7563	1.2112	48.00384	-122.66175
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC COD	3.3758	3.8282	47.96384	-122.49609
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	LINGCOD	0.6752	0.5206	47.96384	-122.49609
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	39.1596	18.4670	47.96384	-122.49609
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	QUILLBACK ROCKFISH	2.0255	0.7350	47.96384	-122.49609
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	7.9811	6.0556	47.96667	-122.38717
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	QUILLBACK ROCKFISH	1.4511	0.9873	47.86667	-122.38717
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC HERRING	0.7841	0.0711	47.84992	-122.49475
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC COD	1.5681	1.0670	47.84992	-122.49475
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	WALLEYE POLLOCK	16.4653	2.9519	47.84992	-122.49475
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	21.1697	6.9351	47.84992	-122.49475
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	QUILLBACK ROCKFISH	36.0668	12.3055	47.84992	-122.49475
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	LINGCOD	0.6847	0.3106	47.83633	-122.41600
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	QUILLBACK ROCKFISH	2.0540	0.3727	47.83633	-122.41600
336	89CS	1989	CS	89CSU04	CS-H038	89/05/04	PACIFIC WHITING (HAKE)	0.8381	0.0381	47.82017	-122.45542

GIS Number	Survey ID	Year	Region	Station ID	Haul ID	Date	Name	Density (Ind./hectare)	Density (kg/hectare)	Average Latitude (N)	Average Longitude (W)
449	91CS	1991	CS	91CSV03	CS-H036	91/05/16	PACIFIC WHITING (HAKE)	21.7914	7.0332	47.71734	-122.41892
452	91CS	1991	CS	91CSV02	CS-H038	91/05/16	PACIFIC WHITING (HAKE)	6.0764	0.1837	47.75675	-122.39000
452	91CS	1991	CS	91CSV02	CS-H038	91/05/16	PACIFIC WHITING (HAKE)	2.0255	0.0920	47.75675	-122.39000
452	91CS	1991	CS	91CSV02	CS-H038	91/05/16	QUILLBACK ROCKFISH	2.0255	0.3674	47.75675	-122.39000
453	91CS	1991	CS	91CSV04	CS-H039	91/05/16	PACIFIC WHITING (HAKE)	0.8681	0.0197	47.81983	-122.43500
453	91CS	1991	CS	91CSV04	CS-H039	91/05/16	PACIFIC WHITING (HAKE)	26.0421	6.3788	47.81983	-122.43500
182	91CS	1991	CS	91CSV03	CS-H040	91/05/16	PACIFIC WHITING (HAKE)	211.8530	20.2536	48.13975	-122.43367
182	91CS	1991	CS	91CSV03	CS-H040	91/05/16	PACIFIC WHITING (HAKE)	1.2003	0.6806	48.13975	-122.43367
454	91CS	1991	CS	91CSV05	CS-H042	91/05/17	PACIFIC WHITING (HAKE)	20.7316	1.3295	47.99050	-122.30234
183	91CS	1991	CS	91CSU03	CS-H043	91/05/17	QUILLBACK ROCKFISH	0.7149	0.1297	47.99050	-122.30234
183	91CS	1991	CS	91CSU03	CS-H043	91/05/17	QUILLBACK ROCKFISH	131.1749	10.3251	48.05584	-122.30842
459	91CS	1991	CS	91CSV06	CS-H044	91/05/17	PACIFIC WHITING (HAKE)	21.6053	12.3201	48.05584	-122.30842
459	91CS	1991	CS	91CSV06	CS-H044	91/05/17	PACIFIC WHITING (HAKE)	0.6752	1.0412	48.10317	-122.45783
