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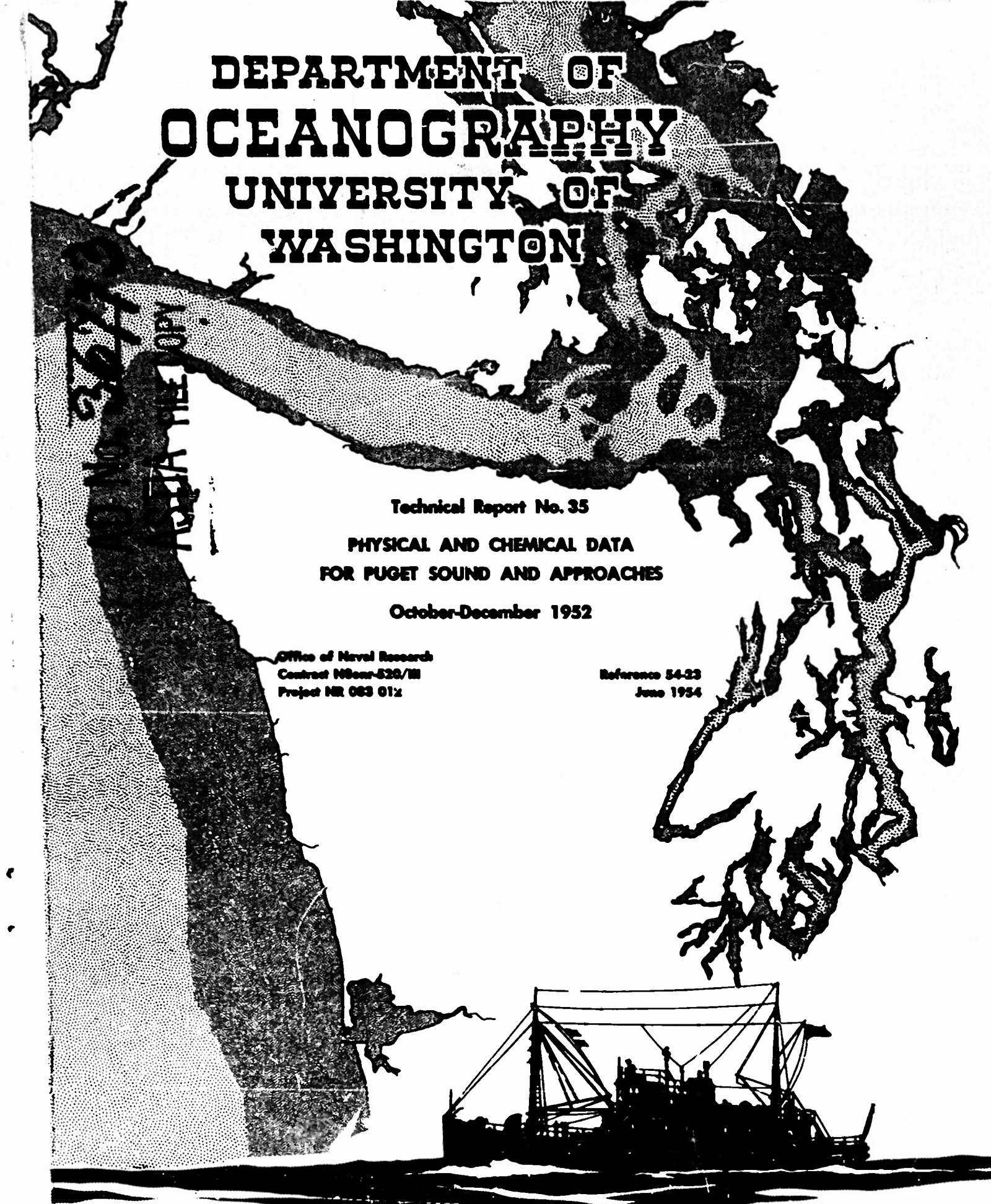
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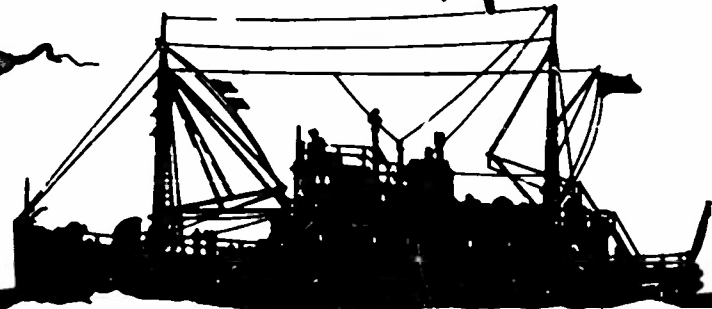
**DEPARTMENT OF
OCEANOGRAPHY
UNIVERSITY OF
WASHINGTON**

**Technical Report No. 35
PHYSICAL AND CHEMICAL DATA
FOR PUGET SOUND AND APPROACHES**

October-December 1952

**Office of Naval Research
Contract N6onr-520/111
Project NR 063 012**

**Reference 54-23
June 1954**



SEATTLE 5, WASHINGTON

UNIVERSITY OF WASHINGTON DEPARTMENT OF OCEANOGRAPHY
(Formerly Oceanographic Laboratories)
Seattle, Washington

PHYSICAL AND CHEMICAL DATA
FOR PUGET SOUND AND APPROACHES
October - December 1952


by

Clifford A. Barnes and Eugene E. Collias

Technical Report No. 35

Office of Naval Research
Contract N8onr-520/III
Project NR 083 012

Reference 54-23
June 1954


Richard H. Fleming
Executive Officer

INTRODUCTION

This report contains inshore data collected from October through December 1952 by the University of Washington personnel aboard the Department of Oceanography research vessel BROWN BEAR. Station location charts are presented before the data for each cruise (see pages 1, 14, 26, and 43). Additional inshore data not contained in this report were obtained with the Salinity-Temperature-Depth Recorder (1) and various current meters. Cruise 17 consisted of serial observations at stations located in the southern ends of East Passage and Colvos Passage.

Station Numbering System

All stations occupied by the BROWN BEAR are numbered consecutively, independent of their location.

Sampling Bottles

Water samples were taken with Nansen bottles and Fjarlie bottles (2).

Determination of Properties

Deep-sea reversing thermometers were used to determine temperature. Copenhagen standard sea water was used exclusively as the standard in the determination of salinity of the sea water. Dissolved oxygen was determined by the modified Winkler method described by Thompson and Robinson (3). The depths reported for sub-surface observations were calculated from measured wire angle, unprotected

reversing thermometer readings, and curves of wire length minus thermometric depth versus wire length (L-Z), as described by LaFond (4).

Data

The time at which the messenger was dropped on the first cast is listed for the +8 time zone. Positions are given to the nearest 0.1 minute. Depth in fathoms was obtained with the aid of a Navy NMC echo sounder aboard the BROWN BEAR. Weather is reported in the Navy bathythermograph weather code given in H. O. Publication No. 606-c, except in cases where the only weather phenomenon reported is the state of the sky. For the state of the sky the following symbols were used: b., clear sky; b.c., blue sky with detached clouds; c., sky mainly cloudy; and o., sky overcast. Wind velocity is reported in knots. Air temperature is reported in degree Fahrenheit.

All data are actual observed values. The maximum depth of sampling was governed by the depth of water. All clearly questionable data have been excluded.

The presentation of these data in this form does not constitute publication. Subsequent, more rigorous analyses of these data may disclose errors which are not apparent at this time.

REFERENCES

- (1) Jacobsen, A. W.
1948. An Instrument for Recording Continuously the Salinity, Temperature, and Depth of Sea Water. Trans. Amer. Inst. Elec. Engrs., 67:714-722.
- (2) Fjarlie, R. L. I.
1953. A Seawater Sampling Bottle. Jour. Mar. Res., 12(1):21-30.
- (3) Thompson, T. G. and R. J. Robinson
1939. Notes on the Determination of Dissolved Oxygen in Sea Water. Jour. Mar. Res., 2(1):1-8.
- (4) LaFond, E. C.
1951. Processing Oceanographic Data. U. S. Navy H. O. Publication No. 614, Washington, D. C.

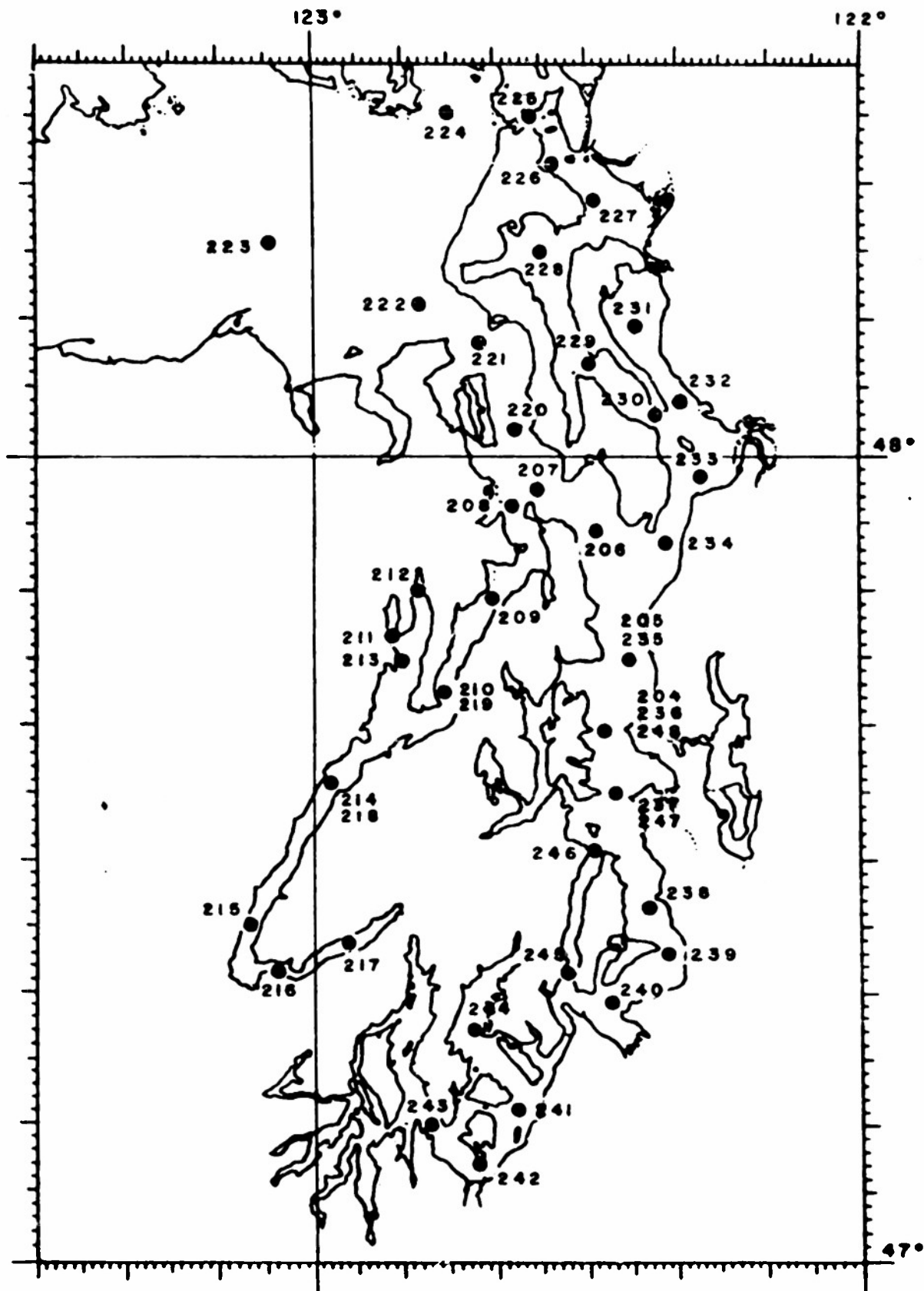
PERSONNEL

AT SEA

Barlow, Dr. John P.	Research Associate
Collias, Eugene E.	Research Associate
Ethier, W. E.	First Officer
Jackson, Esther L.	Laboratory Technician
Jackson, Hewitt R.	Senior Draftsman
Joyner, Marion E.	Laboratory Technician
Lincoln, John H.	Research Associate
Paquette, Dr. Robert G.	Research Oceanographer
Princehouse, Franklin W.	Master
Seckel, Gunter R.	Research Assistant
Seiner, B.	Machinist
Tucker, Donald	Laboratory Assistant
Vail, William R.	Second Officer
Walder, George	Junior Research Assistant

ASHORE

Andrew, Charles C.	Electronics Technician
Barlow, Caroline F.	Research Assistant
Doyle, Donald R.	Draftsman
Duxbury, Alyn C.	Laboratory Helper
Kinison, Roberta F.	Secretary



Oceanographic Station Locations
 Brown Bear Cruise 10
 13-16 October 1952

STA 204 47° 39.7' N WEATHER b.c. 13 Oct 52 122° 28.1' W WIND NNE 18 1122 (+8) DEPTH 124 fm 56° F West Point			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.97	30.39	0.397
5	11.94	30.39	0.405
10	11.92	30.43	0.397
20	11.82	30.50	0.394
30	11.73	30.52	0.379
50	11.66	30.65	0.358
75	11.29	30.71	0.341
100	11.23	30.78	0.355
150	11.15	30.82	0.356
180	-----	30.89	0.343
220	10.77	31.04	0.337

STA 206 47° 54.3' N WEATHER b.c. 13 Oct 52 122° 28.7' W WIND NW 10 1539 (+8) DEPTH 110 fm 50° F Pt. No Point			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	12.06	29.90	0.396
5	12.03	29.97	0.377
10	11.97	30.16	0.265
20	11.84	30.35	0.234
30	11.67	30.57	0.350
50	11.45	30.68	0.351
75	11.27	30.70	0.286
100	11.10	30.81	0.265
140	10.64	31.09	0.323
190	10.46	31.20	0.323

STA 205 47° 44.7' N WEATHER b.c. 13 Oct 52 122° 25.5' W WIND NNE 20 1307 (+8) DEPTH 150 fm 61° F Pt. Jefferson			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	12.02	30.44	0.415
5	11.98	30.46	0.411
10	12.00	30.44	0.408
20	11.89	30.46	0.389
30	11.58	30.57	0.368
50	11.52	30.62	0.363
100	11.20	30.81	0.358
150	10.94	30.95	0.356
200	10.72	31.04	0.338
240	-----	31.11	0.344
275	10.62	31.11	0.335

STA 207 47° 57.4' N WEATHER o. 13 Oct 52 122° 35.5' W WIND NW 16 1658 (+8) DEPTH 55 fm 58° F Double Bluff			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.55	30.45	0.386
5	11.49	30.50	0.391
10	11.50	30.53	0.376
15	11.48	30.52	0.377
15	11.32	30.64	0.358
40	11.19	30.73	0.353
65	9.91	31.58	0.302
95	10.16	31.42	0.310

STA 208 47° 56.2' N WEATHER b.
 13 Oct 52 122° 37.9' W WIND NW 8
 1905 (+8) DEPTH 65 fm 58° F
 Tala Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.22	30.48	0.404
5	11.27	30.53	0.402
10	11.23	30.55	0.392
20	10.91	30.86	0.353
40	10.55	31.11	0.340
65	10.15	31.36	0.320
90	9.94	31.49	0.310

STA 210 47° 41.5' N WEATHER b.
 13 Oct 52 122° 45.8' W WIND N 12
 0002 (+8) DEPTH 71 fm 56° F
 Hazel Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.01	29.87	0.414
5	10.96	29.87	0.413
10	10.85	29.94	0.386
20	9.53	30.23	0.220
30	10.07	30.44	0.256
50	10.41	30.57	0.286
75	10.58	30.75	0.304
100	10.60	30.88	0.213

