

海洋調査要報

第 12 号

DATA RECORD OF OCEANOGRAPHIC OBSERVATIONS

No.12

APRIL 1996 - MARCH 1997

北海道立水産試験場

平成 17 年 4 月

HOKKAIDO FISHERIES EXPERIMENTAL STATION

April 2005

北海道立水産試験場による海洋観測結果の生データの印刷公表は昭和9年以降途絶えていましたが、昭和39年度より漁海況予報事業が発足してからは、その関係分は結果報告書に載るようになりました。その後、昭和51年度から中央水産試験場では石狩湾海域生態調査報告書に石狩湾付近の海洋観測結果を掲載するようになり、釧路水産試験場では昭和52年度から、稚内水産試験場では昭和58年度からそれぞれの事業報告書に当該年の全データを掲載公表してきました。このようにいくつかの報告書に掲載されていたデータについて、昭和60年度からは利用の便を図るため、5水産試験場及び1支場の海洋観測結果をまとめて「海洋調査要報」として印刷公表し、各方面の参考に供することになりました。また、今回の平成8年度版(1996年度)の各層水温・塩分データについては、電子ファイルによる配布を準備しています。ホームページをご覧ください。または E-mail にてお問い合わせください。

ホームページ URL <http://www.fishexp.pref.hokkaido.jp/exp/central/kaiyou/index.htm>

問い合わせ先 E-mail: ckaiyou@fishexp.pref.hokkaido.jp

本要報は平成8年度の各水産試験場における観測結果をまとめたものです。掲載した海洋観測結果を引用する場合には本要報によった旨を明記することをお願いいたします。また、データの品質管理には、(財)日本水路協会 海洋情報研究センターの海洋観測データ品質管理ソフト(POD-QC)を利用しました。また、作図には The Generic Mapping Tools を利用しました。

It is requested that due credit be given if data from this "DATA RECORD" are quoted, or if information taken herefrom is incorporated in other papers.

平成 17 年 4 月 April 2005

Table 1. Summary of oceanographic observations conducted by Hokkaido Fisheries Experimental Station from April 1996 to March 1997.

Period	Area	Station Nos. occupied	Number of obs	Research staff on board	Equipments for hydrography	Referencial pages
Hokkaido Central Fisheries Experimental Station: Vessel Oyashio-Maru						
1996/4/8 - 1996/4/11	West of Hokkaido,Japan Sea	199604J31 - 199604JC12	29	I.Tanaka A.Miyazono	SBE 9/11 725/1055+MSTD	Table 3-1
1996/4/16 - 1996/4/18	West of Hokkaido,Japan Sea	199604CHA01 - 199604CHA11	12	A.Fujioka	MSTD	Table 3-3
1996/4/22 - 1996/4/25	West of Hokkaido,Japan Sea	199604CHA12 - 199604CHA21	9	Y.Watanabe	MSTD	Table 3-5
1996/5/7 - 1996/5/8	Ishikari Bay,Japan Sea	199605CIS004 - 199605CIS253	28	A.Fujioka	MSTD	Table 3-6
1996/5/13 - 1996/5/15	Ishikari Bay,Japan Sea	199605CIS603 - 199605CIS607	7	A.Fujioka	SBE 9/11plus 725/1055	Table 3-8
1996/5/23 - 1996/5/24	West of Hokkaido,Japan Sea	199605CY01 - 199605CY03	3	M.Yamaguchi	SBE 9/11plus 725/1055	Table 3-9
1996/5/27 - 1996/5/29	West of Hokkaido,Japan Sea	199605CY101 - 199605CY103	3	M.Yamaguchi	SBE 9/11plus 725/1055	Table 3-9
1996/6/3 - 1996/6/8	West of Hokkaido,Japan Sea	199606J31 - 199606JW11	59	I.Tanaka A.Nakata	SBE 9/11plus 725/1055	Table 3-10
1996/6/12 - 1996/6/14	Ishikari Bay,Japan Sea	199606CSH01 - 199606CSH05	5	A.Fujioka	SBE 9/11plus 725/1055	Table 3-16
1996/6/17 - 1996/6/18	Ishikari Bay,Japan Sea	199606CSH21 - 199606CSH23	3	A.Fujioka S.Maruyama	SBE 9/11plus 725/1055	Table 3-16
1996/6/25 - 1996/7/2	West of Hokkaido,Japan Sea	199606CSR101 - 199606CSR117	17	J.Nakata K.Sakaguchi	SBE 9/11plus 725/1055	Table 3-16
1996/7/8 - 1996/7/9	Ishikari Bay,Japan Sea	199607CIS08 - 199607CIS908	33	A.Fujioka	SBE 9/11plus 725/1055	Table 3-18
1996/7/10 - 1996/7/11	West of Hokkaido,Japan Sea	199607CHA001 - 199607CHA103	7	A.Fujioka	SBE 9/11plus 725/1055	Table 3-21
1996/7/15 - 1996/7/19	West of Hokkaido,Japan Sea	199607CHA301 - 199607CHA312	12	Y.Watanabe	SBE 9/11plus 725/1055	Table 3-22
1996/7/29 - 1996/8/3	West of Hokkaido,Japan Sea	199608J31 - 199608J11	48	H.Yagi A.Nakata	SBE 9/11plus 725/1055	Table 3-23
1996/8/26 - 1996/9/2	West of Hokkaido,Japan Sea	199608CSR101 - 199608CSR119	19	K.Sakaguchi	SBE 9/11plus 725/1055	Table 3-28
1996/9/17 - 1996/9/19	West of Hokkaido,Japan Sea	199609CHA01 - 199609CHA10	10	Y.Watanabe	SBE 9/11plus 725/1055	Table 3-30
1996/9/24 -	West of Hokkaido,Japan Sea	199609CHA21 -	1	Y.Watanabe	SBE 9/11plus 725/1055	Table 3-31
1996/9/30 - 1996/10/4	West of Hokkaido,Japan Sea	199610J31 - 199610JC11	32	K.Hirano A.Miyazono	SBE 9/11plus 725/1055	Table 3-31
1996/10/14 - 1996/10/21	West of Hokkaido,Japan Sea	199610CW01 - 199610CW28	28	H.Yoshida	SBE 9/11plus 725/1055	Table 3-34
1996/10/29 - 1996/11/5	West of Hokkaido,Japan Sea	199610CHA01 - 199610CHA07	7	Y.Watanabe	SBE 9/11plus 725/1055	Table 3-37
1996/11/23 - 1996/11/25	South of Hokkaido,Japan Sea	199611HW01 - 199611HW12	12	Y.Mihara	SBE 9/11plus 725/1055	Table 3-38
1996/11/26 - 1996/12/4	West of Hokkaido,Japan Sea	199612J63 - 199612J23	22	K.Hirano A.Miyazono	SBE 9/11plus 725/1055	Table 3-39
1997/1/28 - 1997/1/31	West of Hokkaido,Japan Sea	199702J63 - 199702J34	12	K.Hirano A.Miyazono	SBE 9/11plus 725/1055	Table 3-41
1997/2/2 - 1997/2/6	West of Hokkaido,Japan Sea	199702J42 - 199702J52	13	M.Furumaki	SBE 9/11plus 725/1055	Table 3-42
1997/2/24 - 1997/2/25	Ishikari Bay,Japan Sea	199702CJ33 - 199702CJ331	5	T.Watanabe I.Tanaka	SBE 9/11plus 725/1055	Table 3-44
1997/3/17 - 1997/3/18	West of Hokkaido,Japan Sea	199703CJ33 - 199703CJ39	11	I.Tanaka	SBE 9/11plus 725/1055	Table 3-44
Hokkaido Hakodate Fisheries Experimental Station: Vessel Kinsei-Maru						
1996/4/15 - 1996/4/16	South of Hokkaido,North Pacific	199604P66 - 199604P61	6	M.Natsume	SBE 9/11plus	Table 4-1
1996/5/7 - 1996/5/7	South of Hokkaido,North Pacific	199605HKG004 - 199605HKG002	3	H.Shimada	SBE 9/11plus	Table 4-1
1996/5/13 - 1996/5/20	South of Hokkaido,Funka Bay	199605HFK001 - 199605HFK321	97	Y.Nishida	SBE 9/11plus	Table 4-1
1996/5/27 - 1996/5/29	South of Hokkaido,North Pacific	199606P66 - 199606P56	12	H.Shimada	SBE 9/11plus	Table 4-11

Table 1. Summary of oceanographic observations conducted by Hokkaido Fisheries Experimental Station from April 1996 to March 1997.

Period	Area	Station Nos. occupied	Number of obs Research staff on board	Equipments for hydrography	Referencial pages
1996/6/4 - 1996/6/13	West of Aomori & Tsugaru Strait	199606HSR001 - 199606HSR022	25 I.Kanomata	SBE 9/11plus	Table 4-12
1996/6/17 - 1996/6/20	South of Hokkaido,Funka Bay	199606HFK003 - 199606HFK227	52 Y.Nishida	SBE 9/11plus	Table 4-15
1996/6/24 - 1996/6/25	South of Hokkaido,Funka Bay	199606HKD001 - 199606HKD018	18 H.Shimada	SBE 9/11plus	Table 4-20
1996/7/3 - 1996/7/10	South of Hokkaido,North Pacific	199607HSR007 - 199607HSR016	15 I.Kanomata	SBE 9/11plus	Table 4-22
1996/7/15 - 1996/7/17	South of Hokkaido,Funka Bay	199607HFK05 - 199607HFK238	50 Y.Nishida	SBE 9/11plus	Table 4-23
1996/7/18 - 1996/7/18	Tsugaru strait	199607HSR006 -	1 K. Sazaki	SBE 9/11plus	Table 4-28
1996/7/22 - 1996/8/1	South of Hokkaido,North Pacific	199608P66 - 199608P51	12 H.Shimada	SBE 9/11plus	Table 4-28
1996/8/5 - 1996/8/6	Tsugaru strait	199608HT05 - 199608HFK01	33 Y.Nishida	SBE 9/11plus	Table 4-30
1996/8/26 - 1996/8/28	South of Hokkaido,North Pacific	199608HSR007 - 199608HSR081	15 I.Kanomata	SBE 9/11plus	Table 4-33
1996/9/2 - 1996/9/3	Tsugaru strait	199608HSR008 - 199609HNA01	8 I.Kanomata	SBE 9/11plus	Table 4-34
1996/9/10 - 1996/9/12	Tsugaru Strait & Japan Sea	199608HSR18 - 199608HSR016	3 I.Kanomata	SBE 9/11plus	Table 4-35
1996/9/17 - 1996/9/19	South of Hokkaido,Funka Bay	199609HFK01 - 199609HFK101	31 Y.Nishida	SBE 9/11plus	Table 4-36
1996/9/24 - 1996/9/24	South of Hokkaido,Funka Bay	199609HFK01 - 199609HFK07	7 Y.Nishida	SBE 9/11plus	Table 4-39
1996/9/30 - 1996/10/1	South of Hokkaido,North Pacific	199610P64 - 199610P63	12 H.Shimada	SBE 9/11plus	Table 4-39
1996/10/15 - 1996/10/15	South of Hokkaido,Funka Bay	199610HKG004 - 199610HKG001	4 K. Sazaki	SBE 9/11plus	Table 4-41
1996/10/21 - 1996/10/22	South of Hokkaido,Japan Sea	199610HW001 - 199610HW002	12 K. Sazaki	SBE 9/11plus	Table 4-41
1996/11/11 - 1996/11/11	South of Hokkaido,Funka Bay	199611HTK08 - 199611HTK10	12 I.Kanomata &* 1	SBE 9/11plus	Table 4-42
1996/11/18 - 1996/11/20	Tsugaru strait	199611HTK04 - 199611HIKO4	12 Y.Nishida	SBE 9/11plus	Table 4-43
1996/11/26 - 1996/11/26	South of Hokkaido,North Pacific	199612P64 - 199612P65	11 I.Kanomata	SBE 9/11plus	Table 4-45
1996/12/2 - 1996/12/3	Tsugaru strait	199612HNA07 - 199611HIK05	8 K. Sazaki	SBE 9/11plus	Table 4-46
1996/12/9 - 1996/12/9	Tsugaru strait	199611HIK06 - 199611HIK08	2 K. Sazaki	SBE 9/11plus	Table 4-46
1997/2/24 - 1997/2/24	South of Hokkaido,North Pacific	199702P65 - 199702P61	5 I.Kanomata	SBE 9/11plus	Table 4-47
1997/3/4 - 1997/3/4	South of Hokkaido,North Pacific	199703HKG001 - 199703HKG003	3 K. Sazaki	SBE 9/11plus	Table 4-47
1997/3/12 - 1997/3/13	Tsugaru strait	199703HFK03 - 199703HTK27	27 Y.Nishida	SBE 9/11plus	Table 4-47
Hokkaido Kushiro Fisheries Experimental Station: Vessel Hokushin-Marui					
1996/4/11 - 1996/4/17	South of Hokkaido, North Pacific	199604P31 - 199604PK32	59 A.Taka M.Kotori	Niel Brown Mark	Table 5-1
1996/5/13 - 1996/5/16	South of Hokkaido, North Pacific	199605SU01 - 199605SU39	18 O.Shida	Niel Brown Mark	Table 5-6
1996/5/29 - 1996/6/4	South of Hokkaido, North Pacific	199606PK11 - 199606P31	59 T.Honma M.Kotori	Niel Brown Mark	Table 5-8
1996/6/12 - 1996/6/20	South of Hokkaido, North Pacific	199606IK01 - 199606IK14	14 A.Taka	Niel Brown Mark	Table 5-14
1996/6/27 - 1996/7/3	South of Hokkaido, North Pacific	199606IW01 - 199606IW19	19 Y.Nakame	Niel Brown Mark	Table 5-16
1996/7/13 - 1996/7/21	South Kuril islands, North Pacific	199607SM01 - 199607SM17	17 T.Honma	Niel Brown Mark	Table 5-17
1996/8/1 - 1996/8/5	South of Hokkaido, North Pacific	199608P31 - 199608PK06	40 Y.Nakame	Niel Brown Mark	Table 5-19
1996/8/26 - 1996/8/29	South of Hokkaido, North Pacific	199608IK01 - 199608IK06	6 A.Taka	Niel Brown Mark	Table 5-23

Table 1. Summary of oceanographic observations conducted by Hokkaido Fisheries Experimental Station from April 1996 to March 1997.

Period	Area	Station Nos. occupied	Number of obs Research staff on board	Equipments for hydrography	Referencial pages
1996/9/4 - 1996/9/12	South of Hokkaido, North Pacific	199609IW01 - 199609IW17	17 Y.Nakame	Niel Brown Mark	Table 5-24
1996/9/18 - 1996/9/25	South of Hokkaido, North Pacific	199609SM01 - 199609SM15	14 T.Honma	Niel Brown Mark	Table 5-25
1996/10/1 - 1996/10/4	South of Hokkaido, North Pacific	199610P31 - 199610PK06	40 Y.Nakame	Niel Brown Mark	Table 5-27
1996/10/14 - 1996/10/20	Nemuro Strait, Okhotsk Sea	199610IK15 - 199610IK04	10 A.Taka	Niel Brown Mark	Table 5-31
1996/10/28 - 1996/10/31	South of Hokkaido, North Pacific	199610SM01 - 199610SM07	6 T.Honma	Niel Brown Mark	Table 5-32
1996/11/11 - 1996/11/18	South of Hokkaido, North Pacific	199611SU21 - 199611SU32	21 O.Shida	Niel Brown Mark	Table 5-32
1996/11/27 - 1996/11/28	Nemuro Strait	199611SU26 - 199611SU02	17 O.Shida	Niel Brown Mark	Table 5-35
1996/12/4 - 1996/12/10	South of Hokkaido, North Pacific	199612PK11 - 199612P24	36 A.Taka M.Kotori	Niel Brown Mark	Table 5-36
1997/2/18 - 1997/2/28	South of Hokkaido, North Pacific	199702PK11 - 199702PK12	38 Y.Nakame	SBE 9/11 plus	Table 5-40
Hokkaido Wakkanai Fisheries Experimental Station: Vessel Hokuyo-Maru					
1996/4/9 - 1996/4/11	Southwestern Okhotsk Sea	199604S4 - 199604O14	35 T. Suzuuchi	SBE 9/11plus	Table 6-1
1996/4/16 - 1996/4/18	North of Hokkaido, Japan Sea	199604JW14 - 199604JW14	24 T. Suzuuchi	SBE 9/11plus	Table 6-4
1996/4/22 - 1996/4/24	North of Hokkaido, Japan Sea	199604WTC01 - 199604WTC11	11 H. Miyake	SBE 9/11plus	Table 6-6
1996/5/13 - 1996/5/14	North of Hokkaido, Japan Sea	199605WTC01 - 199605WTC14	14 H. Miyake	SBE 9/11plus	Table 6-8
1996/5/20 - 1996/5/23	North of Hokkaido, Japan Sea	199605WHK01 - 199605WHK05	5 T. Kaneta	SBE 9/11plus	Table 6-9
1996/6/4 - 1996/6/6	Southwestern Okhotsk Sea	199606S4 - 199606O14	40 K. Kuratome	SBE 9/11plus	Table 6-9
1996/6/10 - 1996/6/13	Soya Strait	199606J101 - 199606S401	23 H.Yagi A.Miyazono &*2	SBE 9/11plus	Table 6-13
1996/7/29 - 1996/7/31	Southwestern Okhotsk Sea	199608S4 - 199608O34	40 K. Kuratome	SBE 9/11plus	Table 6-16
1996/8/19 - 1996/8/22	Soya Strait	199608J101 - 199608SA01	24 H.Yagi A.Nakata &*2	SBE 9/11plus	Table 6-20
1996/9/30 - 1996/10/3	Japan Sea and Okhotsk Sea	199610S4 - 199610J11	56 T. Suzuuchi	SBE 9/11plus	Table 6-22
1996/11/21 - 1996/11/25	Southwestern Okhotsk Sea	199611WKT01 - 199611WKT06	6 Y. Kunihiro	SBE 9/11plus	Table 6-28
1996/12/3 - 1996/12/4	Soya Strait	199612J101 - 199612S401	22 H.Yagi I.Tanaka	SBE 9/11plus	Table 6-28
1996/12/9 - 1996/12/11	Southwestern Okhotsk Sea	199612S102 - 199612S4	41 K. Kuratome	SBE 9/11plus	Table 6-31
1997/2/19 - 1997/2/20	Japan Sea and Okhotsk Sea	199702J11 - 199702J25	10 K. Kuratome	SBE 9/11plus	Table 6-35
1997/3/4 - 1997/3/5	Japan Sea and Okhotsk Sea	199702J14 - 199702JW01	8 K. Kuratome	SBE 9/11plus	Table 6-36
1997/3/10 - 1997/3/13	Soya Strait	199703S103 - 199703S10N	21 H.Yagi A.Nakata &*4	SBE 9/11plus	Table 6-36

&*1: Fisheries Technology Training Center

&*2: I. Yasuda M.Seo (Hokkaido Tokai Univ.)

&*3: M.Seo (Hokkaido Tokai Univ.)

Table 2. Principal particulars of research vessels

Vessel	Call sign	Gross tonnage	Main engine	Number of crew	Captain	Affiliated institution
Oyashio Maru	JCMO	178	440 p.s.	19	M. Furumaki	Central Fisheries Experimental Station
Kinsei Maru	7LXI	68	290 p.s.	12	K. Sazaki	Hakodate Fisheries Experimental Station
Hokushin Maru	7LQV	214	440 p.s.	22	Y. Nunokawa	Kushiro Fisheries Experimental Station
Hokuyo Maru	JLXU	276	610 p.s.	25	K. Kuratome	Wakkanai Fisheries Experimental Station

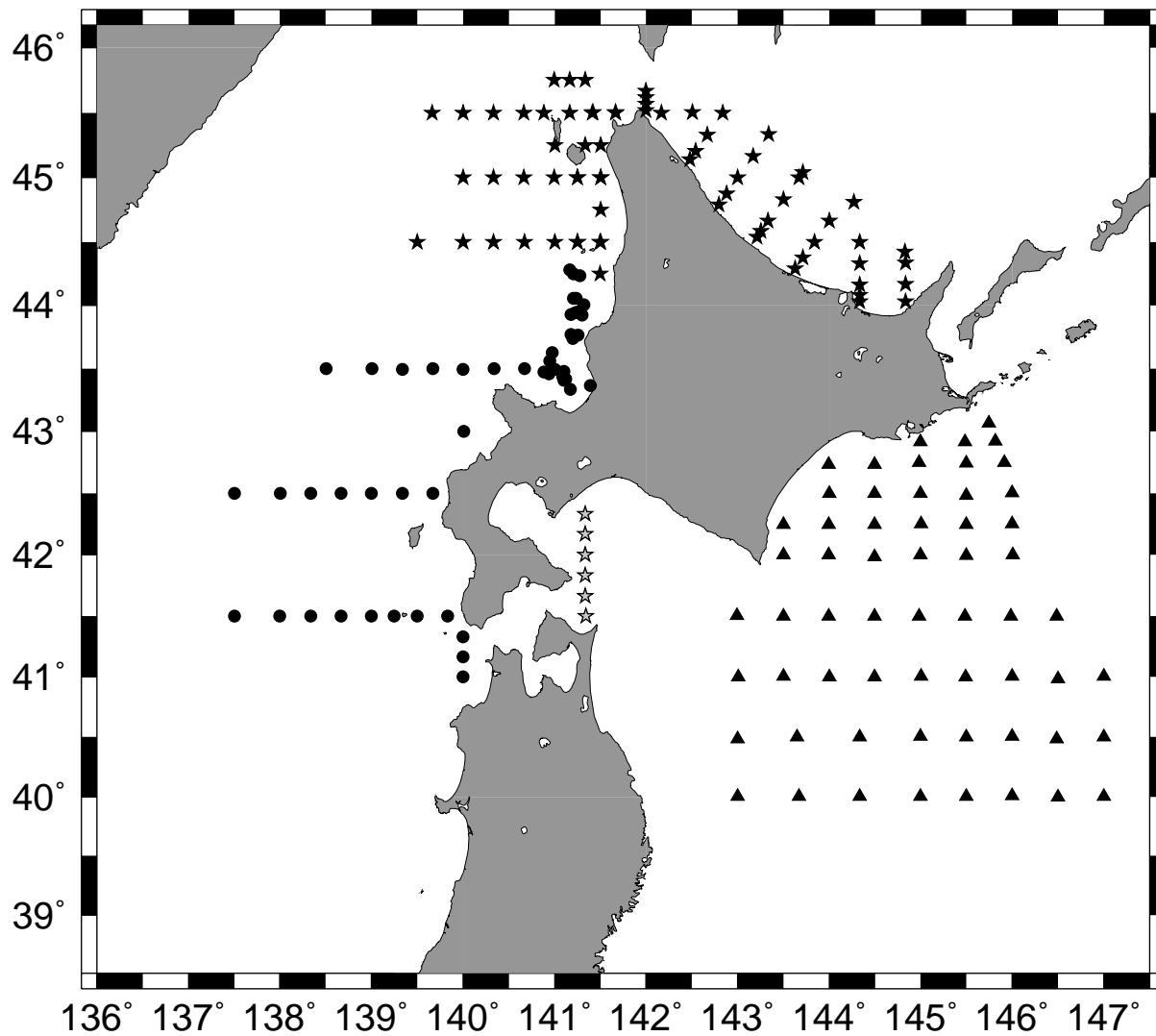


Fig. 1. Location of oceanographic stations covered in April 1996.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

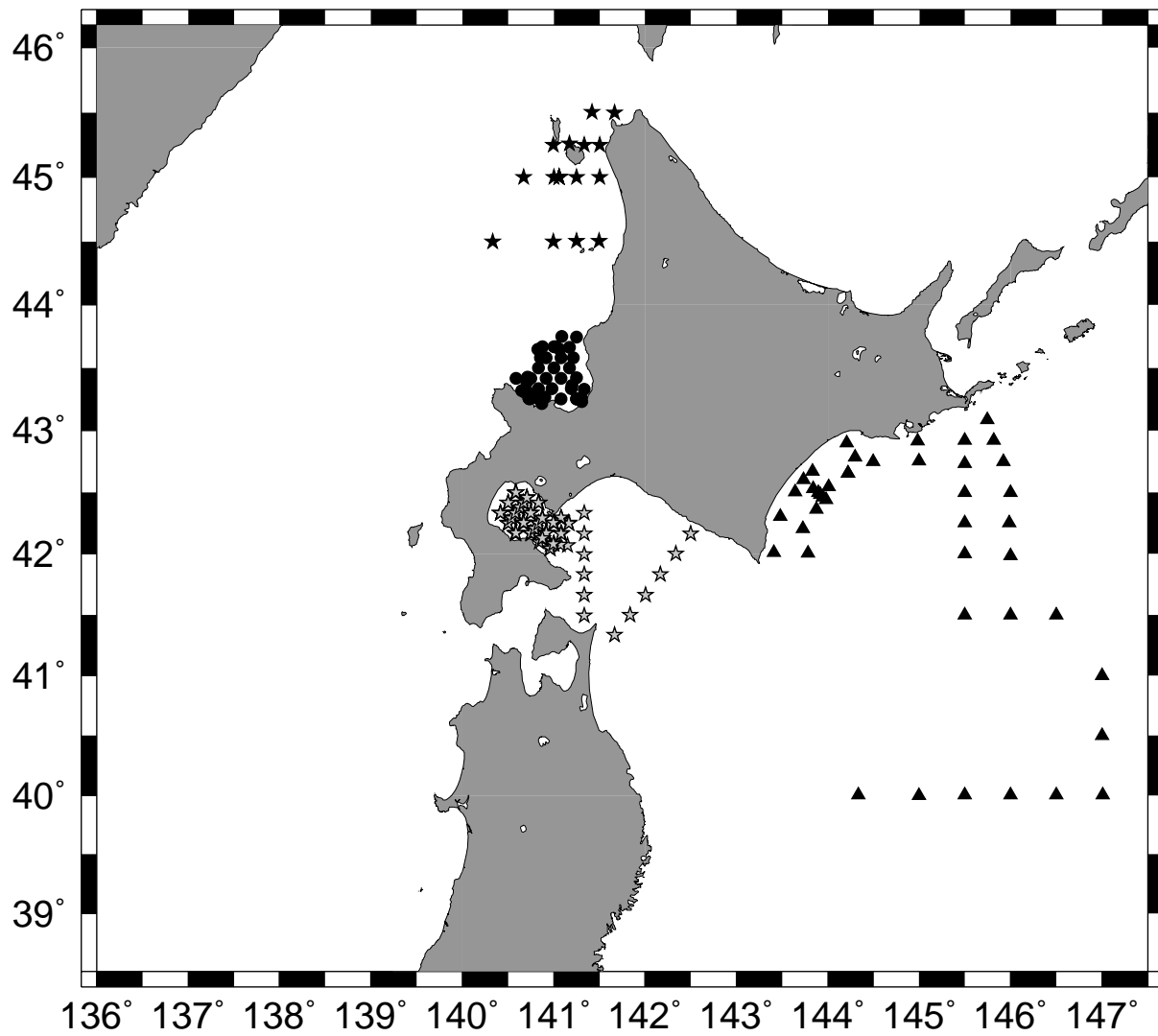


Fig. 2. Location of oceanographic stations covered in May 1996.
 ☆:Oyasyhio-Maru ●:Hokuyo-Maru ☆:Hokushin-Maru ▲:Kinsei-Maru

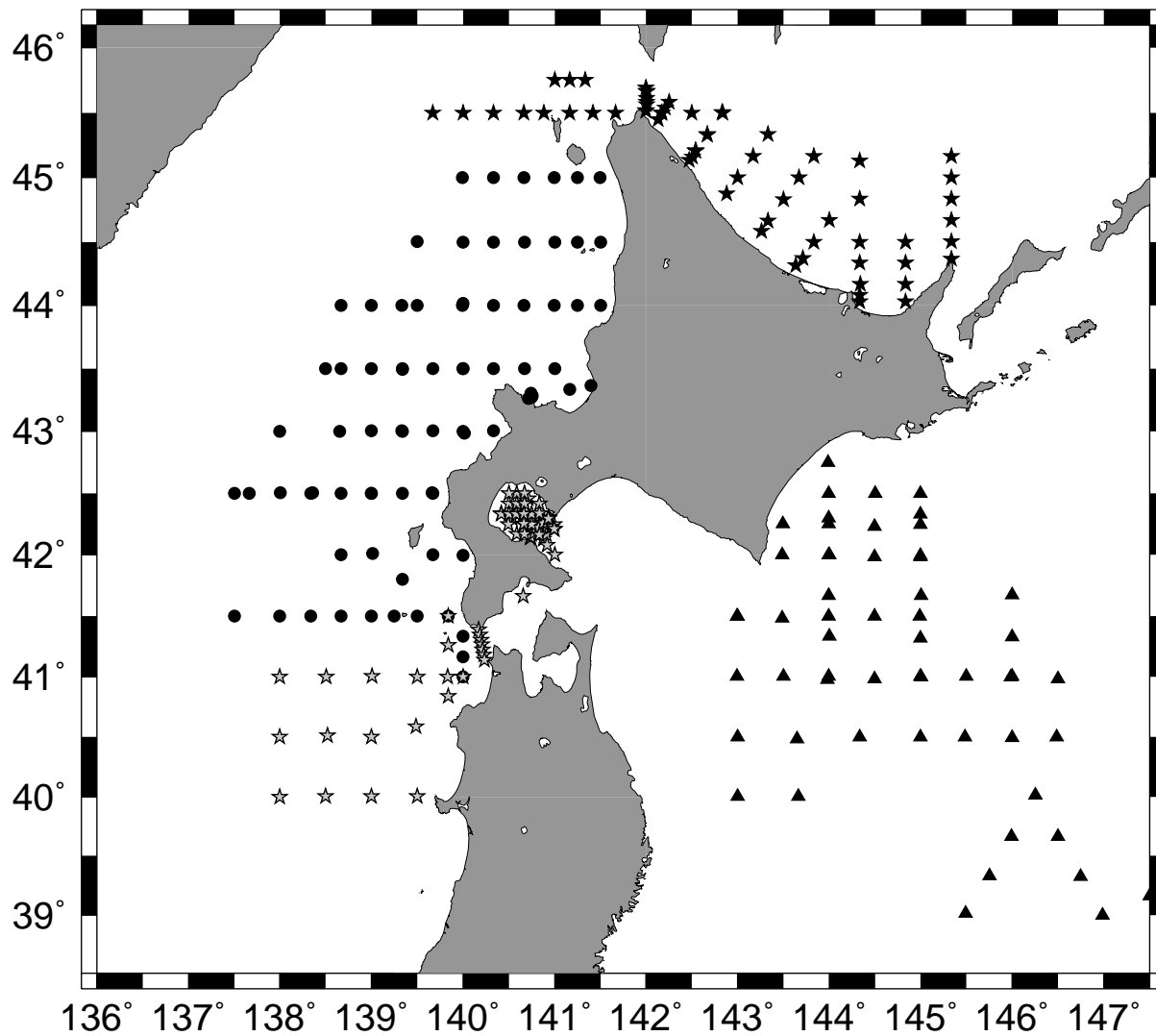


Fig. 3. Location of oceanographic stations covered in June 1996.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

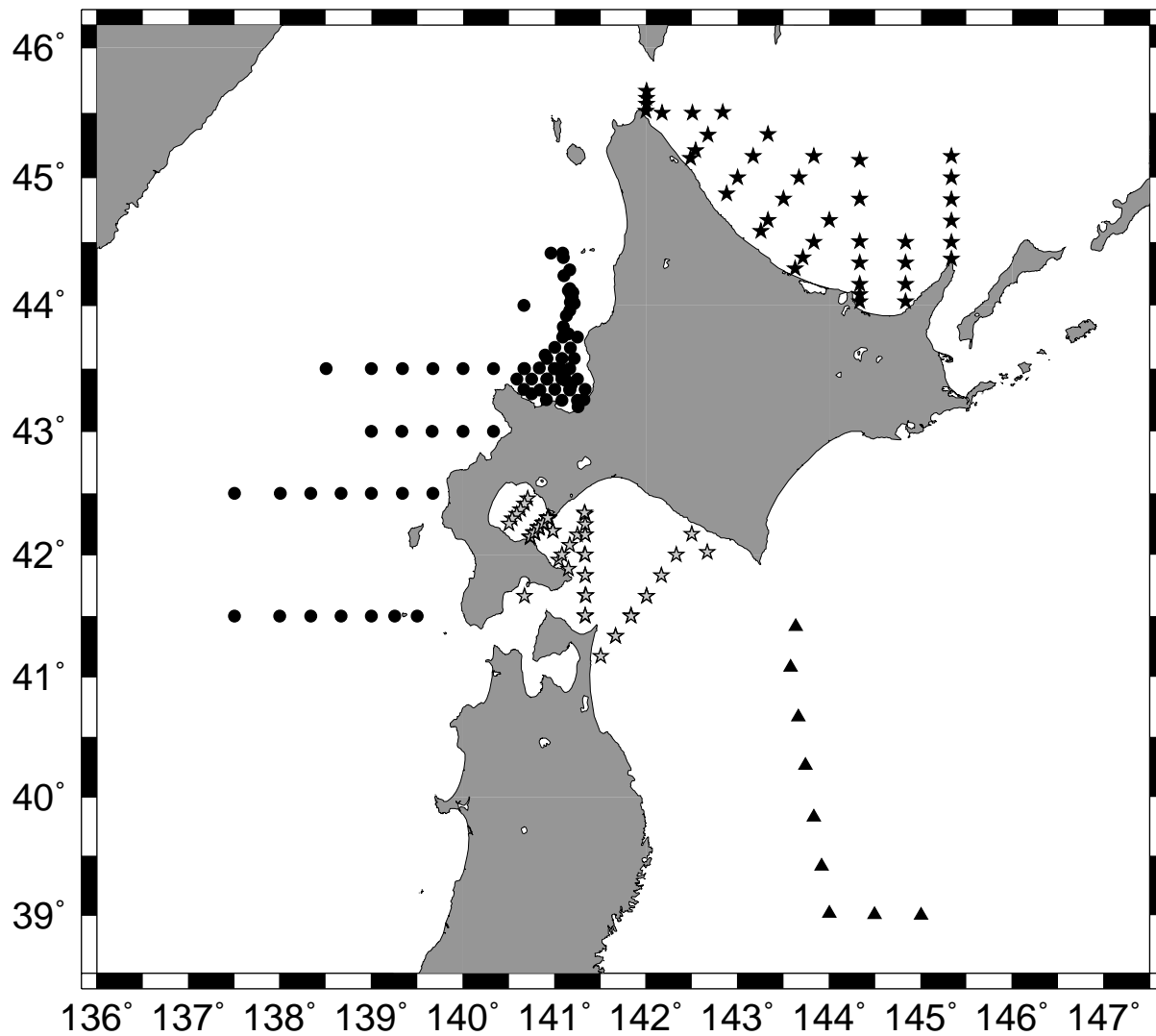


Fig. 4. Location of oceanographic stations covered in July 1996.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

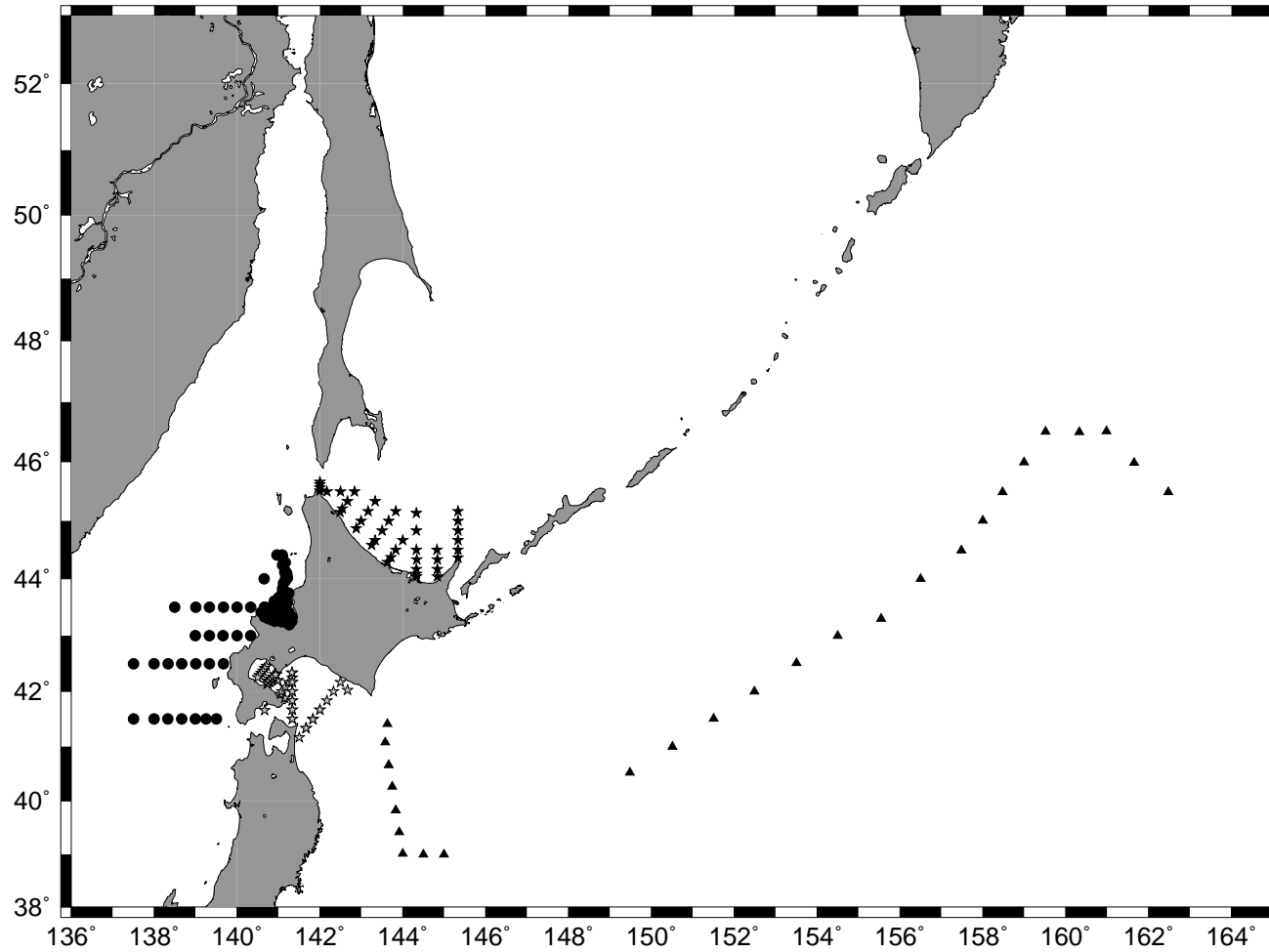


Fig. 4-2. Location of oceanographic stations covered in July 1996.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

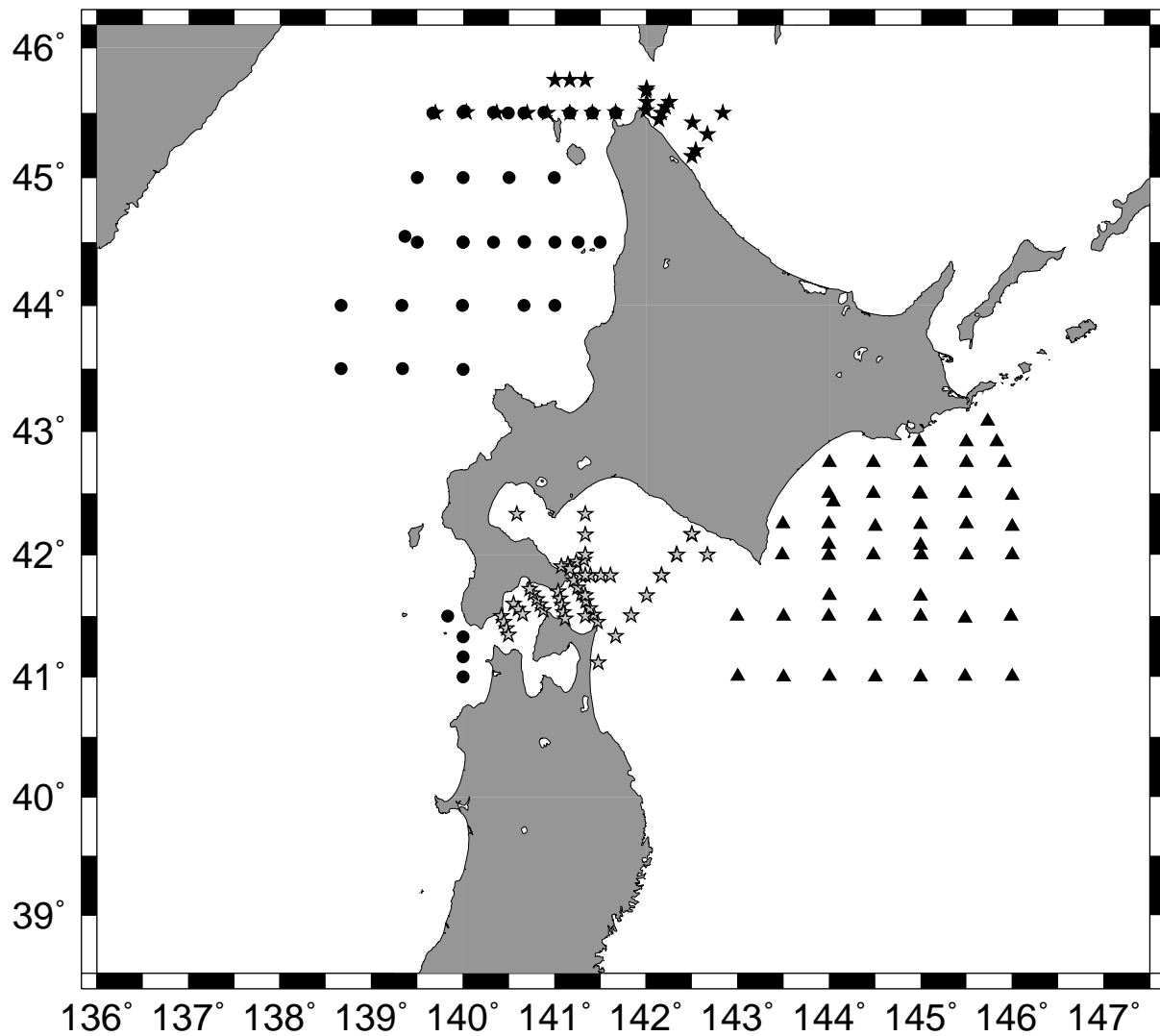


Fig. 5. Location of oceanographic stations covered in August 1996.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

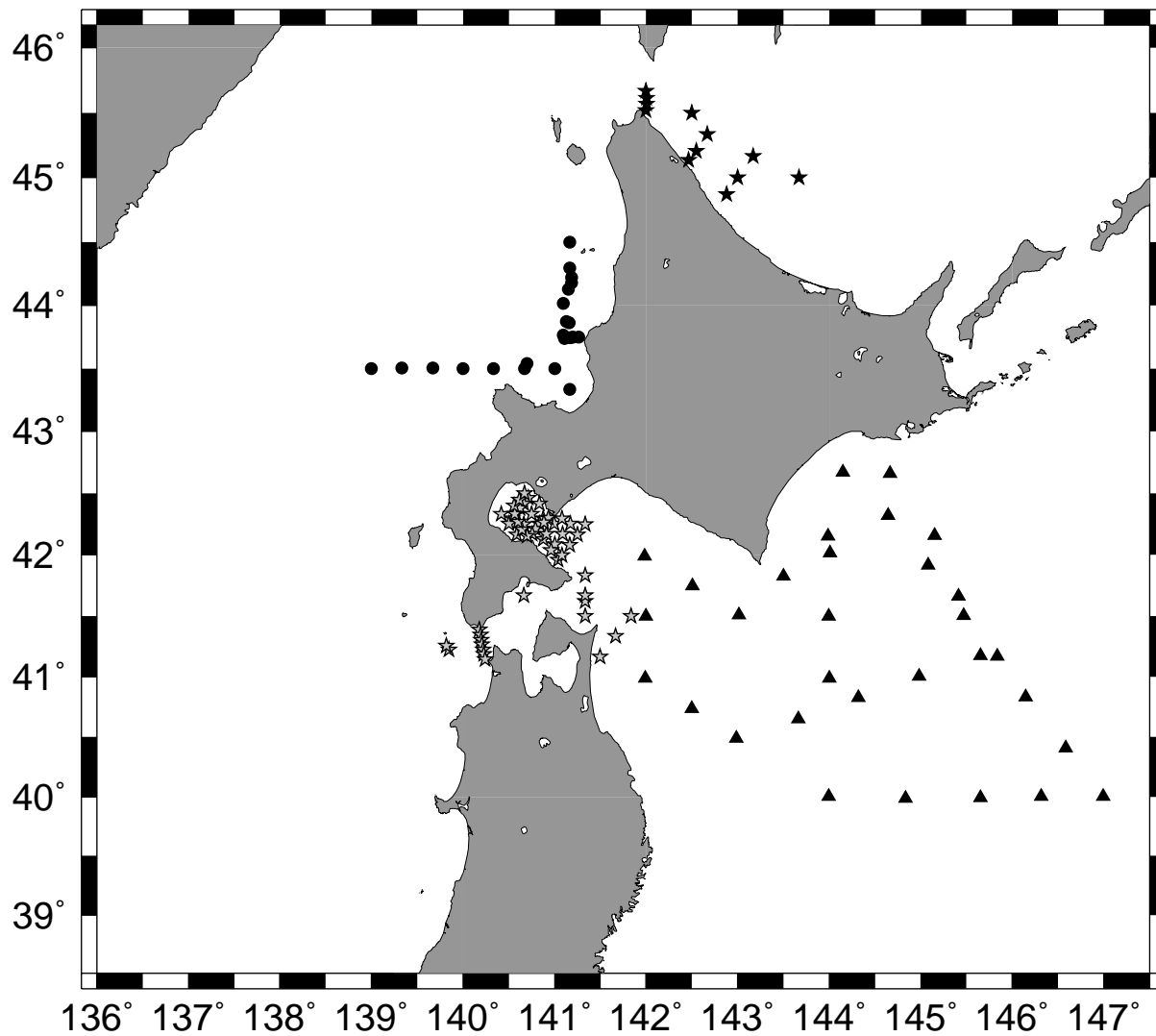


Fig. 6. Location of oceanographic stations covered in September 1996.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

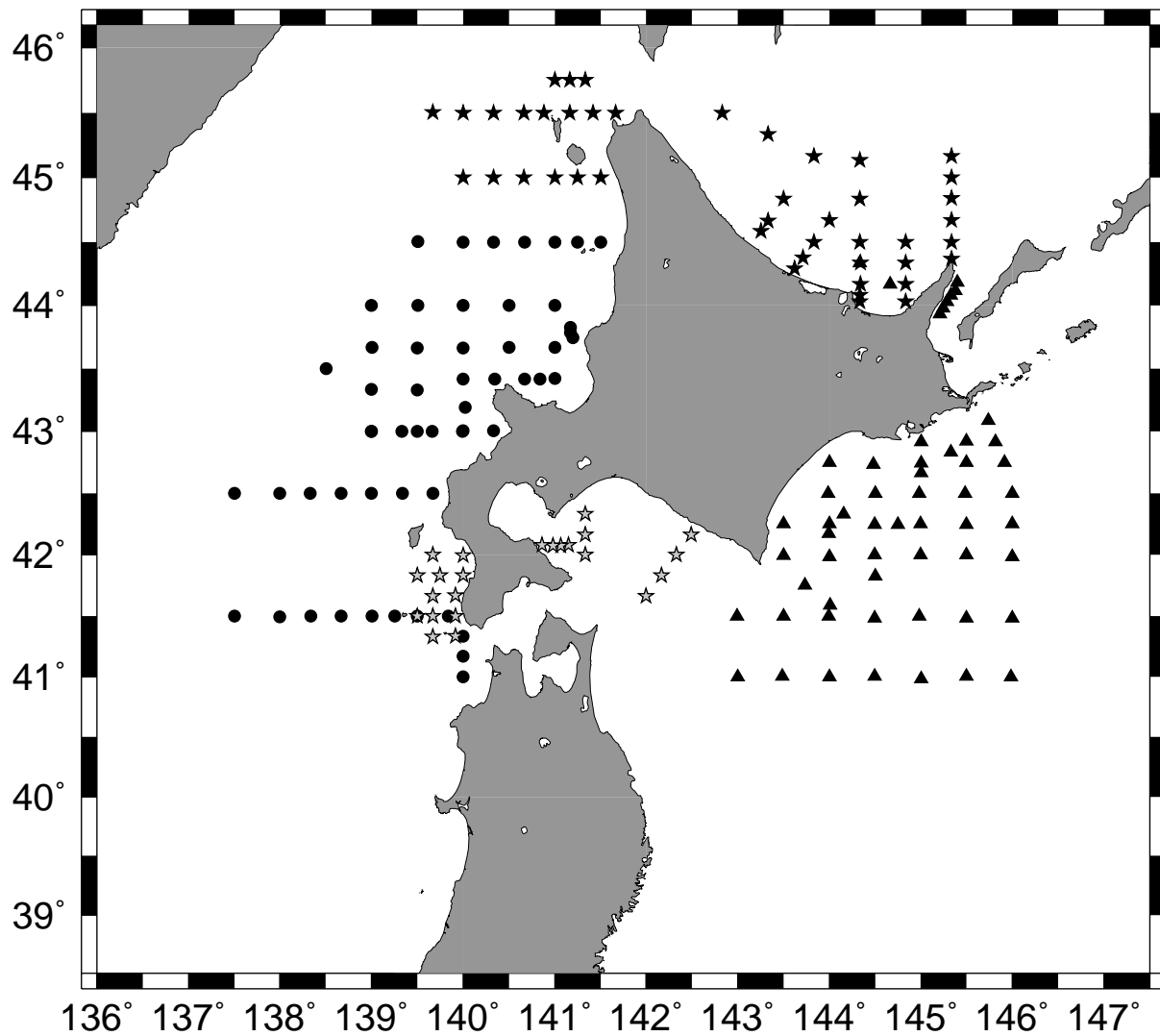


Fig. 7. Location of oceanographic stations covered in October 1996.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

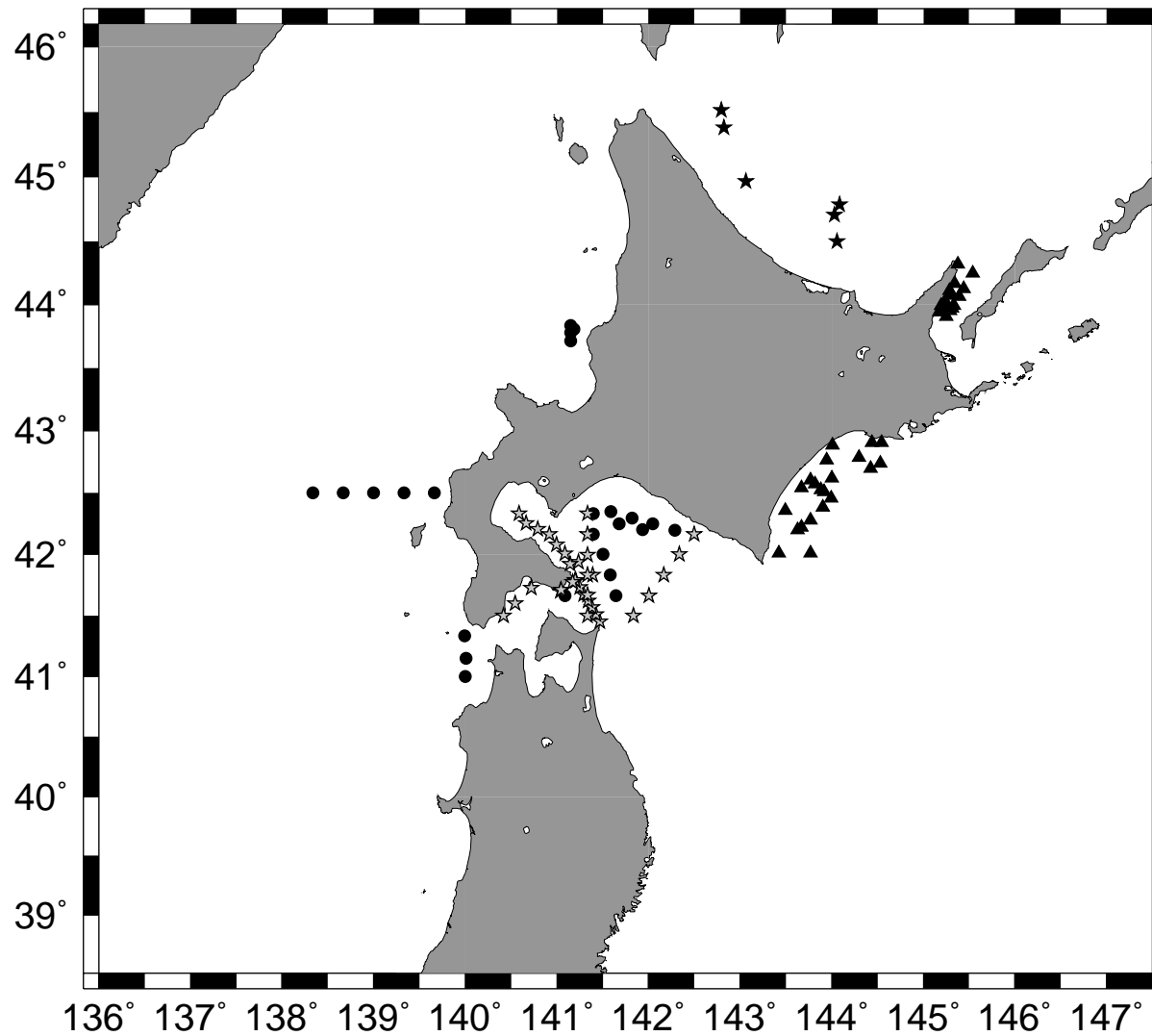


Fig. 8. Location of oceanographic stations covered in November 1996.
 :Oyasyhio-Marun :Hokuyo-Marun :Hokushin-Marun :Kinsei-Marun

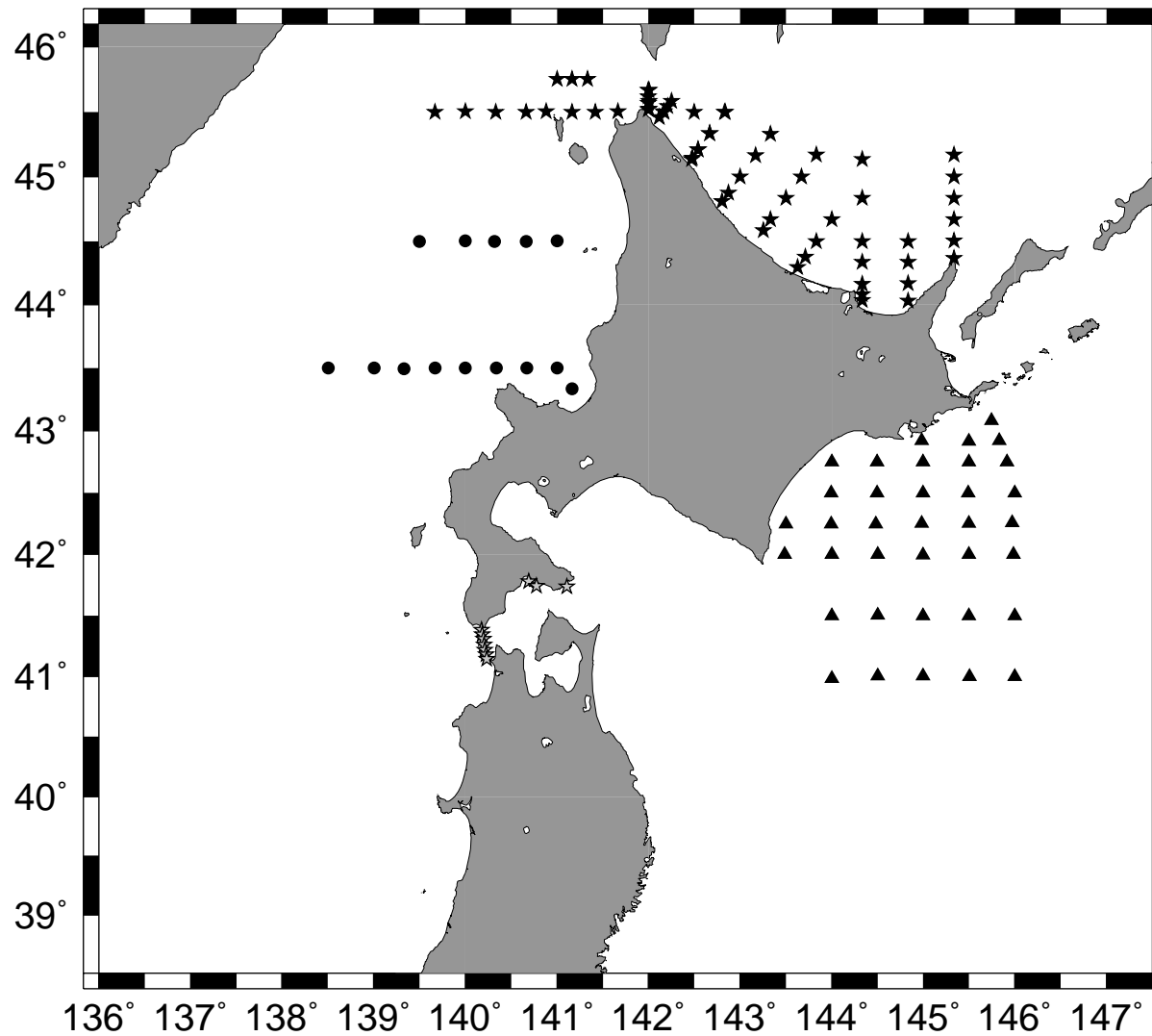


Fig. 9. Location of oceanographic stations covered in December 1996.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

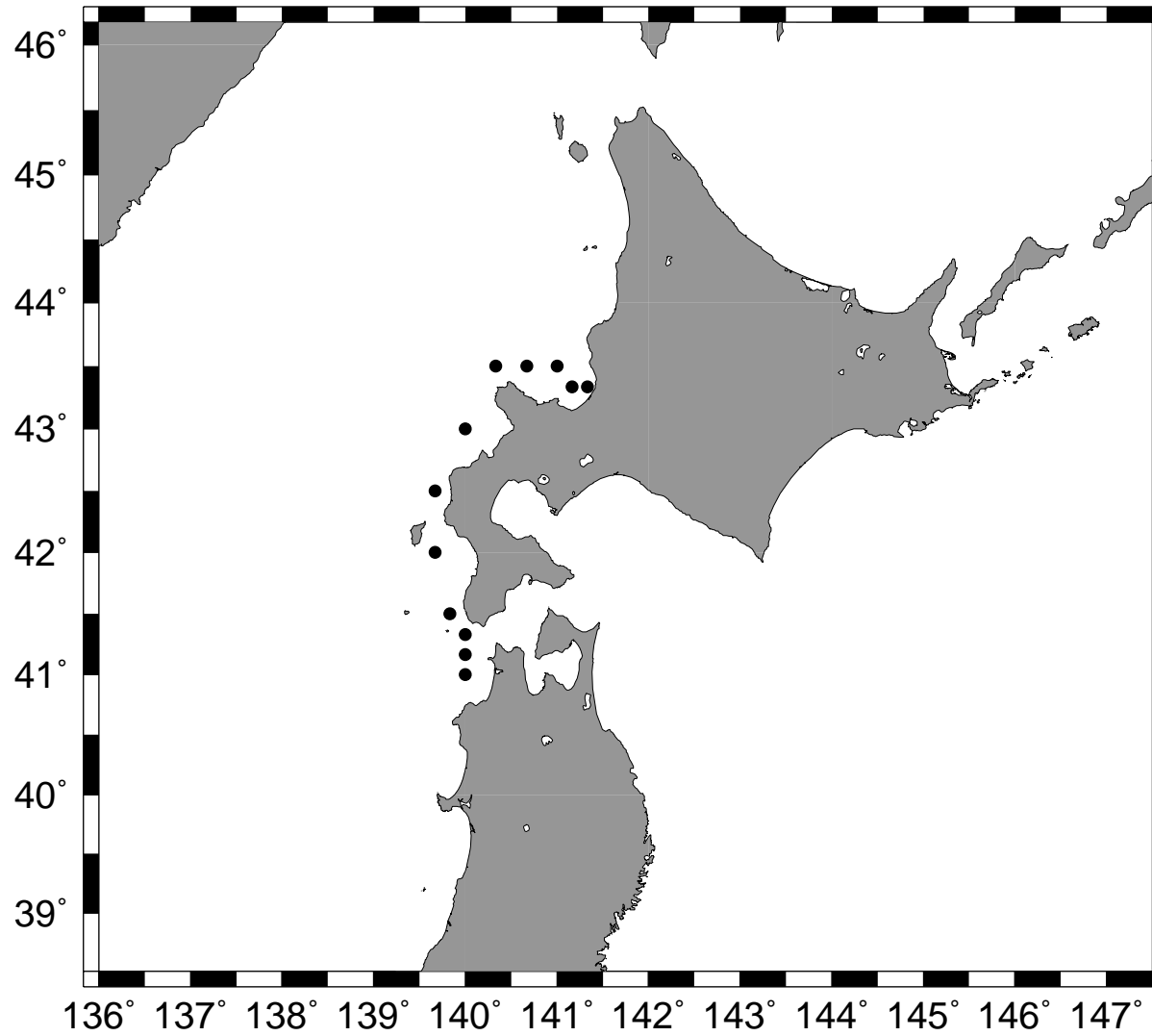


Fig. 10. Location of oceanographic stations covered in January 1997.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

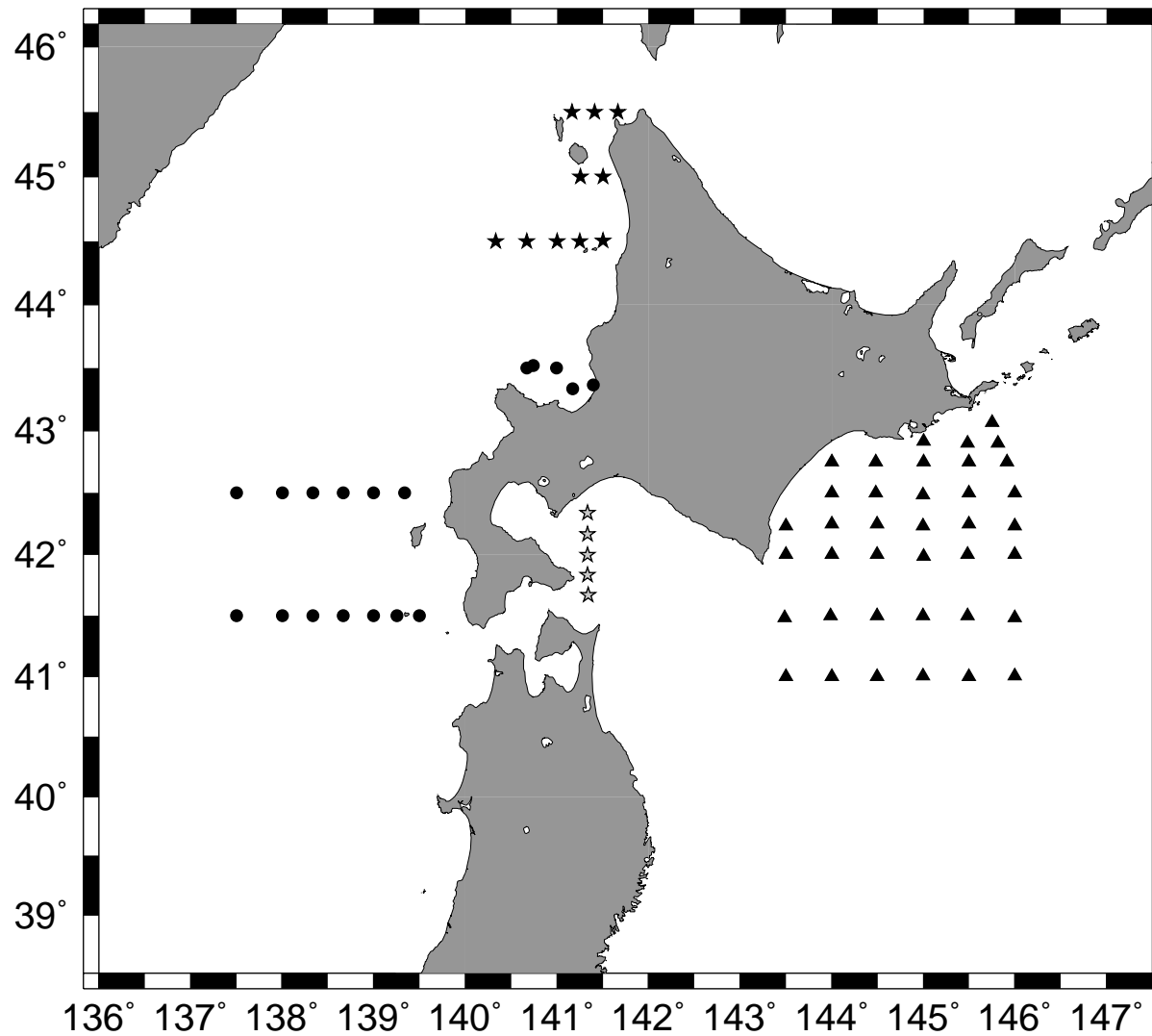


Fig. 11. Location of oceanographic stations covered in February 1997.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

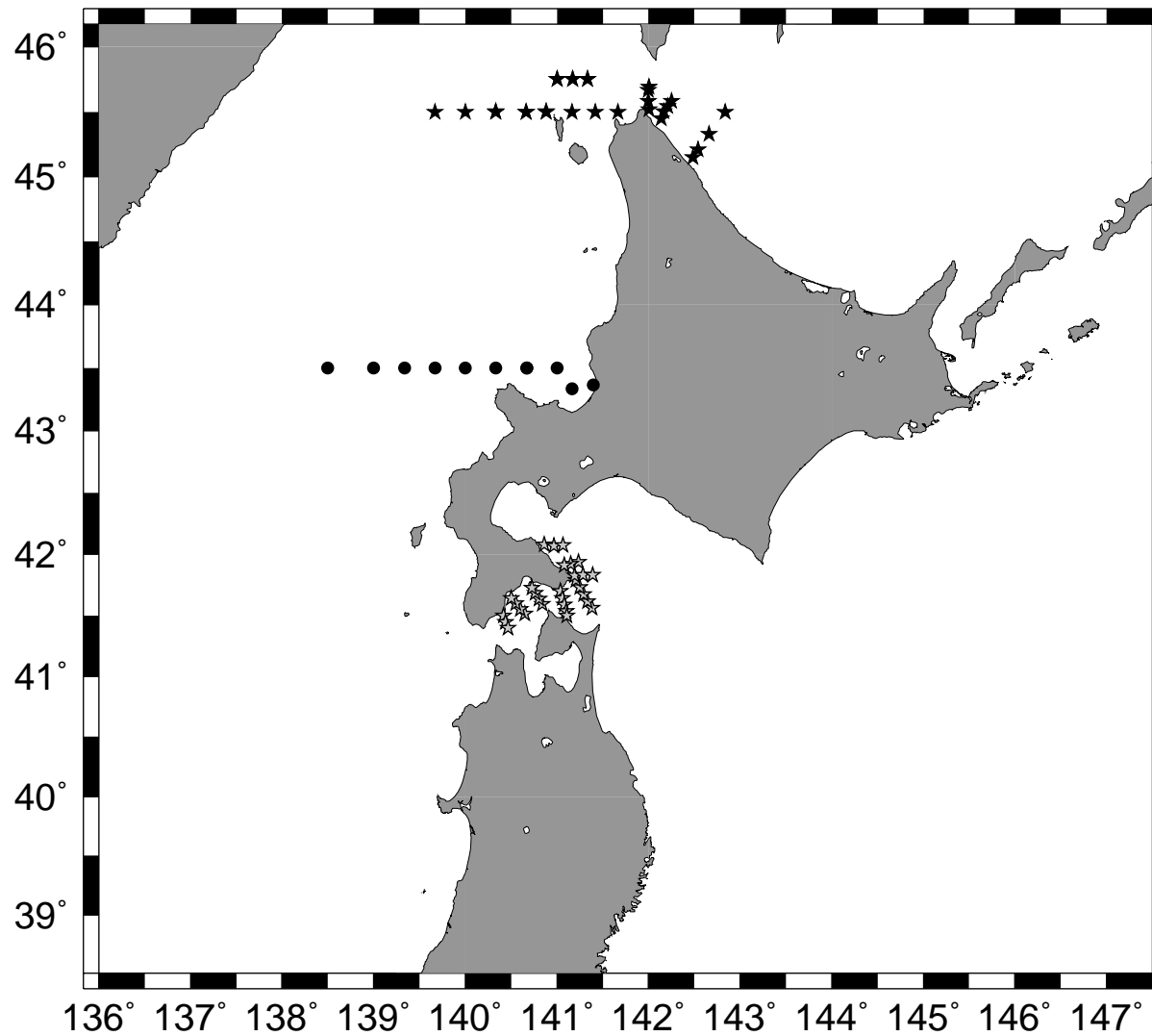


Fig. 12. Location of oceanographic stations covered in March 1997.
 :Oyasyhio-Maru :Hokuyo-Maru :Hokushin-Maru :Kinsei-Maru

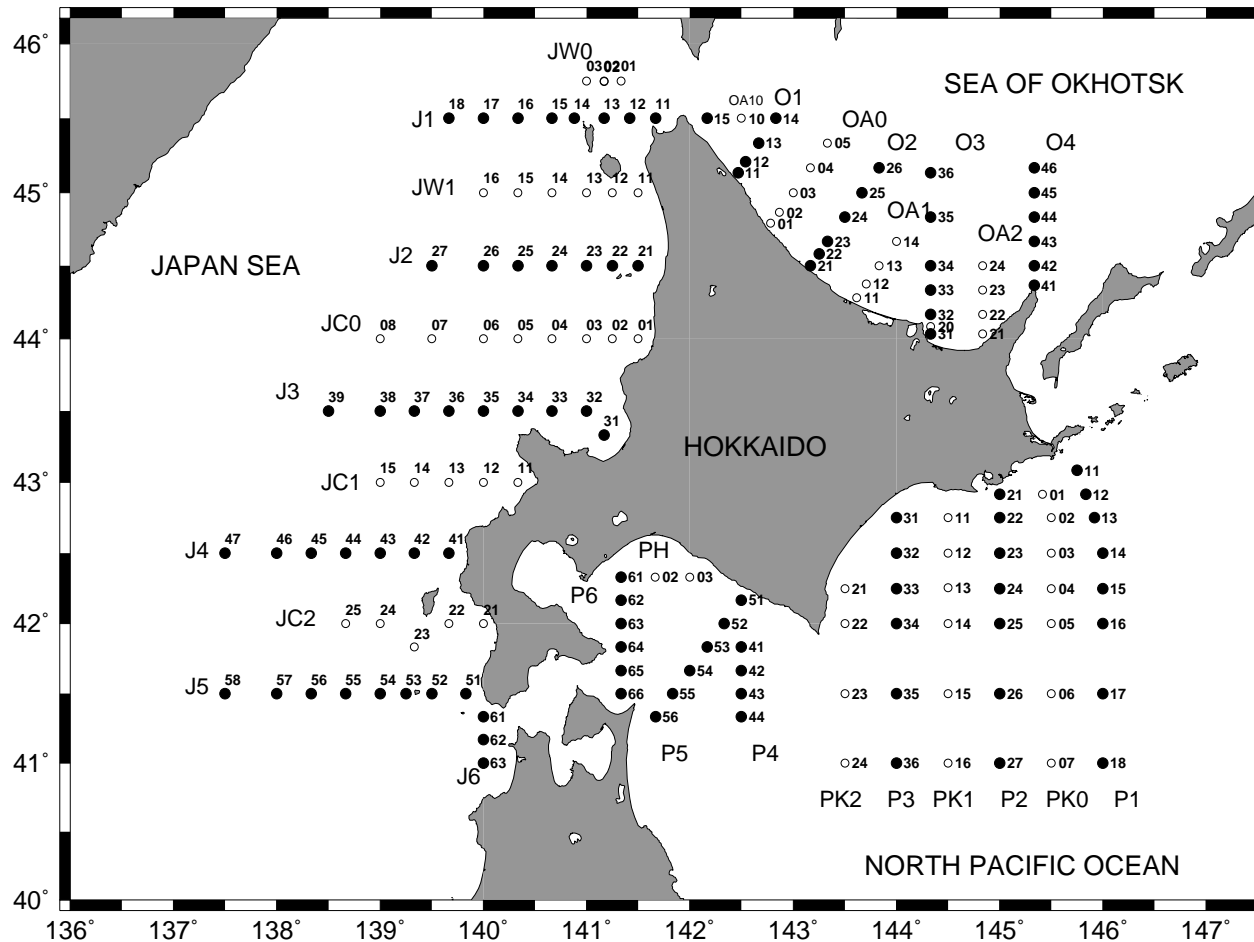


Fig. 13. Periodical observation of environmental research on fishing ground and adjacent waters off Hokkaido. Observed months: April, June, August, October, December and February except for Sea of Okhotsk (April to December only) and P4-Line (June, August and October only). ;Routine station ; Additional station

Part I. Summary of Serial Oceanographic Observations

Salinity was determined with Auto-Lab salinometer or CTD systems.

Tables 3 to 6 show results of serial oceanographic observations. Abbreviations used are as follows: LATITUDE, north latitude; LONGITUDE, east longitude; WEATHER, WMO code 4501; AIR TEMP, air temperature in °C; BAR, barometric pressure in hectopascal; WIND DIR, wind direction; WIND FORCE (F), wind force in Beaufort scale; WIND SPEED (S), wind speed in m/s; TR, transparency in meters with white Secci disc; COLOR, water color in Forel's scale; DEPTH, water depth in meters measured with an echo-sounder; STND. DEP, standard depth in meters; T, water temperature in °C; S, salinity (PSS-78).

Asterisks (*) at 0m row indicate the value of temperature or salinity with CTD at several meter under the sea surface and N.D. means No Data.