459	91CS	1991	CS	91CSV06	CS-H044	91/05/17	QUILLBACK ROCKFISH	3.3758	0.1531	48.10317	-122.45783
461	91CS	1991	CS	91CSV06	CS-H049	91/05/20	PACIFIC WHITING (HAKE)	81.2332	2.2050	48.25134	-122.58075
461	91CS	1991	CS	91CSV06	CS-H049	91/05/20	PACIFIC WHITING (HAKE)	10.8737	0.2321	48.25134	-122.58075
461	91CS	1991	CS	91CSV06	CS-H049	91/05/20	PACIFIC WHITING (HAKE)	14.0719	0.2321	48.25134	-122.58075
462	91CS	1991	CS	91CSV06	CS-H050	91/05/20	PACIFIC WHITING (HAKE)	30.0251	2.1726	48.21250	-122.59617
462	91CS	1991	CS	91CSV06	CS-H050	91/05/20	PACIFIC WHITING (HAKE)	42.8930	0.8431	48.21250	-122.59617
462	91CS	1991	CS	91CSV06	CS-H050	91/05/20	PACIFIC WHITING (HAKE)	0.7149	0.4540	48.21250	-122.59617
674	95CS	1995	CS	95CSS10	CS-H050	91/05/20	QUILLBACK ROCKFISH	70.9986	1.5402	47.64384	-122.59842
675	95CS	1995	CS	95CSS11	CS-H032	95/05/12	QUILLBACK ROCKFISH	11.9777	0.8292	47.96592	-122.24217
676	95CS	1995	CS	95CSS12	CS-H060	95/06/01	QUILLBACK ROCKFISH	1.3564	0.1085	48.11017	-122.55625
677	95CS	1995	CS	95CSS13	CS-H026	95/05/11	PACIFIC WHITING (HAKE)	23.1520	0.4189	48.22534	-122.70809
678	95CS	1995	CS	95CSS14	CS-H025	95/05/10	PACIFIC WHITING (HAKE)	681.6505	20.5266	48.25058	-122.56884
679	95CS	1995	CS	95CSS15	CS-H027	95/05/11	PACIFIC WHITING (HAKE)	29.2503	1.9626	48.27892	-122.60409
685	95CS	1995	CS	95CSS02	CS-H042	95/05/19	LINGCOD	1.9101	0.5730	48.12000	-122.60925
687	95CS	1995	CS	95CSS04	CS-H036	95/05/18	PACIFIC WHITING (HAKE)	1432.0442	33.2481	47.99108	-122.69950
688	95CS	1995	CS	95CSS05	CS-H049	95/05/30	PACIFIC WHITING (HAKE)	1.2758	0.1403	47.93942	-122.44992
689	95CS	1995	CS	95CSS06	CS-H009	95/04/22	QUILLBACK ROCKFISH	1.2348	0.9878	47.88550	-122.42409
670	95CS	1995	CS	95CSS07	CS-H006	95/04/21	PACIFIC WHITING (HAKE)	13.9947	0.6636	47.73450	-122.49334
671	95CS	1995	CS	95CSS08	CS-H022	95/05/05	PACIFIC WHITING (HAKE)	1.4641	0.0146	47.58783	-122.36375
672	95CS	1995	CS	95CSS08	CS-H022	95/05/05	QUILLBACK ROCKFISH	1.4641	0.7613	47.58783	-122.36375
681	95CS	1995	CS	95CSV01	CS-H016	95/04/28	PACIFIC WHITING (HAKE)	3.0802	0.0559	47.57150	-122.58725
683	95CS	1995	CS	95CSV01	CS-H040	95/05/19	WALLEYE POLLOCK	1.5268	0.0305	48.18009	-122.75425
683	95CS	1995	CS	95CSV01	CS-H029	95/05/11	PACIFIC WHITING (HAKE)	3.9400	0.1182	48.12117	-122.49767
685	95CS	1995	CS	95CSV01	CS-H058	95/06/01	PACIFIC WHITING (HAKE)	0.9850	0.0394	48.12117	-122.49767
685	95CS	1995	CS	95CSV01	CS-H058	95/06/01	PACIFIC WHITING (HAKE)	378.3025	18.5871	48.21400	-122.58767
684	95CS	1995	CS	95CSV03	CS-H043	95/05/19	WALLEYE POLLOCK	2.0504	0.0923	48.21400	-122.58767
685	95CS	1995	CS	95CSV05	CS-H038	95/05/18	PACIFIC WHITING (HAKE)	6.7030	0.2234	48.08508	-122.68825
685	95CS	1995	CS	95CSV05	CS-H038	95/05/18	PACIFIC WHITING (HAKE)	33.7675	1.5975	47.97842	-122.58117
688	95CS	1995	CS	95CSV05	CS-H038	95/05/18	WALLEYE POLLOCK	5.1588	0.0310	47.94309	-122.62834
688	95CS	1995	CS	95CSV06	CS-H054	95/05/31	PACIFIC WHITING (HAKE)	43.5958	2.4414	47.87075	-122.50234