STA 209 47° 49.6' N WEATHER b.
 13 Oct 52 122° 40.2' W WIND NNE 9
 2158 (+8) DEPTH 37 fm 58° F
 South Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.18	30.12	0.417
5	11.07	30.12	0.401
10	10.98	30.17	0.365
20	10.31	30.17	0.271
30	10.59	30.57	0.306
40	10.67	30.75	0.320
60	10.28	31.29	0.320

STA 211 47° 46.5' N WEATHER b.
 14 Oct 52 122° 51.4' W WIND N 8
 0157 (+8) DEPTH 40 fm 49° F
 Quilcene Bay

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	12.28	29.47	0.579
5	10.26	29.94	0.299
10	9.76	30.05	0.205
20	9.97	30.34	0.338
30	10.30	30.52	0.264
50	10.40	30.55	0.276

STA 212 47° 50.0' N WEATHER b.
 14 Oct 52 122° 48.6' W WIND N 9
 0309 (+8) DEPTH 25 fm 46° F
 Dabob Bay, Head of

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.79	30.25	0.240
5	9.70	30.25	0.225
10	9.97	30.25	0.226
20	10.00	30.39	0.225
30	10.08	30.44	0.233
40	10.21	30.44	0.249

STA 214 47° 35.7' N WEATHER b.
 14 Oct 52 122° 58.2' W WIND NNE 6
 0754 (+8) DEPTH 97 fm 48° F
 Tekiu Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	12.55	29.09	0.569
5	12.30	29.13	0.550
10	10.91	29.45	0.395
20	8.81	30.08	0.256
30	9.37	30.28	0.211
50	9.99	30.43	0.256
75	10.47	30.57	0.283
100	10.53	30.64	0.292
130	10.61	30.73	0.299
160	10.63	30.77	0.299

STA 213 47° 44.7' N WEATHER b.
 17 Oct 52 122° 50.2' W WIND W 8
 0451 (+8) DEPTH 103 fm 48° F
 Tabook Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.53	29.69	0.491
5	11.38	29.72	0.492
10	10.37	29.97	0.344
20	9.83	30.26	0.223
30	9.85	30.32	0.239
50	10.37	30.62	0.282
75	10.45	30.59	0.286
100	10.44	30.66	0.284
140	9.46	30.50	0.253
180	10.33	30.73	0.293

STA 215 47° 25.1' N WEATHER b.
 14 Oct 52 123° 07.1' W WIND NNE 10
 1110 (+8) DEPTH 68 fm 56° F
 Red Bluff

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	13.13	24.09	0.726
5	13.02	27.52	0.665
10	10.93	29.13	0.295
20	8.86	29.92	0.089
30	8.65	30.12	0.117
50	9.29	30.26	0.195
75	10.30	30.55	0.271
100	10.53	30.55	0.276

STA 216 46° 21.5' N WEATHER b. 14 Oct 52 123° 03.8' W WIND W 1 1322 (+8) DEPTH 20 fm 69° F Tahuya River			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	14.78	24.67	0.859
5	14.37	25.70	0.882
10	9.96	29.43	0.290
20	8.85	29.96	-----
30	8.73	30.12	0.135

STA 218 47° 35.7' N WEATHER 10 14 Oct 52 122° 57.5' W WIND NxE 4 1906 (+8) DEPTH 92 fm 56° F Tekiu Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	12.48	29.31	0.549
5	11.60	29.51	0.479
10	9.72	29.79	0.240
20	8.83	30.08	0.143
30	9.31	30.23	0.204
50	10.24	30.50	0.266
75	10.42	30.66	0.278
100	10.47	30.62	0.284
130	10.59	30.73	0.292
160	10.63	30.81	0.296

STA 217 46° 23.7' N WEATHER b. 14 Oct 52 122° 55.6' W WIND SE 8 1551 (+8) DEPTH 10 fm 92° F Lynch Cove			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	14.30	23.50	0.664
5	13.46	26.55	0.563
10	9.23	29.76	0.009
20	8.69	29.99	0.020

STA 219 47° 41.5' N WEATHER b. 14 Oct 52 122° 45.8' W WIND NW 4 2103 (+8) DEPTH 60 fm 52° F Hazel Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	10.84	29.87	0.373
5	10.56	29.99	0.357
10	10.34	30.05	0.315
20	9.98	30.21	0.261
30	9.85	30.23	0.244
50	10.27	30.52	0.264
70	10.45	30.75	0.301
90	10.54	30.91	0.311

STA 220 48° 01.8' N WEATHER b. 15 Oct 52 122° 37.6' W WIND NW 6 0144 (+8) DEPTH 62 fm 51° F Bush Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.13	30.70	0.371
5	11.03	30.70	0.370
10	11.04	30.82	0.362
20	10.97	30.88	0.355
30	10.86	30.91	0.355
50	10.57	31.15	0.345
75	10.09	31.42	0.331
100	9.75	31.52	0.321

STA 222 48° 10.6' N WEATHER b. 15 Oct 52 122° 47.9' W WIND NW 4 0507 (+8) DEPTH 43 fm 50° F Middle Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.61	31.11	0.332
5	9.80	31.35	0.321
10	9.78	31.47	0.325
15	9.72	31.51	0.299
25	9.49	31.76	0.282
35	9.42	31.85	0.282

STA 221 48° 08.3' N WEATHER b. 15 Oct 52 122° 41.4' W WIND NW 3 0340 (+8) DEPTH 62 fm 49° F Port Townsend			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.26	31.18	0.349
5	10.24	31.27	0.330
10	10.12	31.42	0.331
20	9.71	31.69	0.307
30	9.55	31.78	0.308
50	9.38	31.91	0.303
75	9.23	32.03	0.292
100	8.99	32.16	0.287

STA 223 48° 15.6' N WEATHER 10 15 Oct 52 123° 04.5' W WIND NW 3 0718 (+8) DEPTH 90 fm 51° F New Dungeness			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.05	-----	0.374
5	9.93	-----	0.356
10	10.04	-----	0.349
20	9.84	-----	0.326
30	9.27	-----	0.297
50	8.81	-----	0.277
69	8.58	-----	0.253
93	7.89	-----	0.236
123	7.59	-----	0.222
152	7.52	-----	0.216

STA 224 48° 25.5' N WEATHER 10 15 Oct 52 122° 44.5' W WIND -- 1106 (+8) DEPTH 14 fm 59° F Lawson Reef, North of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.74	29.58	0.414
5	10.17	30.10	0.367
10	9.95	30.46	0.343
20	9.85	-----	0.340
30	9.55	30.46	0.322
50	9.41	-----	0.308
75	8.76	-----	0.269

STA 226 48° 21.4' N WEATHER 10 15 Oct 52 122° 33.5' W WIND SW 1 1404 (+8) DEPTH 8 fm 60° F Goat Island, West of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.93	29.00	0.308
5	10.85	29.34	0.290
10	11.06	29.45	0.268

STA 225 48° 25.0' N WEATHER b.c. 15 Oct 52 122° 36.2' W WIND SE 3 1322 (+8) DEPTH 20 fm 60° F Dewey, South of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.47	29.81	0.344
5	10.24	30.01	0.340
10	10.11	30.34	0.341
20	9.99	30.44	0.334
30	9.91	30.64	0.342

STA 227 48° 18.6' N WEATHER 10 15 Oct 52 122° 29.5' W WIND SE 3 1458 (+8) DEPTH 14 fm 72° F Strawberry Pt., North of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.81	24.94	0.414
5	10.90	30.28	0.247
10	11.02	30.34	0.249
20	10.93	30.37	0.235

STA 228 48° 14.8' N WEATHER 10 15 Oct 52 122° 34.9' W WIND SE 3 1612 (+8) DEPTH 31 fm 70° F Snetelum Pt.			
Depth	Temp	Sal	O ₂
(m)	(°C)	(‰)	(mg-at/L)
0	12.03	27.97	0.366
5	11.32	29.34	0.232
10	10.78	29.88	0.172
20	10.73	29.94	0.301
30	10.86	30.30	0.242
40	11.01	30.57	0.236

STA 230 48° 02.9' N WEATHER b. 15 Oct 52 122° 22.3' W WIND W 2 1856 (+8) DEPTH 95 fm 56° F Camano Head, West of			
Depth	Temp	Sal	O ₂
(m)	(°C)	(‰)	(mg-at/L)
0	12.08	28.26	0.386
5	11.45	29.18	0.303
10	11.12	30.25	0.270
20	11.08	30.48	0.277
30	11.13	30.55	0.286
50	11.19	30.66	0.304
75	11.14	30.79	0.305
100	11.09	30.79	0.295
150	10.94	30.95	0.329

STA 229 48° 06.5' N WEATHER 10 15 Oct 52 122° 29.3' W WIND W 1 1746 (+8) DEPTH 74 fm 61° F East Pt.			
Depth	Temp	Sal	O ₂
(m)	(°C)	(‰)	(mg-at/L)
0	12.41	27.72	0.436
5	11.47	29.56	0.301
10	11.16	30.19	0.272
20	11.09	30.32	0.275
30	11.07	30.43	0.275
50	11.13	30.62	0.298
65	11.09	30.50	0.309
75	11.12	30.73	0.287

STA 231 48° 09.2' N WEATHER b. 15 Oct 52 122° 24.6' W WIND W 2 2027 (+8) DEPTH 50 fm 53° F Port Susan, Head of			
Depth	Temp	Sal	O ₂
(m)	(°C)	(‰)	(mg-at/L)
0	11.99	29.09	0.422
5	10.81	29.49	0.327
10	9.53	29.79	0.185
20	9.86	30.03	0.199
30	10.33	30.28	0.348
50	10.83	30.48	0.255
65	10.95	30.57	0.262

STA 232 48° 03.8' N WEATHER b. 15 Oct 52 122° 19.6' W WIND WNW 12 2156 (+8) DEPTH 65 fm 52° F Camano Head, East of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.50	29.27	0.262
5	10.28	29.87	0.176
10	9.97	29.96	0.183
20	10.64	30.28	0.138
30	10.54	30.30	0.237
50	10.84	30.41	0.241
80	11.13	30.68	0.291
108	11.04	30.77	0.302

STA 234 47° 53.7' N WEATHER c. 16 Oct 52 122° 21.3' W WIND NNW 12 0053 (+8) DEPTH 123 fm 52° F Possession Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.59	29.38	0.330
5	11.30	29.87	0.278
10	11.24	30.26	0.247
19	11.35	30.46	0.276
29	11.40	30.53	0.321
48	11.49	30.61	0.345
73	11.36	30.68	0.349
97	11.24	30.73	0.347
146	10.87	30.95	0.337
175	10.70	31.06	0.332
215	10.61	31.08	0.326

STA 233 47° 58.4' N WEATHER b. 15 Oct 52 122° 17.4' W WIND NNW 4 2347 (+8) DEPTH 76 fm 51° F Port Gardner			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.95	28.40	0.440
5	11.46	29.31	0.341
10	11.12	30.21	0.264
20	11.06	30.48	0.261
30	11.10	30.55	0.274
50	11.30	30.66	0.323
80	11.30	30.73	0.342
120	11.11	30.84	0.334

STA 235 47° 44.5' N WEATHER c. 16 Oct 52 122° 25.5' W WIND NNW 4 0250 (+8) DEPTH 155 fm 52° F Pt. Jefferson			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.91	30.43	0.434
5	11.82	-----	0.435
10	11.91	30.39	0.433
20	11.93	30.43	0.424
30	11.84	30.52	0.394
50	11.44	30.68	0.355
100	11.05	30.82	0.347
150	10.86	30.91	0.342
200	10.75	31.04	0.333
240	10.62	31.09	0.329
275	10.61	31.09	0.328

STA 236 47° 39.7' N WEATHER c. 16 Oct 52 122° 28.0' W WIND NNW 6 0403 (+8) DEPTH 125 fm 52° F West Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.84	30.41	0.405
5	11.77	30.46	0.342
10	11.85	30.48	0.362
20	11.93	30.48	0.399
30	11.75	30.50	0.398
50	11.49	30.61	-----
75	11.33	30.75	-----
100	11.19	30.79	0.334
150	11.00	30.95	0.308
180	10.77	31.02	-----
200	10.65	31.09	0.309

STA 238 47° 26.4' N WEATHER 10 16 Oct 52 122° 23.2' W WIND NNW 3 0648 (+8) DEPTH 127 fm 49° F Pully Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.86	30.50	0.408
5	11.75	30.50	0.403
10	11.82	30.52	0.392
20	11.77	30.52	0.385
30	11.69	30.55	0.377
50	11.54	30.62	0.355
75	11.26	30.75	0.338
100	11.19	30.79	0.332
150	11.14	30.84	0.333
180	10.85	30.99	0.330
220	10.81	30.99	0.325

STA 237 47° 34.9' N WEATHER c. 16 Oct 52 122° 26.6' W WIND NNW 6 0525 (+8) DEPTH 120 fm 50° F Alki Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.87	30.48	0.403
5	11.77	30.48	0.406
10	11.84	30.48	0.402
20	11.84	30.48	0.395
30	11.70	30.50	0.386
50	11.62	30.59	0.365
75	11.30	30.75	0.349
100	11.12	30.82	0.340
150	10.99	30.97	0.334
180	10.78	31.00	0.334
220	10.72	31.08	0.323

STA 239 47° 22.9' N WEATHER 10 16 Oct 52 122° 21.2' W WIND E 4 0835 (+8) DEPTH 109 fm 49° F Pt. Robinson			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
75	11.58	30.72	0.352
100	11.20	30.79	0.328
150	11.08	30.88	0.327
190	10.88	30.97	0.332

STA 240 47° 19.2' N WEATHER 10 16 Oct 52 122° 27.9' W WIND SSE 4 0945 (+8) DEPTH 94 fm 50° F Brown Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.86	29.70	0.413
5	11.92	30.25	0.416
10	11.98	30.48	0.415
20	11.91	30.50	0.401
30	11.78	30.52	0.383
50	11.55	30.59	0.351
75	11.17	30.81	0.333
100	11.12	30.86	0.328
130	11.14	30.86	0.329
160	11.04	30.91	0.334

STA 242 47° 07.3' N WEATHER 10 16 Oct 52 122° 42.6' W WIND WNW 3 1341 (+8) DEPTH 35 fm 62° F Nisqually Reach			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	12.45	30.01	0.405
5	12.31	30.12	0.398
10	12.25	30.25	0.392
20	12.27	30.26	0.390
30	12.21	30.28	0.385
40	12.24	30.27	0.389
60	12.21	30.28	0.388

STA 241 47° 11.0' N WEATHER 10 16 Oct 52 122° 37.8' W WIND WNW 2 1222 (+8) DEPTH 91 fm 54° F Gordon Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	12.66	30.05	0.422
5	12.43	30.12	0.412
10	12.51	30.10	0.416
20	12.52	30.14	0.433
30	12.43	30.21	0.409
50	12.37	30.25	0.400
75	12.17	30.34	0.383
100	12.10	30.33	0.377
130	12.10	30.34	0.374
160	12.02	30.41	0.377

STA 243 47° 10.2' N WEATHER 10 16 Oct 52 122° 47.2' W WIND W 1 1431 (+8) DEPTH 17 fm 60° F Devil's Head			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	13.43	30.01	0.475
5	13.00	30.03	0.474
10	12.95	30.05	0.452
20	12.75	30.08	0.423
30	12.54	30.14	0.403
50	12.54	30.16	0.402
75	12.45	30.19	0.385