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	J31		JH01		J32		J33		J34		J35		J36		J37		J38		J39	
Latitude:N	43-20.1		43-21.8		43-29.8		43-29.9		43-29.9		43-29.8		43-30.0		43-29.8		43-29.9		43-30.0	
Longitude:E	141-10.2		141-23.6		141- 0.1		140-40.2		140-20.2		140- 0.2		139-40.2		139-20.2		139- 0.2		138-30.1	
Date	1996/04/08		1996/04/08		1996/04/08		1996/04/08		1996/04/08		1996/04/09		1996/04/09		1996/04/09		1996/04/09		1996/04/09	
Time(JST)	10:11		11:09		13:01		14:29		16:24		00:32		02:55		04:36		06:24		09:21	
Weather	C				BC		B		BC		BC		B		BC		BC		C	
Air Temp.	5.4				3.7		4.1		5.3		3.3		3.6		2.8		4.1		10.4	
Bar	1011.2				1011.2		1011.3		1011.8		1014.3		1014.2		1014.3		1014.6		1014.2	
Wind Dir	W				NNE		NNE		NNE		NNE		N		N		NNE		E	
Wind Spd/F	S 6		S		S 6		S 5		S 5		S 4		S 5		S 3		S 3		S 5	
Transparency	5		4		8		13		8								10		11	
Depth	36		19		92		688		638		1243		2030		3121		3360		3430	
Equipment	CTD		CTD		CTD		CTD		CTD		STD		STD		STD		STD		STD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.8	26.436	5.9	28.000	6.5	34.081	6.8	34.106	6.8	34.107	5.8	34.129	6.1	34.124	5.8	34.139	5.4	34.138	6.1	34.131
10m	5.84	34.071	5.30	33.823	6.26	34.095	6.66	34.101	6.66	34.102	5.80	34.13	6.09	34.11	5.74	34.11	5.53	34.13	5.89	34.09
20m	5.83	34.071			6.18	34.099	6.57	34.100	5.72	34.132	5.51	34.13	6.08	34.11	5.74	34.10	5.53	34.15	5.61	34.09
30m	5.74	34.070			6.15	34.099	6.55	34.099	5.66	34.129	4.83	34.11	5.45	34.08	5.29	34.09	5.47	34.13	5.31	34.10
50m					6.09	34.101	6.47	34.100	5.48	34.126	3.81	34.13	4.21	34.11	5.01	34.10	5.35	34.12	4.89	34.10
75m					5.89	34.103	5.88	34.113	5.07	34.128	3.13	34.10	3.89	34.11	4.40	34.10	5.30	34.11	4.77	34.11
100m							5.52	34.111	4.62	34.122	2.51	34.10	3.66	34.13	3.90	34.09	5.29	34.11	4.37	34.10
125m							4.35	34.113	4.40	34.119	1.99	34.08	3.05	34.10	3.47	34.13	4.89	34.11	3.46	34.10
150m							3.85	34.114	3.63	34.109	1.62	34.08	2.26	34.10	3.29	34.12	4.34	34.13	2.71	34.10
200m							2.79	34.095	2.28	34.087	1.38	34.07	1.48	34.04	2.06	34.08	3.05	34.09	1.72	34.07
250m							1.90	34.077			1.06	34.09	1.08	34.08	1.45	34.07	2.05	34.06	1.35	34.07
300m							1.38	34.075			0.87	34.09	0.89	34.06	1.06	34.08	1.21	34.07	1.09	34.08
400m							0.85	34.073			0.59	34.08	0.65	34.08	0.78	34.08	0.88	34.08	0.72	34.08
500m							0.68	34.071			0.48	34.08	0.47	34.09	0.58	34.09	0.67	34.08	0.57	34.08
600m											0.38	34.08					0.48	34.08		
700m																				
800m																				
900m																				
1000m																				

Table 3-1

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	J41		J42		J43		J44		J45		J46		J47		J58		J57		J56	
Latitude:N	42-30.0		42-29.9		42-30.0		42-29.9		42-30.0		42-30.0		42-30.1		41-30.1		41-30.0		41-30.0	
Longitude:E	139-40.0		139-20.1		139- 0.1		138-40.1		138-20.1		138- 0.2		137-30.1		137-30.1		138- 0.0		138-20.0	
Date	1996/04/09		1996/04/09		1996/04/09		1996/04/09		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10	
Time(JST)	16:48		19:16		20:56		22:45		00:20		02:04		05:00		10:56		13:27		15:05	
Weather	C		C		R		S		C		C		BC		C		BC		BC	
Air Temp.	6.1		4.9		4.7		2.9		3.4		3.0		2.5		4.3		6.3		8.4	
Bar	1013.0		1012.5		1011.9		1012.0		1011.4		1011.2		1011.0		1012.4		1012.2		1012.0	
Wind Dir	NNE		ENE		ENE				ENE		W		N		WNW		W		W	
Wind Spd/F	S 2		S 4		S 6		S		S 3		S 2		S 1		S 5		S 6		S 6	
Transparency	16												10		16		14		6	
Depth	1808		3234		3600		3670		3621		3699		3669		3670		3682		3682	
Equipment	STD		STD		STD		STD		STD		STD		STD		STD		STD		STD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	7.6	33.884	7.4	34.067	5.0	34.128	6.3	34.081	6.3	34.112	5.9	34.121	4.6	34.091	3.8	34.132	3.7	34.130	7.4	34.165
10m	7.15	34.09	6.95	34.07	4.78	34.12	6.09	34.09	6.25	34.04	5.47	34.11	4.44	34.08	3.40	34.13	3.35	34.07	6.27	33.97
20m	7.06	34.10	6.90	34.07	4.56	34.07	5.98	34.08	6.02	34.07	4.78	34.09	4.15	34.08	2.95	34.14	3.22	34.08	3.86	34.07
30m	7.04	34.10	6.85	34.07	4.38	34.07	5.49	34.04	6.00	34.07	4.58	34.10	4.13	34.08	2.87	34.13	2.95	34.07	3.30	34.06
50m	7.04	34.09	6.42	34.07	3.46	34.07	3.63	34.06	5.41	34.03	3.82	34.10	4.07	34.07	2.66	34.12	2.68	34.07	2.42	34.07
75m	7.03	34.09	4.96	34.02	2.28	34.05	2.51	34.01	3.47	34.02	3.65	34.11	3.46	34.06	2.29	34.12	2.36	34.07	2.10	34.09
100m	6.52	34.13	3.68	34.06	1.83	34.05	1.90	34.04	2.68	34.02	3.36	34.12	2.65	34.06	2.10	34.12	2.22	34.05	1.51	34.09
125m	5.64	34.13	3.47	34.09	1.64	34.06	1.46	34.07	1.95	34.03	3.09	34.12	2.28	34.05	1.78	34.10	2.09	34.05	1.44	34.07
150m	4.88	34.11	3.23	34.08	1.34	34.06	1.28	34.08	1.62	34.06	2.72	34.11	1.72	34.06	1.46	34.10	2.00	34.07	1.37	34.09
200m	2.95	34.08	2.15	34.06	1.01	34.05	1.05	34.05	1.46	34.07	2.06	34.08	1.23	34.05	1.23	34.07	1.92	34.09	1.24	34.08
250m	1.88	34.06	1.49	34.09	0.84	34.08	0.82	34.06	1.33	34.08	1.32	34.07	1.05	34.06	1.06	34.07	1.47	34.07	1.06	34.07
300m	1.33	34.07	1.06	34.08	0.73	34.06	0.71	34.07	1.23	34.07	1.03	34.08	0.89	34.09	0.99	34.06	1.36	34.07	0.97	34.09
400m	0.88	34.08	0.72	34.08	0.54	34.07	0.54	34.07	0.78	34.08	0.68	34.09	0.67	34.08	0.66	34.07	0.93	34.08	0.68	34.09
500m	0.55	34.09	0.49	34.08	0.44	34.08	0.42	34.08	0.61	34.08	0.53	34.07	0.48	34.08	0.49	34.06	0.64	34.08	0.50	34.07
600m	0.43	34.08									0.43	34.08								
700m																				
800m																				
900m																				
1000m																				

Table 3-2

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	J55		J54		J53		J52		J63		J62		J61		J51		JC12		CHA01	
Latitude:N	41-30.0		41-30.1		41-30.1		41-30.0		41- 0.1		41- 9.9		41-19.9		41-29.9		42-59.9		43-56.8	
Longitude:E	138-40.0		138-59.9		139-14.9		139-30.0		140- 0.0		140- 0.1		140- 0.1		139-50.0		140- 0.3		141-13.7	
Date	1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/11		1996/04/11		1996/04/11		1996/04/11		1996/04/11		1996/04/16	
Time(JST)	16:42		18:20		19:42		21:07		00:40		01:50		02:59		04:30		13:45		05:40	
Weather	BC		BC		C		BC		BC		BC		BC		BC		B		C	
Air Temp.	8.3		6.0		6.1		5.8		5.4		5.7		5.7		4.6		5.8		5.1	
Bar	1011.7		1012.0		1012.4		1016.0		1012.3		1011.5		1011.2		1010.0				1012.0	
Wind Dir	W		W		WNW		W		WSW		WSW		WSW		NW		NNE		N	
Wind Spd/F	S 6		S 6		S 6		S 5		S 5		S 9		S 7		S 7		S 6		S 1	
Transparency	7																10			
Depth	3113		1339		1130		1660		503		103		228		1351		1014		191	
Equipment	STD		STD		STD		STD		STD		STD		STD		STD		STD		STD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.2	34.136	8.6	34.131	8.5	34.123	8.6	34.131	8.7	34.135	8.9	34.108	7.7	34.144	8.5	34.127	6.0	34.128	6.1	34.009
10m	5.84	34.10	8.50	34.09	8.40	34.08	8.61	34.07	8.87	34.08	9.04	34.07	7.64	34.10	8.48	34.08	5.78	34.09	6.03	34.02
20m	3.30	33.99	8.46	34.10	8.40	34.08	8.61	34.07	8.87	34.07	9.05	34.09	7.52	34.09	8.47	34.07	5.70	34.07	5.93	34.04
30m	3.03	34.03	8.30	34.08	8.40	34.08	8.57	34.07	8.85	34.07	9.05	34.09	6.98	34.06	8.28	34.05	5.15	34.06	5.85	34.08
50m	2.65	34.03	8.20	34.12	8.32	34.07	8.57	34.08	8.59	34.06	8.99	34.10	6.89	34.08	8.28	34.06	4.28	34.03	5.48	34.11
75m	1.89	34.03	8.02	34.13	8.31	34.09	8.49	34.09	8.36	34.06	8.53	34.13	6.28	34.05	8.28	34.07	3.57	34.04	5.15	34.08
100m	1.51	34.02	7.36	34.09	8.17	34.07	8.48	34.09	8.14	34.02			5.98	34.06	7.86	34.06	3.17	34.04	5.05	34.07
125m	1.32	34.04	6.98	34.14	8.20	34.12	8.43	34.10	8.16	34.04			5.78	34.05	6.47	34.11	2.49	34.07	4.95	34.08
150m	1.17	34.05	6.31	34.13	7.69	34.13	8.38	34.13	8.21	34.06			5.20	34.08	5.41	34.11	2.18	34.08	4.72	34.10
200m	0.95	34.05	3.69	34.08	6.07	34.12	7.16	34.11	8.09	34.11			4.50	34.10	3.54	34.06	1.44	34.05		
250m	0.73	34.05	1.95	34.06	4.14	34.09	4.37	34.10	5.47	34.07					3.10	34.06	1.20	34.07		
300m	0.64	34.07	1.39	34.08	2.46	34.06	2.66	34.06	1.89	34.06					1.83	34.06	0.99	34.08		
400m	0.49	34.06	0.87	34.05	1.21	34.08	1.35	34.07	0.78	34.06					1.05	34.08	0.75	34.08		
500m	0.39	34.06	0.57	34.06	0.91	34.07	0.88	34.07							0.77	34.08	0.55	34.07		
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-3

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	CHA02		CHA03		CHA04		CHA05		CHA06		CHA07		CHA08		CHA09		CHA10		CHA11	
Latitude:N	43-57.1		43-55.4		43-55.6		44- 3.5		44- 3.3		43-46.2		43-44.4		43-46.0		43-28.7		43-25.0	
Longitude:E	141-15.6		141-18.0		141-10.6		141-12.3		141-14.3		141-10.8		141-12.1		141-15.3		141- 6.2		141- 7.3	
Date	1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/17		1996/04/17		1996/04/17		1996/04/17		1996/04/18		1996/04/18	
Time(JST)	08:10		09:46		12:30		15:00		05:35		09:30		11:25		12:42		05:58		07:24	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	7.3		8.1		9.5		9.0		6.1		8.1		8.3		10.2		5.6		4.9	
Bar	1012.0		1012.0		1011.0		1008.5		1007.0		1009.0		1009.5							
Wind Dir	ENE		CALM		CALM		NNE		E		S		SW		SSW		ESE		ESE	
Wind Spd/F	S 3		S 0		S 0		S 2		S 7		S 2		S 2		S 1		S 9		S 11	
Transparency																				
Depth	151		112		257		269		178		194		145		121		71			
Equipment	STD		STD		STD		STD		STD		STD		STD		STD		STD		STD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.2	34.008	6.3	33.935	6.5	34.025	6.1	34.066	6.0	34.050	6.5	34.087	6.7	34.106	6.9	33.962	6.5	34.041	6.4	32.936
10m	5.98	34.01	6.01	34.01	6.08	34.04	5.72	34.06	5.89	34.06	6.25	34.10	6.35	34.13	6.22	34.11	6.43	34.08	6.49	34.00
20m	5.93	33.97	5.83	33.98	5.93	34.01	5.68	34.02	5.69	34.12	6.24	34.10	6.34	34.12	6.15	34.12	6.41	34.07	6.37	34.01
30m	5.78	34.01	5.74	34.01	5.59	34.03	5.67	34.03	5.60	34.13	6.20	34.08	6.29	34.12	6.12	34.11	6.30	34.09	6.17	34.04
50m	5.49	34.06	5.52	34.05	5.23	34.07	5.33	34.06	5.28	34.13	5.83	34.05	5.72	34.09	5.62	34.08	5.92	34.08		
75m	5.14	34.07	5.27	34.07	5.03	34.07	5.13	34.06	5.05	34.08	5.62	34.07	5.48	34.08	5.36	34.07				
100m	4.90	34.08	4.93	34.06	4.92	34.07	5.03	34.07	4.95	34.08	5.41	34.08	5.19	34.08	4.93	34.06				
125m	4.78	34.09			4.74	34.09	4.95	34.08	4.78	34.09	5.06	34.08	4.92	34.08						
150m					4.39	34.09	4.84	34.09	4.70	34.10	4.93	34.09								
200m					3.16	34.10	3.65	34.08												
250m					2.03	34.08	2.49	34.06												
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-4

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	CHA12		CHA13		CHA14		CHA15		CHA16		CHA17		CHA18		CHA19		CHA20		CHA21	
Latitude:N	43-24.4		43-26.4		43-33.6		44- 0.3		44-14.0		44-15.0		44-16.8		43-37.5		43-28.5		43-27.4	
Longitude:E	141- 6.2		141- 5.2		140-56.9		141-19.0		141-16.8		141-12.4		141- 9.7		140-58.5		140-52.8		140-56.2	
Date	1996/04/22		1996/04/22		1996/04/22		1996/04/24		1996/04/24		1996/04/24		1996/04/24		1996/04/24		1996/04/25		1996/04/25	
Time(JST)	10:27		11:31		12:58		06:33		08:06		09:10		10:25		15:37		07:20		08:50	
Weather	C		C		C		B		C		C		BC		C		C		C	
Air Temp.	4.4		5.2		6.8		8.5		8.5		9.8		11.1		11.9		10.5		9.5	
Bar																				
Wind Dir	SE		SE		SE		S		SSE		SE		S		SSE		SE		SE	
Wind Spd/F	S 5		S 7		S 7		S 2		S 5		S 5		S 5		S 3		S 7		S 10	
Transparency																				
Depth	55		66		113		94		93		146		209		115		138		90	
Equipment	STD		STD		STD		STD		STD		STD		STD		STD		STD		STD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.4	32.963	6.1	33.918	7.1	34.048	6.4	34.034	6.5	33.992	6.6	34.057	6.6	34.092	7.6	34.109	7.9	34.003	7.5	34.053
10m	6.59	33.98	6.59	33.89	6.94	34.01	6.34	34.05	6.07	33.96	6.25	34.01	6.04	34.05	7.00	34.08	7.26	34.02	7.36	34.01
20m	6.52	33.97	6.54	33.94	6.90	34.01	6.34	34.04	6.07	33.94	6.23	34.01	6.01	34.04	6.70	34.08	7.26	33.96	7.30	34.01
30m	6.27	34.03	6.31	34.04	6.83	34.05	6.34	34.02	6.09	33.97	6.22	33.99	6.00	34.05	6.63	34.09	7.26	33.95	7.20	34.01
50m	6.06	34.06	5.75	34.06	6.18	34.07	6.36	34.02	6.00	34.02	5.67	34.04	5.98	34.05	6.49	34.09	7.20	33.96	7.05	34.04
75m					5.58	34.07	6.26	34.05	5.60	34.07	5.36	34.05	5.33	34.07	6.26	34.09	7.08	34.02	6.02	34.06
100m					4.93	34.04					5.07	34.05	4.95	34.06	5.87	34.10	7.05	34.04		
125m										5.02	34.05	4.84	34.08			7.07	34.06			
150m												4.68	34.10							
200m												3.83	34.10							
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-5

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605	
Station No	CIS004		CIS002		CIS001		CIS003		CIS206		CIS203		CIS207		CIS204		CIS211		CIS214	
Latitude:N	43-15.0		43-15.0		43-19.9		43-25.3		43-29.9		43-34.9		43-39.9		43-44.8		43-45.0		43-40.0	
Longitude:E	141- 4.9		141-15.0		141-20.0		141-14.8		141-10.1		141-13.0		141-10.1		141-15.0		141- 5.1		141- 0.1	
Date	1996/05/07		1996/05/07		1996/05/07		1996/05/07		1996/05/07		1996/05/07		1996/05/07		1996/05/07		1996/05/07		1996/05/07	
Time(JST)	12:27		13:15		13:55		14:40		15:17		16:15		17:01		17:43		18:33		19:20	
Weather	BC		BC		BC		BC		BC		BC		BC		BC		BC		C	
Air Temp.	9.2		10.6		10.2		8.0		7.7		9.8		7.3		7.9		6.9		6.9	
Bar	1012.5		1012.5		1012.4		1012.5		1012.5		1012.5		1012.4		1012.4		1012.4		1012.5	
Wind Dir	NNW		298		NWN		NNW		WNW		NW		NNW		N		N		N	
Wind Spd/F	S 6		S 6		S 10		S 5		S 6		S 7		S 6		S 6		S 4		S 4	
Transparency									0		0		0		0		0			
Depth	25		20		22		41		59		59		83		115		275		304	
Equipment	CTD		CTD		CTD		CTD		STD		STD		STD		STD		STD		STD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.8	32.64*	8.6	33.03*	9.1	31.19*	8.6	31.82*	8.1	31.48*	8.6	32.99*	8.3	32.33*	8.2	33.08*	7.8	33.84*	7.6	34.05*
10m	8.36	33.573	8.18	33.897	8.02	33.901	7.77	33.899	7.76	33.83	7.79	33.55	7.76	33.68	7.79	33.60	7.03	34.02	7.38	34.01
20m	8.37	33.807	7.66	33.972			6.81	34.092	7.46	33.90	7.79	33.93	6.87	34.02	7.35	34.04	7.05	34.03	7.02	34.04
30m							6.68	34.087	7.17	34.07	6.73	34.00	6.80	34.02	6.81	34.07	7.02	34.04	6.89	34.03
50m									6.52	34.05	6.49	34.03	5.92	34.05	6.36	34.07	6.25	34.05	6.80	34.05
75m													5.05	34.07	5.24	34.07	5.34	34.07	6.08	34.07
100m															4.75	34.10	4.63	34.09	5.71	34.09
125m																	4.15	34.09	5.07	34.10
150m																	3.63	34.07	4.67	34.09
200m																	2.87	34.04	3.84	34.08
250m																	1.81	34.06	2.88	34.08
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-6

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605	
Station No	CIS210		CIS217		CIS219		CIS213		CIS209		CIS216		CIS221		CIS223		CIS222		CIS220	
Latitude:N	43-35.0		43-35.0		43-30.0		43-30.0		43-25.0		43-25.0		43-25.0		43-25.0		43-19.0		43-18.0	
Longitude:E	141- 5.0		140-55.1		140-50.0		141- 0.0		141- 5.0		140-55.0		140-45.0		140-35.0		140-39.0		140-44.0	
Date	1996/05/07		1996/05/07		1996/05/07		1996/05/07		1996/05/07		1996/05/08		1996/05/08		1996/05/08		1996/05/08		1996/05/08	
Time(JST)	20:11		21:00		21:43		22:38		23:16		00:01		00:50		01:42		02:26		02:55	
Weather	C		C		BC		BC		BC		BC		BC		BC		BC		BC	
Air Temp.	6.6		6.7		6.9		6.9		6.9		6.8		6.5		6.7		6.8		5.7	
Bar	1013.0		1012.9		1013.0		1013.0		1013.0		1013.5		1013.5		1013.0		1013.0		1013.0	
Wind Dir	NW		NW		NW		WNW		NW		W		WNW		WNW		SSW		SW	
Wind Spd/F	S 4		S 3		S 3		S 3		S 3		S 4		S 5		S 4		S 2		S 3	
Transparency					0						0		0							
Depth	89		126		463		92		60		85		159		194		107		76	
Equipment	STD		STD		STD		STD		STD		STD		STD		STD		STD		STD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.2	33.12*	8.4	34.00*	8.4	33.97*	8.4	33.37*	8.3	31.29*	8.6	33.65*	8.4	34.01*	8.4	33.96*	8.4	33.90*	8.5	33.93*
10m	7.88	33.40	8.15	34.01	8.16	33.96	8.19	33.96	8.44	33.62	8.32	33.85	8.25	33.94	8.32	33.96	8.62	33.91	8.20	33.99
20m	7.84	33.91	7.70	34.02	8.15	33.97	7.95	33.98	8.19	33.84	8.17	33.96	8.09	34.00	8.17	33.94	8.26	33.95	8.19	33.98
30m	7.53	33.98	7.29	34.02	8.06	33.99	7.65	34.00	7.93	33.98	7.76	33.95	8.07	33.98	7.95	34.00	8.17	33.96	8.17	33.99
50m	6.53	34.02	7.35	34.06	7.25	34.07	7.29	34.06	6.92	34.06	6.92	34.02	7.16	34.05	7.63	34.05	7.98	34.04	7.97	34.02
75m	6.12	34.10	7.21	34.07	7.01	34.08	6.61	34.08			6.57	34.01	6.87	34.07	7.27	34.07	7.32	34.04		
100m			6.82	34.09	6.64	34.09							6.43	34.08	6.81	34.07	6.83	34.05		
125m					6.06	34.07							5.28	34.08	6.08	34.07				
150m					5.55	34.10							3.83	34.08	5.19	34.08				
200m					3.01	34.07														
250m					1.81	34.06														
300m					1.24	34.07														
400m					0.79	34.08														
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-7

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605	
Station No	CIS218		CIS215		CIS212		CIS205		CIS200		CIS251		CIS252		CIS253		CIS603		CIS604	
Latitude:N	43-20.0		43-16.2		43-20.0		43-20.1		43-15.1		43-13.9		43-15.8		43-21.5		43-15.6		43-15.1	
Longitude:E	140-50.0		140-54.1		140-59.0		141-11.7		141-15.1		141-18.5		141-18.1		141-11.9		140-48.4		140-44.2	
Date	1996/05/08		1996/05/08		1996/05/08		1996/05/08		1996/05/08		1996/05/08		1996/05/08		1996/05/08		1996/05/13		1996/05/13	
Time(JST)	03:30		04:05		04:44		05:35		06:17		06:43		07:15		08:18		10:19		13:06	
Weather	C		BC		BC		C		C		C		BC		BC				B	
Air Temp.	6.1		5.6		5.8		7.0		7.3		7.8		8.3		10.8				18.3	
Bar	1013.0		1013.0		1013.0		1013.5		1013.8		1013.8		1013.8		1013.5				1014.0	
Wind Dir	SSW		SW		SW		W		W		WNW		WNW		WNW				NW	
Wind Spd/F	S 2		S 4		S 4		S 3		S 2		S 3		S 2		S 1		S		S 2	
Transparency																				
Depth	79		45		50		36		22		14		20		35		45		32	
Equipment	STD		STD		STD		STD		STD		STD		STD		STD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.6	33.93*	8.7	33.57*	8.7	32.22*	8.4	30.60*	8.9	28.82*	8.2*	31.78*	8.2*	31.31*	8.4*	33.13*	9.0*	33.96*	9.9*	33.38*
10m	8.49	33.92	8.19	33.88	8.55	33.60	8.37	33.65	8.20	33.85	8.47	33.25	8.20	33.62	8.23	33.83	8.97	33.989	8.93	33.962
20m	8.25	33.96	8.10	33.99	8.05	33.90	8.31	33.82	7.75	33.89					7.99	33.89	8.94	34.002	8.94	33.978
30m	8.09	34.00	7.99	34.01	7.70	33.99	7.58	33.99							7.07	34.04	8.89	34.003		
50m	7.80	34.05																		
75m	6.74	34.04																		
100m																				
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-8

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605	
Station No	CIS605		CIS606		CIS602		CIS602		CIS607		CY01		CY02		CY03		CY101		CY102	
Latitude:N	43-15.3		43-15.3		43-23.3		43-25.7		43-13.1		43-40.2		43-39.0		43-40.2		43-35.0		43-34.8	
Longitude:E	140-43.6		140-43.5		140-42.3		140-42.8		140-52.2		141- 1.3		140-49.4		140-52.4		140-51.2		140-51.7	
Date	1996/05/13		1996/05/14		1996/05/14		1996/05/14		1996/05/15		1996/05/23		1996/05/23		1996/05/24		1996/05/27		1996/05/27	
Time(JST)	13:32		05:00		12:18		13:14		07:53		12:45		16:10		07:39		15:56		16:29	
Weather	B		C		C		C		C		C		C		C		C		C	
Air Temp.	16.5		8.6		10.7		9.7		9.5		10.8		10.4		12.1		12.3		11.8	
Bar	1013.8		1013.1		1012.7		1011.0		1009.0		1005.5		1004.8		1003.0		1010.0		1010.0	
Wind Dir	NW		SE		SSW		S		NW		NNE		NNE		WSW		NW		NNW	
Wind Spd/F	S 3		S 1		S 8		S 5		S 8		S 6		S 7		S 3		S 3		S 3	
Transparency																				
Depth	29		30		426		402		20		267		609		489		357		318	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	9.2*	33.59*	9.4*	33.93*	9.5	33.78*	9.3	33.89*	8.1*	32.64*	9.6	34.00*	9.6	34.02*	9.2	34.04*	10.4	33.88*	10.7	33.87*
10m	8.97	33.958	8.94	33.966	9.09	33.944	9.26	33.897	8.99	33.954	9.34	34.003	9.02	34.040	8.91	34.042	9.83	33.902	9.82	33.901
20m	8.89	33.976	8.83	33.973	9.05	33.957	9.25	33.978			9.21	34.012	7.80	34.090	7.96	34.090	9.36	34.001	9.42	33.990
30m					8.89	33.990	9.14	34.047			8.75	34.081	7.24	34.107	7.44	34.101	9.13	34.022	9.14	34.022
50m					8.79	34.049	8.87	34.077			7.98	34.103	6.75	34.106	6.85	34.103	8.91	34.030	8.91	34.029
75m					7.96	34.143	8.01	34.115			6.51	34.145	5.87	34.140	5.84	34.123	8.66	34.091	8.80	34.089
100m					7.03	34.151	6.69	34.146			5.93	34.135	4.57	34.119	4.36	34.123	8.04	34.168	8.05	34.167
125m					6.36	34.144	5.53	34.136			5.75	34.131	3.81	34.116	3.90	34.114	6.45	34.144	6.55	34.143
150m					5.96	34.136	5.04	34.127			5.64	34.130	3.48	34.107	3.38	34.107	5.54	34.131	5.61	34.133
200m					3.38	34.104	3.67	34.112			5.33	34.127	2.07	34.088	2.11	34.087	3.75	34.109	3.95	34.116
250m					1.99	34.081	2.55	34.093			3.48	34.106	1.40	34.078	1.54	34.076	2.45	34.088	2.29	34.089
300m					1.41	34.074	1.58	34.076					1.15	34.076	1.23	34.075	1.51	34.077		
400m							1.01	34.072					0.77	34.072	0.85	34.072				
500m													0.58	34.070						
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-9

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199605		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	CY103		J31		JH01		J32		J33		J34		J35		J36		J37		J38	
Latitude:N	43-39.0		43-20.0		43-22.0		43-30.0		43-30.1		43-30.0		43-29.9		43-29.9		43-30.0		43-30.0	
Longitude:E	141- 4.0		141- 9.9		141-23.8		141- 0.1		140-40.2		140-20.1		140- 0.1		139-40.1		139-20.1		139- 0.1	
Date	1996/05/29		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03	
Time(JST)	10:41		09:59		11:05		12:52		14:25		16:09		17:54		19:34		21:13		22:55	
Weather	BC		C		C		R		C		C		C		C		C		C	
Air Temp.	15.4		15.2		15.1		14.1		13.0		13.5		12.5		11.8		11.9		11.3	
Bar	1011.4		996.2		996.5		995.6		993.5		992.7		995.2		995.4		995.7		995.3	
Wind Dir	SSE		ESE		SE		SW		SSE		S		SSW		SSW		SW		WSW	
Wind Spd/F	S 7		S 8		S 8		S 4		S 7		S 15		S 10		S 10		S 7		S 6	
Transparency																				
Depth	106		40		22		96		690		646		1234		2026		3200			
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	10.6	34.01*	11.8	33.145	12.3	30.684	11.5	32.494	11.4	33.391	10.8	34.023	10.6	34.066	10.4	34.081	10.0	34.057	10.0	34.078
10m	10.17	34.019	11.30	33.231	11.54	32.200	10.89	33.378	10.89	33.848	10.65	34.030	10.45	34.072	10.27	34.086	9.86	34.063	9.86	34.083
20m	9.58	34.042	9.04	34.045			10.33	33.977	10.45	33.959	10.59	34.055	10.41	34.072	10.20	34.095	9.79	34.072	9.84	34.086
30m	9.32	34.059	8.77	34.062			10.19	34.033	10.02	33.992	9.64	34.077	8.97	34.094	10.00	34.101	8.39	34.130	9.12	34.115
50m	8.91	34.093					9.08	34.074	9.04	34.033	9.37	34.064	8.00	34.161	7.64	34.146	7.21	34.177	7.22	34.193
75m	7.87	34.173					8.47	34.103	8.95	34.043	8.72	34.168	6.51	34.148	5.92	34.137	5.87	34.144	6.11	34.149
100m									8.90	34.047	7.26	34.154	4.79	34.128	4.69	34.120	4.42	34.118	5.08	34.126
125m									8.01	34.125	5.60	34.138	3.77	34.105	3.65	34.103	3.61	34.104	3.66	34.104
150m									6.36	34.146	4.25	34.116	3.16	34.093	2.91	34.092	2.88	34.097	2.86	34.091
200m									3.90	34.116	2.97	34.094	1.96	34.079	1.95	34.080	1.86	34.079	1.86	34.075
250m									2.48	34.089	1.96	34.080	1.41	34.073	1.41	34.076	1.33	34.075	1.33	34.075
300m									1.59	34.078	1.35	34.076	1.12	34.072	1.00	34.073	1.03	34.074	1.06	34.075
400m									1.02	34.073	0.85	34.072	0.75	34.070	0.74	34.071	0.72	34.070	0.76	34.072
500m									0.72	34.069	0.62	34.069	0.54	34.068	0.58	34.072	0.57	34.069	0.60	34.071
600m																			0.46	34.069
700m																				
800m																				
900m																				
1000m																				

Table 3-10

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	J39		JC15		JC14		JC13		JC12		JC11		J41		J42		J43		J44	
Latitude:N	43-30.1		43- 0.1		43- 0.1		43- 0.1		43- 0.0		43- 0.1		42-30.0		42-30.1		42-30.0		42-30.0	
Longitude:E	138-30.0		138-59.9		139-19.8		139-40.0		140- 0.0		140-19.9		139-40.2		139-20.1		139- 0.1		138-40.1	
Date	1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04	
Time(JST)	01:58		05:48		07:25		09:00		10:34		12:08		16:30		19:03		20:44		22:21	
Weather	C		BC		BC		C		C		C		BC		C		C		C	
Air Temp.	10.6		12.2		12.8		12.2		12.5		13.3		12.8		11.4		10.4		9.9	
Bar	994.8		994.7		996.1		995.5		996.0		996.2		997.8		999.8		1001.7		1005.0	
Wind Dir	W		SSE		WSW		SW		SW		W		WSW		WNW		N		NNW	
Wind Spd/F	S 6		S 6		S 6		S 6		S 9		S 7		S 6		S 6		S 6		S 5	
Transparency																				
Depth	3404		3539		2339		3360		1300		471		1804		3295		3600		3680	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	9.4	34.046	10.3	33.992	11.0	34.096	11.8	34.005	11.2	34.013	11.6	33.956	13.1	34.288	11.4	34.054	10.3	33.990	10.2	34.010
10m	9.28	34.047	10.13	34.006	10.86	34.097	11.65	33.998	11.06	34.016	11.45	33.959	12.83	34.310	11.04	34.057	10.18	33.991	10.09	34.011
20m	8.94	34.095	8.73	34.226	10.80	34.117	11.14	34.049	10.86	34.011	11.27	34.002	12.32	34.525	10.20	34.153	8.46	34.017	8.45	34.007
30m	6.63	34.125	7.32	34.172	9.21	34.160	10.91	34.068	10.75	34.011	10.15	34.093	11.28	34.538	8.91	34.213	6.22	34.053	6.19	34.099
50m	5.58	34.136	5.55	34.145	7.83	34.193	9.76	34.109	10.22	34.028	9.23	34.055	9.23	34.280	7.03	34.189	4.16	34.077	3.82	34.107
75m	3.94	34.110	4.38	34.112	6.12	34.158	8.59	34.169	9.22	34.082	8.77	34.102	6.85	34.199	5.56	34.153	1.87	34.115	2.02	34.107
100m	3.06	34.090	3.49	34.085	4.36	34.121	7.22	34.187	9.05	34.095	7.63	34.167	5.93	34.164	4.33	34.110	1.65	34.102	1.66	34.101
125m	2.41	34.081	2.98	34.082	3.64	34.099	6.31	34.164	7.94	34.157	6.57	34.156	5.26	34.139	3.48	34.096	1.36	34.090	1.42	34.097
150m	1.91	34.083	2.49	34.079	3.01	34.087	5.48	34.136	6.72	34.152	5.90	34.139	4.84	34.127	2.58	34.083	1.22	34.088	1.32	34.094
200m	1.42	34.079	1.62	34.075	2.10	34.073	3.62	34.102	5.56	34.133	3.97	34.108	3.90	34.103	1.61	34.074	1.14	34.088	1.12	34.088
250m	1.11	34.075	1.19	34.073	1.66	34.060	2.36	34.084	3.86	34.102	2.69	34.087	2.37	34.082	1.34	34.073	1.08	34.087	1.01	34.086
300m	0.89	34.071	0.93	34.070	1.51	34.060	1.70	34.075	2.38	34.080	2.04	34.078	1.62	34.074	1.08	34.073	1.03	34.088	0.86	34.082
400m	0.68	34.070	0.63	34.069	1.07	34.077	1.02	34.072	1.22	34.076	1.24	34.075	1.00	34.069	0.78	34.075	0.69	34.074	0.59	34.072
500m	0.53	34.069	0.50	34.068	0.70	34.070	0.65	34.068	0.80	34.072			0.65	34.068	0.59	34.072	0.57	34.072	0.45	34.070
600m													0.50	34.067						
700m													0.39	34.065						
800m													0.32	34.065						
900m													0.27	34.064						
1000m													0.24	34.064						

Table 3-11

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	J45		J46		J47		J58		J57		J56		J55		J54		J53		J52	
Latitude:N	42-30.0		42-30.2		42-30.1		41-30.1		41-30.0		41-30.0		41-30.1		41-30.0		41-30.0		41-30.0	
Longitude:E	138-20.1		138- 0.2		137-30.1		137-30.1		138- 0.0		138-20.0		138-39.9		138-59.9		139-14.9		139-30.0	
Date	1996/06/04		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05	
Time(JST)	23:55		01:32		04:20		10:07		12:24		14:09		15:47		17:25		18:43		20:03	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	9.9		9.7		9.3		11.5		12.8		12.7		11.9		12.4		11.9		11.8	
Bar	1004.0		1004.9		1007.0		1010.0		1010.2		1010.6		1011.0		1011.4		1012.1		1012.8	
Wind Dir	N		NNW		NNW		NW		NNW		WNW		WNW		WNW		WNW		NW	
Wind Spd/F	S 2		S 5		S 4		S 2		S 1		S 3		S 4		S 4		S 3		S 4	
Transparency																				
Depth	3600				3678		3473		3682		3686		3143		1334		1134		1660	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	10.0	34.046	10.0	34.030	10.0	34.077	10.3	34.030	10.8	34.033	11.3	34.002	11.9	34.080	11.9	34.160	11.8	34.133	11.7	33.988
10m	9.91	34.046	9.75	34.030	9.74	34.072	10.16	34.026	10.29	34.027	10.13	34.001	11.75	34.080	11.71	34.161	11.71	34.132	11.46	34.004
20m	9.21	34.049	6.62	34.080	6.70	34.118	6.58	34.095	6.48	34.083	6.36	34.065	9.83	34.121	11.05	34.170	11.07	34.133	9.51	34.120
30m	6.18	34.119	5.28	34.107	5.93	34.119	5.26	34.115	5.73	34.098	5.04	34.049	7.84	34.133	9.06	34.171	8.24	34.155	6.71	34.077
50m	4.27	34.112	4.43	34.102	4.48	34.128	2.96	34.139	2.53	34.111	1.96	34.092	3.59	34.107	6.99	34.176	5.92	34.141	4.74	34.082
75m	2.74	34.095	2.30	34.112	2.89	34.108	2.30	34.128	1.71	34.105	1.35	34.081	2.35	34.086	5.03	34.126	3.85	34.101	2.67	34.088
100m	2.37	34.102	1.95	34.099	2.35	34.099	2.13	34.118	1.56	34.100	1.20	34.080	1.78	34.076	3.84	34.104	2.90	34.087	2.06	34.080
125m	1.75	34.081	1.62	34.089	2.05	34.100	1.97	34.113	1.36	34.095	1.12	34.079	1.50	34.074	2.93	34.090	2.33	34.079	1.85	34.075
150m	1.49	34.086	1.51	34.093	1.50	34.077	1.80	34.110	1.20	34.087	1.10	34.082	1.35	34.081	2.38	34.079	2.02	34.075	1.66	34.072
200m	1.21	34.082	1.33	34.092	1.15	34.072	1.52	34.105	1.10	34.087	1.20	34.094	1.10	34.081	1.56	34.071	1.33	34.075	1.06	34.070
250m	1.09	34.084	1.05	34.082	1.02	34.076	1.26	34.094	1.12	34.095	1.09	34.088	1.00	34.084	1.03	34.071	0.99	34.070	0.87	34.068
300m	0.95	34.080	0.85	34.078	0.85	34.075	1.09	34.088	1.02	34.093	1.05	34.091	0.83	34.080	0.81	34.070	0.82	34.069	0.74	34.067
400m	0.69	34.074	0.65	34.073	0.66	34.073	0.79	34.078	0.66	34.074	0.68	34.074	0.55	34.071	0.57	34.067	0.56	34.068	0.51	34.065
500m	0.51	34.071	0.49	34.071	0.49	34.071	0.59	34.072	0.49	34.070	0.50	34.071	0.44	34.069	0.42	34.066	0.42	34.066	0.41	34.065
600m			0.40	34.070																
700m			0.34	34.068																
800m			0.31	34.068																
900m			0.27	34.066																
1000m			0.25	34.066																

Table 3-12

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	J63		J62		J61		J51		JC21		JC22		JC23		JC24		JC25		JC08	
Latitude:N	41- 0.1		41-10.0		41-20.0		41-30.1		41-59.9		42- 0.0		41-48.0		42- 0.8		42- 0.0		43-59.9	
Longitude:E	140- 0.0		140- 0.0		140- 0.0		139-50.1		139-59.9		139-40.1		139-20.1		139- 0.7		138-40.1		138-59.9	
Date	1996/06/05		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/07	
Time(JST)	23:50		01:04		02:26		04:00		07:00		08:41		10:45		13:46		15:32		02:31	
Weather	C		C		C		C		B		B		B		B		B		BC	
Air Temp.	12.0		11.9		11.8		11.0		12.5		15.6		15.3		13.2		13.8		11.6	
Bar	1015.3		1015.5		1015.8		1016.9		1018.4		1019.2		1019.3		1019.2		1019.7		1018.4	
Wind Dir	WNW		WNW		W		WNW		ESE		S		SSW		SSW		SSW		S	
Wind Spd/F	S 6		S 3		S 4		S 1		S 3		S 3		S 7		S 5		S 5		S 7	
Transparency																				
Depth	505		110		223		1343		705		900		1300		3729		3695		3369	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	14.1	32.900	14.1	32.952	13.0	34.393	13.0	34.155	13.2	34.288	13.1	34.320	12.2	34.143	12.4	34.078	11.7	34.004	10.3	34.057
10m	15.20	33.089	13.08	33.598	12.80	34.411	12.92	34.152	12.99	34.354	12.54	34.239	11.99	34.129	12.08	34.079	11.11	34.007	10.25	34.060
20m	13.32	33.589	10.70	33.962	12.65	34.416	12.32	34.302	12.59	34.395	12.51	34.253	9.53	34.199	10.43	34.037	7.83	34.109	9.41	34.073
30m	11.25	33.831	9.90	34.012	12.54	34.406	11.30	34.356	11.92	34.431	12.22	34.579	8.55	34.205	6.64	34.048	6.52	34.057	7.64	34.106
50m	10.47	34.024	9.67	34.114	12.51	34.396	9.09	34.322	10.44	34.446	9.63	34.404	7.23	34.194	4.37	34.122	3.72	34.088	5.89	34.128
75m	9.84	34.107	9.45	34.193	11.57	34.435	7.01	34.204	9.73	34.399	6.76	34.210	5.79	34.158	3.36	34.097	2.05	34.097	5.37	34.130
100m	9.74	34.178	9.33	34.259	10.39	34.419	6.27	34.179	7.22	34.226	5.84	34.155	4.36	34.119	2.65	34.084	1.62	34.092	5.23	34.128
125m	9.62	34.198			10.31	34.410	5.12	34.142	5.94	34.167	4.46	34.118	3.39	34.098	2.09	34.076	1.47	34.088	5.13	34.126
150m	9.38	34.203			10.10	34.401	4.62	34.123	4.98	34.130	3.62	34.102	2.72	34.082	1.70	34.075	1.28	34.087	4.92	34.126
200m	8.48	34.210			7.55	34.266	2.82	34.090	3.33	34.096	2.32	34.078	1.75	34.073	1.36	34.079	1.03	34.077	3.87	34.116
250m	5.59	34.156					2.06	34.075	2.63	34.083	1.53	34.073	1.31	34.071	1.17	34.083	0.88	34.074	2.88	34.100
300m	2.78	34.088					1.54	34.069	1.55	34.072	1.18	34.071	0.99	34.070	1.06	34.083	0.85	34.077	1.84	34.082
400m	1.15	34.070					0.92	34.068	0.64	34.069	0.72	34.067	0.66	34.068	0.84	34.078	0.65	34.073	0.94	34.074
500m							0.71	34.067	0.43	34.065	0.58	34.066	0.50	34.066	0.51	34.067	0.49	34.070	0.73	34.071
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-13

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	JC07		JC06		JC05		JC04		JC03		JC02		JC01		J21		J22		J23	
Latitude:N	44- 0.0		44- 0.1		44- 0.0		43-59.9		44- 0.1		44- 0.1		44- 0.1		44-30.0		44-30.0		44-29.9	
Longitude:E	139-29.9		139-59.8		140-19.9		140-40.0		140-59.9		141-14.9		141-30.0		141-30.0		141-15.1		141- 0.1	
Date	1996/06/07		1996/06/07		1996/06/07		1996/06/07		1996/06/07		1996/06/07		1996/06/07		1996/06/07		1996/06/07		1996/06/07	
Time(JST)	04:48		07:02		08:40		10:18		11:54		13:10		14:18		17:08		18:11		19:18	
Weather	BC		C		C		C		C		C		C		C		C		C	
Air Temp.	11.5		12.1		12.0		12.5		14.3		15.2		17.1		15.2		13.9		13.3	
Bar	1018.9		1020.3		1020.9		1021.4		1020.8		1020.6		1020.3		1019.5		1019.4		1018.9	
Wind Dir	S		SSE		SSE		SSE		S		S		CALM		CALM		SSW		S	
Wind Spd/F	S 8		S 5		S 7		S 7		S 7		S 2		S 0		S 0		S 3		S 6	
Transparency																				
Depth	1365		524		524		575		401		169		48		75		117		202	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	10.1	34.088	10.1	34.071	11.4	33.940	10.9	33.959	11.2	33.924	11.6	33.457	12.3	32.657	11.7	33.813	11.6	33.999	10.9	33.888
10m	9.96	34.088	10.04	34.073	11.34	34.066	10.78	33.961	10.99	33.927	11.12	33.607	10.33	33.671	11.48	33.794	11.04	34.025	10.78	33.887
20m	9.53	34.083	10.00	34.074	10.04	34.077	10.63	33.963	10.58	33.934	10.54	33.935	9.80	34.009	10.63	33.854	10.99	34.021	9.88	33.999
30m	8.30	34.115	8.96	34.116	9.24	34.042	10.35	33.965	9.21	34.039	10.36	33.964	8.84	33.972	9.81	33.911	10.12	34.049	8.06	34.004
50m	6.49	34.127	6.88	34.155	8.94	34.080	8.23	34.064	8.51	34.106	9.33	34.046			8.32	33.998	8.30	34.014	6.58	34.109
75m	4.68	34.122	5.41	34.133	8.19	34.121	7.10	34.128	7.34	34.162	8.56	34.100					7.41	34.058	5.66	34.128
100m	3.82	34.112	4.36	34.113	7.37	34.140	6.23	34.136	5.90	34.142	7.64	34.146					7.33	34.077	4.91	34.124
125m	3.35	34.104	3.48	34.103	6.28	34.139	5.48	34.129	5.03	34.127	7.40	34.153							4.36	34.115
150m	2.93	34.095	2.75	34.092	4.85	34.123	4.67	34.116	4.32	34.118	4.34	34.129							3.96	34.111
200m	1.78	34.074	1.67	34.077	2.73	34.095	3.63	34.110	3.16	34.100										
250m	1.25	34.072	1.24	34.073	1.88	34.079	2.57	34.089	2.02	34.079										
300m	1.05	34.072	1.03	34.072	1.42	34.075	1.63	34.074	1.26	34.074										
400m	0.69	34.069	0.71	34.069	0.79	34.070	0.91	34.070												
500m	0.51	34.067	0.57	34.068	0.46	34.067	0.55	34.067												
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-14

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	J24		J25		J26		J27		JW16		JW15		JW14		JW13		JW12		JW11	
Latitude:N	44-30.0		44-30.0		44-30.0		44-30.1		44-59.9		45- 0.0		45- 0.1		45- 0.1		45- 0.1		45- 0.1	
Longitude:E	140-40.1		140-20.1		140- 0.0		139-30.1		139-59.8		140-19.8		140-39.9		140-59.9		141-15.0		141-29.9	
Date	1996/06/07		1996/06/07		1996/06/07		1996/06/08		1996/06/08		1996/06/08		1996/06/08		1996/06/08		1996/06/08		1996/06/08	
Time(JST)	20:47		22:14		23:42		01:58		05:40		07:23		08:54		10:26		11:29		12:33	
Weather	C		BC		BC		BC		C		C		C		B		BC		BC	
Air Temp.	12.8		12.4		11.4		11.1		11.5		11.6		11.9		12.2		13.9		16.3	
Bar	1019.2		1019.4		1019.3		1018.2		1018.7		1019.2		1019.6		1019.4		1019.4		1019.1	
Wind Dir	S		S		S		S		S		S		S		S		SW		W	
Wind Spd/F	S 9		S 6		S 4		S 7		S 8		S 8		S 7		S 5		S 4		S 6	
Transparency																				
Depth	143		250		575		501		280		144		368		103		83		65	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	10.7	34.088	10.6	33.863	10.3	34.065	10.3	34.052	9.9	34.062	10.1	34.058	10.1	34.047	11.2	33.956	11.0	33.943	12.1	33.533
10m	10.42	34.063	10.45	33.858	10.18	34.064	10.18	34.052	9.79	34.052	9.88	34.059	9.89	34.046	10.82	33.957	10.31	33.964	11.84	33.532
20m	10.02	34.069	10.34	33.861	10.15	34.086	9.47	34.043	9.72	34.050	9.86	34.060	9.79	34.046	10.67	33.956	9.92	33.958	10.00	33.697
30m	9.65	34.069	9.93	33.930	9.61	34.087	7.34	34.130	8.56	34.091	8.48	34.100	9.31	34.045	8.87	33.996	8.52	33.994	8.31	33.938
50m	7.94	34.118	7.75	34.099	7.72	34.130	6.31	34.125	7.01	34.153	7.00	34.131	7.35	34.087	7.50	34.109	6.85	34.110	6.90	34.067
75m	6.02	34.098	7.36	34.090	6.50	34.141	5.18	34.127	5.67	34.121	6.29	34.129	5.79	34.115	7.22	34.111	5.87	34.097		
100m	5.12	34.113	7.19	34.084	5.16	34.129	4.12	34.114	4.56	34.117	5.52	34.127	5.08	34.117						
125m	4.86	34.108	7.12	34.100	4.32	34.115	3.78	34.111	3.75	34.112	4.70	34.121	4.70	34.113						
150m			6.92	34.117	3.63	34.104	3.18	34.094	3.50	34.106			4.27	34.112						
200m			5.58	34.127	2.45	34.089	1.74	34.073	3.12	34.098			3.30	34.104						
250m					1.56	34.074	1.37	34.072	2.83	34.092			2.42	34.086						
300m					1.18	34.072	1.10	34.072					1.54	34.078						
400m					0.77	34.068	0.70	34.068												
500m					0.49	34.066														
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-15

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	CSH01		CSH02		CSH03		CSH03		CSH05		CSH21		CSH22		CSH23		CSR101		CSR102	
Latitude:N	43-18.1		43-15.7		43-16.2		43-18.0		43-16.6		43-16.3		43-17.6		43-16.9		42-59.1		42-30.3	
Longitude:E	140-44.5		140-42.7		140-44.1		140-44.6		140-44.3		140-45.0		140-44.3		140-45.2		140- 0.8		139-39.9	
Date	1996/06/12		1996/06/12		1996/06/12		1996/06/14		1996/06/14		1996/06/17		1996/06/17		1996/06/18		1996/06/25		1996/06/26	
Time(JST)	10:44		16:19		16:51		07:46		11:28		10:35		13:00		04:47		18:04		18:33	
Weather																			BC	B
Air Temp.																			22.4	19.4
Bar																			1007.2	1010.5
Wind Dir																			NNE	SE
Wind Spd/F	S		S		S		S		S		S		S		S		S 3		S 4	
Transparency																			1189	1903
Depth																			CTD	CTD
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.8	34.29*	16.1	33.08*	14.7	33.25*	14.0	33.51*	15.1	33.401c	14.8	33.19*	14.4	33.45*	14.0	33.58*	14.7	34.07*	17.1	34.15*
10m	11.31	33.927	12.55	33.592	11.77	33.442	12.60	33.539	13.59	33.394	13.21	33.708	12.21	33.572	13.81	34.122	13.71	34.056	15.05	34.271
20m	10.82	34.278	10.67	33.832	10.76	33.924	11.70	33.787	11.93	33.849	12.09	33.966	12.54	34.084	12.13	34.152	13.60	34.075	12.04	34.331
30m	9.88	34.847	10.07	34.000	9.85	34.023	10.78	33.913	10.73	34.012	10.55	33.939	12.12	34.130	11.08	34.155	13.56	34.090	10.75	34.498
50m	9.06	35.050			8.91	34.060	9.07	34.064	9.44	34.159	9.18	34.071	9.64	34.048	9.10	34.063	9.34	34.146	9.27	34.340
75m	8.39	34.077					8.50	34.071									8.41	34.168	6.85	34.225
100m																	7.90	34.190	5.95	34.180
125m																	6.56	34.158	5.72	34.171
150m																	5.74	34.142	5.28	34.153
200m																	4.04	34.105	3.56	34.110
250m																	2.67	34.085	2.52	34.087
300m																	1.77	34.077	1.77	34.074
400m																	1.07	34.072	0.85	34.069
500m																	0.67	34.070	0.58	34.067
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-16

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	CSR103		CSR104		CSR105		CSR106		CSR107		CSR108		CSR109		CSR110		CSR111		CSR112	
Latitude:N	42-29.9		42-30.4		42-30.1		43- 0.0		42-59.9		43- 0.0		43-30.0		43-29.7		43-30.0		43-59.9	
Longitude:E	138-59.9		138-21.5		137-40.1		137-59.9		138-39.2		139-20.2		140- 0.1		139-20.1		138-40.0		138-39.9	
Date	1996/06/27		1996/06/27		1996/06/28		1996/06/28		1996/06/28		1996/06/29		1996/06/29		1996/06/29		1996/06/30		1996/06/30	
Time(JST)	11:13		18:00		10:53		14:12		17:58		10:44		14:43		17:56		06:11		09:05	
Weather	F		C		F		C		C		C		C		C		R		R	
Air Temp.	16.6		14.8		14.0		15.4		16.0		16.4		16.1		14.9		15.8		14.3	
Bar	1011.6		1010.5		1003.7		1001.0		1001.2		1006.2		1005.9		1005.5		999.0		997.6	
Wind Dir	SSW		SW		CALM		CALM		NE		NNW		N		NE		ESE		E	
Wind Spd/F	S 9		S 7		S 0		S 0		S 3		S 1		S 4		S 3		S 6		S 7	
Transparency																				
Depth	3600		3606		3690		3681		3624		2347		1241		2461		3430		3278	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	15.5	34.06*	13.3	33.92*	13.1	33.92*	13.4	33.96*	15.0	34.08*	15.0	34.05*	15.6	34.06*	15.1	34.04*	14.2	34.14*	12.9	33.95*
10m	14.88	34.049	12.77	33.907	12.87	33.941	12.50	33.965	14.21	34.077	14.47	34.046	15.52	34.058	14.62	33.998	15.12	34.204	12.77	33.998
20m	9.68	34.201	6.74	34.080	8.60	34.040	8.60	34.060	13.98	34.079	14.11	34.042	14.80	34.133	12.58	34.153	10.58	34.400	12.37	34.020
30m	7.51	34.174	5.34	34.094	5.31	34.125	6.03	34.109	7.80	34.068	9.73	34.384	13.18	34.119	10.07	34.391	7.59	34.210	9.49	34.082
50m	4.36	34.121	3.33	34.105	3.66	34.113	3.56	34.109	4.97	34.122	7.44	34.249	10.00	34.271	8.58	34.320	6.16	34.156	6.93	34.125
75m	2.84	34.094	2.20	34.111	2.48	34.114	2.55	34.100	3.49	34.098	5.32	34.124	8.01	34.230	6.24	34.154	4.23	34.115	5.61	34.135
100m	2.08	34.080	1.55	34.098	2.10	34.107	2.16	34.100	2.68	34.084	4.08	34.108	6.70	34.173	4.72	34.123	3.32	34.089	4.89	34.126
125m	1.70	34.075	1.35	34.097	1.84	34.098	1.90	34.099	1.93	34.079	3.01	34.090	6.06	34.150	3.88	34.105	2.47	34.080	4.14	34.116
150m	1.46	34.072	1.15	34.088	1.57	34.091	1.68	34.095	1.63	34.075	2.39	34.079	4.87	34.131	3.14	34.089	2.08	34.070	3.55	34.108
200m	1.20	34.078	1.02	34.085	1.31	34.087	1.45	34.093	1.17	34.074	1.48	34.073	3.20	34.092	2.14	34.076	1.69	34.060	2.41	34.085
250m	1.13	34.085	0.86	34.080	1.12	34.084	1.09	34.079	1.02	34.074	1.14	34.071	2.11	34.078	1.42	34.072	1.54	34.058	1.59	34.075
300m	1.13	34.089	0.71	34.075	0.92	34.076	0.99	34.082	0.95	34.076	1.03	34.075	1.43	34.075	1.09	34.073	1.43	34.061	1.25	34.073
400m	0.83	34.076	0.54	34.070	0.67	34.072	0.73	34.073	0.71	34.068	0.67	34.068	0.94	34.071	0.77	34.070	1.11	34.073	0.82	34.070
500m	0.62	34.072	0.44	34.068	0.51	34.069	0.50	34.069	0.51	34.066	0.50	34.065	0.68	34.068	0.56	34.068	0.78	34.072	0.62	34.068
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-17

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199607		199607		199607		199607		199607	
Station No	CSR113		CSR114		CSR115		CSR116		CSR117		CIS08		CIS01		CIS00		CIS05		CIS09	
Latitude:N	43-59.9		44- 0.9		44- 0.0		44- 1.0		43-30.1		43-14.9		43-14.9		43-20.0		43-19.9		43-24.9	
Longitude:E	139-20.0		139-59.9		140-39.7		141-13.0		140-40.1		141- 5.0		141-14.9		141-19.9		141- 9.9		141- 4.9	
Date	1996/06/30		1996/06/30		1996/07/01		1996/07/01		1996/07/02		1996/07/08		1996/07/08		1996/07/08		1996/07/08		1996/07/08	
Time(JST)	11:59		17:56		11:00		18:00		17:49		09:46		10:31		11:10		11:55		12:35	
Weather	C		R		C		R		C		BC		BC		BC		BC		BC	
Air Temp.	14.8		14.4		16.5		16.8		16.8		17.5		17.3		18.2		21.1		21.6	
Bar	996.3		996.0		1001.5		1001.6		1008.4		1020.2		1019.8		1019.9		1019.4		1019.1	
Wind Dir	E		ESE		SSE		NNE		NE		ESE		E		ESE		E		E	
Wind Spd/F	S 8		S 10		S 8		S 5		S 2		S 5		S 7		S 6		S 4		S 3	
Transparency																				
Depth	1639		608		583		224		688		30		25		25		39		61	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.1	33.97*	13.8	34.05*	15.2	34.11*	15.2	32.78*	15.4	33.87*	17.0	33.79*	16.4	33.93*	16.9	32.38*	16.0	33.96*	16.0	33.96*
10m	12.90	34.012	13.66	34.050	14.86	34.112	15.63	33.942	15.13	33.978	15.50	33.986	16.33	33.930	15.78	34.093	15.64	33.969	15.71	33.962
20m	12.50	34.037	12.83	34.017	14.83	34.115	14.11	33.708	14.04	34.047	14.60	34.054	14.35	34.143	13.77	34.173	13.81	34.078	13.60	34.116
30m	7.59	34.145	7.60	34.144	12.64	34.350	14.01	33.749	13.13	34.187							13.08	34.152	12.98	34.208
50m	6.32	34.134	6.00	34.133	8.92	34.232	10.90	34.208	11.08	34.121									10.58	34.249
75m	5.32	34.135	4.59	34.118	7.15	34.210	8.79	34.116	9.46	34.089										
100m	4.93	34.126	3.62	34.097	6.09	34.158	8.05	34.195	8.63	34.255										
125m	4.56	34.121	2.99	34.087	5.76	34.146	6.95	34.153	8.01	34.263										
150m	3.98	34.115	2.41	34.082	4.94	34.125	6.25	34.144	7.30	34.227										
200m	2.90	34.096	1.66	34.075	3.35	34.099	4.08	34.114	4.85	34.122										
250m	1.72	34.077	1.32	34.072	2.15	34.083			3.23	34.090										
300m	1.33	34.074	1.05	34.071	1.48	34.072			2.23	34.076										
400m	0.88	34.070	0.71	34.068	0.87	34.068			1.10	34.071										
500m	0.61	34.067	0.52	34.065	0.59	34.065			0.81	34.067										
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-18

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199607	
Station No	CIS02		CIS06		CIS03		CIS07		CIS04		CIS11		CIS14		CIS10		CIS17		CIS13	
Latitude:N	43-25.0		43-30.0		43-35.0		43-39.9		43-44.9		43-44.9		43-40.0		43-34.9		43-35.0		43-30.0	
Longitude:E	141-14.9		141- 9.9		141-12.9		141-10.1		141-15.0		141- 5.2		141- 0.1		141- 4.8		140-54.9		140-59.8	
Date	1996/07/08		1996/07/08		1996/07/08		1996/07/08		1996/07/08		1996/07/08		1996/07/08		1996/07/08		1996/07/08		1996/07/08	
Time(JST)	13:24		14:03		14:41		15:18		16:00		16:48		17:32		18:19		19:05		19:48	
Weather	BC		BC		C		BC		BC		BC		BC		BC		BC		C	
Air Temp.	20.6		22.4		21.7		20.2		21.1		19.1		19.1		19.5		18.1		17.0	
Bar	1018.5		1018.4		1018.2		1018.0		1018.0		1018.1		1018.0		1017.5		1017.5		1017.5	
Wind Dir	ESE		SE		ENE		NNE		NE		NE		NE		NE		ESE		ESE	
Wind Spd/F	S 5		S 5		S 2		S 3		S 4		S 4		S 5		S 4		S 7		S 7	
Transparency																				
Depth	43		61		61		85		116		275		307		92		128		96	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	16.5	33.98*	16.3	34.03*	16.5	34.01*	16.4	33.91*	17.1	33.82*	16.9	34.05*	16.9	33.92*	16.8	33.94*	16.8	33.88*	16.2	33.69*
10m	15.97	33.977	15.81	34.008	15.82	34.006	16.12	34.003	16.18	33.959	16.64	34.081	16.40	33.957	16.28	34.007	16.51	33.990	15.75	33.668
20m	13.83	34.095	14.76	34.138	14.43	34.146	14.03	34.006	15.27	34.076	16.51	34.079	16.38	34.015	15.02	33.885	16.20	33.977	14.50	34.013
30m	12.90	34.176	12.53	34.183	12.05	34.189	12.74	34.148	12.33	34.146	15.74	34.075	15.01	34.153	13.21	34.090	14.35	34.184	13.56	34.135
50m			10.52	34.346	11.32	34.309	9.58	34.087	11.85	34.225	10.83	34.212	11.59	34.178	10.02	34.225	12.38	34.328	10.08	34.231
75m							8.41	34.134	9.00	34.070	9.51	34.256	9.46	34.306	9.38	34.277	9.46	34.246	9.23	34.313
100m									7.11	34.196	8.00	34.224	8.34	34.259			8.22	34.254		
125m											6.96	34.200	6.74	34.197						
150m											5.88	34.171	5.95	34.161						
200m											4.76	34.124	4.89	34.128						
250m											3.35	34.102	3.20	34.094						
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-19

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199607	
Station No	CIS19		CIS16		CIS160		CIS21		CIS23		CIS22		CIS20		CIS18		CIS15		CIS12	
Latitude:N	43-30.3		43-25.0		43-25.0		43-25.0		43-25.0		43-20.0		43-17.9		43-19.7		43-15.1		43-20.0	
Longitude:E	140-50.1		140-55.0		140-55.0		140-45.0		140-35.0		140-40.0		140-45.0		140-50.4		140-54.6		141- 0.0	
Date	1996/07/08		1996/07/08		1996/07/08		1996/07/08		1996/07/08		1996/07/09		1996/07/09		1996/07/09		1996/07/09		1996/07/09	
Time(JST)	20:35		21:35		21:43		22:39		23:28		00:15		00:50		01:26		02:19		03:29	
Weather	C		BC		BC		BC		BC		C		BC		BC		BC		BC	
Air Temp.	16.5		15.4		15.4		16.2		16.5		16.2		15.7		15.6		15.2		14.2	
Bar	1017.3		1017.0		1017.0		1017.0		1017.0		1016.2		1016.0		1016.0		1015.8		1015.5	
Wind Dir	SE		SE		SE		ESE		ESE		SW		CALM		SE		E		SE	
Wind Spd/F	S 9		S 8		S 8		S 7		S 3		S 3		S 0		S 3		S 2		S 4	
Transparency																				
Depth	440		87		87		163		187		101		74		79		41		52	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	16.5	33.72*	16.4	34.01*	16.4	34.01*	16.8	33.95*	17.8	33.97*	17.4	33.99*	16.9	33.90*	16.6	33.92*	17.1	33.62*	16.8	33.82*
10m	16.25	33.784	16.35	34.012	16.35	34.010	16.32	33.963	16.87	33.975	16.93	33.993	15.67	34.117	15.33	34.069	15.54	34.012	15.50	34.128
20m	15.23	34.058	14.21	34.124	14.15	34.078	14.54	34.065	16.78	33.972	15.50	34.142	14.88	34.146	14.73	34.102	14.42	34.046	14.12	34.158
30m	14.08	34.124	12.79	34.207	12.93	34.211	13.34	34.140	13.35	34.139	14.01	34.180	14.03	34.197	13.11	34.174	13.25	34.142	11.19	34.216
50m	11.28	34.205	9.95	34.161	9.87	34.144	9.92	34.157	10.80	34.431	11.90	34.264	10.65	34.275	9.82	34.247				
75m	9.70	34.277	9.26	34.271	9.32	34.274	9.47	34.290	9.98	34.395	9.05	34.267			9.07	34.273				
100m	8.50	34.247					7.97	34.256	8.28	34.276										
125m	7.62	34.224					6.17	34.169	7.09	34.207										
150m	6.29	34.178					5.25	34.142	6.63	34.180										
200m	3.91	34.104																		
250m	3.10	34.086																		
300m	2.20	34.076																		
400m	1.19	34.072																		
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-20

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199607	
Station No	CIS901		CIS902		CIS903		CIS904		CIS905		CIS906		CIS907		CIS908		CHA001		CHA002	
Latitude:N	43-15.0		43-11.6		43-14.5		43-21.8		43-24.1		43-26.0		43-28.0		43-29.5		44-16.7		44-14.1	
Longitude:E	141-19.4		141-15.4		141-16.3		141-10.9		141- 7.9		141- 6.3		141- 5.3		141- 4.2		141- 9.7		141- 6.1	
Date	1996/07/09		1996/07/09		1996/07/09		1996/07/09		1996/07/09		1996/07/09		1996/07/09		1996/07/09		1996/07/10		1996/07/10	
Time(JST)	06:55		07:42		08:18		09:39		10:29		11:25		12:03		12:41		07:06		08:41	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	16.0		15.9		16.2		16.4		16.9		19.0		19.0		18.6		17.0		18.6	
Bar	1015.4		1015.5		1015.5		1015.0		1014.7		1014.4		1014.1		1014.0		1011.3		1011.0	
Wind Dir	E		SSE		SSE		SSE		SSE		CALM		S		SSW		E		SSE	
Wind Spd/F	S 5		S 3		S 3		S 4		S 1		S 0		S 2		S 1		S 3		S 3	
Transparency																				
Depth	19		15		24		41		56		63		72		85		246		329	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	15.9	33.97*	16.2	33.90*	16.5	33.91*	15.9	33.97*	16.5	33.81*	16.8	33.88*	16.4	33.91*	16.3	16.40*	16.6	33.48*	16.6	33.45*
10m	15.39	34.084	15.48	34.100	16.33	33.963	15.83	33.972	16.13	33.899	16.43	33.873	16.18	33.918	15.99	33.998	16.09	33.595	16.38	33.689
20m					14.39	34.139	14.20	34.136	13.69	34.227	13.82	34.090	14.23	34.111	14.46	34.126	15.98	33.744	15.97	33.816
30m							12.62	34.178	13.28	34.234	12.02	34.141	11.80	34.127	12.45	34.154	14.82	34.035	14.39	34.099
50m									10.68	34.298	10.57	34.310	10.33	34.317	10.40	34.332	10.10	34.139	10.81	34.249
75m														9.33	34.322	9.48	34.321	9.50	34.346	
100m																	7.62	34.208	7.51	34.161
125m																	6.56	34.164	6.65	34.160
150m																	5.70	34.133	5.82	34.137
200m																	4.76	34.116	4.36	34.119
250m																			2.93	34.095
300m																			1.64	34.077
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-21

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199607	
Station No	CHA003		CHA004		CHA101		CHA102		CHA103		CHA301		CHA302		CHA303		CHA304		CHA305	
Latitude:N	44-24.7		44-22.5		44-24.6		44- 4.9		44- 2.0		43-26.9		43-46.5		43-47.5		43-49.8		43-55.2	
Longitude:E	141- 5.4		141- 5.5		140-57.7		141-10.8		141-12.0		141- 4.9		141- 9.0		141- 6.6		141- 5.8		141- 7.6	
Date	1996/07/10		1996/07/10		1996/07/11		1996/07/11		1996/07/11		1996/07/15		1996/07/15		1996/07/15		1996/07/15		1996/07/16	
Time(JST)	11:30		12:53		10:03		13:01		14:21		10:42		13:16		14:32		15:47		07:18	
Weather	BC		BC		BC		BC		BC		C		C		C		C		C	
Air Temp.	19.6		19.0		21.0		19.7		20.1		20.5		19.4		20.1		20.1		18.9	
Bar			1009.5		1005.6		1003.2				1008.0		1007.0		1008.0		1008.0		1009.0	
Wind Dir	NNE		N		NNE		NNE		NNE		SE		WNW		CALM		CALM		ESE	
Wind Spd/F	S 3		S 4		S 5		S 5		S 5		S 5		S 1		S 0		S 0		S 1	
Transparency																				
Depth	295		330		320		306		278		70		235				297		300	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	16.2	33.47*	16.9	33.43*	16.9	33.62*	17.4	33.35*	18.1	33.48*	18.2	33.82*	17.9	33.91*	17.8	34.03*	18.1	34.01*	18.0	33.86*
10m	15.93	33.551	16.42	33.586	16.68	33.751	16.86	33.610	15.88	33.533	17.69	34.053	17.50	34.031	17.41	34.037	17.56	34.040	17.19	33.900
20m	15.41	33.634	15.78	33.711	16.18	34.069	15.16	34.068	16.38	34.050	16.76	34.082	15.56	34.121	15.43	34.119	15.04	34.122	15.50	34.148
30m	13.90	33.973	14.17	34.157	11.62	34.220	14.84	34.139	14.97	34.142	14.58	34.108	14.39	34.270	14.02	34.314	14.04	34.188	13.80	34.238
50m	10.30	34.292	10.45	34.298	9.93	34.295	10.39	34.191	10.61	34.217	11.45	34.243	11.23	34.365	11.15	34.341	10.39	34.238	10.75	34.351
75m	8.22	34.248	8.58	34.291	8.21	34.208	9.74	34.302	9.10	34.184			9.14	34.307	9.05	34.265	8.98	34.267	9.03	34.321
100m	6.62	34.147	6.73	34.165	6.78	34.137	8.24	34.258	8.35	34.258			8.19	34.285	7.81	34.230	7.65	34.210	7.21	34.213
125m	5.89	34.142	5.69	34.140	5.81	34.130	6.96	34.185	6.97	34.197			6.73	34.193	6.95	34.194	6.82	34.192	6.62	34.180
150m	5.31	34.125	5.39	34.130	5.15	34.117	6.13	34.167	6.07	34.170			6.35	34.178	6.12	34.171	6.03	34.165	6.17	34.172
200m	4.39	34.114	4.58	34.114	3.94	34.110	4.53	34.117	4.50	34.119			5.39	34.148	4.70	34.122	4.57	34.121	4.94	34.131
250m	3.56	34.104	3.47	34.104	2.83	34.093	3.31	34.102	3.68	34.107					3.37	34.097	3.25	34.092	3.36	34.089
300m			1.98	34.083	1.84	34.075														
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-22

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199608		199608		199608	
Station No	CHA306		CHA307		CHA308		CHA309		CHA310		CHA311		CHA312		J31		J32		J33	
Latitude:N	43-57.7		44- 6.0		44- 8.0		44- 7.0		44- 1.5		44- 3.6		43-36.5		43-20.0		43-30.0		43-30.0	
Longitude:E	141-10.0		141-12.0		141-10.0		141- 9.0		141-10.4		141-11.6		140-54.0		141- 9.9		141- 0.0		140-40.0	
Date	1996/07/16		1996/07/17		1996/07/17		1996/07/17		1996/07/18		1996/07/18		1996/07/19		1996/07/29		1996/07/29		1996/07/29	
Time(JST)	10:39		08:54		10:42		13:28		07:04		09:21		06:20		10:19		11:35		13:03	
Weather	C		C		C		C		C		C		C		BC		C		BC	
Air Temp.	20.4		20.9		20.4		20.2		18.6		19.6		18.7		23.5		24.7		23.9	
Bar	1009.0		1004.5		1004.0		1004.0		1007.5		1008.5		1010.0		1005.6		1005.0		1004.5	
Wind Dir	CALM		S				SW				E		NNW		ESE		SE		SW	
Wind Spd/F	S 0		S 6		S		S 4		S		S 1		S 3		S 4		S 5		S 7	
Transparency																				
Depth	260		201		302		325		319		290		168		39		95		689	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	18.2	33.63*	18.2	33.86*	18.3	33.78*	18.5	33.77*	18.2	33.72*	18.2	33.84*	18.4	33.88*	20.1	33.384	19.0	33.371	18.8	33.945
10m	16.73	33.912	17.47	34.021	17.54	34.046	17.45	34.057	17.37	34.020	17.29	34.055	17.94	33.931	19.08	33.963	17.40	34.033	18.46	33.950
20m	15.27	34.065	16.27	34.050	16.52	34.065	16.85	34.055	16.42	34.105	16.05	34.051	16.97	34.050	17.66	34.037	16.44	34.073	17.67	34.016
30m	13.87	34.164	13.54	34.098	14.16	34.168	14.23	34.097	13.08	34.157	13.63	34.093	16.17	34.060	17.32	34.056	13.50	34.270	16.95	34.060
50m	11.47	34.404	11.04	34.198	11.31	34.260	11.21	34.219	10.91	34.218	11.05	34.224	13.23	34.249			11.05	34.392	11.39	34.390
75m	9.73	34.385	9.80	34.139	9.37	34.154	9.79	34.243	9.44	34.140	9.38	34.116	10.60	34.438			9.48	34.358	9.75	34.387
100m	8.01	34.261	9.32	34.311	9.12	34.301	8.76	34.283	8.33	34.243	9.13	34.291	8.49	34.239					8.37	34.296
125m	7.45	34.221	8.38	34.261	7.76	34.237	7.58	34.223	7.45	34.214	7.46	34.217	6.85	34.194					7.36	34.235
150m	6.57	34.180	7.55	34.228	6.98	34.197	6.73	34.189	6.67	34.174	6.91	34.191	5.83	34.155					5.94	34.174
200m	5.35	34.139			4.85	34.122	4.72	34.122	5.22	34.141	5.19	34.134							3.75	34.106
250m	3.58	34.099			3.26	34.092	3.30	34.099	3.36	34.099	3.30	34.096							2.44	34.086
300m							2.26	34.081	2.34	34.076									1.71	34.079
400m																			0.97	34.073
500m																			0.63	34.069
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-23

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	J34		J35		J36		J37		J38		J39		JC15		JC14		JC13		JC12	
Latitude:N	43-30.0		43-29.9		43-30.0		43-30.0		43-30.0		43-29.9		43- 0.0		43- 0.0		43- 0.0		42-59.9	
Longitude:E	140-20.0		140- 0.1		139-40.1		139-20.1		139- 0.1		138-30.1		138-59.8		139-19.8		139-39.9		140- 0.0	
Date	1996/07/29		1996/07/29		1996/07/29		1996/07/29		1996/07/29		1996/07/30		1996/07/30		1996/07/30		1996/07/30		1996/07/30	
Time(JST)	14:56		16:45		18:53		20:40		22:31		01:34		05:11		06:54		08:38		10:18	
Weather	C		C		R		C		C		R		BC		C		C		C	
Air Temp.	20.3		20.2		19.9		19.6		19.3		19.5		19.8		20.6		22.1		22.8	
Bar	1004.2		1003.1		1002.0		1002.1		1001.6		1001.0		1001.4		1001.8		1002.2		1002.0	
Wind Dir	SSW		SSW		S		SSW		SSW		SW		SSW		SSW		SSW		SW	
Wind Spd/F	S 13		S 13		S 13		S 12		S 10		S 11		S 11		S 8		S 10		S 12	
Transparency																				
Depth	652						3200		3452		3414		3531				3370		1290	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	18.6	33.883	19.0	33.990	18.9	33.992	18.3	33.886	18.4	33.879	18.4	33.788	18.3	33.810	18.7	33.812	19.7	34.017	18.9	33.989
10m	18.48	33.885	18.94	33.991	18.82	33.996	18.21	33.885	18.34	33.881	18.28	33.786	18.21	33.815	18.56	33.833	19.47	34.015	18.82	33.988
20m	17.80	34.001	18.94	33.992	18.57	34.016	12.50	34.366	13.90	34.245	8.72	34.095	9.95	34.323	16.92	34.243	19.43	34.016	18.67	33.997
30m	16.99	34.133	18.56	34.002	17.37	34.074	9.57	34.391	8.53	34.290	8.27	34.305	7.01	34.172	11.37	34.460	17.41	34.110	16.64	34.125
50m	11.45	34.441	8.83	34.125	9.01	34.225	8.37	34.303	6.12	34.196	5.97	34.166	5.34	34.140	9.38	34.360	11.12	34.448	11.96	34.469
75m	10.60	34.450	4.42	34.087	6.74	34.173	6.87	34.222	4.46	34.112	4.48	34.127	3.45	34.103	7.94	34.283	10.10	34.398	10.77	34.435
100m	9.23	34.351	2.90	34.042	5.30	34.137	4.79	34.092	3.43	34.102	3.52	34.106	2.67	34.085	6.93	34.226	9.41	34.360	10.01	34.400
125m	7.81	34.269	1.93	34.080	4.10	34.113	3.91	34.112	2.73	34.089	2.81	34.093	1.95	34.082	6.01	34.182	8.18	34.283	8.94	34.327
150m	6.87	34.207	1.58	34.081	3.18	34.098	2.84	34.090	2.15	34.084	2.26	34.082	1.69	34.078	5.17	34.153	7.42	34.248	8.06	34.281
200m	3.30	34.129	1.26	34.078	1.97	34.080	1.96	34.079	1.56	34.085	1.63	34.083	1.29	34.084	3.01	34.097	5.92	34.184	6.12	34.188
250m	1.32	34.081	1.02	34.077	1.50	34.077	1.39	34.077	1.32	34.087	1.37	34.089	1.04	34.080	1.73	34.076	3.58	34.104	4.08	34.116
300m	0.98	34.074	0.79	34.073	1.13	34.076	1.06	34.075	0.97	34.074	1.06	34.080	0.95	34.080	1.24	34.075	2.41	34.083	2.45	34.084
400m	0.66	34.070	0.60	34.068	0.79	34.072	0.75	34.071	0.71	34.071	0.99	34.088	0.72	34.075	0.86	34.076	1.25	34.083	1.23	34.077
500m	0.53	34.068	0.54	34.068	0.58	34.070	0.58	34.068	0.56	34.070	0.66	34.073	0.52	34.071	0.58	34.069	1.03	34.088	0.79	34.071
600m											0.43	34.068								
700m																				
800m																				
900m																				
1000m																				