688	95CS	1995	CS	95CSV06	CS-H054	95/05/31	PACIFIC WHITING (HAKE)	1.2456	0.3488	47.87075	-122.50234
688	95CS	1995	CS	95CSV06	CS-H054	95/05/31	WALLEYE POLLOCK	2.4912	0.1495	47.87075	-122.50234
689	95CS	1995	CS	95CSV07	CS-H063	95/06/01	PACIFIC WHITING (HAKE)	3.4321	4.4045	47.69567	-122.41134
689	95CS	1995	CS	95CSV07	CS-H063	95/06/01	PACIFIC WHITING (HAKE)	1.1440	0.0886	47.69567	-122.41134
689	95CS	1995	CS	95CSV07	CS-H063	95/06/01	QUILLBACK ROCKFISH	6.8641	1.8533	47.69567	-122.41134

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689	95CS	1995	CS	95CST07	CS-H063	95/06/01	WALLEYE POLLOCK	10.2962	1.6703	47.69567	-122.41134
692	95CS	1995	CS	95CST08	CS-H057	95/05/31	PACIFIC HERRING	15.2351	0.6446	48.04558	-122.40692
692	95CS	1995	CS	95CST09	CS-H057	95/05/31	PACIFIC WHITING (HAKE)	1.1719	0.2227	48.04558	-122.40692
692	95CS	1995	CS	95CST09	CS-H057	95/05/31	QUILLBACK ROCKFISH	3.5158	1.3829	48.04558	-122.40692
696	95CS	1995	CS	95CSU01	CS-H053	95/06/02	QUILLBACK ROCKFISH	2.4572	2.7029	48.06467	-122.66158
696	95CS	1995	CS	95CSU01	CS-H053	95/06/02	WALLEYE POLLOCK	18.4287	0.7740	48.06467	-122.66158
697	95CS	1995	CS	95CSU02	CS-H051	95/05/30	PACIFIC COD	1.0294	0.6691	47.99459	-122.62459
697	95CS	1995	CS	95CSU02	CS-H051	95/05/30	QUILLBACK ROCKFISH	4.1177	3.0677	47.99459	-122.62459
697	95CS	1995	CS	95CSU02	CS-H051	95/05/30	WALLEYE POLLOCK	1606.9259	83.5169	47.99459	-122.62459
698	95CS	1995	CS	95CSU03	CS-H039	95/05/18	PACIFIC HERRING	1.3833	0.0277	47.94475	-122.84467
698	95CS	1995	CS	95CSU03	CS-H039	95/05/18	QUILLBACK ROCKFISH	1.3833	1.9366	47.94475	-122.84467
698	95CS	1995	CS	95CSU03	CS-H039	95/05/18	WALLEYE POLLOCK	1.3833	0.0138	47.94475	-122.84467
699	95CS	1995	CS	95CSU04	CS-H056	95/05/31	PACIFIC HERRING	1.8441	0.1291	47.86167	-122.34134
699	95CS	1995	CS	95CSU04	CS-H056	95/05/31	PACIFIC WHITING (HAKE)	32.2723	2.1023	47.86167	-122.34134
699	95CS	1995	CS	95CSU04	CS-H056	95/05/31	QUILLBACK ROCKFISH	141.0762	48.7128	47.86167	-122.34134
699	95CS	1995	CS	95CSU04	CS-H056	95/05/31	WALLEYE POLLOCK	5.5324	0.3227	47.86167	-122.34134
700	95CS	1995	CS	95CSU05	CS-H019	95/05/04	PACIFIC HERRING	1.0320	0.0413	47.62575	-122.40925
700	95CS	1995	CS	95CSU05	CS-H019	95/05/04	PACIFIC WHITING (HAKE)	91.8444	3.3745	47.62575	-122.40925
700	95CS	1995	CS	95CSU05	CS-H019	95/05/04	QUILLBACK ROCKFISH	17.5433	4.8915	47.62575	-122.40925
700	95CS	1995	CS	95CSU05	CS-H019	95/05/04	WALLEYE POLLOCK	8.2557	0.7740	47.62575	-122.40925
701	95CS	1995	CS	95CSU06	CS-H034	95/05/12	LINGCOD	1.9776	7.1688	47.97434	-122.24442
701	95CS	1995	CS	95CSU06	CS-H034	95/05/12	PACIFIC WHITING (HAKE)	3113.7215	307.7927	47.97434	-122.24442
701	95CS	1995	CS	95CSU06	CS-H034	95/05/12	QUILLBACK ROCKFISH	16.8095	8.2169	47.97434	-122.24442
702	95CS	1995	CS	95CSU07	CS-H062	95/06/01	PACIFIC WHITING (HAKE)	3931.3150	317.9911	48.06442	-122.31417
702	95CS	1995	CS	95CSU07	CS-H062	95/06/01	QUILLBACK ROCKFISH	13.8329	5.4041	48.06442	-122.31417