STA 244 47° 17.1' N WEATHER 10 16 Oct 52 122° 42.8' W WIND NNW 6 1726 (+8) DEPTH 47 fm 60° F Green Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	12.70	30.21	0.453
5	12.61	30.21	0.434
10	12.64	30.23	0.417
20	12.48	30.25	0.418
40	12.34	30.28	0.370
60	12.27	30.30	-----
85	12.20	30.35	0.321

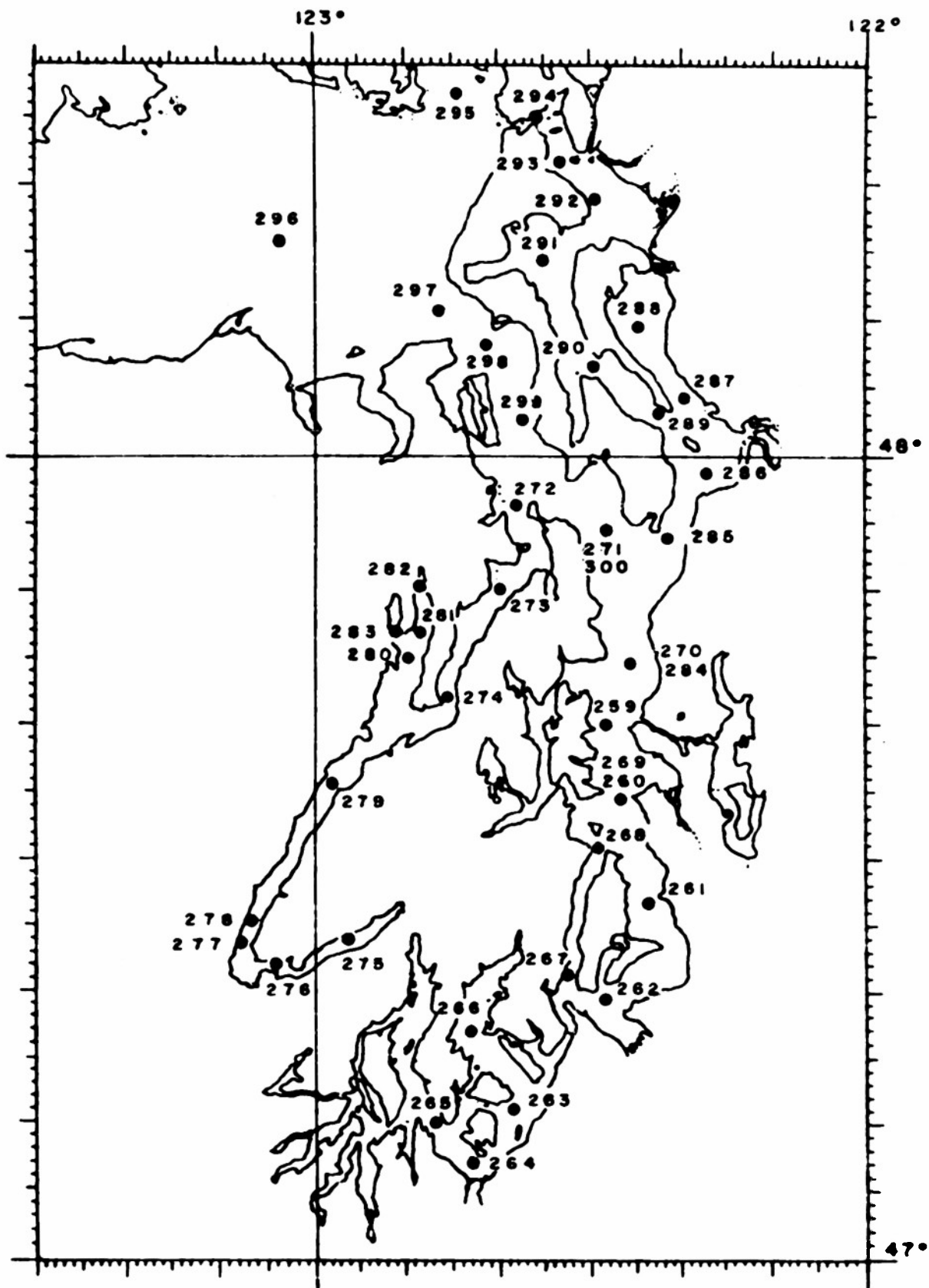
STA 246 47° 30.7' N WEATHER b. 16 Oct 52 122° 29.2' W WIND NW 9 2107 (+8) DEPTH 59 fm 54° F Pt. Vashon			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.87	30.48	0.394
5	11.85	30.48	0.385
10	11.87	30.48	0.386
20	11.88	30.48	0.380
30	11.82	30.50	0.380
50	11.75	30.52	0.373
75	11.61	30.59	0.363
100	11.61	30.59	0.360

STA 245 47° 21.5' N WEATHER 10 16 Oct 52 122° 32.4' W WIND NNW 6 1922 (+8) DEPTH 51 fm 56° F Spring Beach			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.65	30.50	-----
5	11.75	30.52	0.329
15	11.72	30.52	0.374
25	11.63	30.57	0.349
45	11.65	30.64	0.336
70	11.43	30.72	0.354
80	11.32	30.72	0.349

STA 247 47° 34.2' N WEATHER b. 16 Oct 52 122° 27.0' W WIND NNW 6 2216 (+8) DEPTH 126 fm 53° F Alki Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.84	30.44	0.384
5	11.69	30.52	0.390
10	11.90	30.55	0.388
20	11.85	30.50	0.387
30	11.82	-----	0.385
50	11.85	-----	0.386
75	11.32	-----	0.341
100	11.10	-----	0.333
150	10.82	-----	0.319
180	10.74	-----	0.327
220	10.70	-----	0.318

STA 248 47° 39.8' N WEATHER b.
 16 Oct 52 122° 28.2' W WIND N 10
 2335 (+8) DEPTH 123 fm 53° F
 West Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.88	-----	0.404
5	11.76	-----	0.398
10	11.86	-----	0.396
20	11.83	-----	0.383
30	11.67	-----	0.370
50	11.50	-----	0.352
75	11.21	-----	0.338
100	11.00	-----	0.336
150	10.94	-----	0.331
180	10.77	-----	0.329
220	10.73	-----	0.321



Oceanographic Station Locations
 Brown Bear Cruise 15
 12-14, 17-18 November 1952

STA 259 47° 39.8' N WEATHER b.c.
 12 Nov 52 122° 28.3' W WIND SE 5
 1012 (+8) DEPTH 122 fm 48°/46° F
 West Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.96	30.70	0.387
5	10.97	30.72	0.386
10	10.92	30.72	0.387
20	10.97	30.75	0.377
30	10.84	30.84	0.360
50	10.76	30.90	0.348
75	10.62	30.97	0.347
94	10.54	30.97	0.351
114	10.34	31.00	0.355
173	10.14	31.02	0.337
213	9.97	31.08	0.349

STA 261 47° 26.3' N WEATHER o.
 12 Nov 52 122° 23.4' W WIND SE 2
 1324 (+8) DEPTH 132 fm 50°/48° F
 Pully Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.90	30.55	0.402
5	10.87	30.57	0.400
10	10.83	30.57	0.390
20	10.85	30.61	0.380
30	10.92	30.64	0.375
50	10.95	30.75	0.356
75	10.73	30.86	0.324
100	10.56	30.91	0.342
150	10.47	30.93	0.344
180	10.27	30.93	0.347
220	10.21	30.99	0.347

STA 260 47° 34.1' N WEATHER o.
 12 Nov 52 122° 26.9' W WIND SE 3
 1146 (+8) DEPTH 129 fm 48°/45° F
 Alki Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.11	30.60	0.387
5	11.01	30.70	0.400
10	10.96	30.70	0.390
20	10.96	30.70	0.381
30	10.99	30.70	0.372
50	10.83	30.79	0.362
75	10.50	30.84	0.346
100	10.37	30.97	0.354
150	10.28	30.99	0.354
180	-----	31.04	0.349
220	10.09	31.08	0.350

STA 262 47° 19.3' N WEATHER o.
 12 Nov 52 122° 27.9' W WIND NW 1
 1633 (+8) DEPTH 97 fm 51°/48° F
 Brown Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.77	30.10	0.398
5	10.94	30.41	0.397
10	10.87	30.52	0.396
15	10.95	30.70	0.379
35	10.86	30.81	0.346
60	10.74	30.91	0.332
85	10.63	30.91	0.336
115	10.68	30.91	0.338
145	10.57	30.91	0.344
160	10.52	30.91	0.339

STA 263 47° 10.9' N WEATHER 10 12 Nov 52 122° 38.3' W WIND W 1 2017 (+8) DEPTH 90 fm 50°/48° F Gordon Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.29	30.30	0.400
5	11.35	30.30	0.399
10	11.30	30.35	0.386
20	11.32	30.39	0.379
30	11.34	30.39	0.378
50	11.39	30.39	0.372
75	11.30	30.50	0.383
100	11.17	30.57	0.367
130	11.22	30.57	0.366
160	11.08	30.62	0.368

STA 265 47° 10.1' N WEATHER b. 12 Nov 52 122° 47.3' W WIND SW 11 2204 (+8) DEPTH 47 fm 47°/46° F Devil's Head			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.50	30.16	0.396
5	11.50	30.17	0.392
10	11.50	30.25	0.386
20	11.48	30.30	0.375
30	11.48	30.34	0.375
50	11.54	30.35	0.372
75	11.48	30.39	0.371

STA 264 47° 07.3' N WEATHER 10 12 Nov 52 122° 42.3' W WIND SW 16 2113 (+8) DEPTH 36 fm 50°/48° F Nisqually Reach			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.47	30.14	0.408
5	11.46	30.17	0.407
10	11.38	30.27	0.395
20	11.38	30.36	0.378
30	11.39	30.37	0.375
40	11.37	30.43	0.373

STA 266 47° 17.2' N WEATHER b. 13 Nov 52 122° 42.9' W WIND S 4 0710 (+8) DEPTH 48 fm 48°/46° F Green Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	11.42	30.44	0.368
5	11.44	30.44	0.368
10	11.38	30.44	0.370
20	11.38	30.44	0.371
30	11.43	30.44	0.372
40	11.56	30.44	0.354
60	11.50	30.46	0.336
85	11.27	30.53	0.345

STA 267 47° 21.3' N WEATHER 63 13 Nov 52 122° 32.5' W WIND S 10 0904 (+8) DEPTH 55 fm 50°/45° F Spring Beach			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.91	30.70	0.365
5	10.92	30.73	0.370
10	10.92	30.73	0.364
20	10.85	30.73	0.357
30	10.85	30.77	0.359
50	10.88	30.75	0.349
75	10.86	30.79	0.355
95	10.78	30.81	0.355

STA 269 47° 34.3' N WEATHER 61 13 Nov 52 122° 27.0' W WIND ESE 10 1207 (+8) DEPTH 137 fm 46°/44° F Alki Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.89	30.70	0.386
5	10.90	30.72	0.378
10	10.86	30.72	0.377
20	10.88	30.73	0.374
30	10.90	30.70	0.374
50	10.67	30.88	0.358
75	10.52	30.91	0.352
99	10.34	30.95	0.350
149	10.35	30.97	0.350
178	10.16	31.00	0.350
198	10.06	31.02	0.348

STA 268 47° 30.5' N WEATHER 62 13 Nov 52 122° 29.1' W WIND ESE 4 1058 (+8) DEPTH 60 fm 48°/45° F Pt. Vashon			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.88	30.73	0.364
5	10.90	30.73	0.369
10	10.91	30.73	0.369
20	10.88	30.73	0.361
30	10.90	30.72	0.363
50	10.96	30.73	0.357
75	10.95	30.73	0.353
97	10.85	30.77	0.363

STA 270 47° 44.5' N WEATHER 63 13 Nov 52 122° 25.5' W WIND SE 16 1349 (+8) DEPTH 155 fm 50°/47° F Pt. Jefferson			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.85	30.70	0.397
10	10.87	30.70	0.394
20	10.81	30.70	0.390
29	10.81	30.73	0.384
49	10.80	30.75	0.379
73	10.48	30.88	0.357
98	10.40	30.93	0.360
147	10.15	30.99	0.360
196	9.95	31.09	0.359
235	9.83	31.18	0.356
270	9.83	31.20	0.354

STA 271 47° 54.3' N WEATHER 13 13 Nov 52 122° 28.3' W WIND SE 28 1523 (+8) DEPTH 110 fm 50°/48° F Pt. No Point			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.76	30.79	0.391
5	10.75	30.79	-----
10	10.70	30.79	0.386
20	10.72	30.77	0.385
30	10.73	30.81	0.380
50	10.70	30.79	0.380
75	10.58	30.81	0.382
86	10.37	30.90	0.375
121	10.14	31.00	0.374
165	9.87	31.20	0.365

STA 273 47° 50.3' N WEATHER o. 13 Nov 52 122° 40.2' W WIND SE 15 1919 (+8) DEPTH 37 fm 51°/47° F South Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.74	29.88	0.388
5	9.75	29.90	0.389
10	9.77	30.19	0.371
20	9.74	30.50	0.370
29	9.72	30.61	0.362
34	9.58	31.27	0.344
50	9.45	31.42	0.336

STA 272 47° 56.1' N WEATHER o. 13 Nov 52 122° 38.2' W WIND SE 16 1709 (+8) DEPTH 65 fm 50°/48° F Tala Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.68	30.39	0.410
5	9.71	30.44	0.407
9	9.70	30.61	0.402
18	9.71	31.06	0.382
28	9.57	31.29	0.366
46	9.42	31.47	0.355
69	9.27	31.62	0.357
92	9.16	31.62	0.354

STA 274 47° 42.2' N WEATHER 60 13 Nov 52 122° 45.9' W WIND SE 10 2117 (+8) DEPTH 73 fm 48°/45° F Hazel Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.93	30.03	0.348
5	9.99	30.21	0.339
10	9.96	30.25	0.331
20	9.89	30.75	0.318
30	9.85	30.90	0.325
50	9.85	31.00	0.324
80	9.84	31.00	0.320
104	9.79	-----	0.338

STA 275 47° 24.0' N WEATHER 61 14 Nov 52 122° 55.0' W WIND S 16 0557 (+8) DEPTH 11 fm 48°/45° F Lynch Cove			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.15	27.52	0.475
5	9.61	28.89	0.262
10	9.68	30.32	0.077
20	10.27	30.61	-----

STA 277 47° 23.5' N WEATHER 61 14 Nov 52 123° 07.8' W WIND S 21 0823 (+8) DEPTH 60 fm 44°/44° F Musquette Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.97	29.69	0.288
5	10.04	29.72	0.289
10	10.12	30.03	0.266
20	10.47	30.70	0.253
30	10.43	30.73	0.256
40	10.44	30.72	0.259
50	10.32	30.77	0.264
75	10.25	30.77	0.276
100	10.28	30.77	0.279

STA 276 47° 21.5' N WEATHER 61 14 Nov 52 123° 03.9' W WIND S 16 0714 (+8) DEPTH 20 fm 48°/45° F Tahuya River			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.02	30.21	0.227
5	10.02	30.25	0.207
10	10.19	30.50	0.199
20	10.40	30.68	0.247
30	10.35	30.73	0.252

STA 278 47° 25.3' N WEATHER 61 14 Nov 52 123° 07.0' W WIND S 13 0909 (+8) DEPTH 67 fm 45°/45° F Red Bluff			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.89	29.34	0.315
5	10.08	29.76	0.277
10	10.31	30.52	0.234
20	10.45	30.70	0.260
30	10.41	30.72	0.265
40	10.41	30.73	0.270
50	10.39	30.77	0.272
75	10.25	30.75	0.276
100	10.24	30.81	0.284