Table 3-24

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	JC11		J41		J42		J43		J44		J45		J46		J47		J58		J57	
Latitude:N	43- 0.0		42-30.1		42-30.0		42-30.0		42-30.0		42-30.1		42-30.1		42-30.0		41-30.0		41-30.0	
Longitude:E	140-19.9		139-40.1		139-20.1		139- 0.1		138-40.0		138-20.1		138- 0.2		137-30.2		137-30.0		137-59.9	
Date	1996/07/30		1996/07/30		1996/07/30		1996/07/30		1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/07/31	
Time(JST)	11:55		17:38		20:31		22:17		00:01		01:43		03:23		06:09		11:53		14:17	
Weather	C		C		C		C		R		C		C		C		C		BC	
Air Temp.	22.6		21.8		20.6		20.0		19.6		18.6		18.1		17.9		21.8		22.4	
Bar	1002.2		1004.4		1005.3		1005.5		1005.5		1006.0		1006.7		1008.6		1010.0		1010.0	
Wind Dir	SW		SSW		SSW		SW		SW		NW		NNW		N		N		N	
Wind Spd/F	S 12		S 8		S 9		S 7		S 3		S 3		S 5		S 6		S 4		S 5	
Transparency																				
Depth	480		1840		3300		3600		3693		3638		3680		3600		3670		3689	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	18.8	33.926	19.8	34.049	19.3	33.691	18.8	33.719	18.7	33.785	18.5	33.767	18.4	33.671	18.1	34.066	18.9	33.707	19.3	33.691
10m	18.82	33.935	19.84	34.050	19.23	33.687	17.46	33.694	18.63	33.783	18.46	33.765	18.30	33.669	18.05	33.708	18.75	33.745	19.13	33.696
20m	18.68	33.974	19.33	34.076	10.56	34.252	8.41	34.052	8.34	34.125	9.68	34.074	6.71	34.145	7.57	34.104	10.39	34.055	8.35	34.098
30m	18.35	34.051	16.13	34.332	8.51	34.319	5.78	34.064	5.37	34.129	6.06	34.114	4.28	34.119	5.02	34.099	5.60	34.158	5.07	34.167
50m	15.29	34.256	10.87	34.467	6.62	34.205	3.28	34.079	2.34	34.122	2.93	34.118	2.91	34.104	3.24	34.128	3.09	34.134	3.53	34.142
75m	10.99	34.444	8.45	34.269	4.91	34.144	2.60	34.089	1.67	34.104	1.88	34.087	2.05	34.084	2.39	34.125	2.14	34.124	2.36	34.133
100m	9.64	34.386	6.38	34.189	3.59	34.105	1.98	34.082	1.40	34.091	1.56	34.083	1.65	34.075	2.04	34.114	1.79	34.111	2.05	34.119
125m	8.37	34.303	5.01	34.161	2.53	34.088	1.55	34.075	1.35	34.094	1.30	34.079	1.38	34.075	1.71	34.101	1.54	34.102	1.84	34.114
150m	6.75	34.216	4.76	34.139	2.06	34.077	1.34	34.080	1.26	34.096	1.14	34.078	1.27	34.080	1.59	34.105	1.34	34.095	1.68	34.112
200m	4.56	34.125	3.27	34.100	1.45	34.071	1.28	34.094	1.12	34.093	1.13	34.089	1.06	34.082	1.25	34.092	1.18	34.096	1.32	34.099
250m	2.22	34.084	2.26	34.081	1.20	34.081	1.20	34.100	1.03	34.089	0.89	34.078	1.11	34.092	1.07	34.087	1.03	34.090	1.25	34.102
300m	1.73	34.081	1.38	34.074	1.16	34.090	1.12	34.097	0.93	34.087	0.83	34.081	1.04	34.091	0.86	34.079	0.86	34.083	1.17	34.101
400m	0.93	34.075	0.82	34.073	0.95	34.086	0.73	34.077	0.60	34.072	0.58	34.073	0.67	34.074	0.65	34.074	0.59	34.073	0.88	34.086
500m			0.54	34.068	0.64	34.073	0.53	34.071	0.47	34.070	0.46	34.070	0.52	34.071	0.48	34.069	0.46	34.071	0.61	34.073
600m			0.41	34.067									0.42	34.069						
700m																				
800m																				
900m																				
1000m																				

Table 3-25

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	J56		J55		J54		J53		J52		J63		J62		J61		J51		JC03	
Latitude:N	41-30.0		41-30.0		41-30.0		41-30.0		41-30.0		41- 0.1		41-10.0		41-19.9		41-30.0		44- 0.0	
Longitude:E	138-20.0		138-40.0		138-59.9		139-15.0		139-30.0		140- 0.1		140- 0.1		140- 0.1		139-50.0		141- 0.0	
Date	1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/08/01		1996/08/01		1996/08/01		1996/08/01		1996/08/01	
Time(JST)	16:00		17:39		19:17		20:39		22:06		01:48		03:06		04:15		05:37		21:15	
Weather	C		BC		BC		C		C		BC		BC		C		BC		BC	
Air Temp.	21.2		20.4		19.8		19.8		19.9		20.4		19.9		19.5		18.9		18.6	
Bar	1009.0		1010.0		1010.3		1011.5		1011.8		1011.9		1012.0		1012.4		1012.8		1016.2	
Wind Dir	NNE		N		N		CALM		NNW		NW		NNW		NNW		NNW		N	
Wind Spd/F	S 4		S 4		S 5		S 0		S 4		S 6		S 6		S 7		S 7		S 4	
Transparency	3693		3117		1341		1138		1660		503		106		227		1351		401	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	19.4	33.595	19.8	33.314	20.0	33.522	20.8	33.600	21.0	33.631	21.4	34.197	21.7	34.033	21.4	34.033	21.3	33.806	19.5	33.477
10m	19.18	33.674	19.63	33.550	15.09	33.849	20.48	33.781	20.64	33.974	21.38	34.221	21.70	34.032	21.39	34.028	19.93	34.267	19.46	33.472
20m	7.25	34.122	8.01	34.098	11.42	34.315	14.32	34.196	17.38	34.305	19.10	34.143	19.29	34.248	17.48	34.403	17.52	34.357	18.85	33.880
30m	4.73	34.131	4.73	34.106	9.63	34.373	11.67	34.549	13.57	34.574	18.71	34.227	17.65	34.293	15.53	34.452	15.80	34.515	18.22	33.994
50m	2.86	34.121	2.39	34.083	7.76	34.249	9.75	34.419	11.06	34.519	18.02	34.378	15.39	34.416	12.73	34.500	12.98	34.583	12.23	34.414
75m	1.76	34.110	1.53	34.092	5.87	34.166	7.83	34.265	9.30	34.374	16.21	34.559	11.84	34.545	10.69	34.428	10.36	34.442	10.35	34.430
100m	1.43	34.096	1.41	34.093	4.18	34.125	6.56	34.203	7.72	34.265	13.81	34.590			10.11	34.406	9.26	34.360	8.90	34.333
125m	1.31	34.094	1.27	34.093	2.86	34.096	5.23	34.156	6.01	34.182	11.01	34.468			9.38	34.368	7.72	34.268	6.83	34.195
150m	1.25	34.096	1.18	34.090	1.86	34.071	3.90	34.116	4.26	34.124	10.84	34.463			9.04	34.345	6.62	34.221	6.11	34.172
200m	1.11	34.094	1.07	34.088	1.39	34.075	2.17	34.079	2.11	34.083	7.02	34.232			8.78	34.332	4.24	34.132	3.64	34.105
250m	1.08	34.097	0.94	34.085	1.13	34.076	1.47	34.073	1.29	34.076	3.11	34.098					2.45	34.084	2.61	34.089
300m	1.04	34.098	0.76	34.078	1.02	34.080	1.17	34.078	1.04	34.077	1.63	34.080					1.65	34.075	1.68	34.079
400m	0.64	34.075	0.57	34.073	0.66	34.069	0.74	34.070	0.76	34.073	0.95	34.075					1.05	34.081		
500m	0.50	34.072	0.46	34.070	0.48	34.067	0.53	34.068	0.52	34.068							0.67	34.069		
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-26

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	J22		J21		J23		J24		J25		J26		J27		J18		J17		J16	
Latitude:N	44-29.9		44-29.9		44-29.9		44-29.9		44-29.9		44-29.9		44-29.9		45-29.9		45-30.1		45-30.1	
Longitude:E	141-15.2		141-29.9		141- 0.2		140-40.2		140-20.1		140- 0.2		139-30.1		139-40.0		139-59.9		140-19.9	
Date	1996/08/02		1996/08/02		1996/08/02		1996/08/02		1996/08/02		1996/08/02		1996/08/02		1996/08/02		1996/08/02		1996/08/02	
Time(JST)	00:23		01:30		03:36		05:05		06:31		07:58		10:10		15:58		17:45		19:15	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	17.1		17.4		17.5		17.5		17.1		17.9		19.8		21.3		18.6		18.2	
Bar	1015.8		1015.8		1016.0		1016.0		1016.4		1016.9		1016.5		1015.5		1015.4		1016.0	
Wind Dir	NE		ESE		N		NNE		NE		ENE		NNW		S		SW		SW	
Wind Spd/F	S 5		S 5		S 3		S 2		S 1		S 2		S 1		S 2		S 5		S 4	
Transparency																				
Depth	114		75		190		145		253		578		493		841		590		396	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	18.7	33.907	18.9	33.772	18.6	33.927	18.6	33.867	18.4	33.831	17.9	33.877	18.1	33.852	17.9	33.801	18.1	33.885	18.6	33.875
10m	18.65	33.907	18.91	33.774	18.58	33.928	18.53	33.855	18.17	33.865	17.67	33.879	17.74	33.838	16.39	33.797	17.71	33.877	18.13	33.874
20m	18.51	33.913	16.99	33.906	18.59	33.929	18.23	33.907	14.79	34.235	12.05	34.171	10.10	34.254	9.99	34.055	13.26	34.071	12.34	34.436
30m	15.57	34.099	14.49	34.111	16.16	34.132	13.86	34.156	12.53	34.373	9.94	34.393	7.53	34.195	5.27	34.131	7.95	34.199	9.88	34.372
50m	11.53	34.264	11.02	34.137	10.35	34.096	10.97	34.199	9.96	34.399	8.16	34.281	5.94	34.161	3.61	34.121	5.60	34.137	7.27	34.224
75m	9.72	34.292			8.86	34.160	9.30	34.258	8.44	34.286	5.83	34.167	4.25	34.124	2.97	34.111	4.47	34.123	5.66	34.154
100m	7.98	34.184			8.39	34.267	8.09	34.246	6.77	34.192	5.08	34.138	3.43	34.105	2.45	34.099	3.61	34.112	4.70	34.125
125m					7.19	34.209	7.22	34.209	6.23	34.163	4.28	34.117	2.76	34.100	2.04	34.089	2.85	34.097	4.07	34.113
150m					6.27	34.130			5.53	34.137	3.68	34.104	2.22	34.088	1.79	34.084	2.48	34.096	3.31	34.103
200m									2.76	34.100	2.67	34.088	1.69	34.080	1.55	34.083	1.76	34.083	2.10	34.080
250m											1.78	34.078	1.26	34.077	1.16	34.076	1.52	34.081	1.74	34.073
300m											1.24	34.074	1.00	34.074	0.94	34.074	1.21	34.076	1.62	34.081
400m											0.76	34.070	0.63	34.069	0.60	34.069	0.77	34.071		
500m											0.51	34.067			0.44	34.067	0.56	34.068		
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-27

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	J15		J14		J13		J12		J11		CSR101		CSR102		CSR103		CSR104		CSR105	
Latitude:N	45-30.0		45-30.1		45-30.0		45-30.0		45-29.9		43-29.8		43-30.0		43-29.9		43-59.9		43-59.9	
Longitude:E	140-39.9		140-52.9		141- 9.9		141-24.8		141-39.9		140- 0.0		139-20.3		138-40.1		138-39.9		139-20.0	
Date	1996/08/02		1996/08/02		1996/08/02		1996/08/03		1996/08/03		1996/08/26		1996/08/26		1996/08/27		1996/08/27		1996/08/27	
Time(JST)	20:43		21:53		23:22		00:31		01:39		13:35		16:52		07:35		10:36		13:36	
Weather	C		C		C		C		C		C		C		B		B		B	
Air Temp.	18.1		17.8		17.7		17.6		17.6		23.6		22.4		25.6		24.6		25.4	
Bar	1015.5		1015.2		1014.6		1014.8		1014.4		1015.5		1015.2		1015.8		1016.2		1015.5	
Wind Dir	SSW		S		SSE		SSW		SE		NNE		CALM		NE		ENE		ENE	
Wind Spd/F	S 4		S 4		S 3		S 3		S 4		S 1		S 0		S 3		S 4		S 2	
Transparency																				
Depth	540		448		127		110		50		502		503		504		502		503	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	18.8	33.833	18.5	33.833	17.9	33.866	18.1	33.483	18.5	32.856	22.1	33.98*	22.9	34.10*	22.1	33.77*	22.3	33.94*	22.8	33.98*
10m	18.26	33.819	17.80	33.803	17.44	33.869	17.22	33.714	18.44	33.587	21.92	33.984	21.74	34.015	21.92	33.775	21.88	33.917	21.80	33.930
20m	14.00	34.279	13.99	34.005	17.32	33.865	13.09	34.024	17.46	33.811	21.31	33.993	21.25	33.961	12.11	34.244	16.90	34.050	16.56	34.296
30m	10.46	34.378	11.29	34.118	12.87	34.105	11.22	34.040	16.82	33.815	19.75	34.013	18.08	34.296	8.46	34.309	11.93	34.245	12.25	34.378
50m	8.24	34.274	8.76	34.107	9.40	34.170	8.38	34.144			13.31	34.425	11.51	34.485	5.59	34.160	7.63	34.238	9.14	34.366
75m	6.60	34.191	7.18	34.140	7.97	34.218	7.13	34.119			11.03	34.476	9.70	34.389	4.13	34.119	5.89	34.180	7.26	34.249
100m	5.36	34.149	6.32	34.141	6.51	34.132	5.49	34.113			9.64	34.384	8.13	34.294	3.20	34.096	4.33	34.119	5.87	34.178
125m	4.57	34.124	5.23	34.131							8.68	34.320	7.09	34.231	2.54	34.085	3.25	34.103	4.96	34.148
150m	4.31	34.115	4.59	34.118							7.72	34.266	6.14	34.188	2.06	34.079	2.42	34.089	3.70	34.105
200m	2.94	34.095	4.17	34.113							5.62	34.168	3.48	34.102	1.54	34.080	1.73	34.080	2.42	34.085
250m	1.92	34.079	2.40	34.094							3.19	34.095	1.93	34.079	1.24	34.079	1.27	34.076	1.80	34.084
300m	1.64	34.080	1.53	34.079							1.89	34.079	1.32	34.076	1.16	34.088	1.02	34.075	1.26	34.077
400m	0.90	34.071	0.90	34.072							1.12	34.075	1.12	34.087	0.92	34.081	0.73	34.072	0.82	34.073
500m	0.60	34.068									0.74	34.071	0.71	34.069	0.58	34.069	0.55	34.069	0.57	34.069
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-28

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	CSR106		CSR107		CSR108		CSR109		CSR110		CSR111		CSR112		CSR113		CSR114		CSR115	
Latitude:N	44- 0.0		44- 0.0		44-30.3		44-30.0		44-32.5		45- 0.0		45- 0.1		45-30.7		45-29.9		45- 0.0	
Longitude:E	139-59.8		140-39.9		140-39.7		140- 0.0		139-22.1		139-30.0		140- 0.0		140- 0.7		140-29.8		140-30.0	
Date	1996/08/27		1996/08/28		1996/08/28		1996/08/29		1996/08/29		1996/08/30		1996/08/30		1996/08/30		1996/08/31		1996/08/31	
Time(JST)	16:37		10:17		17:49		13:40		17:48		06:52		09:05		17:49		05:53		08:53	
Weather	B		BC		B		B		B		B		B		B		B		B	
Air Temp.	26.1		20.7		24.2		22.9		21.9		20.1		20.7		21.7		20.4		21.7	
Bar	1015.4		1014.2		1011.9		1009.3		1009.4		1013.0		1014.0		1014.0		1017.0		1017.8	
Wind Dir	ENE		SE		NNE		SSW		CALM		SW		WSW		WSW		SW		S	
Wind Spd/F	S 2		S 5		S 5		S 2		S 0		S 3		S 3		S 5		S 3		S 4	
Transparency																				
Depth	454		503		104		503		506		503		251		505		354		252	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	22.5	34.01*	20.6	33.67*	22.8	34.03*	21.0	33.81*	22.1	33.75*	20.5	33.80*	21.2	33.86*	21.3	33.83*	20.7	33.90*	21.3	33.89*
10m	21.87	34.026	20.52	33.671	22.24	34.022	20.14	33.756	19.49	33.777	19.65	33.774	21.04	33.852	20.02	33.805	20.63	33.900	21.10	33.879
20m	21.63	34.019	20.13	33.672	21.90	34.001	14.58	34.079	15.63	33.854	12.50	34.329	16.31	34.280	15.75	34.270	18.47	33.943	16.72	34.097
30m	15.04	34.362	18.92	33.859	16.81	34.273	10.03	34.332	7.22	34.171	8.79	34.191	12.40	34.469	11.63	34.282	13.68	34.189	13.04	34.314
50m	9.63	34.393	18.63	33.969	11.13	34.450	7.77	34.273	4.70	34.115	6.32	34.168	9.02	34.344	8.69	34.305	11.01	34.240	10.44	34.346
75m	7.85	34.273	12.72	34.362	8.88	34.331	5.57	34.157	3.49	34.103	4.57	34.127	7.51	34.254	6.35	34.190	9.40	34.308	8.44	34.232
100m	6.25	34.193	10.02	34.378	7.82	34.266	4.55	34.127	2.75	34.098	3.77	34.108	5.97	34.179	5.32	34.142	8.33	34.249	7.11	34.178
125m	5.12	34.150	8.60	34.303			3.64	34.106	2.29	34.087	3.24	34.097	4.89	34.137	4.30	34.118	6.86	34.193	6.03	34.149
150m	4.58	34.129	7.14	34.227			2.97	34.099	1.86	34.080	2.65	34.090	3.88	34.109	3.45	34.104	5.86	34.154	5.36	34.132
200m	3.40	34.107	4.96	34.135			1.94	34.081	1.45	34.079	1.78	34.076	2.17	34.085	2.51	34.089	3.96	34.116	4.36	34.114
250m	2.16	34.083	2.91	34.093			1.47	34.075	1.20	34.080	1.35	34.073	1.45	34.075	2.04	34.079	2.86	34.092	2.71	34.092
300m	1.48	34.078	1.97	34.078			1.16	34.073	0.96	34.073	1.05	34.071			1.34	34.073	1.92	34.081		
400m	0.97	34.073	1.00	34.073			0.79	34.069	0.63	34.069	0.70	34.068			0.88	34.071				
500m			0.70	34.069			0.43	34.066	0.45	34.066	0.50	34.066			0.61	34.067				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-29

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199609		199609		199609		199609		199609		199609	
Station No	CSR116		CSR117		CSR118		CSR119		CHA01		CHA02		CHA03		CHA04		CHA05		CHA06	
Latitude:N	44-59.9		44-29.9		44- 1.0		43-32.5		43-44.9		43-44.9		43-44.6		44- 7.6		44-10.8		44-13.1	
Longitude:E	140-59.8		141- 9.9		141- 5.8		140-41.8		141-12.1		141-15.6		141-10.1		141- 8.9		141-11.3		141-11.3	
Date	1996/08/31		1996/09/01		1996/09/01		1996/09/02		1996/09/17		1996/09/17		1996/09/17		1996/09/18		1996/09/18		1996/09/18	
Time(JST)	17:33		11:08		18:15		17:26		12:03		13:15		14:30		07:19		09:18		10:33	
Weather	BC		C		R		C		C		C		C		C		C		C	
Air Temp.	22.1		21.0		19.1		20.7		22.4		22.0		21.4		19.9		20.1		20.0	
Bar	1016.0		1012.7		1009.4		1004.8		1012.0		1012.0		1012.0		1011.5		1012.0		1012.0	
Wind Dir	CALM		NE		E		N		SSE		SSW		NE		SE		ESE		ESE	
Wind Spd/F	S 0		S 6		S 5		S 7		S 5		S 3		S 5		S 6		S 5		S 5	
Transparency																				
Depth	77		102		303		504		150		102		194		327		233		177	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	21.2	33.81*	21.7	33.92*	20.9	33.81*	22.5	34.08*	20.0	33.79*	19.8	33.77*	19.9	33.76*	19.6	33.78*	19.6	33.75*	19.7	33.74*
10m	20.73	33.876	21.76	33.931	20.92	33.829	22.57	34.095	19.71	33.783	19.58	33.782	19.71	33.767	19.54	33.783	19.61	33.759	19.67	33.752
20m	20.21	33.880	20.44	33.816	20.04	33.931	19.36	34.085	19.66	33.782	19.56	33.792	19.64	33.767	19.54	33.783	19.60	33.760	19.67	33.752
30m	15.84	34.178	18.15	33.994	15.59	34.201	14.82	34.395	19.66	33.783	19.56	33.815	19.63	33.767	19.52	33.779	19.61	33.760	19.66	33.752
50m	10.78	34.258	12.21	34.341	10.44	34.405	11.03	34.459	14.03	34.214	13.17	34.296	14.25	34.193	15.14	34.209	15.67	34.251	14.64	34.220
75m	8.01	34.180	9.50	34.348	8.89	34.315	9.33	34.358	9.37	34.342	8.78	34.327	9.51	34.345	10.41	34.317	10.38	34.389	10.43	34.401
100m			7.71	34.242	7.30	34.216	8.05	34.279	8.32	34.262			7.91	34.234	8.60	34.305	8.42	34.270	8.45	34.259
125m					6.09	34.170	6.77	34.216	6.00	34.183			6.97	34.210	7.06	34.216	6.43	34.164	6.57	34.166
150m					5.08	34.127	5.70	34.164					4.63	34.137	5.79	34.151	5.17	34.137	5.15	34.145
200m					3.94	34.105	3.70	34.104							3.32	34.102	2.68	34.090		
250m					2.02	34.079	2.42	34.081							1.79	34.078				
300m					1.47	34.072	1.79	34.075							1.05	34.072				
400m							0.94	34.070												
500m							0.68	34.065												
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-30

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199609		199609		199609		199609		199609		199610		199610		199610		199610		199610	
Station No	CHA07		CHA08		CHA09		CHA10		CHA21		J31		J32		J33		J34		J35	
Latitude:N	44-17.6		43-51.7		43-52.3		43-46.0		43-44.4		43-20.0		43-29.9		43-30.0		43-30.0		43-30.0	
Longitude:E	141- 9.7		141- 9.6		141- 7.7		141- 5.8		141- 6.5		141-10.0		141- 0.0		140-40.1		140-20.1		140- 0.1	
Date	1996/09/18		1996/09/19		1996/09/19		1996/09/19		1996/09/24		1996/09/30		1996/09/30		1996/09/30		1996/09/30		1996/09/30	
Time(JST)	12:28		07:05		08:34		11:19		12:10		09:59		11:18		12:47		14:30		16:09	
Weather	C		R		R		C		BC		BC		BC		BC		BC		BC	
Air Temp.	20.1		20.1		18.9		19.8		22.1		17.6		22.0		20.4		19.0		18.8	
Bar	1011.5		1009.5				1008.5		1016.0		1013.0		1013.0		1013.0		1012.0		1010.5	
Wind Dir	E		SSE		S		SE		SW				ESE		NE		SW		WSW	
Wind Spd/F	S 5		S 7		S 9		S 9		S 9		S		S 4		S 2		S 6		S 7	
Transparency																				
Depth	230		252		286		272		257		39		95		691		648		1245	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	19.7	33.80*	20.1	33.78*	19.7	33.77*	19.8	33.79*	19.5	33.81*	19.3	33.470	19.9	34.060	19.7	33.970	19.5	34.000	19.6	33.940
10m	19.67	33.796	19.63	33.778	19.62	33.782	19.66	33.792	19.50	33.810	19.46	33.892	19.65	34.067	19.53	33.978	19.41	34.044	19.66	33.938
20m	19.66	33.813	19.64	33.789	19.62	33.783	19.66	33.793	19.42	33.810	19.63	34.086	19.63	34.067	19.44	33.990	19.33	34.116	19.57	33.926
30m	19.67	33.818	19.67	33.818	19.62	33.782	19.66	33.794	19.32	33.799	19.58	34.119	19.61	34.066	16.57	34.172	18.34	34.058	19.56	33.928
50m	15.43	34.221	13.31	34.319	14.36	34.319	13.64	34.213	12.73	34.312			13.85	34.421	10.87	34.423	11.18	34.375	13.06	34.467
75m	10.45	34.403	10.14	34.396	10.21	34.390	9.92	34.388	8.84	34.311			9.32	34.360	8.33	34.307	8.61	34.292	10.31	34.433
100m	8.52	34.308	8.31	34.284	8.28	34.289	8.13	34.285	6.84	34.208					6.48	34.208	6.40	34.195	9.06	34.350
125m	7.06	34.212	7.01	34.200	6.90	34.212	6.68	34.194	5.07	34.145					4.84	34.139	5.44	34.167	7.93	34.281
150m	5.27	34.147	5.53	34.143	5.48	34.148	5.22	34.142	3.81	34.110					3.72	34.115	4.66	34.135	7.09	34.230
200m	2.39	34.089	3.19	34.097	3.41	34.094	2.81	34.093	2.15	34.084					2.26	34.088	2.88	34.097	5.05	34.152
250m					1.94	34.079	1.47	34.078							1.62	34.083	1.79	34.084	2.99	34.093
300m															1.19	34.079	1.31	34.080	1.93	34.082
400m															0.76	34.075	0.87	34.075	1.04	34.080
500m															0.59	34.072	0.61	34.072	0.74	34.075
600m																			0.53	34.071
700m																				
800m																				
900m																				
1000m																				

Table 3-31

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	J36		J37		J38		J39		J41		J42		J43		J51		J61		J62	
Latitude:N	43-30.2		43-30.2		43-30.1		43-29.9		42-30.0		42-30.1		42-30.1		41-30.0		41-20.1		41-10.1	
Longitude:E	139-40.0		139-19.9		139- 0.1		138-30.1		139-40.1		139-20.1		139- 0.1		139-50.1		140- 0.0		140- 0.1	
Date	1996/09/30		1996/09/30		1996/09/30		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/02		1996/10/02		1996/10/02	
Time(JST)	18:09		19:54		21:35		00:36		08:01		11:05		12:40		07:14		08:53		10:06	
Weather	BC				BC		BC		BC		B		BC		BC		BC		BC	
Air Temp.	17.9		18.0		17.6		17.8		18.4		22.1		20.6		18.6		19.0		20.1	
Bar	1010.7		1010.7		1010.5		1010.6		1011.5		1011.5		1011.5		1014.4		1015.2		1015.0	
Wind Dir	SW		WSW		W		NNE		ESE		NNE		NE		NE		ENE		NE	
Wind Spd/F	S 5		S 6		S 4		S 8		S 2		S 6		S 10		S 2		S 8		S 6	
Transparency																				
Depth	2114		3191		3439		3440		1821		3300		3500		1385		221		110	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	19.5	33.940	20.0	34.010	19.1	33.860	18.5	34.100	19.5	33.960	19.7	33.920	20.3	33.890	20.2	33.970	21.2	33.730	21.4	33.650
10m	19.55	33.946	20.06	34.018	18.87	33.869	18.44	34.102	18.86	33.981	20.44	33.929	20.27	33.892	20.20	33.978	21.25	33.726	21.46	33.654
20m	19.55	33.945	19.73	34.039	18.76	33.863	16.15	33.938	14.27	34.365	19.53	34.029	20.08	33.909	18.23	33.976	20.69	33.898	21.44	33.662
30m	19.53	33.942	19.72	34.037	13.17	34.081	7.93	34.245	11.33	34.450	16.17	34.290	9.73	34.069	11.21	34.244	19.14	34.027	21.16	33.727
50m	13.64	34.401	15.64	34.361	6.69	34.151	5.46	34.127	9.02	34.344	10.40	34.434	5.05	34.149	6.66	34.241	11.04	34.348	14.69	34.429
75m	10.99	34.452	9.36	34.170	4.12	34.088	3.66	34.090	7.30	34.241	8.04	34.297	3.25	34.080	4.04	34.109	8.30	34.308	9.76	34.408
100m	9.84	34.398	6.02	34.200	3.11	34.099	2.82	34.097	5.93	34.184	6.28	34.202	2.24	34.063	2.97	34.066	7.79	34.272	7.63	34.270
125m	8.82	34.332	4.53	34.129	2.44	34.087	2.40	34.094	4.61	34.136	5.57	34.163	1.84	34.067	2.23	34.060	7.31	34.243		
150m	8.12	34.289	3.69	34.100	1.94	34.083	1.93	34.084	3.56	34.110	4.27	34.123	1.51	34.070	1.76	34.062	6.99	34.229		
200m	5.97	34.193	2.25	34.084	1.40	34.086	1.29	34.083	2.41	34.082	2.75	34.087	1.19	34.071	1.48	34.066	5.42	34.156		
250m	3.57	34.111	1.54	34.080	1.14	34.087	1.12	34.087	1.61	34.077	1.66	34.082	1.09	34.079	1.36	34.068				
300m	2.02	34.081	1.11	34.077	1.05	34.089	1.01	34.088	1.16	34.075	1.14	34.078	0.94	34.078	1.07	34.072				
400m	1.19	34.079	0.75	34.073	0.81	34.082	0.69	34.076	0.72	34.072	0.76	34.074	0.72	34.074	0.83	34.070				
500m	0.81	34.077	0.53	34.072	0.57	34.074	0.51	34.072	0.52	34.070	0.54	34.072	0.54	34.073	0.58	34.069				
600m					0.45	34.072			0.38	34.069										
700m																				
800m																				
900m																				
1000m																				

Table 3-32

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	J63		J52		J53		J54		J55		J56		J57		J58		J47		J46	
Latitude:N	41- 0.1		41-29.9		41-29.9		41-29.9		41-30.0		41-29.9		41-29.8		41-30.0		42-29.9		42-29.9	
Longitude:E	140- 0.0		139-29.9		139-15.0		139- 0.2		138-40.1		138-20.1		137-59.9		137-30.0		137-30.1		137-59.9	
Date	1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/03		1996/10/03		1996/10/03	
Time(JST)	11:12		14:46		16:05		17:25		19:07		20:47		22:28		00:46		06:36		08:53	
Weather	B		BC		BC		C										C		BC	
Air Temp.	20.1		22.3		19.4		19.1		18.9		18.1		17.5		17.0		16.4		17.6	
Bar	1014.2		1014.2		1013.7		1014.0		1014.3		1014.2		1013.5		1013.2		1011.8		1011.5	
Wind Dir	ENE		ESE		ESE		E		ENE		NE		ENE		NE		NE		E	
Wind Spd/F	S 7		S 6		S 5		S 5		S 4		S 6		S 6		S 5		S 4		S 3	
Transparency																				
Depth	504		1685		1135		1333		3091		3686		3686		3700		3673		3673	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	21.7	33.740	19.6	33.860	19.4	33.870	19.7	33.960	18.8	33.830	18.6	33.910	17.4	33.860	17.0	33.880	17.6	33.910	17.8	33.780
10m	21.82	33.745	19.49	33.866	19.38	33.884	19.64	33.959	18.76	33.835	18.60	33.914	17.35	33.872	16.88	33.890	17.49	33.908	17.67	33.779
20m	21.81	33.743	19.24	33.863	19.13	33.865	11.39	34.003	18.76	33.834	18.61	33.914	13.57	33.584	16.88	33.890	17.48	33.908	10.47	34.035
30m	21.54	33.769	8.56	34.094	8.13	34.074	5.95	34.138	6.80	34.143	7.47	34.073	5.53	34.148	6.87	34.173	6.82	34.151	5.76	34.127
50m	15.68	34.233	4.51	34.136	4.64	34.154	3.87	34.111	2.78	34.066	3.68	34.129	2.92	34.117	3.29	34.132	3.08	34.109	2.70	34.085
75m	13.58	34.593	3.38	34.101	3.49	34.104	2.68	34.080	2.16	34.089	2.35	34.114	2.05	34.110	2.14	34.119	1.96	34.091	1.67	34.072
100m	10.67	34.452	2.36	34.082	2.56	34.073	2.04	34.076	1.52	34.070	1.87	34.109	1.69	34.104	1.74	34.104	1.61	34.088	1.44	34.077
125m	7.93	34.260	2.02	34.081	1.89	34.074	1.71	34.079	1.52	34.087	1.68	34.105	1.45	34.100	1.53	34.100	1.36	34.086	1.39	34.087
150m	5.16	34.162	1.56	34.080	1.52	34.074	1.40	34.079	1.17	34.072	1.50	34.102	1.33	34.096	1.38	34.097	1.26	34.088	1.26	34.087
200m	3.66	34.109	1.16	34.080	1.14	34.076	0.99	34.076	1.05	34.080	1.28	34.100	1.18	34.095	1.16	34.091	1.04	34.082	1.19	34.093
250m	1.86	34.064	0.92	34.076	0.89	34.074	0.80	34.076	0.89	34.078	1.23	34.103	1.05	34.092	0.98	34.085	0.96	34.083	1.12	34.093
300m	1.48	34.072	0.74	34.073	0.71	34.072	0.64	34.072	0.78	34.075	1.15	34.101	0.90	34.087	0.89	34.085	0.82	34.079	1.07	34.094
400m	0.78	34.072	0.53	34.070	0.50	34.070	0.45	34.070	0.56	34.073	0.77	34.081	0.63	34.076	0.63	34.076	0.62	34.074	0.70	34.076
500m			0.38	34.068	0.39	34.068	0.35	34.068	0.44	34.072	0.54	34.075	0.48	34.072	0.49	34.073	0.48	34.071	0.51	34.072
600m																			0.42	34.071
700m																				
800m																				
900m																				
1000m																				

Table 3-33

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	J45		J44		JC15		JC14		JC13		JC12		JC11		CW01		CW02		CW03	
Latitude:N	42-29.9		42-30.0		43- 0.0		42-59.9		43- 0.0		42-59.9		43- 0.1		43-25.2		43-25.0		43-24.9	
Longitude:E	138-19.9		138-40.0		139- 0.1		139-19.9		139-39.8		139-59.6		140-19.9		141- 0.0		140-50.2		140-40.1	
Date	1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/04		1996/10/14		1996/10/14		1996/10/14	
Time(JST)	11:14		12:54		17:19		19:01		20:48		22:41		00:28		16:29		17:34		18:44	
Weather	BC		BC		BC				C				C		C		C		C	
Air Temp.	18.6		19.9		18.6		18.3		18.9		17.1		17.3		17.4		16.8		16.3	
Bar	1010.2		1009.5		1017.6		1007.2		1007.0		1006.0		1005.0		1006.7		1006.3		1006.0	
Wind Dir	ESE		ESE		ENE		E		SE		SE		E		SSW		S		SE	
Wind Spd/F	S 4		S 1		S 4		S 2		S 9		S 12		S 8		S 8		S 6		S 4	
Transparency																				
Depth	3634		3670		3543		2405		3369		1308		473		74		311		481	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	18.4	33.750	18.4	33.870	19.5	34.010	19.4	34.080	19.0	34.090	18.6	33.840	19.4	33.880	17.5*	33.90*	16.9	33.39*	16.6	33.48*
10m	18.24	33.751	18.19	33.873	19.23	34.009	19.36	34.080	19.01	34.094	18.65	33.844	19.34	33.878	17.37	33.857	16.85	33.397	16.69	33.484
20m	17.67	33.647	18.16	33.872	19.17	34.008	19.23	34.092	18.95	34.093	18.66	33.844	19.41	33.968	17.43	33.914	17.23	33.837	17.17	33.922
30m	6.05	34.140	6.21	34.153	18.95	33.985	19.17	34.106	15.75	34.407	17.23	34.158	15.27	34.443	17.43	33.917	16.81	33.862	16.29	34.062
50m	2.83	34.104	3.27	34.145	10.41	34.438	11.41	34.483	11.01	34.454	11.57	34.450	10.99	34.431	11.45	34.381	9.56	34.330	10.95	34.373
75m	1.97	34.103	1.94	34.107	7.81	34.282	9.82	34.395	9.34	34.365	8.70	34.320	8.52	34.318			6.79	34.212	8.00	34.284
100m	1.40	34.070	1.48	34.085	5.92	34.185	8.46	34.304	8.38	34.291	7.28	34.237	6.11	34.192			5.28	34.153	5.80	34.172
125m	1.24	34.072	1.27	34.079	4.85	34.138	7.17	34.240	7.25	34.238	5.73	34.174	4.80	34.133			4.52	34.127	4.39	34.123
150m	1.15	34.078	1.13	34.078	4.17	34.119	6.39	34.197	6.13	34.181	4.83	34.135	4.08	34.113			3.68	34.107	3.51	34.107
200m	1.12	34.090	1.13	34.090	2.00	34.078	4.01	34.099	3.82	34.095	2.85	34.092	2.45	34.086			2.71	34.090	2.24	34.087
250m	1.14	34.098	1.06	34.091	1.41	34.075	2.55	34.080	2.38	34.074	1.73	34.080	1.47	34.078			1.85	34.081	1.60	34.079
300m	0.96	34.087	0.93	34.085	1.16	34.075	1.89	34.074	1.58	34.076	1.25	34.076	1.14	34.075					1.17	34.077
400m	0.62	34.073	0.64	34.073	0.91	34.080	1.03	34.077	0.92	34.073	0.83	34.072	0.72	34.071					0.83	34.072
500m	0.49	34.071	0.49	34.071	0.61	34.071	0.69	34.072	0.62	34.070	0.51	34.069								
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-34

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	CW04		CW05		CW06		CW07		CW08		CW09		CW10		CW11		CW12		CW13	
Latitude:N	43-25.1		43-25.0		43- 0.1		43- 0.0		42-59.9		43-20.0		43-19.9		43-40.1		43-39.9		43-39.9	
Longitude:E	140-20.6		140- 0.2		140- 0.1		139-30.1		139- 0.1		139- 0.1		139-29.9		139- 0.2		139-30.0		140- 0.0	
Date	1996/10/14		1996/10/15		1996/10/15		1996/10/15		1996/10/18		1996/10/18		1996/10/18		1996/10/18		1996/10/18		1996/10/19	
Time(JST)	21:33		01:10		03:58		06:57		13:46		15:55		18:18		21:28		23:40		02:15	
Weather	R		C		C		BC		C		C		C		C		C		C	
Air Temp.	16.0		13.2		13.6		12.4		14.9		13.9		13.6		11.9		12.3		11.6	
Bar	1005.3		1004.5		1004.4		1004.7		1011.2		1011.5		1011.7		1013.0		1012.6		1012.1	
Wind Dir	SW		NNW		NNW		NW		NE		NE		NE		NNE		N		N	
Wind Spd/F	S 8		S 7		S 7		S 6		S 3		S 6		S 5		S 7		S 7		S 8	
Transparency																				
Depth	209		675		1250								3550						1400	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	17.6	33.91*	17.0	34.09*	17.4	34.08*	17.3	34.13*	16.6	34.12*	16.8	34.14*	16.6	34.17*	15.9	34.02*	15.6	34.04*	15.8	34.12*
10m	17.59	33.909	17.23	34.092	17.44	34.078	17.41	34.129	16.57	34.123	16.81	34.143	16.66	34.174	15.89	34.021	15.63	34.038	15.98	34.117
20m	17.59	33.912	17.23	34.093	17.46	34.079	17.42	34.129	16.58	34.126	16.81	34.144	16.66	34.173	15.11	34.076	15.56	34.067	15.99	34.117
30m	17.60	33.913	17.23	34.095	17.46	34.081	17.42	34.130	16.60	34.145	16.82	34.163	16.66	34.173	14.97	34.104	15.25	34.117	15.93	34.135
50m	17.60	33.916	12.79	34.465	17.12	34.130	14.31	34.398	12.50	34.434	12.87	34.459	12.95	34.445	9.68	34.381	11.38	34.466	12.31	34.464
75m	12.05	34.309	10.14	34.417	9.82	34.369	10.65	34.441	9.28	34.368	10.44	34.433	10.39	34.428	7.17	34.223	9.17	34.331	9.70	34.384
100m	5.72	34.193	8.75	34.330	8.07	34.279	8.63	34.317	7.45	34.246	8.76	34.329	9.81	34.389	5.96	34.174	7.61	34.256	8.19	34.287
125m	3.85	34.117	7.43	34.256	5.91	34.181	6.85	34.207	5.96	34.180	7.61	34.259	9.09	34.347	4.89	34.135	6.19	34.184	7.14	34.226
150m	2.93	34.098	6.01	34.183	4.60	34.134	5.70	34.162	4.87	34.133	6.38	34.196	8.36	34.298	3.49	34.076	4.88	34.137	5.97	34.171
200m	2.40	34.083	3.70	34.111	2.82	34.087	3.60	34.106	3.08	34.084	3.92	34.104	7.04	34.226	1.98	34.070	3.24	34.078	3.60	34.095
250m			2.42	34.083	1.68	34.078	1.80	34.079	2.02	34.080	2.23	34.085	4.42	34.125	1.39	34.075	1.90	34.076	2.18	34.077
300m			1.49	34.082	1.17	34.077	1.27	34.077	1.35	34.077	1.56	34.073	2.31	34.078	1.10	34.076	1.44	34.074	1.48	34.076
400m			1.01	34.082	0.81	34.073	0.83	34.073	0.93	34.074	1.10	34.076	1.30	34.075	0.94	34.084	0.91	34.072	1.11	34.084
500m			0.69	34.071	0.61	34.070	0.59	34.070	0.69	34.070	0.79	34.074	0.85	34.071	0.67	34.072	0.68	34.068	0.78	34.073
600m			0.52	34.069	0.47	34.068	0.45	34.068	0.51	34.069	0.55	34.068	0.58	34.068	0.50	34.070	0.50	34.068	0.53	34.068
700m																				
800m																				
900m																				
1000m																				

Table 3-35

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	CW14		CW15		CW16		CW17		CW18		CW19		CW20		CW21		CW22		CW23	
Latitude:N	43-40.0		43-40.1		43-59.9		44- 0.0		44-29.9		44-29.9		44-30.0		44-30.0		44-29.9		44-29.9	
Longitude:E	140-30.0		141- 0.1		141- 0.0		140-30.2		141-14.9		141-30.0		141- 0.1		140-40.1		140-20.1		140- 0.1	
Date	1996/10/19		1996/10/19		1996/10/19		1996/10/19		1996/10/19		1996/10/19		1996/10/19		1996/10/19		1996/10/20		1996/10/20	
Time(JST)	04:42		07:12		09:59		12:34		17:33		18:58		21:08		23:01		00:37		02:17	
Weather	C		C		BC		BC		R		C		C		C		C		R	
Air Temp.	11.0		11.6		12.5		11.4		9.7		9.8		9.9		10.0		9.9		9.5	
Bar	1011.8		1011.9		1012.5		1012.3		1013.0		1013.4		1013.6		1014.5		1015.3		1016.1	
Wind Dir	N		NNE		N		N		NW		NNE		NNE		N		N		N	
Wind Spd/F	S 7		S 7		S 4		S 5		S 9		S 7		S 7		S 8		S 10		S 10	
Transparency																				
Depth	815		301		403		720		114		75		196		742		254		570	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	16.4	33.94*	15.8	33.77*	15.7	34.06*	15.6	34.16*	14.3	34.12*	15.3	33.99*	14.2	34.17*	15.5	34.08*	15.1	34.13*	14.8	34.09*
10m	16.57	33.941	15.85	33.767	15.73	34.068	15.60	34.156	14.44	34.123	15.40	33.992	14.07	34.174	15.61	34.081	15.20	34.134	14.87	34.091
20m	16.51	33.952	15.85	33.767	15.62	34.097	15.57	34.154	14.33	34.158	15.16	34.016	14.08	34.174	15.58	34.100	15.20	34.135	14.87	34.091
30m	16.39	33.974	15.87	33.771	15.21	34.116	14.05	34.179	14.31	34.161	14.85	34.131	14.08	34.174	15.22	34.185	14.81	34.200	14.29	34.153
50m	16.39	33.975	12.07	34.337	14.81	34.141	12.99	34.129	13.96	34.174	14.52	34.172	13.75	34.190	11.52	34.397	11.07	34.417	10.36	34.239
75m	11.07	34.402	7.45	34.253	10.77	34.376	9.34	34.358	9.62	34.356			8.95	34.294	9.04	34.319	8.26	34.286	6.39	34.199
100m	8.33	34.277	5.81	34.170	8.79	34.312	7.40	34.246	8.12	34.274			7.75	34.247	7.78	34.251	6.74	34.208	5.20	34.149
125m	6.40	34.191	3.97	34.117	7.65	34.247	5.00	34.142					6.13	34.164			5.12	34.148	3.58	34.111
150m	5.17	34.141	3.19	34.100	6.39	34.185	4.05	34.112					4.44	34.125			4.12	34.115	2.60	34.088
200m	2.78	34.088	2.18	34.083	3.22	34.099	2.44	34.085									2.79	34.086	1.82	34.079
250m	1.78	34.079	1.52	34.077	1.74	34.080	1.79	34.077											1.30	34.074
300m	1.38	34.076			1.01	34.074	1.18	34.074											1.09	34.070
400m	0.91	34.072					0.76	34.069											0.69	34.066
500m	0.62	34.069					0.57	34.067											0.32	34.063
600m	0.52	34.067					0.49	34.065												
700m																				
800m																				
900m																				
1000m																				

Table 3-36

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	CW24		CW25		CW26		CW27		CW28		CHA01		CHA02		CHA03		CHA04		CHA05	
Latitude:N	44-30.2		44- 0.1		43-59.9		44- 0.0		43-11.3		43-44.7		43-47.3		43-49.6		43-47.0		43-50.2	
Longitude:E	139-30.2		140- 0.0		139-30.2		139- 0.1		140- 1.3		141-11.8		141-10.3		141-10.5		141- 9.0		141- 9.1	
Date	1996/10/20		1996/10/20		1996/10/20		1996/10/20		1996/10/21		1996/10/29		1996/10/29		1996/10/30		1996/11/01		1996/11/01	
Time(JST)	05:08		17:39		21:14		23:44		10:27		12:01		14:06		07:42		06:30		09:07	
Weather	C		BC		BC		C		BC		C		C		C		C		C	
Air Temp.	9.0		9.7		9.7		10.4		13.9		19.0		15.6							
Bar	1017.7		1021.6		1023.4		1023.4		1025.5		1013.5									
Wind Dir	M		NW		WNW		W		W		S		SW		S		S		SSE	
Wind Spd/F	S 8		S 5		S 4		S 5		S 6		S 6		S 6		S 14		S 2		S 4	
Transparency																				
Depth	484		494		1340		3000		273		155		213		223		235		251	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.4	33.17*	15.4	34.17*	14.6	34.15*	12.5	34.12*	16.1	34.13*	15.2	33.79*	15.1	33.84*	14.8	33.92*	13.6	33.13*	14.0	33.81*
10m	13.48	33.962	15.40	34.168	14.65	34.154	12.44	34.118	15.98	34.128	14.94	33.796	14.95	33.837	14.72	33.929	13.91	33.264	14.08	33.830
20m	13.48	34.052	15.40	34.168	14.65	34.154	12.45	34.118	15.99	34.128	14.94	33.800	14.91	33.856	14.66	33.957	14.63	34.048	14.07	33.839
30m	13.45	34.062	15.35	34.171	14.65	34.154	9.82	34.336	15.99	34.128	14.95	33.807	14.87	33.879	14.52	34.011	14.65	34.066	14.07	33.840
50m	5.13	34.137	10.09	34.412	9.65	34.346	7.46	34.233	15.99	34.129	14.99	33.898	14.80	33.921	14.45	34.039	14.62	34.064	13.75	34.069
75m	3.64	34.103	8.05	34.284	5.94	34.151	5.57	34.135	9.76	34.375	9.25	34.315	9.39	34.321	11.76	34.303	9.65	34.331	9.98	34.372
100m	2.81	34.091	6.94	34.221	4.23	34.087	5.19	34.125	7.23	34.228	6.59	34.202	7.19	34.222	7.83	34.235	6.77	34.191	7.71	34.230
125m	2.16	34.077	5.99	34.169	3.21	34.076	4.96	34.122	4.69	34.135	4.91	34.139	5.16	34.140	5.58	34.158	5.15	34.145	5.16	34.147
150m	1.89	34.075	4.63	34.120	2.42	34.077	4.60	34.119	3.55	34.106	4.09	34.112	3.69	34.107	3.88	34.113	4.01	34.107	3.72	34.111
200m	1.46	34.076	3.04	34.080	1.58	34.073	3.40	34.102	1.75	34.077			2.43	34.082	2.39	34.084	2.56	34.082	2.01	34.080
250m	1.17	34.071	1.90	34.072	1.26	34.075	2.36	34.086												
300m	0.92	34.071	1.43	34.073	1.06	34.073	1.63	34.074												
400m	0.62	34.066	0.93	34.068	0.70	34.067	1.07	34.071												
500m					0.51	34.065	0.77	34.071												
600m					0.38	34.063	0.53	34.066												
700m																				
800m																				
900m																				
1000m																				

Table 3-37

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199610		199610		199611		199611		199611		199611		199611		199611		199611		199611	
Station No	CHA06		CHA07		HW01		HW02		HW03		HW04		HW05		HW06		HW07		HW08	
Latitude:N	43-48.3		43-42.9		41-40.0		41-39.9		41-50.0		42- 0.0		42-10.0		42-14.9		42-19.8		42-20.8	
Longitude:E	141-11.2		141- 9.1		141- 5.1		141-38.6		141-34.9		141-30.0		141-24.0		141-40.9		141-23.8		141-35.1	
Date	1996/11/01		1996/11/05		1996/11/23		1996/11/23		1996/11/23		1996/11/24		1996/11/24		1996/11/24		1996/11/24		1996/11/25	
Time(JST)	11:00		11:57		13:30		16:42		23:30		06:06		14:20		18:02		21:52		01:30	
Weather					B		C		C		C		B		C		C		R	
Air Temp.	11.0				7.6		6.8		6.7		5.9		9.5		8.1		9.3		9.9	
Bar	1018.0				1018.0		1018.5		1021.0		1023.0		1022.0		1022.0		1021.0		1017.0	
Wind Dir	ESE				NW		WNW		NNE		W		SSE		E		SE		ESE	
Wind Spd/F	S 1		S		S 7		S 6		S 2		S 2		S 2		S 7		S 12		S 7	
Transparency																				
Depth	201				84		440		596		475		437				416		429	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	14.0	33.18*	10.0	33.89*	14.1*	34.08*	13.3*	34.10*	12.0*	34.10*	11.1*	34.06*	11.2*	34.10*	10.6*	34.13*	10.3*	34.12*	10.8*	34.10*
10m	14.49	33.702	13.87	33.889	14.12	34.076	13.28	34.105	12.04	34.102	11.09	34.064	11.11	34.115	10.62	34.132	10.49	34.131	10.82	34.131
20m	14.59	33.862	13.88	33.893	14.12	34.076	13.28	34.105	12.05	34.102	11.10	34.063	11.02	34.123	10.60	34.133	10.24	34.114	10.79	34.135
30m	14.58	33.897	13.81	33.988	14.11	34.076	12.60	34.130	12.05	34.102	11.10	34.064	10.98	34.128	10.42	34.130	10.22	34.107	10.81	34.135
50m	14.65	34.070	13.63	34.108	14.11	34.076	12.37	34.129	11.83	34.096	11.10	34.064	10.71	34.143	10.21	34.129	9.72	34.065	10.48	34.126
75m	9.73	34.322	9.85	34.349	14.11	34.076	11.71	34.127	10.74	34.069	11.10	34.064	9.51	34.042	10.19	34.127	9.07	34.048	10.09	34.116
100m	7.19	34.223	6.98	34.212			11.28	34.112	9.97	34.035	10.66	34.090	8.91	33.999	10.04	34.109	7.66	33.859	8.21	33.917
125m	5.04	34.144	4.72	34.137			10.98	34.081	9.08	34.016	10.23	34.079	8.64	33.975	8.90	34.004	6.55	33.772	7.36	33.876
150m	3.44	34.103	3.52	34.105			9.69	34.027	7.83	33.905	9.52	34.046	8.10	33.930	8.06	33.926	6.10	33.741	5.89	33.707
200m							6.96	33.853	5.41	33.689	5.88	33.727	5.46	33.682	5.45	33.692	3.76	33.521	4.06	33.559
250m							4.11	33.610	3.79	33.567	3.60	33.557	3.43	33.506	3.84	33.548	3.24	33.546	3.29	33.526
300m							2.92	33.548	2.60	33.539	2.66	33.559	2.86	33.534	2.84	33.546	2.71	33.555	2.96	33.563
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-38

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199611		199611		199611		199611		199612		199612		199612		199612		199612		199612	
Station No	HW09		HW10		HW11		HW12		J63		J62		J61		J41		J42		J43	
Latitude:N	42-17.9		42-12.1		42-14.9		42-11.9		41- 0.1		41- 8.8		41-20.1		42-30.0		42-30.0		42-29.9	
Longitude:E	141-49.1		141-56.0		142- 2.9		142-17.0		140- 0.0		140- 0.5		139-59.8		139-39.9		139-20.0		139- 0.0	
Date	1996/11/25		1996/11/25		1996/11/25		1996/11/25		1996/11/26		1996/11/26		1996/11/27		1996/11/27		1996/11/27		1996/11/27	
Time(JST)	06:32		09:24		10:47		14:17		22:27		23:25		00:40		07:05		08:44		10:21	
Weather	C		BC		C		BC		BC				C		BC		C			
Air Temp.	9.8		9.9		9.5		8.4		8.4		8.3		9.0		8.4		8.2		9.4	
Bar	1016.0		1017.0		1017.0		1017.0		1023.0		1022.0		1021.0		1017.0		1014.3		1012.3	
Wind Dir	W		WSW		WNW		NW		E		ESE		ESE		ESE		ESE		SE	
Wind Spd/F	S 7		S 9		S 13		S 17		S 8		S 9		S 9		S 8		S 11		S 11	
Transparency																				
Depth	536		750		540		415		506		105		214		1830		3240		3614	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	11.1*	34.12*	12.1*	33.94*	11.9*	34.05*	12.0*	34.03*	15.7	33.783	15.0	33.673	15.2	34.014	12.8	34.099	10.0	34.105	9.7	34.109
10m	11.07	34.116	12.35	34.101	11.92	34.065	12.00	34.075	15.79	33.768	15.10	33.702	15.25	34.006	12.81	34.092	9.49	34.107	9.37	34.108
20m	10.82	34.128	12.28	34.097	11.92	34.064	11.99	34.075	15.79	33.767	15.54	33.900	15.26	34.008	12.40	34.104	9.03	34.100	9.37	34.108
30m	10.62	34.134	12.12	34.087	11.92	34.064	11.96	34.075	15.78	33.764	15.54	33.972	15.25	34.009	11.90	34.206	9.01	34.096	9.37	34.109
50m	10.52	34.133	11.83	34.076	11.91	34.065	11.82	34.081	15.50	33.925	15.19	34.220	15.18	34.021	11.10	34.188	8.88	34.086	9.15	34.101
75m	10.35	34.145	11.62	34.042	11.89	34.068	11.30	34.069	15.43	34.045	12.95	34.465	14.58	34.040	9.00	34.125	3.65	34.072	2.89	34.089
100m	10.01	34.072	11.56	34.049	11.83	34.064	11.12	34.060	15.25	34.255			14.55	34.036	6.78	34.193	2.88	34.068	1.75	34.091
125m	8.41	33.989	10.17	34.067	10.52	34.065	10.80	34.062	13.65	34.548			14.36	34.082	4.77	34.124	2.22	34.070	1.45	34.092
150m	7.64	33.926	8.44	33.944	8.33	33.900	9.81	34.048	12.07	34.532			13.99	34.146	3.07	34.084	1.69	34.070	1.24	34.090
200m	5.08	33.641	5.12	33.615	6.08	33.731	7.36	33.848	7.12	34.237			10.57	34.416	1.95	34.063	1.34	34.089	1.10	34.089
250m	3.98	33.573	4.17	33.597	5.40	33.748	4.76	33.593	3.19	34.098					1.37	34.069	1.14	34.091	1.00	34.088
300m	3.11	33.558	3.61	33.609	3.90	33.647	3.15	33.535	1.34	34.077					1.12	34.076	1.05	34.092	0.93	34.088
400m									0.66	34.076					0.78	34.077	0.65	34.076	0.65	34.078
500m															0.57	34.072	0.50	34.075	0.51	34.075
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-39

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	J44		J45		J31		J32		J33		J34		J35		J36		J37		J38	
Latitude:N	42-29.9		42-30.1		43-20.0		43-29.9		43-30.0		43-30.0		43-30.1		43-30.1		43-29.8		43-30.0	
Longitude:E	138-40.0		138-20.0		141- 9.9		141- 0.1		140-40.2		140-20.2		140- 0.1		139-40.1		139-20.0		139- 0.2	
Date	1996/11/27		1996/11/27		1996/12/03		1996/12/03		1996/12/03		1996/12/03		1996/12/03		1996/12/03		1996/12/03		1996/12/03	
Time(JST)	11:56		13:32		09:56		11:15		12:51		14:41		16:36		18:57		20:50		22:47	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	10.1		10.2		3.3		4.9		3.3		3.7		3.6		2.3		2.9		2.9	
Bar	1009.0		1006.3		1022.6		1021.5		1021.0		1020.5		1020.5		1021.3		1020.5		1020.5	
Wind Dir	SE		SE		SW		SSW		WSW		WSW		WSW		WSW		WSW		W	
Wind Spd/F	S 8		S 7		S 6		S 7		S 13		S 11		S 12		S 11		S 11		S 11	
Transparency																				
Depth	3678		3648		40		96		688		640		1253		2102		3200		3387	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	9.9	34.136	8.0	34.071	8.8	34.090	7.2	32.991	9.7	34.134	9.3	34.168	7.0	34.198	7.1	34.203	7.3	34.290	8.5	34.274
10m	9.47	34.135	8.63	34.076	8.96	34.093	9.19	34.097	10.15	34.136	9.51	34.167	7.11	34.198	7.11	34.206	8.42	34.273	8.66	34.269
20m	9.47	34.136	8.62	34.076	8.97	34.092	9.23	34.134	10.15	34.136	8.94	34.188	7.11	34.198	7.11	34.206	8.38	34.272	8.67	34.269
30m	9.47	34.149	8.59	34.074	8.97	34.093	9.06	34.130	10.12	34.137	8.28	34.232	7.11	34.198	7.11	34.206	8.18	34.256	8.66	34.270
50m	9.19	34.183	7.98	34.047			9.07	34.161	9.83	34.130	7.65	34.220	7.10	34.197	7.12	34.206	7.37	34.218	8.67	34.270
75m	2.27	34.093	2.30	34.111			8.69	34.209	9.57	34.151	7.27	34.203	7.11	34.198	6.85	34.197	6.82	34.198	8.66	34.271
100m	1.93	34.104	1.75	34.099					9.25	34.191	7.06	34.198	7.04	34.195	5.13	34.142	5.94	34.092	7.93	34.276
125m	1.63	34.098	1.49	34.097					8.24	34.203	6.74	34.197	4.73	34.136	4.09	34.110	3.68	34.105	7.05	34.229
150m	1.45	34.098	1.33	34.092					7.24	34.205	5.02	34.147	3.53	34.099	3.05	34.087	2.76	34.093	6.18	34.185
200m	1.19	34.093	1.15	34.091					3.09	34.111	3.19	34.103	2.05	34.081	1.85	34.078	1.67	34.079	4.58	34.127
250m	1.13	34.094	1.04	34.091					1.81	34.084	1.90	34.084	1.44	34.080	1.29	34.080	1.34	34.081	3.14	34.106
300m	1.03	34.093	0.92	34.088					1.38	34.080	1.26	34.079	1.13	34.082	0.98	34.077	1.13	34.085	2.21	34.088
400m	0.72	34.080	0.65	34.078					0.85	34.076	0.81	34.076	0.88	34.080	0.64	34.074	0.91	34.085	1.24	34.081
500m	0.53	34.076	0.48	34.075					0.63	34.074	0.62	34.073	0.59	34.074	0.47	34.072	0.62	34.075	0.88	34.083
600m													0.42	34.072					0.65	34.075
700m																				
800m																				
900m																				
1000m																				

Table 3-40

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199702		199702		199702		199702	
Station No	J39		J27		J26		J25		J24		J23		J63		J62		J61		J51	
Latitude:N	43-30.0		44-29.9		44-30.1		44-30.0		44-30.0		44-30.3		41- 0.1		41- 9.9		41-19.8		41-29.9	
Longitude:E	138-30.2		139-29.9		139-59.9		140-19.0		140-39.8		141- 0.0		140- 0.1		140- 0.1		140- 0.1		139-49.9	
Date	1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/04		1997/01/28		1997/01/28		1997/01/28		1997/01/29	
Time(JST)	02:17		09:14		11:28		13:06		14:35		16:10		20:34		21:47		22:50		00:16	
Weather			C		BC		C				BC		B							
Air Temp.	3.5		4.4		3.9		2.9		3.7		4.5		3.8		3.8		3.8		3.3	
Bar	1019.6		1015.5		1014.4		1014.0		1013.5		1013.0		1001.7		1000.6		999.5		998.8	
Wind Dir	W		W		WNW		W		W		W		SSE		E		ENE		ENE	
Wind Spd/F	S 14		S 11		S 12		S 11		S 11		S 12		S 1		S 2		S 5		S 4	
Transparency																				
Depth	3400		522		574		259		142		195		505		106		231		1300	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.3	34.249	7.1	34.173	7.1	34.220	7.1	34.220	7.6	34.242	8.4	34.214	10.9	33.982	10.8	33.972	10.3	34.003	8.2	34.174
10m	8.40	34.249	6.12	34.172	7.10	34.215	7.13	34.216	7.70	34.238	8.57	34.209	11.08	33.980	10.98	33.971	10.44	34.001	8.41	34.173
20m	8.41	34.249	6.13	34.172	7.10	34.215	7.13	34.216	7.70	34.239	8.59	34.208	11.08	33.980	10.99	33.971	10.24	34.039	8.40	34.171
30m	8.41	34.249	6.13	34.172	7.10	34.215	7.11	34.212	7.71	34.238	8.57	34.209	11.08	33.980	10.99	33.971	9.80	34.072	8.26	34.167
50m	8.42	34.248	6.13	34.172	7.10	34.215	6.87	34.200	7.71	34.238	8.58	34.209	11.09	33.980	10.99	33.971	8.86	34.106	8.17	34.165
75m	8.42	34.248	3.15	34.107	7.08	34.213	6.80	34.196	5.76	34.177	8.50	34.210	11.06	33.986	10.99	33.972	7.94	34.150	8.02	34.153
100m	8.42	34.249	2.61	34.092	4.97	34.142	4.48	34.139	4.15	34.119	7.65	34.195	11.02	33.982			7.77	34.147	7.03	34.168
125m	5.75	34.162	2.20	34.085	3.85	34.103	3.17	34.104	3.39	34.104	5.87	34.176	11.01	33.987			7.64	34.153	6.14	34.160
150m	4.23	34.121	1.96	34.084	2.94	34.091	2.37	34.088			4.51	34.137	11.02	34.006			6.78	34.161	5.18	34.137
200m	2.52	34.062	1.44	34.082	1.88	34.082	1.81	34.082					9.43	34.259			5.92	34.141	4.00	34.106
250m	1.82	34.078	1.16	34.081	1.46	34.083							3.67	34.102					2.67	34.072
300m	1.30	34.080	0.93	34.078	1.15	34.082							1.89	34.075					1.65	34.075
400m	0.86	34.079	0.63	34.075	0.69	34.074							0.98	34.081					0.92	34.082
500m	0.61	34.074	0.40	34.072	0.53	34.072													0.58	34.079
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 3-41

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199702		199702		199702		199702		199702		199702		199702		199702		199702		199702	
Station No	JC22		J41		JC12		J31		JH01		J32		J33		J34		J42		J43	
Latitude:N	42- 0.0		42-30.0		42-59.9		43-20.0		43-20.0		43-30.0		43-29.9		43-30.0		42-30.0		42-30.0	
Longitude:E	139-40.1		139-40.2		140- 0.0		141-10.0		141-20.0		141- 0.0		140-40.1		140-20.0		139-20.1		139- 0.1	
Date	1997/01/29		1997/01/29		1997/01/29		1997/01/31		1997/01/31		1997/01/31		1997/01/31		1997/01/31		1997/02/02		1997/02/02	
Time(JST)	03:19		06:26		10:34		10:01		11:06		13:00		14:30		16:09		00:30		02:26	
Weather	C		S		F		B		BC		C		C		BC		C		BC	
Air Temp.	21.0		0.3		0.2		1.1		1.5		-2.7		3.0		2.9		1.7		1.2	
Bar	998.0		990.0		1000.0		1014.5		1014.3		1013.8		1014.0		1014.1		1016.5		1018.0	
Wind Dir	NNE		N		NW		ESE		WSW		NNE		NE		NE					
Wind Spd/F	S 3		S 6		S 6		S 4		S 2		S 6		S 7		S 8		S		S	
Transparency							8		6		19		18							
Depth	909		1821		1273		41		22		95		690		641		3300		3600	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.1	34.140	6.7	34.160	5.8	34.175	5.1	33.940	4.7	33.179	6.1	34.191	7.1	34.186	6.9	34.191	6.8	34.139	7.0	34.146
10m	8.26	34.138	7.05	34.159	5.90	34.180	5.68	34.146	4.88	33.329	6.99	34.191	7.18	34.189	6.96	34.188	7.81	34.147	7.51	34.139
20m	8.14	34.147	7.05	34.159	5.75	34.179	5.62	34.154			7.00	34.191	7.18	34.189	6.57	34.179	7.83	34.147	7.52	34.139
30m	8.07	34.150	7.05	34.158	5.50	34.178	5.42	34.146			6.98	34.192	7.17	34.189	6.39	34.180	7.83	34.147	7.51	34.139
50m	7.98	34.151	6.99	34.154	5.45	34.180					6.96	34.192	7.09	34.193	6.25	34.179	7.83	34.147	6.15	34.186
75m	7.77	34.162	6.75	34.155	5.13	34.176					6.94	34.193	7.06	34.191	5.16	34.159	7.45	34.163	5.91	34.173
100m	6.44	34.170	6.20	34.162	4.18	34.150						6.78	34.193	4.59	34.131	5.62	34.152	4.87	34.147	
125m	5.16	34.130	4.80	34.126	3.16	34.087						6.08	34.196	3.52	34.109	4.34	34.119	3.36	34.090	
150m	3.40	34.107	3.60	34.105	2.20	34.070						5.00	34.179	2.94	34.093	3.69	34.100	2.40	34.070	
200m	2.01	34.083	2.24	34.081	1.59	34.071						2.51	34.088	1.72	34.082	2.15	34.077	1.41	34.076	
250m	1.51	34.079	1.61	34.078	1.20	34.082						1.64	34.082	1.41	34.079	1.53	34.076	1.19	34.081	
300m	1.19	34.080	1.21	34.081	1.11	34.093						1.24	34.083	1.21	34.080	1.16	34.085	1.10	34.088	
400m	0.77	34.080	0.98	34.093	0.97	34.094						0.79	34.080	0.97	34.081	0.91	34.086	0.88	34.089	
500m	0.56	34.078	0.66	34.081	0.68	34.082						0.58	34.077	0.76	34.079	0.62	34.077	0.64	34.081	
600m			0.49	34.077																
700m																				
800m																				
900m																				
1000m																				

Table 3-42

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199702		199702		199702		199702		199702		199702		199702		199702		199702		199702	
Station No	J44		J45		J46		J47		J54		J55		J56		J57		J58		J53	
Latitude:N	42-30.1		42-30.0		42-30.0		42-30.1		41-29.9		41-30.1		41-30.1		41-30.1		41-30.1		41-30.0	
Longitude:E	138-40.1		138-20.2		138- 0.1		137-30.1		139- 0.0		138-40.1		138-20.1		138- 0.1		137-30.0		139-15.0	
Date	1997/02/02		1997/02/02		1997/02/02		1997/02/02		1997/02/05		1997/02/05		1997/02/06		1997/02/06		1997/02/06		1997/02/06	
Time(JST)	04:22		06:11		07:59		10:27		20:43		22:30		00:11		01:55		04:20		14:36	
Weather	C		C		B		BC		B		C		BC		BC		BC		C	
Air Temp.	0.9		0.2		-0.8		0.2		1.6		1.8		1.7		1.2		1.3		4.3	
Bar	1018.7		1019.5		1021.0		1021.0		1017.5		1016.5		1016.0		1015.0		1014.0		1009.5	
Wind Dir	NW		WNW		WNW		W		WSW		SW		WNW		W		WNW		WNW	
Wind Spd/F	S 6		S 6		S 6		S 6		S 4		S 5		S 4		S 3		S 3		S 2	
Transparency							21										13			
Depth	3682		3617		3678		3678		1329		3008		3700		3700		3669		1134	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.9	34.162	5.3	34.190	3.2	34.168	3.4	34.160	9.9	33.968	9.0	34.054	9.0	34.018	5.2	34.132	2.7	34.148	9.9	34.011
10m	6.12	34.162	5.73	34.169	3.35	34.166	3.42	34.160	10.09	33.968	9.23	34.056	9.19	34.018	5.35	34.131	2.82	34.146	10.02	34.010
20m	6.11	34.163	5.73	34.169	3.33	34.164	3.42	34.160	10.09	33.968	9.24	34.056	9.19	34.017	5.36	34.131	2.83	34.146	10.02	34.010
30m	6.08	34.165	5.32	34.144	3.31	34.164	3.42	34.160	10.09	33.968	9.23	34.056	9.19	34.018	5.36	34.130	2.82	34.146	10.02	34.010
50m	5.35	34.176	4.05	34.179	3.11	34.155	3.41	34.160	10.09	33.968	8.74	34.113	8.82	34.011	5.05	34.136	2.67	34.146	10.02	34.009
75m	4.73	34.156	3.73	34.169	3.09	34.156	3.41	34.160	9.54	34.169	5.28	34.147	4.09	34.166	2.81	34.147	2.55	34.144	9.77	34.115
100m	3.85	34.143	3.68	34.165	3.08	34.155	3.41	34.160	7.33	34.212	4.48	34.114	2.48	34.123	2.49	34.125	1.64	34.115	5.43	34.155
125m	2.38	34.098	2.66	34.116	1.59	34.088	3.34	34.155	4.93	34.134	3.90	34.108	1.76	34.106	1.50	34.100	1.35	34.099	4.52	34.123
150m	1.54	34.090	1.67	34.085	1.37	34.085	1.67	34.106	3.96	34.112	3.53	34.100	1.60	34.100	1.47	34.100	1.22	34.095	4.05	34.111
200m	1.33	34.094	1.18	34.083	1.20	34.090	1.32	34.095	2.16	34.078	2.11	34.070	1.19	34.091	1.14	34.091	1.11	34.095	3.48	34.103
250m	1.11	34.095	1.11	34.095	1.07	34.092	1.16	34.096	1.39	34.076	1.33	34.080	1.04	34.090	1.06	34.092	0.98	34.093	2.03	34.077
300m	0.97	34.092	1.03	34.094	0.97	34.092	1.07	34.096	1.19	34.081	1.10	34.085	0.96	34.092	0.97	34.092	0.88	34.089	1.53	34.070
400m	0.72	34.084	0.71	34.084	0.74	34.085	0.74	34.084	0.82	34.083	0.90	34.088	0.67	34.082	0.72	34.084	0.66	34.081	0.77	34.079
500m	0.54	34.080	0.53	34.079	0.55	34.079	0.54	34.079	0.60	34.078	0.64	34.079	0.52	34.079	0.49	34.079	0.47	34.079	0.56	34.077
600m					0.43	34.078														
700m																				
800m																				
900m																				
1000m																				

Table 3-43

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199702		199702		199702		199702		199702		199702		199703		199703		199703		199703	
Station No	J52		CJ33		CJ32		CJ31		CJH01		CJ331		CJ33		CJ32		CJ31		CJH01	
Latitude:N	41-29.9		43-30.0		43-30.0		43-20.1		43-22.0		43-31.1		43-30.0		43-30.0		43-20.0		43-22.0	
Longitude:E	139-30.1		140-40.1		140-59.9		141-10.2		141-24.0		140-44.6		140-40.2		141- 0.0		141-10.0		141-23.9	
Date	1997/02/06		1997/02/24		1997/02/24		1997/02/24		1997/02/24		1997/02/25		1997/03/17		1997/03/17		1997/03/17		1997/03/17	
Time(JST)	15:54		11:44		13:54		15:26		16:27		03:31		11:31		14:34		15:58		17:08	
Weather	BC		BC		C		C		C		C		C		C		C		C	
Air Temp.	4.8		6.9		7.1		5.6		5.8		0.7		1.4		0.5		0.8		0.8	
Bar	1009.5		1020.2		1020.3		1020.7		1016.9		1023.2		1023.3		1023.3		1023.3		1023.6	
Wind Dir	NW		WSW		S		S		NNW		S		NNW		NW		WNW		WNW	
Wind Spd/F	S 4		S 11		S		S 1		S 1		S 5		S 6		S 6		S 6		S 5	
Transparency	19		16		9		7		3		17		14		6		5		5	
Depth	1670		687		97		39		21		560		689		97		34		21	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	9.5	34.009	5.6	34.189	4.8	34.042	4.6	33.858	3.4	32.253	5.3	34.16*	3.8	34.155	4.3	34.159	3.2	33.617	2.8	32.954
10m	9.59	34.010	5.52	34.185	4.79	34.060	4.53	33.878	3.44	33.677	5.32	34.157	3.83	34.152	4.30	34.158	3.56	33.986	3.11	33.641
20m	9.42	34.023	5.51	34.186	5.02	34.107	4.57	33.928			5.32	34.157	3.81	34.154	4.27	34.158	3.85	34.144		
30m	9.05	34.070	5.51	34.186	5.11	34.125	4.58	33.951			5.32	34.157	3.81	34.154	4.25	34.158	3.84	34.151		
50m	8.77	34.071	5.51	34.186	5.14	34.129					5.32	34.157	3.80	34.154	4.24	34.159				
75m	7.77	34.127	5.51	34.185	5.27	34.151					5.32	34.157	3.66	34.149	4.09	34.155				
100m	7.49	34.133	5.51	34.186							5.34	34.161	3.43	34.154						
125m	6.08	34.133	5.51	34.186							5.26	34.168	3.29	34.146						
150m	4.28	34.122	5.43	34.181							3.43	34.120	3.03	34.128						
200m	2.30	34.074	2.10	34.082							1.96	34.082	2.50	34.097						
250m	1.43	34.074	1.34	34.081							1.37	34.080	1.47	34.081						
300m	1.14	34.080	1.02	34.080							1.13	34.080	1.13	34.080						
400m	0.78	34.079	0.73	34.077							0.78	34.078	0.74	34.079						
500m	0.49	34.075	0.58	34.076							0.59	34.077	0.55	34.076						
600m			0.52	34.075									0.49	34.075						
700m																				
800m																				
900m																				
1000m																				

Table 3-44

Table 3 Results of serial oceanographic observations. Hokkaido Central Fisheries Experimental Station