703	95CS	1995	CS	95CSU08	CS-H028	95/05/11	PACIFIC HERRING	1.6240	0.1868	48.13192	-122.52934
703	95CS	1995	CS	95CSU08	CS-H028	95/05/11	PACIFIC WHITING (HAKE)	416.5685	23.1752	48.13192	-122.52934
703	95CS	1995	CS	95CSU08	CS-H028	95/06/01	PACIFIC HERRING	34.7993	2.5602	48.17292	-122.52934
704	95CS	1995	CS	95CSU09	CS-H059	95/06/01	PACIFIC WHITING (HAKE)	765.5851	24.0281	48.17292	-122.54800
704	95CS	1995	CS	95CSU09	CS-H059	95/06/01	QUILLBACK ROCKFISH	2.4857	1.2428	48.17292	-122.54800
705	95CS	1995	CS	95CSV01	CS-H055	95/05/31	PACIFIC COD	15.5640	18.7475	47.87058	-122.46075
705	95CS	1995	CS	95CSV01	CS-H055	95/05/31	PACIFIC HERRING	1.4149	0.0424	47.87058	-122.46075
705	95CS	1995	CS	95CSV01	CS-H055	95/05/31	PACIFIC WHITING (HAKE)	19.8087	5.0654	47.87058	-122.46075
706	95CS	1995	CS	95CSV02	CS-H055	95/05/31	WALLEYE POLLOCK	165.5442	28.7509	47.87058	-122.46075
706	95CS	1995	CS	95CSV02	CS-H007	95/04/21	PACIFIC COD	1.5731	1.9623	47.72608	-122.43750
706	95CS	1995	CS	95CSV02	CS-H007	95/04/21	PACIFIC WHITING (HAKE)	12.5851	1.9266	47.72608	-122.43750
706	95CS	1995	CS	95CSV02	CS-H007	95/04/21	WALLEYE POLLOCK	7.8657	1.8196	47.72608	-122.43750
707	95CS	1995	CS	95CSV04	CS-H061	95/06/01	PACIFIC WHITING (HAKE)	5567.0495	258.3031	48.07292	-122.35758
707	95CS	1995	CS	95CSV04	CS-H061	95/06/01	QUILLBACK ROCKFISH	1.9989	1.0394	48.07292	-122.35758
707	95CS	1995	CS	95CSV04	CS-H061	95/06/01	RED STRIPE ROCKFISH	1.9989	0.3998	48.07292	-122.35758
288	--	1987	SS	--	SS-H080	87/10/26	PACIFIC HERRING	10.3036	0.1079	47.28450	-122.84050
289	--	1987	SS	--	SS-H081	87/10/26	PACIFIC HERRING	4.4644	0.0338	47.16084	-122.83042
292	--	1987	SS	--	SS-H083	87/10/27	PACIFIC COD	1.7361	5.6306	47.15833	-122.65042
292	--	1987	SS	--	SS-H083	87/10/27	WALLEYE POLLOCK	0.8681	0.5119	47.15833	-122.65042
292	--	1987	SS	--	SS-H083	87/10/27	QUILLBACK ROCKFISH	13.0209	7.9931	47.15833	-122.65042
293	--	1987	SS	--	SS-H084	87/10/27	PACIFIC WHITING (HAKE)	1.0128	0.0919	47.21442	-122.63617
293	--	1987	SS	--	SS-H084	87/10/27	QUILLBACK ROCKFISH	10.1275	4.5938	47.21442	-122.63617
295	--	1987	SS	--	SS-H086	87/10/27	PACIFIC HERRING	2.3272	0.1056	47.32800	-122.70342
295	--	1987	SS	--	SS-H086	87/10/27	WALLEYE POLLOCK	4.6543	0.0704	47.32800	-122.70342
295	--	1987	SS	--	SS-H086	87/10/27	PACIFIC WHITING (HAKE)	8.5330	0.3519	47.32800	-122.70342

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296	--	1987	SS	--	SS-H087	87/10/27	WALLEYE POLLOCK	0.7292	0.3308	47.29475	-122.71200
298	--	1987	SS	--	SS-H087	87/10/27	QUILBACK ROCKFISH	0.7292	0.2646	47.29475	-122.71200
299	--	1987	SS	--	SS-H088	87/10/27	PACIFIC COD	33.4207	30.5258	47.25925	-122.56367
301	--	1987	SS	--	SS-H090	87/10/28	PACIFIC COD	1.3758	1.9346	47.48742	-122.43200
301	--	1987	SS	--	SS-H090	87/10/28	WALLEYE POLLOCK	8.2549	4.1188	47.48742	-122.43200
301	--	1987	SS	--	SS-H090	87/10/28	PACIFIC WHITING (HAKE)	3.4395	2.7147	47.48742	-122.43200