STA 279 47° 35.8' N WEATHER 61 14 Nov 52 122° 58.0' W WIND S 14 1105 (+8) DEPTH 94 fm 44°/44° F Tekiu Pt.			
Depth (m)	Temp (°C)	Sal (°/oc)	O ₂ (mg-at/L)
0	9.79	29.51	0.336
5	9.90	29.67	0.327
10	10.18	30.44	0.274
17	10.36	30.70	0.261
26	10.30	30.73	0.266
34	10.30	30.75	0.265
43	10.22	30.79	0.271
64	10.11	30.81	0.279
86	10.09	30.82	0.301
111	10.02	30.88	0.311
137	9.93	30.95	0.320

STA 281 47° 46.9' N WEATHER 63 14 Nov 52 122° 48.6' W WIND SSE 16 1404 (+8) DEPTH 87 fm 53°/53° F Bolton Peninsula, East of			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	9.74	29.92	0.483
5	9.74	29.92	0.487
10	9.74	29.94	0.473
20	9.73	29.96	0.466
30	9.76	29.99	0.451
40	10.05	30.43	0.284
50	10.31	30.72	0.249
75	10.19	30.79	0.284
100	10.07	30.79	0.301

STA 280 47° 45.0' N WEATHER 63 14 Nov 52 122° 49.8' W WIND SSE 21 1255 (+8) DEPTH 102 fm 56°/54° F Tabock Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	9.86	30.19	0.392
5	9.90	30.19	0.389
10	9.85	30.19	0.386
20	9.86	30.17	0.384
30	10.08	30.39	0.297
40	10.32	30.70	0.261
50	10.25	30.73	0.265
75	10.09	30.79	0.293
100	10.10	30.84	0.300
131	10.03	30.84	0.317
169	10.01	30.84	0.310

STA 282 43° 49.8' N WEATHER b.c. 14 Nov 52 122° 48.6' W WIND SSE 16 1452 (+8) DEPTH 28 fm 53°/53° F Dabob Bay, Head of			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	9.51	29.60	0.528
5	9.46	29.63	0.543
10	9.44	29.65	0.543
20	9.59	29.72	0.528
30	9.64	29.79	0.518
40	9.78	29.97	0.460

STA 283 47° 46.7' N WEATHER b.c. 14 Nov 52 122° 51.5' W WIND SE 12 1551 (+8) DEPTH 40 fm 48°/46° F Quiloana Bay			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.64	29.87	0.479
5	9.67	29.94	0.480
10	9.66	29.94	0.474
20	9.72	29.97	0.462
30	9.75	29.99	0.450
50	10.28	30.66	0.235

STA 285 47° 53.6' N WEATHER 42 17 Nov 52 122° 21.3' W WIND NE 4 1326 (+8) DEPTH 129 fm 48°/46° F Possession Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.00	29.76	0.433
5	10.31	30.10	0.382
10	10.59	30.43	0.367
20	10.67	30.72	0.384
30	10.69	30.75	0.370
50	10.72	30.73	0.378
75	10.71	30.84	0.360
100	10.48	30.90	0.356
150	10.26	31.00	0.368
180	10.11	31.06	0.370
215	10.08	31.09	0.379

STA 284 47° 44.4' N WEATHER 45 17 Nov 52 122° 25.6' W WIND calm 1128 (+8) DEPTH 156 fm 46°/45° F Pt. Jefferson			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.58	30.72	0.394
5	10.53	30.72	0.393
10	10.59	30.72	0.390
20	10.62	30.73	0.383
30	10.63	30.75	0.381
50	10.66	30.75	0.368
100	10.39	30.93	0.370
150	10.35	31.00	0.369
200	10.07	31.06	0.381
240	10.00	31.08	0.382
270	10.02	31.08	0.386

STA 286 47° 58.5' N WEATHER c. 17 Nov 52 122° 17.2' W WIND calm 1451 (+8) DEPTH 77 fm 47°/44° F Port Gardner			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	10.20	29.79	0.407
5	10.39	30.03	0.392
10	10.54	30.34	0.372
20	10.66	30.55	0.352
30	10.76	30.77	0.345
50	10.77	30.84	0.305
80	10.64	30.91	0.322
120	10.28	30.99	0.340

STA 287 48° 04.1' N WEATHER 10 17 Nov 52 122° 19.8' W WIND calm 1604 (+8) DEPTH 69 fm 48°/44° F Camano Head, East of			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	8.56	26.35	0.529
5	10.24	29.72	0.388
10	10.67	30.50	0.337
20	10.71	30.64	0.340
30	10.71	30.72	0.339
50	10.82	30.73	0.327
80	10.91	30.77	0.273
110	10.58	30.90	0.295

STA 289 48° 02.7' N WEATHER 10 17 Nov 52 122° 02.2' W WIND N 1 1923 (+8) DEPTH 90 fm 45°/44° F Camano Head, West of			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	9.38	28.84	0.496
5	9.91	29.20	0.457
10	10.54	30.14	0.448
20	10.75	30.46	0.374
30	10.79	30.62	0.335
50	10.72	30.75	0.334
75	10.66	30.88	0.325
100	10.47	31.00	0.329
150	10.27	31.02	0.332

STA 288 48° 09.1' N WEATHER 10 17 Nov 52 122° 24.7' W WIND N 1 1734 (+8) DEPTH 50 fm 46°/43° F Port Susan, Head of			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	8.79	26.71	0.539
5	10.17	29.43	0.381
10	10.70	30.23	0.316
20	10.98	30.52	0.246
30	10.97	-----	0.255
50	11.03	30.82	0.252
80	10.95	30.84	0.265

STA 290 48° 06.0' N WEATHER 61 17 Nov 52 122° 29.2' W WIND ENE 3 2040 (+8) DEPTH 79 fm 46°/45° F East Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	9.37	28.55	0.516
5	10.23	29.27	0.425
10	10.49	29.63	0.391
20	10.64	30.39	0.352
30	10.81	30.62	0.325
50	10.79	30.77	0.315
75	10.70	30.82	0.315
100	10.67	30.90	0.319
130	10.51	31.08	0.325

STA 291 48° 14.3' N WEATHER 10
 17 Nov 52 122° 35.1' W WIND E 5
 2222 (+8) DEPTH 23 fm 46°/45° F
 Snatelum Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.89	26.65	0.517
5	9.22	27.86	0.518
10	10.19	29.42	0.376
20	10.65	30.21	0.356
30	10.81	30.44	0.311
35	10.94	30.62	-----

STA 293 48° 21.4' N WEATHER 10
 18 Nov 52 122° 33.5' W WIND SE 3
 0831 (+8) DEPTH 6 fm 46°/44° F
 Goat Island, West of

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.81	27.27	0.403
3	10.34	29.05	0.347
8	10.81	20.37	0.300

STA 292 48° 18.5' N WEATHER 0.
 18 Nov 52 122° 29.6' W WIND SE 3
 0739 (+8) DEPTH 15 fm 46°/44° F
 Strawberry Pt., North of

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.98	28.35	0.395
5	10.74	30.26	0.329
10	10.82	30.46	0.313
20	10.83	30.53	0.301

STA 294 48° 25.1' N WEATHER 10
 18 Nov 52 122° 36.0' W WIND NE 1
 0920 (+8) DEPTH 21 fm 46°/44° F
 Dewey, South of

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.36	28.93	0.406
2	9.26	29.00	0.410
7	9.26	29.02	0.410
16	9.25	29.05	0.409
25	9.29	29.16	0.410

STA 295 48° 26.6' N WEATHER b.c.
 18 Nov 52 122° 44.3' W WIND SE 2
 1029 (+8) DEPTH 44 fm 47°/44° F
 Lawson Reef, North of

Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	8.76	30.97	0.399
5	8.75	30.97	0.395
10	8.77	30.99	0.392
20	8.72	31.02	0.393
30	8.77	31.08	0.392
50	8.75	31.15	0.390
75	8.68	31.18	0.385

STA 297 48° 10.6' N WEATHER 10
 18 Nov 52 122° 46.3' W WIND NW 6
 1555 (+8) DEPTH 30 fm 54°/49° F
 Middle Pt.

Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	9.15	31.49	0.393
5	9.06	31.51	0.390
10	9.00	31.60	0.379
20	8.93	31.65	0.377
30	8.96	31.67	0.374
50	8.78	32.03	0.369

STA 296 48° 15.7' N WEATHER 10
 18 Nov 52 123° 03.6' W WIND NW 4
 1332 (+8) DEPTH 94 fm 48°/46° F
 New Dungeness, Northeast of

Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	9.32	31.87	0.422
5	9.15	31.92	0.413
10	8.96	32.01	0.391
20	8.88	32.05	0.380
30	8.92	32.05	0.384
50	8.91	32.05	0.384
75	8.77	32.07	0.380
100	8.65	32.14	0.367
130	8.36	32.38	0.324
160	8.25	32.48	0.301

STA 298 48° 08.0' N WEATHER 10
 18 Nov 52 122° 41.2' W WIND NW 4
 1650 (+8) DEPTH 60 fm 50°/47° F
 Port Townsend

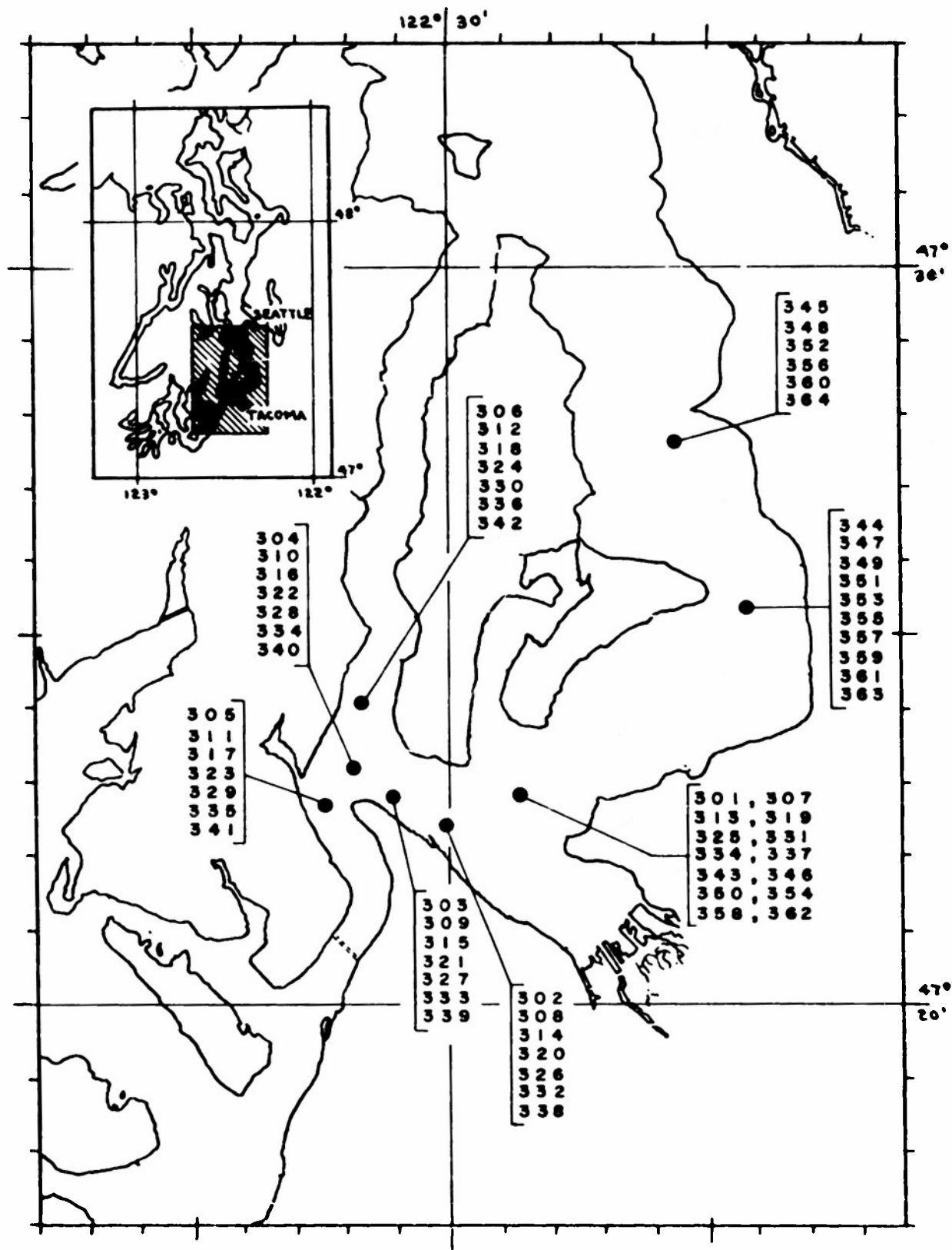
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	9.12	31.46	0.389
5	9.12	31.46	0.390
10	9.11	31.49	0.377
20	9.06	31.49	0.382
30	9.09	31.49	0.381
50	9.04	31.53	0.377
75	8.96	31.55	0.379
100	9.00	31.58	0.379

STA 299 48° 02.1' N WEATHER 10
 18 Nov 52 122° 37.4' W WIND NW 4
 1824 (+8) DEPTH 68 fm 48°/46° F
 Bush Pt.

Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	9.84	31.02	0.385
5	9.83	31.02	0.385
10	9.84	31.04	0.385
20	9.85	31.05	0.393
30	9.89	31.05	0.387
50	9.64	31.15	0.381
75	9.17	31.38	0.381
100	9.11	31.46	0.378

STA 300 47° 54.1' N WEATHER b.c.
 18 Nov 52 122° 28.7' W WIND NW 4
 2132 (+8) DEPTH 109 fm 48°/47° F
 Pt. No Point

Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	10.43	30.50	0.384
5	10.46	30.57	0.384
15	10.48	30.64	0.381
25	10.55	30.70	0.379
45	10.52	30.82	0.381
70	10.26	30.88	0.383
95	10.11	30.91	0.384
135	9.92	30.99	0.383
190	9.95	31.02	0.387



Oceanographic Station Locations
 Brown Bear Cruise 17
 8-10 December 1952

STA 301 47° 19.4' N WEATHER o. 8 Dec 52 122° 27.6' W WIND SW 18 1357 (+8) DEPTH 94 fm 44°/43° F Brown Pt.		
Depth (m)	TEMP (°C)	SAL (°/oo)
0	9.73	30.71
5	9.72	30.73
10	9.73	30.81
20	9.75	30.78
30	9.75	30.80
49	9.69	30.87
74	9.69	30.89
98	9.54	30.91
128	9.34	30.93
157	9.43	30.96

STA 303 47° 19.3' N WEATHER c. 8 Dec 52 122° 31.4' W WIND SW 8 1465 (+8) DEPTH 52 fm 44°/42° F		
DEPTH (m)	TEMP (°C)	SAL (°/oo)
0	9.70	30.83
40	9.65	30.90
60	9.60	30.90
90	9.59	30.91

STA 302 47° 18.9' N WEATHER c. 8 Dec 52 122° 30.2' W WIND SW 18 1437 (+8) DEPTH 83 fm 44°/42° F		
Depth (m)	Temp (°C)	Sal (°/oo)
0	9.85	30.86
5	9.81	30.83
10	9.84	30.84
20	9.84	30.84
30	9.83	30.83
50	9.71	30.84
75	9.71	30.88
100	9.55	30.93
125	9.54	30.93
150	9.50	30.95

STA 304 47° 19.9' N WEATHER c. 8 Dec 52 122° 32.5' W WIND SW 8 1522 (+8) DEPTH 27 fm 44°/42° F		
Depth (m)	Temp (°C)	Sal (°/oo)
10	9.64	30.81
30	9.73	30.81

STA 305 47° 18.9' N WEATHER c. 8 Dec 52 122° 33.8' W WIND SW 8 1552 (+8) DEPTH 42 fm 44°/42° F Pt. Defiance		
Depth (m)	Temp (°C)	Sal (‰)
0	9.71	30.80
30	9.69	30.77
70	9.70	30.79

STA 307 47° 19.4' N WEATHER c. 8 Dec 52 122° 27.7' W WIND SW 8 1805 (+8) DEPTH 97 fm 42°/40° F Brown Pt.		
Depth (m)	Temp (°C)	Sal (‰)
0	9.80	30.83
5	9.82	30.81
10	9.81	30.81
20	9.84	30.83
30	9.82	30.84
50	9.66	30.86
75	9.64	30.90
100	9.56	30.91
130	9.38	30.91
160	9.45	30.96

STA 306 47° 21.3' N WEATHER c. 8 Dec 52 122° 32.1' W WIND SW 8 1628 (+8) DEPTH 55 fm 43°/41° F Spring Beach		
Depth (m)	Temp (°C)	Sal (‰)
0	9.70	30.76
5	9.70	30.77
10	9.55	30.79
20	9.68	30.79
30	9.69	30.79
50	9.64	30.81
75	9.70	30.81
95	9.72	30.82

STA 308 47° 18.8' N WEATHER c. 8 Dec 52 122° 30.1' W WIND SW 8 1851 (+8) DEPTH 83 fm 42°/40° F		
Depth (m)	Temp (°C)	Sal (‰)
0	9.65	30.85
5	9.62	30.87
10	9.63	30.87
20	9.65	30.87
30	9.66	30.83
50	9.60	30.88
75	9.67	30.88
100	9.71	30.88
125	9.51	30.90
150	9.52	30.93

STA 309 47° 19.2' N WEATHER c.
 8 Dec 52 122° 31.6' W WIND SW 8
 1851 (+8) DEPTH 51 fm 42°/40° F

Depth (m)	Temp (°C)	Sal (‰)
0	9.76	30.86
40	9.69	30.83
60	9.69	30.85
90	9.65	30.88

STA 311 47° 18.8' N WEATHER b.c.
 8 Dec 52 122° 33.7' W WIND SW 8
 2048 (+8) DEPTH 44 fm 42°/40° F
 Pt. Defiance

Depth (m)	Temp (°C)	Sal (‰)
0	9.71	30.82
30	9.74	30.80
70	9.72	30.82

STA 310 47° 19.9' N WEATHER c.
 8 Dec 52 122° 32.6' W WIND SW 10
 2016 (+8) Depth 32 fm 42°/40° F

Depth (m)	Temp (°C)	Sal (‰)
0	9.67	30.79
10	9.69	30.80
50	9.68	30.88

STA 312 47° 21.1' N WEATHER c.
 8 Dec 52 122° 32.4' W WIND SW 8
 2125 (+8) DEPTH 53 fm 42°/40° F
 Spring Beach

Depth (m)	Temp (°C)	Sal (‰)
0	9.70	30.74
5	9.71	30.77
10	9.70	30.79
20	9.66	30.78
30	9.72	30.82
50	9.65	30.82
75	9.71	30.84
95	9.70	30.84

STA 313 47° 19.3' N WEATHER b.c. 8 Dec 52 122° 27.7' W WIND SW 8 2221 (+8) DEPTH 98 fm 42°/40° F Brown Pt.		
Depth (m)	Temp (°C)	Sal (°/oo)
0	9.57	30.34
5	9.75	30.72
10	9.75	30.82
20	9.73	30.81
30	9.74	30.85
50	9.66	30.90
75	9.66	30.89
100	9.58	30.91
130	9.40	30.92
160	9.47	30.97

STA 315 47° 19.1' N WEATHER b.c. 8 Dec 52 122° 31.5' W WIND SW 6 2340 (+8) DEPTH 52 fm 42°/40° F		
Depth (m)	Temp (°C)	Sal (°/oo)
0	9.71	30.86
40	9.69	30.87
60	9.53	30.93
90	9.46	30.94

STA 314 47° 18.9' N WEATHER b.c. 8 Dec 52 122° 30.0' W WIND SW 7 2302 (+8) DEPTH 84 fm 42°/40° F		
Depth (m)	Temp (°C)	Sal (°/oo)
0	9.76	30.83
5	9.76	30.84
10	9.74	30.82
20	9.67	30.84
30	9.69	30.84
50	9.57	30.88
75	9.52	30.91
100	9.49	30.94
125	9.47	30.96
150	9.44	30.94

STA 316 47° 19.9' N WEATHER b.c. 9 Dec 52 122° 32.4' W WIND SW 4 0006 (+8) DEPTH 33 fm 46°/42° F		
Depth (m)	Temp (°C)	Sal (°/oo)
0	9.65	30.87
10	9.60	30.86
30	9.66	30.88
50	9.76	31.00

STA 317 47° 19.1' N WEATHER c. 9 Dec 52 122° 33.8' W WIND SW 4 0029 (+8) DEPTH 42 fm 42°/40° F Pt. Defiance		
Depth (m)	Temp (°C)	Sal (‰)
0	9.72	30.76
30	9.71	30.84
70	9.70	30.84

STA 319 47° 19.3' N WEATHER c. 9 Dec 52 122° 27.8' W WIND SW 4 0200 (+8) DEPTH 94 fm 41°/40° F Brown Pt.		
Depth (m)	Temp (°C)	Sal (‰)
0	9.73	30.80
5	9.73	30.82
10	9.70	30.83
20	9.75	30.80
30	9.73	30.81
50	9.63	30.86
75	9.63	30.90
100	9.58	30.90
130	9.37	30.95
160	9.42	30.99

STA 318 47° 21.2' N WEATHER c. 9 Dec 52 122° 32.7' W WIND SW 2 0106 (+8) DEPTH 54 fm 42°/40° F Spring Beach		
Depth (m)	Temp (°C)	Sal (‰)
0	9.67	30.78
5	9.68	30.79
10	9.67	30.80
20	9.67	30.82
30	9.65	30.83
50	9.59	30.83
75	9.66	30.86
95	9.63	30.87

STA 320 47° 18.9' N WEATHER c. 9 Dec 52 122° 30.1' W WIND SW 5 0241 (+8) DEPTH 83 fm 41°/40° F		
Depth (m)	Temp (°C)	Sal (‰)
0	9.74	30.84
5	9.72	30.85
10	9.71	30.85
20	9.75	30.85
30	9.74	30.85
50	9.61	30.86
75	9.60	30.90
100	9.47	30.92
125	9.36	30.96
150	9.45	30.97

STA 321 47° 19.2' N WEATHER c. 9 Dec 52 122° 31.6' W WIND SW 4 0307 (+8) DEPTH 44 fm 41°/38° F		
Depth (m)	Temp (°C)	Sal (‰)
0	9.66	30.86
20	9.64	30.92
50	9.50	30.97

STA 323 47° 19.0' N WEATHER c. 9 Dec 52 122° 33.7' W WIND SW 1 0359 (+8) DEPTH 38 fm 42°/40° F Pt. Defiance		
Depth (m)	Temp (°C)	Sal (‰)
0	9.73	30.69
30	9.74	30.72
70	9.70	30.76

STA 322 47° 19.9' N WEATHER c. 9 Dec 52 122° 32.6' W WIND SW 1 0335 (+8) DEPTH 33 fm 42°/40° F		
Depth (m)	Temp (°C)	Sal (‰)
0	9.61	30.83
10	9.57	30.83
30	9.63	30.90
50	9.45	30.97

STA 324 47° 21.1' N WEATHER b.c. 9 Dec 52 122° 32.4' W WIND S 1 0437 (+8) DEPTH 54 fm 42°/40° F Spring Beach		
Depth (m)	Temp (°C)	Sal (‰)
0	9.74	30.72
5	9.72	30.72
10	9.69	30.72
20	9.73	30.74
30	9.72	30.78
50	9.65	30.81
75	9.71	30.83
95	9.68	30.87

STA 325 47° 19.3' N WEATHER b.c.
 9 Dec 52 122° 27.9' W WIND SW 1
 0543 (+8) DEPTH 94 fm 42°/40° F
 Brown Pt.

Depth (m)	Temp (°C)	Sal (‰)
0	9.58	30.51
5	9.66	30.74
10	9.66	30.76
20	9.73	30.82
30	9.68	30.82
50	9.70	30.85
75	9.64	30.91
100	9.58	30.91
130	9.44	30.94
160	9.44	30.97

STA 327 47° 19.4' N WEATHER 10
 9 Dec 52 122° 31.6' N WIND calm
 0810 (+8) DEPTH 49 fm 42°/40° F

Depth (m)	Temp (°C)	Sal (‰)
0	9.76	30.76
35	9.68	30.83
55	9.63	30.88
85	9.50	30.93

STA 326 47° 18.8' N WEATHER 10
 9 Dec 52 122° 30.0' W WIND SW 1
 0711 (+8) DEPTH 82 fm 39°/38° F

Depth (m)	Temp (°C)	Sal (‰)
0	9.75	30.81
5	9.76	30.81
10	9.78	30.82
20	9.70	30.84
30	9.76	30.87
50	9.63	30.87
75	9.65	30.87
100	9.53	30.92
125	9.38	30.94
150	9.44	30.98

STA 328 47° 19.8' N WEATHER 63
 9 Dec 52 122° 32.5' W WIND E 1
 0839 (+8) DEPTH 32 fm 42°/40° F

Depth (m)	Temp (°C)	Sal (‰)
0	9.64	30.78
20	9.60	30.82
40	9.52	30.90

STA 329 47° 18.7' N WEATHER 63 9 Dec 52 122° 33.6' W WIND S1E 6 0906 (+8) DEPTH 40 fm 42°/40° F Pt. Defiance		
Depth (m)	Temp (°C)	Sal (‰)
0	9.53	30.80
30	9.73	30.80
70	9.62	30.86

STA 331 47° 19.3' N WEATHER 61 9 Dec 52 122° 27.9' W WIND SSE 10 1040 (+8) DEPTH 96 fm 41°/39° F Brown Pt.		
Depth (m)	Temp (°C)	Sal (‰)
0	9.27	30.07
5	9.66	30.65
10	9.60	30.81
20	9.67	30.89
30	9.71	30.88
50	9.62	30.96
75	9.62	30.96
100	9.59	30.98
130	9.45	31.01
160	9.35	31.04

STA 330 47° 21.0' N WEATHER 61 9 Dec 52 122° 32.4' W WIND ESE 10 0947 (+8) DEPTH 55 fm 43°/41° F Spring Beach		
Depth (m)	Temp (°C)	Sal (‰)
0	9.66	30.80
5	9.68	30.80
10	9.68	30.81
20	9.68	30.81
30	9.70	30.82
50	9.62	30.87
75	9.65	30.87
95	9.68	30.87

STA 332 47° 18.9' N WEATHER 61 9 Dec 52 122° 30.2' W WIND SSE 10 1114 (+8) DEPTH 80 fm 41°/39° F		
Depth (m)	Temp (°C)	Sal (‰)
0	9.67	30.78
5	9.65	30.78
10	9.74	30.88
20	9.72	30.81
30	9.72	30.92
50	9.69	30.95
75	9.58	30.99
100	9.48	31.01
125	9.35	31.01

STA 333 47° 19.2' N WEATHER 61 9 Dec 52 122° 31.7' W WIND SSE 9 1203 (+8) DEPTH 51 fm 46°/43° F		
Depth (m)	Temp (°C)	Sal (‰)
0	9.74	30.85
40	9.57	30.99
60	9.49	31.01
90	9.49	31.03

STA 335 47° 19.2' N WEATHER 61 9 Dec 52 122° 33.7' W WIND ESE 6 1246 (+8) DEPTH 44 fm 46°/43° F Pt. Defiance		
Depth (m)	Temp (°C)	Sal (‰)
0	9.63	30.74
30	9.56	30.73
70	9.67	30.74

STA 334 47° 19.9' N WEATHER c. 9 Dec 52 122° 32.6' W WIND ESE 6 1221 (+8) DEPTH 33 fm 46°/43° F		
Depth (m)	Temp (°C)	Sal (‰)
0	9.75	30.83
10	9.67	30.87
30	9.65	30.91
50	9.59	30.92

STA 336 47° 21.3' N WEATHER 61 9 Dec 52 122° 32.6' W WIND SW 3 1375 (+8) DEPTH 59 fm 44°/42° F Spring Beach		
Depth (m)	Temp (°C)	Sal (‰)
0	9.63	30.73
5	9.58	30.78
10	9.57	30.78
20	9.61	30.81
30	9.68	30.89
50	9.59	30.90
75	9.60	30.91
95	9.61	30.94

STA 337 47° 19.3' N WEATHER 61 9 Dec 52 122° 27.8' W WIND SW 4 1404 (+8) DEPTH 96 fm 44°/42° F Brown Pt.		
Depth (m)	Temp (°C)	Sal (°/oo)
0	9.45	30.35
5	9.47	30.37
10	9.64	30.74
20	9.68	30.80
30	9.70	30.91
50	9.61	30.94
75	9.60	30.96
100	9.56	31.00
130	9.46	31.02
160	9.35	31.03

STA 339 47° 19.2' N WEATHER 61 9 Dec 52 122° 31.6' W WIND SW 4 1520 (+8) DEPTH 54 fm 44°/42° F		
Depth (m)	Temp (°C)	Sal (°/oo)
0	9.73	30.83
40	9.69	30.94
60	9.63	30.96
90	9.52	30.98

STA 338 47° 18.8' N WEATHER 61 9 Dec 52 122° 30.1' W WIND SW 7 1443 (+8) DEPTH 84 fm 44°/42° F		
Depth (m)	Temp (°C)	Sal (°/oo)
0	9.72	30.82
5	9.73	30.82
10	9.70	30.83
20	9.74	30.89
30	9.75	30.90
50	9.65	30.90
75	9.61	30.96
100	9.53	30.99
125	9.46	31.00
150	9.37	30.99

STA 340 47° 20.0' N WEATHER 61 9 Dec 52 122° 32.6' W WIND SW 3 1542 (+8) DEPTH 30 fm 43°/42° F		
Depth (m)	Temp (°C)	Sal (°/oo)
0	9.69	30.85
10	9.63	30.85
30	9.67	30.85
50	9.70	30.85

STA 341 47° 18.9' N WEATHER 10 9 Dec 52 122° 33.7' W WIND SW 3 1600 (+8) DEPTH 42 fm 44°/42° F Pt. Defiance		
Depth (m)	Temp (°C)	Sal (‰)
0	9.55	30.82
30	9.61	30.84
70	9.67	30.85

STA 343 47° 19.3' N WEATHER 61 9 Dec 52 122° 28.0' W WIND SW 3 1754 (+8) DEPTH 95 fm 44°/43° F Brown Pt.		
Depth (m)	Temp (°C)	Sal (‰)
0	9.51	30.63
5	9.67	30.74
10	9.69	30.76
20	9.74	30.85
30	9.73	30.87
50	9.63	30.94
75	9.58	30.94
100	9.59	30.99
130	9.46	30.99
160	9.40	30.99

STA 342 47° 21.1' N WEATHER 10 9 Dec 52 122° 32.4' W WIND SW 3 1637 (+8) DEPTH 55 fm 44°/42° F Spring Beach		
Depth (m)	Temp (°C)	Sal (‰)
0	9.66	30.87
5	9.65	30.89
10	9.60	30.89
20	9.65	30.90
30	9.66	30.90
50	9.60	30.90
75	9.63	30.90
95	9.65	30.90