Stn-prefix	199703		199703		199703		199703		199703		199703		199703							
Station No	CJ332		CJ34		CJ35		CJ36		CJ37		CJ38		CJ39							
Latitude:N	43-30.0		43-30.1		43-30.0		43-30.1		43-30.0		43-30.1		43-30.1							
Longitude:E	140-40.3		140-20.1		140- 0.0		139-40.1		139-20.1		139- 0.1		138-30.0							
Date	1997/03/17		1997/03/18		1997/03/18		1997/03/18		1997/03/18		1997/03/18		1997/03/18							
Time(JST)	21:51		05:29		07:09		08:50		10:32		12:16		14:36							
Weather	C		BC		BC		B		BC		C		BC							
Air Temp.	0.5		0.5		3.5		5.3		5.7		3.3		3.7							
Bar	1024.8		1023.0		1023.0		1022.1		1021.3		1020.2		1018.7							
Wind Dir	WNW		WSW		WSW		SW		SW		WSW		WSW							
Wind Spd/F	S 5		S 7		S 6		S 7		S 8		S 8		S 6							
Transparency					15		18		18		17		17							
Depth	688		650		1251		2065				3400		3440							
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD							
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	4.1	34.146	4.6	34.161	4.2	34.155	4.5	34.159	3.6	34.162	3.2	34.177	4.3	34.161						
10m	4.29	34.148	4.69	34.158	4.32	34.151	4.51	34.158	3.59	34.156	3.10	34.173	4.29	34.156						
20m	4.29	34.148	4.70	34.158	3.72	34.151	4.49	34.157	3.49	34.157	3.04	34.171	4.25	34.156						
30m	4.29	34.147	4.70	34.157	3.59	34.149	4.40	34.154	3.39	34.159	3.00	34.173	3.86	34.157						
50m	3.71	34.141	4.69	34.159	3.32	34.134	4.18	34.152	3.33	34.158	2.97	34.171	3.22	34.159						
75m	3.62	34.152	4.67	34.158	3.15	34.128	3.35	34.157	3.08	34.155	2.88	34.164	3.04	34.160						
100m	3.56	34.154	4.62	34.157	2.75	34.111	2.95	34.157	3.03	34.155	2.67	34.152	2.96	34.158						
125m	3.16	34.137	4.36	34.150	2.03	34.079	2.79	34.147	2.91	34.156	2.69	34.159	2.87	34.159						
150m	3.03	34.128	4.02	34.149	1.73	34.075	2.32	34.118	2.83	34.157	2.60	34.157	2.76	34.155						
200m	2.49	34.097	2.74	34.105	1.37	34.077	1.40	34.077	2.37	34.125	2.50	34.154	2.46	34.133						
250m	1.44	34.081	1.77	34.082	1.11	34.082	1.08	34.084	1.31	34.081	2.32	34.146	1.94	34.111						
300m	1.11	34.081	1.28	34.080	0.99	34.085	0.96	34.086	1.09	34.085	1.72	34.103	1.23	34.084						
400m	0.72	34.079	0.83	34.081	0.79	34.083	0.68	34.078	0.82	34.082	1.02	34.082	0.88	34.083						
500m	0.54	34.076	0.60	34.077	0.57	34.076	0.57	34.077	0.59	34.077	0.71	34.079	0.62	34.078						
600m	0.47	34.075																		
700m																				
800m																				
900m																				
1000m																				

Table 3-45

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199605		199605		199605		199605	
Station No	P66		P65		P64		P63		P62		P61		HKG004		HKG003		HKG002		HFK001	
Latitude:N	41-30.0		41-40.0		41-50.0		42- 0.0		42-10.2		42-20.0		42- 4.3		42- 4.6		42- 4.5		42- 2.5	
Longitude:E	141-20.5		141-19.9		141-20.0		141-20.2		141-20.0		141-19.9		141- 9.1		141- 4.2		140-57.4		140-57.4	
Date	1996/04/15		1996/04/15		1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/05/07		1996/05/07		1996/05/07		1996/05/13	
Time(JST)	21:38		23:05		00:25		01:42		03:06		04:26		13:57		14:37		15:30		15:04	
Weather	BC		BC		BC		BC		BC		C		C		C		C			
Air Temp.	1.5		1.0		1.0		1.0		0.0		0.0		5.8		3.9		4.2			
Bar	1017.0		1017.0		1017.0		1017.0		1016.0		1017.0		1013.0		1013.5		1014.0			
Wind Dir	WNW		WSW		E				NE		NE		NW		S		W			
Wind Spd/F	S 3		S 1		S 1		S 1		S 2		S 2		S 3		S 5		S 4		S	
Transparency													8		9		9			
Depth	242		233		288		314		365		242		125		103		84			
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	7.5	34.348	2.8	32.942	3.1	32.873	2.9	32.842	2.9	32.758	2.9	32.866	5.9	32.343	5.9	32.324	6.2	32.405	5.3*	32.18*
10m	7.65	34.054	2.75	32.753	3.08	32.785	2.79	32.773	2.83	32.702	2.89	32.762	4.41	32.672	5.45	32.334	5.72	32.372	5.23	32.212
20m	7.62	34.057	3.00	32.829	2.98	32.784	2.91	32.913	2.59	32.750	2.55	32.778	3.55	32.789	4.42	32.758	4.81	32.713	5.07	32.260
30m	7.53	34.056	3.36	32.955	2.82	32.789	3.84	33.218	2.41	32.866	2.36	32.778	2.89	32.879	3.71	32.786	3.83	32.782	4.23	32.670
50m	7.45	34.092	4.33	33.293	2.31	32.934	4.34	33.379	4.10	33.223	2.92	33.071	3.50	33.093	3.28	33.003	3.33	33.054	2.90	32.883
75m	7.44	34.094	4.77	33.476	3.88	33.253	4.31	33.426	4.61	33.403	5.15	33.468	3.90	33.267	4.00	33.340	3.50	33.348	3.35	33.136
100m	7.44	34.094	6.56	33.833	4.59	33.425	4.38	33.476	4.78	33.521	5.66	33.575	4.16	33.418						
125m	7.44	34.093	7.30	34.051	4.37	33.468	5.26	33.666	5.46	33.683	5.32	33.543								
150m	7.45	34.091	7.33	34.073	4.45	33.513	4.83	33.665	4.74	33.629	4.47	33.468								
200m	7.37	34.094	6.55	33.981	4.70	33.675	4.28	33.646	5.17	33.768	4.99	33.667								
250m					3.17	33.605	3.62	33.615	4.73	33.744										
300m							3.21	33.616	3.10	33.615										
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-1

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605		
Station No	HFK002		HFK003		HFK004		HFK005		HFK006		HFK007		HFK008		HFK009		HFK010		HFK011		
Latitude:N	42- 5.0		42- 9.9		42-14.9		42-17.0		42-15.1		42-10.1		42- 7.7		42-10.0		42-12.5		42-14.9		
Longitude:E	141- 0.0		141- 5.1		141-10.0		141- 5.2		141- 0.1		140-55.0		140-52.5		140-45.0		140-47.4		140-50.0		
Date	1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		
Time(JST)	15:32		16:18		17:06		17:54		18:39		19:24		19:50		20:39		21:08		21:37		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	6.2*	31.96*	5.3*	32.55*	5.2*	32.62*	5.7*	32.39*	6.2*	31.99*	5.8*	32.30*	5.7*	32.29*	5.9*	32.20*	6.1*	32.34*	5.7*	32.37*	
10m	4.83	32.269	4.64	32.649	4.32	32.632	5.73	32.425	5.31	32.166	5.42	32.302	5.30	32.317	5.48	32.246	5.32	32.428	5.50	32.373	
20m	4.12	32.636	3.63	32.903	4.29	32.853	5.40	32.803	4.50	32.542	4.50	32.369	4.93	32.408	5.20	32.481	5.00	32.423	4.99	32.440	
30m	3.91	32.856	3.54	32.918	3.55	32.883	4.79	33.400	3.93	32.701	4.35	32.650	4.68	32.496	4.64	32.592	4.15	32.659	4.80	32.485	
50m	3.77	32.950	3.83	32.995	3.26	32.931	4.11	33.864	3.64	32.823	3.87	32.852	3.56	32.878	3.45	32.815	3.20	32.883	3.29	32.845	
75m	3.80	33.052	3.84	33.024	4.21	33.187							3.34	33.219	3.32	33.243					
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-2

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605		
Station No	HFK012		HFK013		HFK014		HFK015		HFK016		HFK017		HFK018		HFK019		HFK020		HFK021		
Latitude:N	42-17.5		42-25.1		42-20.0		42-15.1		42-10.0		42-15.0		42-17.5		42-19.9		42-22.4		42-24.9		
Longitude:E	140-52.5		140-50.2		140-45.0		140-40.0		140-35.1		140-29.9		140-32.4		140-34.9		140-37.4		140-39.8		
Date	1996/05/13		1996/05/13		1996/05/13		1996/05/14		1996/05/14		1996/05/14		1996/05/14		1996/05/14		1996/05/14		1996/05/14		
Time(JST)	22:05		23:02		23:48		00:33		01:23		02:10		02:38		03:05		04:26		04:55		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	5.6*	32.40*	6.4*	32.26*	6.5*	32.21*	6.7*	32.26*	6.3*	32.09*	6.6*	32.10*	6.5*	32.31*	6.8*	32.09*	6.5*	32.23*	5.9*	32.25*	
10m	5.16	32.413	6.13	32.266	6.33	32.226	6.29	32.299	5.69	32.390	6.09	32.280	5.77	32.378	6.36	32.247	6.53	32.253	5.87	32.258	
20m	5.12	32.425	5.38	32.433	5.79	32.272	6.01	32.301	5.17	32.442	5.23	32.432	5.67	32.380	6.19	32.276	5.72	32.396	5.78	32.336	
30m	4.98	32.453	4.13	32.712	4.44	32.664	5.07	32.507	4.21	32.646	4.92	32.521	5.53	32.406	4.18	32.658	4.64	32.602	4.34	32.648	
50m	3.52	32.850			3.06	33.045	3.34	32.818	3.43	32.842	3.36	32.857	3.47	32.814	3.35	32.800	3.42	32.791	3.32	32.829	
75m							3.07	33.104			3.24	33.286	3.05	33.070	3.07	33.063	3.05	33.196			
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-3

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605		
Station No	HFK022		HFK023		HFK024		HFK025		HFK104		HFK103		HFK102		HFK101		HFK108		HFK107		
Latitude:N	42-27.5		42-30.0		42-25.1		42-20.0		42-15.1		42-10.1		42- 5.2		42- 2.7		42- 7.5		42-10.1		
Longitude:E	140-42.5		140-35.1		140-30.1		140-25.1		141- 9.9		141- 5.0		141- 0.0		140-57.4		140-52.6		140-54.8		
Date	1996/05/14		1996/05/14		1996/05/14		1996/05/14		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		
Time(JST)	05:24		06:10		06:57		07:46		09:58		10:45		11:30		11:57		12:41		13:09		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	6.2*	32.19*	7.0*	31.99*	6.8*	32.07*	6.3*	32.33*	5.0*	32.40*	5.4*	32.40*	5.3*	32.49*	6.4*	32.20*	5.7*	32.33*	5.6*	32.31*	
10m	5.77	32.311	6.43	32.192	6.78	32.067	6.03	32.340	4.89	32.420	5.27	32.410	5.17	32.567	6.01	32.280	5.58	32.377	5.45	32.326	
20m	5.55	32.363	6.25	32.337	6.11	32.238	5.64	32.396	5.12	32.793	4.41	32.532	4.17	32.786	4.76	32.503	5.36	32.421	4.39	32.538	
30m	4.21	32.690	4.70	32.588	5.18	32.411	3.95	32.710	4.34	32.899	3.99	32.873	3.80	32.903	4.35	32.611	4.05	32.866	4.18	32.825	
50m	3.39	32.845	3.33	32.838	3.40	32.806	3.31	32.867	3.57	33.034	4.03	32.904	3.71	32.955	3.89	32.950	4.01	33.000	3.97	32.947	
75m					3.16 33.128				5.33 33.463		4.01 33.008		4.38 33.204		4.32 33.172		3.68 33.203				
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-4

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605		
Station No	HFK106		HFK105		HFK112		HFK111		HFK110		HFK109		HFK116		HFK116		HFK114		HFK113		
Latitude:N	42-14.9		42-17.5		42-17.6		42-15.1		42-12.7		42-10.1		42- 9.8		42-14.9		42-19.9		42-25.0		
Longitude:E	141- 0.0		141- 4.9		140-52.7		140-50.0		140-47.4		140-45.1		140-34.8		140-40.1		140-45.0		140-49.9		
Date	1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		
Time(JST)	13:56		14:30		15:35		16:02		16:27		16:54		18:07		18:58		19:48		20:34		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	6.2*	32.29*	5.0*	32.52*	6.5*	32.27*	6.1*	32.34*	6.0*	32.31*	6.5*	32.30*	6.7*	32.25*	7.0*	32.10*	7.0*	31.86*	6.6*	32.23*	
10m	4.85	32.484	4.64	32.602	6.32	32.304	5.98	32.337	5.77	32.374	6.46	32.309	6.67	32.259	6.86	32.118	6.18	32.194	6.51	32.251	
20m	4.16	32.680	3.73	32.758	5.12	32.421	5.34	32.415	5.58	32.412	5.70	32.374	5.19	32.450	6.18	32.239	5.72	32.312	4.52	32.667	
30m	3.69	32.787	3.84	32.827	4.27	32.637	4.70	32.512	4.76	32.520	4.61	32.550	4.30	32.638	4.58	32.611	3.72	32.763	3.50	32.808	
50m	3.22	32.870	3.84	32.959	3.18	32.898	3.24	32.878	3.72	32.887	3.18	32.958	3.30	32.882	3.48	32.806	3.22	32.898			
75m									3.32	33.030	3.30	33.214			3.26	33.138					
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-5

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605	
Station No	HFK122		HFK121		HFK120		HFK119		HFK118		HFK117		HFK125		HFK124		HFK123		HKG001	
Latitude:N	42-27.5		42-25.1		42-22.6		42-20.2		42-17.6		42-15.1		42-20.0		42-25.0		42-29.7		42- 5.8	
Longitude:E	140-42.5		140-40.0		140-37.5		140-35.0		140-32.6		140-30.1		140-25.0		140-29.9		140-34.8		140-50.4	
Date	1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/17		1996/05/17		1996/05/17		1996/05/17	
Time(JST)	21:29		21:53		22:18		22:44		23:31		23:59		00:43		01:30		03:30		09:15	
Weather																				
Air Temp.																				
Bar																				
Wind Dir																				
Wind Spd/F	S		S		S		S		S		S		S		S		S		S 4	
Transparency																				
Depth																				
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.9*	32.10*	7.0*	32.06*	7.0*	32.09*	6.9*	32.14*	6.8*	32.16*	6.8*	32.20*	6.8*	32.10*	6.7*	32.15*	6.8*	32.11*	7.4	32.352
10m	6.73	32.159	7.01	32.057	6.98	32.095	6.91	32.142	6.82	32.157	6.83	32.201	6.80	32.139	6.64	32.222	6.69	32.207	5.49	32.340
20m	5.33	32.433	5.98	32.290	6.37	32.250	6.65	32.187	6.35	32.245	6.36	32.274	6.13	32.326	5.89	32.355	5.14	32.471	5.12	32.430
30m	3.95	32.741	4.92	32.513	4.99	32.463	5.32	32.514	5.31	32.496	5.49	32.380	5.00	32.498	4.92	32.492	4.20	32.668	4.41	32.730
50m	3.13	32.919	3.38	32.818	3.36	32.802	3.46	32.797	3.58	32.788	3.34	32.809	3.38	32.844	3.40	32.843	3.33	32.883	3.52	32.954
75m					3.15	33.220	3.08	33.074	3.04	33.024	3.15	33.126			3.18	33.243				
100m																				
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-6

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605		
Station No	HFK201		HFK202		HFK203		HFK204		HFK205		HFK206		HFK207		HFK208		HFK209		HFK210		
Latitude:N	42- 2.7		42- 5.0		42-10.0		42-15.0		42-17.5		42-15.1		42-10.1		42- 7.6		42-10.0		42-12.5		
Longitude:E	140-57.4		140-59.9		141- 4.9		141- 9.9		141- 5.0		141- 0.0		140-55.0		140-52.6		140-45.2		140-47.4		
Date	1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		
Time(JST)	10:02		10:27		11:11		11:57		12:31		13:04		13:48		14:14		14:58		15:23		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	6.3*	32.31*	5.7*	32.40*	6.7*	32.25*	4.5*	32.52*	5.6*	32.35*	5.9*	32.27*	6.6*	32.32*	5.6*	32.42*	7.3*	32.14*	6.5*	32.26*	
10m	6.13	32.357	4.42	32.635	6.50	32.254	4.87	32.633	5.03	32.423	5.32	32.306	6.40	32.326	5.55	32.419	6.71	32.287	6.45	32.257	
20m	4.52	32.641	3.90	32.745	4.27	32.682	4.43	32.652	4.48	32.529	4.83	32.455	5.10	32.432	5.50	32.426	5.18	32.456	5.07	32.429	
30m	4.04	32.893	4.17	32.875	4.00	32.796	3.02	32.690	3.73	32.687	3.78	32.686	4.67	32.583	4.61	32.572	4.46	32.638	4.49	32.605	
50m	3.62	32.975	3.90	32.962	3.38	32.906	3.17	32.808	3.56	32.802	3.75	32.818	3.45	32.835	3.60	32.904	3.21	32.887	3.50	32.859	
75m	4.37	33.218	3.47	33.170	4.55	33.260	3.89	33.011					3.33	33.119	3.23	33.223	3.33	33.178			
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-7

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605		
Station No	HFK211		HFK212		HFK213		HFK214		HFK215		HFK216		HFK217		HFK218		HFK219		HFK220		
Latitude:N	42-15.0		42-17.4		42-25.0		42-20.1		42-15.1		42-10.1		42-15.0		42-17.6		42-20.0		42-22.6		
Longitude:E	140-50.0		140-52.4		140-50.1		140-45.0		140-39.9		140-34.8		140-29.9		140-32.6		140-34.9		140-37.5		
Date	1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		1996/05/18		
Time(JST)	15:50		16:15		17:05		17:53		18:39		19:28		20:10		20:36		21:05		22:02		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	6.3*	32.35*	5.7*	32.13*	7.2*	32.07*	7.3*	32.14*	6.9*	32.16*	6.7*	32.20*	7.2*	32.08*	7.0*	32.12*	7.2*	32.10*	7.3*	32.15*	
10m	6.28	32.349	5.66	32.133	7.15	32.105	7.34	32.143	6.89	32.166	6.68	32.197	7.12	32.102	6.99	32.124	7.16	32.101	7.29	32.148	
20m	6.14	32.354	5.79	32.218	5.49	32.434	7.17	32.165	5.63	32.360	4.64	32.556	5.09	32.498	6.72	32.207	7.13	32.112	6.29	32.293	
30m	4.76	32.547	5.47	32.408	4.13	32.724	4.41	32.669	4.52	32.563	3.74	32.752	3.99	32.676	5.03	32.523	5.51	32.481	5.40	32.411	
50m	3.40	32.898	3.22	32.888			3.20	32.956	3.35	32.800	3.26	32.892	3.27	32.907	3.34	32.804	3.51	32.821	3.41	32.803	
75m									3.31	33.107			3.18	33.223	3.11	33.071	3.20	32.981	3.16	33.134	
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-8

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605		
Station No	HFK221		HFK222		HFK223		HFK224		HFK225		HFK301		HFK302		HFK303		HFK304		HFK305		
Latitude:N	42-24.9		42-27.5		42-30.1		42-25.1		42-20.1		42-17.6		42-15.1		42-10.1		42- 7.6		42-10.1		
Longitude:E	140-40.1		140-42.5		140-35.0		140-29.9		140-25.0		141- 4.9		140-59.9		140-55.0		140-52.5		140-45.1		
Date	1996/05/18		1996/05/18		1996/05/18		1996/05/19		1996/05/19		1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/20		
Time(JST)	22:29		22:56		23:40		00:29		01:16		07:57		08:31		09:16		09:42		10:25		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	7.2*	32.18*	7.1*	32.19*	7.1*	32.19*	7.0*	32.18*	6.9*	32.23*	6.6*	32.53*	5.7*	32.42*	5.8*	32.36*	6.2*	32.37*	5.8*	32.36*	
10m	7.20	32.184	7.14	32.194	7.05	32.196	7.01	32.183	6.92	32.233	5.61	32.525	5.71	32.425	5.74	32.371	5.71	32.421	5.58	32.369	
20m	6.23	32.304	5.94	32.348	5.64	32.387	6.39	32.313	5.73	32.404	4.47	32.474	4.66	32.515	4.79	32.524	4.62	32.572	4.18	32.646	
30m	4.80	32.523	4.66	32.633	4.70	32.546	5.39	32.436	4.24	32.670	3.81	32.523	3.76	32.741	4.12	32.675	4.38	32.816	3.66	32.748	
50m	3.31	32.844	3.47	32.817	3.35	32.854	3.45	32.851	3.31	32.863	3.53	32.775	3.73	32.818	3.42	32.849	3.53	32.866	3.18	32.901	
75m							3.22		33.270								3.29		33.291		
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-9

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605		
Station No	HFK306		HFK307		HFK308		HFK309		HFK310		HFK311		HFK312		HFK313		HFK314		HFK315		
Latitude:N	42-12.5		42-14.9		42-17.5		42-24.9		42-20.1		42-15.1		42-10.1		42-15.0		42-17.5		42-20.0		
Longitude:E	140-47.3		140-49.8		140-52.4		140-50.0		140-45.0		140-40.1		140-35.0		140-30.0		140-32.4		140-34.9		
Date	1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/20		
Time(JST)	10:50		11:17		11:42		12:33		13:15		14:00		14:46		15:27		15:52		16:17		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	6.4*	32.25*	6.1*	32.36*	5.7*	32.09*	6.7*	32.22*	7.3*	32.19*	7.4*	32.16*	5.4*	32.44*	6.2*	32.36*	6.9*	32.19*	7.3*	32.15*	
10m	6.36	32.253	6.04	32.365	5.62	32.145	6.57	32.270	7.27	32.187	7.32	32.159	5.05	32.501	6.09	32.357	6.76	32.224	7.14	32.156	
20m	5.14	32.417	5.97	32.372	5.69	32.255	6.26	32.311	7.20	32.208	7.26	32.160	4.70	32.568	5.76	32.396	6.53	32.270	7.06	32.160	
30m	4.71	32.630	4.73	32.556	5.54	32.295	5.67	32.380	4.55	32.643	4.85	32.563	3.74	32.777	4.73	32.547	5.27	32.433	5.87	32.365	
50m	3.39	32.882	3.32	32.853	3.45	32.856			3.20	32.902	3.39	32.822	3.27	32.879	3.42	32.808	3.47	32.799	3.56	32.792	
75m	3.32	33.305									3.17	33.117			3.10	33.031	3.05	32.988	3.11	33.088	
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-10

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199606		199606		199606		199606	
Station No	HFK316		HFK317		HFK318		HFK319		HFK320		HFK321		P66		P65		P64		P63	
Latitude:N	42-22.7		42-25.0		42-27.6		42-30.1		42-25.0		42-20.0		41-29.8		41-40.0		41-50.0		41-59.9	
Longitude:E	140-37.6		140-40.1		140-42.4		140-35.2		140-30.0		140-25.1		141-19.9		141-20.2		141-20.0		141-20.1	
Date	1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/20		1996/05/27		1996/05/27		1996/05/27		1996/05/27	
Time(JST)	16:53		17:18		17:43		18:25		19:12		19:59		17:31		19:01		20:24		21:51	
Weather													BC		BC		BC		B	
Air Temp.													9.5		6.0		4.0		3.5	
Bar													1012.0		1012.0		1013.0		1013.5	
Wind Dir													SW		W		WSW		CALM	
Wind Spd/F	S		S		S		S		S		S		S 5		S 4		S 4		S 0	
Transparency													12							
Depth													241		234		288		312	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	7.3*	32.12*	7.3*	32.16*	7.4*	32.11*	7.5*	32.16*	7.0*	32.17*	6.9*	32.26*	11.0	33.919	7.0	32.901	6.5	32.605	7.9	32.684
10m	7.28	32.120	7.26	32.162	7.22	32.153	7.18	32.234	6.86	32.187	6.60	32.255	10.58	33.958	6.82	33.091	5.44	32.611	5.87	32.645
20m	7.12	32.136	7.17	32.177	7.15	32.153	7.08	32.224	6.75	32.186	6.20	32.330	10.32	33.941	6.91	33.366	4.50	33.111	4.49	32.766
30m	5.97	32.341	5.79	32.388	5.87	32.370	5.26	32.472	6.11	32.304	4.66	32.558	10.32	33.940	7.34	33.532	6.01	33.414	4.14	32.971
50m	3.47	32.802	3.64	32.795	3.39	32.814	3.46	32.822	3.46	32.820	3.44	32.807	10.31	33.945	8.02	33.749	3.94	33.266	3.46	33.052
75m	3.16	33.097	3.22	33.087					3.14	33.177			10.06	33.995	9.04	34.063	4.71	33.443	4.66	33.386
100m													9.95	34.024	8.53	34.055	3.66	33.376	5.04	33.497
125m													9.55	34.145	7.17	33.936	4.10	33.476	5.33	33.604
150m													9.53	34.151	5.57	33.753	4.47	33.551	4.89	33.613
200m													9.23	34.177	4.31	33.686	5.19	33.726	4.96	33.706
250m																	5.03	33.768	4.59	33.715
300m																	3.89	33.681		
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-11

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	P62		P61		P51		P52		P53		P54		P55		P56		HSR001		HSR002	
Latitude:N	42-10.0		42-20.0		42- 9.9		42- 0.0		41-50.0		41-40.0		41-30.0		41-20.0		41- 0.3		40-59.9	
Longitude:E	141-20.0		141-19.9		142-29.9		142-20.1		142-10.1		142- 0.1		141-50.2		141-40.0		139- 0.2		138-30.1	
Date	1996/05/27		1996/05/28		1996/05/29		1996/05/29		1996/05/29		1996/05/29		1996/05/29		1996/05/29		1996/06/04		1996/06/05	
Time(JST)	23:16		22:00		03:44		05:16		07:15		09:18		11:04		13:49		21:38		07:00	
Weather	BC		BC		B		B		B		F		F		BC		B		C	
Air Temp.	3.0		6.0		4.0		5.5		9.0		7.5		8.5		10.0		5.0		6.0	
Bar	1013.5		1015.0		1016.0		1016.5		1017.5		1017.0		1017.0		1015.5		1006.0		1010.5	
Wind Dir	W		NE		CALM		S		WSW		WSW		WSW		NW		W		WNW	
Wind Spd/F	S 2		S 1		S 0		S 2		S 3		S 3		S 2		S 2		S 4		S 5	
Transparency							7		6		12		11		12				14	
Depth	365		241		122		1008		1081		1054		945		760		1000		3000	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	7.8	32.595	7.5	32.353	7.0	31.204	7.4	32.443	8.7	33.102	6.9	32.457	7.5	33.257	12.2	33.544	11.0	33.925	10.0	34.003
10m	5.82	32.674	4.95	32.521	4.93	32.593	6.68	32.978	7.42	33.309	5.94	32.681	8.06	33.165	9.74	33.721	10.98	33.964	9.88	33.937
20m	4.53	32.966	4.20	32.733	2.17	32.567	2.12	32.679	7.24	33.420	3.64	32.787	8.03	33.148	10.32	34.071	7.07	34.050	8.42	33.984
30m	3.92	32.942	3.50	32.761	2.36	32.693	2.60	32.771	6.62	33.468	3.87	32.980	8.15	33.230	10.23	34.075	5.86	34.034	5.41	34.050
50m	4.89	33.142	4.20	33.065	2.01	32.801	2.94	33.012	6.68	33.547	5.17	33.317	8.51	33.957	10.22	34.085	4.11	34.067	2.76	34.076
75m	5.55	33.304	3.54	33.150	3.47	33.139	3.44	33.148	7.12	33.795	7.90	33.902	8.58	34.046	10.27	34.103	2.28	34.082	1.46	34.077
100m	2.55	33.149	3.95	33.349	4.11	33.329	3.99	33.340	6.02	33.663	6.51	33.761	8.48	34.039	10.17	34.114	1.69	34.082	1.32	34.077
125m	4.32	33.468	3.71	33.391			4.09	33.413	5.85	33.682	6.34	33.765	8.29	34.020	10.10	34.107	1.39	34.076	1.15	34.071
150m	5.07	33.618	4.17	33.482			3.79	33.430	5.71	33.703	5.55	33.696	7.20	33.865	9.89	34.082	1.23	34.074	1.16	34.076
200m	5.35	33.752	5.23	33.718			4.94	33.699	5.80	33.778	5.39	33.740	6.64	33.827	10.06	34.146	1.13	34.079	1.10	34.079
250m	4.48	33.713					4.13	33.657	3.71	33.563	4.59	33.701	5.52	33.780	9.74	34.134	0.96	34.077	1.08	34.082
300m	3.76	33.655					3.51	33.626	3.69	33.629	3.08	33.572	3.60	33.657	7.73	33.971	0.88	34.077	1.05	34.083
400m							3.06	33.709	2.67	33.646	3.06	33.695	3.06	33.720	3.19	33.711	0.65	34.072	0.95	34.084
500m							3.18	33.856	2.87	33.810	3.11	33.818	3.18	33.830	3.24	33.887	0.49	34.070	0.63	34.073
600m							3.47	34.020	3.41	33.994	3.31	33.978	3.23	33.929	3.30	34.012				
700m																				
800m																				
900m																				
1000m																				

Table 4-12

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	HSR003		HSR005		HSR006		HSR013		HSR007		HSR011		HSR012		HSR014		HSR015		HSR016	
Latitude:N	40-59.9		40-30.0		40-30.6		40- 0.0		40- 0.1		40- 0.1		40- 0.2		40-30.0		40-35.1		41- 0.0	
Longitude:E	138- 0.0		137-59.9		138-31.0		138- 0.0		138-29.9		139- 0.0		139-30.1		139- 0.0		139-29.1		139-29.9	
Date	1996/06/05		1996/06/05		1996/06/05		1996/06/06		1996/06/06		1996/06/06		1996/06/07		1996/06/09		1996/06/09		1996/06/10	
Time(JST)	09:52		13:18		18:51		08:30		11:17		18:30		05:27		14:36		18:19		05:26	
Weather	C		C		BC		B		B		BC		C		BC		BC		B	
Air Temp.	7.5		10.0		5.0		13.5		13.0		15.0		11.0		15.0		12.0		11.0	
Bar	1012.3		1013.5		1015.5		1021.6		1022.2		1022.5		1021.5		1018.0		1017.5		1017.0	
Wind Dir	NNE		WNW		WNW		ESE		SE		CALM		SE		NE		N		ENE	
Wind Spd/F	S 1		S 1		S 2		S 1		S 2		S 0		S 8		S 3		S 5		S 6	
Transparency	12		14		13		18		18		13		9		19		16		18	
Depth	1000		1000		1000		1000		1000		1500		1302		1000		1000			
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	11.2	34.100	11.3	34.000	11.3	34.006	12.0	33.995	16.4	34.433	19.3	34.619	17.1	32.588	15.1	33.943	17.8	34.604	17.5	34.544
10m	7.22	34.123	8.78	33.951	10.34	33.970	12.25	33.926	16.13	34.438	16.96	34.529	16.86	33.486	12.08	33.947	16.73	34.590	17.41	34.484
20m	6.19	34.094	6.00	34.020	7.55	34.024	9.89	34.082	13.97	34.432	15.22	34.577	14.82	34.478	11.06	33.931	13.75	34.586	13.25	34.374
30m	5.25	34.103	4.59	34.040	5.31	34.048	7.77	34.054	11.29	34.358	14.06	34.520	12.94	34.332	8.60	34.020	13.02	34.592	11.77	34.554
50m	2.68	34.128	2.29	34.060	2.21	34.094	4.71	34.070	8.72	34.273	12.29	34.637	10.84	34.256	6.11	34.054	12.77	34.600	10.60	34.510
75m	1.79	34.094	1.54	34.054	1.45	34.075	2.99	34.069	6.87	34.197	11.09	34.540	10.56	34.335	3.69	34.061	11.62	34.569	9.41	34.395
100m	1.56	34.093	1.43	34.067	1.26	34.067	2.27	34.056	5.44	34.151	9.44	34.394	10.48	34.367	2.17	34.087	11.09	34.467	7.45	34.253
125m	1.38	34.088	1.25	34.066	1.08	34.068	1.84	34.062	4.16	34.116	7.86	34.260	9.91	34.284	1.53	34.073	9.97	34.388	5.80	34.164
150m	1.26	34.084	1.13	34.068	1.02	34.070	1.51	34.062	3.06	34.076	7.46	34.239	9.63	34.274	1.27	34.066	7.48	34.245	4.45	34.108
200m	1.06	34.081	1.03	34.071	0.99	34.078	1.13	34.065	1.96	34.064	4.13	34.116	8.83	34.277	1.10	34.069	5.93	34.163	2.71	34.081
250m	0.97	34.082	0.88	34.070	0.93	34.079	1.06	34.082	1.49	34.063	2.25	34.074	5.89	34.151	0.90	34.069	3.18	34.092	1.78	34.074
300m	0.84	34.079	0.79	34.072	0.73	34.072	0.99	34.083	1.15	34.064	1.39	34.066	3.33	34.090	0.85	34.074	1.94	34.068	1.26	34.067
400m	0.58	34.072	0.57	34.069	0.54	34.070	0.62	34.072	0.75	34.068	0.78	34.064	1.26	34.065	0.57	34.066	1.06	34.068	0.92	34.070
500m	0.46	34.070	0.44	34.069	0.41	34.069	0.46	34.069	0.52	34.068	0.51	34.064	0.72	34.064	0.46	34.068	0.72	34.065	0.61	34.066
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-13

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	HSR018		HSR17		HSR019		HSR020		HSR021		HNA07		HNA06		HNA05		HNA04		HNA03	
Latitude:N	41- 0.1		40-50.3		40-59.9		41-30.0		41-15.8		41-23.3		41-20.7		41-18.3		41-16.0		41-13.5	
Longitude:E	139-49.8		139-50.1		140- 0.0		139-50.1		139-50.1		140-10.1		140-11.0		140-11.7		140-12.3		140-12.7	
Date	1996/06/10		1996/06/10		1996/06/10		1996/06/10		1996/06/10		1996/06/12		1996/06/12		1996/06/12		1996/06/12		1996/06/12	
Time(JST)	07:27		09:40		11:17		14:51		18:30		13:01		13:34		14:03		14:36		15:08	
Weather	BC		BC		C		BC		C											
Air Temp.	10.0		10.5		13.0		14.0		13.0											
Bar	1017.0		1016.5		1016.0		1014.5		1013.0											
Wind Dir	NE		NE		NE		N		ENE											
Wind Spd/F	S 5		S 5		S 5		S 2		S 7		S		S		S		S		S	
Transparency	14		12		12		17		13											
Depth	1800		1248		515		1000		878											
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	15.2	32.855	12.5	32.203	15.9	32.057	18.5	34.117	17.0	33.083	16.3*	33.40*	15.4*	33.83*	14.7*	33.99*	14.6*	32.93*	14.7*	33.26*
10m	14.77	32.911	13.72	34.119	15.24	32.276	17.08	34.473	16.15	34.029	16.08	33.492	14.93	33.923	13.22	34.330	14.64	33.151	14.37	33.286
20m	15.35	34.547	12.21	34.122	14.69	34.123	13.10	34.438	13.65	34.604	15.86	33.614	13.90	34.362	12.22	34.515	12.25	34.667	11.38	34.249
30m	13.11	34.426	11.17	34.202	11.66	34.193	11.71	34.481	12.35	34.588	15.52	33.864	12.74	34.483	11.83	34.494	11.54	34.578	11.17	34.211
50m	10.32	34.211	10.41	34.236	10.33	34.208	11.08	34.549	11.55	34.559	8.74	34.482	10.84	34.510	10.55	34.487	10.12	34.389	10.61	34.431
75m	10.21	34.288	10.17	34.285	9.84	34.189	10.02	34.451	11.22	34.537			9.24	34.383	8.73	34.322	9.53	34.338	9.87	34.291
100m	9.64	34.228	10.11	34.329	10.06	34.290	8.40	34.327	10.38	34.428			7.38	34.244	8.03	34.271	9.52	34.337	9.82	34.291
125m	9.72	34.313	10.11	34.355	9.80	34.293	7.20	34.233	9.31	34.332					8.00	34.273	9.34	34.334		
150m	9.24	34.299	10.07	34.365	9.60	34.289	5.41	34.166	7.90	34.222										
200m	7.26	34.182	8.53	34.299	9.20	34.301	3.65	34.116	5.31	34.152										
250m	4.64	34.121	5.13	34.135	5.48	34.153	2.56	34.080	3.36	34.097										
300m	2.52	34.076	2.71	34.078	2.85	34.083	1.56	34.076	2.42	34.075										
400m	1.19	34.069	1.31	34.065	1.22	34.068	0.91	34.068	1.13	34.067										
500m	0.71	34.066	0.74	34.066	0.67	34.065	0.60	34.066	0.68	34.066										
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-14

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	HNA02		HNA01		HSR022		HFK003		HFK002		HFK001		HFK007		HFK006		HFK005		HFK004	
Latitude:N	41-11.0		41- 8.4		41-39.8		42- 7.6		42-10.0		42-15.0		42-17.7		42-15.1		42-12.6		42-10.1	
Longitude:E	140-13.4		140-14.2		140-39.5		140-52.5		140-54.8		140-59.9		140-52.6		140-50.0		140-47.4		140-45.0	
Date	1996/06/12		1996/06/12		1996/06/13		1996/06/17		1996/06/17		1996/06/17		1996/06/17		1996/06/17		1996/06/17		1996/06/17	
Time(JST)	15:39		16:07		19:24		19:48		20:14		21:01		22:13		22:40		23:07		23:35	
Weather	B																			
Air Temp.	12.2																			
Bar	1016.0																			
Wind Dir	ENE																			
Wind Spd/F	S		S		S 2		S		S		S		S		S		S		S	
Transparency																				
Depth	112																			
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	12.9*	33.68*	13.2*	33.10*	15.2	33.338	11.0*	31.91*	10.7*	31.97*	11.7*	31.58*	11.5*	31.69*	11.6*	31.74*	10.9*	31.93*	11.2*	31.82*
10m	12.12	33.668	12.32	33.307	14.00	34.041	8.77	32.271	10.01	32.311	11.73	31.688	11.50	31.728	11.23	31.872	10.60	31.945	9.78	31.952
20m	12.07	34.145	13.88	33.876	11.76	34.085	5.55	32.456	5.39	32.539	10.39	32.232	10.92	31.958	9.39	32.264	5.36	32.450	5.07	32.545
30m	10.88	34.326	10.31	34.050	10.72	34.264	4.16	32.805	4.35	32.665	5.18	32.457	5.25	32.543	4.47	32.662	4.33	32.666	4.01	32.723
50m	10.64	34.336	9.86	34.139	9.61	34.306	3.59	32.904	3.86	32.941	3.95	32.852	3.50	32.939	4.01	32.954	3.65	32.979	3.34	32.910
75m	10.27	34.321			9.46	34.296	4.58	33.395									4.67	33.373	3.28	33.186
100m					9.20	34.290														
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-15

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606		
Station No	HFK011		HFK010		HFK009		HFK008		HFK017		HFK016		HFK015		HFK014		HFK013		HFK012		
Latitude:N	42-10.2		42-15.0		42-19.9		42-25.1		42-27.5		42-25.2		42-22.7		42-20.1		42-17.7		42-15.0		
Longitude:E	140-35.0		140-40.0		140-45.1		140-49.9		140-42.7		140-40.1		140-37.5		140-34.9		140-32.1		140-29.7		
Date	1996/06/18		1996/06/18		1996/06/18		1996/06/18		1996/06/18		1996/06/18		1996/06/18		1996/06/18		1996/06/18		1996/06/18		
Time(JST)	00:27		01:16		02:07		02:54		03:39		04:10		04:39		05:09		05:48		06:18		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	11.6*	31.75*	11.6*	31.73*	11.8*	31.78*	12.1*	31.69*	12.4*	31.78*	11.9*	31.80*	12.0*	31.53*	12.0*	31.81*	11.9*	31.80*	11.7*	31.77*	
10m	9.60	31.983	11.59	31.735	11.78	31.783	12.05	31.691	11.50	31.800	11.93	31.800	11.95	31.807	11.98	31.809	11.94	31.801	11.68	31.774	
20m	5.92	32.397	9.93	31.925	9.78	31.936	11.09	31.766	9.93	31.948	11.35	31.832	11.58	31.908	11.75	31.825	10.64	31.913	9.76	31.965	
30m	4.79	32.557	6.11	32.362	6.41	32.267	4.78	32.618	6.54	32.307	7.44	32.157	7.65	32.182	7.91	32.125	7.53	32.241	5.52	32.466	
50m	3.39	32.820	3.53	32.828	3.58	32.828			3.60	32.800	4.54	32.614	4.80	32.623	4.62	32.630	3.93	32.758	3.47	32.841	
75m			3.39	33.200					3.33	33.016	3.34	33.080	3.39	33.003	3.21	33.219	3.20	33.219			
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-16

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606		
Station No	HFK020		HFK019		HFK018		HFK105		HFK104		HFK103		HFK102		HFK101		HFK201		HFK202		
Latitude:N	42-20.2		42-25.0		42-30.0		42-18.2		42-15.7		42-13.4		42-11.0		42- 8.7		42- 8.7		42-10.8		
Longitude:E	140-25.1		140-30.0		140-35.1		140-55.7		140-52.7		140-49.9		140-46.8		140-43.9		140-44.1		140-46.7		
Date	1996/06/18		1996/06/18		1996/06/18		1996/06/19		1996/06/19		1996/06/19		1996/06/19		1996/06/19		1996/06/19		1996/06/19		
Time(JST)	07:00		07:41		08:22		12:57		13:25		13:54		14:27		14:58		19:48		20:22		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	11.3*	31.81*	11.7*	31.78*	11.9*	31.78*	11.3*	31.69*	11.0*	31.66*	11.2*	31.77*	11.2*	31.78*	9.8*	31.92*	10.7*	31.85*	11.3*	31.81*	
10m	10.73	31.883	11.68	31.779	11.82	31.793	10.79	31.742	10.72	31.701	10.91	31.924	10.18	31.929	7.76	32.135	8.67	32.076	8.96	32.048	
20m	6.87	32.321	9.68	32.018	10.21	31.926	8.65	32.203	9.23	32.010	6.80	32.387	4.68	32.636	5.43	32.429	7.52	32.168	5.15	32.574	
30m	5.31	32.500	6.18	32.326	5.74	32.438	5.08	32.628	5.50	32.477	4.16	32.691	3.77	32.764	3.89	32.705	4.96	32.550	4.00	32.741	
50m	3.44	32.860	3.58	32.802	3.52	32.823	3.97	32.790	3.66	32.855	4.02	32.982	3.24	32.982			3.64	32.802	3.24	32.935	
75m			3.18	33.076									3.66	33.293					3.19	33.188	
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-17

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606	199606	199606	199606	199606	199606	199606	199606	199606	199606	199606
Station No	HFK203	HFK204	HFK205	HFK206	HFK211	HFK210	HFK209	HFK208	HFK207	HFK211	
Latitude:N	42-13.2	42-15.5	42-18.0	42-13.6	42-18.0	42-15.7	42-13.3	42-10.8	42- 8.7	42-10.6	
Longitude:E	140-49.7	140-52.7	140-55.7	140-58.1	140-55.9	140-52.9	140-49.9	140-46.9	140-44.1	140-46.8	
Date	1996/06/19	1996/06/19	1996/06/19	1996/06/19	1996/06/19	1996/06/20	1996/06/20	1996/06/20	1996/06/20	1996/06/20	
Time(JST)	20:53	21:23	21:55	22:57	23:41	00:29	01:02	01:33	02:02	02:32	
Weather											
Air Temp.											
Bar											
Wind Dir											
Wind Spd/F	S	S	S	S	S	S	S	S	S	S	
Transparency											
Depth											
Equipment	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD	
STND. Dep	T S	T S	T S	T S	T S	T S	T S	T S	T S	T S	
0m	11.6* 31.56*	11.3* 31.67*	11.5* 31.63*	11.9* 31.40*	11.6* 31.61*	11.8* 31.58*	11.1* 31.65*	11.3* 31.79*	11.0* 31.82*	11.1* 31.82*	
10m	11.09 31.791	10.56 31.790	10.58 31.815	11.20 31.839	10.16 32.157	10.71 31.733	10.42 31.776	10.45 31.898	10.52 31.978	10.49 31.894	
20m	8.27 32.337	9.67 31.955	5.96 32.460	7.04 32.364	5.63 32.472	8.54 32.172	9.78 31.946	5.91 32.437	6.50 32.247	6.07 32.420	
30m	4.59 32.615	6.15 32.441	4.80 32.562	4.22 32.665	4.84 32.551	4.78 32.560	5.60 32.482	4.04 32.718	4.55 32.612	4.14 32.703	
50m	4.18 32.940	4.06 32.795	4.02 32.737	3.73 32.856	4.18 32.685	3.93 32.900	3.63 32.846	3.33 32.901	3.50 32.830	3.33 32.910	
75m								3.19 33.193		3.28 33.211	
100m											
125m											
150m											
200m											
250m											
300m											
400m											
500m											
600m											
700m											
800m											
900m											
1000m											

Table 4-18

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606		
Station No	HFK212		HFK214		HFK215		HFK216		HFK222		HFK221		HFK220		HFK219		HFK218		HFK222		
Latitude:N	42-13.2		42-15.5		42-17.8		42-12.5		42-18.0		42-15.5		42-13.2		42-10.9		42- 8.6		42-10.7		
Longitude:E	140-49.6		140-52.7		140-55.7		140-59.9		140-55.9		140-52.9		140-49.8		140-46.8		140-44.4		140-46.7		
Date	1996/06/20		1996/06/20		1996/06/20		1996/06/20		1996/06/20		1996/06/20		1996/06/20		1996/06/20		1996/06/20		1996/06/20		
Time(JST)	03:06		03:37		04:09		05:00		06:00		06:32		07:06		07:37		08:16		08:45		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	11.2*	31.65*	11.7*	31.61*	11.2*	31.69*	11.4*	31.74*	10.9*	31.74*	11.6*	31.60*	11.6*	31.58*	11.4*	31.58*	11.1*	31.85*	11.5*	31.58*	
10m	10.66	31.784	11.39	31.669	10.50	31.806	10.87	31.818	10.18	31.868	11.50	31.616	11.33	31.638	11.29	31.612	11.02	31.853	11.21	31.638	
20m	9.95	31.899	7.84	32.221	7.93	32.238	5.00	32.542	6.02	32.434	8.86	32.094	9.36	32.069	7.83	32.203	6.74	32.308	8.28	32.139	
30m	4.92	32.543	4.15	32.674	5.05	32.556	4.08	32.661	4.67	32.590	4.74	32.557	4.52	32.617	4.34	32.697	5.63	32.442	4.29	32.716	
50m	3.58	32.839	3.93	32.851	4.11	32.686	4.29	33.050	4.12	32.679	4.03	32.798	3.45	32.827	3.41	32.890	4.29	32.675	3.42	32.895	
75m							3.99 33.076								3.79 33.267				3.62 33.268		
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-19

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	HFK223		HFK224		HFK225		HFK226		HFK227		HKD001		HKD002		HKD003		HKD004		HKD005	
Latitude:N	42-13.2		42-15.6		42-18.0		42-12.6		42-17.9		42- 0.1		42- 5.0		42-10.0		42-15.0		42-20.1	
Longitude:E	140-49.7		140-52.7		140-55.8		140-59.8		140-55.9		141- 0.1		140-55.1		140-50.0		140-44.9		140-39.9	
Date	1996/06/20		1996/06/20		1996/06/20		1996/06/20		1996/06/20		1996/06/24		1996/06/24		1996/06/24		1996/06/24		1996/06/24	
Time(JST)	09:18		09:49		10:20		11:20		12:22		18:58		19:46		20:37		21:26		22:17	
Weather											F		F		F		F		F	
Air Temp.											5.5		5.0		5.0		5.5		6.0	
Bar											1017.0		1016.5		1017.0		1016.0		1016.0	
Wind Dir											ENE		ESE		ENE		E		E	
Wind Spd/F	S		S		S		S		S		S 4		S 7		S 4		S 7		S 8	
Transparency											90		90		90		83		81	
Depth											90		90		90		83		81	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	11.4*	31.60*	11.6*	31.67*	11.6*	31.68*	11.3*	31.77*	11.2*	31.75*	11.7	31.936	11.6	31.925	11.1	31.914	12.4	31.773	12.3	31.795
10m	11.33	31.622	11.62	31.671	10.65	31.808	11.24	31.777	10.61	31.827	11.45	31.970	11.49	31.872	10.67	31.910	12.27	31.731	12.25	31.764
20m	10.12	32.097	7.81	32.266	5.30	32.531	5.39	32.608	6.10	32.429	5.86	32.844	10.37	32.247	7.42	32.223	6.70	32.428	12.25	31.766
30m	4.67	32.620	4.78	32.576	4.62	32.586	3.93	32.680	5.27	32.525	4.23	32.903	6.54	32.543	4.22	32.665	4.67	32.635	11.48	31.859
50m	3.74	32.834	4.02	32.810	4.15	32.681	4.05	32.995			3.89	33.015	4.05	32.939	3.44	32.934	3.81	32.929	4.82	32.588
75m											4.74	33.311	4.26	33.301	4.18	33.263	4.20	33.245	3.67	33.129
100m																				
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-20

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	HKD006		HKD007		HKD008		HKD009		HKD010		HKD011		HKD012		HKD013		HKD014		HKD015	
Latitude:N	42-25.1		42-30.1		42-20.0		42-20.1		42-20.1		42-20.0		42-20.0		42-20.2		42-29.9		42-25.0	
Longitude:E	140-35.1		140-30.2		140-24.9		140-29.9		140-34.9		140-39.9		140-45.0		140-49.9		140-40.1		140-40.1	
Date	1996/06/24		1996/06/24		1996/06/25		1996/06/25		1996/06/25		1996/06/25		1996/06/25		1996/06/25		1996/06/25		1996/06/25	
Time(JST)	23:04		23:52		01:20		01:59		02:38		03:15		03:52		04:27		05:58		06:39	
Weather	C		C		F		F		F		F		C		C		C		C	
Air Temp.	6.0		6.0		6.0		6.5		6.5		7.0		7.0		7.0		8.0		8.0	
Bar	1015.5		1015.0		1014.0		1014.0		1013.5		1014.0		1013.5		1013.0		1013.0		1012.5	
Wind Dir	ESE		SE		E		E		ESE		ESE		ESE		E		W		SE	
Wind Spd/F	S 6		S 5		S 5		S 6		S 5		S 4		S 5		S 7		S 3		S 6	
Transparency															6		11		12	
Depth	95		70		72		95		95		80		59		48		68		80	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	12.3	31.776	12.4	31.788	11.8	31.810	12.5	31.772	12.4	31.791	12.4	31.791	12.4	31.768	12.3	31.791	12.2	31.713	12.3	31.782
10m	12.18	31.741	11.47	31.771	11.47	31.803	12.41	31.744	12.25	31.773	12.23	31.768	12.16	31.726	11.74	31.823	12.01	31.740	12.17	31.748
20m	12.17	31.742	10.32	31.969	10.19	31.929	12.40	31.747	12.25	31.774	12.22	31.771	12.06	31.727	11.43	31.870	11.32	31.826	12.15	31.748
30m	10.88	31.876	6.88	32.345	6.13	32.506	8.24	32.180	10.36	31.944	10.32	31.973	7.92	32.265	9.84	32.197	8.78	32.213	11.71	31.776
50m	4.63	32.640	3.64	32.876	3.54	32.847	3.95	32.770	4.76	32.595	4.93	32.563	3.79	32.785			3.82	32.814	4.95	32.581
75m	3.29	33.051					3.29	33.194	3.28	33.188	3.64	33.104							3.39	32.974
100m																				
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-21

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199607		199607		199607		199607		199607		199607		199607	
Station No	HKD016		HKD017		HKD018		HSR007		HSR008		HSR009		HSR010		HSR011		HSR012		HSR013	
Latitude:N	42-20.1		42-15.1		42-10.2		41-30.0		41-10.1		41-20.0		41-30.2		41-40.0		41-50.0		42- 0.1	
Longitude:E	140-40.0		140-40.0		140-40.1		141-20.2		141-30.2		141-40.1		141-50.2		142- 0.1		142- 9.9		142-19.9	
Date	1996/06/25		1996/06/25		1996/06/25		1996/07/03		1996/07/03		1996/07/04		1996/07/04		1996/07/04		1996/07/04		1996/07/04	
Time(JST)	07:19		08:02		08:44		15:58		18:46		05:24		07:03		08:39		10:30		12:15	
Weather	C		C		F		C		C		F		F		F		F		B	
Air Temp.	8.5		7.0		7.0		13.0		11.0		10.5		11.0		10.5		10.7		12.8	
Bar	1012.5		1012.5		1013.0		1011.5		1012.0		1012.0		1012.0		1012.7		1013.0		1012.8	
Wind Dir	ESE		CALM		ENE		CALM		NNE		CALM		NE		SSE		E		ESE	
Wind Spd/F	S 6		S 0		S 4		S 0		S 1		S 0		S 3		S 2		S 4		S 3	
Transparency	10		10		7		15		14		14		14		12		15		12	
Depth	80		91		87		242		508		758		945		1030		1268		1008	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	12.3	31.816	12.3	31.813	11.4	31.963	16.2	33.967	14.4	33.690	14.1	33.882	14.5	34.013	11.0	33.110	13.5	33.187	14.4	33.422
10m	12.18	31.768	12.15	31.751	8.22	32.332	15.13	33.984	13.93	33.729	13.43	33.951	14.02	34.035	9.61	33.299	13.38	33.691	12.46	33.550
20m	12.18	31.768	11.08	31.963	6.05	32.532	14.69	34.031	13.44	33.783	13.30	34.046	13.79	34.069	10.14	33.596	10.71	33.627	6.65	32.768
30m	11.34	31.974	5.52	32.633	4.50	32.727	14.42	34.053	12.76	33.830	13.27	34.047	13.39	34.092	10.33	33.728	10.83	33.878	10.76	33.985
50m	5.30	32.565	3.62	32.906	3.38	32.888	13.36	34.070	12.03	34.016	13.12	34.064	12.64	34.168	10.37	33.808	9.35	33.989	10.10	34.156
75m	3.61	33.067	3.75	33.226	3.21	33.189	13.14	34.111	11.37	34.017	12.91	34.113	11.98	34.212	9.72	34.047	9.83	34.191	10.14	34.219
100m							12.14	34.239	11.01	34.029	12.56	34.154	11.75	34.228	9.79	34.135	9.38	34.182	10.03	34.222
125m							11.51	34.278	10.74	34.097	12.29	34.188	11.66	34.234	8.31	33.973	8.58	34.101	9.81	34.206
150m							11.45	34.283	10.69	34.145	11.61	34.157	11.20	34.231	5.66	33.736	6.68	33.855	8.85	34.066
200m							10.17	34.160	10.56	34.194	10.91	34.146	10.03	34.178	4.19	33.645	3.54	33.529	3.74	33.434
250m									10.07	34.197	10.56	34.225	8.65	34.096	3.30	33.617	2.59	33.506	2.90	33.423
300m									3.83	33.669	7.10	33.940	4.29	33.617	2.76	33.634	2.49	33.557	2.98	33.492
400m									3.03	33.762	3.06	33.689	3.01	33.750	3.07	33.818	3.03	33.754	2.08	33.550
500m											3.06	33.807	3.12	33.869	3.33	33.980	3.27	33.954	3.16	33.847
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-22

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199607	
Station No	HSR014		HSR015		HSR005		HSR001		HSR004		HSR003		HSR002		HSR006		HFK05		HFK04	
Latitude:N	42-10.1		42- 1.5		41-50.1		41-53.1		42- 0.0		42-10.0		42-19.8		41-40.1		41-57.5		42- 0.0	
Longitude:E	142-30.0		142-40.1		141-20.0		141- 9.0		141-19.8		141-20.2		141-19.9		141-20.1		141- 2.6		141- 5.0	
Date	1996/07/04		1996/07/04		1996/07/09		1996/07/09		1996/07/10		1996/07/10		1996/07/10		1996/07/10		1996/07/15		1996/07/15	
Time(JST)	13:50		18:28		18:02		19:26		01:15		02:34		03:57		08:37		18:40		19:09	
Weather	C		F		C		F		C		C		F		F					
Air Temp.	14.5		9.0		9.0		8.0		8.2		8.0		8.0		9.2					
Bar	1012.5		1012.0		1015.5		1015.5		1015.0		1014.5		1014.0		1013.4					
Wind Dir	CALM		N		CALM		CALM		SSW		W		SSE		CALM					
Wind Spd/F	S 0		S 1		S 0		S 0		S 2		S 2		S 1		S 0		S		S	
Transparency	12		9		9										14					
Depth	122		269		288		108		307		368		231		232					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.9	33.205	12.6	32.340	13.8	31.991	13.8	31.801	13.0	32.707	13.0	32.451	13.2	32.300	14.2	32.986	14.2*	31.72*	13.4*	31.97*
10m	13.19	33.190	9.94	32.368	11.74	32.689	12.75	32.350	12.83	32.770	12.26	33.234	12.66	32.878	13.90	33.193	13.27	31.835	12.89	32.534
20m	12.55	33.438	9.38	32.349	10.05	32.822	11.46	32.894	11.90	33.020	11.12	33.664	12.48	33.097	14.07	33.292	12.62	32.719	13.21	33.289
30m	12.06	33.520	12.05	33.085	4.82	32.800	7.84	32.803	8.08	33.228	8.08	33.573	12.05	33.544	14.28	33.390	11.49	33.493	12.17	33.530
50m	6.83	33.479	11.07	33.586	3.80	32.949	3.99	32.889	5.67	33.342	7.90	33.734	4.64	33.086	14.86	33.893	6.52	33.452	4.09	32.985
75m	7.00	33.659	6.06	33.484	4.57	33.235	3.45	33.052	7.59	33.808	8.65	33.984	4.31	33.273	13.83	34.101	5.77	33.595	4.29	33.221
100m	5.00	33.582	8.74	34.049	6.50	33.656	4.13	33.239	7.87	33.920	8.04	33.941	4.92	33.463	11.57	34.236	4.81	33.557	4.71	33.385
125m			7.71	33.971	6.03	33.663			7.36	33.897	7.80	33.936	5.03	33.524	9.63	34.053				
150m			7.06	33.839	5.74	33.689			6.75	33.849	6.56	33.800	4.83	33.535	7.72	34.001				
200m			6.31	33.783	4.98	33.644			5.46	33.744	5.11	33.673	4.66	33.574	5.05	33.695				
250m			4.28	33.672	4.85	33.687			4.46	33.654	4.48	33.661								
300m									3.80	33.651	2.91	33.523								
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-23

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199607		
Station No	HFK03		HFK02		HFK01		HFK11		HFK10		HFK09		HFK08		HFK07		HFK06		HFK205		
Latitude:N	42- 4.9		42- 9.9		42-14.9		42-27.6		42-25.0		42-22.3		42-19.9		42-17.6		42-15.1		42-18.0		
Longitude:E	141- 9.9		141-15.0		141-20.0		140-42.5		140-40.1		140-37.6		140-35.1		140-32.3		140-30.0		140-55.6		
Date	1996/07/15		1996/07/15		1996/07/15		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		
Time(JST)	20:01		20:52		21:49		01:36		02:02		02:30		03:03		04:08		04:44		06:54		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	11.5*	32.17*	12.7*	32.54*	14.9*	32.88*	16.7*	31.38*	16.3*	31.52*	15.7*	31.52*	15.0*	31.55*	14.7*	31.54*	15.8*	31.38*	14.4*	32.27*	
10m	10.00	32.373	10.82	32.747	13.58	33.254	14.60	31.490	15.38	31.507	14.91	31.539	14.36	31.537	14.08	31.584	14.03	31.567	13.28	32.394	
20m	11.09	33.070	9.48	32.811	10.57	33.655	12.48	31.836	13.13	31.692	13.32	31.649	13.24	31.658	13.26	31.658	12.81	31.750	11.62	32.683	
30m	11.13	33.521	6.84	32.805	10.00	33.872	8.98	32.385	11.98	31.944	12.18	31.857	12.44	31.816	12.12	31.881	9.12	32.430	10.63	32.855	
50m	4.07	32.953	6.38	33.393	4.66	33.232	3.63	32.880	4.51	32.796	4.88	32.798	5.18	32.824	4.32	32.731	3.72	32.825	4.83	32.960	
75m	6.48	33.544	8.45	33.920	7.96	33.897					3.46	33.074	3.35	33.094	3.31	33.153	3.32	33.148			
100m	4.78	33.427	7.47	33.841	7.19	33.826															
125m			5.97	33.662	6.87	33.797															
150m			4.91	33.566	5.75	33.660															
200m			4.74	33.622	4.91	33.610															
250m					4.49	33.652															
300m					4.10	33.660															
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-24

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199607		
Station No	HFK204		HFK203		HFK202		HFK201		HFK206		HFK207		HFK208		HFK209		HFK210		HFK214		
Latitude:N	42-15.7		42-13.2		42-10.8		42- 8.7		42-10.8		42-13.2		42-15.6		42-18.0		42-11.9		42-18.3		
Longitude:E	140-52.9		140-50.1		140-46.9		140-44.1		140-46.7		140-49.7		140-52.7		140-55.6		140-59.0		140-55.9		
Date	1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		
Time(JST)	07:33		08:04		08:33		09:05		09:36		10:10		10:41		11:09		12:12		13:19		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	13.4*	31.94*	14.5*	31.52*	15.4*	31.31*	17.0*	31.23*	16.0*	31.21*	15.7*	31.35*	11.5*	32.22*	14.2*	32.29*	13.8*	31.85*	15.0*	32.09*	
10m	10.97	32.347	12.43	32.150	13.51	31.658	16.16	31.465	12.92	31.706	13.03	31.974	11.04	32.580	12.85	32.490	13.10	31.877	12.87	32.496	
20m	10.05	32.685	9.41	32.664	10.76	32.514	12.81	31.752	10.81	32.734	8.85	32.388	9.87	32.726	11.21	32.816	11.67	32.246	10.77	32.803	
30m	7.70	32.802	8.10	33.043	7.85	32.793	9.65	32.269	8.13	32.836	7.81	32.808	7.62	32.802	10.39	32.934	9.93	32.700	10.42	32.903	
50m	3.63	32.889	3.79	32.960	4.04	32.870	4.19	32.701	4.36	32.866	3.81	32.928	3.66	32.856			4.14	32.890			
75m					3.99	33.197			4.00	33.200											
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-25

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199607		
Station No	HFK213		HFK212		HFK211		HFK101		HFK215		HFK216		HFK217		HFK218		HFK219		HFK224		
Latitude:N	42-15.7		42-13.3		42-10.8		42- 8.7		42-10.7		42-13.2		42-15.6		42-18.1		42-11.9		42-17.9		
Longitude:E	140-52.8		140-49.9		140-46.8		140-44.1		140-46.7		140-49.7		140-52.7		140-55.6		140-58.9		140-55.9		
Date	1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		
Time(JST)	13:46		14:13		14:45		15:17		15:50		16:22		16:51		17:21		18:24		19:27		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	12.7*	31.86*	15.7*	31.68*	14.4*	31.53*	16.9*	31.40*	14.8*	31.50*	12.9*	31.82*	12.7*	31.84*	14.2*	32.31*	15.2*	31.46*	15.5*	31.89*	
10m	11.76	32.047	13.48	31.875	12.56	31.925	13.75	31.618	12.90	31.857	11.90	32.024	12.99	32.354	11.89	32.638	12.89	32.031	12.52	32.533	
20m	11.00	32.873	10.71	32.512	9.82	32.727	11.51	32.065	10.91	32.400	10.47	32.631	10.99	32.793	10.93	32.740	11.06	32.649	11.06	32.773	
30m	9.25	32.780	9.43	32.941	7.95	32.763	6.72	32.541	9.45	32.801	9.44	32.938	10.51	32.962	10.07	32.955	10.13	33.217	9.82	32.955	
50m	3.89	32.943	3.75	32.929	3.77	32.933			3.98	32.934	4.64	32.921	4.82	32.952	7.82	33.018	4.06	32.909	7.89	33.011	
75m					4.00	33.219			4.02	33.209											
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-26

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199607		
Station No	HFK223		HFK222		HFK221		HFK220		HFK225		HFK226		HFK227		HFK228		HFK229		HFK234		
Latitude:N	42-15.7		42-13.3		42-10.9		42- 8.8		42-10.7		42-13.2		42-15.7		42-18.1		42-11.9		42-17.9		
Longitude:E	140-52.9		140-49.8		140-46.9		140-44.2		140-46.6		140-49.6		140-52.7		140-55.8		140-59.0		140-55.7		
Date	1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/16		1996/07/17		1996/07/17		
Time(JST)	20:01		20:28		20:58		21:29		22:01		22:35		23:04		23:34		00:33		01:34		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	15.6*	31.48*	13.5*	31.79*	14.5*	31.84*	15.0*	31.36*	15.0*	31.62*	12.6*	31.93*	17.1*	31.72*	13.9*	32.20*	15.9*	32.12*	15.1*	31.91*	
10m	13.66	32.220	12.39	31.879	11.37	32.221	12.90	31.761	11.54	32.155	11.92	31.992	12.64	32.517	12.83	32.513	12.68	32.657	12.72	32.505	
20m	11.14	32.621	10.86	32.780	8.52	32.626	11.49	32.012	8.46	32.547	11.23	32.974	11.09	32.661	10.81	32.775	11.26	32.993	11.06	32.776	
30m	10.50	33.069	9.06	32.970	7.86	32.749	7.48	32.556	7.55	32.760	8.99	33.005	10.06	32.921	9.84	32.932	9.96	33.073	9.97	32.963	
50m	5.32	32.965	3.84	32.880	4.02	32.893	3.96	32.761	4.03	32.871	3.82	32.882	5.66	32.997	8.18	33.022	4.16	32.983	8.14	33.024	
75m					3.80 33.094				3.91 33.125												
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-27

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199607		199607		199607		199608					
Station No	HFK233		HFK232		HFK231		HFK230		HFK235		HFK236		HFK237		HFK238		HSR016		P66					
Latitude:N	42-15.8		42-13.4		42-11.0		42- 8.8		42-10.8		42-13.2		42-15.6		42-18.0		41-39.9		41-30.4					
Longitude:E	140-52.8		140-49.6		140-46.7		140-44.0		140-46.6		140-49.7		140-52.7		140-55.6		140-40.1		141-20.1					
Date	1996/07/17		1996/07/17		1996/07/17		1996/07/17		1996/07/17		1996/07/17		1996/07/17		1996/07/17		1996/07/18		1996/07/22					
Time(JST)	02:13		02:43		03:11		03:40		04:14		04:45		05:14		05:44		18:48		14:22					
Weather																			C		C			
Air Temp.																			13.5		12.0			
Bar																			1012.0		1015.0			
Wind Dir																			NW		ESE			
Wind Spd/F	S		S		S		S		S		S		S		S		F 2		S 6					
Transparency																			18		246			
Depth																								
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD					
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S				
0m	15.8*	31.86*	12.5*	31.92*	16.8*	31.17*	14.4*	31.52*	16.7*	31.19*	14.6*	31.69*	16.3*	31.91*	15.7*	32.84*	17.2	33.50*	16.4	34.063				
10m	13.62	32.535	11.80	32.013	12.23	31.990	12.20	31.917	12.68	31.876	12.00	32.051	13.53	32.404	13.47	32.154	13.19	34.260	17.00	34.111				
20m	11.83	32.982	11.76	32.720	8.64	32.506	10.29	32.237	9.68	32.588	11.17	32.704	12.18	33.021	12.09	32.854	11.69	34.311	15.95	34.179				
30m	10.69	33.113	9.37	32.834	8.05	32.750	6.20	32.607	8.16	32.740	9.79	32.698	11.19	33.078	10.64	32.822	11.05	34.341	15.82	34.189				
50m	6.27	32.999	3.87	32.859	4.13	32.918	3.90	32.780	3.92	32.909	3.90	32.866	6.99	33.053	8.84	33.020	10.57	34.352	13.75	34.339				
75m					3.82		33.094		3.78		33.104						10.48		34.357		13.40		34.342	
100m																	10.37		34.354		12.53		34.325	
125m																					11.57		34.370	
150m																					11.11		34.379	
200m																					11.05		34.376	
250m																								
300m																								
400m																								
500m																								
600m																								
700m																								
800m																								
900m																								
1000m																								

Table 4-28

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	P65		P64		P63		P62		P61		P56		P55		P54		P53		P52	
Latitude:N	41-40.1		41-50.0		42- 0.0		42-10.0		42-20.5		41-20.0		41-29.9		41-40.0		41-50.0		42- 0.0	
Longitude:E	141-20.3		141-20.0		141-20.0		141-20.0		141-19.5		141-40.0		141-50.0		142- 0.1		142-10.0		142-19.9	
Date	1996/07/22		1996/07/22		1996/07/22		1996/07/22		1996/07/25		1996/07/31		1996/07/31		1996/07/31		1996/08/01		1996/08/01	
Time(JST)	15:48		17:08		18:24		19:41		01:39		19:16		21:15		22:56		00:36		02:15	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	10.0		10.0		10.5		10.0		10.0		16.0		16.0		14.0		13.0		12.0	
Bar	1014.5		1014.5		1015.0		1015.0		1013.0		1012.0		1013.0		1013.0		1013.0		1013.5	
Wind Dir	ESE		ESE		ESE		ESE		SE		CALM		SW		W		NNW		NW	
Wind Spd/F	S 5		S 4		S 3		S 5		S 7		S 0		S 1		S 2		S 4		S 5	
Transparency	9		12		11															
Depth	234		286		310		366		203		756		948		1054		1082		1004	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	14.9	32.272	16.3	32.123	16.5	32.491	16.7	32.628	10.0	32.863	20.5	33.024	20.4	32.857	18.7	33.430	18.0	33.274	17.5	32.141
10m	14.39	32.815	15.19	32.609	14.60	33.107	13.85	33.169	15.13	32.920	18.82	33.457	17.59	33.595	17.48	33.859	16.88	33.917	16.94	33.302
20m	11.81	32.809	12.41	33.357	10.55	33.622	11.71	33.287	12.18	33.138	18.44	33.833	16.09	33.577	16.51	34.206	16.36	34.217	13.83	33.559
30m	11.69	32.814	6.40	33.020	5.81	33.310	9.38	33.665	12.12	33.877	17.64	33.946	13.54	33.171	16.28	34.226	15.78	34.252	13.28	34.251
50m	12.90	33.989	9.07	33.927	8.37	33.860	8.61	33.843	11.72	34.221	15.65	33.540	12.81	33.434	14.89	34.242	14.11	34.128	10.95	34.174
75m	10.71	34.277	5.25	33.434	8.37	33.952	8.96	34.026	9.09	33.934	11.62	33.593	12.05	33.777	12.50	34.146	12.59	34.194	9.69	34.097
100m	9.14	34.121	7.57	33.866	8.03	33.956	7.88	33.896	8.15	33.876	10.54	34.027	10.77	33.904	9.80	33.883	11.95	34.282	8.98	34.057
125m	7.42	33.931	6.73	33.786	6.85	33.804	6.87	33.785	7.87	33.883	8.57	33.887	9.52	33.986	8.94	33.932	10.91	34.225	8.20	33.989
150m	5.21	33.696	6.19	33.774	5.93	33.710	5.99	33.691	7.65	33.860	7.62	33.815	8.85	33.988	8.55	33.953	9.14	34.075	7.31	33.913
200m	4.12	33.628	5.24	33.720	5.00	33.662	4.58	33.611			5.92	33.659	6.81	33.758	7.00	33.784	5.85	33.695	5.06	33.714
250m			4.18	33.640	3.65	33.573	4.22	33.629			6.07	33.766	4.12	33.477	4.67	33.574	3.89	33.541	3.15	33.558
300m					3.28	33.596	3.64	33.620			5.80	33.846	2.57	33.377	3.21	33.464	3.31	33.596	2.75	33.596
400m											3.26	33.665	2.57	33.530	1.50	33.428	2.53	33.631	3.02	33.757
500m											2.92	33.750	2.56	33.699	2.15	33.594	3.19	33.864	3.27	33.923
600m													3.58	33.955	3.58	33.984	3.35	34.039	3.35	34.037
700m																				
800m																				
900m																				
1000m																				

Table 4-29

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608		
Station No	P51		HT05		HT06		HT07		HT04		HT03		HT02		HT01		HT08		HT09		
Latitude:N	42-10.0		41-36.1		41-33.4		41-30.9		41-30.1		41-27.0		41-23.9		41-20.7		41-33.0		41-35.6		
Longitude:E	142-30.0		140-33.0		140-36.0		140-39.1		140-25.1		140-26.6		140-28.2		140-29.5		140-52.7		140-50.4		
Date	1996/08/01		1996/08/05		1996/08/05		1996/08/05		1996/08/05		1996/08/05		1996/08/05		1996/08/05		1996/08/05		1996/08/05		
Time(JST)	04:00		12:00		12:27		13:07		14:50		15:22		16:09		16:54		18:54		19:26		
Weather	BC																				
Air Temp.	12.0																				
Bar	1013.5																				
Wind Dir	WNW																				
Wind Spd/F	S 4		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth	123																				
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	17.2	30.953	19.7*	34.06*	17.7*	34.14*	21.4*	34.11*	19.8*	34.05*	21.1*	34.17*	22.3*	34.06*	22.5*	33.67*	22.0*	34.03*	21.8*	33.92*	
10m	10.88	32.283	18.78	34.111	17.05	34.171	21.25	34.119	19.00	34.111	20.99	34.179	21.95	34.152	21.83	33.720	21.78	34.006	21.02	34.018	
20m	7.86	32.614	16.43	34.312	16.34	34.215	20.64	34.176	17.43	34.251	19.62	34.250	21.09	34.234	21.12	33.814	21.61	33.973	20.66	34.139	
30m	5.60	32.761	14.84	34.349	15.36	34.268	20.10	34.217	15.52	34.303	15.18	34.341	19.69	34.340	19.22	34.140	21.50	33.967	20.37	34.201	
50m	6.11	33.121			12.02	34.419	17.41	34.371	12.51	34.375	11.22	34.347	17.50	34.437	17.99	34.277			14.61	34.469	
75m	10.41	34.218					13.58	34.420	11.21	34.369	10.75	34.331	15.93	34.464	17.81	34.290			14.07	34.447	
100m	5.84	33.571					10.83	34.381	10.51	34.364	9.63	34.329	13.20	34.489	15.03	34.532					
125m							10.18	34.373					11.86	34.451	12.83	34.514					
150m							10.07	34.366					11.19	34.430							
200m							10.01	34.360													
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-30

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608		
Station No	HT10		HT11		HT12		HT13		HT14		HT15		HT16		HT17		HT18		HT19		
Latitude:N	41-38.4		41-41.1		41-43.3		41-42.0		41-38.7		41-35.4		41-32.0		41-28.7		41-27.2		41-30.5		
Longitude:E	140-48.1		140-45.7		140-43.6		141- 2.4		141- 3.7		141- 4.7		141- 5.7		141- 6.9		141-28.0		141-25.5		
Date	1996/08/05		1996/08/05		1996/08/05		1996/08/05		1996/08/05		1996/08/05		1996/08/06		1996/08/06		1996/08/06		1996/08/06		
Time(JST)	19:59		20:34		21:01		22:33		23:00		23:29		00:03		00:50		02:42		03:20		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	20.4*	34.11*	21.2*	34.09*	20.9*	33.98*	21.4*	33.96*	21.8*	34.04*	20.8*	33.89*	19.9*	34.00*	20.0*	33.97*	19.8*	34.04*	19.9*	34.01*	
10m	20.35	34.111	21.04	34.083	20.80	33.990	21.16	33.978	21.05	34.018	20.42	33.934	19.92	34.003	20.00	33.979	18.87	34.107	19.31	34.060	
20m	19.69	34.200	19.26	34.163	18.73	34.167	19.41	34.126	20.40	33.998	19.79	34.015	19.90	34.007	19.98	33.984	18.63	34.120	17.48	34.218	
30m	15.83	34.481	18.63	34.341	16.71	34.292	16.33	34.106	19.87	34.021	19.66	34.032	18.11	34.147	19.76	34.048	18.61	34.118	16.80	34.262	
50m	12.49	34.481	14.08	34.450	14.77	34.393			18.07	34.194	18.35	34.152	15.85	34.288	14.84	34.329			16.57	34.265	
75m	11.67	34.447	11.69	34.391	11.94	34.415			14.92	34.271	16.26	34.319	15.03	34.332					12.25	34.411	
100m	11.46	34.426	10.59	34.378							13.47	34.408	13.80	34.379							
125m	10.85	34.400	10.24	34.368							8.72	34.037	13.07	34.383							
150m	10.53	34.382											12.83	34.377							
200m	10.50	34.382											11.19	34.385							
250m	10.02	34.361											10.06	34.353							
300m													8.63	34.189							
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-31