301	--	1987	SS	--	SS-H090	87/10/28	QUILBACK ROCKFISH	3.4395	3.0579	47.48742	-122.43200
302	--	1987	SS	--	SS-H091	87/10/28	PACIFIC COD	3.5057	8.7459	47.37234	-122.36459
302	--	1987	SS	--	SS-H091	87/10/28	WALLEYE POLLOCK	9.8159	4.7069	47.37234	-122.36459
302	--	1987	SS	--	SS-H091	87/10/28	PACIFIC WHITING (HAKE)	13.3216	11.7672	47.37234	-122.36459
302	--	1987	SS	--	SS-H091	87/10/28	QUILBACK ROCKFISH	0.7011	0.4135	47.37234	-122.36459
303	--	1987	SS	--	SS-H092	87/10/28	PACIFIC COD	1.8538	3.8681	47.33650	-122.43584
303	--	1987	SS	--	SS-H092	87/10/28	WALLEYE POLLOCK	8.6513	3.7841	47.33650	-122.43584
303	--	1987	SS	--	SS-H092	87/10/28	PACIFIC WHITING (HAKE)	4.9436	3.1394	47.33650	-122.43584
304	--	1987	SS	--	SS-H093	87/10/28	QUILBACK ROCKFISH	0.6179	0.2803	47.33650	-122.43584
309	--	1987	SS	--	SS-H098	87/10/29	WALLEYE POLLOCK	26.0422	1.4507	47.33909	-122.47375
309	--	1987	SS	--	SS-H098	87/10/29	QUILBACK ROCKFISH	21.5779	6.4126	47.40658	-122.40950
310	--	1987	SS	--	SS-H099	87/10/29	PACIFIC COD	8.7501	5.4674	47.40750	-122.40767
310	--	1987	SS	--	SS-H099	87/10/29	WALLEYE POLLOCK	178.6483	6.2777	47.40750	-122.40767
310	--	1987	SS	--	SS-H099	87/10/29	PACIFIC WHITING (HAKE)	48.8548	7.2931	47.40750	-122.40767
310	--	1987	SS	--	SS-H099	87/10/29	QUILBACK ROCKFISH	46.6673	15.8761	47.40750	-122.40767
338	--	1989	SS	--	SS-H024	89/05/01	PACIFIC WHITING (HAKE)	2.0834	1.8695	47.48825	-122.43275
339	--	1989	SS	--	SS-H025	89/05/01	PACIFIC HERRING	7.7498	0.4794	47.41125	-122.41650
339	--	1989	SS	--	SS-H025	89/05/01	PACIFIC COD	0.7045	2.2370	47.41125	-122.41650
339	--	1989	SS	--	SS-H025	89/05/01	PACIFIC WHITING (HAKE)	13.3859	0.3196	47.41125	-122.41650
339	--	1989	SS	--	SS-H025	89/05/01	QUILBACK ROCKFISH	27.4764	7.9892	47.41125	-122.41650
340	--	1989	SS	--	SS-H026	89/05/01	PACIFIC WHITING (HAKE)	1.6204	0.0735	47.34058	-122.43217
341	--	1989	SS	--	SS-H028	89/05/02	PACIFIC HERRING	2.9641	0.1345	47.25933	-122.56292
341	--	1989	SS	--	SS-H028	89/05/02	PACIFIC COD	7.1139	3.3613	47.25933	-122.56292
341	--	1989	SS	--	SS-H028	89/05/02	WALLEYE POLLOCK	0.5928	0.2689	47.25933	-122.56292
341	--	1989	SS	--	SS-H028	89/05/02	PACIFIC WHITING (HAKE)	1.1857	0.1075	47.25933	-122.56292
342	--	1989	SS	--	SS-H030	89/05/02	QUILBACK ROCKFISH	0.5928	0.2958	47.25933	-122.56292
342	--	1989	SS	--	SS-H030	89/05/02	PACIFIC HERRING	9.3910	0.6765	47.16583	-122.73450
342	--	1989	SS	--	SS-H030	89/05/02	SMELT UNIDEN.	0.5524	0.0251	47.16583	-122.73450
343	--	1989	SS	--	SS-H031	89/05/03	PACIFIC HERRING	11.4381	0.1621	47.32359	-122.80783
344	--	1989	SS	--	SS-H032	89/05/03	QUILBACK ROCKFISH	0.5227	0.0948	47.28009	-122.84209
345	--	1989	SS	--	SS-H033	89/05/03	PACIFIC WHITING (HAKE)	11.9538	2.8622	47.15875	-122.65475
345	--	1989	SS	--	SS-H033	89/05/03	QUILBACK ROCKFISH	53.3937	27.6533	47.15875	-122.65475
346	--	1989	SS	--	SS-H034	89/05/03	PACIFIC HERRING	8.2744	0.1408	47.36767	-122.65017