STA 344 47° 23.1' N WEATHER 61 9 Dec 52 122° 21.1' W WIND SW 12 1903 (+8) DEPTH 108 fm 44°/43° F Pt. Robinson		
Depth (m)	Temp (°C)	Sal (‰)
0	9.67	30.84
5	9.71	30.87
10	9.70	30.87
20	9.66	30.87
40	9.68	30.87
60	9.62	30.92
75	9.63	30.95
100	9.54	31.00
130	9.42	31.00
160	9.31	31.03
190	9.35	31.05

STA 345 47° 26.6' N WEATHER 61 9 Dec 52 122° 23.6' W WIND SW 14 2008 (+8) DEPTH 132 fm 46°/45° F Pully Pt.		
Depth (m)	Temp (°C)	Sal (‰)
0	9.61	30.85
5	9.60	30.85
10	9.60	30.85
20	9.65	30.85
30	9.67	30.85
50	9.59	30.85
75	9.58	30.90
100	9.56	30.96
140	9.38	30.98
180	9.33	30.98
220	9.35	31.03

STA 347 47° 22.9' N WEATHER c. 9 Dec 52 122° 21.3' W WIND SSE 13 2259 (+8) DEPTH 112 fm 47°/45° F Pt. Robinson		
Depth (m)	Temp (°C)	Sal (‰)
0	9.62	30.85
5	9.63	30.88
10	9.60	30.89
20	9.68	30.90
40	9.69	30.91
60	9.60	30.91
75	9.59	30.94
100	9.53	30.97
130	9.30	31.00
160	9.17	31.00
190	9.37	31.03

STA 346 47° 19.1' N WEATHER 63 9 Dec 52 122° 27.9' W WIND SSE 12 2150 (+8) DEPTH 97 fm 47°/46° F Brown Pt.		
Depth (m)	Temp (°C)	Sal (‰)
0	9.60	30.72
5	9.61	30.76
10	9.63	30.78
20	9.71	30.80
30	9.69	30.87
50	9.51	30.96
75	9.53	30.98
100	9.48	30.99
130	9.41	30.99
160	9.41	31.02

STA 348 47° 26.5' N WEATHER c. 9 Dec 52 122° 23.5' W WIND SSW 12 2352 (+8) DEPTH 133 fm 46°/45° F Pully Pt.		
Depth (m)	Temp (°C)	Sal (‰)
0	9.63	30.05
5	9.61	30.86
10	9.61	30.86
20	9.64	30.86
30	9.63	30.87
50	9.58	30.87
75	9.60	30.92
100	9.52	30.98
140	9.29	31.01
180	9.38	31.02
220	9.30	31.06

STA 349 47° 22.9' N WEATHER c.
 10 Dec 52 122° 21.0' W WIND SW 10
 0058 (+8) DEPTH 112 fm 47°/45° F
 Pt. Robinson

Depth (m)	Temp (°C)	Sal (°/oo)
0	9.60	30.88
5	9.61	30.89
10	9.59	30.89
20	9.66	30.91
40	9.68	30.91
50	9.59	30.92
75	9.61	30.97
100	9.49	30.99
130	9.26	31.04
160	9.37	31.05
190	9.34	31.07

STA 351 47° 23.0' N WEATHER c.
 10 Dec 52 122° 21.1' W WIND SW 9
 0315 (+8) DEPTH 112 fm 46°/44° F
 Pt. Robinson

Depth (m)	Temp (°C)	Sal (°/oo)
0	9.64	30.81
5	9.62	30.87
10	9.62	30.87
20	9.63	30.89
30	9.66	30.92
50	9.54	30.96
75	9.53	30.97
100	9.51	30.98
130	9.38	30.99
160	9.22	31.00
190	9.35	31.05

STA 350 47° 18.6' N WEATHER c.
 10 Dec 52 122° 28.4' W WIND SW 9
 0210 (+8) DEPTH 98 fm 46°/44° F
 Brown Pt.

Depth (m)	Temp (°C)	Sal (°/oo)
0	9.58	30.74
5	9.60	30.76
10	9.61	30.76
20	9.64	30.80
30	9.69	30.87
50	9.64	30.91
75	9.61	30.96
100	9.54	30.98
130	9.45	30.99
160	9.33	31.02

STA 352 47° 26.5' N WEATHER c.
 10 Dec 52 122° 23.4' W WIND SW 8
 0412 (+8) DEPTH 134 fm 46°/44° F
 Pully Pt.

Depth (m)	Temp (°C)	Sal (°/oo)
0	9.61	30.83
5	9.62	30.87
10	9.59	30.87
20	9.62	30.87
30	9.61	30.87
50	9.56	30.87
75	9.62	30.90
100	9.56	30.98
140	9.41	30.98
180	9.19	31.03
220	9.26	31.06

STA 353 47° 23.0' N WEATHER c.
 10 Dec 52 122° 20.1' W WIND SW 12
 0511 (+8) DEPTH 109 fm 46°/43° F
 Pt. Robinson

Depth (m)	Temp (°C)	Sal (‰)
0	9.50	30.74
5	9.60	30.82
10	9.62	30.89
20	9.65	30.90
40	9.65	30.92
60	9.55	30.96
75	9.51	30.99
100	9.46	31.02
130	9.39	31.05
160	9.22	31.07
190	9.34	31.07

STA 355 47° 22.9' N WEATHER c.
 10 Dec 52 122° 21.3' W WIND SW --
 0745 (+8) DEPTH 109 fm 46°/44° F
 Pt. Robinson

Depth (m)	Temp (°C)	Sal (‰)
0	9.62	30.89
5	9.60	30.89
10	9.58	30.89
20	9.63	30.88
30	9.64	30.89
50	9.57	30.91
75	9.51	30.99
100	9.44	31.01
130	9.35	31.05
160	9.24	31.05
190	9.34	31.05

STA 354 47° 19.3' N WEATHER c.
 10 Dec 52 122° 28.0' W WIND SW 12
 0628 (+8) DEPTH 95 fm 46°/43° F
 Brown Pt.

Depth (m)	Temp (°C)	Sal (‰)
0	9.45	30.54
5	9.47	30.58
10	9.59	30.73
20	9.59	30.82
30	9.72	30.90
50	9.62	30.90
75	9.61	30.98
100	9.53	31.00
130	9.43	31.00
160	8.19	30.75

STA 356 47° 26.5' N WEATHER b.c.
 10 Dec 52 122° 23.6' W WIND SW 10
 0851 (+8) DEPTH 131 fm 45°/42° F
 Pully Pt.

Depth (m)	Temp (°C)	Sal (‰)
0	9.60	30.82
5	9.60	30.86
10	9.62	30.81
20	9.63	30.83
30	9.66	30.85
50	9.59	30.86
75	9.59	30.92
100	9.54	30.97
140	9.37	30.99
180	9.18	31.04
220	9.31	31.05

STA 357 47° 22.8' N WEATHER b.c. 10 Dec 52 122° 21.2' W WIND SW 18 0946 (+8) DEPTH 110 fm 45°/43° F Pt. Robinson		
Depth (m)	Temp (°C)	Sal (‰)
0	9.62	30.85
5	9.61	30.87
10	9.59	30.86
20	9.61	30.86
30	9.63	30.87
50	9.52	30.87
75	9.62	30.92
100	9.56	30.96
130	9.39	30.99
160	9.24	31.01
190	9.35	31.03

STA 359 47° 22.9' N WEATHER b.c. 10 Dec 52 122° 21.1' W WIND SW 20 1208 (+8) DEPTH 112 fm 50°/47° F Pt. Robinson		
Depth (m)	Temp (°C)	Sal (‰)
0	9.61	30.87
5	9.61	30.87
10	9.59	30.88
20	9.62	30.89
30	9.61	30.90
50	9.58	30.90
75	9.62	30.93
100	9.57	30.99
130	9.46	30.99
160	9.29	31.01
190	9.35	31.05

STA 358 47° 19.4' N WEATHER b.c. 10 Dec 52 122° 27.8' W WIND SW 18 1056 (+8) DEPTH 96 fm 47°/44° F Brown Pt.		
Depth (m)	Temp (°C)	Sal (‰)
0	9.52	30.65
5	9.52	30.71
10	9.57	30.79
20	9.62	30.80
30	9.69	30.91
50	9.58	30.92
75	9.55	30.97
100	9.56	30.97
130	9.42	31.04
160	9.32	31.04

STA 360 47° 26.5' N WEATHER b.c. 10 Dec 52 122° 23.5' W WIND SW 6 1253 (+8) DEPTH 132 fm 49°/45° F Pully Pt.		
Depth (m)	Temp (°C)	Sal (‰)
0	9.65	30.87
5	9.64	30.87
10	9.62	30.90
20	9.63	30.90
30	9.64	30.92
50	9.57	30.92
75	9.61	30.92
100	9.54	30.99
140	9.43	30.99
180	9.20	31.05
220	9.28	31.05

STA 361 47° 23.5' N WEATHER b.c.
 10 Dec 52 122° 21.3' W WIND SW 13
 1348 (+8) DEPTH 114 fm 49°/45° F
 Pt. Robinson

Depth (m)	Temp (°C)	Sal (‰)
0	9.64	30.87
5	9.62	30.87
10	9.59	30.87
20	9.61	30.87
30	9.64	30.89
50	9.60	30.90
75	9.63	30.90
100	9.54	30.97
130	9.37	31.02
160	9.23	31.05
190	9.34	31.07

STA 363 47° 23.0' N WEATHER b.c.
 10 Dec 52 122° 21.3' W WIND SW 4
 1520 (+8) DEPTH 112 fm 48°/44° F
 Pt. Robinson

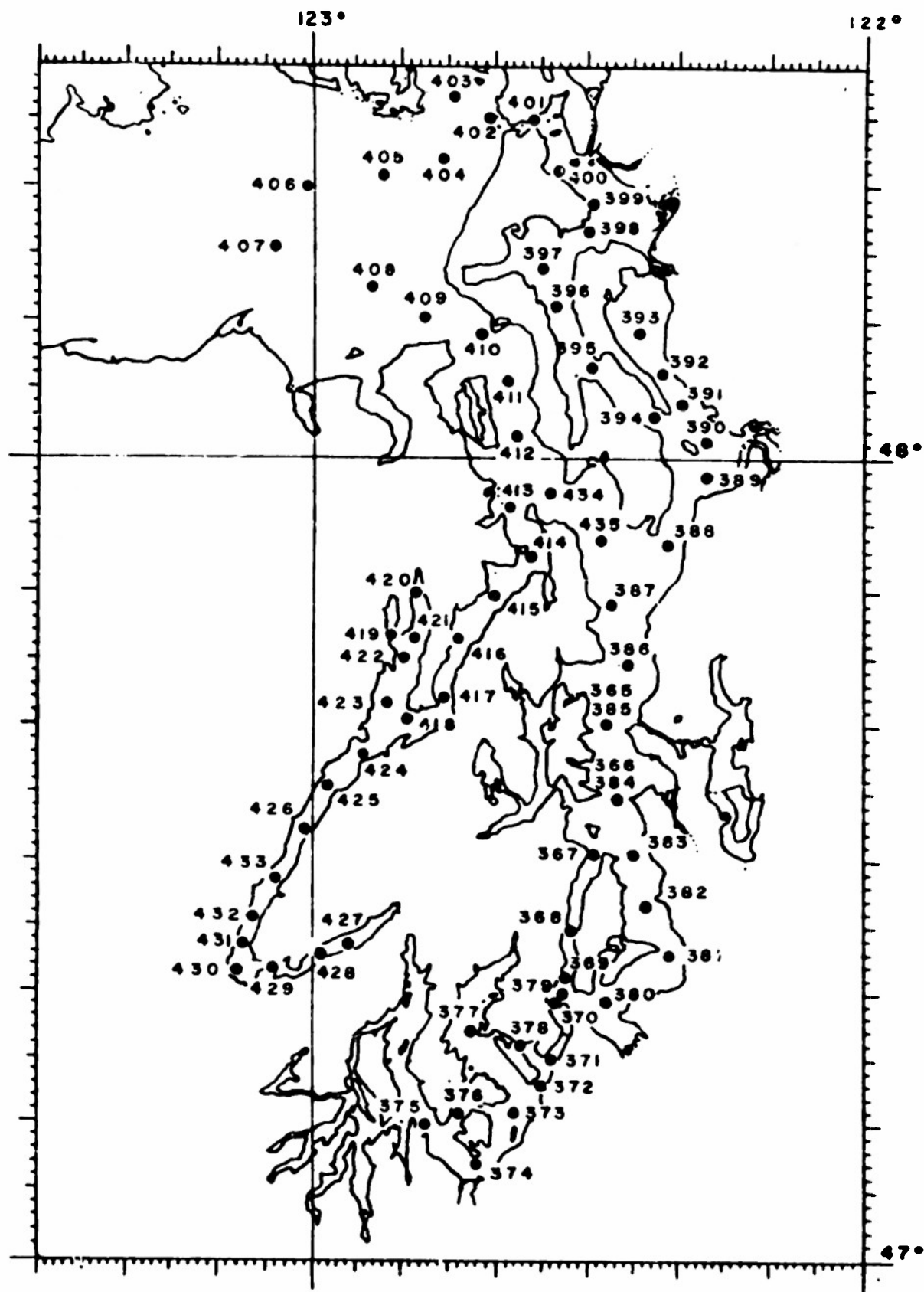
Depth (m)	Temp (°C)	Sal (‰)
0	9.60	30.85
5	9.63	30.87
10	9.60	30.85
20	9.63	30.85
30	9.63	30.86
50	9.59	30.86
75	9.55	30.92
100	9.52	30.93
130	9.41	30.97
160	9.26	31.00
190	9.49	31.00

STA 362 47° 19.4' N WEATHER b.c.
 10 Dec 52 122° 28.0' W WIND SW 4
 1500 (+8) DEPTH 98 fm 49°/45° F
 Brown Pt.

Depth (m)	Temp (°C)	Sal (‰)
0	9.64	30.80
5	9.64	30.77
10	9.63	30.76
20	9.64	30.77
30	9.65	30.79
50	9.62	30.90
75	9.55	30.92
100	9.51	30.93
130	9.42	30.97
160	9.32	30.99

STA 364 47° 26.4' N WEATHER b.c.
 10 Dec 52 122° 23.4' W WIND SW 4
 1710 (+8) DEPTH 132 fm 48°/44° F
 Pully Pt.