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608		
Station No	HT20		HT21		HT22		HT23		HT24		HT25		HT26		HT27		HT28		HT29		
Latitude:N	41-33.8		41-37.3		41-40.7		41-44.1		41-47.4		41-50.1		41-50.0		41-50.0		41-50.0		41-57.7		
Longitude:E	141-22.9		141-20.4		141-17.7		141-15.0		141-12.6		141-17.0		141-23.5		141-30.0		141-36.4		141-19.4		
Date	1996/08/06		1996/08/06		1996/08/06		1996/08/06		1996/08/06		1996/08/06		1996/08/06		1996/08/06		1996/08/06		1996/08/06		
Time(JST)	04:01		04:51		05:42		06:28		07:04		07:36		08:19		09:02		09:53		11:42		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	20.3*	34.00*	20.7*	34.03*	20.5*	34.16*	20.2*	33.79*	16.0*	32.18*	17.6*	32.54*	16.6*	32.82*	16.9*	32.53*	15.9*	32.33*	17.4*	32.58*	
10m	20.10	34.009	20.38	33.984	20.26	34.161	18.36	33.292	15.37	32.371	16.63	32.443	13.38	33.387	16.48	32.816	15.44	32.385	16.38	33.283	
20m	19.63	34.040	20.08	33.989	20.19	34.147	17.55	33.753	14.37	32.707	12.46	33.504	12.00	33.546	15.12	33.541	11.12	32.986	13.48	33.602	
30m	17.59	34.215	18.42	34.151	19.70	34.175	14.96	33.811	13.78	32.776	10.70	33.670	11.01	33.737	11.59	33.690	9.30	33.414	10.82	33.696	
50m	16.36	34.247	18.01	34.117	18.00	34.149	10.08	33.780	9.44	33.616	10.45	34.135	9.84	34.040	11.15	34.098	11.29	34.206	10.04	33.935	
75m	14.22	34.391	13.63	34.325	11.05	34.020	9.04	33.880	8.06	33.812	9.29	34.022	8.41	33.905	10.12	34.144	9.96	34.130	9.49	34.060	
100m	13.15	34.407	11.83	34.222	9.50	34.046	8.32	33.919	6.77	33.732	8.52	33.948	7.63	33.854	10.07	34.221	10.25	34.256	8.68	33.990	
125m	12.97	34.403	9.50	34.087	7.80	33.858	7.14	33.789			7.20	33.808	6.98	33.779	9.10	34.090	8.71	34.074	7.86	33.914	
150m	12.56	34.395	8.71	34.012	6.43	33.718	6.36	33.710			5.68	33.629	6.69	33.786	7.99	33.975	7.77	33.936	6.35	33.727	
200m	9.90	34.283	4.57	33.609	4.74	33.602	5.22	33.662			4.80	33.601	4.70	33.595	5.59	33.730	5.47	33.709	4.64	33.550	
250m											4.39	33.632	4.11	33.603	3.22	33.539	3.83	33.583	3.91	33.567	
300m													3.31	33.585	2.93	33.566	2.59	33.506			
400m																	2.74	33.659			
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-32

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	HT30		HT31		HT32		HFK01		HSR007		HSR006		HSR005		HSR001		HSR004		HSR003	
Latitude:N	41-56.5		41-55.4		41-54.4		42-20.1		41-30.1		41-40.1		41-49.9		41-53.2		42- 0.1		42-10.0	
Longitude:E	141-14.2		141- 8.8		141- 4.3		140-35.1		141-20.1		141-20.2		141-20.0		141- 9.8		141-19.9		141-19.9	
Date	1996/08/06		1996/08/06		1996/08/06		1996/08/06		1996/08/26		1996/08/26		1996/08/26		1996/08/26		1996/08/27		1996/08/27	
Time(JST)	12:22		13:03		13:36		17:09		13:43		15:08		16:22		18:33		03:27		04:44	
Weather									BC		C		C		B		BC		BC	
Air Temp.									19.0		18.0		17.0		14.0		15.0		14.3	
Bar									1018.5		1017.5		1018.0		1018.5		1018.0		1019.0	
Wind Dir									CALM		NE		CALM		CALM		E		E	
Wind Spd/F	S		S		S		S		F 0		S 2		F 0		S 0		F 3		S 4	
Transparency									16		17		19							
Depth									242		232		285		126		309		356	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	17.5*	32.00*	16.2*	32.17*	17.3*	32.25*	18.2*	31.32*	21.3	34.118	22.7	34.115	20.3	32.962	20.1	31.294	19.6	32.997	19.6	33.257
10m	16.66	32.622	14.37	32.711	15.13	32.174	17.67	31.325	20.96	34.135	19.19	34.251	19.47	32.886	18.37	32.485	19.38	33.424	19.57	33.186
20m	13.78	33.611	12.55	33.091	14.58	32.726	16.07	31.622	20.92	34.139	17.20	34.330	18.15	32.956	14.76	32.793	18.71	33.652	19.55	33.228
30m	9.91	33.704	10.73	33.330	11.30	33.273	12.23	32.195	20.55	34.146	16.95	34.334	16.21	33.252	10.79	33.080	15.19	34.261	18.72	N.D.
50m	9.91	34.053	8.64	33.684	10.43	33.910	6.86	32.998	20.40	34.130	15.60	34.363	12.19	34.136	9.57	33.556	12.29	34.301	14.77	N.D.
75m	8.63	33.944	8.86	33.991	6.62	33.672	3.55	33.057	16.22	34.352	14.45	34.363	10.28	34.178	9.37	34.020	9.13	33.978	12.39	N.D.
100m	7.96	33.892	6.90	33.762					14.63	34.399	12.28	34.268	8.75	34.053	8.07	33.887	8.05	33.912	10.94	N.D.
125m	6.01	33.649	5.76	33.656					12.67	34.415	10.81	34.222	8.43	34.111	6.69	33.758	6.28	33.695	10.10	N.D.
150m	5.51	33.591	5.35	33.648					11.72	34.409	10.20	34.358	6.40	33.836			5.81	33.658	8.62	N.D.
200m	4.67	33.571							10.49	34.369	6.63	33.857	3.94	33.614			4.70	33.597	6.03	N.D.
250m													3.02	33.539			3.68	33.547	4.59	N.D.
300m																	3.09	33.544	3.63	N.D.
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-33

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	HSR002		HSR014		HSR015		HSR013		HSR012		HSR011		HSR010		HSR009		HSR081		HSR008	
Latitude:N	42-20.0		42-10.1		42- 0.0		42- 0.2		41-50.1		41-40.1		41-30.2		41-20.2		41- 7.1		41-10.0	
Longitude:E	141-20.0		142-29.9		142-40.0		142-20.1		142-10.0		142- 0.1		141-50.0		141-39.9		141-28.3		141-29.8	
Date	1996/08/27		1996/08/27		1996/08/27		1996/08/28		1996/08/28		1996/08/28		1996/08/28		1996/08/28		1996/08/28		1996/09/02	
Time(JST)	06:02		11:44		18:45		03:40		05:32		07:26		09:22		11:20		15:41		18:40	
Weather	BC		BC		B		BC		BC		BC		B		BC		C		C	
Air Temp.	14.3		16.0		12.0		12.0		12.0		13.5		13.5		13.0		14.0		13.5	
Bar	1019.4		1020.0		1019.5		1017.5		1017.2		1016.6		1016.5		1016.0		1014.5		1006.5	
Wind Dir	E		SE		ESE		ESE		ESE		E		E		E		E		CALM	
Wind Spd/F	S 3		S 5		S 3		S 6		S 7		S 7		S 7		S 5		S 8		S 0	
Transparency	18		15		21				13		12		13		15		14			
Depth	243		122		546		1002		1078		1052		933		760		384		481	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	20.1	32.561	20.0	32.995	19.5	33.073	19.8	34.041	20.5	33.848	19.6	33.804	19.5	33.735	20.0	33.665	20.4	33.958	19.3	33.577
10m	19.34	32.451	19.27	33.208	19.58	33.407	19.94	34.005	20.60	34.090	19.46	33.720	19.40	33.693	19.91	33.608	19.88	34.139	19.13	33.538
20m	15.98	33.202	17.23	33.532	16.60	33.204	19.23	34.126	19.74	34.154	19.41	33.818	18.17	33.799	19.83	33.716	19.55	34.173	19.11	33.590
30m	11.68	33.429	11.83	33.108	15.67	33.596	18.02	34.217	17.60	34.285	19.01	34.175	17.34	34.030	17.05	34.021	18.78	34.212	18.72	33.741
50m	9.86	33.750	8.18	33.046	12.64	33.778	15.40	34.351	16.03	34.335	15.05	33.917	14.89	34.300	14.17	34.254	17.62	34.285	14.45	34.088
75m	9.61	33.994	11.47	34.270	6.99	33.157	13.90	34.430	12.76	34.326	13.97	34.365	14.00	34.326	13.10	34.320	15.52	34.248	13.70	34.316
100m	8.55	33.946	7.62	33.823	9.15	33.909	11.42	34.189	11.97	34.280	12.72	34.357	13.00	34.343	12.26	34.255	13.12	34.218	12.35	34.176
125m	7.94	33.895			8.93	33.988	10.02	34.147	11.31	34.228	11.69	34.277	12.45	34.312	11.35	34.220	11.38	34.116	11.96	34.212
150m	6.81	33.768			7.89	33.895	9.27	34.117	10.65	34.223	10.64	34.186	11.07	34.229	10.46	34.154	8.25	33.708	11.28	34.181
200m	4.76	33.606			6.27	33.702	6.95	33.789	7.38	33.787	9.47	34.102	8.27	33.888	7.38	33.806	5.68	33.580	7.80	33.871
250m					3.95	33.549	3.99	33.506	4.15	33.439	5.82	33.661	5.02	33.565	4.07	33.466	4.56	33.531	3.67	33.433
300m					3.01	33.527	3.51	33.512	2.75	33.381	3.08	33.419	3.55	33.479	1.60	33.265	2.94	33.456	2.49	33.448
400m					2.59	33.625	2.64	33.574	2.08	33.450	1.85	33.412	2.32	33.462	2.37	33.517			2.59	33.594
500m					3.11	33.855	2.74	33.723			1.96	33.556	2.52	33.629	2.76	33.731				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-34

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199609		199609		199609		199609		199609		199609		199609		199608		199608		199608			
Station No	HNA07		HNA06		HNA05		HNA04		HNA03		HNA02		HNA01		HSR18		HSR017		HSR016			
Latitude:N	41-23.2		41-20.6		41-18.3		41-15.9		41-13.5		41-11.1		41- 8.6		41-13.3		41-15.2		41-40.1			
Longitude:E	140-10.6		140-11.3		140-11.7		140-12.5		140-13.2		140-13.6		140-14.3		139-50.7		139-48.9		140-39.8			
Date	1996/09/03		1996/09/03		1996/09/03		1996/09/03		1996/09/03		1996/09/03		1996/09/03		1996/09/10		1996/09/10		1996/09/12			
Time(JST)	13:35		14:19		14:47		15:21		15:51		16:22		16:52		16:14		18:25		18:42			
Weather																	BC		BC		BC	
Air Temp.																	18.0		15.0			
Bar																	1011.0		1012.0		1018.0	
Wind Dir																	SW		W		E	
Wind Spd/F	S		S		S		S		S		S		S		S 3		S 5		S 4			
Transparency																	21					
Depth																	1100		1280			
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD			
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S		
0m	21.6	34.13*	22.1	34.12*	22.5	34.02*	22.7	33.97*	22.7	33.97*	22.7	33.94*	22.7	33.95*	23.3	34.04*	22.8	34.054	21.4	34.166		
10m	17.23	34.293	22.11	34.121	22.48	34.026	22.71	33.966	22.60	33.982	22.71	33.946	22.18	34.026	22.92	34.060	22.91	33.975	20.49	34.146		
20m	13.60	34.373	15.63	34.488	22.43	34.029	22.68	33.966	22.46	33.992	22.37	34.000	21.60	34.090	22.63	34.027	22.82	34.040	19.65	34.187		
30m	10.89	34.373	14.37	34.516	20.70	34.172	22.41	34.006	20.40	34.237	19.24	34.343	20.07	34.270	18.16	34.358	18.33	34.211	16.31	34.331		
50m			11.22	34.451	17.06	34.391	18.13	34.441	17.47	34.472	17.99	34.428	19.26	34.333	12.89	34.162	11.84	34.434	11.82	34.425		
75m			8.39	34.291	13.76	34.594	14.56	34.550	14.47	34.595	14.98	34.565			8.60	34.336	9.01	34.335	10.69	34.389		
100m			7.15	34.221	10.18	34.404	11.37	34.464	12.27	34.510					6.59	34.200	7.46	34.237	10.38	34.367		
125m					8.49	34.308	9.66	34.372							4.84	34.123	5.63	34.149				
150m															4.00	34.079	4.38	34.090				
200m															2.57	34.044	2.36	34.057				
250m															1.95	34.059	1.55	34.060				
300m															1.29	34.063	1.21	34.060				
400m															0.66	34.061	0.67	34.060				
500m															0.41	34.060	0.45	34.060				
600m															0.32	34.060						
700m																						
800m																						
900m																						
1000m																						

Table 4-35

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199609		199609		199609		199609		199609		199609		199609		199609		199609		199609		
Station No	HFK01		HFK06		HFK05		HFK04		HFK03		HFK02		HFK10		HFK09		HFK08		HFK07		
Latitude:N	41-37.4		41-57.6		41-59.9		42- 5.0		42- 9.9		42-15.0		42-15.1		42-10.1		42- 5.1		42- 2.4		
Longitude:E	141-20.2		141- 2.4		141- 4.9		141- 9.9		141-14.9		141-20.0		141-10.1		141- 5.1		141- 0.2		140-57.7		
Date	1996/09/17		1996/09/17		1996/09/17		1996/09/17		1996/09/17		1996/09/17		1996/09/17		1996/09/17		1996/09/17		1996/09/17		
Time(JST)	14:06		17:20		17:49		18:50		19:42		20:36		21:39		22:27		23:18		23:47		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	22.8	33.86*	19.3	32.83*	19.2	32.74*	19.5	32.85*	19.5	33.14*	19.3	33.62*	19.4	32.34*	19.5	32.67*	19.4	32.37*	19.6	32.09*	
10m	21.41	33.987	18.82	32.870	19.17	32.949	19.45	32.986	19.41	33.343	19.29	33.626	19.07	33.543	19.40	33.003	19.13	32.917	19.25	32.520	
20m	20.71	34.057	18.72	33.558	18.74	33.781	18.51	33.645	19.16	33.681	16.92	33.979	19.03	33.777	19.11	33.516	19.06	33.722	18.16	33.111	
30m	20.53	34.064	16.63	33.433	16.45	33.879	13.85	33.846	16.07	33.717	12.72	33.852	17.85	33.901	16.46	33.711	16.73	33.700	13.68	32.870	
50m	20.26	34.083	11.21	33.557	11.94	33.922	11.04	33.924	11.82	33.964	11.77	34.195	11.78	33.618	12.70	34.073	8.53	33.123	9.23	33.023	
75m	18.29	34.202	7.54	33.525	10.01	33.953	10.10	34.039	10.04	34.062	10.39	34.117	10.08	34.065	9.07	33.856	5.28	33.325			
100m	15.39	34.265			8.76	33.911	9.32	34.046	8.72	34.005	9.31	34.077									
125m	12.98	34.331							8.01	33.921	8.13	33.937									
150m	10.08	34.164							6.34	33.726	7.11	33.818									
200m	9.15	34.227									4.86	33.608									
250m											3.67	33.557									
300m											2.98	33.613									
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-36

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199609		199609		199609		199609		199609		199609		199609		199609		199609		199609		
Station No	HFK14		HFK13		HFK12		HFK11		HFK18		HFK17		HFK16		HFK15		HFK22		HFK21		
Latitude:N	42- 7.6		42-10.1		42-15.2		42-17.7		42-17.8		42-15.3		42-12.7		42-10.3		42-10.0		42-14.9		
Longitude:E	140-52.5		140-54.8		140-59.9		141- 5.0		140-52.5		140-49.9		140-47.6		140-45.2		140-35.2		140-39.9		
Date	1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		
Time(JST)	00:35		01:02		01:50		02:28		03:32		04:00		04:39		05:12		06:10		07:02		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	19.6	31.96*	19.4	32.32*	19.5	32.97*	19.2	32.83*	19.5	32.92*	19.5	32.82*	19.4	32.21*	19.7	31.91*	19.8*	31.41*	19.5	32.05*	
10m	19.38	32.270	19.53	32.997	19.51	33.109	19.14	33.138	19.46	33.139	19.54	32.825	18.24	32.607	19.68	31.948	19.57	32.017	19.52	32.049	
20m	16.24	33.003	18.92	33.687	19.11	33.537	19.16	33.307	19.22	33.336	18.99	33.592	17.62	33.042	17.79	32.412	18.33	32.509	17.26	32.561	
30m	15.05	33.391	16.32	33.685	19.05	33.734	19.11	33.445	18.73	33.436	17.31	33.654	13.42	32.902	15.47	32.955	15.56	32.769	14.55	33.312	
50m	8.45	33.113	10.52	33.645	13.83	33.676	18.92	33.751	13.92	33.673	10.22	33.507	7.83	33.064	8.58	33.059	9.56	33.311	10.59	33.458	
75m	4.67	33.250											5.14	33.286	3.93	33.139			5.00	33.271	
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-37

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199609		199609		199609		199609		199609		199609		199609		199609		199609		199609		
Station No	HFK20		HFK19		HFK28		HFK27		HFK26		HFK25		HFK24		HFK23		HFK29		HFK102		
Latitude:N	42-20.0		42-25.0		42-27.7		42-25.1		42-22.7		42-20.1		42-17.7		42-15.2		42-19.9		42-18.1		
Longitude:E	140-44.9		140-50.0		140-42.6		140-40.0		140-37.4		140-34.8		140-32.3		140-30.1		140-24.9		140-55.8		
Date	1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/18		1996/09/19		
Time(JST)	08:02		08:48		09:30		09:58		10:39		11:15		11:47		12:19		13:03		08:20		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	19.4	32.96*	19.5	32.18*	19.6	31.88*	19.4	32.87*	19.4	32.82*	19.2	32.40*	19.4	32.16*	19.8	31.62*	19.7	31.80*	19.2*	33.11*	
10m	19.45	32.959	19.51	32.181	19.53	32.070	19.40	32.878	19.43	32.819	19.23	32.404	19.22	32.221	19.75	31.623	19.72	31.797	19.18	33.146	
20m	19.30	33.215	19.21	32.560	19.47	32.400	19.41	32.905	19.42	32.899	19.38	32.824	18.57	32.858	18.71	32.423	19.31	32.206	19.13	33.277	
30m	18.59	33.676	18.56	33.547	19.43	32.523	19.19	33.375	18.10	33.682	16.12	33.326	14.43	33.078	14.15	32.769	17.61	32.687	19.06	33.403	
50m	12.94	33.680			11.23	33.408	12.66	33.287	10.76	33.352	10.53	33.475	8.75	33.190	6.19	32.970	9.90	33.210			
75m											4.80	33.230	4.55	33.174	4.73	33.246					
100m																					
125m																					
150m																					
200m																					
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-38

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199609		199609		199609		199609		199609		199609		199609		199609		199610		199610					
Station No	HFK101		HFK01		HFK02		HFK03		HFK04		HFK05		HFK06		HFK07		P64		P65					
Latitude:N	42-15.8		42- 9.3		42-12.4		42-16.1		42-20.0		42-24.0		42-26.9		42-29.9		41-50.0		41-40.1					
Longitude:E	140-52.8		140-41.8		140-38.6		140-36.1		140-33.9		140-33.5		140-36.9		140-40.2		141-20.0		141-20.2					
Date	1996/09/19		1996/09/24		1996/09/24		1996/09/24		1996/09/24		1996/09/24		1996/09/24		1996/09/24		1996/09/30		1996/09/30					
Time(JST)	08:58		16:59		17:47		18:45		19:37		20:26		21:15		21:59		13:43		17:59					
Weather																			BC		C			
Air Temp.																			16.0		14.0			
Bar																			1014.5		1013.5			
Wind Dir																			SE		SE			
Wind Spd/F	S		S		S		S		S		S		S		S		S 3		S 6					
Transparency																			16		18			
Depth																			284		233			
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD					
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S				
0m	19.3*	33.01*	19.5*	32.14*	19.5*	32.00*	19.4*	32.22*	19.3*	32.40*	19.3*	32.37*	19.3*	31.99*	19.3*	32.44*	19.0	33.197	21.3	33.849				
10m	19.26	33.062	19.34	32.292	19.35	32.099	19.45	32.273	19.27	32.401	19.32	32.369	19.30	33.382	19.12	33.369	18.61	33.292	20.67	33.914				
20m	18.99	33.557	19.27	32.561	19.19	32.760	19.35	32.396	19.03	32.468	19.25	33.474	19.14	33.583	19.08	33.571	18.41	33.422	20.30	33.980				
30m	19.00	33.721	19.10	32.865	18.95	32.972	17.54	33.279	17.80	33.402	18.94	33.672	19.08	33.675	19.01	33.690	16.60	33.880	19.88	34.017				
50m	18.34	33.742	10.74	33.110	11.67	33.356	10.55	33.361	10.97	33.401	13.71	33.505	14.05	33.324	13.23	33.320	11.49	34.262	18.13	34.150				
75m					4.99	33.138	5.07	33.154	4.88	33.198	5.28	33.322	5.00	33.317					10.45	34.172	14.75	34.209		
100m																			9.71	34.121	11.09	34.209		
125m																			9.09	34.054	10.73	34.238		
150m																			8.23	33.978	9.48	34.268		
200m																			6.32	33.775	6.12	33.900		
250m																			3.28	33.511				
300m																								
400m																								
500m																								
600m																								
700m																								
800m																								
900m																								
1000m																								

Table 4-39

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	P66		P56		P55		P54		P53		P52		P51		P61		P62		P63	
Latitude:N	41-30.0		41-20.0		41-30.0		41-40.0		41-50.0		42- 0.1		42-10.0		42-20.0		42-10.0		42- 0.0	
Longitude:E	141-19.9		141-40.0		141-50.1		142- 0.0		142-10.1		142-19.9		142-29.5		141-20.1		141-20.0		141-20.0	
Date	1996/09/30		1996/09/30		1996/09/30		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01	
Time(JST)	19:25		21:46		23:43		01:40		03:19		05:17		06:56		12:21		13:35		14:52	
Weather	C		C		C		C		C		C		C		BC		BC		BC	
Air Temp.	12.5		12.5		12.5		14.0		14.0		12.5		13.0		16.0		14.0		14.0	
Bar	1014.0		1013.0		1012.5		1013.0		1012.5		1013.0		1012.5		1013.0		1013.0		1013.0	
Wind Dir	CALM		NNE		CALM		ENE		NE		ENE		NNE		SW		W		W	
Wind Spd/F	S 0		S 3		S 0		S 4		S 4		S 6		S 2		S 4		S 4		S 4	
Transparency													15		15		16		16	
Depth	242		756		940		1048		1084		1002		122		246		362		309	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	20.0	33.970	18.4	33.958	19.6	33.994	19.3	33.849	19.7	33.977	19.5	33.966	19.4	34.005	19.3	33.743	18.9	32.808	19.1	32.736
10m	20.00	33.976	18.68	33.949	19.59	33.959	19.29	33.862	19.78	33.967	19.46	33.961	19.33	33.987	18.77	33.693	18.24	33.668	18.37	33.679
20m	19.71	33.967	18.56	33.973	19.59	33.959	19.40	33.965	19.79	33.967	19.44	33.986	19.28	33.996	18.00	33.784	17.10	33.854	16.02	34.062
30m	19.58	33.949	18.53	33.977	19.59	33.959	19.32	33.983	19.54	33.986	19.44	34.007	18.06	34.096	15.66	34.083	15.66	34.000	13.49	34.201
50m	16.39	34.180	17.95	34.107	19.49	33.971	19.26	33.985	18.95	34.046	18.49	34.101	15.64	34.220	14.06	34.267	12.32	34.222	12.01	34.213
75m	14.45	34.302	15.79	34.229	18.12	34.089	18.70	34.038	17.61	34.148	15.77	34.241	14.58	34.276	12.17	34.239	10.65	34.125	10.76	34.185
100m	13.09	34.339	14.52	34.294	15.86	34.221	15.99	34.242	14.24	34.366	14.13	34.313	11.32	34.213	10.17	34.095	10.15	34.156	9.77	34.125
125m	12.74	34.344	13.59	34.293	14.38	34.265	14.64	34.289	13.24	34.325	12.47	34.302			9.88	34.091	9.59	34.159	8.60	34.029
150m	11.51	34.330	12.90	34.321	13.49	34.300	12.95	34.297	12.48	34.327	11.37	34.295			9.37	34.117	8.96	34.092	7.52	33.888
200m	10.57	34.338	11.70	34.258	12.06	34.282	11.88	34.299	11.52	34.305	9.27	34.042			8.89	34.116	6.96	33.855	4.97	33.611
250m			9.37	34.085	10.41	34.226	10.03	34.144	8.97	34.155	4.84	33.563					4.66	33.592	3.86	33.554
300m			4.81	33.564	8.98	34.101	6.46	33.702	8.16	34.070	2.70	33.429					3.54	33.526	3.48	33.558
400m			2.69	33.526	2.87	33.590	2.83	33.572	2.61	33.522	2.73	33.611								
500m			3.19	33.904	3.25	33.970	3.02	33.815	2.95	33.787	3.14	33.872								
600m			3.37	34.076	3.38	34.095	3.36	34.011	3.37	34.090	3.26	34.011								
700m																				
800m																				
900m																				
1000m																				

Table 4-40

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	HKG004		HKG003		HKG002		HKG001		HW001		HW012		HW010		HW011		HW009		HW007	
Latitude:N	42- 4.8		42- 4.5		42- 4.6		42- 4.8		41-20.1		41-19.9		41-29.9		41-29.9		41-40.0		41-50.0	
Longitude:E	141- 8.9		141- 3.8		140-58.9		140-51.8		139-55.1		139-40.2		139-30.1		139-40.0		139-40.0		139-30.0	
Date	1996/10/15		1996/10/15		1996/10/15		1996/10/15		1996/10/21		1996/10/21		1996/10/21		1996/10/21		1996/10/21		1996/10/21	
Time(JST)	10:07		10:47		11:34		12:34		15:21		16:56		19:00		20:10		21:42		23:28	
Weather	C		C		C		C		BC		B		B		B		B		B	
Air Temp.	17.0		12.5		13.5		13.5		10.5		10.5		10.0		9.5		9.5		9.5	
Bar	1005.5		1005.0		1005.0		1004.5		1029.5		1029.0		1029.5		1029.5		1030.0		1029.5	
Wind Dir	NW		NW		NW		NW		WNW		SW		W		NW		W		W	
Wind Spd/F	S 5		S 6		S 4		S 7		S 2		S 5		S 2		S 4		S 5		S 5	
Transparency	12		14		19		14													
Depth	121		99		82		62		129		522		1280		1433		1432		667	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	16.6	33.97*	16.3	33.89*	16.5	33.49*	15.7	33.36*	19.1	33.56*	19.0	33.55*	17.4	33.79*	16.6	33.90*	15.8	33.92*	15.7	33.93*
10m	16.45	33.977	16.16	33.916	16.39	33.676	16.54	33.411	19.19	33.575	19.10	33.553	16.25	33.897	16.60	33.909	15.87	33.925	15.80	33.927
20m	16.25	33.999	16.16	33.976	16.49	33.912	12.79	33.512	18.81	33.665	19.10	33.552	15.53	33.902	16.45	33.927	15.86	33.924	15.80	33.926
30m	15.25	34.084	16.02	34.013	14.39	33.810	11.92	33.908	18.00	33.795	19.07	33.555	15.23	33.911	15.51	33.930	15.42	33.903	15.70	33.927
50m	12.68	34.170	13.94	34.203	9.15	33.931	9.18	33.718	14.62	34.295	14.79	34.120	6.31	34.059	7.71	34.028	5.99	34.097	5.82	34.088
75m	11.56	34.204	8.04	33.743	7.35	33.912			13.06	34.483	13.38	34.551	2.89	34.031	3.82	34.036	2.55	34.061	2.76	34.077
100m	10.24	34.141							9.16	34.359	10.19	34.414	1.91	34.025	3.30	34.076	2.10	34.055	1.77	34.066
125m											7.30	34.245	1.69	34.053	2.85	34.074	1.68	34.062	1.55	34.062
150m											5.11	34.134	1.44	34.060	2.28	34.059	1.48	34.065	1.45	34.064
200m											2.37	34.062	1.15	34.069	1.47	34.069	1.15	34.068	1.22	34.067
250m											1.33	34.068	0.94	34.072	1.19	34.071	0.87	34.068	1.00	34.068
300m											1.09	34.068	0.80	34.072	1.06	34.077	0.74	34.068	0.82	34.069
400m											0.91	34.069	0.58	34.070	0.77	34.074	0.54	34.067	0.58	34.068
500m													0.45	34.071			0.43	34.067	0.45	34.068
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-41

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199611		199611		199611		199611	
Station No	HW008		HW006		HW005		HW004		HW003		HW002		HTK08		HTK09		HTK17		HTK18	
Latitude:N	41-50.0		42- 0.0		41-59.9		41-50.0		41-40.1		41-30.0		41-43.7		41-42.0		41-47.2		41-50.0	
Longitude:E	139-44.9		139-40.0		140- 0.0		140- 0.0		139-55.0		139-55.1		140-43.4		141- 2.4		141-12.4		141-23.5	
Date	1996/10/22		1996/10/22		1996/10/22		1996/10/22		1996/10/22		1996/10/22		1996/11/11		1996/11/11		1996/11/11		1996/11/11	
Time(JST)	01:02		02:34		04:30		06:00		07:46		09:23		10:46		12:14		13:15		14:21	
Weather	BC		BC		B		C		B		BC									
Air Temp.	9.9		10.0		5.0		11.0		12.0		12.0									
Bar	1029.5		1028.5		1028.5		1029.0		1029.5		1030.0									
Wind Dir	W		W		WSW		W		WSW		W									
Wind Spd/F	S 7		S 7		S 6		S 5		S 4		S 6		S		S		S		S	
Transparency							13		16		16									
Depth	1398		897		729		872		1280		237									
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	15.8	33.93*	16.7	33.93*	16.1	33.93*	16.3	33.95*	17.2	33.82*	16.8	33.84*	13.4	34.02*	15.1	33.94*	13.3	34.03*	13.1	34.07*
10m	15.89	33.930	16.51	33.929	16.12	33.925	16.26	33.947	17.13	33.818	16.89	33.835	13.41	34.022	15.08	33.936	13.29	34.034	13.09	34.073
20m	15.89	33.929	16.51	33.930	14.60	34.139	16.24	33.953	17.11	33.822	16.19	33.931	13.35	34.033	14.97	33.946	13.25	34.042	13.09	34.077
30m	15.51	33.912	16.47	33.942	11.80	34.427	16.21	33.964	15.51	34.106	15.78	33.912	13.07	34.052	14.39	33.984	13.21	34.049	13.09	34.081
50m	6.49	34.069	8.41	34.068	9.39	34.364	14.88	34.130	9.63	34.354	12.51	34.471	12.99	34.048			12.98	34.070	13.04	34.093
75m	3.41	34.072	4.23	34.041	6.37	34.192	9.83	34.391	6.97	34.215	8.03	34.298					12.75	34.042	12.08	34.220
100m	2.48	34.056	3.15	34.045	5.03	34.107	6.37	34.205	5.81	34.158	5.61	34.158					10.87	34.058	10.33	34.168
125m	1.85	34.062	2.35	34.049	3.28	34.066	4.81	34.128	5.07	34.131	4.12	34.108							9.30	34.083
150m	1.64	34.064	1.89	34.054	2.64	34.053	3.83	34.081	4.00	34.081	3.18	34.072							7.11	33.888
200m	1.27	34.067	1.36	34.066	1.72	34.061	2.62	34.048	2.55	34.057	2.17	34.050							4.92	33.657
250m	0.99	34.069	1.08	34.069	1.33	34.066	1.92	34.060	1.77	34.054									3.14	33.517
300m	0.80	34.068	0.94	34.069	1.02	34.069	1.37	34.066	1.36	34.061									2.73	33.577
400m	0.59	34.068	0.65	34.066	0.71	34.068	0.91	34.068	1.06	34.076										
500m	0.43	34.067	0.48	34.066	0.52	34.068	0.66	34.068	0.67	34.072										
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-42

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199611		199611		199611		199611		199611		199611		199611		199611		199611		199611		
Station No	HTK19		HTK20		HTK01		HTK02		HTK05		HTK06		HTK07		HTK10		HTK04		HTK03		
Latitude:N	41-56.4		41-55.4		42- 0.4		42- 5.0		42-10.0		42-12.5		42-15.1		42-20.0		41-36.1		41-30.0		
Longitude:E	141-14.1		141- 8.6		141- 5.1		140-59.9		140-54.9		140-47.5		140-40.0		140-35.1		140-32.8		140-25.1		
Date	1996/11/11		1996/11/11		1996/11/11		1996/11/11		1996/11/11		1996/11/11		1996/11/11		1996/11/11		1996/11/18		1996/11/18		
Time(JST)	15:37		16:39		17:26		18:10		18:58		19:45		20:49		21:36		11:34		12:28		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	12.3	33.95*	13.2	34.03*	12.4	34.05*	12.3	33.88*	12.1	33.81*	12.3	33.85*	12.3	33.87*	11.8	33.65*	13.2*	34.11*	12.6*	34.09*	
10m	12.25	33.960	13.18	34.028	12.45	34.053	12.32	33.879	12.14	33.809	12.31	33.855	12.35	33.867	11.82	33.647	13.16	34.110	11.76	34.124	
20m	12.21	33.977	13.01	34.034	12.46	34.053	12.35	33.907	12.17	33.818	12.33	33.860	12.34	33.864	11.83	33.653	13.12	34.116	10.75	34.122	
30m	12.18	33.983	12.98	34.041	12.44	34.052	12.36	33.915	12.30	33.878	12.43	33.890	12.35	33.866	11.83	33.746	13.02	34.125	10.51	34.131	
50m	11.91	34.009	12.50	34.052	11.94	34.097	12.42	33.980	12.11	34.035	12.83	34.043	11.50	34.007	9.88	33.936			10.40	34.132	
75m	10.85	34.195	10.77	34.159	9.66	34.104	9.29	34.055			8.81	34.028	9.55	34.049	9.40	33.975			10.19	34.140	
100m	10.18	34.184	9.49	34.104	9.06	34.064													8.32	34.212	
125m	8.57	34.022	8.33	33.987																	
150m	7.53	33.922																			
200m	5.41	33.712																			
250m																					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-43

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199611		199611		199611		199611		199611		199611		199611		199611		199611		199611	
Station No	HTK11		HTK12		HTK13		HTK14		HTK15		HTK16		HIK01		HIK02		HIK03		HIK04	
Latitude:N	41-27.1		41-30.5		41-34.0		41-37.3		41-40.5		41-44.0		41-47.2		41-47.6		41-42.6		41-46.5	
Longitude:E	141-27.9		141-25.7		141-23.0		141-20.3		141-17.6		141-14.9		141-12.0		141-12.2		141- 2.8		141-10.3	
Date	1996/11/18		1996/11/18		1996/11/18		1996/11/18		1996/11/18		1996/11/18		1996/11/18		1996/11/19		1996/11/20		1996/11/20	
Time(JST)	17:04		17:41		18:23		19:10		19:51		20:34		21:27		07:54		12:08		15:18	
Weather													BC		C		BC		BC	
Air Temp.													3.0		2.0		10.0		7.0	
Bar													1013.5		1015.5		1028.5		1027.0	
Wind Dir													W		WSW		S		SE	
Wind Spd/F	S		S		S		S		S		S		F 5		S 8		S 3		S 2	
Transparency																				
Depth													96		86		37		42	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.5*	34.09*	13.6*	34.09*	13.7*	34.09*	12.1*	34.10*	12.7*	34.12*	11.8*	34.12*	11.7*	34.10*	11.3*	<i>N.D.</i>	11.9*	34.10*	11.5*	34.08*
10m	13.50	34.091	13.56	34.090	13.72	34.090	12.11	34.096	12.64	34.126	11.78	34.119	11.70	34.101	11.30	34.081	11.65	34.095	11.46	34.100
20m	13.48	34.093	13.56	34.090	13.73	34.090	11.77	34.092	11.55	34.147	11.75	34.121	11.64	34.099	11.29	34.080	11.37	34.089	11.46	34.015
30m	13.47	34.092	13.54	34.092	13.74	34.090	11.58	34.088	11.13	34.134	11.71	34.121	11.46	34.091	11.29	34.081	11.02	34.078	11.45	34.014
50m			13.32	34.102	13.70	34.090	10.67	34.040	10.62	34.115	11.34	34.125	10.99	34.059	10.76	34.058				
75m			12.85	34.122	13.52	34.096	10.41	34.021	8.74	33.969	9.34	33.988	9.34	34.017	7.81	33.899				
100m					13.40	34.098	9.03	33.942	7.00	33.833	7.43	33.870								
125m					12.93	34.112	7.41	33.841	5.39	33.758	6.09	33.771								
150m					12.08	34.136	6.86	33.805	3.07	33.573	5.10	33.668								
200m					9.63	34.118	5.20	33.734	2.75	33.591	3.33	33.528								
250m					9.33	34.068														
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-44

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	P64		P63		P62		P61		P51		P52		P53		P54		P55		P66	
Latitude:N	41-50.0		41-59.9		42- 9.9		42-19.9		42-10.0		42- 0.1		41-50.0		41-40.0		41-29.9		41-30.1	
Longitude:E	141-19.9		141-20.0		141-20.1		141-20.0		142-29.8		142-20.0		142-10.0		142- 0.1		141-50.2		141-20.1	
Date	1996/11/26		1996/11/26		1996/11/26		1996/11/26		1996/11/26		1996/11/26		1996/11/26		1996/11/26		1996/11/26		1996/11/26	
Time(JST)	02:01		03:28		04:57		06:23		12:09		13:37		15:23		17:07		18:55		22:29	
Weather	C		C		C		BC		B		BC		BC		C				BC	
Air Temp.	3.0		2.0		1.5		2.0		7.5		4.0		4.0		4.0				4.0	
Bar	1028.0		1028.5		1028.5		1028.5		1027.5		1027.5		1028.0		1029.0				1027.0	
Wind Dir	N		NNW		NW		WNW		NW		NW		NW		NNW				ESE	
Wind Spd/F	S 9		S 7		S 5		S 7		S 6		S 6		S 5		S 5		S		S 3	
Transparency									11		18		17							
Depth			309		364		245		122		1002		1080		1053				242	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	11.6	34.094	10.5	34.041	10.6	34.079	9.6	34.088	9.8	33.949	11.8	34.065	11.9	34.091	11.9	34.120	13.7	34.048	14.4	34.017
10m	11.55	34.096	10.38	34.053	10.63	34.078	9.58	34.063	9.59	33.951	11.97	34.093	12.24	34.098	11.91	34.110	13.78	34.059	14.57	34.024
20m	11.55	34.095	10.38	34.053	10.64	34.077	9.53	34.059	9.32	33.929	11.97	34.093	12.25	34.098	11.90	34.110	13.79	34.059	14.57	34.025
30m	11.54	34.096	10.38	34.054	10.64	34.077	9.45	34.052	9.05	33.903	11.97	34.093	12.04	34.096	11.89	34.110	13.78	34.058	14.30	34.044
50m	11.37	34.092	10.38	34.053	10.64	34.077	9.40	34.047	8.36	33.850	11.97	34.092	11.63	34.106	11.87	34.110	13.70	34.062	14.20	34.049
75m	10.77	34.088	10.39	34.053	9.84	34.020	8.99	34.015	7.42	33.823	11.96	34.092	11.50	34.117	11.83	34.109	13.07	34.075	14.20	34.048
100m	10.60	34.097	10.38	34.053	9.27	34.008	7.76	33.884	6.82	33.794	10.62	34.027	11.50	34.116	11.51	34.106	13.10	34.073	14.01	34.053
125m	9.34	34.052	10.29	34.052	8.49	33.958	7.31	33.842			9.82	34.001	10.67	34.133	10.88	34.100	12.80	34.073	13.93	34.058
150m	8.44	33.948	9.46	34.023	7.19	33.846	6.22	33.757			9.62	34.093	9.23	34.060	9.89	34.044	12.41	34.057	12.19	34.027
200m	5.34	33.647	8.46	33.949	3.74	33.505	5.04	33.641			8.92	34.071	5.82	33.723	6.95	33.818	9.59	33.941	7.65	33.823
250m	3.76	33.534	5.11	33.640	3.39	33.512					5.04	33.657	3.65	33.554	3.66	33.535	6.78	33.837		
300m			2.92	33.517	2.64	33.599					3.55	33.554	2.80	33.603	2.84	33.587	3.71	33.601		
400m											3.00	33.760	3.13	33.852	2.98	33.765	2.81	33.703		
500m											3.35	33.974	3.36	34.030	3.38	33.967	3.15	33.910		
600m											3.33	34.088	3.35	34.185	3.30	34.121	3.32	34.070		
700m																				
800m																				
900m																				
1000m																				

Table 4-45

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199611		199611	
Station No	P65		HNA07		HNA06		HNA05		HNA04		HNA03		HNA02		HNA01		HIK05		HIK06	
Latitude:N	41-40.1		41-23.1		41-20.7		41-18.4		41-15.8		41-13.2		41-10.8		41- 8.5		41-46.7		41-44.2	
Longitude:E	141-20.2		140-10.6		140-11.0		140-11.8		140-12.4		140-12.8		140-13.4		140-14.2		140-41.6		141- 6.3	
Date	1996/11/26		1996/12/02		1996/12/02		1996/12/02		1996/12/02		1996/12/02		1996/12/02		1996/12/02		1996/12/03		1996/12/09	
Time(JST)	23:56		14:46		15:27		16:01		16:26		16:52		17:24		17:58		20:03		12:47	
Weather	C																BC		BC	
Air Temp.	4.5																2.0		2.0	
Bar	1026.0																1026.0		1021.5	
Wind Dir	E																SW		WNW	
Wind Spd/F	S 4		S		S		S		S		S		S		S		S 8		S 7	
Transparency																				
Depth	232																		22	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	14.4	34.064	13.0	34.15*	13.4	34.05*	14.4	34.02*	14.6	34.00*	14.4	33.99*	14.6	33.79*	14.6	33.78*	10.8	33.61*	10.3	34.07*
10m	14.00	34.042	13.05	34.147	13.46	34.053	14.45	34.018	14.62	33.996	14.40	33.993	14.59	33.787	14.63	33.774	10.92	33.612	9.60	34.036
20m	13.72	34.049	12.45	34.162	13.40	34.069	14.25	34.009	14.62	33.996	14.40	33.994	14.65	33.931	14.66	33.936	11.61	33.815	9.42	34.021
30m	13.44	34.055	12.41	34.164	13.23	34.089	13.99	34.033	14.62	33.997	14.42	34.001	14.40	33.961	14.53	33.956				
50m	12.67	34.072			12.26	34.200	13.79	34.099	14.59	33.999	14.42	34.016	14.10	34.037	14.39	33.998				
75m	11.64	34.050			11.33	34.220	13.18	34.143	14.12	34.136	14.39	34.017	14.27	34.095						
100m	10.28	34.060			9.27	34.272	11.38	34.369	13.74	34.246	14.40	34.207								
125m	8.30	33.953							12.47	34.226										
150m	6.27	33.760																		
200m	3.39	33.520																		
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-46

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199611		199702		199702		199702		199702		199702		199703		199703		199703		199703	
Station No	HIK08		P65		P64		P63		P62		P61		HKG001		HKG002		HKG003		HFK03	
Latitude:N	41-44.5		41-40.1		41-50.0		41-59.9		42-10.0		42-20.3		42- 4.7		42- 4.3		42- 4.5		41-30.0	
Longitude:E	140-46.5		141-20.3		141-20.1		141-20.2		141-20.2		141-20.2		140-51.8		140-58.2		141- 3.9		140-25.1	
Date	1996/12/09		1997/02/24		1997/02/24		1997/02/24		1997/02/24		1997/02/24		1997/03/04		1997/03/04		1997/03/04		1997/03/12	
Time(JST)	16:14		13:27		15:42		16:59		18:20		19:47		06:32		07:35		08:24		12:35	
Weather	C		B		B		B		B		B		S		S		S			
Air Temp.	0.0		2.0				2.0		0.0		-1.0		5.3		5.9		5.5			
Bar	1023.0		1023.5		1023.5		1024.0		1024.0		1024.0		1013.0		1014.0		1013.5			
Wind Dir	NW		W		E		WSW		W		W		SW		SE		WSE			
Wind Spd/F	S 6		S 10		S 1		S 5		S 5		S 7		S 7		S 6		S 6		S	
Transparency			16		17		16													
Depth	49		233		287		315		369		249		64		83		102			
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.1	34.10*	8.5	33.987 <i>c</i>	3.7	33.107 <i>c</i>	3.0	33.013 <i>c</i>	2.8	33.039 <i>c</i>	2.6	33.128 <i>c</i>	2.0	32.92*	1.1	32.95*	1.4	26.21*	7.3	34.02*
10m	13.32	34.101	8.17	34.002	3.08	33.151	2.62	33.064	2.37	33.068	2.97	33.169	2.04	32.986	1.72	32.955	1.38	32.888	7.31	34.015
20m	13.32	34.101	8.18	33.998	3.42	33.218	2.64	33.074	2.38	33.069	3.19	33.200	3.23	33.201	1.72	32.956	1.60	32.927	7.29	34.013
30m	13.32	34.102	7.91	33.970	4.31	33.377	2.65	33.076	2.42	33.073	3.23	33.208	3.17	33.219	1.72	32.956	1.64	32.939	7.27	34.024
50m			7.54	33.921	4.75	33.460	2.69	33.083	2.60	33.097	3.22	33.209	2.95	33.237	2.98	33.157	1.75	32.959	7.22	34.071
75m			7.06	33.842	5.10	33.523	2.73	33.089	2.76	33.122	3.38	33.233					2.88	33.138	7.13	34.083
100m			6.94	33.829	5.90	33.661	2.85	33.107	4.72	33.418	3.46	33.246								
125m			6.98	33.839	5.94	33.685	3.43	33.206	5.40	33.544	3.47	33.250								
150m			6.94	33.837	5.33	33.601	4.28	33.332	5.34	33.550	3.61	33.268								
200m			5.37	33.620	4.38	33.527	5.21	33.527	5.45	33.599	3.71	33.298								
250m					4.47	33.603	4.32	33.536	4.20	33.519										
300m							3.90	33.526	3.72	33.546										
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 4-47

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199703		199703		199703		199703		199703		199703		199703		199703		199703		199703		
Station No	HTK02		HTK01		HTK07		HTK06		HTK05		HTK04		HTK08		HTK09		HTK10		HTK11		
Latitude:N	41-26.9		41-23.8		41-30.8		41-33.3		41-36.0		41-38.6		41-35.8		41-38.4		41-41.1		41-43.8		
Longitude:E	140-26.3		140-28.1		140-39.0		140-36.1		140-33.1		140-30.1		140-50.2		140-48.1		140-45.8		140-43.5		
Date	1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/12		
Time(JST)	13:03		13:36		14:59		15:34		16:04		16:32		18:09		18:37		19:12		19:42		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	7.6	34.08*	8.8	34.06*	7.2	34.29*	7.4	34.10*	7.8	34.10*	7.3	34.04*	8.8	34.03*	8.5	34.03*	7.4	34.10*	7.7	34.09*	
10m	7.59	34.085	8.80	34.055	7.40	34.097	7.40	34.096	7.82	34.097	7.34	34.037	8.81	34.030	8.50	34.031	7.44	34.100	7.74	34.087	
20m	7.61	34.087	8.80	34.056	7.39	34.096	7.35	34.100	7.82	34.098	7.34	34.037	8.82	34.031	8.49	34.035	7.43	34.100	7.73	34.089	
30m	7.61	34.090	8.81	34.055	7.42	34.096	7.29	34.102	7.81	34.099			8.82	34.031	8.49	34.034	7.44	34.100	7.56	34.096	
50m	7.59	34.088	8.81	34.056	7.44	34.096	6.99	34.105					8.79	34.028	8.41	34.042	7.34	34.103	7.45	34.099	
75m	7.58	34.090	8.80	34.056	7.41	34.096							8.79	34.027	8.24	34.059	7.24	34.105			
100m	7.57	34.088	8.69	34.059	7.39	34.094									8.04	34.080	7.22	34.105			
125m	7.57	34.089	8.24	34.080	7.26	34.094									7.87	34.091	7.11	34.108			
150m	7.25	34.113	7.61	34.110	7.05	34.102									7.42	34.098					
200m			6.94	34.123	6.29	34.108									7.44	34.094					
250m															7.35	34.097					
300m																					
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-48

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199703		199703		199703		199703		199703		199703		199703		199703		199703		199703		
Station No	HTK12		HTK13		HTK14		HTK15		HTK16		HTK16		HTK18		HTK19		HTK20		HTK21		
Latitude:N	41-42.0		41-38.7		41-35.4		41-32.1		41-29.9		41-33.9		41-37.1		41-40.6		41-43.9		41-47.3		
Longitude:E	141- 2.2		141- 3.5		141- 4.8		141- 5.9		141- 6.7		141-22.8		141-20.2		141-17.5		141-14.9		141-12.3		
Date	1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/13		1997/03/13		1997/03/13		1997/03/13		1997/03/13		
Time(JST)	21:13		21:39		22:04		22:28		22:56		00:16		01:08		01:55		02:35		03:12		
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S		S		S		S		S		
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	3.0	33.18*	8.4	34.06*	8.6	34.03*	8.4	34.05*	8.3	34.06*	5.2	33.58*	7.4	33.98*	3.1	33.22*	2.5	33.12*	2.8	33.16*	
10m	3.14	33.201	8.37	34.062	8.58	34.033	8.38	34.046	8.32	34.061	5.18	33.576	7.42	33.981	3.11	33.217	2.53	33.118	2.79	33.158	
20m	3.27	33.223	8.37	34.063	8.58	34.034	8.37	34.047	8.33	34.061	5.19	33.576	7.43	33.981	3.17	33.224	2.52	33.118	2.67	33.147	
30m	3.50	33.263	8.38	34.062	8.47	34.047	8.37	34.048	8.33	34.061	5.18	33.575	7.45	33.986	3.25	33.235	2.57	33.124	2.64	33.145	
50m			8.38	34.062	8.51	34.041	8.33	34.053	8.22	34.068	5.76	33.661	7.45	33.988	4.22	33.403	2.90	33.175	2.63	33.143	
75m			8.38	34.062	8.44	34.048	8.35	34.052	8.19	34.068	6.01	33.707	7.50	33.997	5.88	33.684	3.27	33.242	2.93	33.180	
100m					8.42	34.056	8.20	34.057			6.38	33.773	7.58	34.004	6.11	33.726	3.34	33.258	3.36	33.253	
125m					8.43	34.054	8.10	34.060			6.52	33.801	7.12	33.955	5.98	33.717	3.40	33.273			
150m							8.13	34.058			6.61	33.824	6.72	33.886	5.97	33.727	4.32	33.411			
200m							7.99	34.060			6.67	33.841	5.27	33.756	5.85	33.788	4.43	33.509			
250m							7.87	34.066			6.77	33.888									
300m							7.88	34.069													
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-49

Table 4 Results of serial oceanographic observations. Hokkaido Hakodate Fisheries Experimental Station

Stn-prefix	199703		199703		199703		199703		199703		199703										
Station No	HTK22		HTK23		HTK24		HTK25		HTK26		HTK27										
Latitude:N	41-49.8		41-50.0		41-49.9		41-56.4		41-55.4		41-54.6										
Longitude:E	141-11.5		141-17.0		141-23.5		141-14.3		141- 8.9		141- 4.8										
Date	1997/03/13		1997/03/13		1997/03/13		1997/03/13		1997/03/13		1997/03/13										
Time(JST)	03:49		04:26		05:17		06:33		07:14		07:44										
Weather																					
Air Temp.																					
Bar																					
Wind Dir																					
Wind Spd/F	S		S		S		S		S		S										
Transparency																					
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD										
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	2.8	33.17*	2.6	33.12*	1.4	32.98*	2.4	31.68*	2.4	33.05*	2.3	33.05*									
10m	2.81	33.168	2.58	33.123	1.43	32.984	2.45	31.737	2.39	33.075	2.34	33.069									
20m	2.82	33.168	2.59	33.123	1.44	32.980	2.53	31.861	2.43	33.087	2.34	33.074									
30m	2.86	33.174	2.59	33.125	1.53	32.981	2.59	31.995	2.43	33.088	2.37	33.083									
50m	3.24	33.230	2.61	33.125	2.16	32.931	2.69	32.230	2.52	33.100	2.95	33.180									
75m	3.34	33.249	2.62	33.126	4.18	33.338	2.92	32.369	2.53	33.105	3.35	33.253									
100m			2.85	33.166	4.64	33.463	3.25	32.401	2.65	33.126											
125m			3.93	33.337	6.44	33.711	3.30	32.665	3.18	33.218											
150m			4.53	33.455	6.56	33.801	3.65	32.568	4.06	33.481											
200m			4.39	33.561	6.11	33.799	3.98	32.898													
250m					4.87	33.672															
300m					3.43	33.640															
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 4-50

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	P31		P32		P33		P34		PK21		PK22		PK31		PK23		P35		PK15	
Latitude:N	42-44.1		42-29.9		42-15.0		42- 0.1		42-15.0		42- 0.0		41-30.2		41-30.1		41-30.1		41-30.1	
Longitude:E	143-59.8		144- 0.0		143-59.8		143-59.8		143-29.9		143-30.0		142-59.7		143-30.0		143-59.9		144-29.9	
Date	1996/04/11		1996/04/11		1996/04/11		1996/04/11		1996/04/11		1996/04/11		1996/04/11		1996/04/12		1996/04/12		1996/04/12	
Time(JST)	10:59		12:22		13:52		15:27		18:10		19:28		22:42		00:55		03:06		05:22	
Weather	C		C		C		C		BC		BC		S		C		C		C	
Air Temp.	1.9		2.0		2.5		2.9		1.1		1.5		1.7		1.5		0.9		1.0	
Bar	1014.5		1014.5		1014.0		1014.0		1016.0		1015.0		1014.5		1014.0		1013.0		1013.0	
Wind Dir	CALM		SSE		SSE		SE		S		S		ENE		SE		SSE		CALM	
Wind Spd/F	F 0		F 2		F 2		F 2		F 2		F 2		F 2		F 3		F 2		F 0	
Transparency	7		4		4		4												16	
Depth			486				1122		67		125									
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	1.8	32.230	2.2	33.652	1.9	32.616	2.1	32.824	1.3	32.340	1.6	32.246	4.9	33.382	5.5	33.566	1.3	32.741	2.5	33.080
10m	1.03	32.115	1.38	32.623	1.33	32.688	1.81	32.922	0.85	32.372	1.67	32.327	5.29	33.486	5.75	33.577	1.32	32.773	2.65	33.096
20m	0.82	32.118	1.10	32.740	1.18	32.820	1.83	32.944	0.28	32.473	0.78	32.405	5.67	33.545	5.76	33.576	1.18	32.922	2.67	33.111
30m	-0.22	32.206	0.78	32.769	1.16	32.845	1.81	32.978	-0.09	32.589	0.93	32.655	5.69	33.555	5.79	33.580	1.14	33.002	2.35	33.142
50m	-0.43	32.354	0.85	32.896	1.10	33.014	1.42	33.048	-0.19	32.667	-0.04	32.818	5.84	33.582	5.81	33.591	1.12	33.045	2.31	33.173
75m			0.82	32.954	1.00	33.089	1.20	33.127			-0.03	32.842	6.16	33.650	5.93	33.615	1.25	33.111	2.26	33.219
100m			0.77	33.008	0.87	33.103	1.28	33.285			0.43	32.921	6.02	33.644	6.13	33.668	1.38	33.197	2.64	33.336
125m			1.00	33.077	0.83	33.108	1.51	33.405					5.85	33.642	5.20	33.567	1.64	33.259	2.69	33.518
150m			0.96	33.096	0.85	33.139	1.53	33.413					4.88	33.549	5.45	33.656	1.53	33.326	2.74	33.592
200m			0.99	33.143	1.01	33.235	1.59	33.457					5.21	33.660	5.27	33.726	1.63	33.393	3.11	33.739
250m			1.17	33.242	1.21	33.356	1.57	33.511					4.80	33.653	4.87	33.724	1.35	33.429	2.94	33.799
300m			1.66	33.367	2.48	33.596	1.75	33.563					4.81	33.794	3.84	33.702	1.30	33.501	3.22	33.900
400m			1.91	33.497	2.53	33.747	2.45	33.769					3.47	33.814	3.43	33.782	3.10	33.854	3.38	34.057
500m					2.83	33.876	2.74	33.858					3.29	33.930	3.22	33.901	2.65	33.950	3.30	34.182
600m					3.15	34.008	3.01	33.956					3.38	34.039	3.27	34.031	3.22	34.165	3.09	34.278
700m							3.12	34.019												
800m							3.22	34.124												
900m							3.22	34.174												
1000m							3.16	34.260												

Table 5-1

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	PK14		PK13		PK12		PK11		P21		P22		P23		P24		P25		P26	
Latitude:N	41-59.1		42-14.9		42-30.0		42-44.1		42-55.0		42-45.1		42-30.1		42-15.1		42- 0.0		41-30.1	
Longitude:E	144-29.8		144-30.0		144-30.0		144-30.0		144-59.7		144-59.1		145- 0.0		145- 0.2		144-59.8		144-59.1	
Date	1996/04/12		1996/04/12		1996/04/12		1996/04/12		1996/04/12		1996/04/12		1996/04/12		1996/04/12		1996/04/12		1996/04/13	
Time(JST)	08:20		10:20		11:54		13:50		16:02		16:58		18:19		19:45		21:14		00:12	
Weather	C		BC		BC		B		C		C		C		S		C		BC	
Air Temp.	-1.1		0.6		0.9		1.7		0.8		-1.2		1.1		-1.3		-0.3		0.9	
Bar	1014.5		1014.0		1014.0		1012.7		1012.5		1012.5		1013.0		1014.0		1014.5		1014.2	
Wind Dir	NE		NE		NE		CALM		ESE		S		WNW		NW		WNW		NNW	
Wind Spd/F	F 4		F 2		F 1		F 0		F 3		F 2		F 1		F 2		F 3		F 2	
Transparency	16		25		5		3		6		5									
Depth	1689		1610		1476		132		65		169		1775							
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.4	33.030	2.2	33.017	1.6	32.581	1.7	32.683	1.1	32.267	1.4	32.735	2.4	33.021	3.1	33.149	3.1	33.113	2.3	33.106
10m	2.55	33.047	2.01	33.023	1.28	32.608	1.29	32.854	1.05	32.263	1.03	32.729	2.67	33.025	3.21	33.151	3.15	33.131	2.43	33.094
20m	2.42	33.035	1.98	33.023	1.12	32.690	1.33	32.863	0.60	32.257	0.59	32.730	2.12	33.024	3.07	33.160	3.02	33.133	2.43	33.095
30m	1.69	32.989	1.90	33.021	1.20	32.955	1.31	32.873	0.41	32.360	0.23	32.806	1.97	33.009	3.00	33.163	2.60	33.130	2.39	33.098
50m	2.30	33.119	1.21	33.044	0.86	33.011	1.15	32.916	-0.03	32.457	0.17	32.869	1.84	33.021	2.27	33.046	2.42	33.166	2.29	33.177
75m	2.08	33.185	0.69	33.088	0.59	33.066	0.79	32.989			0.63	32.977	1.24	33.056	3.00	33.256	2.39	33.196	2.30	33.208
100m	2.42	33.243	0.64	33.156	0.70	33.103	0.99	33.084			0.90	33.082	1.07	33.070	3.08	33.295	2.56	33.262	1.95	33.189
125m	2.68	33.302	1.39	33.280	0.93	33.165	1.02	33.121			1.08	33.165	0.97	33.140	3.83	33.457	2.76	33.322	2.81	33.388
150m	2.69	33.416	1.77	33.358	1.09	33.202					1.35	33.302	1.22	33.250	2.30	33.387	2.71	33.540	2.82	33.570
200m	3.02	33.625	1.71	33.453	1.54	33.314							1.80	33.391	2.65	33.577	3.03	33.733	3.02	33.702
250m	3.38	33.794	1.63	33.497	1.57	33.383							1.97	33.475	2.98	33.738	3.12	33.826	3.09	33.822
300m	3.35	33.868	1.83	33.587	1.51	33.410							2.23	33.556	2.48	33.763	3.23	33.914	3.20	33.926
400m	3.36	34.017	2.23	33.711	1.71	33.563							2.38	33.708	3.28	33.976	3.33	34.055	3.40	34.082
500m	3.04	34.090	2.90	33.900	2.56	33.786							2.99	33.917	3.10	34.060	3.35	34.165	3.19	34.176
600m	3.13	34.187	3.02	33.968	2.87	33.922							3.16	34.066	3.14	34.165	3.10	34.215	2.99	34.233
700m	3.02	34.258															3.02	34.290		
800m	2.96	34.331															2.87	34.342		
900m	2.78	34.377															2.71	34.389		
1000m	2.69	34.408															2.58	34.425		

Table 5-2

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	PK06		PK05		PK04		PK03		PK02		PK01		P13		P12		P11		P14	
Latitude:N	41-30.1		41-59.9		42-15.0		42-29.1		42-44.8		42-55.0		42-45.0		42-55.1		43- 4.1		42-30.2	
Longitude:E	145-29.1		145-30.0		145-29.8		145-29.7		145-29.9		145-29.1		145-54.8		145-49.1		145-44.9		146- 0.0	
Date	1996/04/13		1996/04/13		1996/04/13		1996/04/13		1996/04/13		1996/04/13		1996/04/13		1996/04/13		1996/04/13		1996/04/13	
Time(JST)	02:23		05:18		07:35		09:25		11:08		12:21		14:22		15:56		17:24		23:24	
Weather	BC		C		BC		BC		C		C		C		BC		B		B	
Air Temp.	0.5		0.1		0.3		0.2		1.2		2.0		2.7		0.9		0.3		1.3	
Bar	1013.5		1013.5		1014.2		1014.5		1014.5		1014.5		1014.5		1014.7		1015.2		1017.0	
Wind Dir	WNW		WNW		NW		WNW		WNW		NNE		NW		NNW		CALM		SW	
Wind Spd/F	F 3		F 5		F 5		F 5		F 4		F 2		F 3		F 3		F 0		F 3	
Transparency			10		13		15		18		7		18		14		5			
Depth									1707		158				1500		105			
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.2	33.077	2.9	33.165	2.7	33.135	2.3	33.099	2.0	33.007	1.2	32.842	2.9	33.041	2.1	33.060	0.6	32.624	2.3	33.090
10m	2.37	33.058	3.04	33.170	2.78	33.137	2.17	33.045	1.85	33.003	1.20	32.917	2.43	33.047	2.07	33.054	0.59	32.625	2.50	33.091
20m	2.29	33.046	3.04	33.169	2.78	33.134	2.16	33.046	1.85	33.005	1.33	32.981	2.43	33.064	1.98	33.049	0.49	32.652	2.72	33.129
30m	2.12	33.064	3.05	33.174	2.74	33.129	1.83	33.059	1.89	33.012	1.17	33.036	2.59	33.105	2.11	33.062	0.67	32.819	2.83	33.140
50m	1.98	33.067	2.58	33.189	2.44	33.131	2.74	33.234	1.97	33.037	1.05	33.065	1.67	33.066	2.30	33.152	0.54	32.788	2.62	33.155
75m	2.18	33.103	2.95	33.256	2.21	33.154	3.28	33.334	2.45	33.216	1.06	33.078	2.54	33.212	2.47	33.193	0.37	32.918	2.33	33.189
100m	1.89	33.138	2.75	33.253	2.18	33.189	3.15	33.387	3.00	33.289	1.08	33.125	2.77	33.256	3.23	33.334			2.47	33.231
125m	2.11	33.225	2.60	33.315	2.44	33.267	2.67	33.445	1.49	33.280	1.15	33.169	2.83	33.313	3.93	33.463			2.58	33.262
150m	2.65	33.478	2.68	33.495	2.67	33.470	2.73	33.578	1.74	33.354	1.20	33.191	2.82	33.465	4.17	33.503			3.03	33.344
200m	2.83	33.685	2.91	33.696	2.95	33.682	2.36	33.635	1.88	33.427			2.97	33.663	2.99	33.533			2.78	33.605
250m	3.33	33.844	3.05	33.818	3.11	33.802	3.00	33.801	2.07	33.545			2.99	33.745	2.64	33.625			3.08	33.788
300m	3.24	33.925	3.27	33.930	3.24	33.906	3.45	33.947	2.17	33.604			3.18	33.848	2.55	33.661			3.34	33.927
400m	3.34	34.076	3.34	34.083	3.27	34.071	3.33	34.037	2.54	33.760			3.28	33.999	3.23	33.881			3.32	34.131
500m	3.21	34.177	3.29	34.195	3.22	34.195	3.28	34.142	2.87	33.879			3.33	34.125	3.41	33.995			3.06	34.249
600m	3.09	34.241	3.06	34.273	3.14	34.285	3.25	34.231	3.10	34.071			3.23	34.208	3.22	34.084			2.93	34.325
700m			2.93	34.328									3.07	34.280	3.09	34.180			2.77	34.374
800m			2.82	34.375									2.92	34.331	3.02	34.238			2.65	34.404
900m			2.62	34.414									2.81	34.382	2.89	34.281			2.51	34.440
1000m			2.51	34.442									2.63	34.419	2.72	34.348			2.40	34.472

Table 5-3

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	P15		P16		P17		PKA24		PKA28		PKA29		PKA30		PKA27		PKA22		PKA19	
Latitude:N	42-15.1		42- 0.0		41-30.1		41-30.0		41- 0.1		40-30.1		40- 0.1		39-59.8		40- 0.4		40- 0.1	
Longitude:E	146- 0.1		146- 0.2		145-59.1		146-29.1		147- 0.1		146-59.9		147- 0.1		146-30.0		145-59.8		145-29.8	
Date	1996/04/14		1996/04/14		1996/04/14		1996/04/14		1996/04/14		1996/04/14		1996/04/14		1996/04/14		1996/04/14		1996/04/15	
Time(JST)	01:49		04:26		07:40		10:08		13:29		16:16		19:08		21:27		23:46		01:59	
Weather	BC		B		BC		B		BC		BC		B		BC		BC		BC	
Air Temp.	2.0		2.2		3.4		5.1		6.0		5.1		6.6		4.6		4.4		3.9	
Bar	1016.5		1016.7		1018.0		1017.5		1017.0		1017.0		1018.5		1018.0		1017.0		1016.0	
Wind Dir	SW		WNW		W		W		WNW		WSW		W		SW		SW		SSW	
Wind Spd/F	F 2		F 4		F 4		F 4		F 3		F 2		F 5		F 4		F 5		F 4	
Transparency					13		24		12		13									
Depth			1500																	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.9	33.219	3.1	33.184	2.8	33.099	2.8	33.075	4.9	33.400	4.7	33.342	8.8	34.089	3.0	33.003	2.5	32.860	3.0	33.012
10m	3.03	33.211	3.04	33.196	2.72	33.105	2.60	33.078	4.72	33.394	4.54	33.353	8.93	34.045	2.86	32.984	2.48	32.864	2.37	32.984
20m	3.02	33.209	3.05	33.198	2.69	33.106	2.51	33.081	4.61	33.391	4.33	33.339	8.87	34.051	2.57	32.977	2.18	32.887	1.99	33.028
30m	3.01	33.208	3.04	33.201	2.68	33.108	2.49	33.084	4.51	33.383	4.38	33.362	8.86	34.050	2.17	33.010	1.53	32.936	1.89	33.067
50m	2.87	33.207	2.50	33.197	2.46	33.114	2.36	33.081	4.44	33.385	4.20	33.348	8.78	34.040	1.95	33.038	1.56	33.011	1.75	33.060
75m	2.56	33.256	2.52	33.243	2.16	33.112	2.14	33.082	4.68	33.437	5.62	33.606	8.50	34.001	1.89	33.105	1.74	33.106	1.79	33.101
100m	2.66	33.269	2.56	33.252	2.07	33.162	1.90	33.120	5.45	33.599	5.16	33.531	7.60	33.874	2.11	33.196	2.20	33.249	2.54	33.256
125m	2.73	33.283	2.60	33.269	2.44	33.340	2.13	33.227	5.26	33.571	3.92	33.383	5.71	33.611	2.48	33.318	2.24	33.397	2.81	33.303
150m	2.69	33.289	2.72	33.407	2.72	33.516	2.43	33.429	4.05	33.518	3.48	33.470	4.66	33.559	2.80	33.548	2.15	33.471	2.88	33.392
200m	2.66	33.552	3.01	33.685	3.25	33.788	2.64	33.631	4.52	33.779	4.20	33.735	5.30	33.881	3.04	33.734	2.12	33.579	2.76	33.621
250m	3.19	33.812	3.27	33.861	3.26	33.855	3.13	33.789	3.81	33.777	2.95	33.695	4.43	33.855	3.30	33.881	2.44	33.689	3.27	33.788
300m	3.37	33.990	3.38	34.011	3.28	33.930	3.24	33.887	3.79	33.867	3.43	33.874	4.41	33.958	3.20	33.940	3.06	33.885	3.30	33.886
400m	3.20	34.199	3.17	34.181	3.34	34.082														
500m	2.88	34.330	3.00	34.286	3.22	34.183														
600m	2.64	34.409	2.85	34.346	3.09	34.261														
700m	2.49	34.444	2.69	34.399	2.94	34.320														
800m	2.42	34.467	2.56	34.432	2.78	34.370														
900m	2.33	34.490	2.44	34.460	2.65	34.406														
1000m	2.26	34.509	2.35	34.488	2.52	34.441														

Table 5-4

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	PKA16		PKA13		PKA10		PKA07		PKA06		PKA09		PKA12		PKA15		PKA18		PKA21	
Latitude:N	40- 0.1		40- 0.1		40- 0.2		40- 0.0		40-29.1		40-30.0		40-29.9		40-30.2		40-30.1		40-30.2	
Longitude:E	145- 0.0		144-20.1		143-40.2		143- 0.2		143- 0.0		143-39.1		144-19.9		144-59.9		145-29.7		145-59.9	
Date	1996/04/15		1996/04/15		1996/04/15		1996/04/15		1996/04/15		1996/04/15		1996/04/15		1996/04/16		1996/04/16		1996/04/16	
Time(JST)	04:18		07:29		10:37		13:43		16:20		19:02		21:46		00:23		02:26		04:35	
Weather	BC		C		BC		BC		BC		B		B		BC		BC		BC	
Air Temp.	8.0		8.8		7.3		8.1		7.0		6.5		5.5		3.4		3.0		2.0	
Bar	1014.0		1013.0		1011.0		1009.0		1009.5		1012.0		1013.5		1015.0		1016.0		1016.2	
Wind Dir	SW		SW		SW		WSW		WNW		WNW		WNW		NE		ENE		E	
Wind Spd/F	F 4		F 5		F 5		F 4		F 4		F 4		F 4		F 2		F 2		F 3	
Transparency			15		4		11		10											
Depth							1299		1566											
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.8	33.655	7.9	33.942	4.8	33.240	5.1	33.263	3.8	32.848	4.6	33.181	5.3	33.380	2.2	32.965	2.7	33.084	2.4	33.014
10m	6.83	33.664	8.00	33.949	7.26	33.955	4.88	33.224	3.61	32.878	5.38	33.432	5.32	33.432	2.23	32.971	2.74	33.084	2.45	33.038
20m	6.82	33.666	8.00	33.949	7.91	33.941	6.64	33.754	4.06	33.089	5.51	33.474	6.67	33.773	2.08	32.942	2.72	33.082	2.46	33.041
30m	6.82	33.670	8.00	33.945	7.97	33.948	7.29	33.798	3.88	33.068	5.66	33.523	6.99	33.754	0.46	32.878	2.55	33.105	2.38	33.033
50m	7.32	33.817	8.00	33.946	8.00	33.957	7.31	33.820	4.17	33.312	5.65	33.529	7.09	33.770	0.50	33.020	2.33	33.117	1.41	33.017
75m	7.20	33.805	8.15	33.979	7.99	33.953	7.03	33.774	4.66	33.457	5.75	33.553	6.87	33.755	0.90	33.114	2.21	33.161	1.58	33.105
100m	6.82	33.755	8.22	33.996	7.92	33.936	6.35	33.677	4.84	33.528	5.69	33.563	6.13	33.652	5.30	33.663	2.30	33.312	2.64	33.283
125m	6.27	33.671	8.22	33.998	7.85	33.925	5.99	33.633	4.83	33.560	5.52	33.571	5.55	33.587	4.68	33.654	2.57	33.483	2.51	33.442
150m	5.56	33.571	8.19	33.991	7.30	33.830	5.15	33.537	5.14	33.648	5.10	33.535	4.97	33.514	4.07	33.661	2.82	33.598	2.47	33.526
200m	4.87	33.549	8.13	33.979	6.74	33.743	5.92	33.743	4.36	33.586	4.19	33.512	4.58	33.563	2.03	33.488	3.08	33.755	2.56	33.707
250m	3.91	33.485	6.86	33.759	5.67	33.613	6.33	33.858	4.34	33.644	4.04	33.565	4.14	33.612	4.12	33.865	3.26	33.870	2.80	33.804
300m	3.32	33.559	5.59	33.615	4.54	33.572	6.81	33.968	3.88	33.629	4.03	33.636	3.42	33.603	2.71	33.808	3.29	33.951	3.09	33.919
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-5

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199605	
Station No	PKA26		PKA25		P18		PK07		P27		PK16		P36		PK24		PK32		SU01	
Latitude:N	40-29.1		40-59.1		41- 0.1		41- 0.0		41- 0.1		40-59.9		41- 0.0		41- 0.1		41- 0.0		42-54.0	
Longitude:E	146-29.1		146-30.0		145-59.9		145-29.6		145- 0.1		144-29.8		144- 0.3		143-29.9		143- 0.4		144-12.4	
Date	1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/17		1996/05/13	
Time(JST)	06:42		09:24		11:39		14:17		16:26		18:55		21:12		23:23		01:30		09:51	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	2.7		4.3		4.3		3.9		3.5		3.4		3.5		3.0		2.9		4.4	
Bar	1007.5		1017.5		1016.5		1013.4		1011.5		1008.5		1006.5		1005.0		1003.5		1014.5	
Wind Dir	E		ESE		E		E		E		E		ENE		NE		NE		SSW	
Wind Spd/F	F 4		F 4		F 4		F 4		F 4		F 5		F 5		F 6		F 7		S 6	
Transparency	11		23		25		13		12										6	
Depth																			48	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.7	32.975	2.6	32.981	3.0	33.102	2.8	33.101	2.6	33.053	2.5	32.968	2.9	33.058	2.1	32.867	4.2	33.142	2.6	31.63*
10m	2.64	32.990	2.44	33.044	2.73	33.108	2.69	33.077	2.60	33.067	2.45	33.001	2.91	33.090	2.02	32.877	4.22	33.142	2.79	31.713
20m	2.61	32.991	2.42	33.050	2.65	33.108	2.62	33.080	2.60	33.068	2.46	33.001	2.91	33.095	2.03	32.878	4.75	33.334	2.37	31.855
30m	2.49	32.989	2.38	33.050	2.63	33.111	2.66	33.089	2.61	33.070	2.46	33.001	2.89	33.091	1.93	32.882	5.40	33.498	2.19	31.910
50m	1.85	32.976	2.20	33.081	2.51	33.105	2.46	33.071	2.12	33.069	2.35	33.078	2.31	33.143	1.37	33.030	6.19	33.668		
75m	1.31	33.089	1.91	33.108	2.18	33.127	1.93	33.108	2.32	33.168	2.40	33.137	2.21	33.193	1.00	33.059	5.06	33.524		
100m	1.77	33.266	2.08	33.242	1.89	33.141	2.14	33.204	2.89	33.320	1.85	33.153	2.42	33.239	1.17	33.155	5.07	33.584		
125m	2.47	33.516	2.49	33.431	1.99	33.305	2.41	33.356	2.88	33.418	2.16	33.353	2.52	33.476	2.79	33.353	5.55	33.694		
150m	2.87	33.637	2.71	33.586	2.53	33.496	2.74	33.536	2.75	33.542	2.56	33.510	2.64	33.558	4.19	33.549	6.04	33.825		
200m	3.14	33.799	3.30	33.811	3.11	33.736	3.03	33.720	2.99	33.695	3.05	33.666	2.52	33.649	1.59	33.381	6.49	33.925		
250m	3.26	33.930	3.43	33.927	3.29	33.873	3.27	33.845	3.19	33.819	3.03	33.776	2.70	33.733	1.55	33.438	5.61	33.845		
300m	3.35	34.007	3.32	34.003	3.33	33.961	3.36	33.955	3.27	33.896	3.07	33.866	2.68	33.833	1.62	33.485	4.21	33.704		
400m					3.35	34.092	3.31	34.082	3.34	34.092	3.37	34.049	3.02	33.984	1.86	33.572				
500m					3.30	34.181	3.23	34.185	3.25	34.173	3.41	34.179	3.17	34.103	2.33	33.706				
600m					3.13	34.262	3.07	34.267	3.13	34.239	3.12	34.242	3.18	34.187	2.96	33.940				
700m					2.96	34.325														
800m					2.78	34.371														
900m					2.62	34.417														
1000m					2.48	34.444														