346	--	1989	SS	--	SS-H034	89/05/03	QUILBACK ROCKFISH	2.0686	1.1729	47.36767	-122.65017
347	--	1989	SS	--	SS-H035	89/05/03	PACIFIC HERRING	21.7018	1.2797	47.29259	-122.71333
347	--	1989	SS	--	SS-H035	89/05/03	WALLEYE POLLOCK	2.6042	0.8269	47.29259	-122.71333
349	--	1989	SS	--	SS-H037	89/05/04	PACIFIC COD	5.2084	0.1969	47.29259	-122.71333
349	--	1989	SS	--	SS-H037	89/05/04	WALLEYE POLLOCK	2.0255	0.8891	47.41008	-122.41884
349	--	1989	SS	--	SS-H037	89/05/04	QUILBACK ROCKFISH	5.0638	0.7351	47.41008	-122.41884
436	--	1991	SS	--	SS-H021	91/05/13	PACIFIC WHITING (HAKE)	3.0383	1.4241	47.41008	-122.41884
437	--	1991	SS	--	SS-H022	91/05/13	PACIFIC COD	5.2351	1.5266	47.48367	-122.43042
437	--	1991	SS	--	SS-H022	91/05/13	WALLEYE POLLOCK	0.9532	0.5188	47.41075	-122.42050
437	--	1991	SS	--	SS-H022	91/05/13	WALLEYE POLLOCK	0.9532	0.0865	47.41075	-122.42050

GIS Number	Survey ID	Year	Region	Station ID	Haul ID	Date	Name	Density (Ind./hectare)	Density (kg/hectare)	Average Latitude (N)	Average Longitude (W)
437	--	1991	SS	--	SS-H022	91/05/13	PACIFIC WHITING (HAKE)	15.2507	0.2595	47.41075	-122.42050
437	--	1991	SS	--	SS-H022	91/05/13	QUILLBACK ROCKFISH	2.8595	1.8159	47.41075	-122.42050
438	--	1991	SS	--	SS-H023	91/05/13	PACIFIC WHITING (HAKE)	7.6390	0.7875	47.41050	-122.41250
438	--	1991	SS	--	SS-H023	91/05/13	QUILLBACK ROCKFISH	15.2780	5.9536	47.41050	-122.41250
440	--	1991	SS	--	SS-H025	91/05/13	PACIFIC COD	0.6002	0.8984	47.33567	-122.42850
440	--	1991	SS	--	SS-H025	91/05/13	PACIFIC WHITING (HAKE)	3.6009	2.4501	47.33567	-122.42850
440	--	1991	SS	--	SS-H025	91/05/13	QUILLBACK ROCKFISH	0.6002	0.6261	47.33567	-122.42850
441	--	1991	SS	--	SS-H026	91/05/13	PACIFIC COD	1.1857	0.4840	47.25767	-122.56459
441	--	1991	SS	--	SS-H026	91/05/13	WALLEYE POLLOCK	1.1857	0.2151	47.25767	-122.56459
441	--	1991	SS	--	SS-H026	91/05/13	PACIFIC WHITING (HAKE)	11.8566	2.6353	47.25767	-122.56459
442	--	1991	SS	--	SS-H027	91/05/13	PACIFIC WHITING (HAKE)	15.7988	1.4250	47.16033	-122.64975
442	--	1991	SS	--	SS-H027	91/05/13	QUILLBACK ROCKFISH	3.6459	1.2679	47.16033	-122.64975
443	--	1991	SS	--	SS-H028	91/05/14	PACIFIC HERRING	5.0042	0.1297	47.16742	-122.73250
444	--	1991	SS	--	SS-H030	91/05/15	PACIFIC HERRING	81.4248	1.4608	47.32275	-122.80909
444	--	1991	SS	--	SS-H030	91/05/15	PACIFIC WHITING (HAKE)	0.6076	0.0276	47.32275	-122.80909
445	--	1991	SS	--	SS-H031	91/05/15	PACIFIC HERRING	31.1614	0.8481	47.28225	-122.84375
446	--	1991	SS	--	SS-H032	91/05/15	PACIFIC HERRING	5.6525	0.0513	47.36542	-122.65525
447	--	1991	SS	--	SS-H033	91/05/15	PACIFIC HERRING	1.3889	0.0315	47.28917	-122.71633
447	--	1991	SS	--	SS-H033	91/05/15	PACIFIC WHITING (HAKE)	2.7778	0.0630	47.28917	-122.71633
786	--	1996	SS	--	SS-H035	96/05/08	QUILLBACK ROCKFISH	1.9897	1.4892	47.30525	-122.45784
788	--	1996	SS	--	SS-H037	96/05/08	PACIFIC WHITING (HAKE)	26.8801	1.3322	47.34608	-122.38450