Depth (m)	Temp (°C)	Sal (‰)
0	9.62	30.83
5	9.62	30.84
10	9.60	30.85
20	9.63	30.86
30	9.63	30.85
50	9.60	30.85
75	9.57	30.92
100	9.45	30.95
140	9.37	30.99
180	9.16	30.99
220	9.30	31.02



Oceanographic Station Locations
 Brown Bear Cruises 18
 15-19 December 1952

STA 365 47° 39.8' N WEATHER 10 15 Dec 52 122° 28.2' W WIND SSE 4 1220 (+8) DEPTH 127 fm 44°/43° F West Point			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.47	30.79	0.434
5	9.46	30.77	0.444
10	9.44	30.80	0.441
20	9.47	30.81	0.442
30	9.45	30.85	0.435
50	9.43	30.90	0.422
75	9.35	30.95	0.430
100	9.49	30.97	0.431
140	9.19	31.01	0.437
180	9.13	31.07	0.444
220	9.05	31.09	0.435

STA 367 47° 30.4' N WEATHER 10 15 Dec 52 122° 29.5' W WIND SSE 7 1420 (+8) DEPTH 61 fm 42°/41° F Pt. Vashon			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.51	30.77	0.419
5	9.47	30.82	0.423
10	9.49	30.82	0.427
20	9.50	30.82	0.419
30	9.48	30.83	0.419
50	9.47	30.85	0.414
75	9.42	30.85	0.409
100	9.47	30.85	0.416

STA 366 47° 34.4' N WEATHER 10 15 Dec 52 122° 26.8' W WIND SSE 16 1330 (+8) DEPTH 131 fm 42°/41° F Alki Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.48	30.84	0.435
5	9.40	30.85	0.435
10	9.44	30.84	0.432
20	9.43	30.85	0.432
30	9.41	30.85	0.428
50	9.41	30.85	0.424
75	9.32	30.98	0.419
100	9.31	30.96	0.419
140	9.17	31.04	0.433
180	9.13	31.07	0.421
220	9.08	31.08	0.424

STA 368 47° 24.8' N WEATHER 10 15 Dec 52 122° 31.7' W WIND SSE 3 1527 (+8) DEPTH 67 fm 42°/41° F Olalla			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.52	30.45	-----
5	9.49	30.72	-----
10	9.52	30.73	-----
20	9.52	30.72	-----
30	9.52	30.73	-----
50	9.50	30.75	-----
80	9.44	30.76	-----
110	9.48	30.83	-----

STA 369 47° 21.3' N WEATHER 63 15 Dec 52 122° 32.4' W WIND SSE 3 1615 (+8) DEPTH 57 fm 42°/41° F Spring Beach			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.22	30.58	0.459
5	9.34	30.75	0.437
10	9.36	30.76	0.423
20	9.38	30.78	0.423
30	9.42	30.80	0.422
50	9.44	30.84	0.416
75	9.42	-----	0.408
95	9.44	30.93	0.411

STA 371 47° 15.0' N WEATHER 10 15 Dec 52 122° 34.6' W WIND SSE 3 1812 (+8) DEPTH 37 fm 42°/41° F Day Island			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.48	30.64	-----
9	9.48	30.67	-----
27	9.50	30.70	-----
45	9.50	30.71	-----

STA 370 47° 19.3' N WEATHER 60 15 Dec 52 122° 33.8' W WIND SSE 3 1654 (+8) DEPTH 40 fm 42°/41° F Pt. Defiance			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.43	30.73	-----
19	9.45	30.73	-----
38	9.48	30.73	-----
66	9.48	30.90	-----

STA 372 47° 13.2' N WEATHER b. 15 Dec 52 122° 34.8' W WIND SSE 3 1859 (+8) DEPTH 38 fm 42°/41° F Gibson Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.49	30.49	-----
5	9.45	30.51	-----
10	9.50	30.54	-----
20	9.49	30.56	-----
30	9.50	30.60	-----
50	9.48	30.60	-----
65	9.44	30.63	-----

STA 373 47° 10.8' N WEATHER b. 15 Dec 52 122° 37.9' W WIND NNE 3 2000 (+8) DEPTH 92 fm 42°/41° F Gordon Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.40	30.42	0.434
5	9.48	30.53	0.423
10	9.50	30.54	0.421
20	9.50	30.54	0.425
30	9.48	30.56	0.418
50	9.50	30.61	0.416
75	9.47	30.61	0.412
100	9.52	30.67	0.409
130	9.50	30.67	-----
160	9.52	30.71	0.380

STA 375 47° 09.9' N WEATHER 10 15 Dec 52 122° 47.4' W WIND E 5 2216 (+8) DEPTH 49 fm 41°/40° F Devil's Head			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.20	30.07	0.449
5	9.17	30.07	0.440
10	9.16	30.07	0.441
20	9.25	30.15	0.441
30	9.26	30.18	0.437
50	9.46	30.38	0.425
75	9.52	30.51	0.414

STA 374 47° 07.2' N WEATHER 10 15 Dec 52 122° 42.3' W WIND S 4 2108 (+8) DEPTH 35 fm 39°/38° F Misqually Reach			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.38	30.43	0.432
5	9.43	30.45	0.428
10	9.48	30.45	0.428
20	9.47	30.45	0.420
30	9.46	30.45	0.420
40	9.46	30.47	0.422
60	9.42	30.47	0.429

STA 376 47° 10.5' N WEATHER b. 15 Dec 52 122° 44.1' W WIND NNE 2 2259 (+8) DEPTH 32 fm 42°/41° F Drayton Passage			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.42	30.42	-----
10	9.42	30.43	-----
20	9.50	30.50	-----
30	9.48	30.51	-----
50	9.50	30.52	-----

STA 377 47° 17.0' N WEATHER 10 16 Dec 52 122° 42.7' W WIND SE 3 0625 (+8) DEPTH 48 fm 44°/43° F Green Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.54	29.91	0.523
5	9.14	30.35	0.478
10	9.61	30.58	0.440
20	9.76	30.65	0.411
30	9.76	-----	0.412
40	9.67	30.65	0.414
60	9.73	30.65	0.403
85	9.83	30.72	0.371

STA 379 47° 19.9' N WEATHER 61 16 Dec 52 122° 32.4' W WIND SE 4 0851 (+8) DEPTH 34 fm 45°/44° F Gig Harbor, Northeast of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.49	30.84	-----
10	9.44	30.85	-----
30	9.46	30.87	-----
55	9.44	30.89	-----

STA 378 47° 16.2' N WEATHER 10 16 Dec 52 122° 37.2' W WIND SE 3 0752 (+8) DEPTH 17 fm 45°/44° F Crosswell			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.62	30.63	-----
5	9.60	30.64	-----
10	9.63	30.64	-----
20	9.62	30.64	-----

STA 380 47° 19.2' N WEATHER 60 16 Dec 52 122° 27.9' W WIND SE 3 0930 (+8) DEPTH 96 fm 43°/42° F Brown Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.25	30.43	0.445
5	9.21	30.45	0.445
10	9.35	30.68	0.439
20	9.54	30.81	0.419
30	9.52	30.81	0.419
50	9.49	30.86	0.412
75	9.46	30.90	0.407
100	9.43	30.93	0.409
130	9.33	30.99	0.409
160	9.30	31.01	0.412

STA 381 47° 22.9' N WEATHER 10
 16 Dec 52 122° 21.3' W WIND ESE 4
 1035 (+8) DEPTH 113 fm 46°/44° F
 Pt. Robinson

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.34	30.71	0.445
5	9.29	30.71	0.443
10	9.30	30.71	0.440
20	9.40	30.79	0.432
30	9.45	-----	0.415
50	9.45	-----	0.416
75	9.39	-----	0.416
100	9.33	-----	0.405
130	9.28	30.99	0.406
160	9.25	31.03	0.409
190	9.19	31.06	0.416

STA 383 47° 30.5' N WEATHER c.
 16 Dec 52 122° 25.0' W WIND S 5
 1233 (+8) DEPTH 109 fm 48°/46° F
 Dolphin Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.46	30.78	-----
5	9.44	30.79	-----
10	9.46	30.78	-----
20	9.46	30.80	-----
30	9.46	30.79	-----
50	9.42	30.80	-----
75	9.35	30.88	-----
100	9.28	31.00	-----
140	9.18	31.01	-----
180	9.14	31.04	-----

STA 382 47° 26.4' N WEATHER 10
 16 Dec 52 122° 23.8' W WIND S 5
 1130 (+8) DEPTH 131 fm 46°/45° F
 Pully Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.39	30.75	0.442
5	9.39	30.76	0.431
10	9.42	-----	0.432
20	9.44	30.82	0.416
30	9.46	30.84	0.431
50	9.44	30.89	0.413
75	9.30	30.92	0.416
100	9.29	30.97	0.415
140	9.25	31.00	0.416
180	9.26	31.02	0.417
220	9.17	31.02	0.430

STA 384 47° 34.5' N WEATHER c.
 16 Dec 52 122° 27.0' W WIND S 3
 1351 (+8) DEPTH 136 fm 49°/47° F
 Alki Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.48	30.78	-----
5	9.46	30.78	-----
10	9.46	30.77	-----
20	9.45	30.77	-----
30	9.46	30.81	-----
50	9.38	30.81	-----
75	9.36	30.90	-----
100	9.30	30.93	-----
140	9.21	30.99	-----
180	9.12	31.00	-----
220	9.14	31.03	-----

STA 385 47° 39.9' N WEATHER c.
 16 Dec 52 122° 28.1' W WIND S 3
 1506 (+8) DEPTH 128 fm 48°/46° F
 West Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.44	30.71	-----
5	9.46	30.74	-----
10	9.45	30.76	-----
20	9.46	30.80	-----
30	9.48	30.84	-----
50	9.44	30.87	-----
75	9.36	30.92	-----
100	9.37	30.94	-----
140	9.18	30.99	-----
180	9.13	31.03	-----
220	9.09	31.08	-----

STA 387 47° 49.3' N WEATHER b.c.
 16 Dec 52 122° 27.4' W WIND N 2
 1723 (+8) DEPTH 103 fm 49°/47° F
 Apple Cove Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.33	30.50	-----
5	9.30	30.51	-----
10	9.36	30.53	-----
20	9.34	30.66	-----
30	9.20	30.79	-----
50	9.21	30.84	-----
75	9.17	30.91	-----
100	9.20	30.93	-----
140	9.10	30.99	-----
180	9.08	31.06	-----

STA 386 47° 44.5' N WEATHER c.
 16 Dec 52 122° 25.3' W WIND N 1
 1615 (+8) DEPTH 155 fm 48°/46° F
 Pt. Jefferson

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.23	30.85	0.447
5	9.37	30.85	0.445
10	9.28	30.83	0.441
20	9.23	30.83	0.437
30	9.28	30.84	0.428
50	9.31	30.88	0.423
100	9.33	30.92	-----
150	9.15	30.99	0.413
200	9.17	31.00	0.423
240	9.17	31.02	0.429
270	9.12	31.06	0.407

STA 388 47° 53.7' N WEATHER b.c.
 16 Dec 52 122° 21.4' W WIND N 2
 1834 (+8) DEPTH 122 fm 50°/47° F
 Possession Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.02	28.97	0.477
5	9.55	30.26	0.416
10	9.68	30.55	0.399
20	9.76	30.81	0.377
30	9.65	30.85	0.394
50	9.56	30.87	0.419
75	9.46	30.87	0.427
100	9.31	30.95	0.430
140	9.20	31.00	0.435
180	9.16	31.01	0.436
215	9.09	31.08	0.420

STA 389 47° 58.7' N WEATHER b.c. 16 Dec 52 122° 17.3' W WIND N 2 1950 (+8) DEPTH 72 fm 46°/45° F Port Gardner			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	8.27	26.89	0.444
5	9.26	29.68	0.439
10	9.52	30.06	0.414
20	9.88	30.72	0.362
30	9.87	30.80	0.359
50	9.82	30.81	0.356
80	9.38	30.90	0.419
120	9.27	30.99	0.422

STA 391 48° 04.1' N WEATHER o. 16 Dec 52 122° 19.8' W WIND W 6 2125 (+8) DEPTH 64 fm 44°/43° F Camano Head, East of			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	7.66	23.15	0.552
5	8.63	27.11	0.480
10	9.58	30.41	0.401
20	10.05	30.79	0.355
30	9.98	30.84	0.336
50	10.13	30.90	0.314
80	9.85	30.92	0.340
110	9.43	30.95	0.384

STA 390 48° 01.3' N WEATHER b.c. 16 Dec 52 122° 17.1' W WIND calm 2039 (+8) DEPTH 49 fm 43°/42° F Godney Island, East of			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	8.18	23.53	-----
5	8.82	28.03	-----
10	9.80	30.61	-----
20	10.10	30.82	-----
30	9.98	30.83	-----
50	10.00	30.86	-----
80	9.62	30.88	-----

STA 392 48° 06.1' N WEATHER o. 16 Dec 52 122° 21.9' W WIND WNW 3 2215 (+8) DEPTH 64 fm 44°/43° F Port Susan, Middle of			
Depth (m)	Temp (°C)	Sal (°/oo)	O ₂ (mg-at/L)
0	7.24	20.44	-----
5	7.86	23.17	-----
10	9.80	30.35	-----
20	10.28	30.88	-----
30	10.30	30.94	-----
50	10.36	30.95	-----
80	10.08	30.96	-----
110	9.62	30.97	-----

STA 393 48° 09.3' N WEATHER c. 16 Dec 52 122° 24.5' W WIND NNW 1 2308 (+8) DEPTH 41 fm 43°/42° F Port Susan, Head of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	6.28	14.93	0.622
5	8.31	25.10	0.516
10	9.76	30.51	0.357
20	9.97	30.74	0.342
30	10.06	30.84	0.318
50	10.31	30.92	0.295
70	10.17	30.99	0.297

STA 395 48° 06.5' N WEATHER c. 17 Dec 52 122° 29.5' W WIND NE 5 0825 (+8) DEPTH 80 fm 41°/40° F East Point			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.34	27.74	0.519
5	8.64	28.86	0.391
10	8.86	29.21	0.324
20	9.55	30.27	0.327
30	9.66	30.64	0.230
50	9.68	30.80	0.276
75	9.64	30.84	0.363
100	9.54	30.94	0.381
130	9.46	30.98	0.283

STA 394 48° 02.9' N WEATHER c. 17 Dec 52 122° 22.7' W WIND SE 1 0712 (+8) DEPTH 98 fm 42°/41° F Camano Head, West of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.38	25.32	-----
5	8.45	28.76	0.484
10	9.44	30.10	0.435
20	9.76	30.59	0.303
30	9.81	30.80	-----
50	9.61	30.86	0.384
75	9.39	30.94	-----
100	9.30	30.97	0.384
150	9.17	31.01	0.326

STA 396 48° 11.1' N WEATHER b.c. 17 Dec 52 122° 33.6' W WIND SE 2 0926 (+8) DEPTH 52 fm 41°/40° F Onamac Point			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.19	26.37	-----
5	8.26	28.38	-----
10	8.60	29.29	-----
20	9.62	30.36	-----
30	9.92	30.74	-----
40	9.81	30.79	-----
80	9.66	30.95	-----

STA 397 48° 14.0' N WEATHER c. 17 Dec 52 122° 35.0' W WIND NE 5 1008 (+8) DEPTH 24 fm 41°/40° F Snelum Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.93	26.36	0.549
5	8.12	27.34	0.548
10	8.74	29.64	0.500
20	9.46	30.27	0.289
30	9.92	30.67	0.118
40	10.00	30.87	0.286

STA 399 48° 18.7' N WEATHER c. 17 Dec 52 122° 29.8' W WIND NW 4 1138 (+8) DEPTH 17 fm 41°/40° F Strawberry Pt., North of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	6.99	17.68	0.539
5	9.08	29.19	0.448
10	9.36	29.41	0.291
20	9.86	30.65	0.345

STA 398 48° 16.8' N WEATHER c. 17 Dec 52 122° 30.2' W WIND NNE 9 1054 (+8) DEPTH 12 fm 44°/42° F Strawberry Pt., South of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.40	24.25	-----
5	8.49	28.55	-----
10	9.04	29.71	-----
20	9.96	30.81	-----

STA 400 48° 21.3' N WEATHER b.c. 17 Dec 52 122° 33.3' W WIND NNE 2 1224 (+8) DEPTH 8 fm 41°/40° F Goat Island			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.31	26.26	0.506
5	8.83	29.14	0.429
10	9.18	29.35	0.420

STA 401 48° 25.1' N WEATHER b.o.
 17 Dec 52 122° 36.1' W WIND NE 3
 1306 (+8) DEPTH 19 fm 45°/43° F
 Dewey