Table 5-6

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605	
Station No	SU02		SU05		SU06		SU09		SU10		SU13		SU14		SU17		SU18		SU21	
Latitude:N	42-47.3		42-39.4		42-39.3		42-40.3		42-32.8		42-30.4		42-21.7		42-18.2		42-12.4		42- 0.8	
Longitude:E	144-17.9		144-13.2		144-13.1		143-50.0		144- 0.6		143-38.5		143-52.4		143-29.0		143-43.7		143-24.8	
Date	1996/05/13		1996/05/13		1996/05/13		1996/05/14		1996/05/14		1996/05/14		1996/05/14		1996/05/15		1996/05/15		1996/05/15	
Time(JST)	11:01		13:33		15:06		05:23		06:50		09:34		11:21		05:25		06:56		09:55	
Weather	C		BC		BC		BC		BC		BC		BC		C		C		C	
Air Temp.	5.1		4.7		5.4		3.6		3.7		7.8		5.7		3.4		3.0		4.5	
Bar	1014.5		1013.0		1013.0		1014.0		1014.5		1014.5		1014.5		1009.5		1009.5		1012.0	
Wind Dir	SSE		S		S		CALM		E		ENE		SE		N		N		N	
Wind Spd/F	S 3		S 3		S 3		S 0		S 3		S 2		S 6		S 5		S 6		S 7	
Transparency																				
Depth	409		47		507		43		475		44		493		45		502		54	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.5	32.39*	3.6	32.25*	3.9	32.84*	3.0	32.42*	3.1	32.69*	3.8	32.25*	2.4	32.97*	3.7	32.29*	3.4	32.93*	3.4	32.20*
10m	1.70	32.445	2.68	32.317	2.55	32.810	2.97	32.460	2.92	32.751	2.93	32.297	3.12	32.963	3.57	32.311	3.26	32.972	3.12	32.307
20m	1.85	32.518	2.21	32.489	1.89	32.829	2.36	32.541	2.34	32.770	3.06	32.435	2.81	32.960	1.93	32.516	2.63	32.990	2.62	32.517
30m	1.81	32.533	2.09	32.525	2.18	32.899	2.13	32.589	2.01	32.867	2.21	32.521	2.69	32.959	1.82	32.574	2.34	32.996	2.03	32.615
50m	1.55	32.648			2.18	32.921			1.86	32.896			2.41	32.959			2.06	33.002		
75m	1.36	32.663			1.75	32.999			1.15	33.000			0.93	33.057			1.53	33.032		
100m	1.21	32.703			1.12	33.058			1.23	33.079			0.91	33.100			1.07	33.084		
125m	1.15	32.764			1.15	33.092			1.23	33.127			0.82	33.137			0.89	33.124		
150m	1.16	32.802			1.06	33.128			1.33	33.198			1.00	33.186			0.96	33.146		
200m	1.16	32.887			1.09	33.233			1.43	33.283			1.20	33.260			1.00	33.221		
250m	1.35	33.037			1.53	33.346			1.54	33.348			1.58	33.366			1.10	33.275		
300m	1.68	33.189			1.76	33.435			1.75	33.429			1.61	33.424			1.55	33.336		
400m					1.73	33.528			2.10	33.588			2.00	33.561			1.94	33.542		
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-7

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199606		199606		199606	
Station No	SU22		SU34		SU35		SU36		SU37		SU38		SU39		PK11		P22		P21	
Latitude:N	42- 0.5		42-26.5		42-27.9		42-29.1		42-29.9		42-31.9		42-36.1		42-45.1		42-45.2		42-55.0	
Longitude:E	143-47.0		143-58.8		143-56.8		143-55.1		143-53.8		143-50.6		143-44.1		144-29.9		144-59.8		144-59.1	
Date	1996/05/15		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/16		1996/05/29		1996/05/29		1996/05/29	
Time(JST)	12:11		13:10		13:38		14:01		14:19		14:48		15:40		10:26		12:22		13:18	
Weather	C		S		S		S		S		S		S		BC		BC		BC	
Air Temp.	2.5		1.3		1.3		1.4		1.4		1.4		1.4		9.3		10.6		11.5	
Bar	1013.0		1017.5		1017.0		1017.0		1017.0		1017.0		1017.5		1012.5		1012.0		1011.0	
Wind Dir	N		S		SSE		SE		S		S		SE		CALM		SSW		S	
Wind Spd/F	S 11		S 8		S 3		S 3		S 2		S 3		S 2		F 0		F 3		F 3	
Transparency															6		6		7	
Depth	505		512		402		302		201		103		42		130		165		66	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.5	33.02*	2.6	32.80*	2.8	32.86*	3.0	32.80*	2.7	32.75*	2.0	32.72*	3.0	32.27*	7.5	32.639	6.6	32.540	8.6	32.270
10m	2.45	33.022	2.64	32.874	2.58	32.862	2.95	32.802	2.49	32.721	1.86	32.730	2.87	32.341	3.78	32.476	5.40	32.432	5.40	32.228
20m	2.44	33.021	2.74	32.895	2.37	32.885	2.83	32.815	2.09	32.761	1.84	32.738	2.85	32.424	2.30	32.564	2.49	32.829	3.51	32.379
30m	2.19	33.026	2.74	32.901	2.05	32.934	2.63	32.817	2.02	32.798	1.83	32.730	2.85	32.429	2.05	32.612	2.22	32.967	2.80	32.528
50m	1.66	33.040	2.75	32.921	1.44	32.958	1.90	32.803	1.70	32.832	1.82	32.734			1.59	32.637	1.62	32.980	1.92	32.895
75m	1.21	33.106	1.96	33.005	1.35	33.009	1.17	32.957	1.19	32.928	1.83	32.747			1.29	32.696	1.37	33.012		
100m	1.00	33.145	1.20	33.061	1.24	33.051	1.21	33.001	1.18	32.948					1.25	32.766	0.98	33.052		
125m	1.03	33.188	1.01	33.083	1.18	33.081	1.21	33.048	1.18	32.972							1.02	33.071		
150m	1.07	33.205	1.09	33.132	1.16	33.118	1.24	33.118	1.18	33.000							1.06	33.110		
200m	1.20	33.257	1.23	33.243	1.22	33.250	1.40	33.238												
250m	1.41	33.325	1.52	33.351	1.62	33.366	1.65	33.379												
300m	1.34	33.391	1.73	33.424	1.84	33.462														
400m	1.84	33.543	2.21	33.627																
500m			2.46	33.718																
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-8

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	PK02		PK01		P12		P11		P13		P14		P15		P16		P17		PK06	
Latitude:N	42-44.1		42-55.1		42-55.1		43- 5.2		42-44.9		42-30.1		42-15.1		41-59.1		41-30.1		41-30.0	
Longitude:E	145-29.9		145-30.0		145-49.1		145-44.8		145-55.1		145-59.8		145-59.1		145-59.9		146- 0.1		145-30.0	
Date	1996/05/29		1996/05/29		1996/05/29		1996/05/29		1996/05/29		1996/05/30		1996/05/30		1996/05/30		1996/05/30		1996/05/30	
Time(JST)	15:28		16:35		17:59		19:26		22:47		00:56		03:39		05:36		08:55		11:38	
Weather	BC		BC		BC		BC		BC		F		F		F		F		F	
Air Temp.	9.8		8.0		7.5		6.5		7.5		8.0		7.0		7.5		8.8		9.1	
Bar	1011.0		1010.9		1011.0		1012.0		1013.0		1013.2		1013.0		1014.0		1015.0		1014.0	
Wind Dir	SSW		SSW		SSW		SSW		SW		SW		SW		SW		SW		SSW	
Wind Spd/F	F 4		F 4		F 5		F 3		F 5		F 4		F 4		F 4		F 4		F 4	
Transparency	11		5		4								9		13		11			
Depth	1695		155		1425		104													
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.1	32.912	5.9	32.941	5.0	32.877	4.6	32.592	5.2	32.923	6.1	33.000	6.1	33.020	6.2	32.982	6.6	33.016	6.9	32.997
10m	4.70	32.904	3.25	32.908	4.51	32.918	3.88	32.897	4.90	32.922	5.89	32.994	5.88	33.013	6.04	32.976	6.24	32.982	6.76	32.992
20m	2.91	32.854	2.46	32.969	3.21	33.047	3.01	32.996	4.15	32.920	5.72	32.991	4.70	33.015	5.48	32.912	4.92	32.983	6.57	32.990
30m	2.45	32.913	2.35	32.997	1.91	33.061	2.56	32.962	2.28	33.009	4.84	33.011	3.74	33.047	4.22	33.009	4.07	33.033	5.51	32.979
50m	1.00	32.972	1.27	33.070	2.04	33.105	1.82	33.026	1.85	33.027	3.76	33.055	3.31	33.079	3.61	33.073	3.58	33.078	4.12	33.078
75m	0.41	33.087	0.97	33.157	0.86	33.086	1.07	33.148	1.25	33.084	3.34	33.094	2.86	33.109	2.51	33.104	2.78	33.144	3.46	33.081
100m	0.50	33.135	1.08	33.200	0.90	33.176			0.94	33.148	2.86	33.134	2.26	33.162	2.29	33.226	2.39	33.232	2.79	33.139
125m	0.87	33.196	1.09	33.248	0.71	33.206			0.95	33.192	2.28	33.210	2.32	33.330	2.34	33.357	2.56	33.373	2.46	33.223
150m	0.67	33.207			0.80	33.236			1.09	33.248	2.38	33.291	2.56	33.490	2.66	33.518	2.77	33.527	2.64	33.274
200m	0.99	33.303			1.10	33.316			1.38	33.333	2.74	33.516	2.96	33.691	3.12	33.714	2.99	33.703	2.77	33.537
250m	1.25	33.385			1.37	33.364			1.58	33.411	3.04	33.728	3.14	33.782	3.25	33.841	3.15	33.818	3.08	33.754
300m	1.34	33.457			1.93	33.455			1.57	33.467	3.22	33.827	3.23	33.885	3.35	33.920	3.26	33.909	3.30	33.883
400m	2.05	33.655			1.67	33.547			1.74	33.616	3.30	34.003	3.33	34.028	3.35	34.068	3.32	34.046	3.34	34.099
500m	2.27	33.772			1.88	33.691			2.98	33.896	3.35	34.127	3.29	34.127	3.34	34.185	3.31	34.152	3.08	34.257
600m	3.05	34.014			2.65	33.932			2.74	34.078	3.23	34.217	3.15	34.231	3.10	34.261	3.18	34.232	2.85	34.338
700m					2.99	34.102			3.03	34.215	3.05	34.287	3.01	34.289	2.99	34.323	3.02	34.289		
800m					3.12	34.261			2.93	34.276	2.91	34.329	2.87	34.349	2.79	34.374	2.87	34.350		
900m					3.03	34.308			2.88	34.341	2.79	34.384	2.72	34.400	2.67	34.421	2.75	34.391		
1000m					2.88	34.374			2.75	34.389	2.63	34.426	2.52	34.452	2.52	34.451	2.60	34.433		

Table 5-9

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	PK05		PK04		PK03		PKA24		PKA28		PKA29		PKA30		PKA27		PKA22		PKA19	
Latitude:N	42- 0.0		42-15.2		42-30.0		41-30.1		40-59.9		40-30.1		40- 0.0		40- 0.0		40- 0.1		40- 0.2	
Longitude:E	145-29.8		145-30.0		145-29.9		146-30.0		147- 0.1		146-59.9		147- 0.3		146-29.9		145-59.9		145-29.9	
Date	1996/05/30		1996/05/30		1996/05/30		1996/05/31		1996/05/31		1996/05/31		1996/05/31		1996/05/31		1996/05/31		1996/05/31	
Time(JST)	14:21		16:15		17:52		02:37		06:01		08:41		11:18		13:17		15:14		17:13	
Weather	F		F		F				F		F		F		F		F		C	
Air Temp.	9.5		9.0		8.3		9.3		10.6		11.5		11.8		10.5		11.1		10.0	
Bar	1011.0		1009.0		1007.5		1006.9		1007.0		1007.0		1005.5		1004.5		1004.4		1004.5	
Wind Dir	SW		SSW		SW		SW		SW		SSW		SSW		W		W		NNE	
Wind Spd/F	F 5		F 5		F 5		F 5		F 5		F 4		F 3		F 2		F 2		F 3	
Transparency	10		9		6				12		13		15		18		17		10	
Depth																				
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.7	32.989	6.0	32.997	5.7	32.919	7.1	32.912	8.6	33.262	9.1	33.571	7.8	33.020	8.6	33.051	9.2	33.078	9.1	33.008
10m	6.28	32.965	6.30	33.013	5.46	32.918	6.70	32.898	8.27	33.275	8.86	33.559	7.34	33.030	7.47	32.995	6.65	32.981	7.66	33.014
20m	5.13	33.017	5.12	32.953	4.30	32.907	4.56	32.967	7.32	33.392	8.78	33.550	5.75	32.991	5.84	32.982	4.84	32.986	5.12	33.093
30m	4.52	33.041	3.95	33.044	2.58	32.982	2.80	32.945	6.16	33.381	7.86	33.623	4.50	33.109	4.78	33.022	4.37	33.118	5.05	33.172
50m	3.70	33.070	3.45	33.061	2.30	33.004	2.51	33.008	6.02	33.409	7.19	33.664	4.82	33.258	3.75	33.043	5.31	33.371	3.51	33.163
75m	3.14	33.111	2.94	33.104	1.72	33.046	2.33	33.118	5.86	33.534	7.37	33.719	3.45	33.152	3.40	33.069	4.88	33.388	4.28	33.454
100m	2.45	33.167	2.37	33.173	0.98	33.132	2.15	33.203	5.17	33.541	7.02	33.721	2.51	33.228	2.77	33.107	4.39	33.434	4.65	33.543
125m	2.53	33.247	2.43	33.259	0.96	33.200	2.52	33.435	4.13	33.462	6.59	33.693	2.66	33.320	2.26	33.161	4.33	33.487	4.94	33.606
150m	2.64	33.341	2.60	33.424	1.29	33.279	2.46	33.366	4.55	33.548	5.99	33.647	1.81	33.324	2.36	33.251	4.50	33.560	5.35	33.732
200m	2.88	33.619	2.92	33.647	1.65	33.366	3.73	33.627	5.14	33.707	5.37	33.647	2.68	33.552	2.59	33.470	4.19	33.610	5.35	33.768
250m	3.16	33.807	3.15	33.796	2.32	33.547	3.27	33.733	4.84	33.712	6.28	33.874	3.04	33.696	2.88	33.621	3.58	33.614	3.65	33.608
300m	3.33	33.932	3.29	33.888	2.15	33.600	3.21	33.818	2.99	33.537	6.15	33.886	3.14	33.777	3.13	33.764	3.17	33.632	2.36	33.547
400m	3.31	34.119	3.33	34.026	2.74	33.876														
500m	3.19	34.229	3.21	34.132	3.02	34.052														
600m	3.12	34.320	3.13	34.227	3.26	34.174														
700m	2.83	34.349																		
800m	2.66	34.394																		
900m	2.61	34.437																		
1000m	2.44	34.462																		

Table 5-10

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	PKA16		PKA13		PKA10		PKA07		PKA06		PKA09		PKA12		PKA15		PKA18		PKA21	
Latitude:N	39-59.9		40- 0.0		40- 0.1		40- 0.1		40-30.1		40-29.1		40-30.0		40-30.0		40-30.1		40-29.8	
Longitude:E	144-59.7		144-20.0		143-39.9		142-59.9		143- 0.0		143-39.1		144-19.9		144-59.8		145-29.1		146- 0.0	
Date	1996/05/31		1996/05/31		1996/06/01		1996/06/01		1996/06/01		1996/06/01		1996/06/01		1996/06/01		1996/06/01		1996/06/01	
Time(JST)	19:14		21:53		00:42		03:39		06:23		09:14		12:12		15:03		17:20		19:34	
Weather	C		C				BC		BC		BC		C		BC		BC		BC	
Air Temp.	8.8		8.1		7.6		8.3		8.6		6.5		6.1		7.5		6.6		6.1	
Bar	1007.0		1008.5		1009.5		1011.7		1014.0		1015.0		1015.5		1015.2		1015.5		1016.5	
Wind Dir	NNE		NE		NNE		NNE		NNE		NNE		N		N		NNW		NNW	
Wind Spd/F	F 6		F 6		F 4		F 4		F 4		F 3		F 3		F 2		F 2		F 1	
Transparency									11		10		18		10		12			
Depth					2488		1299													
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.9	33.185	8.6	33.254	10.4	33.671	11.0	33.742	10.2	33.542	8.7	33.324	7.1	32.970	10.1	33.449	8.2	33.180	7.8	33.327
10m	8.55	33.199	7.52	33.178	10.34	33.665	10.91	33.719	10.16	33.526	8.54	33.333	6.86	32.956	9.87	33.424	8.13	33.176	7.76	33.314
20m	5.96	33.137	4.81	33.108	10.20	33.656	8.95	33.721	8.27	33.574	8.56	33.845	5.19	32.957	8.13	33.575	8.03	33.181	7.72	33.308
30m	5.12	33.163	5.39	33.341	8.68	33.774	8.66	33.815	8.31	33.836	8.60	33.890	4.40	33.011	7.79	33.665	5.95	33.270	7.73	33.369
50m	4.54	33.280	6.07	33.564	8.61	33.834	8.87	33.916	8.38	33.900	8.71	33.973	3.50	33.027	7.93	33.784	4.45	33.193	6.85	33.539
75m	4.34	33.299	4.26	33.349	8.72	33.926	8.23	33.881	8.39	33.932	8.49	33.983	2.78	33.035	7.67	33.855	4.58	33.315	6.46	33.557
100m	1.89	33.125	2.84	33.365	8.71	33.958	7.49	33.785	8.34	33.941	8.33	33.998	2.57	33.132	7.46	33.842	4.40	33.328	5.71	33.573
125m	2.44	33.264	1.21	33.200	8.62	33.970	7.85	33.915	8.21	33.922	7.89	33.956	2.32	33.201	6.89	33.767	4.08	33.352	4.67	33.467
150m	1.68	33.285	1.04	33.197	8.63	33.985	7.93	33.930	7.44	33.828	7.37	33.897	2.51	33.301	6.18	33.673	4.03	33.412	4.33	33.477
200m	3.22	33.484	1.22	33.289	8.34	33.999	6.81	33.760	3.17	33.260	6.16	33.756	2.71	33.529	5.37	33.667	3.89	33.472	4.93	33.666
250m	3.39	33.551	1.51	33.402	7.14	33.836	5.69	33.637	3.15	33.429	4.55	33.628	2.46	33.604	3.27	33.434	2.90	33.451	4.40	33.684
300m	2.88	33.614	1.75	33.502	6.71	33.859	5.64	33.708	3.18	33.484	3.40	33.547	3.17	33.771	1.98	33.421	2.87	33.501	3.13	33.551
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-11

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	PKA26		PKA25		P18		PK07		P27		PK16		P36		PK24		PK32		PK31	
Latitude:N	40-29.9		40-59.1		41- 0.0		41- 0.2		41- 0.0		40-59.1		41- 0.1		41- 0.1		41- 0.2		41-29.9	
Longitude:E	146-29.1		146-30.1		145-59.1		145-29.8		145- 0.1		144-30.0		143-59.9		143-30.0		142-59.8		142-59.9	
Date	1996/06/01		1996/06/02		1996/06/02		1996/06/02		1996/06/02		1996/06/02		1996/06/02		1996/06/02		1996/06/02		1996/06/02	
Time(JST)	21:43		00:26		02:48		05:51		08:19		10:38		12:49		15:07		17:37		20:21	
Weather	BC						BC		B		C		C		C		C		C	
Air Temp.	6.1		6.1		8.0		9.6		9.3		9.1		7.9		11.5		10.8		10.6	
Bar	1017.0		1016.9		1016.5		1016.2		1016.0		1015.5		1014.9		1012.0		1011.0		1010.5	
Wind Dir	WSW		WSW		WSW		SSW		S		SSW		S		SSW		SSE		S	
Wind Spd/F	F 2		F 2		F 3		F 3		F 3		F 4		F 3		F 3		F 3		F 3	
Transparency							9		15		6		4		10		12			
Depth															2024					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.5	33.477	7.1	32.929	9.8	33.496	9.6	33.379	6.5	32.856	5.5	32.547	6.1	32.709	10.5	33.457	9.5	32.893	8.8	32.831
10m	8.39	33.591	7.01	33.060	9.85	33.618	9.59	33.582	6.14	32.984	4.93	32.691	5.88	32.819	10.09	33.562	8.86	33.026	8.09	32.935
20m	8.40	33.590	6.90	33.053	9.84	33.626	9.97	33.673	5.70	32.977	2.15	32.883	4.35	32.781	9.25	33.612	7.32	33.351	6.05	33.098
30m	8.33	33.594	4.03	32.946	5.86	33.089	6.36	33.148	4.27	32.996	1.73	32.934	2.26	32.969	8.34	33.631	8.07	33.756	5.19	33.118
50m	7.42	33.575	2.82	33.046	5.23	33.525	4.03	33.086	3.48	33.051	1.59	33.019	1.51	33.016	8.10	33.817	8.81	34.025	5.62	33.384
75m	7.21	33.685	1.85	33.019	7.62	33.878	3.38	33.093	2.69	33.026	1.09	33.075	1.26	33.068	7.81	33.852	8.95	34.080	7.10	33.749
100m	7.01	33.692	1.55	33.121	6.29	33.666	2.55	33.054	2.47	33.157	0.95	33.136	1.08	33.130	7.74	33.895	8.20	33.952	7.54	33.883
125m	6.59	33.698	0.88	33.143	5.43	33.574	1.81	33.107	2.60	33.260	0.99	33.158	1.10	33.197	7.75	33.895	7.66	33.905	6.04	33.684
150m	6.33	33.691	1.98	33.350	4.41	33.413	3.79	33.380	2.70	33.376	1.15	33.222	1.25	33.251	7.41	33.838	6.18	33.706	6.54	33.804
200m	5.63	33.624	3.91	33.573	3.18	33.561	2.48	33.356	2.80	33.594	1.50	33.337	1.42	33.320	6.55	33.701	5.67	33.740	5.27	33.693
250m	5.27	33.662	2.56	33.468	1.57	33.373	2.24	33.490	2.96	33.719	1.63	33.410	1.73	33.398	5.44	33.614	4.06	33.581	4.31	33.643
300m	4.39	33.617	2.81	33.588	1.60	33.408	2.66	33.644	3.17	33.836	1.66	33.478	1.72	33.438	5.31	33.676	3.73	33.607	3.65	33.627
400m					3.04	33.784	3.27	33.888	3.39	34.015	3.06	33.800	1.69	33.524	3.20	33.613	3.00	33.674	3.25	33.796
500m					3.42	33.972	3.36	34.024	3.33	34.117	3.04	33.989	2.09	33.650	3.32	33.843	3.27	33.852	3.28	33.937
600m					3.37	34.096	3.28	34.138	3.22	34.203	2.97	34.087	2.47	33.805	3.50	34.010	3.34	33.994	3.47	34.087
700m					3.54	34.235														
800m					3.29	34.286														
900m					3.06	34.327														
1000m					2.84	34.374														

Table 5-12

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	PK23		P35		PK15		P26		P25		PK14		P34		PK22		PK21		P33	
Latitude:N	41-29.1		41-30.1		41-30.1		41-30.1		41-59.1		41-59.1		42- 0.1		42- 0.1		42-15.1		42-15.1	
Longitude:E	143-29.1		143-59.9		144-30.0		144-59.5		144-59.8		144-29.9		143-59.9		143-29.1		143-29.8		143-59.9	
Date	1996/06/02		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03		1996/06/03	
Time(JST)	22:37		00:52		03:04		05:14		08:06		11:02		13:29		15:48		17:09		19:00	
Weather	C								C		C		C		F		F		F	
Air Temp.	10.8		7.5		8.1		8.3		8.8		8.3		9.3		9.0		10.1		9.3	
Bar	1009.0		1007.4		1006.0		1005.9		1003.0		1001.5		998.2		997.7		996.9		997.5	
Wind Dir	SSW		S		SSW		SSW		S		SSW		SSW		SW		S		SSW	
Wind Spd/F	F 4		F 3		F 4		F 4		F 4		F 4		F 4		F 4		F 5		F 6	
Transparency							9		10		6		5		7		5			
Depth													1120		124		66		935	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.9	32.884	5.1	32.731	6.4	32.863	6.3	32.895	6.4	32.871	5.5	32.770	4.8	32.759	5.3	32.195	5.7	31.751	4.7	32.780
10m	8.71	33.133	4.08	32.871	6.21	33.003	6.12	33.017	6.21	33.007	5.28	32.904	4.29	32.861	4.72	32.303	5.17	31.863	4.39	32.909
20m	5.90	33.244	3.50	32.892	5.50	33.001	5.91	33.012	5.64	33.014	4.99	32.903	3.97	32.856	4.36	32.351	2.57	32.547	4.24	32.898
30m	6.81	33.435	2.80	32.945	5.05	33.007	5.20	33.015	5.36	33.013	4.40	32.905	3.65	32.849	2.66	32.637	2.17	32.679	3.55	32.868
50m	8.34	33.872	1.91	33.007	3.59	33.051	3.36	33.065	3.52	33.074	1.60	32.931	1.68	33.021	1.67	32.863	1.96	32.830	1.46	33.055
75m	8.10	33.940	1.08	33.061	3.19	33.077	2.74	33.105	2.98	33.105	1.44	32.986	1.54	33.093	1.82	32.921			1.14	33.100
100m	6.13	33.657	0.79	33.112	2.91	33.222	2.30	33.234	2.31	33.165	0.96	33.067	0.99	33.128	1.24	33.036			0.82	33.161
125m	5.30	33.576	0.86	33.168	2.53	33.343	2.35	33.333	2.21	33.316	0.89	33.162	0.92	33.182					0.87	33.180
150m	4.36	33.450	0.92	33.211	2.88	33.486	2.66	33.520	2.66	33.505	1.23	33.267	0.99	33.213					0.99	33.213
200m	5.24	33.710	1.28	33.292	2.92	33.643	3.00	33.715	2.95	33.672	1.45	33.361	1.18	33.256					1.07	33.248
250m	4.54	33.670	1.40	33.370	3.03	33.761	3.16	33.816	3.15	33.801	1.70	33.477	1.28	33.327					1.21	33.301
300m	3.98	33.644	1.68	33.472	3.20	33.862	3.28	33.909	3.26	33.904	2.84	33.721	1.55	33.420					1.71	33.373
400m	3.20	33.703	2.21	33.692	3.34	34.032	3.33	34.057	3.31	34.045	2.85	33.860	1.90	33.566					1.55	33.442
500m	3.37	33.881	3.29	33.976	3.29	34.149	3.25	34.159	3.24	34.148	2.84	34.012	2.27	33.734					1.94	33.609
600m	3.28	34.008	3.36	34.123	3.08	34.211	3.07	34.241	3.13	34.239	3.23	34.153	2.86	33.899					2.22	33.713
700m									2.97	34.307	3.05	34.222	3.09	34.071						
800m									2.82	34.351	2.99	34.294	3.06	34.188						
900m									2.67	34.387	2.83	34.347	2.94	34.267						
1000m									2.52	34.421	2.69	34.393	2.85	34.348						

Table 5-13

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	PK13		P24		P23		PK12		P32		P31		IK01		IK02		IK03		IK04	
Latitude:N	42-14.1		42-15.0		42-30.0		42-30.0		42-30.1		42-45.1		42-18.1		42- 0.1		41-40.2		41-29.9	
Longitude:E	144-29.9		144-59.9		144-59.9		144-30.1		143-59.6		143-59.1		143-59.9		144- 0.0		143-59.9		142-59.6	
Date	1996/06/03		1996/06/03		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/12		1996/06/13		1996/06/13		1996/06/14	
Time(JST)	21:05		23:17		00:52		03:03		05:18		06:50		17:47		05:40		17:51		17:59	
Weather	R		C						C		BC		C		BC		BC		F	
Air Temp.	9.8		9.6		8.1		8.6		9.3		12.1		11.6		9.6		12.3		12.3	
Bar	998.5		998.0		997.0		996.4		996.5		997.0		1009.0		1011.2		1012.0		1013.0	
Wind Dir	WSW		SW		SW		SW		SW		SW		CALM		WSW		SW		SSE	
Wind Spd/F	F 4		F 5		F 4		F 4		F 5		F 2		F 0		F 2		F 4		F 4	
Transparency									6		5									
Depth					1774				475				852		1117				1201	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	4.8	32.715	6.6	32.886	4.9	32.726	5.1	32.433	5.8	32.130	7.9	30.828	10.0	31.83*	8.9	32.86*	9.2	32.69*	8.5	32.68*
10m	4.47	32.828	6.42	33.009	4.60	32.846	4.67	32.546	5.48	32.244	4.97	32.182	8.69	31.906	7.68	32.883	6.32	32.768	7.34	32.731
20m	4.26	32.818	6.34	33.011	4.54	32.855	4.61	32.550	4.58	32.686	3.14	32.594	4.88	32.547	5.90	32.871	3.05	32.802	4.90	32.787
30m	2.22	32.778	5.92	33.027	3.01	33.032	2.29	32.771	2.08	32.858	2.29	32.757	3.67	32.648	4.20	32.931	2.12	32.935	2.97	32.884
50m	0.86	33.005	3.64	33.064	2.55	33.080	1.54	33.013	1.57	32.963	1.97	32.927	2.10	32.979	2.19	33.065	1.44	32.983	1.63	32.952
75m	0.53	33.068	3.27	33.082	1.77	33.062	1.03	33.093	1.49	33.034			1.88	33.033	1.66	33.144	1.16	33.069	1.08	33.043
100m	0.55	33.141	2.69	33.122	1.03	33.087	1.03	33.148	1.32	33.078			1.09	33.027	0.76	33.128	0.75	33.132	1.02	33.100
125m	0.81	33.215	2.42	33.222	0.91	33.150	1.06	33.187	1.16	33.099			0.78	33.108	0.98	33.213	0.88	33.178	0.89	33.124
150m	1.33	33.294	2.58	33.305	1.08	33.206	0.94	33.189	1.19	33.191			0.95	33.154	1.25	33.249	1.03	33.223	0.87	33.158
200m	1.36	33.353	2.81	33.558	1.32	33.292	1.00	33.230	1.33	33.275			1.27	33.262	1.77	33.357	1.36	33.305	0.55	33.214
250m	1.59	33.426	3.03	33.715	1.52	33.368	1.36	33.300	1.41	33.327			1.43	33.345	1.99	33.415	1.50	33.362	0.78	33.313
300m	1.35	33.441	3.12	33.812	1.63	33.438	1.71	33.387	1.67	33.422			1.65	33.421	2.05	33.441	1.53	33.406	1.36	33.424
400m	2.04	33.614	3.31	33.981	1.32	33.509	1.82	33.547	1.88	33.535										
500m	2.25	33.742	3.31	34.105	2.35	33.745	2.13	33.713												
600m	2.88	33.960	3.25	34.193	3.08	34.028	2.94	33.937												
700m																				
800m																				
900m																				
1000m																				

Table 5-14

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606		
Station No	IK05		IK06		IK08		IK07		IK09		IK10		IK11		IK12		IK13		IK14		
Latitude:N	41-20.0		40-58.8		41-19.1		41- 0.2		41- 0.2		41-19.9		41-40.3		41-40.1		41-59.9		42-19.9		
Longitude:E	144- 0.0		143-58.9		144-59.7		144-59.8		145-59.8		145-59.9		146- 0.1		145- 0.2		144-59.9		144-59.7		
Date	1996/06/15		1996/06/15		1996/06/16		1996/06/16		1996/06/17		1996/06/18		1996/06/18		1996/06/19		1996/06/20		1996/06/20		
Time(JST)	07:42		17:38		07:48		17:56		18:01		04:16		18:17		18:22		05:32		18:17		
Weather	F		R		C		F		F		F		R		C		C		C		
Air Temp.	10.5		11.3		11.1		11.5		13.3		11.6		12.6		10.3		10.3		10.6		
Bar	1013.5		1011.7		1011.2		1009.0		1009.0		1007.0		1009.5		988.0		989.5		993.5		
Wind Dir	ESE		SE		SE		SSE		N		ESE		E		SW		SW		NNE		
Wind Spd/F	F 3		F 3		F 5		F 4		F 2		F 4		F 5		F 4		F 5		F 2		
Transparency																					
Depth	1200																				
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	9.4	32.17*	11.6	33.05*	9.8	32.82*	10.1	32.84*	12.2	32.75*	12.3	32.92*	10.6	32.68*	8.9	32.84*	9.4	32.77*	9.2	32.75*	
10m	7.40	32.753	11.38	33.092	7.86	32.761	9.91	32.863	12.18	33.034	11.09	32.950	10.28	32.771	8.61	32.882	9.14	32.825	8.89	32.765	
20m	4.21	32.818	7.34	32.673	5.65	32.910	6.43	32.871	4.73	32.887	7.70	33.011	6.49	32.938	7.24	32.892	5.47	32.967	4.26	32.903	
30m	2.55	32.853	4.74	32.789	3.31	32.946	4.75	32.864	3.39	32.916	4.31	33.006	4.89	32.968	5.95	32.990	4.76	33.010	3.58	32.915	
50m	1.06	32.972	1.32	32.928	2.28	32.998	3.36	33.078	1.84	32.947	3.08	33.020	3.54	33.070	3.74	33.047	3.47	33.018	2.43	32.942	
75m	0.54	33.024	0.61	32.972	1.80	33.040	1.51	32.964	1.81	33.079	2.64	33.089	2.93	33.100	3.02	33.094	2.53	33.111	2.16	32.980	
100m	0.47	33.106	0.50	33.069	3.14	33.287	0.80	33.019	0.81	33.107	2.46	33.178	2.35	33.201	2.48	33.175	2.74	33.273	1.95	33.041	
125m	0.47	33.147	0.53	33.115	3.01	33.318	1.24	33.129	1.34	33.208	2.39	33.247	2.59	33.340	2.45	33.295	2.87	33.381	1.93	33.160	
150m	0.54	33.163	0.52	33.163	2.35	33.392	2.48	33.383	2.19	33.408	2.60	33.393	2.68	33.458	2.75	33.490	2.87	33.489	2.25	33.332	
200m	1.00	33.276	0.89	33.233	2.04	33.483	2.51	33.590	1.42	33.352	2.62	33.530	2.92	33.626	2.95	33.650	3.00	33.656	2.88	33.616	
250m	1.19	33.360	0.59	33.291	1.94	33.597	3.04	33.764	1.58	33.455	2.99	33.702	3.06	33.736	3.13	33.786	3.16	33.775	3.11	33.766	
300m	0.99	33.396	1.03	33.393	3.17	33.823	2.75	33.813	2.41	33.624	2.92	33.770	2.98	33.828	3.14	33.874	3.32	33.894	3.20	33.845	
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 5-15

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606		
Station No	IW01		IW02		IW03		IW04		IW05		IW06		IW07		IW08		IW09		IW10		
Latitude:N	39-30.9		39-20.1		39- 9.8		38-59.8		39-19.6		39-39.9		40- 0.8		39-39.8		39-20.0		39- 0.9		
Longitude:E	148-29.9		148- 0.0		147-30.0		146-59.2		146-44.7		146-30.1		146-15.0		145-59.7		145-45.0		145-29.6		
Date	1996/06/27		1996/06/28		1996/06/28		1996/06/28		1996/06/29		1996/06/29		1996/06/29		1996/06/30		1996/06/30		1996/06/30		
Time(JST)	18:07		08:15		11:27		18:06		06:21		09:31		18:05		06:50		09:35		18:05		
Weather	BC		C		BC		R				F		C		F		C		R		
Air Temp.	16.8		17.2		18.7		18.7		18.6		14.6		13.9		12.2		14.0		15.5		
Bar	1015.0		1014.3		1012.5		1008.4		1008.3		1008.0		1001.5		1005.8		1005.8		1003.6		
Wind Dir	NE		S		S		S		S		W		NNW		N		NE		ESE		
Wind Spd/F	F 2		F 3		F 4		F 4		F 4		F 3		F 5		F 2		F 1		F 4		
Transparency			15		13				15		13				15		15				
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	17.6	34.62*	17.1	34.56*	17.8	34.48*	19.0	34.51*	18.2	34.14*	12.7	32.93*	12.4	32.73*	12.4	32.97*	17.2	34.43*	17.8	34.62*	
10m	16.89	34.601	16.70	34.555	18.46	34.609	18.79	34.600	17.93	34.147	12.31	32.960	12.08	32.737	12.19	32.978	17.00	34.398	17.47	34.626	
20m	16.53	34.581	16.55	34.551	18.17	34.595	18.74	34.606	17.84	34.156	10.52	32.976	7.21	32.909	10.63	33.013	17.01	34.404	17.48	34.626	
30m	16.44	34.583	16.24	34.547	15.01	34.555	17.78	34.653	14.24	34.354	5.50	32.948	4.88	33.019	7.42	33.135	17.04	34.418	17.17	34.604	
50m	14.45	34.614	14.39	34.615	14.09	34.596	15.43	34.614	12.61	34.366	3.64	33.050	3.70	33.096	4.15	33.149	13.85	34.509	14.67	34.686	
75m	13.15	34.552	13.40	34.598	13.16	34.563	14.15	34.559	11.32	34.242	3.02	33.087	2.93	33.121	3.53	33.227	11.08	34.093	13.25	34.480	
100m	12.26	34.465	13.10	34.580	12.52	34.497	12.52	34.475	9.41	34.037	3.29	33.236	2.49	33.204	4.31	33.431	5.77	33.420	11.35	34.322	
125m	11.45	34.385	12.26	34.468	11.44	34.379	11.49	34.393	7.97	33.900	3.24	33.329	2.96	33.356	2.79	33.330	4.21	33.325	10.44	34.197	
150m	10.95	34.348	11.31	34.373	10.88	34.325	9.73	34.171	7.79	33.972	2.68	33.355	3.13	33.476	2.78	33.378	4.20	33.341	9.84	34.214	
200m	10.46	34.341	10.27	34.272	10.33	34.323	8.41	34.087	6.80	33.980	3.04	33.594	3.31	33.634	2.53	33.477	4.53	33.569	7.48	33.859	
250m	10.35	34.339	9.57	34.194	9.38	34.173	6.36	33.865	5.93	33.957	3.09	33.738	3.12	33.719	3.00	33.640	3.04	33.375	5.84	33.698	
300m	9.95	34.271	8.55	34.067	7.92	33.994	6.49	34.037	5.20	33.939	3.17	33.832	3.13	33.830	3.13	33.744			4.93	33.685	
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 5-16

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199607	
Station No	IW11		IW12		IW13		IW14		IW15		IW16		IW17		IW18		IW19		SM01	
Latitude:N	38-59.9		39- 0.0		39- 0.7		39-24.9		39-49.8		40-15.7		40-39.9		41- 4.8		41-24.9		45-29.6	
Longitude:E	145- 0.2		144-30.0		144- 0.2		143-55.1		143-49.8		143-44.7		143-39.8		143-34.9		143-38.1		162-29.0	
Date	1996/07/01		1996/07/01		1996/07/01		1996/07/02		1996/07/02		1996/07/02		1996/07/03		1996/07/03		1996/07/03		1996/07/13	
Time(JST)	06:49		09:34		18:04		08:34		11:38		18:03		07:48		11:00		18:09		18:07	
Weather	F		F		BC		F		BC		BC		F		C		F		R	
Air Temp.	14.8		18.1		17.1		18.1		21.6		16.3		15.1		16.4		12.3		11.6	
Bar	1005.0		1005.1		1005.5		1010.0		1010.3		1010.9		1011.6		1011.5		1011.5		994.0	
Wind Dir	S		SE		SSE		SSW		S		ESE		SSE		S		NE		SSE	
Wind Spd/F	F 2		F 2		F 2		F 3		F 1		F 3		F 3		F 3		F 2		F 4	
Transparency	10		12		10		15		10		10		11		10					
Depth																				
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.4	32.76*	16.1	33.79*	16.0	33.81*	18.9	34.19*	18.2	34.18*	12.4	32.44*	13.7	33.13*	13.4	32.99*	9.8	32.23*	10.4	N.D.
10m	13.10	32.782	14.91	33.813	14.65	33.941	18.55	34.419	17.42	34.165	11.78	32.448	13.22	33.175	11.06	32.678	7.89	32.342	9.86	N.D.
20m	10.42	32.809	10.34	33.891	13.15	33.913	18.23	34.386	16.50	34.205	9.58	32.534	11.58	33.336	5.75	32.502	6.36	32.598	9.68	N.D.
30m	6.05	32.925	9.66	33.991	9.54	33.982	17.84	34.386	14.51	34.466	6.07	32.811	8.44	33.609	7.21	33.403	7.27	33.105	5.94	N.D.
50m	3.97	33.069	9.08	33.912	8.94	34.019	15.30	34.576	12.00	34.261	1.96	32.935	7.90	33.820	8.69	33.922	8.23	33.814	5.05	N.D.
75m	3.47	33.088	8.74	34.003	8.62	34.044	13.61	34.471	9.10	33.982	1.41	33.069	7.47	33.808	7.88	33.850	8.90	34.035	4.06	N.D.
100m	2.91	33.116	8.42	34.017	8.61	34.052	12.19	34.359	8.90	33.984	2.97	33.310	7.23	33.792	7.39	33.841	8.64	34.017	3.82	N.D.
125m	2.95	33.216	8.48	34.033	8.63	34.058	10.41	34.159	7.86	33.865	4.18	33.491	6.69	33.717	5.83	33.634	6.30	33.645	4.06	N.D.
150m	2.54	33.232	8.49	34.033	8.67	34.069	8.99	34.001	4.40	33.310	4.21	33.503	5.96	33.635	3.82	33.408	5.60	33.601	3.97	N.D.
200m	2.94	33.462	8.49	34.033	8.60	34.055	8.86	34.147	4.91	33.650	2.19	33.333	5.27	33.650	2.87	33.408	3.58	33.483	3.89	N.D.
250m	2.82	33.570	8.34	34.007	8.61	34.056	6.97	33.916	3.68	33.558	1.83	33.407	3.57	33.503	3.35	33.550	4.03	33.594	3.65	N.D.
300m	2.95	33.682	7.29	33.840	8.52	34.040	5.49	33.765	3.34	33.597	3.01	33.603	2.86	33.477	3.01	33.551	3.40	33.585	3.58	N.D.
400m																			3.61	N.D.
500m																			3.55	N.D.
600m																			3.43	N.D.
700m																			3.28	N.D.
800m																			3.09	N.D.
900m																			2.90	N.D.
1000m																			2.74	N.D.

Table 5-17

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199607	199607	199607	199607	199607	199607	199607	199607	199607	199607	199607
Station No	SM02	SM03	SM04	SM05	SM06	SM07	SM08	SM09	SM10	SM11	
Latitude:N	45-59.2	46-30.9	46-30.0	46-30.5	45-59.7	45-29.3	45- 0.1	44-29.5	43-59.8	43-17.8	
Longitude:E	161-39.1	160-59.1	160-19.8	159-30.9	158-59.8	158-28.9	158- 0.1	157-29.3	156-30.1	155-33.3	
Date	1996/07/14	1996/07/14	1996/07/15	1996/07/15	1996/07/16	1996/07/16	1996/07/17	1996/07/17	1996/07/18	1996/07/18	
Time(JST)	09:23	17:45	08:03	18:07	08:08	18:03	08:37	18:02	10:10	18:02	
Weather	C	C	C	C	C	F	C	C	BC	C	
Air Temp.	10.1	9.3	8.8	9.0	10.1	10.0	10.8	10.8	12.3	12.6	
Bar	994.5	1002.0	1009.5	1012.0	1015.0	1016.0	1018.5	1018.5	1017.0	1014.0	
Wind Dir	NNW	N	NNW	NNW	CALM	S	SSE	SE	ESE	ESE	
Wind Spd/F	F 5	F 5	F 4	F 3	F 0	F 3	F 3	F 3	F 4	F 5	
Transparency	10		11		14		12		13	12	
Depth											
Equipment	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD
STND. Dep	T S	T S	T S	T S	T S	T S	T S	T S	T S	T S	T S
0m	10.6 33.18*	9.0 32.74*	8.7 32.80*	8.6 32.78*	8.9 32.74*	9.6 32.71*	9.7 32.70*	9.9 32.14*	10.5 32.62*	12.0 33.48*	
10m	10.42 33.180	8.69 32.735	8.53 32.787	8.47 32.774	8.63 32.737	8.85 32.693	9.34 32.687	9.24 32.725	10.16 32.621	11.75 33.504	
20m	10.36 33.178	7.20 32.671	8.51 32.783	8.46 32.773	8.61 32.736	8.64 32.685	8.85 32.709	8.01 32.707	9.63 32.654	11.73 33.514	
30m	6.93 33.051	4.31 32.741	4.49 32.816	4.91 32.807	4.91 32.759	5.37 32.732	5.77 32.748	4.59 32.888	4.15 32.832	10.99 33.556	
50m	6.78 33.246	3.54 32.748	3.05 32.799	3.56 32.811	3.51 32.791	3.00 32.772	3.54 32.840	2.71 32.912	2.56 32.888	8.68 33.395	
75m	5.11 33.197	2.29 32.741	1.89 32.794	2.31 32.805	2.34 32.772	2.19 32.788	2.29 32.873	2.59 32.995	2.18 32.902	6.71 33.569	
100m	4.77 33.226	1.98 32.755	1.83 32.825	1.94 32.819	1.99 32.822	1.82 32.809	1.92 32.892	2.34 33.047	1.65 32.960	6.81 33.683	
125m	3.77 33.121	2.14 32.904	2.64 33.179	2.18 32.994	2.58 33.186	2.21 33.017	1.99 33.015	2.85 33.366	2.30 33.261	6.90 33.800	
150m	4.09 33.237	2.85 33.306	3.41 33.533	3.17 33.500	3.22 33.498	3.25 33.460	2.90 33.420	3.01 33.520	2.80 33.470	6.04 33.698	
200m	3.31 33.297	3.38 33.572	3.57 33.697	3.50 33.703	3.41 33.677	3.59 33.697	3.34 33.694	3.24 33.686	3.24 33.689	5.34 33.674	
250m	3.27 33.414	3.51 33.703	3.58 33.783	3.54 33.805	3.40 33.769	3.56 33.803	3.36 33.810	3.41 33.814	3.50 33.824	4.59 33.718	
300m	3.59 33.556	3.49 33.771	3.52 33.859	3.49 33.866	3.46 33.849	3.51 33.865	3.33 33.869	3.39 33.896	3.33 33.884	4.20 33.780	
400m	3.59 33.703	3.29 33.866	3.33 33.935	3.35 33.959	3.31 33.920	3.36 33.951	3.34 33.999	3.34 34.027	3.36 34.024	3.84 33.896	
500m	3.51 33.812	3.18 33.949	3.24 34.017	3.21 34.031	3.18 34.004	3.18 34.034	3.19 34.087	3.21 34.107	3.24 34.114	3.87 34.033	
600m	3.39 33.882	3.05 34.012	3.06 34.065	3.08 34.080	3.01 34.076	3.00 34.079	3.06 34.150	3.07 34.170	3.20 34.202	3.57 34.119	
700m	3.23 33.947	2.89 34.053	2.88 34.119	2.93 34.122	2.86 34.121	2.89 34.129	2.90 34.195	2.93 34.218	2.95 34.231	3.30 34.187	
800m	3.05 33.994	2.76 34.097	2.74 34.155	2.79 34.156	2.75 34.169	2.75 34.172	2.75 34.244	2.81 34.273	2.76 34.263	3.17 34.235	
900m	2.86 34.031	2.65 34.131	2.58 34.194	2.63 34.193	2.62 34.196	2.62 34.203	2.62 34.283	2.67 34.313	2.66 34.303	3.01 34.280	
1000m	2.77 34.066	2.55 34.164	2.48 34.219	2.50 34.219	2.47 34.229	2.48 34.234	2.50 34.319	2.53 34.342	2.55 34.331	2.77 34.313	

Table 5-18

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199607		199607		199607		199607		199607		199607		199608		199608		199608		199608	
Station No	SM12		SM13		SM14		SM15		SM16		SM17		P31		P32		P33		PK21	
Latitude:N	42-59.6		42-31.0		42- 0.2		41-30.7		40-59.8		40-31.3		42-45.0		42-29.9		42-15.1		42-15.1	
Longitude:E	154-29.9		153-30.3		152-29.7		151-30.2		150-30.7		149-29.1		144- 0.2		143-59.9		143-59.9		143-29.8	
Date	1996/07/19		1996/07/19		1996/07/20		1996/07/20		1996/07/21		1996/07/21		1996/08/01		1996/08/01		1996/08/01		1996/08/01	
Time(JST)	10:35		18:03		10:54		18:02		10:08		18:02		10:47		12:08		13:35		15:41	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	13.3		13.5		15.3		15.1		16.5		17.0		14.8		16.3		14.6		14.1	
Bar	1011.5		1009.9		1010.5		1010.5		1013.0		1013.5		1015.0		1015.0		1015.5		1015.5	
Wind Dir	ESE		ESE		ENE		ENE		NE		NE		CALM		CALM		NE		N	
Wind Spd/F	F 5		F 5		F 4		F 3		F 3		F 4		F 0		F 0		F 2		F 1	
Transparency	11				13				13				4		5		5		6	
Depth													64		485		922		65	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.7	33.31*	13.1	33.09*	15.5	33.28*	15.6	33.09*	16.5	32.57*	19.5	34.35*	13.6	31.794	13.9	31.959	12.2	32.218	8.8	32.281
10m	13.51	33.705	12.91	33.264	15.06	33.323	15.32	33.093	12.94	32.697	19.36	34.347	9.52	32.368	12.29	32.080	11.00	32.462	6.67	32.447
20m	13.50	33.707	12.89	33.259	14.25	33.555	13.57	33.350	8.48	32.830	18.93	34.381	6.39	32.902	4.59	32.859	6.63	32.588	5.67	32.579
30m	13.41	33.693	12.34	33.216	13.15	33.662	12.97	33.618	4.36	33.072	16.54	34.429	5.33	32.866	3.38	32.938	5.52	32.840	4.44	32.714
50m	7.12	33.556	5.97	33.328	7.00	33.461	8.15	33.739	2.29	33.038	12.22	34.288	4.10	32.817	2.70	32.968	2.99	32.972	3.76	32.814
75m	6.44	33.616	3.55	33.178	6.76	33.687	6.92	33.707	2.02	33.067	10.92	34.220			2.14	33.008	2.36	33.026		
100m	6.30	33.694	3.86	33.318	5.94	33.647	5.57	33.600	2.15	33.192	9.35	34.050			1.89	33.095	1.79	33.072		
125m	6.08	33.679	3.01	33.274	5.12	33.588	5.90	33.734	2.26	33.302	8.40	33.963			2.14	33.183	1.64	33.134		
150m	5.62	33.662	3.38	33.396	4.71	33.599	5.73	33.773	2.19	33.405	6.68	33.752			1.96	33.188	1.51	33.185		
200m	4.91	33.657	3.17	33.509	4.51	33.689	4.83	33.760	2.36	33.556	3.34	33.463			1.67	33.195	1.81	33.328		
250m	3.94	33.701	3.10	33.637	4.84	33.883	4.10	33.785	2.83	33.689	1.79	33.338			1.77	33.317	1.86	33.437		
300m	3.81	33.777	3.45	33.782	4.43	33.891	3.80	33.844	3.33	33.849	2.89	33.643			1.78	33.358	2.52	33.578		
400m	3.88	33.937	3.60	33.956	4.43	34.076	4.06	34.049	3.28	33.981	3.15	33.842			2.05	33.502	2.59	33.723		
500m	3.67	34.051	3.79	34.123	3.75	34.123	4.03	34.174	3.35	34.125	3.44	34.046					3.02	33.912		
600m	3.62	34.166	3.55	34.206	3.55	34.211	3.56	34.230	3.66	34.281	3.51	34.183					3.18	34.016		
700m	3.30	34.217	3.33	34.271	3.33	34.277	3.47	34.305	3.44	34.322	3.47	34.279								
800m	3.06	34.270	3.09	34.308	3.14	34.335	3.03	34.299	3.23	34.369	3.07	34.320								
900m	3.04	34.340	3.01	34.366	3.01	34.377	3.02	34.381	2.90	34.386	2.94	34.367								
1000m	2.88	34.372	2.80	34.389	2.82	34.407	2.79	34.406	2.71	34.417	2.75	34.406								

Table 5-19

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	PK22		P34		PK14		PK13		PK12		PK11		P21		P22		P23		P24	
Latitude:N	42- 0.1		41-59.9		42- 0.0		42-14.1		42-30.1		42-45.1		42-55.0		42-45.1		42-30.1		42-14.9	
Longitude:E	143-29.1		143-59.9		144-29.1		144-30.1		144-29.1		144-29.1		144-59.1		145- 0.0		144-59.1		145- 0.0	
Date	1996/08/01		1996/08/01		1996/08/01		1996/08/01		1996/08/02		1996/08/02		1996/08/02		1996/08/02		1996/08/02		1996/08/02	
Time(JST)	16:58		18:54		21:19		23:15		00:47		02:22		04:35		05:30		06:55		08:40	
Weather	C		BC		C		BC		C		C		C		F		C		C	
Air Temp.	12.8		13.6		12.3		12.1		12.6		12.8		12.5		12.1		11.5		12.6	
Bar	1015.5		1017.0		1017.5		1018.0		1017.5		1017.5		1018.0		1017.7		1018.5		1018.5	
Wind Dir	CALM		NNE		ENE		ENE		NE		NE		NE		NNE		N		N	
Wind Spd/F	F 0		F 2		F 5		F 4		F 3		F 3		F 2		F 2		F 2		F 3	
Transparency	13												6		7		8		12	
Depth	123				1695		1610		1364		130		65		168		1778			
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.1	32.389	13.6	32.095	11.2	32.486	11.5	32.445	11.2	32.465	11.6	32.387	10.6	32.499	11.4	32.677	10.2	32.563	11.8	32.419
10m	7.00	32.485	12.94	32.191	10.99	32.563	10.69	32.519	10.99	32.552	11.41	32.482	9.97	32.504	8.88	32.380	9.65	32.656	11.51	32.518
20m	5.12	32.676	7.17	32.544	5.22	32.772	4.85	32.838	5.62	32.732	6.31	32.990	6.85	32.733	4.19	32.824	6.95	32.660	9.97	32.674
30m	3.70	32.824	3.21	32.894	3.36	32.888	2.55	32.971	3.86	32.871	4.56	33.003	7.04	32.825	3.12	32.874	3.71	32.927	7.93	32.714
50m	3.04	32.900	1.71	33.084	2.34	33.015	1.89	33.061	2.05	33.030	3.71	33.045	6.82	32.977	2.38	33.124	2.52	33.034	2.84	32.948
75m	2.40	32.956	1.36	33.158	1.72	33.114	1.87	33.132	1.70	33.100	2.74	33.031			1.78	33.060	1.18	33.070	1.89	33.039
100m	2.16	32.983	1.27	33.220	1.44	33.171	1.88	33.214	1.60	33.174	2.35	33.044			1.60	33.092	1.06	33.167	1.88	33.134
125m			1.27	33.231	1.53	33.206	1.68	33.276	1.52	33.224					1.48	33.122	0.83	33.177	2.08	33.285
150m			1.45	33.265	1.64	33.257	1.62	33.287	1.81	33.303					1.31	33.171	0.80	33.241	2.25	33.407
200m			1.68	33.332	1.86	33.354	1.99	33.357	1.81	33.355							1.61	33.399	2.87	33.628
250m			1.86	33.380	1.81	33.413	1.88	33.369	1.92	33.412							1.60	33.498	2.84	33.718
300m			1.88	33.451	2.00	33.533	2.05	33.470	2.04	33.463							2.70	33.692	2.72	33.786
400m			2.38	33.612	2.97	33.870	2.62	33.723	2.42	33.645							2.80	33.846	3.29	34.018
500m			2.89	33.771	3.21	34.015	2.99	33.880	2.99	33.851							2.91	33.936	3.15	34.098
600m			2.92	33.857	3.26	34.073	3.11	34.011	2.94	33.971							2.98	34.028	3.24	34.208
700m			3.09	33.973	3.13	34.116														
800m			3.11	34.092	3.08	34.197														
900m			3.01	34.205	2.96	34.280														
1000m			2.74	34.319	2.79	34.353														

Table 5-20

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	P25		PK05		PK04		P14		P11		PK01		P12		P13		PK02		PK03	
Latitude:N	42- 0.2		42- 0.1		42-15.2		42-29.1		43- 5.0		42-55.0		42-55.0		42-45.1		42-45.0		42-30.1	
Longitude:E	145- 0.1		145-30.0		145-29.9		145-59.9		145-43.9		145-29.8		145-49.9		145-54.8		145-30.1		145-29.1	
Date	1996/08/02		1996/08/02		1996/08/02		1996/08/02		1996/08/03		1996/08/03		1996/08/03		1996/08/03		1996/08/03		1996/08/03	
Time(JST)	10:06		12:35		14:34		17:15		02:15		03:36		04:57		06:21		08:19		09:43	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	14.0		14.1		14.0		14.0		10.3		10.6		11.5		12.0		11.8		12.8	
Bar	1018.0		1017.5		1018.4		1017.7		1019.5		1019.0		1019.2		1019.0		1019.0		1019.0	
Wind Dir	NNE		N		NE		NE		CALM		NNE		ESE		NE		NNE		NNE	
Wind Spd/F	F 3		F 4		F 3		F 4		F 0		F 2		F 2		F 2		F 3		F 2	
Transparency	12		9		12		8						11		13		13		15	
Depth											101									
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	14.5	32.382	15.0	32.364	12.8	32.550	16.4	32.271	10.5	32.671	11.2	32.662	12.8	32.570	12.7	32.557	11.8	32.540	13.0	32.456
10m	13.12	32.434	14.30	32.456	12.49	32.624	16.25	32.380	10.01	32.814	10.44	32.820	11.47	32.621	12.08	32.622	8.97	32.561	12.79	32.577
20m	10.49	32.635	9.74	32.678	10.80	32.661	8.84	32.651	8.26	33.128	7.36	32.923	6.73	32.754	7.20	32.766	4.00	32.820	10.04	32.651
30m	5.67	32.892	5.42	32.952	5.75	32.929	5.12	32.852	6.91	33.224	4.58	32.863	3.71	32.987	5.14	32.874	2.52	32.957	6.42	32.829
50m	2.60	32.967	3.60	33.066	3.17	33.034	3.47	33.064	5.92	33.238	3.48	33.134	2.60	33.110	2.70	32.963	1.21	33.082	3.36	32.935
75m	1.78	33.024	2.99	33.110	2.36	33.026	2.19	33.113	5.51	33.259	3.56	33.248	1.50	33.143	1.92	33.006	0.98	33.153	2.08	32.996
100m	1.69	33.114	2.34	33.168	1.64	33.120	2.16	33.209					1.19	33.205	1.69	33.095	1.10	33.242	1.77	33.073
125m	1.01	33.192	2.49	33.290	1.70	33.273	2.33	33.339					1.29	33.247	1.79	33.208	1.26	33.269	1.93	33.230
150m	1.30	33.301	2.45	33.406	1.76	33.335	2.54	33.470					1.40	33.316	2.21	33.353	1.42	33.318	2.20	33.353
200m	2.29	33.524	2.82	33.621	2.47	33.557	2.84	33.654					1.72	33.451	2.78	33.568	1.75	33.436	2.81	33.593
250m	2.65	33.669	3.03	33.765	2.61	33.666	3.07	33.796					1.86	33.488	3.07	33.710	1.97	33.511	3.18	33.767
300m	2.81	33.771	3.17	33.876	2.78	33.793	3.16	33.883					2.06	33.554	2.96	33.780	2.06	33.556	2.74	33.801
400m	2.96	33.963	3.29	34.032	3.17	34.003	3.31	34.055					2.18	33.625	3.43	33.988	2.40	33.680	3.24	34.015
500m	3.23	34.115	3.03	34.101	3.05	34.109	3.20	34.161					2.59	33.778	3.36	34.092	2.68	33.832	3.08	34.092
600m	3.14	34.202	2.94	34.195	3.02	34.195	2.88	34.222					2.77	33.880	3.01	34.191	2.91	33.977	3.08	34.184
700m	2.98	34.265	2.84	34.270			2.89	34.315					3.09	34.116	2.95	34.264				
800m	2.87	34.330	2.71	34.322			2.80	34.361					2.94	34.235	2.83	34.308				
900m	2.75	34.367	2.57	34.377			2.64	34.403					2.81	34.310	2.74	34.348				
1000m	2.57	34.406	2.55	34.416			2.54	34.432					2.74	34.365	2.63	34.378				

Table 5-21

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	P15		P16		P17		P18		PK07		P27		PK16		P36		PK24		PK32	
Latitude:N	42-14.1		42- 0.0		41-30.1		41- 0.1		41- 0.1		41- 0.0		41- 0.0		41- 0.1		41- 0.0		41- 0.1	
Longitude:E	146- 0.0		145-59.9		145-59.1		146- 0.1		145-29.1		144-59.7		144-30.1		144- 0.1		143-30.0		143- 0.2	
Date	1996/08/03		1996/08/03		1996/08/03		1996/08/03		1996/08/04		1996/08/04		1996/08/04		1996/08/04		1996/08/04		1996/08/04	
Time(JST)	12:18		14:11		18:27		21:44		00:19		02:38		04:54		07:08		09:19		11:28	
Weather	C		C		C		BC		C		C		BC		C		C		BC	
Air Temp.	15.8		16.1		16.7		16.5		17.0		16.8		17.2		19.3		19.7		19.1	
Bar	1018.0		1017.0		1015.0		1014.0		1012.7		1011.0		1009.2		1008.0		1005.5		1004.5	
Wind Dir	E		ENE		SSE		SSE		SSE		SSE		SSE		SSW		S		S	
Wind Spd/F	F 2		F 3		F 2		F 3		F 4		F 4		F 4		F 4		F 4		F 4	
Transparency	11		10										15		15		15		17	
Depth																				
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	15.6	32.250	16.7	32.288	19.7	33.222	18.9	33.345	20.3	33.188	16.4	32.465	15.7	32.147	18.0	32.557	18.4	32.348	16.9	32.396
10m	15.11	32.375	15.20	32.422	19.23	33.338	18.81	33.449	20.23	33.313	11.72	32.425	14.71	32.204	17.70	32.676	17.96	32.476	15.41	33.029
20m	11.47	32.589	12.52	32.583	15.73	32.905	16.31	33.655	16.11	33.786	5.79	32.827	11.59	33.077	10.19	32.539	13.50	33.236	12.19	33.217
30m	6.75	32.872	6.88	32.834	8.37	33.009	12.25	33.599	13.00	33.792	3.64	32.910	9.64	33.600	7.28	33.182	10.65	33.371	10.22	33.042
50m	3.52	33.029	4.24	33.030	6.24	33.516	7.69	33.563	9.02	33.745	7.47	33.821	8.40	33.927	2.56	32.906	8.30	33.704	9.29	33.774
75m	2.88	33.061	2.92	33.073	2.43	33.032	5.28	33.267	8.55	34.012	6.10	33.629	7.50	33.833	1.55	33.009	7.63	33.832	8.71	33.899
100m	2.41	33.155	2.49	33.168	1.76	33.100	4.66	33.414	7.53	33.855	5.53	33.572	6.68	33.735	1.18	33.060	7.11	33.786	6.94	33.739
125m	2.52	33.253	2.37	33.259	1.90	33.189	3.96	33.387	7.34	33.907	2.91	33.194	5.95	33.651	1.22	33.139	6.38	33.741	6.05	33.625
150m	2.64	33.380	2.42	33.374	3.71	33.455	2.52	33.236	5.47	33.701	2.76	33.300	4.38	33.511	1.42	33.176	5.42	33.664	4.78	33.519
200m	2.82	33.609	2.75	33.597	2.83	33.438	2.55	33.388	4.61	33.704	1.72	33.312	1.21	33.285	1.51	33.277	3.90	33.580	4.19	33.547
250m	3.14	33.777	2.87	33.743	2.23	33.518	2.58	33.450	4.73	33.864	2.05	33.437	1.51	33.361	2.14	33.423	3.12	33.588	3.76	33.594
300m	3.27	33.889	3.08	33.860	2.83	33.685	3.66	33.659	4.97	33.972	2.31	33.557	1.97	33.510	2.78	33.552	2.89	33.654	3.30	33.607
400m	3.28	34.067	3.12	34.002	3.49	33.909	3.18	33.771	4.86	34.105	2.87	33.767	2.42	33.653	2.66	33.693	2.95	33.815	1.92	33.601
500m	3.11	34.172	3.20	34.132	4.09	34.144	3.47	33.958	4.13	34.127	3.37	33.998	2.98	33.849	2.63	33.812	3.28	33.968	3.20	33.894
600m	2.96	34.249	3.08	34.211	3.79	34.206	3.65	34.093	3.97	34.223	3.41	34.121	3.24	34.005	3.26	34.028	3.37	34.088	3.26	34.034
700m	2.87	34.303	2.99	34.288	3.36	34.254	3.28	34.142												
800m	2.66	34.347	2.87	34.340	3.08	34.286	3.06	34.221												
900m	2.62	34.404	2.73	34.385	2.89	34.345	2.96	34.297												
1000m	2.52	34.436	2.58	34.422	2.75	34.389	2.88	34.358												

Table 5-22

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	PK31		PK23		P35		PK15		P26		PK06		IK01		IK02		IK03		IK04	
Latitude:N	41-30.1		41-30.1		41-30.0		41-30.0		41-30.0		41-29.1		42-26.0		42- 5.1		41-40.0		41-39.9	
Longitude:E	142-59.8		143-29.9		143-59.9		144-29.8		144-59.9		145-29.1		144- 2.7		143-59.7		144- 0.0		144-59.8	
Date	1996/08/04		1996/08/04		1996/08/04		1996/08/04		1996/08/04		1996/08/05		1996/08/26		1996/08/27		1996/08/27		1996/08/28	
Time(JST)	14:31		16:43		18:51		21:01		23:10		01:18		18:02		05:24		18:00		17:41	
Weather	C		C		C		BC		BC		BC		BC		BC		BC		C	
Air Temp.	19.7		18.7		17.2		16.2		16.7		15.8		16.3		16.4		18.3		18.0	
Bar	1002.4		1001.9		1002.0		1002.0		1001.5		1001.2		1016.3		1017.7		1017.3		1013.5	
Wind Dir	S		SSW		SW		SW		SW		WSW		SSW		WNW		SSE		ENE	
Wind Spd/F	F 4		F 5		F 4		F 5		F 4		F 4		F 3		F 2		F 3		F 3	
Transparency	11		15												11					
Depth													683							
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	18.2	33.459	16.9	32.560	13.7	32.304	12.8	32.342	15.1	32.354	13.3	32.260	14.4	32.52*	15.7	32.25*	17.0	32.29*	18.2	32.17*
10m	17.28	33.593	16.52	32.720	11.55	32.516	9.89	32.592	14.42	32.481	12.54	32.586	12.57	32.645	14.71	32.273	13.50	32.380	17.92	32.215
20m	15.27	34.182	8.62	32.858	9.84	32.653	4.85	32.766	9.37	32.680	7.86	32.700	10.04	32.883	10.86	32.411	7.17	32.677	11.90	32.573
30m	14.19	34.285	6.67	32.883	6.13	32.766	3.30	32.882	4.83	32.938	4.93	32.956	8.65	33.168	5.96	32.762	5.07	32.800	5.62	32.813
50m	12.34	34.254	7.16	33.740	2.75	32.947	1.98	32.983	3.11	33.009	3.11	33.019	7.38	33.277	3.34	33.072	2.76	32.944	2.38	32.977
75m	11.83	34.280	7.14	33.760	1.57	33.022	2.45	33.159	1.85	33.047	2.29	33.064	4.85	33.010	2.81	33.155	2.02	33.045	2.00	33.039
100m	11.34	34.246	5.71	33.597	1.10	33.090	1.99	33.208	2.17	33.188	2.35	33.187	2.12	33.046	1.85	33.158	1.78	33.139	2.06	33.218
125m	10.58	34.154	4.37	33.461	0.90	33.145	1.14	33.194	2.00	33.297	2.04	33.236	2.52	33.117	1.48	33.179	1.90	33.221	1.91	33.311
150m	8.92	34.047	4.28	33.518	1.20	33.209	1.14	33.240	2.23	33.398	1.98	33.313	2.22	33.137	1.44	33.213	1.84	33.285	2.35	33.438
200m	6.11	33.659	3.87	33.535	1.35	33.280	1.52	33.363	2.37	33.534	2.26	33.503	1.41	33.168	1.36	33.285	2.37	33.485	2.60	33.621
250m	3.07	33.433	2.91	33.484	1.30	33.338	1.73	33.482	2.71	33.699	2.65	33.642	1.40	33.245	1.30	33.338	2.23	33.573	2.95	33.757
300m	3.34	33.540	2.64	33.512	1.60	33.456	1.85	33.565	3.03	33.816	2.70	33.750	1.69	33.352	1.63	33.449	2.39	33.673	3.15	33.869
400m	2.72	33.619	2.28	33.601	2.29	33.659	2.54	33.766	3.11	33.970	3.15	33.932								
500m	3.00	33.813	2.91	33.819	3.03	33.890	3.16	33.985	3.13	34.104	3.13	34.048								
600m	3.38	34.026	3.34	34.032	3.20	34.029	3.09	34.111	2.98	34.190	3.12	34.162								
700m																				
800m																				
900m																				
1000m																				

Table 5-23

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199608		199608		199609		199609		199609		199609		199609		199609		199609		199609	
Station No	IK05		IK06		IW01		IW02		IW03		IW04		IW05		IW06		IW07		IW08	
Latitude:N	42- 4.8		42-29.8		42-40.2		42- 9.1		41-49.8		41-30.5		41-44.8		41-59.5		41-30.0		40-59.4	
Longitude:E	144-59.8		144-59.9		144- 9.1		143-59.2		143-30.1		143- 0.8		142-30.2		141-59.0		141-59.9		141-59.4	
Date	1996/08/29		1996/08/29		1996/09/04		1996/09/04		1996/09/05		1996/09/05		1996/09/06		1996/09/06		1996/09/07		1996/09/07	
Time(JST)	05:51		17:56		10:36		17:36		08:32		17:35		10:39		17:31		09:53		17:34	
Weather	R		R		C		C		C		BC		BC		C		C		BC	
Air Temp.	17.4		16.5		17.2		15.6		15.1		19.8		19.2		19.2		18.0		18.2	
Bar	1012.0		1010.5		1017.0		1017.5		1015.0		1009.5		1012.4		1013.0		1014.0		1014.0	
Wind Dir	ESE		E		NE		E		NE		SSW		NW		NNW		E		E	
Wind Spd/F	F 5		F 5		F 3		F 3		F 3		F 4		F 5		F 5		F 4		F 1	
Transparency	11				9				9				18				13			
Depth					386		902		141		1115								803	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	17.2	32.26*	15.3	32.15*	14.2	32.85*	15.7	32.31*	13.7	32.33*	20.1	34.06*	19.2	33.71*	19.4	34.10*	19.4	33.92*	19.3	33.84*
10m	16.92	32.296	12.64	32.288	13.49	32.866	13.22	32.821	13.19	32.417	19.88	34.053	18.95	33.733	19.35	34.083	19.15	33.916	19.11	33.900
20m	9.92	32.485	5.78	32.711	13.16	32.957	10.93	33.049	8.49	32.694	19.89	34.052	18.22	33.892	17.39	34.133	19.30	33.983	19.20	33.939
30m	5.24	32.929	3.95	32.871	12.76	33.021	9.99	33.128	5.11	32.926	19.89	34.053	16.76	34.146	15.78	34.158	19.22	34.019	19.19	33.939
50m	2.80	33.004	2.21	33.013	11.39	33.246	8.00	33.247	4.62	33.045	19.30	34.078	15.14	34.285	10.79	33.851	17.18	34.006	17.08	34.161
75m	2.15	33.034	1.86	33.139	9.85	33.265	4.45	33.173	3.42	32.998	13.96	34.168	14.19	34.320	11.50	34.249	15.26	34.190	14.82	34.229
100m	1.93	33.139	1.64	33.216	7.67	33.220	2.14	33.134	2.48	33.130	11.66	34.155	12.97	34.224	10.82	34.209	13.99	34.257	13.55	34.263
125m	2.13	33.293	1.73	33.267	2.75	32.867	1.66	33.152	1.73	33.157	10.96	34.224	12.47	34.254	10.05	34.138	12.68	34.233	12.35	34.214
150m	2.39	33.427	2.09	33.344	1.85	32.934	1.50	33.179			9.73	34.078	12.10	34.290	9.17	34.038	12.05	34.219	11.92	34.371
200m	2.65	33.610	1.83	33.405	1.52	33.118	1.84	33.319			6.71	33.769	11.55	34.291	8.53	34.065	10.98	34.196	9.61	34.120
250m	2.87	33.733	1.82	33.477	1.68	33.253	2.13	33.436			3.39	33.467	9.83	34.119	5.05	33.559	9.43	34.078	7.03	33.790
300m	3.11	33.860	1.88	33.541	1.98	33.390					2.72	33.504	6.11	33.660	3.26	33.494	6.93	33.763	3.10	33.400
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-24

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199609		199609		199609		199609		199609		199609		199609		199609		199609		199609	
Station No	IW09		IW10		IW11		IW12		IW13		IW14		IW15		IW16		IW17		SM01	
Latitude:N	40-44.1		40-29.4		40-39.1		40-49.6		41- 0.1		41-10.4		41-39.9		42- 9.4		42-39.7		42-19.3	
Longitude:E	142-29.8		142-59.1		143-39.8		144-19.3		144-59.1		145-39.1		145-25.0		145- 9.2		144-39.8		144-38.7	
Date	1996/09/08		1996/09/08		1996/09/09		1996/09/09		1996/09/10		1996/09/10		1996/09/11		1996/09/11		1996/09/12		1996/09/18	
Time(JST)	09:16		17:34		10:14		17:34		09:55		17:34		09:44		17:36		10:41		17:34	
Weather	B		BC		C		C		BC		C		B		BC		B		R	
Air Temp.	18.8		18.5		19.2		18.2		20.2		18.7		20.5		16.8		19.5		17.1	
Bar	1018.9		1019.9		1018.0		1015.7		1011.0		1010.0		1013.2		1012.0		1016.0		1013.0	
Wind Dir	W		SW		SSE		SE		ESE		ESE		CALM		SSW		ESE		SSE	
Wind Spd/F	F 3		F 2		F 5		F 3		F 5		F 3		F 0		F 4		F 3		F 2	
Transparency	14				12				19				13				8			
Depth																			469	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	17.5	33.06*	16.8	32.70*	17.2	32.17*	17.6	32.14*	18.2	32.79*	20.4	33.52*	17.8	31.96*	15.2	32.37*	15.7	32.81*	15.2	32.44*
10m	17.13	33.059	16.01	32.726	16.03	32.184	17.26	32.153	19.18	33.386	20.25	33.500	16.85	32.234	14.75	32.392	13.46	32.874	12.14	32.499
20m	16.86	33.088	14.35	32.721	12.49	32.395	17.13	32.164	14.15	33.469	20.06	33.496	12.54	32.480	9.02	32.608	12.50	33.020	8.21	32.730
30m	15.65	33.129	10.21	33.041	8.02	32.668	10.02	32.530	11.17	33.655	13.91	33.563	7.10	32.715	5.14	32.839	11.72	33.143	5.85	32.817
50m	11.29	33.596	10.36	34.042	4.20	32.863	3.65	32.991	8.21	33.684	9.55	33.894	3.69	32.971	3.00	32.967	9.05	33.172	3.64	33.003
75m	10.10	34.020	9.95	34.124	2.98	33.021	2.74	33.023	6.97	33.704	8.11	33.856	2.67	33.031	2.26	33.018	6.66	33.180	2.58	33.060
100m	9.24	34.045	9.49	34.086	2.16	33.049	2.19	33.054	6.32	33.704	7.15	33.778	2.24	33.136	2.13	33.127	4.49	33.213	2.26	33.139
125m	8.54	33.997	7.80	33.850	2.07	33.101	2.08	33.155	5.72	33.690	5.75	33.627	2.29	33.253	2.10	33.248	2.59	33.101	1.89	33.148
150m	7.42	33.891	6.14	33.660	2.02	33.157	2.27	33.271	4.71	33.613	5.20	33.608	2.47	33.399	2.10	33.346	1.96	33.120	1.74	33.187
200m	4.75	33.660	3.99	33.488	2.26	33.328	2.61	33.498	3.96	33.658	4.22	33.634	2.75	33.575	2.74	33.564	1.59	33.225	2.19	33.336
250m	3.25	33.590	3.33	33.474	2.53	33.478	2.75	33.637	4.28	33.797	4.46	33.779	2.86	33.705	2.72	33.663	1.76	33.341	2.57	33.513
300m	2.75	33.615	2.83	33.515	2.65	33.575	3.04	33.764	4.06	33.854	4.38	33.854	3.06	33.819	2.90	33.761	1.93	33.456	2.34	33.614
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-25