788	--	1996	SS	--	SS-H037	96/05/08	QUILLBACK ROCKFISH	3.9822	2.6192	47.34608	-122.38450
789	--	1996	SS	--	SS-H038	96/05/08	PACIFIC COD	0.9009	1.1850	47.37025	-122.41658
789	--	1996	SS	--	SS-H038	96/05/08	PACIFIC WHITING (HAKE)	4.5045	1.2484	47.37025	-122.41658
789	--	1996	SS	--	SS-H038	96/05/08	QUILLBACK ROCKFISH	47.7477	18.3686	47.37025	-122.41658
789	--	1996	SS	--	SS-H038	96/05/08	WALLEYE POLLOCK	0.9009	1.1033	47.37025	-122.41658
793	--	1996	SS	--	SS-H040	96/05/09	PACIFIC WHITING (HAKE)	2.5191	0.1428	47.26309	-122.55559
794	--	1996	SS	--	SS-H041	96/05/10	PACIFIC HERRING	10.8239	0.6137	47.32092	-122.56358
794	--	1996	SS	--	SS-H041	96/05/10	PACIFIC WHITING (HAKE)	10.8239	1.0555	47.32092	-122.56358
794	--	1996	SS	--	SS-H041	96/05/10	QUILLBACK ROCKFISH	8.6591	5.7444	47.32092	-122.56358
794	--	1996	SS	--	SS-H041	96/05/10	WALLEYE POLLOCK	2.1648	0.3682	47.32092	-122.56358
795	--	1996	SS	--	SS-H042	96/05/10	PACIFIC HERRING	13.7195	0.8402	47.32325	-122.51942
795	--	1996	SS	--	SS-H042	96/05/10	PACIFIC WHITING (HAKE)	2.7439	0.0933	47.32325	-122.51942
796	--	1996	SS	--	SS-H043	96/05/10	QUILLBACK ROCKFISH	1.3719	0.8090	47.32325	-122.51942
796	--	1996	SS	--	SS-H043	96/05/10	PACIFIC HERRING	23.9181	0.3051	47.37225	-122.52359
798	--	1996	SS	--	SS-H045	96/05/15	PACIFIC COD	15.0015	9.1078	47.43750	-122.52525
798	--	1996	SS	--	SS-H045	96/05/15	PACIFIC WHITING (HAKE)	8.0777	0.7852	47.43750	-122.52525
798	--	1996	SS	--	SS-H045	96/05/15	QUILLBACK ROCKFISH	19.6173	12.1437	47.43750	-122.52525
798	--	1996	SS	--	SS-H045	96/05/15	WALLEYE POLLOCK	1.1540	0.0785	47.43750	-122.52525
799	--	1996	SS	--	SS-H046	96/05/15	PACIFIC HERRING	2.2720	0.0258	47.50033	-122.44992
799	--	1996	SS	--	SS-H046	96/05/15	PACIFIC WHITING (HAKE)	1.1360	0.0412	47.50033	-122.44992
799	--	1996	SS	--	SS-H046	96/05/15	QUILLBACK ROCKFISH	17.0396	4.3799	47.50033	-122.44992
799	--	1996	SS	--	SS-H046	96/05/15	WALLEYE POLLOCK	1.1360	0.1030	47.50033	-122.44992
800	--	1996	SS	--	SS-H047	96/05/15	PACIFIC WHITING (HAKE)	41.4311	3.7391	47.49450	-122.42942
802	--	1996	SS	--	SS-H049	96/05/16	QUILLBACK ROCKFISH	2.5894	1.5269	47.49450	-122.42942
803	--	1996	SS	--	SS-H050	96/05/16	PACIFIC HERRING	1.3516	0.0307	47.19133	-122.69442
803	--	1996	SS	--	SS-H050	96/05/16	PACIFIC WHITING (HAKE)	189.2515	2.2127	47.15517	-122.62559
804	--	1996	SS	--	SS-H051	96/05/16	PACIFIC WHITING (HAKE)	1.1755	0.0267	47.15517	-122.62559
804	--	1996	SS	--	SS-H051	96/05/16	QUILLBACK ROCKFISH	5.4574	0.1945	47.18659	-122.80050
804	--	1996	SS	--	SS-H051	96/05/16	QUILLBACK ROCKFISH	2.3389	0.2652	47.18659	-122.80050

GIS Number	Survey ID	Year	Region	Station ID	Haul ID	Date	Name	Density (Ind./hectare)	Density (kg/hectare)	Average Latitude (N)	Average Longitude (W)
810	--	1996	SS	--	SS-H054	96/05/17	PACIFIC HERRING	9.2269	0.0930	47.20425	-122.82233
810	--	1996	SS	--	SS-H054	96/05/17	SURF SMELT	1.0252	0.0279	47.20425	-122.82233