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.30	29.32	-----
5	8.24	29.54	0.479
15	8.21	29.96	0.476
25	8.24	30.18	0.475

STA 403 48° 26.5' N WEATHER c.
 17 Dec 52 122° 44.3' W WIND NNE 3
 1535 (+8) DEPTH 46 fm 46°/44° F
 Lawson Reef, North of

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.16	30.86	0.460
5	8.16	30.91	0.459
10	8.19	30.93	0.452
20	8.18	30.93	0.455
30	8.18	30.95	0.455
50	8.16	30.99	0.454
75	8.13	31.09	0.457

STA 402 48° 24.9' N WEATHER c.
 17 Dec 52 122° 40.6' W WIND calm
 1455 (+8) DEPTH 50 fm 46°/44° F
 Deception Island, Northwest of

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.23	30.57	0.467
5	8.16	30.94	0.465
10	8.16	30.94	0.460
20	8.18	31.04	0.461
30	8.18	31.06	0.462
50	8.24	31.35	0.463
80	8.23	31.42	0.455

STA 404 48° 22.0' N WEATHER c.
 17 Dec 52 122° 45.8' W WIND NNW 3
 1633 (+8) DEPTH 44 fm 56°/53° F
 Lawson Reef, South of

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.14	30.86	-----
5	8.19	31.00	-----
10	8.18	31.04	-----
20	8.18	31.09	-----
30	8.20	31.24	-----
50	8.20	31.33	-----
75	8.16	31.46	-----

STA 405 48° 20.9' N WEATHER c. 17 Dec 52 122° 52.0' W WIND NNE 3 1721 (+8) DEPTH 52 fm 56°/53° F Smith Island, Northwest of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.32	31.26	0.463
5	8.32	31.26	0.474
10	8.34	31.27	0.460
20	8.34	31.27	0.469
30	8.30	31.32	0.452
50	8.33	31.36	0.464
80	8.24	31.57	0.449

STA 407 48° 15.6' N WEATHER o. 17 Dec 52 123° 03.9' W WIND NW 4 1929 (+8) DEPTH 93 fm 46°/43° F New Dungeness, Northeast of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.22	31.73	0.488
5	8.20	31.74	0.434
10	8.22	31.73	0.426
20	8.22	31.74	0.406
30	8.24	31.75	0.452
50	8.22	31.74	0.449
75	8.18	31.74	0.456
100	8.19	31.76	0.261
130	8.19	31.78	0.358
160	8.20	31.81	0.438

STA 406 48° 20.0' N WEATHER b.c. 17 Dec 52 123° 00.9' W WIND NNW 4 1829 (+8) DEPTH 54 fm 46°/43° F Hein Bank, Southeast of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.26	31.48	-----
5	8.27	31.50	-----
10	8.28	31.54	-----
20	8.35	31.61	-----
30	8.32	31.63	-----
50	8.25	31.66	-----
75	8.21	31.73	-----
100	8.21	31.73	-----
130	8.15	31.73	-----
160	8.21	31.75	-----

STA 408 48° 12.6' N WEATHER o. 17 Dec 52 122° 53.2' W WIND SW 6 2112 (+8) DEPTH 52 fm 45°/43° F Protection Island			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.58	31.31	-----
5	8.61	31.32	-----
10	8.62	31.32	-----
20	8.58	31.34	-----
30	8.62	31.34	-----
50	8.57	31.31	-----
70	8.56	31.34	-----
80	8.55	31.33	-----

STA 409 48° 10.3' N WEATHER b.c.
 17 Dec 52 122° 47.4' W WIND SW 6
 2217 (+8) DEPTH 31 fm 45°/43° F
 Middle Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.53	31.20	0.441
5	8.54	31.40	-----
10	8.52	31.40	-----
20	8.50	31.46	0.453
30	8.45	31.57	0.448
40	8.38	31.63	0.445

STA 411 48° 05.6' N WEATHER o.
 18 Dec 52 122° 38.6' W WIND SE 15
 0608 (+8) DEPTH 102 fm 42°/42° F
 Marrowstone Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.62	31.33	0.456
5	8.60	31.35	0.443
10	8.60	31.35	0.456
19	8.58	31.36	0.452
29	8.58	31.36	0.445
49	8.52	31.35	0.454
73	8.50	31.36	0.455
97	8.48	31.36	0.457
136	8.50	31.37	0.467
175	8.55	31.36	0.457

STA 410 48° 09.1' N WEATHER b.c.
 17 Dec 52 122° 41.8' W WIND SW 4
 2313 (+8) DEPTH 39 fm 44°/43° F
 Port Townsend

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.00	30.93	-----
5	8.96	30.96	-----
10	8.96	30.95	-----
20	8.87	31.01	-----
30	8.76	31.12	-----
50	8.75	31.13	-----

STA 412 48° 01.5' N WEATHER c.
 18 Dec 52 122° 37.5' W WIND SE 14
 0653 (+8) DEPTH 64 fm 42°/42° F
 Bush Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.51	31.34	0.460
5	8.50	31.35	0.460
10	8.50	31.35	0.457
19	8.50	31.35	0.452
29	8.50	31.34	0.455
49	8.49	31.34	0.454
73	8.45	31.34	0.457
98	8.47	31.35	0.458

STA 413 47° 56.2' N WEATHER c.
 18 Dec 52 122° 38.1' W WIND SE 12
 0755 (+8) DEPTH 68 fm 42°/42° F
 Tala Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.83	30.44	0.433
5	8.84	30.43	0.431
10	8.92	30.81	0.447
20	8.92	30.92	0.447
29	8.90	31.00	0.443
49	8.90	31.02	0.449
73	8.80	31.07	0.456
98	8.71	31.19	0.445

STA 415 47° 49.9' N WEATHER c.
 18 Dec 52 122° 40.0' W WIND SE 13
 1003 (+8) DEPTH 39 fm 42°/41° F
 South Pt.

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.86	30.34	0.428
5	8.84	30.39	0.433
10	8.92	30.59	0.429
20	8.93	30.67	0.424
30	8.86	30.93	0.437
40	8.84	31.08	0.442
60	8.76	31.09	0.440

STA 414 47° 52.5' N WEATHER 10
 18 Dec 52 122° 35.9' W WIND SSE 15
 0848 (+8) DEPTH 60 fm 42°/41° F
 Point Hannon

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.85	30.50	-----
5	8.85	30.59	-----
10	8.87	30.66	-----
20	8.87	30.72	-----
30	8.84	30.81	-----
50	8.89	30.91	-----
80	8.76	31.02	-----

STA 416 47° 46.5' N WEATHER c.
 18 Dec 52 122° 43.9' W WIND SSW 10
 1052 (+8) DEPTH 40 fm 45°/42° F
 Vinland

Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.94	30.21	-----
5	9.00	30.17	-----
10	9.09	30.22	-----
20	9.08	30.73	-----
30	9.02	30.89	-----
50	8.97	30.96	-----

STA 417 47° 42.0' N WEATHER c. 18 Dec 52 122° 45.7' W WIND S 14 114 (+8) DEPTH 75 fm 45°/42° F Hazel Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.18	30.21	0.384
5	9.16	30.23	0.380
10	9.19	30.30	0.378
20	9.27	30.56	0.365
30	9.26	30.68	0.365
50	9.18	30.88	0.366
80	8.97	31.00	0.398
110	8.93	30.99	0.403

STA 419 47° 46.7' N WEATHER c. 19 Dec 52 122° 51.5' W WIND NNW 2 0815 (+8) DEPTH 43 fm 41°/40° F Quilcene Bay			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.92	28.49	0.532
5	7.90	28.49	0.481
10	8.30	29.11	0.285
20	9.41	30.53	0.313
30	9.64	30.81	0.297
50	9.43	30.91	0.277
70	9.19	30.91	0.258

STA 418 47° 40.5' N WEATHER c. 18 Dec 52 122° 49.4' W WIND SSW 13 1240 (+8) DEPTH 62 fm 45°/42° F Misery Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.02	27.59	-----
5	8.76	29.47	-----
10	9.50	30.59	-----
20	9.50	30.75	-----
30	9.56	30.77	-----
50	9.26	30.93	-----
75	9.08	30.97	-----
100	9.10	30.97	-----

STA 420 47° 50.0' N WEATHER c. 19 Dec 52 122° 48.6' W WIND SxW 18 0643 (+8) DEPTH 27 fm 43°/41° F Dabob Bay, Head of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.58	28.11	0.572
5	7.56	28.11	0.582
10	7.60	28.11	0.567
20	9.40	30.44	0.355
30	9.64	30.77	0.333
40	9.70	30.88	0.284

STA 421 47° 46.7' N WEATHER c. 19 Dec 52 122° 48.5' W WIND SxW 17 0733 (+8) DEPTH 86 fm 43°/42° F Bolton Peninsula, East of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.76	28.34	-----
5	7.74	28.34	-----
10	7.86	28.41	0.500
20	9.42	30.62	0.250
29	9.67	30.86	0.287
39	9.60	30.88	0.279
49	9.27	30.88	0.308
73	9.14	30.88	0.325
98	9.06	30.99	0.312

STA 423 47° 41.8' N WEATHER c. 19 Dec 52 122° 51.9' W WIND S 5 1434 (+8) DEPTH 79 fm 45°/43° F Tskutsko Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.12	28.43	-----
5	8.62	29.52	-----
10	8.73	30.48	-----
20	9.62	30.88	-----
29	9.48	30.88	-----
49	9.28	30.88	-----
73	9.18	30.95	-----
98	9.08	30.97	-----
127	9.05	31.00	-----

STA 422 47° 44.9' N WEATHER c. 19 Dec 52 122° 49.6' W WIND SSW 12 0855 (+8) DEPTH 107 fm 40°/39° F Tabook Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.20	28.68	-----
5	8.19	28.68	0.430
10	8.23	28.77	0.381
20	9.57	30.78	0.243
29	9.75	30.90	0.202
39	9.54	30.90	0.305
49	9.38	30.90	0.310
73	9.14	30.95	0.348
98	9.10	30.99	0.358
137	9.08	31.02	0.361
147	9.04	31.04	0.350

STA 424 47° 38.4' N WEATHER c. 19 Dec 52 122° 53.7' W WIND SW 6 1530 (+8) DEPTH 91 fm 45°/42° F Quatsap Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.80	23.75	-----
5	8.58	29.33	-----
10	9.52	30.49	-----
19	9.90	30.87	-----
29	9.83	30.88	-----
48	9.57	30.88	-----
73	9.24	30.91	-----
97	9.14	30.97	-----
126	9.05	31.00	-----

STA 425 47° 35.8' N WEATHER c. 19 Dec 52 122° 58.2' W WIND SW 5 1636 (+8) DEPTH 92 fm 46°/43° F Tekiu Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.75	22.88	0.550
5	7.85	29.43	0.445
10	9.74	30.66	0.307
20	9.94	30.86	0.277
30	9.82	30.91	0.281
40	9.64	30.91	0.307
50	9.38	30.91	0.335
75	9.21	30.95	0.353
100	9.10	30.97	0.359
130	9.10	31.01	0.376
160	9.01	31.04	0.373

STA 427 47° 23.9' N WEATHER 63 19 Dec 52 122° 55.9' W WIND SE 1 2051 (+8) DEPTH 11 fm 40°/40° F Lynch Cove, Head of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.12	19.36	0.567
5	9.51	29.47	0.236
10	10.14	30.65	0.176
20	10.11	30.84	0.136

STA 426 47° 32.3' N WEATHER c. 19 Dec 52 123° 00.4' W WIND SW 3 1816 (+8) DEPTH 87 fm 43°/41° F Chinom Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.34	24.78	-----
5	9.10	29.66	-----
10	9.42	30.34	-----
20	9.94	30.83	-----
30	9.73	30.90	-----
50	9.52	30.91	-----
75	9.12	30.93	-----
100	9.06	30.93	-----
140	8.97	31.09	-----

STA 428 47° 23.1' N WEATHER 63 19 Dec 52 122° 58.6' W WIND SE 2 2127 (+8) DEPTH 22 fm 40°/40° F Lynch Cove, Middle of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.28	18.87	-----
5	9.77	30.15	-----
10	10.10	30.68	-----
20	10.12	30.79	-----
30	10.07	30.88	-----

STA 429 47° 21.6' N WEATHER 63 19 Dec 52 123° 03.9' W WIND calm 2206 (+8) DEPTH 20 fm 40°/40° F Tahuya River			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.46	22.70	-----
5	9.60	29.54	-----
10	9.89	30.43	-----
20	9.96	30.79	-----
30	9.91	30.90	-----

STA 431 47° 23.4' N WEATHER 61 19 Dec 52 123° 07.8' W WIND W 3 2331 (+8) DEPTH 59 fm 42°/41° F Musqueti Pt.			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.49	19.01	0.474
5	8.96	29.56	0.447
10	9.84	30.35	0.312
20	9.96	30.81	0.255
30	9.94	30.89	0.259
40	9.83	30.92	0.269
50	9.64	30.93	0.279
75	9.24	30.97	0.341
100	9.05	31.00	0.373

STA 430 47° 21.4' N WEATHER 63 19 Dec 52 123° 08.4' W WIND WNW 4 2205 (+8) DEPTH 35 fm 41°/41° F Skokomish River, North of			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	7.52	26.26	0.531
5	9.50	29.56	0.364
10	9.78	30.20	0.300
20	10.01	30.84	0.244
30	9.96	30.86	0.245
40	9.85	30.90	0.254
55	9.53	30.91	0.294

STA 432 47° 25.4' N WEATHER c. 19 Dec 52 123° 06.9' W WIND NNE 3 0031 (+8) DEPTH 66 fm 42°/41° F Red Bluff			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.29	21.65	0.453
5	8.92	29.65	0.461
10	9.58	30.23	0.377
20	10.03	30.84	0.261
30	9.95	30.91	0.264
40	9.86	30.97	0.282
50	9.50	30.97	0.312
75	9.15	30.98	0.359
100	9.05	31.01	0.373

STA 433 47° 28.7' N WEATHER 63 19 Dec 52 123° 04.2' W WIND NNE 2 0120 (+8) DEPTH 86 fm 42°/41° F Eagle Creek			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	8.49	23.12	0.437
5	9.23	29.88	0.423
10	9.74	30.46	0.302
20	9.98	30.90	0.272
30	9.92	30.95	0.268
40	9.66	30.97	0.297
50	9.33	30.99	0.340
75	9.23	30.98	0.355
100	9.09	31.00	0.371
140	9.34	30.99	0.280

STA 435 47° 54.0' N WEATHER 63 19 Dec 52 122° 28.7' W WIND SW 3 1301 (+8) DEPTH 112 fm 56°/54° F Pt. No Point			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.12	30.64	0.470
5	9.08	30.64	0.460
10	9.10	30.65	0.458
20	9.08	30.66	0.452
30	9.08	30.66	0.454
50	9.09	30.78	0.450
75	8.99	30.81	0.449
100	8.99	30.82	0.451
130	9.03	30.82	0.452
160	9.04	30.84	0.454
190	9.02	30.84	0.449

STA 434 47° 57.4' N WEATHER c. 19 Dec 52 122° 34.6' W WIND SE 2 1208 (+8) DEPTH 61 fm 48°/44° F Double Bluff			
Depth (m)	Temp (°C)	Sal (‰)	O ₂ (mg-at/L)
0	9.04	30.80	0.436
5	9.02	30.78	0.436
10	9.01	30.79	0.439
20	9.02	30.82	0.432
30	8.99	30.86	0.439
50	8.89	30.95	0.439
75	8.74	31.00	0.448
100	8.75	31.02	0.447

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