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199609		199609		199609		199609		199609		199609		199609		199609		199609		199609		
Station No	SM02		SM03		SM04		SM05		SM06		SM07		SM08		SM09		SM10		SM11		
Latitude:N	41-55.0		41-30.2		41-10.1		40-49.9		40-24.6		40- 0.2		40- 0.1		39-59.4		39-59.1		40- 0.1		
Longitude:E	145- 5.0		145-28.4		145-50.1		146- 8.7		146-35.0		146-59.8		146-19.1		145-39.3		144-50.1		143-59.8		
Date	1996/09/19		1996/09/19		1996/09/20		1996/09/20		1996/09/21		1996/09/21		1996/09/21		1996/09/21		1996/09/22		1996/09/22		
Time(JST)	09:43		17:36		09:04		17:34		09:34		13:03		16:25		19:45		10:15		14:08		
Weather	BC		BC		BC		BC		C		BC		C				C		R		
Air Temp.	19.0		18.2		18.2		18.2		19.3		20.0		20.2		19.2		20.6		20.1		
Bar	1013.4		1012.7		1013.0		1012.0		1012.5		1011.5		1011.0		1012.0		1012.0		1008.7		
Wind Dir	ESE		ESE		E		ESE		SE		ESE		SE		SSE		ESE		ESE		
Wind Spd/F	F 3		F 4		F 4		F 4		F 3		F 2		F 3		F 2		F 4		F 5		
Transparency	10				20				18		14		20				18				
Depth																					
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	18.1	32.18*	17.9	32.26*	17.9	32.54*	18.5	32.91*	18.5	33.41*	18.8	32.61*	20.4	33.16*	19.2	33.10*	21.0	33.94*	20.7	34.10*	
10m	17.78	32.357	17.58	32.266	17.60	32.540	18.28	32.929	18.14	33.425	18.40	32.610	20.15	33.507	18.98	33.103	20.84	33.945	20.53	34.089	
20m	17.76	32.382	15.84	32.285	13.15	32.444	17.73	32.798	17.55	33.497	17.73	33.403	20.34	33.600	18.91	33.260	21.01	34.056	20.54	34.089	
30m	12.42	32.569	11.61	33.592	9.12	32.910	12.48	32.886	13.14	33.617	13.39	33.221	18.22	33.317	13.39	32.879	19.55	33.929	16.20	34.134	
50m	3.87	33.003	8.76	33.728	4.34	33.141	8.97	33.693	7.35	33.581	8.57	33.798	7.77	33.570	10.78	33.864	17.75	34.590	10.70	34.139	
75m	2.47	33.056	7.00	33.741	3.19	33.214	8.05	33.806	6.08	33.571	5.43	33.449	5.89	33.563	10.37	34.096	15.64	34.605	9.32	34.118	
100m	2.32	33.171	5.36	33.605	2.14	33.242	5.07	33.460	5.27	33.536	5.57	33.586	4.84	33.492	7.89	33.847	13.81	34.509	9.07	34.133	
125m	2.41	33.262	4.85	33.640	1.69	33.258	1.78	33.149	4.05	33.437	4.29	33.470	3.89	33.454	7.25	33.755	12.98	34.486	8.95	34.122	
150m	2.38	33.381	4.44	33.647	1.61	33.288	1.57	33.192	3.01	33.381	3.73	33.476	3.66	33.459	5.94	33.627	11.99	34.395	8.96	34.124	
200m	2.66	33.606	3.86	33.696	1.68	33.364	2.32	33.369	2.91	33.468	3.17	33.524	3.34	33.502	4.06	33.501	10.40	34.284	8.98	34.131	
250m	2.89	33.734	3.73	33.789	1.89	33.437	2.68	33.499	2.92	33.536	2.75	33.592	2.99	33.564	2.44	33.375	9.49	34.182	8.99	34.130	
300m	3.04	33.845	3.60	33.887	2.19	33.558	2.44	33.580	2.65	33.579	2.80	33.676	2.66	33.576	1.82	33.395	8.13	34.007	8.99	34.131	
400m																					
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 5-26

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199609		199609		199609		199610		199610		199610		199610		199610		199610		199610	
Station No	SM13		SM14		SM15		P31		P32		P33		PK21		PK22		P34		PK14	
Latitude:N	40-59.4		41-29.9		42- 1.0		42-45.0		42-30.1		42-15.2		42-15.1		41-59.9		41-59.1		42- 0.0	
Longitude:E	144- 0.2		143-59.9		144- 0.4		144- 0.1		143-59.1		144- 0.1		143-30.2		143-29.9		144- 0.1		144-29.9	
Date	1996/09/24		1996/09/25		1996/09/25		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01	
Time(JST)	17:32		09:16		17:33		10:39		11:57		13:24		15:56		17:11		19:16		21:46	
Weather	B		BC				F		F		F		C		F		F		C	
Air Temp.	18.7		19.1		16.7		15.5		16.2		15.8		15.1		14.8		14.8		15.5	
Bar	1019.0		1017.7		1015.4		1011.5		1011.0		1010.5		1011.0		1011.0		1012.0		1012.5	
Wind Dir	W		SW		SW		E		N		NNE		N		N		NE		E	
Wind Spd/F	F 3		F 4		F 4		F 2		F 1		F 2		F 1		F 3		F 2		F 2	
Transparency			12				6		9		6		6							
Depth	300								486		935		68		118				1689	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	19.4	33.17*	14.6	32.62*	15.5	32.61*	14.7	32.578	15.2	32.599	14.3	32.647	14.3	33.004	14.5	32.668	15.0	32.474	14.3	32.526
10m	19.10	33.167	13.50	32.598	14.46	32.624	13.84	32.889	14.08	32.819	13.94	32.632	13.07	32.892	14.26	32.661	14.43	32.388	14.17	32.571
20m	19.06	33.182	12.44	32.596	9.53	33.017	12.68	32.876	13.09	32.991	8.83	32.945	11.84	32.964	14.05	32.728	11.23	32.496	13.73	32.713
30m	15.17	33.073	9.56	32.742	8.35	33.168	12.68	33.002	12.03	32.932	6.53	33.082	11.57	32.991	13.45	32.831	8.82	32.714	9.81	32.731
50m	12.91	34.078	3.68	33.086	6.83	33.189	11.58	33.015	10.72	33.171	3.69	33.099	11.43	33.026	10.99	33.142	3.90	33.075	3.99	32.955
75m	11.72	34.326	2.25	33.114	2.79	33.063			8.84	33.166	2.03	33.190			7.03	33.142	2.83	33.119	2.50	32.998
100m	10.64	34.255	1.96	33.161	2.22	33.089			4.60	33.015	1.67	33.260			6.16	33.134	2.18	33.142	1.99	33.060
125m	9.16	34.090	1.73	33.213	1.96	33.161			3.01	33.116	1.65	33.272					1.83	33.193	1.94	33.146
150m	8.41	34.030	1.57	33.253	1.73	33.198			2.52	33.149	1.57	33.284					1.90	33.250	1.98	33.261
200m	6.83	33.859	1.61	33.327	1.61	33.276			1.73	33.215	1.59	33.351					1.53	33.320	2.62	33.542
250m	5.02	33.784	1.50	33.375	1.71	33.349			1.71	33.319	1.61	33.382					1.75	33.403	2.88	33.718
300m			1.62	33.428	1.98	33.433			1.91	33.418	1.58	33.413					1.66	33.489	2.95	33.807
400m									2.49	33.729	2.13	33.565					2.24	33.683	3.19	33.983
500m											2.37	33.729					3.00	33.906	3.16	34.109
600m											3.11	33.974					3.20	34.075	3.38	34.246
700m																	3.19	34.167	2.95	34.293
800m																	3.06	34.241	2.77	34.351
900m																	2.89	34.307	2.67	34.399
1000m																	2.79	34.344	2.62	34.425

Table 5-27

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	PK13		PK12		PK11		P21		P22		P23		P24		P25		PK05		PK04	
Latitude:N	42-14.9		42-29.9		42-44.1		42-55.0		42-44.8		42-30.0		42-15.1		42- 0.0		42- 0.1		42-15.0	
Longitude:E	144-30.0		144-30.1		144-29.1		145- 0.1		145- 0.1		144-59.1		144-59.9		145- 0.0		145-29.9		145-29.9	
Date	1996/10/01		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02	
Time(JST)	23:41		01:21		03:06		05:29		06:24		07:46		09:20		10:52		13:32		15:32	
Weather	R		C		C		C		B		C		C		BC		BC		B	
Air Temp.	13.8		13.5		13.1		13.1		12.8		13.5		14.3		14.6		14.8		14.1	
Bar	1013.5		1014.5		1014.9		1015.5		1016.5		1017.0		1017.5		1017.0		1016.2		1016.5	
Wind Dir	NE		NNE		NNE		NNE		N		N		NNE		NNE		NNE		ENE	
Wind Spd/F	F 4		F 5		F 3		F 4		F 5		F 5		F 5		F 5		F 5		F 5	
Transparency							5		6		8		10		11		16		11	
Depth			1454		129		63													
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.3	32.622	12.9	32.377	12.1	32.577	13.9	33.125	12.4	32.484	14.3	32.425	15.1	32.628	15.4	32.484	15.3	32.464	15.3	32.522
10m	12.47	33.030	12.18	32.626	11.65	32.599	13.81	33.078	12.18	32.447	14.09	32.394	14.91	32.606	15.20	32.459	15.09	32.452	15.18	32.499
20m	11.77	32.976	6.26	32.587	11.68	32.730	13.52	33.097	11.66	32.554	12.68	32.544	14.90	32.608	14.35	32.464	14.30	32.450	14.70	32.501
30m	6.71	32.719	3.54	33.000	10.98	33.014	13.43	33.109	11.34	32.604	6.31	32.763	9.89	32.686	7.33	32.775	7.44	32.643	5.33	32.816
50m	2.80	32.966	3.05	33.081	7.99	33.050	12.71	33.181	3.81	32.919	2.96	32.967	2.92	32.983	3.29	33.033	2.93	32.953	2.72	32.963
75m	2.21	33.027	2.28	33.147	5.16	33.122			2.27	33.041	2.11	33.019	2.10	33.045	2.39	33.089	2.01	33.016	1.97	33.061
100m	2.01	33.094	2.11	33.159	3.45	33.070			2.05	33.190	2.02	33.122	2.05	33.164	2.29	33.201	1.97	33.129	1.98	33.182
125m	2.12	33.192	1.97	33.175					2.03	33.200	2.47	33.312	2.06	33.255	2.27	33.316	2.19	33.305	2.07	33.295
150m	2.39	33.343	1.80	33.188					2.03	33.201	2.89	33.460	2.37	33.416	2.59	33.469	2.44	33.450	2.43	33.426
200m	2.94	33.617	1.66	33.259							2.74	33.610	2.35	33.559	2.80	33.640	2.74	33.619	2.66	33.614
250m	2.98	33.709	1.68	33.330							3.09	33.747	2.77	33.713	3.00	33.777	2.87	33.751	2.88	33.740
300m	2.94	33.788	1.81	33.485							3.24	33.866	2.90	33.835	2.62	33.797	2.97	33.841	3.04	33.852
400m	3.25	33.947	2.59	33.758							3.26	34.027	3.54	34.046	3.23	34.038	3.43	34.070	3.19	34.007
500m	3.00	34.031	2.87	33.903							3.21	34.132	3.13	34.095	3.16	34.152	3.43	34.171	3.11	34.112
600m	3.17	34.132	3.15	34.043							3.13	34.203	3.41	34.235	3.27	34.266	3.14	34.238	3.29	34.242
700m															3.16	34.325	2.92	34.303		
800m															2.82	34.355	2.75	34.333		
900m															2.66	34.374	2.72	34.394		
1000m															2.56	34.418	2.62	34.438		

Table 5-28

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	PK03		PK02		PK01		P11		P12		P13		P14		P15		P16		P17	
Latitude:N	42-30.1		42-45.1		42-55.1		43- 5.1		42-54.9		42-45.1		42-30.1		42-15.1		41-59.1		41-29.1	
Longitude:E	145-29.1		145-30.1		145-29.9		145-44.1		145-49.1		145-54.9		146- 0.0		146- 0.1		146- 0.0		146- 0.1	
Date	1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03	
Time(JST)	17:08		18:43		19:54		21:26		22:38		00:03		02:05		03:55		05:49		09:07	
Weather	BC		B		BC		B		B		BC		BC		BC		BC		B	
Air Temp.	12.6		12.0		11.6		11.3		11.3		11.0		10.8		11.1		11.8		13.8	
Bar	1016.7		1017.5		1018.0		1018.0		1017.5		1017.4		1016.7		1016.2		1017.2		1017.0	
Wind Dir	ENE		E		E		ENE		E		ENE		NE		ENE		NNW		CALM	
Wind Spd/F	F 4		F 3		F 3		F 2		F 3		F 1		F 1		F 2		F 1		F 0	
Transparency																	8		13	
Depth			1679		153		102		1506											
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	15.2	32.621	12.1	32.457	11.8	32.694	11.6	32.721	13.5	32.441	13.1	32.406	14.9	32.912	14.3	32.534	14.3	32.449	15.4	32.429
10m	15.26	32.601	11.81	32.535	11.68	32.648	12.87	33.332	13.52	32.423	13.13	32.377	14.90	32.879	14.36	32.495	14.44	32.437	15.20	32.422
20m	14.75	32.811	10.33	32.580	11.04	32.626	12.68	33.384	11.69	32.468	12.78	32.389	14.91	32.885	13.55	32.505	14.44	32.438	15.17	32.422
30m	9.10	32.658	6.17	32.756	10.60	32.640	12.23	33.367	6.05	32.616	8.16	32.623	14.89	32.973	9.61	32.617	10.68	32.562	13.79	32.602
50m	3.13	32.949	3.11	32.981	8.14	33.180	11.73	33.351	2.91	32.996	3.92	32.939	5.94	32.887	3.18	32.957	4.11	32.965	4.42	33.007
75m	2.13	33.051	2.20	33.165	5.42	33.133	9.36	33.304	2.18	33.106	2.37	33.000	2.42	33.021	2.34	33.034	2.35	33.019	2.61	33.052
100m	1.99	33.150	2.12	33.218	5.52	33.195			1.97	33.172	2.00	33.034	2.42	33.121	1.91	33.142	1.93	33.098	3.16	33.299
125m	2.12	33.268	2.07	33.277	4.23	33.139			1.93	33.241	2.02	33.166	1.95	33.217	2.00	33.242	2.20	33.246	2.69	33.265
150m	1.91	33.358	2.06	33.298					1.88	33.286	2.29	33.312	1.99	33.333	2.12	33.339	2.47	33.397	2.69	33.351
200m	2.46	33.535	2.05	33.383					2.07	33.403	2.70	33.584	1.83	33.417	2.40	33.521	2.25	33.516	2.92	33.578
250m	2.51	33.651	2.43	33.573					2.57	33.562	3.09	33.760	2.03	33.536	2.55	33.623	2.66	33.683	2.94	33.716
300m	2.99	33.790	2.62	33.690					2.57	33.643	3.19	33.856	2.92	33.750	2.85	33.758	2.86	33.779	2.54	33.749
400m	3.15	33.957	2.70	33.805					2.72	33.758	3.17	33.999	3.19	33.964	2.94	33.911	2.97	33.945	3.32	33.992
500m	3.20	34.075	2.82	33.931					2.90	33.890	3.20	34.115	3.66	34.159	3.20	34.076	3.18	34.092	3.55	34.171
600m	3.15	34.170	3.05	34.043					3.16	34.058	3.13	34.193	3.17	34.184	3.09	34.172	3.08	34.183	3.48	34.252
700m									3.16	34.124	3.00	34.254	3.03	34.252	2.99	34.253	3.00	34.246	3.12	34.300
800m									3.01	34.244	2.89	34.312	2.94	34.309	3.18	34.347	2.84	34.309	2.83	34.321
900m									2.84	34.326	2.81	34.352	2.83	34.351	2.94	34.373	2.77	34.363	2.76	34.376
1000m									2.71	34.369	2.63	34.394	2.71	34.392	2.76	34.402	2.61	34.409	2.60	34.403

Table 5-29

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	P18		PK07		P27		PK16		P36		PK24		PK32		PK31		PK23		P35	
Latitude:N	41- 0.0		41- 0.1		40-59.1		41- 0.1		41- 0.0		41- 0.1		41- 0.0		41-30.1		41-30.1		41-30.0	
Longitude:E	145-59.1		145-29.9		145- 0.2		144-29.9		144- 0.1		143-29.1		142-59.9		142-59.8		143-29.9		143-59.9	
Date	1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/04		1996/10/04		1996/10/04		1996/10/04		1996/10/04	
Time(JST)	12:15		14:52		17:18		19:42		22:10		00:32		02:54		06:24		08:44		11:01	
Weather	BC		BC		BC		B		BC		C		C		C		R		R	
Air Temp.	14.8		15.1		15.1		15.6		16.8		17.3		17.0		17.1		14.6		15.6	
Bar	1015.5		1015.0		1014.0		1013.0		1012.0		1010.5		1008.5		1006.5		1007.0		1006.0	
Wind Dir	SE		SE		SE		SE		SSE		SSE		SSE		S		S		S	
Wind Spd/F	F 1		F 2		F 4		F 4		F 4		F 5		F 5		F 6		F 6		F 5	
Transparency	11		16												11		7		7	
Depth																				
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	16.3	32.571	17.5	33.499	17.7	33.184	16.6	33.336	18.4	33.480	17.7	33.480	17.0	33.642	19.2	33.952	13.6	32.458	14.4	32.388
10m	15.80	32.555	17.37	33.483	17.57	33.147	16.48	33.326	18.65	33.478	17.58	33.477	16.80	33.651	19.33	33.964	13.33	32.517	13.94	32.426
20m	15.75	32.559	16.66	33.545	15.28	32.780	16.41	33.305	18.62	33.472	14.99	33.662	15.70	33.834	19.33	33.963	10.77	32.566	13.84	32.443
30m	12.54	32.708	11.56	33.110	15.61	34.079	15.46	33.918	13.96	33.533	10.68	33.256	12.06	33.576	19.33	33.963	7.71	32.663	11.92	32.910
50m	3.22	32.960	5.91	33.234	10.58	33.342	11.91	33.647	12.95	34.290	7.66	33.241	9.73	33.463	19.34	33.963	3.76	32.849	6.91	32.857
75m	2.21	33.033	7.31	33.808	11.64	34.233	8.07	33.480	12.14	34.272	7.10	33.481	5.96	33.039	17.76	34.117	2.37	33.055	3.62	32.912
100m	1.97	33.150	6.36	33.713	10.40	34.202	6.07	33.380	11.38	34.267	3.87	33.230	3.67	33.059	14.79	34.190	2.03	33.169	2.35	32.999
125m	2.31	33.291	3.52	33.408	9.89	34.188	2.16	33.090	10.54	34.215	2.07	33.148	4.13	33.328	13.49	34.286	1.78	33.255	2.03	33.142
150m	2.40	33.361	1.59	33.232	7.86	33.860	1.91	33.150	8.99	34.034	1.78	33.187	2.44	33.241	12.41	34.296	1.68	33.315	2.38	33.328
200m	2.31	33.537	1.64	33.336	3.83	33.388	4.11	33.556	5.45	33.616	1.80	33.293	1.76	33.279	10.32	34.184	1.78	33.407	3.07	33.613
250m	2.87	33.704	1.54	33.389	4.16	33.602	2.33	33.388	1.82	33.288	2.75	33.511	2.07	33.395	5.54	33.633	2.19	33.604	3.11	33.752
300m	3.02	33.814	1.61	33.436	3.79	33.650	3.07	33.579	2.07	33.435	2.15	33.547	2.27	33.503	2.53	33.429	2.17	33.610	3.02	33.815
400m	3.19	33.974	1.95	33.539	3.96	33.826	3.68	33.873	2.29	33.631	2.97	33.815	2.92	33.760	2.50	33.602	2.65	33.743	3.13	34.028
500m	3.22	34.091	2.19	33.692	3.75	33.933	4.05	34.036	2.67	33.823	3.47	34.010	3.17	33.966	2.99	33.903	2.87	33.885	3.16	34.135
600m	3.14	34.198	2.96	33.928	2.99	33.955	3.94	34.141	3.15	34.018	3.35	34.121	3.17	34.076	3.29	34.061	3.06	33.967	3.14	34.184
700m	2.99 34.251																			
800m	2.91 34.313																			
900m	2.78 34.343																			
1000m	2.66 34.387																			

Table 5-30

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	PK15		P26		PK06		IK15		IK14		IK16		IK13		IK12		IK11		IK01	
Latitude:N	41-29.1		41-30.1		41-29.1		43-56.1		43-58.8		44- 1.9		44- 4.9		44- 7.1		44-11.1		44-20.0	
Longitude:E	144-29.9		144-59.1		145-29.8		145-12.6		145-14.8		145-17.4		145-19.9		145-22.5		145-24.1		144-19.9	
Date	1996/10/04		1996/10/04		1996/10/04		1996/10/14		1996/10/14		1996/10/14		1996/10/14		1996/10/14		1996/10/14		1996/10/15	
Time(JST)	13:14		15:29		17:56		19:50		20:13		20:40		21:06		21:33		21:59		17:48	
Weather	BC		BC		C		C		C		C		C		C		C		R	
Air Temp.	17.1		17.5		16.8		11.8		12.3		12.5		12.6		12.6		12.6		10.3	
Bar	1005.2		1005.5		1006.2		1009.5		1009.5		1009.5		1009.0		1009.0		1008.5		1001.0	
Wind Dir	S		S		S		S		SSW		SSW		SSW		SSW		SSW		E	
Wind Spd/F	F 6		F 6		F 6		F 4		F 4		F 4		F 5		F 5		F 5		F 2	
Transparency			13																	
Depth							82		447		780		561		1311		1360		267	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	15.0	32.546	15.8	32.944	15.6	32.458	14.5	33.58*	14.8	33.40*	14.7	33.47*	14.6	33.49*	14.5	33.54*	13.9	33.65*	11.2	32.45*
10m	14.16	32.536	15.76	32.926	15.53	32.472	14.88	33.524	14.94	33.504	14.83	33.437	14.72	33.507	14.58	33.517	13.29	33.640	11.13	32.460
20m	11.15	32.688	15.59	32.888	15.49	32.474	14.81	33.575	14.82	33.689	14.65	33.715	12.53	33.664	12.15	33.693	12.17	33.760	10.76	32.446
30m	7.38	32.816	11.25	32.694	14.46	32.514	14.68	33.707	13.98	33.745	12.26	33.672	12.03	33.669	11.77	33.712	11.86	33.778	6.57	32.659
50m	4.05	32.962	4.30	32.855	7.18	32.892	10.88	33.735	11.37	33.729	11.59	33.688	11.44	33.675	11.26	33.771	11.02	33.752	0.92	32.894
75m	3.04	33.040	2.74	33.012	4.36	33.014	10.18	33.736	9.81	33.720	10.31	33.704	10.07	33.700	10.11	33.731	10.40	33.770	0.06	33.085
100m	2.69	33.179	2.21	33.060	3.33	33.079			9.05	33.728	8.73	33.701	8.59	33.692	9.03	33.698	9.77	33.754	-0.04	33.121
125m	2.28	33.221	2.14	33.180	2.67	33.141			8.45	33.754	7.86	33.654	7.76	33.664	7.77	33.670	7.85	33.662	0.20	33.178
150m	2.77	33.399	2.52	33.310	2.52	33.181			7.82	33.779	7.40	33.641	6.87	33.626	6.18	33.598	5.27	33.570	0.03	33.211
200m	3.02	33.557	2.47	33.528	2.56	33.295			4.70	33.556	5.03	33.595	4.73	33.607	4.60	33.591	3.51	33.485	0.26	33.280
250m	2.82	33.664	2.88	33.667	2.72	33.480			2.44	33.390	2.19	33.372	3.54	33.503	2.90	33.454	2.73	33.475	3.23	33.834
300m	2.87	33.766	3.16	33.826	2.95	33.653			2.13	33.430	2.65	33.482	2.44	33.437	2.37	33.459	2.37	33.483		
400m	3.06	33.898	3.15	34.004	3.30	33.899														
500m	3.52	34.124	3.18	34.136	3.33	34.070														
600m	3.28	34.226	3.20	34.240	3.18	34.196														
700m																				
800m																				
900m																				
1000m																				

Table 5-31

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199611		
Station No	IK02		IK03		IK04		SM01		SM02		SM04		SM05		SM06		SM07		SU21		
Latitude:N	44-10.0		42-49.9		42-19.9		42-10.6		41-45.1		41-35.4		41-49.6		42-14.9		42-39.9		42-41.8		
Longitude:E	144-40.0		145-19.8		144- 9.6		143-59.8		143-44.1		144- 0.7		144-30.4		144-44.9		145- 0.1		144-25.7		
Date	1996/10/15		1996/10/19		1996/10/20		1996/10/28		1996/10/29		1996/10/29		1996/10/30		1996/10/31		1996/10/31		1996/11/11		
Time(JST)	23:35		17:59		18:00		18:01		10:05		18:05		18:04		12:08		17:59		10:31		
Weather	C		C		BC				BC		F				BC				B		
Air Temp.	10.6		10.5		10.0		10.8		12.8		10.8		12.8		8.3		7.9		9.7		
Bar	1001.5		1010.0		1019.5		1025.0		1018.5		1017.2		1011.9		1021.5		1023.5		1015.4		
Wind Dir	NNW		NNE		WSW		S		SSW		CALM		SW		NNW		SSE		W		
Wind Spd/F	F 4		F 4		F 2		F 3		F 3		F 0		F 5		F 2		F 2		S 8		
Transparency									6						11						
Depth	668																		504		
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	10.1	32.53*	12.0	33.30*	11.2	32.49*	9.8	33.17*	10.0	32.92*	10.2	32.79*	11.0	32.66*	12.5	33.15*	10.4	33.06*	9.9	33.26*	
10m	7.96	32.636	12.32	33.444	11.43	32.609	9.58	33.171	9.58	32.896	10.10	32.780	10.74	32.777	12.73	33.153	10.88	33.030	9.56	33.304	
20m	4.38	32.966	12.22	33.413	11.30	32.618	9.52	33.164	9.38	32.918	9.00	32.844	10.67	32.780	12.78	33.173	10.56	33.000	9.56	33.306	
30m	2.26	32.995	7.63	32.995	11.10	32.632	9.28	33.123	8.73	32.912	8.46	32.875	8.27	32.815	12.81	33.199	9.58	32.975	9.56	33.306	
50m	0.77	33.102	3.39	33.040	6.68	32.730	3.86	33.039	6.07	32.888	4.34	32.905	3.71	32.943	10.84	33.059	6.07	33.128	9.54	33.304	
75m	-0.26	33.122	2.21	33.148	3.04	32.940	2.45	33.081	2.62	33.030	2.73	33.105	2.05	33.072	3.24	32.989	3.80	33.161	9.33	33.282	
100m	-0.36	33.126	2.08	33.196	2.33	33.087	2.32	33.191	3.79	33.372	2.86	33.166	4.05	33.451	2.57	33.129	2.89	33.173	7.11	33.259	
125m	-0.23	33.163	1.95	33.225	2.13	33.180	2.13	33.205	2.93	33.324	2.29	33.245	3.69	33.527	2.27	33.222	2.12	33.204	4.48	33.206	
150m	0.24	33.242	1.90	33.233	2.13	33.245	2.04	33.252	2.33	33.339	2.47	33.371	2.54	33.444	2.24	33.303	2.11	33.262	4.51	33.233	
200m	0.48	33.299	1.69	33.248	2.29	33.418	2.03	33.342	2.59	33.537	2.49	33.495	2.40	33.541	2.72	33.532	2.05	33.331	2.33	33.272	
250m	1.56	33.433	1.86	33.349	2.28	33.488	2.15	33.447	2.53	33.610	2.60	33.598	2.61	33.666	3.04	33.710	2.15	33.424	2.10	33.336	
300m	1.48	33.453	2.13	33.459	2.44	33.566	2.40	33.553	2.69	33.680	2.68	33.700	3.06	33.847	2.97	33.800	2.22	33.475	2.37	33.458	
400m																				2.45	33.572
500m																					
600m																					
700m																					
800m																					
900m																					
1000m																					

Table 5-32

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199611		199611		199611		199611		199611		199611		199611		199611		199611		199611	
Station No	SU23		SU22		SU02		SU01		SU06		SU05		SU11		SU12		SU24		SU16	
Latitude:N	42-54.3		42-54.3		42-47.3		42-53.1		42-37.2		42-45.9		42-32.4		42-23.2		42-21.6		42-16.8	
Longitude:E	144-32.9		144-26.3		144-18.1		144- 0.7		144- 0.1		143-56.8		143-40.4		143-54.3		143-29.7		143-46.2	
Date	1996/11/11		1996/11/11		1996/11/11		1996/11/11		1996/11/12		1996/11/12		1996/11/12		1996/11/12		1996/11/13		1996/11/13	
Time(JST)	12:28		13:00		14:13		15:27		06:13		08:02		12:37		14:20		06:19		07:57	
Weather	B		B		B		BC		C		R		C		BC		BC		C	
Air Temp.	11.7		11.1		10.5		10.0		6.1		4.9		5.6		5.3		-2.1		-0.2	
Bar	1014.0		1013.5		1013.5		1013.0		1004.0		1004.5		1002.0		1002.5		1008.0		1008.0	
Wind Dir	WSW		NW		WNW		NW		N		NW		NNW		NNW		NNW		N	
Wind Spd/F	S 3		S 3		S 6		S 3		S 4		S 3		S 10		S 8		S 4		S 1	
Transparency																				
Depth	44		40		445		49		567		41		43		478		40		496	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	9.0	33.20*	9.6	32.99*	9.6	33.31*	9.3	32.98*	9.1	33.25*	8.8	33.21*	8.9	33.09*	9.2	33.21*	8.5	33.18*	8.8	33.32*
10m	9.49	33.262	9.34	33.202	9.59	33.306	9.27	33.057	9.23	33.241	9.22	33.189	9.23	33.046	9.45	33.212	9.07	33.183	9.28	33.228
20m	9.48	33.265	9.37	33.254	9.59	33.306	9.34	33.188	9.22	33.238	9.22	33.186	9.18	33.074	9.46	33.213	9.06	33.185	9.28	33.226
30m	9.48	33.268	9.37	33.255	9.57	33.307	9.38	33.283	9.13	33.231	9.22	33.185	9.12	33.096	9.45	33.217	9.09	33.183	9.28	33.225
50m					9.54	33.311			8.93	33.213					9.17	33.207			9.20	33.230
75m					8.83	33.293			8.68	33.236					7.92	33.144			7.00	33.162
100m					6.53	33.203			6.09	33.139					5.83	33.177			5.25	33.159
125m					5.08	33.175			4.69	33.134					4.16	33.144			3.63	33.140
150m					4.10	33.160			3.15	33.165					2.91	33.152			2.72	33.144
200m					2.52	33.291			2.16	33.260					2.21	33.232			2.25	33.233
250m					2.42	33.386			2.49	33.391					2.15	33.297			2.16	33.313
300m					2.28	33.445			2.34	33.437					2.34	33.475			2.20	33.378
400m					2.59	33.634			2.62	33.609					2.97	33.831			2.46	33.566
500m									3.01	33.858										
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-33

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199611		199611		199611		199611		199611		199611		199611		199611		199611		199611	
Station No	SU25		SU19		SU20		SU26		SU27		SU28		SU29		SU30		SU31		SU32	
Latitude:N	42-12.0		42- 0.7		42- 0.7		42-27.6		42-30.6		42-31.5		42-34.4		42-36.3		42-13.2		42-44.2	
Longitude:E	143-37.9		143-25.3		143-46.3		143-59.6		143-54.9		143-53.1		143-49.3		143-46.3		143-40.3		144-31.9	
Date	1996/11/13		1996/11/13		1996/11/13		1996/11/14		1996/11/14		1996/11/14		1996/11/14		1996/11/14		1996/11/15		1996/11/18	
Time(JST)	12:01		14:15		16:21		10:00		10:41		12:03		13:28		13:50		13:28		10:19	
Weather	BC		BC		BC		BC		BC		BC		BC		BC		BC		BC	
Air Temp.	1.7		2.5		1.9		5.6		6.6		8.3		7.1		6.7		5.5		6.8	
Bar	1006.0		1006.0		1007.5		1014.0		1014.0		1013.0		1012.5		1012.0		1008.0		1006.5	
Wind Dir	CALM		WNW		NW		W		WNW		NW		CALM		SSE		WNW		W	
Wind Spd/F	S 0		S 4		S 10		S 7		S 4		S 3		S 0		S 2		S 6		S 3	
Transparency																				
Depth	156		40		507		520		224		125		78		50		249		130	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.8	33.23*	8.8	33.20*	9.0	33.30*	8.9	33.37*	8.9	33.31*	8.7	33.29*	9.0	33.28*	8.3	32.50*	8.7	33.23*	7.8	33.07*
10m	9.13	33.230	9.23	33.196	9.43	33.231	9.18	33.308	9.08	33.284	9.11	33.284	9.08	33.280	8.80	33.116	8.82	33.230	8.34	33.130
20m	9.06	33.234	9.22	33.197	9.43	33.232	9.18	33.309	9.07	33.286	9.08	33.285	9.06	33.281	8.71	33.129	8.81	33.231	8.34	33.149
30m	8.93	33.224	9.22	33.200	9.43	33.231	9.18	33.308	9.07	33.283	9.06	33.280	9.06	33.285	8.82	33.178	8.78	33.227	8.48	33.209
50m	8.60	33.230			9.28	33.219	9.17	33.308	9.07	33.284	9.03	33.280	9.06	33.287			8.70	33.234	8.78	33.285
75m	6.03	33.176			6.89	33.379	8.78	33.275	9.05	33.279	8.09	33.238					5.69	33.158	8.86	33.305
100m	4.60	33.184			4.71	33.238	6.78	33.181	7.03	33.235	6.78	33.220					3.95	33.190	7.58	33.259
125m	4.49	33.199			4.74	33.348	4.40	33.098	5.25	33.189							3.64	33.195		
150m	4.29	33.196			2.68	33.177	3.41	33.169	3.89	33.188							2.61	33.208		
200m					3.69	33.442	2.36	33.240	2.88	33.219							2.36	33.316		
250m					2.97	33.438	2.13	33.318												
300m					2.17	33.417	2.30	33.441												
400m					2.29	33.507	2.50	33.592												
500m					2.88	33.793	2.90	33.797												
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-34

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199611		199611		199611		199611		199611		199611		199611		199611		199611		199611	
Station No	SU26		SU25		SU21		SU20		SU19		SU18		SU17		SU16		SU11		SU10	
Latitude:N	44-19.2		44-14.9		44- 7.6		44-10.0		44- 6.7		44- 4.0		44- 4.6		44- 4.6		43-59.7		44- 0.4	
Longitude:E	145-22.5		145-32.5		145-26.6		145-20.8		145-17.2		145-23.6		145-18.8		145-17.3		145-20.1		145-15.3	
Date	1996/11/27		1996/11/27		1996/11/27		1996/11/27		1996/11/27		1996/11/27		1996/11/27		1996/11/27		1996/11/27		1996/11/27	
Time(JST)	04:52		06:04		08:23		09:07		09:42		10:36		11:07		11:25		14:01		14:28	
Weather	C		C		C		C		C		C		C		C		R		C	
Air Temp.	3.1		3.4		3.3		4.2		3.7		3.3		3.6		3.6		3.9		4.2	
Bar	1026.9		1025.5		1026.0		1025.0		1024.5		1023.5		1023.0		1022.5		1020.5		1020.5	
Wind Dir	E		S		SSW		ESE		ESE		E		E		CALM		SE		ESE	
Wind Spd/F	S 4		S 3		S 4		S 3		S 5		S 4		S 5		S 0		S 4		F 5	
Transparency											0		1							
Depth	170						185										320		664	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	4.4	32.34*	4.6	32.38*	4.8	32.42*	5.0	32.45*	5.5	32.69*	4.9	32.41*	5.1	32.43*	5.1	32.46*	5.3	32.50*	5.4	32.52*
10m	4.45	32.304	4.53	32.385	4.81	32.395	5.01	32.444	5.69	32.679	4.87	32.400	5.12	32.442	5.26	32.477	5.21	32.491	5.27	32.507
20m	4.45	32.330	4.57	32.392	4.80	32.394	5.02	32.447	6.31	32.825	4.87	32.402	5.50	32.611	5.40	32.525	5.22	32.494	5.32	32.521
30m	4.44	32.333	4.64	32.407	5.09	32.457	5.12	32.479	6.95	32.954	4.88	32.405	6.08	32.737	5.39	32.526	5.29	32.514	5.34	32.528
50m	4.43	32.335	5.20	32.518	5.55	32.568	5.49	32.572	8.00	33.206	6.00	32.719	7.09	32.992	6.76	32.516	6.63	32.900	5.61	32.596
75m	5.56	32.604	6.29	32.804	6.49	32.830	5.89	32.681	8.61	33.341	6.41	32.813	8.32	33.282	8.16	33.255	8.33	33.287	6.65	32.856
100m	6.25	32.986	8.55	33.324	8.13	33.217	8.15	33.236	8.56	33.372	7.08	33.011	8.41	33.341	8.55	33.373	8.28	33.399	7.58	33.105
125m	5.59	33.083	8.11	33.487	7.78	33.317	8.57	33.362	8.34	33.401	8.29	33.432	7.83	33.468	8.37	33.461	6.54	33.455	7.50	33.473
150m	3.60	33.384	5.67	33.426	6.63	33.521	5.25	33.446	5.79	33.459	6.01	33.484	5.32	33.485	5.78	33.417	4.46	33.417	4.94	33.466
200m			3.07	33.342	3.67	33.433			3.64	33.431	3.43	33.428	3.38	33.434	3.84	33.444	3.55	33.430	3.52	33.446
250m			1.58	33.355	2.51	33.417			2.45	33.424	2.90	33.429	2.41	33.417	2.92	33.432	2.58	33.421		
300m			1.72	33.433	1.95	33.409			1.94	33.433	2.13	33.431	1.95	33.438	2.16	33.422	2.31	33.417		
400m			2.02	33.564	1.84	33.523			1.92	33.556	1.89	33.541					1.88	33.499		
500m			1.92	33.667	2.05	33.635			1.92	33.642							1.72	33.564		
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-35

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199611		199611		199611		199611		199611		199611		199611		199612		199612		199612	
Station No	SU09		SU08		SU06		SU07		SU05		SU01		SU02		PK11		P22		P21	
Latitude:N	44- 0.7		43-58.4		43-59.6		43-57.3		43-58.4		43-54.6		43-56.5		42-45.1		42-45.0		42-55.2	
Longitude:E	145-13.6		145-19.0		145-11.9		145-17.6		145-13.6		145-15.2		145-10.5		144-29.9		144-59.8		144-59.1	
Date	1996/11/27		1996/11/27		1996/11/28		1996/11/28		1996/11/28		1996/11/28		1996/11/28		1996/12/04		1996/12/04		1996/12/04	
Time(JST)	14:49		15:38		06:35		07:27		07:50		08:59		09:38		10:20		12:21		13:21	
Weather	C		R		R		R		R		C		C		BC		C		C	
Air Temp.	4.1		4.6		3.5		4.3		4.0		5.8		3.5		6.1		5.9		5.6	
Bar	1020.5		1020.0		1008.0		1006.5		1006.0		1004.0		1004.0		1018.0		1017.0		1016.2	
Wind Dir	ESE		ESE		NNE		E		ENE		E		N		SW		SW		SW	
Wind Spd/F	S 5		S 6		S 4		S 8		S 6		S 7		S 7		F 6		F 6		F 6	
Transparency															12		11		6	
Depth	118		230		333		126								129		167		63	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.4	32.53*	5.4	32.57*	5.6	32.57*	5.4	32.54*	5.4	32.51*	7.5	33.10*	5.8	32.61*	6.8	33.304	5.9	33.144	6.6	33.331
10m	5.29	32.518	5.45	32.565	5.59	32.572	5.40	32.541	5.38	32.524	7.71	33.148	6.04	32.719	6.80	33.246	5.75	33.076	6.68	33.256
20m	5.33	32.528	5.49	32.573	5.75	32.633	5.45	32.556	5.49	32.564	7.72	33.150	6.06	32.727	6.78	33.241	5.73	33.066	6.68	33.255
30m	5.45	32.557	5.65	32.609	5.78	32.648	5.51	32.574	5.65	32.616	7.81	33.166	6.06	32.729	6.77	33.243	5.63	33.054	6.68	33.257
50m	6.34	32.786	6.43	32.831	5.82	32.661	7.32	33.090	5.88	32.697	7.72	33.154	6.04	32.725	6.73	33.238	5.58	33.055	6.67	33.264
75m	8.24	33.280	8.33	33.279	8.03	33.216	8.29	33.260	7.93	33.189					6.63	33.223	5.62	33.069		
100m	8.42	33.354	8.33	33.377	7.99	33.401	8.20	33.304	7.86	33.407					6.21	33.227	6.03	33.175		
125m			6.36	33.511	4.61	33.478			4.77	33.473							5.73	33.161		
150m			4.94	33.437	3.70	33.446			3.65	33.423							4.77	33.219		
200m			3.77	33.443	2.86	33.440			2.87	33.447										
250m					2.28	33.450			2.44	33.464										
300m					1.98	33.454			2.03	33.494										
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 5-36

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	PK02		PK01		P11		P12		P13		P14		P15		P16		P31		P32	
Latitude:N	42-45.1		42-54.9		43- 4.9		42-55.2		42-45.1		42-30.1		42-15.4		42- 0.2		42-45.1		42-30.1	
Longitude:E	145-29.8		145-29.9		145-44.7		145-49.8		145-54.9		145-59.9		145-58.4		145-59.1		144- 0.1		143-59.9	
Date	1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/05		1996/12/05		1996/12/05		1996/12/07		1996/12/07	
Time(JST)	15:32		16:43		18:10		19:32		21:52		02:12		06:05		08:11		08:15		09:39	
Weather	C		C		BC		B		BC		BC		C		R		BC		BC	
Air Temp.	6.3		5.6		5.6		6.5		7.3		7.5		7.5		7.3		0.6		1.6	
Bar	1016.2		1016.0		1015.5		1015.0		1015.0		1014.0		1012.5		1011.5		1011.0		1012.5	
Wind Dir	SW		SW		SW		WSW		WSW		WSW		S		SE		NNE		NW	
Wind Spd/F	F 6		F 4		F 4		F 5		F 6		F 5		F 2		F 4		F 3		F 2	
Transparency	11														15		18		16	
Depth			157		104												65		487	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	7.1	33.309	5.7	33.149	5.6	33.767	6.5	33.246	7.3	33.379	7.4	33.016	7.4	33.009	7.2	33.124	6.2	33.094	6.6	33.258
10m	7.41	33.217	5.63	33.071	5.56	33.023	6.56	33.163	7.31	33.307	7.49	32.926	7.39	32.945	7.17	33.090	6.56	33.128	6.73	33.212
20m	7.47	33.235	5.63	33.072	5.57	33.018	6.54	33.156	7.31	33.309	7.50	32.928	7.39	32.955	7.15	33.100	6.56	33.129	6.73	33.212
30m	7.84	33.373	5.67	33.085	5.56	33.029	6.50	33.151	7.31	33.308	7.50	32.931	7.38	32.967	7.14	33.101	6.57	33.129	6.74	33.212
50m	8.00	33.400	5.75	33.105	5.46	33.061	5.99	33.100	7.30	33.306	7.43	32.973	7.24	33.004	7.12	33.106	6.76	33.204	6.74	33.215
75m	4.76	33.161	5.71	33.106	5.19	33.094	7.64	33.530	2.69	33.108	4.80	33.008	6.72	33.079	2.65	33.017			6.71	33.213
100m	4.23	33.380	3.83	33.204			4.88	33.300	2.47	33.222	2.80	33.096	2.81	33.050	2.37	33.171			5.96	33.168
125m	3.92	33.416	2.35	33.319			4.80	33.496	2.44	33.305	2.49	33.139	2.50	33.181	2.54	33.339			5.02	33.221
150m	3.66	33.487					5.18	33.704	2.52	33.416	2.53	33.238	2.55	33.239	2.62	33.454			4.19	33.308
200m	2.78	33.476					4.38	33.636	2.70	33.596	2.66	33.422	2.74	33.508	2.74	33.568			3.13	33.355
250m	2.80	33.558					4.51	33.743	3.11	33.745	2.88	33.613	2.97	33.669	2.89	33.700			2.90	33.402
300m	2.63	33.613					3.14	33.650	3.10	33.838	3.11	33.755	3.15	33.786	3.16	33.829			2.73	33.408
400m	3.38	33.825					3.95	33.910	3.15	33.960	3.35	34.009	3.34	34.028	3.24	33.981			2.81	33.602
500m	4.07	34.104					3.56	33.970	3.30	34.091	3.19	34.184	3.20	34.179	3.24	34.110				
600m	3.33	34.118					3.92	34.142	3.18	34.201	2.98	34.288	3.03	34.271	3.34	34.241				
700m							3.32	34.202	3.07	34.262	2.81	34.344	2.87	34.328	3.07	34.272				
800m							3.12	34.274	2.92	34.313	2.68	34.390	2.74	34.375	2.87	34.322				
900m							2.91	34.326	2.77	34.353	2.56	34.420	2.53	34.429	2.75	34.380				
1000m							2.76	34.363	2.66	34.394	2.38	34.463	2.39	34.462	2.66	34.408				

Table 5-37

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	PK12		P23		PK03		PK04		PK05		PK06		P17		P18		PK07		P27	
Latitude:N	42-30.1		42-30.0		42-30.1		42-15.1		42- 0.1		41-30.1		41-30.1		41- 0.0		41- 0.0		41- 0.1	
Longitude:E	144-29.9		144-59.8		145-29.6		145-30.1		145-30.1		145-29.9		145-59.8		146- 0.1		145-30.2		145- 0.0	
Date	1996/12/07		1996/12/07		1996/12/07		1996/12/07		1996/12/07		1996/12/07		1996/12/08		1996/12/08		1996/12/08		1996/12/08	
Time(JST)	11:48		13:59		16:18		17:52		19:27		22:44		00:48		06:27		11:36		14:16	
Weather	BC		BC		BC		BC		BC		C		C		C		BC		C	
Air Temp.	4.0		3.1		2.5		2.5		2.7		3.9		4.0		4.5		5.0		4.4	
Bar	1011.5		1011.5		1012.0		1013.5		1013.5		1014.5		1013.2		1012.5		1013.0		1013.5	
Wind Dir	CALM		WNW		NW		WNW		WNW		WNW		WNW		NNE		NNW		NW	
Wind Spd/F	F 0		F 2		F 2		F 2		F 2		F 4		F 3		F 2		F 4		F 5	
Transparency	21		16												13		23		13	
Depth	1628		3020																	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.9	33.113	6.7	33.292	6.8	33.156	6.5	32.974	7.2	33.161	6.9	33.230	7.8	33.551	6.8	33.262	12.1	34.225	11.9	34.084
10m	5.70	33.093	6.88	33.300	7.17	33.150	6.70	32.947	7.36	33.208	7.16	33.269	8.10	33.496	6.92	33.332	12.87	34.167	12.29	34.102
20m	5.69	33.097	6.65	33.268	7.27	33.173	6.71	32.951	7.36	33.208	7.17	33.266	8.05	33.488	6.88	33.326	12.87	34.167	12.30	34.102
30m	5.69	33.096	6.48	33.245	7.41	33.214	6.77	33.025	7.36	33.206	7.18	33.269	8.07	33.490	6.85	33.318	12.87	34.169	12.31	34.102
50m	5.70	33.095	5.66	33.141	7.53	33.320	7.11	33.208	7.15	33.136	7.18	33.270	8.02	33.483	6.89	33.330	12.79	34.175	12.31	34.102
75m	5.69	33.097	5.45	33.153	2.72	33.044	2.89	33.038	2.47	33.121	4.78	33.069	8.08	33.784	7.25	33.456	12.73	34.170	12.32	34.102
100m	5.64	33.094	4.73	33.386	2.37	33.178	2.51	33.167	2.49	33.240	3.35	33.270	4.46	33.367	8.35	33.730	12.64	34.174	12.32	34.103
125m	4.73	33.185	4.45	33.557	2.41	33.274	2.47	33.251	2.48	33.374	2.67	33.260	3.43	33.381	10.23	34.189	12.17	34.223	12.31	34.103
150m	4.10	33.308	5.00	33.619	2.46	33.380	2.59	33.386	2.59	33.493	2.43	33.337	3.14	33.419	8.79	34.028	11.01	34.228	12.03	34.082
200m	2.97	33.322	4.43	33.670	2.69	33.569	2.78	33.624	2.75	33.637	2.58	33.477	2.89	33.518	6.49	33.756	8.94	34.031	10.02	34.137
250m	3.09	33.461	3.64	33.672	2.84	33.693	2.91	33.753	2.89	33.764	2.77	33.613	2.74	33.598	5.65	33.788	6.71	33.781	8.35	33.994
300m	2.65	33.449	4.02	33.833	2.96	33.802	3.07	33.854	3.05	33.866	2.97	33.729	2.87	33.693	3.30	33.533	4.63	33.571	8.33	33.996
400m	2.84	33.625	3.27	33.801	3.19	33.987	3.29	34.046	3.24	34.020	3.15	33.894	3.25	33.868	4.57	33.933	3.42	33.600	5.82	33.676
500m	3.22	33.811	3.42	33.955	3.28	34.109	3.25	34.158	3.27	34.141	3.27	34.032	3.31	34.053	3.21	33.889	4.18	33.873	3.89	33.576
600m	3.23	33.952			3.17	34.211	3.10	34.247	3.14	34.219	3.58	34.160	3.20	34.142	3.32	34.086	3.40	33.898	2.96	33.642
700m									3.06	34.275			3.18	34.246	3.23	34.182				
800m									2.95	34.334			2.99	34.297	3.12	34.265				
900m									2.77	34.374			2.83	34.341	2.94	34.316				
1000m									2.64	34.399			2.71	34.390	2.85	34.361				

Table 5-38

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612			
Station No	PK16		P36		P35		PK15		P26		P25		PK14		P34		PK22		PK21			
Latitude:N	41- 0.1		40-59.1		41-30.0		41-30.3		41-30.1		41-59.9		42- 0.1		42- 0.1		42- 0.1		42-14.8			
Longitude:E	144-30.2		144- 0.2		144- 0.1		144-30.3		144-59.9		145- 0.0		144-30.3		144- 0.1		143-29.1		143-30.0			
Date	1996/12/08		1996/12/08		1996/12/08		1996/12/09		1996/12/09		1996/12/09		1996/12/09		1996/12/09		1996/12/09		1996/12/09			
Time(JST)	17:22		20:50		23:44		01:44		03:38		06:41		10:18		13:28		15:54		17:15			
Weather	C		C		C		BC		R		C		B		BC		BC		BC			
Air Temp.	5.3		5.9		6.4		6.0		5.0		4.0		4.5		4.1		3.5		3.2			
Bar	1014.7		1016.0		1014.5		1014.0		1014.0		1015.0		1018.0		1017.5		1018.7		1019.5			
Wind Dir	WNW		W		SW		SW		W		W		W		WNW		WNW		WNW			
Wind Spd/F	F 6		F 5		F 6		F 5		F 5		F 6		F 5		F 5		F 5		F 3			
Transparency																						
Depth													12									
Equipment													2024		1118		124		68			
STND. Dep	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD			
	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S		
0m	12.6	34.075	11.7	34.172	12.5	34.113	8.4	33.613	7.9	33.172	6.5	33.001	7.0	33.327	6.4	33.209	6.0	33.128	6.1	33.143		
10m	12.88	34.100	12.12	34.188	12.86	34.164	8.22	33.572	6.94	33.237	6.67	33.041	7.11	33.360	6.32	33.201	6.23	33.182	6.34	33.190		
20m	12.88	34.100	12.12	34.185	12.88	34.165	8.29	33.582	6.95	33.237	6.69	33.042	7.11	33.362	6.32	33.205	6.24	33.180	6.36	33.188		
30m	12.88	34.100	12.11	34.185	12.89	34.164	8.28	33.579	7.00	33.250	6.69	33.042	7.12	33.361	6.32	33.201	6.23	33.183	6.51	33.225		
50m	12.89	34.099	12.12	34.185	12.89	34.164	7.76	33.435	7.07	33.266	6.74	33.102	7.11	33.362	6.31	33.197	6.17	33.174	6.42	33.228		
75m	12.90	34.103	12.12	34.186	12.72	34.145	7.24	33.406	6.79	33.235	2.63	33.145	7.55	33.496	5.39	33.243	6.11	33.228				
100m	12.90	34.105	12.12	34.192	10.81	33.950	6.94	33.408	3.46	33.268	2.59	33.253	8.24	33.943	4.31	33.260	5.20	33.283				
125m	12.45	34.203	12.06	34.227	8.76	33.570	8.64	33.784	3.25	33.313	2.50	33.362	6.67	33.836	3.87	33.303						
150m	11.98	34.221	11.81	34.211	7.82	33.427	9.95	34.170	3.40	33.352	2.62	33.467	6.24	33.791	3.35	33.315						
200m	8.93	34.094	8.89	34.048	8.29	33.779	8.44	34.018	3.00	33.438	2.70	33.589	5.05	33.742	2.84	33.403						
250m	8.86	34.099	8.33	33.998	5.96	33.633	5.42	33.670	2.67	33.531	3.02	33.723	4.46	33.769	2.72	33.443						
300m	8.86	34.102	8.38	34.009	4.26	33.534	5.85	33.868	2.95	33.658	3.26	33.835	4.11	33.782	2.74	33.513						
400m	8.82	34.093	7.84	33.920	4.01	33.700	2.87	33.650	4.00	33.935	3.45	33.995	3.69	33.901	2.82	33.611						
500m	8.40	34.002	4.97	33.627	2.77	33.693	3.27	33.833	3.56	33.993	3.26	34.095	3.90	34.053	3.12	33.784						
600m	4.30	33.579	3.45	33.616	4.06	34.012	3.42	33.989	3.93	34.184	3.22	34.186	3.38	34.078	3.33	33.930						
700m											3.10	34.243	3.22	34.190	3.39	34.086						
800m											2.96	34.296	3.06	34.254	3.18	34.189						
900m											2.89	34.361	3.00	34.300	3.02	34.275						
1000m											2.81	34.399	2.86	34.347	2.87	34.326						

Table 5-39

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199702		199702		199702		199702		199702		199702		199702	
Station No	P33		PK13		P24		PK11		P22		P21		PK02		PK01		P11		P12	
Latitude:N	42-15.0		42-15.0		42-15.1		42-45.1		42-45.1		42-55.0		42-45.1		42-54.1		43- 4.1		42-54.1	
Longitude:E	143-59.8		144-29.1		144-59.1		144-29.1		145- 0.1		145- 0.1		145-29.7		145-29.1		145-45.0		145-49.1	
Date	1996/12/09		1996/12/09		1996/12/10		1997/02/18		1997/02/18		1997/02/19		1997/02/19		1997/02/19		1997/02/19		1997/02/19	
Time(JST)	19:14		22:21		00:34		10:15		12:20		07:35		09:43		11:01		12:39		13:57	
Weather	B		BC		BC		B		B		B		BC		B		B		B	
Air Temp.	3.0		3.5		3.9		0.0		0.7		2.7		-1.3		-0.8		-0.7		0.0	
Bar	1020.5		1021.0		1021.5		996.0		995.7		1000.0		999.0		999.5		999.0		999.4	
Wind Dir	WNW		W		W		W		W		W		NW		WNW		WNW		WNW	
Wind Spd/F	F 2		F 4		F 4		F 6		F 7		F 4		F 5		F 5		F 5		F 4	
Transparency							11				10		13				15		23	
Depth	931						131		170				1695		157		105		1512	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.8	33.183	5.3	33.056	5.9	33.210	-0.1	32.695	-0.1	32.777	-0.7	32.713	-0.2	32.831	-0.3	32.765	-0.2	32.971	0.9	33.075
10m	6.08	33.205	5.51	33.101	5.99	33.118	0.03	32.594	-0.38	32.609	-0.35	32.575	0.03	32.721	-0.30	32.632	-0.44	32.609	0.88	32.922
20m	6.07	33.203	5.52	33.098	5.56	33.058	0.03	32.594	-0.38	32.609	-0.34	32.577	0.10	32.737	-0.26	32.645	-0.44	32.608	0.89	32.924
30m	5.90	33.199	5.51	33.102	5.47	33.055	0.03	32.597	-0.36	32.617	-0.25	32.608	0.41	32.796	0.38	32.793	-0.34	32.632	0.89	32.925
50m	5.73	33.195	5.45	33.105	5.31	33.036	0.09	32.709	0.79	32.893	0.08	32.723	0.53	32.833	0.87	32.917	0.71	32.847	0.92	32.940
75m	5.57	33.193	4.41	33.187	5.86	33.151	0.49	32.815	1.36	33.072			1.04	32.964	0.94	32.938	0.96	32.928	1.06	32.972
100m	4.63	33.195	4.19	33.200	4.79	33.224	0.88	32.939	1.44	33.141			1.12	33.023	1.11	32.992			1.20	33.010
125m	4.14	33.259	3.97	33.275	4.26	33.500			1.46	33.145			1.30	33.076	1.18	33.038			1.21	33.025
150m	3.85	33.301	3.93	33.347	2.61	33.415			1.46	33.150			1.39	33.113					1.30	33.049
200m	3.01	33.345	2.54	33.273	2.63	33.532							1.61	33.202					2.25	33.248
250m	2.75	33.380	2.55	33.369	3.36	33.697							1.79	33.294					2.23	33.489
300m	2.56	33.441	2.49	33.401	3.40	33.794							2.12	33.424					2.64	33.588
400m	2.89	33.569	2.44	33.527	3.75	33.970							1.94	33.493					2.89	33.764
500m	3.18	33.761	3.17	33.699	4.21	34.139							2.58	33.716					2.47	33.869
600m	3.45	33.946	3.23	33.908	3.37	34.144							2.70	33.990					3.20	34.050
700m																			3.02	34.136
800m																			3.04	34.232
900m																			2.80	34.275
1000m																			2.81	34.327

Table 5-40

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199702	199702	199702	199702	199702	199702	199702	199702	199702	199702	199702									
Station No	P13	P14	P15	P16	P17	P18	PK07	P27	PK16	P36										
Latitude:N	42-45.0	42-30.0	42-14.1	42- 0.1	41-29.1	41- 0.1	40-59.9	41- 0.1	40-59.9	40-59.9										
Longitude:E	145-55.0	146- 0.1	146- 0.0	146- 0.0	146- 0.0	146- 0.1	145-30.1	145- 0.0	144-30.0	144- 0.0										
Date	1997/02/19	1997/02/19	1997/02/19	1997/02/19	1997/02/20	1997/02/20	1997/02/20	1997/02/20	1997/02/20	1997/02/21										
Time(JST)	15:35	17:37	19:38	21:45	01:24	08:03	16:22	19:02	21:39	00:11										
Weather	BC	BC	B	C	BC	BC	BC	BC	C	S										
Air Temp.	0.2	0.4	0.0	-1.1	-0.4	1.5	2.4	1.9	1.1	0.1										
Bar	999.8	1001.0	1003.0	1004.5	1006.5	1008.5	1008.2	1010.0	1009.0	1007.4										
Wind Dir	WNW	W	W	W	WNW	WNW	WNW	NW	WNW	SE										
Wind Spd/F	F 5	F 5	F 5	F 6	F 6	F 5	F 6	F 3	F 3	F 2										
Transparency	20					14	11													
Depth	2439																			
Equipment	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD	CTD									
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S								
0m	1.8	33.245	1.8	33.280	1.8	33.202	2.3	33.230	1.5	33.176	1.9	33.157	3.6	33.359	6.9	33.963	1.8	33.156	1.1	32.820
10m	1.92	33.115	1.91	33.128	1.95	33.145	2.47	33.190	1.82	33.127	1.92	33.177	3.62	33.307	7.30	33.884	1.81	33.090	1.17	32.850
20m	1.92	33.114	1.91	33.127	1.95	33.145	2.47	33.190	1.82	33.127	1.93	33.177	3.67	33.321	7.30	33.882	1.81	33.091	1.21	32.854
30m	1.93	33.114	1.91	33.127	1.95	33.146	2.48	33.190	1.82	33.129	1.92	33.176	3.77	33.330	7.27	33.878	1.82	33.093	1.22	32.859
50m	1.93	33.115	1.92	33.128	1.95	33.145	2.48	33.190	1.82	33.128	1.94	33.179	3.83	33.337	7.07	33.844	1.86	33.096	1.20	32.858
75m	1.94	33.118	1.91	33.128	1.96	33.145	2.49	33.190	1.83	33.128	1.95	33.181	4.33	33.415	6.93	33.818	2.66	33.198	1.59	32.981
100m	1.92	33.130	2.18	33.236	2.10	33.216	2.49	33.191	2.09	33.324	2.30	33.225	4.82	33.491	6.59	33.776	2.66	33.246	2.15	33.128
125m	2.01	33.165	2.53	33.432	2.22	33.388	2.69	33.368	2.54	33.432	2.63	33.314	5.09	33.536	6.32	33.797	2.57	33.421	3.68	33.375
150m	2.62	33.442	2.71	33.518	2.28	33.442	2.56	33.454	2.74	33.511	2.02	33.312	6.28	33.741	5.12	33.689	2.10	33.431	3.16	33.355
200m	2.58	33.551	2.78	33.653	2.90	33.624	2.56	33.583	2.67	33.612	2.19	33.444	4.77	33.669	5.41	33.873	1.94	33.458	2.45	33.308
250m	2.73	33.638	2.95	33.753	2.68	33.700	2.86	33.718	2.81	33.716	2.15	33.500	3.63	33.668	3.63	33.707	2.02	33.529	3.18	33.478
300m	2.99	33.769	3.02	33.850	3.03	33.812	3.10	33.840	2.95	33.792	2.41	33.596	4.69	33.911	4.47	33.909	2.21	33.592	3.21	33.563
400m	3.12	33.925	3.01	33.991	2.94	33.956	3.34	34.010	3.16	34.001	2.96	33.846	3.86	33.971	2.76	33.870	2.52	33.758	2.84	33.658
500m	3.24	34.066	2.70	34.050	2.88	34.079	3.26	34.127	3.23	34.120	3.22	34.005	3.91	34.129	3.73	34.117	2.71	33.914	3.26	33.890
600m	3.12	34.165	2.54	34.133	2.82	34.162	3.16	34.226	3.16	34.219	3.24	34.137	3.45	34.162	3.33	34.178	3.21	34.131	3.35	34.039
700m	2.90	34.223	2.85	34.265	2.95	34.260	3.05	34.296	3.03	34.282	3.24	34.246								
800m	2.94	34.290	2.74	34.317	2.86	34.327	2.84	34.329	2.90	34.336	3.08	34.301								
900m	2.81	34.330	2.60	34.358	2.72	34.367	2.73	34.376	2.74	34.378	3.00	34.357								
1000m	2.56	34.351	2.51	34.397	2.62	34.399	2.60	34.407	2.63	34.419	2.80	34.397								

Table 5-41

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199702		199702		199702		199702		199702		199702		199702		199702		199702		199702	
Station No	PK24		PK23		P35		PK15		P26		PK06		PK05		P25		P31		P32	
Latitude:N	40-59.9		41-29.1		41-29.9		41-30.1		41-30.0		41-30.0		42- 0.0		41-59.1		42-45.0		42-30.0	
Longitude:E	143-30.0		143-29.1		143-59.1		144-29.8		144-59.9		145-29.1		145-29.1		145- 0.1		144- 0.1		144- 0.1	
Date	1997/02/21		1997/02/21		1997/02/21		1997/02/21		1997/02/21		1997/02/21		1997/02/21		1997/02/21		1997/02/26		1997/02/27	
Time(JST)	02:27		05:16		07:52		10:28		13:23		16:08		19:17		22:21		10:39		11:20	
Weather	C		C		S		C		R		C		C		C		B		B	
Air Temp.	0.1		0.5		1.0		1.5		1.7		2.2		0.7		0.0		2.5		-1.5	
Bar	1005.0		1002.0		999.5		996.0		992.4		990.4		988.0		986.5		1006.5		1023.5	
Wind Dir	ESE		SE		ESE		SE		ENE		SW		SSW		NNE		NW		NW	
Wind Spd/F	F 4		F 5		F 5		F 6		F 2		F 3		F 2		F 8		F 5		F 5	
Transparency					15		13		15		13						7		13	
Depth																				
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	0.9	32.894	1.2	32.947	1.0	33.032	0.9	32.859	1.8	33.144	1.9	33.183	0.9	33.049	0.6	32.903	-0.1	32.631	0.7	32.912
10m	1.00	32.816	1.23	32.868	0.99	32.954	0.87	32.915	1.81	33.100	1.89	33.123	0.99	32.959	0.64	32.809	-0.22	32.558	0.68	32.831
20m	1.05	32.821	1.24	32.870	0.99	32.954	0.87	32.915	1.81	33.105	1.90	33.127	1.07	32.973	0.65	32.813	-0.26	32.560	0.62	32.837
30m	1.08	32.825	1.25	32.871	1.00	32.955	0.89	32.921	1.81	33.110	1.91	33.132	1.08	32.978	0.64	32.809	-0.41	32.579	0.58	32.844
50m	1.17	32.844	1.27	32.878	1.02	32.957	0.97	32.939	1.83	33.113	1.92	33.135	1.50	33.041	1.48	32.953	-0.41	32.582	0.58	32.848
75m	1.09	32.856	1.71	32.962	1.04	32.960	1.21	33.020	1.84	33.115	1.92	33.135	1.75	33.124	2.20	33.178			1.36	32.969
100m	1.02	32.909	2.45	33.168	1.06	32.963	1.47	33.119	1.85	33.117	2.09	33.220	1.73	33.178	4.05	33.451			1.67	33.046
125m	1.92	33.129	2.43	33.191	1.13	32.973	1.52	33.147	1.91	33.129	2.44	33.443	2.39	33.296	4.37	33.498			2.06	33.152
150m	3.14	33.329	2.35	33.191	1.65	33.060	1.56	33.171	2.57	33.380	2.19	33.473	2.14	33.319	3.35	33.390			3.62	33.382
200m	2.44	33.329	2.84	33.269	2.27	33.376	1.76	33.275	2.62	33.516	2.18	33.559	2.23	33.414	1.83	33.277			3.46	33.408
250m	2.26	33.383	2.67	33.354	2.75	33.543	2.28	33.426	2.79	33.635	2.57	33.672	2.27	33.499	2.17	33.381			1.73	33.245
300m	2.51	33.488	2.48	33.456	2.89	33.626	2.04	33.495	3.00	33.756	2.39	33.723	2.30	33.565	2.23	33.460			2.10	33.391
400m	2.95	33.653	2.82	33.632	3.09	33.833	2.54	33.738	3.23	33.936	2.69	33.936	2.95	33.796	2.31	33.589			2.27	33.522
500m	4.78	34.083	3.08	33.856	2.63	33.887	2.80	33.916	3.19	34.074	2.78	34.080	3.20	33.963	2.68	33.775				
600m	3.24	34.003	3.58	34.050	3.28	34.073	2.68	34.025	3.01	34.155	2.70	34.157	3.09	34.082	2.78	33.922				
700m													3.01	34.186						
800m													2.84	34.271						
900m													2.80	34.335						
1000m													2.54	34.355						

Table 5-42

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199702		199702		199702		199702		199702		199702		199702		199702		199702			
Station No	P33		PK21		PK22		P34		PK14		PK13		P24		PK04		PK03		P23	
Latitude:N	42-15.0		42-14.1		42- 0.1		42- 0.0		42- 0.0		42-14.9		42-14.1		42-15.0		42-30.0		42-29.1	
Longitude:E	144- 0.0		143-30.0		143-30.0		144- 0.0		144-30.0		144-30.0		145- 0.0		145-29.9		145-30.0		144-59.9	
Date	1997/02/27		1997/02/27		1997/02/27		1997/02/27		1997/02/27		1997/02/27		1997/02/28		1997/02/28		1997/02/28		1997/02/28	
Time(JST)	12:49		14:59		16:21		18:22		20:42		22:55		01:10		03:28		05:08		07:09	
Weather	B		B		B		B		B		B		B		B		B		B	
Air Temp.	-0.6		-0.2		0.3		0.1		0.0		-0.3		-1.7		-1.3		-1.7		-0.3	
Bar	1023.5		1022.0		1023.0		1024.5		1026.0		1026.0		1026.5		1026.5		1026.0		1026.0	
Wind Dir	WSW		CALM		W		W		NW		N		Cal		WNW		NNW		S	
Wind Spd/F	F 3		F 0		F 6		F 4		F 4		F 3		F		F 3		F 2		F 3	
Transparency	30		19		9														14	
Depth	935		67		124															
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	0.9	32.861	-0.1	32.607	0.1	32.658	1.0	32.812	1.0	32.853	1.6	33.070	1.4	33.049	1.5	33.068	1.3	33.075	1.5	33.118
10m	0.81	32.878	-0.28	32.627	0.05	32.679	1.04	32.889	0.96	N.D.	1.75	33.098	1.77	33.070	1.79	33.095	1.38	33.110	1.77	33.143
20m	0.76	32.880	-0.30	32.630	0.06	32.718	1.03	32.890	1.02	32.874	1.77	33.106	1.77	33.070	1.79	33.095	1.60	33.128	1.77	33.144
30m	0.76	32.881	-0.28	32.634	0.07	32.729	1.02	32.891	1.02	32.887	1.76	33.121	1.77	33.070	1.79	33.095	1.60	33.128	1.79	33.144
50m	0.80	32.887	-0.19	32.650	0.10	32.751	1.06	32.921	1.16	32.917	1.77	33.135	1.77	33.070	1.79	33.095	1.62	33.132	1.70	33.160
75m	1.25	32.976			0.12	32.757	2.04	33.158	1.77	33.068	1.75	33.155	1.77	33.071	1.83	33.101	1.79	33.191	1.45	33.179
100m	1.45	33.102			0.20	32.776	1.97	33.217	1.89	33.131	1.76	33.158	1.78	33.079	1.93	33.132	1.73	33.242	1.43	33.188
125m	1.46	33.147					1.75	33.223	3.07	33.300	2.33	33.321	1.90	33.127	2.39	33.261	1.91	33.279	1.39	33.201
150m	2.37	33.274					2.19	33.332	2.84	33.318	2.51	33.410	2.18	33.215	2.60	33.410	2.18	33.363	1.57	33.247
200m	2.99	33.369					2.34	33.425	2.30	33.318	2.66	33.550	2.62	33.504	2.68	33.503	2.06	33.422	1.84	33.371
250m	2.59	33.367					2.33	33.463	1.86	33.337	1.89	33.535	2.79	33.636	2.84	33.643	2.29	33.504	2.14	33.467
300m	2.19	33.410					2.50	33.529	1.99	33.437	2.11	33.614	2.60	33.690	2.92	33.736	2.18	33.545	1.99	33.511
400m	2.48	33.594					2.65	33.629	2.31	33.624	3.09	33.873	3.15	33.926	3.21	33.931	2.64	33.726	2.61	33.744
500m	2.97	33.795					2.82	33.715	2.86	33.849	3.23	34.008	3.24	34.055	3.28	34.062	2.92	33.908	2.69	33.863
600m	3.26	33.991					3.17	33.923	2.77	33.979	2.91	34.072	3.19	34.153	3.15	34.160	2.95	34.036	2.84	33.966
700m							3.34	34.098	2.74	34.109										
800m							3.21	34.209	3.05	34.228										
900m							3.06	34.277	2.72	34.272										
1000m							2.91	34.331	2.66	34.326										

Table 5-43

Table 5 Results of serial oceanographic observations. Hokkaido Kushiro Fisheries Experimental Station

Stn-prefix	199702																		
Station No	PK12																		
Latitude:N	42-30.0																		
Longitude:E	144-29.1																		
Date	1997/02/28																		
Time(JST)	09:13																		
Weather	B																		
Air Temp.	1.7																		
Bar	1024.5																		
Wind Dir	S																		
Wind Spd/F	F 4																		
Transparency	17																		
Depth																			
Equipment	CTD																		
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	
0m	1.6	33.084																	
10m	1.66	33.115																	
20m	1.65	33.114																	
30m	1.61	33.118																	
50m	1.57	33.125																	
75m	1.25	33.131																	
100m	1.28	33.140																	
125m	1.28	33.164																	
150m	1.25	33.174																	
200m	2.39	33.382																	
250m	2.49	33.490																	
300m	2.72	33.632																	
400m	2.60	33.764																	
500m	2.89	33.871																	
600m	3.02	33.999																	
700m																			
800m																			
900m																			
1000m																			

Table 5-44

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	S4		S3		S2		S1		O15		OA10		O13		O12		O11		OA01	
Latitude:N	45-40.0		45-37.0		45-34.1		45-31.2		45-29.9		45-30.1		45-19.8		45-12.4		45- 8.5		44-47.5	
Longitude:E	141-59.8		142- 0.0		142- 0.0		142- 0.0		142-10.1		142-30.2		142-40.1		142-32.6		142-28.7		142-47.5	
Date	1996/04/09		1996/04/09		1996/04/09		1996/04/09		1996/04/09		1996/04/09		1996/04/09		1996/04/09		1996/04/09		1996/04/09	
Time(JST)	10:59		11:23		11:47		12:09		12:51		14:09		15:18		16:15		16:49		19:08	
Weather	C		C		C		C		BC		C		C		C		C		C	
Air Temp.	2.2		1.0		1.0		0.6		1.1		1.8		0.9		0.7		0.6		-0.1	
Bar	1018.0		1018.0		1018.0		1018.0		1018.0		1018.0		1018.0		1018.0		1018.0		1018.0	
Wind Dir	E		E		E		E		ENE		E		ENE		ENE		E		CALM	
Wind Spd/F	F 2		F 2		F 2		F 3		F 3		F 2		F		F 3		F 3		F 0	
Transparency	12		10		9		13		12		11		8		8		8			
Depth	55		45		43		27		37		85		99		63		39		38	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	3.9	34.040	4.1	33.900	4.1	33.843	3.9	33.656	4.2	33.922	0.2	32.295	0.4	32.328	2.5	32.095	2.4	32.752	0.3	32.353
10m	3.89	34.044	4.25	33.941	4.21	33.880	3.95	33.667	4.28	33.936	-0.09	32.330	-0.04	32.355	3.91	33.833	4.01	33.817	-0.14	32.476
20m	3.86	34.043	4.24	33.974	4.21	33.908	3.93	33.676	4.28	33.937	-0.59	32.327	-0.50	32.355	3.96	33.877	3.98	33.829	1.03	32.859
30m	3.85	34.042	4.24	33.982	4.21	33.916			4.27	33.937	-1.67	32.683	-1.64	32.691	3.99	33.902				
50m											-1.50	32.885	-1.61	32.890	4.04	33.952				
75m											0.83	33.393	3.49	33.938						
100m																				
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-1

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	OA02		OA03		OA04		O25		O24		O23		O22		O21		OA11		OA12	
Latitude:N	44-52.4		44-59.9		45-10.0		45- 0.0		44-49.9		44-39.9		44-35.0		44-32.4		44-17.4		44-22.5	
Longitude:E	142-52.6		142-59.9		143- 9.9		143-40.2		143-29.9		143-20.0		143-15.1		143-12.5		143-37.5		143-42.7	
Date	1996/04/09		1996/04/09		1996/04/09		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10	
Time(JST)	19:48		20:46		22:03		00:13		01:26		02:51		03:41		04:08		06:26		07:05	
Weather	S		C		C		C		C		S		C		C		C		S	
Air Temp.	0.0		-0.3		-0.7		-1.6		-1.3		-0.8		-0.7		-0.8		-0.7		-0.8	
Bar	1018.8				1019.0		1019.0		1019.0		1018.0		1018.0		1018.0		1018.0		1018.0	
Wind Dir	E		E		E		E		E		E		E		E		SE		E	
Wind Spd/F	F 3		F 3		F 3		F 2		F 3		F 3		F 3		F 4		F 3		F 3	
Transparency																	9		12	
Depth	86		132		134		174		150		115		77		57		46		94	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	0.2	32.275	0.3	32.431	-0.1	32.454	-0.2	32.513	-0.2	32.574	-0.1	32.521	-0.2	32.574	-0.2	32.568	-0.1	32.485	0.0	32.487
10m	-0.08	32.290	-0.26	32.450	0.00	32.460	-0.34	32.520	-0.19	N.D.	-0.06	N.D.	-0.16	N.D.	-0.06	N.D.	-0.50	32.537	-0.02	32.486
20m	-1.49	32.589			-0.85	32.573	-1.34	32.616	-0.23	N.D.	-0.31	N.D.	-0.53	N.D.	0.09	N.D.	-0.60	32.663	-0.08	32.589
30m	-1.57	32.748	-1.07	32.622	-1.36	32.667	-1.47	32.646	-0.38	N.D.	-0.61	N.D.	-0.87	N.D.	0.53	N.D.	-0.63	32.959	-0.91	32.767
50m	-1.48	32.919	-1.64	32.810	-1.72	32.800	-1.69	32.829	-1.02	N.D.	-1.37	N.D.	-0.39	N.D.					0.37	33.137
75m	3.32	33.799	-1.72	32.934	-1.73	32.985	-1.55	32.941	-0.93	N.D.	2.20	N.D.							2.20	33.789
100m			-1.06	33.088	-1.74	33.021	-1.63	32.992	-0.80	N.D.	3.18	N.D.								
125m					-1.65	33.034	-1.77	33.021	1.11	N.D.										
150m							-0.54	33.153												
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-2