812	--	1996	SS	--	SS-H056	96/05/20	QUILLBACK ROCKFISH	8.3222	1.8403	47.16400	-122.67025
812	--	1996	SS	--	SS-H056	96/05/20	REDSTRIPED ROCKFISH	3.1208	0.4719	47.16400	-122.67025
815	--	1996	SS	--	SS-H058	96/05/21	PACIFIC WHITING (HAKE)	10.8428	0.7624	47.21900	-122.63592
815	--	1996	SS	--	SS-H058	96/05/21	QUILLBACK ROCKFISH	1.0843	0.0983	47.21900	-122.63592
815	--	1996	SS	--	SS-H058	96/05/21	WALLEYE POLLOCK	1.0843	0.0737	47.21900	-122.63592
820	--	1996	SS	--	SS-H060	96/05/22	PACIFIC HERRING	19.2474	0.3395	47.33667	-122.80134
821	--	1996	SS	--	SS-H061	96/05/23	PACIFIC HERRING	4.5098	0.2045	47.14467	-122.78450
823	--	1996	SS	--	SS-H063	96/05/23	PACIFIC HERRING	92.5739	1.6170	47.29650	-122.80075
824	--	1996	SS	--	SS-H064	96/05/23	PACIFIC HERRING	26.6343	1.1665	47.27292	-122.85034
825	--	1996	SS	--	SS-H065	96/05/23	PACIFIC HERRING	21.0367	0.4120	47.23825	-122.84484
826	--	1996	SS	--	SS-H066	96/05/24	PACIFIC HERRING	87.7458	4.1727	47.24550	-122.67517
826	--	1996	SS	--	SS-H066	96/05/24	PACIFIC WHITING (HAKE)	182.0961	9.3083	47.24550	-122.67517
826	--	1996	SS	--	SS-H066	96/05/24	QUILLBACK ROCKFISH	0.9435	0.2588	47.24550	-122.67517
827	--	1996	SS	--	SS-H067	96/05/24	PACIFIC HERRING	32.8955	1.1937	47.27025	-122.69800
827	--	1996	SS	--	SS-H067	96/05/24	PACIFIC WHITING (HAKE)	20.8338	1.2683	47.27025	-122.69800
828	--	1996	SS	--	SS-H068	96/05/24	PACIFIC HERRING	542.7919	11.4795	47.30492	-122.71958
828	--	1996	SS	--	SS-H068	96/05/24	PACIFIC WHITING (HAKE)	14.4616	0.8091	47.30492	-122.71958
829	--	1996	SS	--	SS-H069	96/05/24	PACIFIC HERRING	1.2815	0.0174	47.28959	-122.73008
833	--	1996	SS	--	SS-H071	96/05/29	PACIFIC COD	0.9268	0.5044	47.32325	-122.47750
833	--	1996	SS	--	SS-H071	96/05/29	PACIFIC WHITING (HAKE)	0.9268	0.0210	47.32325	-122.47750
833	--	1996	SS	--	SS-H071	96/05/29	QUILLBACK ROCKFISH	15.7553	7.3567	47.32325	-122.47750
834	--	1996	SS	--	SS-H072	96/05/29	PACIFIC COD	0.9234	2.1989	47.36292	-122.37117
834	--	1996	SS	--	SS-H072	96/05/29	PACIFIC WHITING (HAKE)	9.2337	2.0313	47.36292	-122.37117
834	--	1996	SS	--	SS-H072	96/05/29	QUILLBACK ROCKFISH	5.5402	3.1203	47.36292	-122.37117
835	--	1996	SS	--	SS-H073	96/05/29	PACIFIC WHITING (HAKE)	26.3152	2.9570	47.39392	-122.35108
835	--	1996	SS	--	SS-H073	96/05/29	QUILLBACK ROCKFISH	1.1961	1.0308	47.39392	-122.35108
837	--	1996	SS	--	SS-H074	96/05/29	PACIFIC WHITING (HAKE)	12.8904	0.6822	47.42042	-122.37709
837	--	1996	SS	--	SS-H074	96/05/29	QUILLBACK ROCKFISH	0.8594	0.7601	47.42042	-122.37709
838	--	1996	SS	--	SS-H075	96/05/29	PACIFIC WHITING (HAKE)	29.6915	3.6935	47.47042	-122.41859
838	--	1996	SS	--	SS-H075	96/05/29	QUILLBACK ROCKFISH	2.8992	1.7753	47.47042	-122.41859
838	--	1996	SS	--	SS-H075	96/05/29	WALLEYE POLLOCK	2.8992	0.6530	47.47042	-122.41859
840	--	1996	SS	--	SS-H077	96/05/30	PACIFIC WHITING (HAKE)	3.4065	0.1288	47.49800	-122.38784
840	--	1996	SS	--	SS-H077	96/05/30	QUILLBACK ROCKFISH	18.1682	8.8848	47.49800	-122.38784