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	OA13		OA14		O35		O34		O33		O32		OA20		O31		OA21		OA22	
Latitude:N	44-30.0		44-39.9		44-48.6		44-29.9		44-19.9		44- 9.9		44- 4.9		44- 2.0		44- 2.0		44-10.1	
Longitude:E	143-50.2		144- 0.0		144-16.0		144-20.1		144-20.1		144-20.0		144-20.1		144-20.1		144-50.1		144-50.0	
Date	1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10		1996/04/10	
Time(JST)	08:10		09:23		10:50		12:41		13:51		14:54		15:29		15:51		17:49		18:38	
Weather	BC		BC		B		BC		BC		BC		C		C		C		BC	
Air Temp.	-0.5		-0.6		-0.3		-0.3		-0.2		-0.3		-0.1		-0.2		-0.7		-1.0	
Bar	1018.5		1018.8		1019.0		1018.5		1018.0		1018.0		1018.0		1018.0		1017.5		1018.0	
Wind Dir	E		ENE		NE		NE		NE		NE		NE		NE		NNE		NE	
Wind Spd/F	F 3		F 3		F 2		F 2		F 3		F 3		F 3		F 3		F 4		F 4	
Transparency	11		11		14		13		12		11		12		8					
Depth	167		190		161		840		269		114		38		35		81		600	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	-0.2	32.591	-0.2	32.557	-0.1	32.432	-0.1	32.507	-0.2	32.599	-0.2	32.488	-0.4	32.504	-0.2	31.998	-0.2	32.500	0.6	32.647
10m	-0.37	32.614	-0.38	32.570	-0.15	N.D.	-0.30	N.D.	-0.21	32.589	-0.32	32.490	0.57	32.511	0.53	32.436	-0.04	32.503	0.20	32.743
20m	-0.67	32.625	-0.78	32.598	-0.43	N.D.	-0.60	N.D.	-0.81	32.684	-0.87	32.548	0.55	32.521	-0.12	32.469	-0.68	32.568	0.41	32.902
30m	-1.44	32.747	-0.80	32.641	-0.70	N.D.	-0.89	N.D.	-1.25	32.725	-1.04	32.681					-1.31	32.628	0.29	32.937
50m	-1.59	32.941	-1.37	32.749	-1.14	N.D.	-1.09	N.D.	-1.53	32.792	-0.78	32.858					-1.55	32.788	-0.72	32.987
75m	-1.63	32.990	-1.67	32.911	-1.14	N.D.	-1.46	N.D.	-1.57	32.949	0.95	33.362							-0.68	33.069
100m	-1.67	33.012	-1.70	32.969	-1.42	N.D.	-1.53	N.D.	-1.65	32.973	1.36	33.470							-0.38	33.135
125m	-1.63	33.030	-1.75	33.001	-1.60	N.D.	-1.53	N.D.	-1.63	33.000									0.30	33.218
150m	2.22	33.793	-1.38	33.060	-1.35	N.D.	-1.51	N.D.	-1.58	33.016									0.25	33.302
200m							-1.21	N.D.	-0.96	33.102									0.21	33.334
250m							-0.44	N.D.	2.45	33.882									0.44	33.360
300m							0.14	N.D.											1.06	33.442
400m							0.69	N.D.											1.23	33.590
500m							1.73	N.D.											1.67	33.662
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-3

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	OA23		OA24		O26		OA05		O14		J11		J12		J13		JW01		JW02	
Latitude:N	44-20.1		44-25.2		45- 2.4		45-20.1		45-30.0		45-30.1		45-29.9		45-30.0		45-45.1		45-45.0	
Longitude:E	144-50.1		144-49.8		143-42.9		143-20.1		142-50.0		141-40.0		141-24.9		141-10.0		141-19.9		141- 9.9	
Date	1996/04/10		1996/04/10		1996/04/11		1996/04/11		1996/04/11		1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/16	
Time(JST)	20:01		21:01		05:39		08:03		10:06		10:10		11:15		12:17		14:02		14:48	
Weather	BC		C		C		C		C		C		C		C		C		C	
Air Temp.	-1.8		-1.7		-3.2		-1.8		-1.4		5.6		4.9		6.1		4.8		3.6	
Bar	1018.8		1019.0		1018.5		1018.0		1018.8		1015.3		1015.5		1014.5		1014.0		1013.0	
Wind Dir	ENE		ENE		NE		ENE		ENE		ENE		ENE		E		E		E	
Wind Spd/F	F 3		F		F 2		F 4		F 3		F 3		F 4		F 4		F 6		F 6	
Transparency					10		15		5		7		10		13		15		11	
Depth	1080		1352		181		146		122		55		115		129		130		124	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	-0.5	32.404	-0.3	32.500	-0.1	32.582	-0.4	32.601	0.4	32.408	4.1	33.230	5.1	34.025	5.0	34.086	4.8	34.089	4.9	34.098
10m	-0.33	32.527	-0.20	32.500	-0.31	32.655	-0.49	32.625	0.14	32.377	4.77	33.769	4.62	34.045	4.93	34.101	4.74	34.101	4.87	34.102
20m	-1.27	32.660	-0.61	32.537	-0.51	32.666	-1.24	32.692	-0.54	32.525	4.69	33.875	4.55	34.078	4.74	34.102	4.54	34.104	4.68	34.104
30m	-1.48	32.789	-1.06	32.565	-0.71	32.672	-1.57	32.814	-1.00	32.572	4.65	33.929	4.52	34.090	4.67	34.103	4.31	34.105	4.40	34.102
50m	-1.59	32.943	-1.32	32.812	-1.26	32.779	-1.70	32.963	-1.71	32.789	4.64	33.930	4.50	34.099	4.57	34.105	4.22	34.103	4.25	34.106
75m	-1.60	33.002	-1.16	32.925	-1.70	32.969	-1.72	33.019	-1.68	32.909			4.31	34.097	4.40	34.102	3.76	34.110	3.91	34.108
100m	-1.57	33.030	-0.97	33.011	-1.71	33.013	-1.74	33.035	-1.16	33.084			4.12	34.099	4.27	34.104	3.54	34.106	3.73	34.106
125m	-1.51	33.047	-1.25	33.062	-1.72	33.020	-1.74	33.035												
150m	-1.33	33.075	-0.34	33.158	-1.72	33.020														
200m	-0.61	33.166	0.19	33.282																
250m	0.10	33.287	0.25	33.335																
300m	0.35	33.366	0.49	33.395																
400m	0.88	33.500	0.96	33.513																
500m	1.40	33.648	1.39	33.662																
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-4

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	JW03		J14		J15		J16		J17		J18		JW15		JW16		J27		J26	
Latitude:N	45-45.0		45-30.0		45-29.9		45-30.0		45-30.0		45-30.0		45- 0.0		45- 0.0		44-30.0		44-30.0	
Longitude:E	140-59.9		140-53.0		140-39.8		140-19.8		140- 0.0		139-39.9		140-19.9		140- 0.0		139-30.0		139-59.9	
Date	1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/16		1996/04/17		1996/04/17		1996/04/17		1996/04/17	
Time(JST)	15:35		17:23		18:27		19:59		21:28		23:25		04:19		05:40		09:04		12:01	
Weather	C		C		C		C		C		C		C		C		C		C	
Air Temp.	3.7		4.6		4.7		4.7		4.5		4.7		4.4		4.5		5.4		5.9	
Bar	1013.0		1012.0		1012.0		1012.0		1012.2		1011.5		1010.0		1011.0		1012.0		1012.3	
Wind Dir	E		E		E		E		ENE		E		ENE		ENE		ENE		E	
Wind Spd/F	F 5		F 5		F 4		F 4		F 4		F 5		F 3		F 3		F 3		F 5	
Transparency	11		10										8		10		9			
Depth	496		428		538		397		595		844		140		239		525		576	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	4.7	34.101	4.8	34.040	4.8	34.104	4.8	34.091	3.8	34.086	4.8	34.109	4.8	34.112	5.0	34.106	5.1	34.122	5.4	34.111
10m	4.69	34.112	5.02	34.054	5.01	34.115	4.94	34.103	3.80	34.098	4.92	34.123	4.97	34.120	5.14	34.112	5.05	34.131	5.41	34.123
20m	4.64	34.109	5.01	34.061	5.01	34.114	4.92	34.103	3.70	34.101	4.52	34.130	4.95	34.120	5.14	34.112	4.93	34.128	5.40	34.123
30m	4.56	34.111	4.94	34.084	5.00	34.112	4.78	34.104	3.64	34.100	4.17	34.130	4.90	34.120	5.14	34.112	4.84	34.124	5.35	34.123
50m	4.51	34.112	4.76	34.104	4.51	34.107	4.64	34.103	2.42	34.069	3.61	34.119	4.86	34.120	5.00	34.108	4.04	34.111	5.12	34.120
75m	3.92	34.115	4.37	34.095	4.23	34.098	4.29	34.103	2.26	34.072	2.74	34.094	4.61	34.119	4.64	34.114	3.30	34.110	4.37	34.120
100m	3.59	34.110	4.32	34.092	4.06	34.115	3.96	34.112	2.16	34.070	2.31	34.073	4.02	34.113	4.06	34.115	2.83	34.109	3.91	34.121
125m	3.34	34.115	4.32	34.094	3.55	34.115	3.32	34.113	2.16	34.093	1.93	34.073	3.34	34.117	3.52	34.121	2.33	34.098	3.32	34.108
150m	3.20	34.126	4.26	34.097	3.17	34.107	2.55	34.111	1.76	34.078	1.78	34.081			2.64	34.091	2.07	34.094	2.65	34.089
200m	2.62	34.108	3.69	34.109	2.26	34.104	1.86	34.085	1.67	34.085	1.63	34.084			1.75	34.076	1.64	34.081	1.57	34.073
250m	2.14	34.095	1.98	34.098	1.51	34.083	1.42	34.081	1.33	34.080	1.27	34.078					1.23	34.077	1.22	34.075
300m	1.77	34.087	1.37	34.080	1.12	34.077	1.13	34.076	1.03	34.076	0.97	34.075					0.87	34.074	1.04	34.075
400m	1.04	34.076	0.95	34.074	0.70	34.073			0.70	34.074	0.66	34.073					0.56	34.072	0.68	34.073
500m					0.43	34.071			0.45	34.072	0.44	34.072					0.40	34.071	0.47	34.071
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-5

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	J25		J24		J23		J22		J21		JW11		JW12		JW13		JW14		WTC01	
Latitude:N	44-30.0		44-30.0		44-30.0		44-29.9		44-29.9		45- 0.0		45- 0.0		44-59.9		45- 0.0		45-30.0	
Longitude:E	140-20.1		140-40.1		141- 0.1		141-15.0		141-29.9		141-30.0		141-15.0		140-59.8		140-39.9		141-40.1	
Date	1996/04/17		1996/04/17		1996/04/17		1996/04/17		1996/04/17		1996/04/17		1996/04/17		1996/04/18		1996/04/18		1996/04/22	
Time(JST)	13:49		15:24		16:48		17:53		18:55		21:32		22:32		00:11		01:30		09:50	
Weather	C		C		C		C		C		C		C		C		C		BC	
Air Temp.	5.4		5.2		5.2		5.2		5.3		2.0		2.0		1.9		2.6		5.8	
Bar	1012.5		1013.0		1014.0		1014.5		1014.5		1017.2		1017.5		1017.5		1016.5		1019.8	
Wind Dir	E		ENE		ENE		ENE		ENE		ENE		ENE		ENE		ENE		SW	
Wind Spd/F	F 5		F 5		F 3		F 3		F 2		F 5		F 5		F 5		F 6		F 4	
Transparency	9		8		12														11	
Depth	253		145		202		119		77		65		86		105		368		55	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.2	34.109	5.6	34.100	5.3	34.090	5.7	33.918	5.4	34.064	5.0	33.219	4.7	33.884	4.8	34.085	4.6	34.107	5.3	33.63*
10m	5.20	34.118	5.68	34.106	5.35	34.106	5.92	33.918	5.53	34.069	5.26	33.358	4.94	33.906	4.91	34.099	4.82	34.119	4.74	33.644
20m	5.15	34.119	5.67	34.106	5.33	34.105	5.85	33.961	5.32	34.071	4.78	33.856	4.93	33.917	4.91	34.100	4.81	34.120	4.58	33.824
30m	5.05	34.120	5.59	34.106	5.29	34.104	5.45	34.105	5.16	34.068	4.74	33.983	4.78	34.048	4.91	34.100	4.82	34.119	4.57	33.848
50m	4.82	34.120	5.12	34.110	5.16	34.101	5.38	34.103	5.12	34.071	4.57	34.030	4.71	34.083	4.89	34.099	4.64	34.124		
75m	4.66	34.119	4.68	34.106	5.05	34.099	5.07	34.101					4.37	34.085	4.39	34.096	3.73	34.113		
100m	4.42	34.117	4.27	34.109	4.68	34.090	4.96	34.101							4.33	34.092	3.29	34.111		
125m	3.79	34.114	3.95	34.102	4.55	34.083											2.96	34.107		
150m	3.29	34.101			4.28	34.110											2.30	34.097		
200m	2.13	34.076															1.84	34.089		
250m																	1.52	34.083		
300m																	1.13	34.078		
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-6

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199604		199604		199604		199604		199604		199604		199604		199604		199604		199604	
Station No	WTC02		WTC03		WTC04		WTC05		WTC06		WTC07		WTC08		WTC09		WTC10		WTC11	
Latitude:N	45-30.1		45-15.0		45-15.0		45-15.1		45- 0.1		45- 0.0		44-45.1		44-30.0		44-15.0		44-29.9	
Longitude:E	141-25.1		141-30.0		141-20.0		141- 0.1		141-15.1		141-30.0		141-30.0		141-30.1		141-29.8		141-15.0	
Date	1996/04/22		1996/04/22		1996/04/22		1996/04/22		1996/04/24		1996/04/24		1996/04/24		1996/04/24		1996/04/24		1996/04/24	
Time(JST)	11:22		13:41		14:45		16:41		08:19		09:45		11:43		13:31		15:23		18:33	
Weather	BC		C		C		C		C		C		C		BC		C		C	
Air Temp.	5.1		5.5		4.8		5.1		6.8		7.1		8.6		10.5		11.0		8.5	
Bar	1019.0		1018.0		1017.5		1016.5		1015.8		1015.6		1015.6		1014.5		1015.0		1014.0	
Wind Dir	SW		SSW		SSW		SSW		S		S		S		S		SSW			
Wind Spd/F	F 4		F 6		F 4		F 6		F 3		F 3		F 3		F 3		F		F	
Transparency	15		10		12		12		12		9		13		11		10			
Depth	113		37		85		85		85		65		86		78		61		118	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.0	33.68*	5.4	33.59*	4.9	33.98*	4.9	34.12*	5.2	<i>N.D.</i>	5.7	33.92*	5.9	34.15*	7.5	34.14*	7.9	33.47*	6.3	34.02*
10m	4.94	33.678	5.19	33.612	4.67	34.007	4.90	34.113	4.91	34.099	5.41	33.928	5.47	34.089	5.90	34.005	6.24	33.494	6.22	34.026
20m	4.86	33.794	4.96	33.868	4.31	34.071	4.90	34.113	4.91	34.098	5.19	34.002	5.39	34.087	5.86	34.010	6.35	33.698	5.98	34.094
30m	4.60	34.061	4.89	33.915	4.33	34.077	4.86	34.111	4.91	34.098	5.09	34.041	5.38	34.086	5.85	34.011	5.72	33.843	5.98	34.096
50m	4.42	34.088			4.35	34.081	4.70	34.101	4.90	34.099	5.06	34.056	5.32	34.085	5.85	34.010	5.25	34.029		
75m	3.99	34.097			4.33	34.082			4.48	34.081			4.77	34.071						
100m																				
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-7

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199605	
Station No	WTC01		WTC02		WTC03		WTC04		WTC05		WTC06		WTC07		WTC08		WTC09		WTC10	
Latitude:N	45-29.9		45-30.1		45-14.9		45-15.0		45-15.6		45-15.1		45- 0.1		45- 0.0		44-59.9		44-30.0	
Longitude:E	141-39.9		141-25.0		141-30.0		141-20.1		141-10.1		140-59.9		141- 0.1		141-14.9		141-30.1		140-59.9	
Date	1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/13		1996/05/14	
Time(JST)	10:17		11:35		13:24		14:20		15:24		16:22		18:12		19:36		20:59		03:32	
Weather	BC		BC		C		C		C		BC		C		C		C		C	
Air Temp.	7.7		8.8		10.2		8.5		8.5		8.3		8.2		7.6		7.4		7.7	
Bar	1015.5		1016.0		1016.0		1015.7		1015.8		1016.0		1016.5		1016.5		1016.5		1015.2	
Wind Dir	NNW		W		NNW		NW		WSW		W		WNW		W		W		SW	
Wind Spd/F	F 3		F 1		F 1		F 2		F 1		F 1		F 2		F 1		F 2		F 4	
Transparency	11		12		13		12		10		11		11							
Depth	55		114		36		85		38		87		99		86		65		200	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.5	34.01*	8.5	33.63*	8.8	32.92*	7.9	33.15*	7.8	33.95*	8.3	34.06*	7.8	33.69*	7.3	33.22*	7.4	33.24*	8.2	33.31*
10m	5.98	34.014	6.62	33.696	6.74	33.731	7.48	33.131	7.42	34.066	7.47	34.069	7.03	33.773	7.24	33.223	7.17	33.279	8.27	33.314
20m	5.73	34.030	5.97	33.897	6.35	33.904	6.26	33.732	6.51	34.075	7.01	34.078	6.69	33.872	6.77	33.744	6.59	33.909	7.84	33.563
30m	5.66	34.033	5.30	34.099			5.66	34.043	5.65	34.094	6.84	34.075	6.57	33.958	6.40	34.089	5.87	34.055	7.48	33.906
50m			5.07	34.107			4.94	34.090			6.22	34.116	6.42	34.044	5.49	34.098	5.44	34.051	6.72	34.104
75m			4.91	34.108			4.94	34.087			5.24	34.115	6.03	34.083	4.88	34.095			6.09	34.114
100m			4.54	34.105															5.29	34.119
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-8

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199605		199605		199605		199605		199605		199605		199605		199605		199605		199606	
Station No	WTC11		WTC12		WTC13		WTC14		WHK01		WHK03		WHK02		WHK04		WHK05		S4	
Latitude:N	44-30.1		44-30.1		44-30.0		44-59.9		45- 0.0		45- 0.0		45- 0.0		45- 0.0		45- 0.0		45-40.1	
Longitude:E	141-15.0		141-29.9		140-20.0		140-40.1		141- 3.5		141- 3.5		141- 3.5		141- 3.5		141- 3.5		142- 0.2	
Date	1996/05/14		1996/05/14		1996/05/14		1996/05/14		1996/05/20		1996/05/21		1996/05/22		1996/05/22		1996/05/23		1996/06/04	
Time(JST)	04:59		06:26		16:56		22:03		07:51		19:00		07:36		17:43		05:00		09:53	
Weather	C		C		C		R						C						F	
Air Temp.	7.9		8.4		7.2		7.2												10.2	
Bar	1016.0		1016.5		1011.0		1011.0												998.0	
Wind Dir	WSW		WSW		SSW		WSW												NNE	
Wind Spd/F	F 3		F 2		F 6		F 2		F		F		F		F		F		F 3	
Transparency	15		13		8														13	
Depth	118		79		254		370				54		51		54		66		55	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.3	33.16*	8.4	33.58*	7.5	34.08*	7.5	33.93*	8.8	<i>N.D.</i>	8.6	<i>N.D.</i>	8.5	<i>N.D.</i>	8.9	<i>N.D.</i>	8.3	<i>N.D.</i>	10.1	33.290
10m	8.33	33.161	7.96	33.581	7.46	34.079	7.48	33.951	7.54	33.807	8.13	33.750	8.26	33.740	8.00	33.828	7.42	33.891	6.38	34.052
20m	7.84	33.618	7.57	33.671	7.28	34.080	7.38	33.961	7.11	33.900	7.39	33.906	8.01	33.824	7.58	33.906	7.18	33.905	5.86	34.060
30m	7.43	34.062	7.06	34.099	6.51	34.075	6.84	34.015	7.14	34.012	7.46	33.997	7.56	33.945	7.38	33.974	6.97	34.014	5.59	34.066
50m	7.09	34.087	6.51	34.096	6.18	34.081	5.78	34.122	6.38	34.081							6.07	34.089		
75m	6.38	34.106			5.59	34.108	5.24	34.110												
100m	5.96	34.116			5.05	34.104	4.86	34.112												
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-9

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	S3		S2		S1		O15		OA10		O13		O12		O11		OA02		OA03	
Latitude:N	45-36.9		45-33.9		45-30.8		45-30.0		45-29.9		45-19.9		45-12.5		45- 8.0		44-52.4		44-59.9	
Longitude:E	142- 0.1		142- 0.1		142- 0.0		142-10.3		142-30.1		142-40.0		142-32.5		142-28.0		142-52.6		142-59.9	
Date	1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04		1996/06/04	
Time(JST)	10:18		10:41		11:03		11:41		12:51		13:54		14:53		15:34		17:36		18:33	
Weather	F		F		F		C		F		F		F		C		R		R	
Air Temp.	9.5		9.4		9.7		9.3		8.4		7.1		7.6		8.7		7.7		6.5	
Bar	998.2		998.5		998.5		998.5		998.0		998.0		998.5		998.5		999.5		999.9	
Wind Dir	NNE		NNE		NE		E		NE		SE		ESE		ENE		NE		ENE	
Wind Spd/F	F 3		F 3		S 6		F 2		F 2		F 2		F 2		F 2		F 2		F 2	
Transparency	11		11		12		10		15		10		12		10		11			
Depth	49		41		21		37		82		97		62		34		84		130	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	10.0	33.182	8.9	33.694	9.5	33.502	9.9	33.289	4.9	33.101	3.5	33.428	7.9	33.783	9.2	33.445	7.0	33.871	3.9	33.095
10m	8.36	33.724	8.60	33.694	9.37	33.466	9.40	33.390	5.55	34.058	2.86	33.645	7.43	33.878	8.79	33.580	6.96	33.970	3.29	33.192
20m	7.37	33.967	8.47	33.722			7.73	33.897	5.40	34.062	3.34	33.777	7.24	33.904	8.14	33.717	6.64	33.972	3.82	33.454
30m	7.04	34.013	8.11	33.805			7.50	33.920	5.35	34.063	3.41	33.794	7.05	33.931			6.61	33.971	3.96	33.750
50m									5.15	34.060	4.29	34.011	6.99	33.940			6.56	33.976	3.89	33.932
75m									5.13	34.058	4.08	34.032					6.56	33.975	3.84	33.958
100m																			3.92	34.010
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-10

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	OA04		O25		O24		O23		O22		OA11		OA12		OA13		OA14		O34	
Latitude:N	45-10.0		44-59.9		44-49.9		44-39.9		44-34.9		44-18.8		44-22.4		44-30.0		44-40.0		44-30.0	
Longitude:E	143-10.0		143-40.2		143-30.0		143-20.0		143-15.4		143-37.9		143-42.5		143-49.9		144- 0.0		144-20.1	
Date	1996/06/04		1996/06/04		1996/06/04		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05	
Time(JST)	19:45		21:54		23:16		00:45		01:43		03:49		04:22		05:22		06:40		12:49	
Weather	R		R		R		R		R		C		C		R		C		C	
Air Temp.	5.7		5.2		5.5		5.5		5.4		5.8		5.7		5.6		5.3		7.1	
Bar	1000.5		1001.0		1001.5		1003.0		1003.5		1004.5		1005.0		1005.8		1007.5		1010.0	
Wind Dir	NE		NNE		NNE		N		N		N		NNW		NW		NW		NW	
Wind Spd/F	F 3		F 3		F 3		F 2		F 2		F 2		F 2		F 3		F 2		F 2	
Transparency															7		8		7	
Depth	133		173		150		115		75		56		91		165		190		880	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.7	32.169	6.1	32.182	6.4	32.137	4.5	32.811	7.6	33.669	9.1	32.906	7.8	33.384	5.4	32.185	6.1	32.222	6.1	32.138
10m	4.91	32.247	5.44	32.320	5.25	32.347	4.21	32.905	7.40	33.794	9.27	33.121	7.01	33.665	6.29	32.664	5.53	32.285	3.85	32.241
20m	1.79	32.344	1.94	32.393	3.61	32.704	5.46	33.898	7.08	33.850	8.11	33.570	5.79	33.886	5.24	33.295	1.57	32.441	-0.42	32.599
30m	-0.46	32.590	-0.92	32.691	1.87	32.873	5.61	33.993	6.97	33.869	8.11	33.566	6.05	34.026	0.45	33.037	-0.72	32.688	-1.25	32.821
50m	-1.60	32.921	-1.58	32.892	-1.54	32.914	4.50	33.992	6.64	33.935	8.11	33.563	5.93	34.015	1.34	33.206	-1.46	32.930	-1.50	32.982
75m	-1.66	32.998	-1.62	32.976	-1.45	33.032	4.56	34.001					5.91	34.013	0.76	33.225	-1.43	33.009	-1.47	33.033
100m	-1.56	33.035	-1.65	33.007	1.70	33.412	4.57	34.002					1.54	33.344	-1.34	33.047	-1.38	33.076		
125m			-1.48	33.051	3.79	33.899							3.42	33.833	-1.22	33.077	-1.21	33.105		
150m			-1.12	33.120									3.55	33.995	-1.14	33.102	-0.99	33.140		
200m																			-0.67	33.186
250m																			-0.13	33.263
300m																			0.27	33.337
400m																			0.75	33.451
500m																			1.43	33.655
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-11

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	O33		O32		OA20		O31		OA21		OA22		OA23		OA24		O41		O42	
Latitude:N	44-20.0		44-10.0		44- 5.0		44- 2.0		44- 2.0		44-10.0		44-20.1		44-30.0		44-22.1		44-30.2	
Longitude:E	144-20.1		144-20.2		144-20.1		144-20.0		144-50.1		144-50.0		144-50.1		144-50.0		145-20.2		145-20.1	
Date	1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/05		1996/06/06		1996/06/06	
Time(JST)	14:09		15:21		16:01		16:23		18:24		19:12		20:32		21:52		00:21		01:23	
Weather	C		C		C		C		C		C		C		BC		BC		BC	
Air Temp.	8.1		8.4		8.3		7.5		7.4		6.6		6.0		5.9		5.7		6.1	
Bar	1010.5		1010.5		1011.5		1012.0		1013.0		1013.6		1015.0		1015.0		1015.5		1016.0	
Wind Dir	WNW		NW		NW		NNW		WNW		WNW		S		SW		SW		WSW	
Wind Spd/F	F 1		F 1		F 2		F 2		F 1		F 1		F 1		F 1		F 3		F 2	
Transparency	6		5		7		8		9											
Depth	266		116		37		34		80		589		1089		1573		220		1700	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.9	32.149	5.5	32.529	9.2	32.573	9.2	32.885	9.2	32.962	5.8	33.076	6.9	32.120	5.3	32.091	7.5	32.416	6.8	32.176
10m	5.19	32.428	4.90	32.594	8.79	32.832	8.91	32.851	4.56	33.086	4.98	33.283	3.86	32.264	3.94	32.260	7.99	32.815	4.21	32.347
20m	6.61	33.580	1.50	33.027	8.17	32.967	8.24	32.867	6.45	33.499	4.87	33.370	1.12	32.365	0.91	32.483	6.80	32.941	2.52	32.473
30m	3.31	33.262	2.15	33.167	7.43	33.416			3.46	33.217	4.59	33.478	0.25	32.474	-0.55	32.664	6.44	33.141	1.11	32.631
50m	0.96	33.127	6.58	33.869					0.38	33.012	4.07	33.635	-1.45	32.774	-1.27	32.894	4.79	33.289	-1.40	32.879
75m	-0.67	33.074	2.84	33.514					2.93	33.588	-1.47	32.937	-1.23	32.966	1.19	33.166	-1.46	32.994		
100m	0.46	33.173	3.64	33.647					3.33	33.667	-1.57	33.000	-1.60	32.997	0.43	33.146	-1.24	33.045		
125m	-0.06	33.234							3.53	33.752	-1.39	33.038	-1.48	33.021	0.39	33.152	-0.94	33.109		
150m	3.85	33.646							4.01	33.829	-1.18	33.092	-1.10	33.065	0.62	33.192	1.94	33.390		
200m	3.43	33.707							4.01	33.836	-0.65	33.197	-0.15	33.211	1.19	33.327	3.65	33.651		
250m	3.50	33.911							3.98	33.838	0.24	33.315	0.54	33.347			3.26	33.633		
300m									3.65	33.798	0.69	33.415	0.99	33.436			3.60	33.704		
400m									2.23	33.664	1.13	33.534	1.40	33.560			0.83	33.464		
500m									2.47	33.741	1.48	33.673	1.45	33.658			2.25	33.702		
600m													1.81	33.823						
700m																				
800m																				
900m																				
1000m																				

Table 6-12

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	O43		O44		O45		O46		O35		O36		O26		OA05		O14		J101	
Latitude:N	44-40.0		44-50.0		45- 0.0		45-10.0		44-50.0		45- 7.9		45-10.0		45-20.0		45-30.1		45-30.0	
Longitude:E	145-20.1		145-20.1		145-19.9		145-19.9		144-20.0		144-20.0		143-50.0		143-20.0		142-49.8		141-40.0	
Date	1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/06		1996/06/10	
Time(JST)	02:43		04:03		05:27		06:47		11:10		13:09		15:20		18:05		20:16		15:28	
Weather	BC		BC		C		C		BC		B		BC		BC		BC		C	
Air Temp.	6.1		6.0		6.6		6.5		7.9		11.4		9.5		9.2		8.3		14.0	
Bar	1016.5		1017.0		1017.8		1018.0		1018.7		1019.0		1019.0		1020.2				1017.5	
Wind Dir	WSW		SW		SW		SW		S		SSW		SW		W		WSW		NE	
Wind Spd/F	F 2		F 3		F 3		F 3		F 2		F		F 2		F 2		F 2		S 7	
Transparency					7		6		7		7		7		7					
Depth	2000		2000		2000		2000		153		800		344		143		119		54	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.2	32.141	6.0	32.289	5.5	32.441	5.0	32.281	6.3	32.119	5.9	32.120	7.5	32.203	6.9	32.134	6.2	32.208	13.1	32.377
10m	5.10	32.167	4.76	32.271	6.50	32.299	4.78	32.210	3.80	32.227	5.09	32.122	5.03	32.215	6.11	32.153	5.92	32.156	11.17	33.309
20m	0.14	32.418	0.93	32.473	3.12	32.507	1.24	32.317	0.10	32.368	3.09	32.272	2.15	32.324	2.12	32.295	2.13	32.268	10.30	33.727
30m	-1.12	32.782	-0.83	32.627	1.38	32.569	-1.07	32.657	-1.37	32.811	0.74	32.376	-0.57	32.588	0.05	32.404	1.19	32.502	9.25	33.891
50m	-0.82	32.915	-1.19	32.863	0.49	32.863	-1.62	32.967	-1.54	32.921	-0.92	32.682	-1.50	32.952	-1.32	32.864	-0.64	32.822		
75m	-1.14	33.043	-1.48	32.957	0.90	33.117	-1.65	32.999	-1.60	32.996	-1.48	32.945	-1.52	32.986	-1.61	32.970	-1.39	33.001		
100m	-1.26	33.060	-1.45	32.997	1.42	33.299	-1.59	33.020	-1.53	33.032	-1.55	33.011	-1.56	33.017	-1.68	33.034	1.56	33.504		
125m	-0.91	33.104	-0.97	33.059	1.44	33.387	-1.42	33.050	-1.25	33.100	-1.49	33.054	-1.53	33.031	-1.68	33.037				
150m	-0.62	33.161	-1.14	33.095	1.45	33.436	-1.18	33.099			-1.41	33.086	-1.51	33.066						
200m	0.04	33.277	-0.65	33.200	2.03	33.545	-0.45	33.207			-0.79	33.171	0.10	33.294						
250m	1.90	33.485	0.53	33.351	2.03	33.596	0.10	33.311			0.07	33.298	0.75	33.444						
300m	1.92	33.546	0.92	33.443	2.07	33.641	0.59	33.402			0.54	33.395	1.04	33.524						
400m	1.16	33.558	1.18	33.566	2.01	33.694	1.06	33.528			1.05	33.514								
500m	2.08	33.752	1.59	33.719	1.61	33.731	1.46	33.666			1.73	33.673								
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-13

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	J102		J103		J104		J105		J106		J107		J108		JW03		JW02		JW01	
Latitude:N	45-30.0		45-30.0		45-29.9		45-30.0		45-30.0		45-30.0		45-30.0		45-45.0		45-45.0		45-45.0	
Longitude:E	141-25.0		141-10.0		140-52.9		140-39.8		140-19.9		140- 0.0		139-40.0		141- 0.0		141-10.0		141-19.9	
Date	1996/06/10		1996/06/10		1996/06/10		1996/06/10		1996/06/10		1996/06/11		1996/06/11		1996/06/11		1996/06/11		1996/06/11	
Time(JST)	17:02		18:34		20:19		22:17		23:46		02:05		03:30		11:01		13:44		14:38	
Weather	C		C		C		C		R		C		C		C		C		C	
Air Temp.	12.7		11.9		11.3		10.8		10.6		10.0		9.8		10.3		9.7		9.4	
Bar	1017.2		1017.2		1017.0		1016.5		1016.0		1015.0		1015.8		1015.5		1015.5		1015.5	
Wind Dir	NE		ENE		ENE		NE		NE		NE		NE		E		E		E	
Wind Spd/F	S 7		S 7		S 7		S 8		S 7		S 7		S 7		S 10		S 12		S 11	
Transparency																				
Depth	113		128		438		536		398		595		800		490		120		126	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	11.1	33.958	11.2	34.006	11.2	33.977	10.3	34.055	99.9	34.058	9.7	34.049	9.6	34.049	10.7	33.975	10.3	34.024	9.7	33.990
10m	9.78	33.962	9.53	34.001	11.06	33.974	10.33	34.059	9.29	34.070	9.52	34.051	9.19	34.064	10.59	33.973	10.07	33.994	9.60	33.984
20m	9.38	33.983	9.34	33.993	9.94	33.992	9.10	34.072	8.22	34.065	8.47	34.044	8.65	34.067	9.43	34.011	10.07	33.994	9.57	33.990
30m	8.70	33.993	9.13	33.989	8.67	34.032	8.33	34.081	5.85	34.113	6.85	34.084	7.41	34.082	7.77	34.090	9.69	34.010	7.86	34.051
50m	6.63	34.086	7.80	33.996	7.21	34.104	6.35	34.120	4.30	34.117	4.35	34.118	3.51	34.078	6.68	34.100	7.05	34.114	6.67	34.103
75m	6.05	34.097	5.68	34.067	6.59	34.127	5.33	34.128	3.47	34.105	3.48	34.109	2.89	34.071	5.87	34.102	6.53	34.117	6.06	34.099
100m	3.93	34.113	4.88	34.096	5.97	34.119	4.68	34.116	2.83	34.090	2.70	34.096	2.06	34.054	5.16	34.102	5.70	34.111	5.15	34.093
125m					5.56	34.119	3.95	34.113	2.13	34.086	2.24	34.089	1.93	34.065	4.90	34.102				
150m					5.12	34.115	3.37	34.099	1.84	34.079	1.84	34.081	1.87	34.074	4.71	34.106				
200m					3.75	34.114	2.37	34.085	1.44	34.078	1.39	34.073	1.71	34.079	3.68	34.107				
250m					2.43	34.090	1.73	34.086	1.18	34.078	1.06	34.071	1.48	34.078	2.61	34.092				
300m					1.70	34.081	1.25	34.074	0.92	34.072	0.90	34.071	1.18	34.075	1.89	34.082				
400m					1.16	34.073	0.71	34.070			0.60	34.069	0.77	34.070	1.07	34.073				
500m							0.47	34.068			0.45	34.068	0.60	34.069						
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-14

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199606		199606		199606		199606		199606		199606		199606		199606		199606		199606	
Station No	S100		S103		S102		S101		S300		S301		S399		S302		S404		S403	
Latitude:N	45-41.4		45-39.8		45-34.9		45-31.0		45-26.9		45-30.0		45-32.4		45-35.0		45-29.9		45-20.0	
Longitude:E	142- 0.0		142- 0.1		142- 0.1		142- 0.0		142- 8.0		142-10.1		142-12.5		142-15.0		142-50.1		142-40.2	
Date	1996/06/12		1996/06/12		1996/06/12		1996/06/12		1996/06/12		1996/06/12		1996/06/13		1996/06/13		1996/06/13		1996/06/13	
Time(JST)	19:57		20:14		21:08		22:23		23:08		23:55		00:18		01:09		04:07		05:30	
Weather	C		R		D		F						F		F		F		F	
Air Temp.	8.4		8.6		8.8		8.8		8.3		8.1		7.9		7.7		7.6		7.0	
Bar	1016.0		1015.0		1015.0		1015.0		1015.0		1015.0		1015.0		1014.5		1015.0		1015.4	
Wind Dir	E		ENE		ENE		ENE		E		ENE		NE		NE		W		WNW	
Wind Spd/F	S 7		S 6		S 6		S 7		S 5		S 5		S 3		S 3		S 1		S 2	
Transparency																				
Depth	62		57		43		25		22		37		44		49		118		97	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	9.6	33.986	10.4*	33.59*	10.3*	33.563	10.1*	33.552	9.6	33.626	9.0	33.863	9.3	33.999	7.3	34.019	7.5	32.053	4.9	33.786
10m	9.59	34.005	9.24	34.039	10.39	33.566	10.11	33.545	9.29	33.692	7.78	33.959	7.95	34.046	6.36	34.059	7.57	32.048	4.69	33.901
20m	6.99	34.052	6.01	34.091	7.11	34.038	9.65	33.654	8.98	33.753	7.52	33.969	7.26	34.036	6.25	34.063	2.73	32.152	4.80	34.046
30m	5.81	34.085	5.97	34.072	6.92	34.042							7.23	34.030	6.24	34.063	0.64	32.315	4.58	34.029
50m	5.69	34.080															-1.25	32.701	4.36	34.031
75m																	2.72	33.406	4.12	34.024
100m																	3.42	33.593		
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-15

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199606		199606		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	S402		S401		S4		S3		S2		S1		O15		OA10		O14		O13	
Latitude:N	45-12.4		45- 9.5		45-39.9		45-36.9		45-34.0		45-30.9		45-29.9		45-30.0		45-30.1		45-19.9	
Longitude:E	142-32.6		142-30.2		142- 0.1		142- 0.2		142- 0.1		142- 0.0		142-10.3		142-30.2		142-50.1		142-40.3	
Date	1996/06/13		1996/06/13		1996/07/29		1996/07/29		1996/07/29		1996/07/29		1996/07/29		1996/07/29		1996/07/29		1996/07/29	
Time(JST)	06:57		07:21		11:07		11:31		11:54		12:16		12:53		13:58		15:12		16:33	
Weather	F		F		C		C		C		C		C		C		C		BC	
Air Temp.	7.6		8.1		20.1		20.4		20.6		21.0		21.2		21.6		19.7		19.4	
Bar	1015.6		1015.7		1005.0		1005.0		1005.0		1014.0		1004.0		1004.0		1013.5		1003.0	
Wind Dir	WSW		CALM		SSW		SSW		SW		SW		SW		SW		SW		WSW	
Wind Spd/F	S 1		S 0		F 4		F 4		F 5		F 6		F 5		F 4		F 4		F 4	
Transparency					17		18		15		12		13		9		16		13	
Depth	61		46		55		48		40		24		36		82		1118		96	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	7.6	33.957	9.5	33.626	17.7	33.679	18.4	33.598	17.0	33.668	18.8	33.408	15.9	33.708	16.1	33.782	15.7	31.807	12.3	33.836
10m	7.52	33.973	9.27	33.768	17.71	33.750	15.57	33.828	16.84	33.665	18.68	33.386	14.99	33.786	9.65	33.676	13.12	31.766	10.32	33.966
20m	7.46	33.981	8.68	33.847	13.51	34.055	13.62	33.939	16.76	33.670			14.11	33.863	7.39	34.035	9.21	31.961	8.39	34.085
30m	7.43	33.989	8.70	33.882	9.92	34.084	13.01	33.964	16.71	33.673					7.14	34.026	4.64	32.190	8.32	34.081
50m	7.42	33.990													7.11	34.015	-0.81	32.813	8.27	34.065
75m																	-1.41	33.007	8.27	34.063
100m																	-1.30	33.027		
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-16

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	O12		O11		OA02		OA03		OA04		OA05		O26		O25		O24		O23	
Latitude:N	45-12.5		45- 9.1		44-52.4		45- 0.0		45-10.0		45-20.0		45- 9.9		44-59.9		44-50.0		44-40.0	
Longitude:E	142-32.4		142-29.0		142-52.6		142-59.8		143-10.0		143-19.9		143-50.0		143-40.0		143-29.9		143-20.0	
Date	1996/07/29		1996/07/29		1996/07/29		1996/07/29		1996/07/29		1996/07/29		1996/07/30		1996/07/30		1996/07/30		1996/07/30	
Time(JST)	17:26		17:52		19:41		20:40		21:54		23:05		01:26		03:57		06:04		08:18	
Weather	BC		C		BC		C		C		R		R		C		R		C	
Air Temp.	20.3		20.3		20.6		19.9		19.6		19.2		18.5		18.4		19.6		19.8	
Bar	1003.0		1003.0		1004.0		1004.0		1003.6		1003.0		1002.0		1001.0		1000.5		1002.0	
Wind Dir	SW		SW		SSW		SSW		SSW		SW		SW		SSW		SW		WSW	
Wind Spd/F	F		F 5		F 3		F 3		F 3		F 2		F 3		F 3		F 3		F 3	
Transparency	15		10														8		13	
Depth	60		43		82		130		133		144		348		172		148		113	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	18.0	33.693	15.9	33.702	14.5	33.916	15.0	32.110	15.8	31.912	15.8	32.028	15.8	31.850	15.2	32.113	16.0	32.071	15.9	32.878
10m	17.86	33.703	15.46	33.756	12.54	33.988	13.52	32.152	9.62	32.341	9.68	32.366	11.01	32.045	9.56	32.297	9.94	32.345	13.78	33.483
20m	15.24	33.802	15.43	33.757	12.36	33.981	2.16	32.354	1.73	32.486	3.23	32.509	4.87	32.295	0.62	32.811	2.28	32.739	10.56	34.031
30m	14.97	33.800	15.41	33.756	11.90	34.001	4.71	33.225	-0.63	32.682	0.03	32.671	0.73	32.576	-0.29	32.826	-0.38	32.900	9.73	34.027
50m	14.71	33.800			10.99	34.026	6.32	34.011	-1.49	32.932	-1.32	32.909	-1.03	32.942	-0.89	32.970	-1.03	32.994	8.92	34.072
75m					10.73	34.027	6.36	34.076	-1.50	33.029	-1.62	32.994	-1.03	32.984	-0.81	33.020	-1.03	33.078	6.52	33.981
100m							6.34	34.076	2.26	33.420	-1.58	33.042	-1.05	33.011	-0.20	33.090	5.60	33.937	6.04	34.008
125m									5.70	34.017	-1.20	33.094	-0.84	33.057	-1.05	33.090	5.93	34.026		
150m													-0.80	33.081	-0.75	33.158				
200m													-0.13	33.230						
250m													0.18	33.294						
300m													0.23	33.304						
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-17

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	0022		OA11		OA12		OA13		OA14		O35		O36		O46		O45		O44	
Latitude:N	44-34.9		44-17.4		44-22.5		44-30.0		44-40.0		44-50.0		45- 8.0		45-10.0		44-59.9		44-49.9	
Longitude:E	143-15.1		143-37.6		143-42.7		143-50.1		144- 0.1		144-20.0		144-20.0		145-20.0		145-20.0		145-20.1	
Date	1996/07/30		1996/07/30		1996/07/30		1996/07/30		1996/07/30		1996/07/30		1996/07/30		1996/07/30		1996/07/31		1996/07/31	
Time(JST)	09:52		12:52		13:32		14:29		15:42		17:28		19:09		23:24		00:45		02:01	
Weather	C		R		R		R		R		R		R		R		R		R	
Air Temp.	19.9		17.8		16.9		16.1		15.8		14.9		14.1		13.1		12.8		13.0	
Bar	1002.5		1003.5		1003.5		1003.0		1004.0		1005.5		1006.0		1008.3		1007.0		1008.5	
Wind Dir	NW		NNE		ENE		E		E		NE		E		NE		ENE		NE	
Wind Spd/F	F 2		F 4		F 3		F 3		F 1		F 2		F 3		F 3		F 5		F 5	
Transparency	15		10		10		10		7											
Depth	72		44		90		163		188		153		800		1000		2573		2234	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	16.3	33.788	17.4	33.538	13.1	32.394	14.9	32.022	15.1	31.888	14.9	32.019	14.7	31.841	13.8	31.928	12.9	32.034	13.8	31.996
10m	15.38	33.842	15.61	33.823	14.35	33.895	5.05	32.432	7.33	32.526	8.64	32.303	13.26	32.009	13.93	32.101	12.67	32.125	13.86	32.048
20m	14.69	33.856	14.92	33.895	12.80	33.946	1.81	32.691	0.16	32.871	0.62	32.705	4.24	32.572	3.42	32.506	5.65	32.505	4.77	32.479
30m	14.38	33.859	14.56	33.896	11.93	33.980	5.51	33.453	-0.57	32.967	-0.49	32.808	0.97	32.751	0.33	32.695	1.23	32.676	1.05	32.679
50m	13.41	33.919			10.99	34.008	1.83	33.280	-0.75	33.039	-1.18	32.959	-0.73	32.889	-0.88	32.891	-0.46	32.886	-0.64	32.931
75m					10.68	34.026	5.28	33.856	-0.47	33.126	-1.20	33.017	-1.20	33.006	-0.68	33.009	-1.11	32.983	-0.75	33.012
100m							6.26	34.060	0.03	33.176	-0.57	33.108	-1.04	33.051	-0.56	33.058	-0.82	33.058	-0.97	33.057
125m							5.37	33.954	0.14	33.207	-0.03	33.208	-0.81	33.091	-0.22	33.107	-0.73	33.112	-0.75	33.103
150m							5.24	33.932	0.69	33.288			-0.55	33.143	-0.37	33.134	-0.13	33.193	-0.15	33.186
200m													-0.13	33.241	-0.08	33.221	0.39	33.305	0.35	33.308
250m													0.46	33.344	0.44	33.335	0.78	33.399	0.74	33.384
300m													0.74	33.422	0.72	33.413	0.94	33.460	0.98	33.454
400m													1.23	33.565	1.21	33.555	1.27	33.590	1.28	33.578
500m													1.52	33.676	1.57	33.710	1.65	33.738	1.59	33.705
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-18

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	O43		O42		O41		OA24		OA23		OA22		OA21		O31		OA20		O32	
Latitude:N	44-39.9		44-30.0		44-22.0		44-30.0		44-20.0		44-10.0		44- 2.0		44- 2.0		44- 5.1		44-10.0	
Longitude:E	145-20.0		145-20.2		145-20.0		144-49.9		144-50.0		144-50.0		144-50.0		144-20.0		144-20.0		144-20.0	
Date	1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/07/31		1996/07/31	
Time(JST)	03:16		04:32		05:42		07:48		09:08		10:25		11:31		13:33		13:54		14:25	
Weather	R		C		R		C		C		C		C		C		C		C	
Air Temp.	13.2		13.0		13.6		13.9		14.4		15.0		15.6		15.3		15.1		15.3	
Bar	1008.0		1008.5		1009.0		1010.0		1010.2		1010.4		1011.0		1011.5		1012.0		1012.0	
Wind Dir	NE		ENE		ENE		ENE		NE		N		NNW		NNW		NW		WNW	
Wind Spd/F	F 5		F 4		F 3		F 4		F 3		F 3		F 2		F 3		F 2		F 2	
Transparency					11		12		16		12		12		7		7		11	
Depth	2174		1700		139		1540		1082		593		76		33		37		112	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	14.5	31.930	13.8	33.076	13.9	33.874	15.0	31.963	15.0	31.910	16.5	33.672	16.3	33.660	16.1	33.130	16.1	33.257	14.0	32.490
10m	10.46	32.928	13.73	33.350	13.16	33.942	14.06	31.997	14.21	32.128	12.99	33.761	15.81	33.710	15.33	33.273	15.20	33.475	14.98	33.610
20m	3.23	32.867	-0.20	33.024	12.73	33.950	2.46	32.568	5.36	32.408	12.04	33.964	14.90	33.863	14.32	33.649	13.51	33.779	13.91	33.899
30m	0.49	32.890	0.01	33.085	12.28	33.966	0.26	32.763	0.92	32.565	11.85	33.980	13.99	33.914					13.70	33.896
50m	1.36	33.126	2.59	33.381	10.69	33.992	-0.84	32.894	-0.89	32.862	11.06	34.012	13.55	33.926					12.69	33.936
75m	0.88	33.162	0.87	33.252	9.45	33.945	-0.75	33.008	-1.19	32.988	5.22	33.276							9.70	34.019
100m	-0.75	33.093	1.58	33.320	8.11	33.997	-0.68	33.066	-0.91	33.049	-1.22	33.028							8.46	33.974
125m	-0.18	33.153	2.61	33.447	7.53	33.923	-0.30	33.118	-0.30	33.123	-0.63	33.103								
150m	-0.57	33.159	2.78	33.472			-0.40	33.161	-0.14	33.165	1.06	33.295								
200m	1.58	33.372	1.01	33.344			0.17	33.285	0.17	33.259	0.87	33.334								
250m	0.54	33.349	1.46	33.416			0.52	33.368	0.52	33.351	2.74	33.542								
300m	0.76	33.420	1.76	33.506			0.78	33.442	0.73	33.418	0.79	33.394								
400m	1.30	33.563	1.59	33.562			1.27	33.574	1.21	33.566	1.77	33.569								
500m	1.55	33.685	2.23	33.736			1.63	33.737	1.54	33.697	1.50	33.617								
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-19

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	O33		O34		J101		J102		J103		J104		J105		J106		J107		J108	
Latitude:N	44-20.1		44-30.1		45-30.1		45-30.0		45-30.0		45-30.0		45-29.9		45-30.0		45-30.1		45-30.0	
Longitude:E	144-20.1		144-19.9		141-40.0		141-24.9		141- 9.9		140-55.0		140-42.1		140-22.0		140- 2.0		139-42.0	
Date	1996/07/31		1996/07/31		1996/08/19		1996/08/19		1996/08/19		1996/08/19		1996/08/19		1996/08/19		1996/08/19		1996/08/20	
Time(JST)	15:25		16:29		11:41		13:20		14:56		16:43		18:21		20:03		22:41		00:22	
Weather	C		C		C		BC		BC		BC		BC		BC		BC		C	
Air Temp.	15.4		15.0		19.6		19.1		18.9		18.9		19.2		19.5		19.7		19.4	
Bar	1012.0		1012.0		1016.5		1016.2		1015.8		1016.0		1014.5		1015.0		1015.0		1016.2	
Wind Dir	N		NNE		WSW		SSW		S		S		S		SSW		SSW		SW	
Wind Spd/F	F 1		F 1		S 3		S 5		S 8		S 5		S 9		S 8		S 9		S 5	
Transparency	9		11																	
Depth	267		750		54		112		127		123		580		373		572		800	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	14.3	32.285	13.9	32.035	19.0	33.185	19.4	33.625	19.1	33.758	19.3	33.870	19.2	33.736	19.9	33.775	19.7	33.799	18.9	33.756
10m	7.85	32.451	5.85	32.488	17.62	33.800	19.08	33.629	18.85	33.749	19.13	33.869	19.41	33.734	19.75	33.776	19.52	33.798	18.71	33.759
20m	0.55	32.739	0.57	32.750	17.10	33.859	18.55	33.755	18.43	33.777	19.13	33.871	15.85	34.171	15.31	33.955	15.21	33.977	11.98	34.059
30m	-0.82	32.929	-0.03	32.892	15.45	34.069	16.03	33.984	16.69	33.913	16.91	34.114	12.39	34.348	10.08	34.196	8.82	34.221	7.86	34.120
50m	-1.12	33.012	-0.10	32.962			8.87	34.136	9.75	34.111	10.41	34.254	8.33	34.181	7.12	34.167	6.72	34.195	5.22	34.110
75m	-1.04	33.065	-0.23	33.012			7.56	34.177	8.27	34.168	8.55	34.174	7.21	34.152	5.87	34.154	5.02	34.129	3.56	34.098
100m	-0.63	33.138	-1.02	33.041			6.24	34.110	7.05	34.138	7.40	34.176	6.01	34.142	5.13	34.133	4.02	34.106	2.93	34.094
125m	-0.24	33.191	-0.47	33.095									5.62	34.127	4.36	34.114	3.31	34.092	2.41	34.085
150m	0.12	33.250	-0.16	33.165									5.29	34.129	3.77	34.106	2.74	34.086	1.96	34.077
200m	0.67	33.346	0.25	33.253									4.30	34.111	2.65	34.088	1.93	34.072	1.57	34.075
250m	1.32	33.493	2.27	33.499									2.99	34.094	1.77	34.077	1.31	34.069	1.23	34.072
300m			2.34	33.563									2.04	34.078	1.32	34.073	1.11	34.070	0.98	34.072
400m			1.11	33.530									1.00	34.068			0.70	34.066	0.65	34.068
500m			1.48	33.651									0.58	34.066			0.50	34.065	0.45	34.066
600m																			0.37	34.066
700m																				
800m																				
900m																				
1000m																				

Table 6-20

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199608		199608		199608		199608	
Station No	JW03		JW02		JW01		S100		S103		S102		S101		S300		S301		S399	
Latitude:N	45-45.1		45-45.0		45-45.0		45-41.3		45-40.0		45-34.9		45-31.0		45-26.9		45-29.9		45-32.5	
Longitude:E	141- 0.1		141-10.0		141-20.0		142- 0.1		142- 0.0		142- 0.1		142- 0.0		142- 8.1		142-10.1		142-12.6	
Date	1996/08/20		1996/08/20		1996/08/20		1996/08/20		1996/08/21		1996/08/21		1996/08/21		1996/08/21		1996/08/21		1996/08/21	
Time(JST)	06:34		08:16		09:00		18:49		13:25		14:17		15:01		15:38		16:28		16:53	
Weather	C		BC		C		C		C		C		BC		BC		C		C	
Air Temp.	19.9		20.1		20.4		20.2		23.6		22.6		22.3		22.9		22.1		21.3	
Bar	1017.5		1017.5		1018.0		1018.0		1013.6		1013.1						1012.5		1012.5	
Wind Dir	SSW		SW		SSW		SE		E		NNE		N		SE		ESE		ESE	
Wind Spd/F	S 7		S 7		S 5		S 3		S 2		S 1		S 1		S 1		S 2		S 3	
Transparency																				
Depth	500		121		125		55		55		41		26		18		36		43	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	19.5	33.818	19.3	33.838	19.3	33.716	18.9	33.819	19.7	33.758	19.4	33.728	19.5	33.679	19.7	33.710	19.9	33.704	19.4	33.764
10m	19.34	33.818	19.07	33.836	18.96	33.717	17.99	33.800	17.10	33.914	17.85	33.766	18.92	33.688	18.05	33.798	18.10	33.750	15.58	34.023
20m	19.10	33.941	17.81	33.858	18.34	33.906	11.27	34.346	9.50	34.243	12.93	34.087					15.08	34.004	11.75	34.209
30m	14.30	34.223	17.13	33.880	15.25	34.195	8.23	34.254	8.43	34.213	12.66	34.078					14.90	34.020	11.39	34.187
50m	9.30	34.204	10.07	34.182	9.49	34.183														
75m	8.37	34.257	8.86	34.165	8.34	34.163														
100m	6.67	34.157	7.88	34.179	6.85	34.139														
125m	5.20	34.126																		
150m	4.63	34.115																		
200m	3.40	34.092																		
250m	2.25	34.080																		
300m	1.53	34.073																		
400m	0.97	34.069																		
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-21

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199608		199608		199608		199608		199608		199608		199610		199610		199610		199610	
Station No	S302		S404		S403		S402		S401		SA01		S4		S3		S2		S1	
Latitude:N	45-35.0		45-30.0		45-20.0		45-12.6		45- 9.9		45-25.4		45-39.9		45-36.7		45-34.0		45-31.0	
Longitude:E	142-15.1		142-50.0		142-39.9		142-32.5		142-29.9		142-30.4		142- 0.0		142- 0.1		142- 0.2		142- 0.0	
Date	1996/08/21		1996/08/21		1996/08/21		1996/08/21		1996/08/22		1996/08/22		1996/09/30		1996/09/30		1996/09/30		1996/09/30	
Time(JST)	17:50		20:29		22:11		23:44		00:08		02:10		11:00		11:27		11:49		12:15	
Weather	C		C		R		C		R		C		BC		BC		BC		BC	
Air Temp.	20.2		18.4		18.4		19.1		19.0		17.8		21.0		20.0		19.5		19.5	
Bar	1012.5		1013.0		1012.5		1011.5		1011.5		1010.2		1014.5		1014.5		1014.0		1014.0	
Wind Dir	SE		SSE		SW		S		S		SSE		SW		WSW		SW			
Wind Spd/F	S 3		S 2		S 3		S 4		S 1		S 5		F 4		F 4		F 4		F	
Transparency													20		22		19		9	
Depth	48		119		97		61		47		76		54		44		45		26	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	19.8	33.742	17.1	31.629	17.2	31.633	19.4	33.737	18.8	33.671	10.5	33.391	17.6	33.947	17.7	33.395	18.2	33.846	18.5	33.685
10m	9.73	34.281	15.08	31.662	8.95	32.389	17.46	33.832	18.29	33.762	8.36	33.785	17.41	33.934	17.63	33.929	18.63	33.857	18.03	33.688
20m	9.31	34.263	3.75	32.456	7.22	33.273	15.23	33.968	18.21	33.762	7.82	34.152	9.75	34.291	11.92	34.323	18.29	33.911	17.80	33.731
30m	9.30	34.248	0.82	32.708	5.24	33.795	14.62	33.996	17.98	33.795	7.33	34.125	9.02	34.247	10.78	34.222	17.27	33.981		
50m			-1.07	32.914	5.00	34.051	12.55	34.106			7.12	34.118	8.99	34.234						
75m			-1.43	33.016	5.08	34.059														
100m			1.02	33.278																
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-22

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	OA10		O13		O12		O11		OA02		OA03		OA04		O25		O24		O23	
Latitude:N	45-30.0		45-20.0		45-12.4		45- 8.0		44-52.3		45- 0.1		45-10.0		45- 0.0		44-50.0		44-39.9	
Longitude:E	142-30.1		142-39.9		142-32.7		142-27.9		142-52.7		142-59.9		143- 9.9		143-40.0		143-30.1		143-20.0	
Date	1996/09/30		1996/09/30		1996/09/30		1996/09/30		1996/09/30		1996/09/30		1996/09/30		1996/09/30		1996/10/01		1996/10/01	
Time(JST)	14:08		15:21		16:16		16:51		18:46		19:44		20:56		23:10		00:27		01:45	
Weather	BC		BC		BC		BC		BC		BC		BC		BC		BC		BC	
Air Temp.	21.9		19.1		17.8		17.7		16.6		15.1		14.0		13.1		12.7		12.4	
Bar	1013.5		1013.5		1013.5		1014.0		1014.0		1014.0		1014.0		1014.0		1014.0		1014.0	
Wind Dir	SE		CALM		WSW		WSW		S		SSW		SSW		CALM		NW		N	
Wind Spd/F	F 3		F 0		F 1		F 2		F 1		F 1		F 1		F 0		F 2		F 1	
Transparency	16		12		13		8													
Depth	83		97		62		32		83		130		132		170		149		112	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	13.4	31.952	13.9	32.075	15.6	33.228	18.0	33.814	17.1	33.867	12.4	32.248	13.9	31.821	12.6	32.303	11.8	32.368	12.6	32.853
10m	12.97	31.943	11.55	32.338	13.58	33.403	18.09	33.809	16.59	33.838	11.95	32.239	13.20	31.887	10.41	32.457	10.41	32.420	11.91	33.489
20m	6.75	33.284	1.11	32.922	12.80	33.787	17.50	33.875	15.27	33.863	2.84	32.749	0.84	32.867	3.46	32.840	2.67	32.805	5.88	33.388
30m	2.15	33.423	0.20	32.938	11.32	33.939			10.13	34.065	-0.08	32.912	-0.25	32.924	0.17	32.920	0.11	32.941	6.26	33.828
50m	3.09	33.760	3.98	33.698	10.54	34.108			8.99	34.153	-0.95	33.037	-0.72	32.995	-0.42	33.018	-0.64	33.028	6.37	33.992
75m			4.49	34.053					8.32	34.118	3.24	33.549	-0.60	33.061	-0.48	33.083	-0.18	33.106	6.13	33.990
100m											4.51	33.902	0.00	33.154	0.25	33.168	2.98	33.506	5.97	33.993
125m															1.07	33.285	3.69	33.896		
150m															2.65	33.575				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-23

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	O22		OA11		OA12		OA13		OA14		O35		O34		O33		O32		OA20	
Latitude:N	44-34.9		44-17.5		44-22.5		44-30.0		44-40.0		44-50.0		44-29.9		44-20.0		44-10.0		44- 5.0	
Longitude:E	143-15.0		143-37.4		143-42.6		143-50.0		144- 0.0		144-20.1		144-20.0		144-20.2		144-20.2		144-20.1	
Date	1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01	
Time(JST)	02:32		04:34		05:13		06:07		07:20		09:00		10:45		12:02		13:05		13:39	
Weather	BC		BC		BC		BC		C		BC		BC		BC		C		C	
Air Temp.	12.9		14.3		14.3		13.3		14.0		16.0		15.6		16.3		17.5		17.6	
Bar	1014.0		1013.5		1014.0		1014.0		1014.5		1015.0		1014.8		1014.5		1014.5		1015.5	
Wind Dir	WNW		W		WSW		W		WNW		W		NNW		NNW		N		NNW	
Wind Spd/F	F 1		F 2		F 2		F 1		F 2		F 1		F 2		F 3		F 3		F 3	
Transparency							9		8		14		14		15		10		7	
Depth	73		43		87		161		186		153		840		266		115		37	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	17.6	33.817	17.5	33.740	17.0	33.897	12.2	32.585	12.6	32.440	13.8	32.322	13.7	32.425	13.7	32.461	18.3	33.865	17.4	33.722
10m	17.59	33.812	17.47	33.823	15.83	33.764	11.82	32.599	12.23	32.538	13.18	32.317	12.36	32.497	12.88	32.429	16.97	33.914	17.12	33.729
20m	16.32	33.796	17.18	33.888	14.16	33.838	2.59	33.055	6.74	32.808	4.95	33.023	6.48	32.797	9.17	32.685	12.48	33.572	16.84	33.766
30m	16.27	33.781	16.63	33.868	11.33	33.720	-0.35	33.073	3.89	32.943	1.02	33.047	2.62	32.906	4.58	32.877	11.29	33.921	16.75	33.795
50m	11.89	33.936			8.63	33.983	-0.02	33.138	1.66	33.157	0.10	33.063	0.48	33.101	0.00	33.041	9.39	34.074		
75m					6.87	33.949	0.49	33.201	2.25	33.398	-0.60	33.088	-0.30	33.091	-0.10	33.116	6.97	33.910		
100m							1.93	33.389	2.87	33.552	-0.24	33.152	0.84	33.214	0.30	33.203	6.87	33.893		
125m							2.46	33.491	3.41	33.670	0.31	33.225	1.36	33.302	0.59	33.266				
150m							3.80	33.891	4.13	33.823			2.07	33.406	0.64	33.284				
200m													1.21	33.372	0.79	33.318				
250m													1.02	33.395	2.60	33.641				
300m													1.56	33.510						
400m													1.36	33.557						
500m													1.59	33.667						
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-24

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	O31		OA21		OA22		OA23		OA24		O41		O42		O43		O44		O45	
Latitude:N	44- 2.0		44- 2.0		44-10.0		44-20.0		44-29.7		44-22.0		44-30.0		44-40.0		44-50.3		45- 0.0	
Longitude:E	144-20.1		144-50.1		144-50.1		144-50.1		144-50.1		145-19.9		145-20.0		145-19.9		145-20.0		145-20.1	
Date	1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/01		1996/10/02		1996/10/02		1996/10/02	
Time(JST)	14:02		15:58		16:47		18:01		19:40		21:57		22:47		00:05		01:43		03:17	
Weather	BC		C		C		C		C		C		C		C		C		C	
Air Temp.	17.9		15.9		15.2		14.0		13.4		13.9		12.9		12.0		11.4		11.5	
Bar	1014.5		1015.0		1015.5		1016.0		1016.5		1017.6		1017.4		1017.5		1019.0		1019.0	
Wind Dir	NNW		N		N		N		N		NNW		N		NNE		NNE		NNE	
Wind Spd/F	F 3		F 2		F 1		F 2		F 3		F 5		F 5		F 5		F 5		F 5	
Transparency	7		8		9															
Depth	35		78		586		1051		1550		137		1600		2173		2173		2541	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	17.0	33.694	17.1	33.786	12.5	32.488	12.9	32.412	12.5	32.475	16.5	33.796	12.4	32.635	13.5	33.107	12.2	32.813	12.8	32.508
10m	16.88	33.679	16.64	33.812	12.33	32.744	12.14	32.431	12.59	32.458	16.66	33.790	12.30	32.628	13.79	33.130	12.25	32.762	12.78	32.447
20m	16.63	33.786	16.59	33.815	10.49	33.140	4.91	32.944	7.63	33.246	15.56	33.827	9.49	32.867	7.63	33.296	1.99	33.096	8.25	32.864
30m	16.19	33.837	16.55	33.829	4.99	32.970	0.52	33.014	3.11	33.191	14.90	33.848	7.61	33.200	2.79	33.272	1.44	33.153	2.02	33.151
50m			15.19	33.880	-0.09	33.046	0.17	33.106	0.03	33.092	11.46	33.862	1.01	33.145	1.70	33.267	0.57	33.146	0.01	33.086
75m					0.32	33.116	-0.48	33.111	1.82	33.288	9.74	33.874	-0.10	33.108	1.16	33.269	1.14	33.240	0.29	33.156
100m					0.03	33.154	0.00	33.171	2.05	33.358	7.55	33.862	0.21	33.189	1.27	33.302	1.46	33.302	1.22	33.282
125m					-0.04	33.178	0.21	33.207	1.93	33.401	6.00	33.734	2.12	33.391	1.73	33.379	1.45	33.340	1.47	33.356
150m					0.05	33.223	0.55	33.295	1.27	33.388			0.93	33.321	1.57	33.402	1.32	33.361	1.03	33.345
200m					1.02	33.327	0.97	33.361	0.85	33.378			2.16	33.481	1.04	33.399	1.45	33.430	2.62	33.555
250m					1.07	33.376	1.31	33.449	1.80	33.519			4.14	33.769	1.99	33.543	1.11	33.451	2.15	33.563
300m					2.70	33.598	1.88	33.544	1.39	33.519			3.95	33.776	1.62	33.543	1.15	33.496	1.78	33.564
400m					1.31	33.545	1.54	33.599	1.44	33.600			3.66	33.824	2.04	33.667	1.45	33.604	1.91	33.659
500m					2.01	33.723	1.63	33.702	1.67	33.732			2.60	33.785	1.66	33.724	1.67	33.733	1.67	33.741
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-25

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	O46		O36		O26		OA05		O14		JW01		JW02		JW03		J14		J15	
Latitude:N	45-10.0		45- 8.0		45-10.0		45-20.0		45-29.9		45-45.0		45-45.0		45-45.0		45-30.0		45-30.0	
Longitude:E	145-20.0		144-20.0		143-50.1		143-20.0		142-49.9		141-20.0		141- 9.9		141- 0.0		140-52.9		140-39.9	
Date	1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/02		1996/10/03		1996/10/03	
Time(JST)	05:04		09:05		11:18		13:36		15:48		21:23		22:18		23:03		00:47		01:59	
Weather	BC		BC		B		BC		B		B		B		B		B		B	
Air Temp.	10.7		13.7		13.4		11.7		11.3		10.8		11.2		11.8		12.0		12.7	
Bar	1020.0		1021.8		1021.5		1020.5		1019.5		1018.5		1018.0		1017.8		1017.5			
Wind Dir	NNE		N		NNE		E		ESE		S		WSW		WSW		SW		SW	
Wind Spd/F	F 5		F 3		F 2		F 1		F 1		F 2		F 2		F 2		F 2		F 3	
Transparency			16		16		9		12											
Depth	2730		790		343		142		118		125		121		490		440		539	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	12.5	32.289	13.2	32.133	12.9	32.208	13.9	31.808	14.8	31.722	15.6	33.90*	16.3	33.994	16.3	33.986	17.4	33.930	16.6	34.019
10m	12.97	33.229	13.14	32.110	12.70	32.195	13.20	31.875	14.47	31.714	16.31	33.901	16.90	33.979	16.97	33.945	17.27	33.917	17.12	33.935
20m	12.44	33.242	5.20	32.717	8.22	32.557	4.38	32.457	13.99	31.751	16.23	33.901	16.90	33.979	16.96	33.946	17.10	33.938	16.90	33.949
30m	7.20	33.484	1.83	32.967	2.62	32.756	-0.30	32.822	2.46	32.606	12.60	34.252	11.89	34.306	14.49	34.213	12.73	34.243	10.90	34.324
50m	2.02	33.257	-0.22	33.002	-0.37	32.960	-1.49	32.974	-0.93	32.899	8.43	34.224	9.54	34.315	10.20	34.326	9.75	34.338	9.40	34.328
75m	1.59	33.271	-0.04	33.081	-0.78	33.023	-1.37	33.032	-1.29	33.003	7.79	34.198	7.81	34.223	8.67	34.274	7.81	34.216	7.80	34.258
100m	1.48	33.302	-0.43	33.114	-1.10	33.041	-0.70	33.131	0.45	33.204	6.44	34.163	6.33	34.164	7.27	34.211	6.29	34.159	6.71	34.201
125m	1.49	33.332	-0.37	33.148	-0.91	33.073	-0.69	33.135							6.33	34.166	4.91	34.128	6.16	34.170
150m	1.87	33.400	0.11	33.203	-0.51	33.136									6.32	34.163	3.32	34.100	5.72	34.149
200m	2.54	33.520	0.42	33.301	0.14	33.242									1.94	34.079	1.44	34.075	4.26	34.112
250m	1.30	33.456	0.74	33.376	0.27	33.290									1.15	34.071	0.98	34.068	2.86	34.089
300m	1.58	33.521	0.97	33.441	0.34	33.306									0.86	34.067	0.85	34.066	1.84	34.075
400m	1.53	33.610	1.27	33.542											0.47	34.065	0.57	34.065	0.99	34.068
500m	1.67	33.734	1.59	33.674															0.43	34.064
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-26

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199610		199610		199610		199610		199610		199610		199610		199610		199610		199610	
Station No	J16		J17		J18		JW16		JW15		JW14		JW13		JW12		JW11		J13	
Latitude:N	45-30.0		45-30.0		45-30.1		45- 0.1		45- 0.0		45- 0.1		45- 0.1		45- 0.0		44-59.9		45-30.0	
Longitude:E	140-19.9		140- 0.0		139-40.0		140- 0.1		140-20.0		140-40.0		141- 0.0		141-15.0		141-30.1		141- 9.9	
Date	1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03		1996/10/03	
Time(JST)	03:43		05:22		06:58		10:08		11:32		12:53		14:24		15:26		16:30		19:26	
Weather	B		B		B		BC		BC		BC		C		C		C		C	
Air Temp.	13.2		13.4		14.1		15.0		17.9		19.0		21.7		19.6		18.3		16.2	
Bar	1016.5		1016.0		1015.5		1015.0		1014.2		1013.5		1012.5		1012.0		1012.0		1011.0	
Wind Dir	SW		SW		SW		SW		SW		SSW		SW		SSW		SW		WSW	
Wind Spd/F	F 3		F 2		F 3		F 3		F 2		F 2		F 1		F 4		F 4		F 2	
Transparency					18		23		23		24		24		17		11			
Depth	395		588		860		273		151		369		99		85		66		127	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	17.7	34.028	17.5	34.014	16.1	33.952	18.2	34.175	17.9	34.195	18.6	34.049	18.4	34.022	18.6	33.818	18.4	33.782	17.5	33.961
10m	17.96	34.008	17.96	33.980	16.36	33.937	18.33	34.083	17.86	34.160	18.45	34.030	18.14	33.994	18.37	33.817	18.47	33.745	17.74	33.950
20m	17.95	34.010	17.95	33.980	16.38	33.943	18.32	34.083	17.83	34.158	18.34	34.034	18.10	33.993	18.33	33.876	18.62	33.896	17.74	33.950
30m	14.52	34.336	11.06	34.366	10.77	34.151	18.05	34.075	13.68	34.436	14.87	34.303	18.10	34.001	18.25	33.981	18.48	33.944	17.05	33.984
50m	10.55	34.400	8.46	34.301	6.05	34.121	7.85	34.192	10.07	34.392	9.86	34.365	10.32	34.271	10.95	34.226	10.30	34.200	9.72	34.194
75m	7.94	34.224	6.67	34.177	4.29	34.101	5.55	34.133	8.09	34.274	8.25	34.284	8.81	34.200	8.54	34.164			8.06	34.235
100m	7.00	34.208	5.90	34.160	3.31	34.092	4.00	34.098	6.62	34.189	6.61	34.194							6.31	34.155
125m	5.78	34.154	4.92	34.126	2.79	34.085	3.04	34.092	6.04	34.163	5.89	34.163								
150m	4.91	34.127	4.35	34.112	2.30	34.081	2.45	34.083			4.70	34.124								
200m	3.56	34.097	3.15	34.088	1.74	34.072	2.01	34.075			2.35	34.086								
250m	2.35	34.082	1.84	34.076	1.41	34.074	1.84	34.072			1.54	34.073								
300m	1.53	34.073	1.25	34.069	1.11	34.070					1.03	34.068								
400m			0.86	34.068	0.72	34.067														
500m			0.63	34.066	0.51	34.065														
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-27

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199610		199610		199611		199611		199611		199611		199611		199611		199612		199612	
Station No	J12		J11		WKT01		WKT02		WKT03		WKT04		WKT05		WKT06		J101		J102	
Latitude:N	45-30.0		45-30.0		44-29.9		44-42.2		44-47.2		44-58.0		45-22.7		45-30.8		45-30.1		45-30.0	
Longitude:E	141-25.0		141-40.0		144- 3.3		144- 1.7		144- 5.1		143- 3.9		142-49.2		142-47.5		141-39.9		141-25.0	
Date	1996/10/03		1996/10/03		1996/11/21		1996/11/21		1996/11/21		1996/11/24		1996/11/25		1996/11/25		1996/12/03		1996/12/03	
Time(JST)	20:33		21:33		06:49		11:52		15:41		14:52		07:13		09:53		09:50		11:46	
Weather	BC		BC														C		C	
Air Temp.	15.5		15.6														3.2		2.6	
Bar	1011.0		1010.8														1022.0		1021.0	
Wind Dir	WSW		WNW														SW		WSW	
Wind Spd/F	F 3		F 3		S		S		S		S		S		S		S 9		S 9	
Transparency																				
Depth	112		54														57		114	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	17.3	33.976	17.6	33.936	4.0	32.27*	4.0	32.32*	4.0	32.33*	4.1	31.97*	3.5	32.11*	3.8	32.03*	8.3	34.012	7.9	34.162
10m	17.68	33.959	17.73	33.941	3.99	32.267	4.04	32.322	4.00	32.327	3.79	32.103	3.50	32.107	3.77	32.031	8.43	34.010	8.11	34.143
20m	17.68	33.958	17.66	33.957	4.07	32.410	4.21	32.437	4.16	32.646	3.49	32.376	3.45	32.147	3.76	32.033	8.44	34.010	8.11	34.143
30m	13.45	34.267	17.59	33.959	4.46	32.707	4.28	32.686	4.17	32.724	3.28	32.463	3.45	32.153	3.75	32.037	8.47	34.014	7.91	34.179
50m	9.93	34.302			4.60	32.869	4.31	32.849	4.22	32.909	2.54	33.288	3.21	32.492	3.15	32.316			7.78	34.169
75m	7.92	34.221			1.94	33.178	1.09	32.996	0.07	33.064	1.81	33.926	1.76	32.783	1.48	32.843			6.85	34.074
100m	5.83	34.118			-0.99	33.038	-0.05	33.080	-0.80	33.072	1.53	33.925	1.37	33.770	1.23	33.829			5.62	34.013
125m					-1.01	33.060	-0.80	33.107	-0.70	33.123	1.49	33.929								
150m					1.54	33.336	-0.66	33.135	-0.50	33.159										
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-28

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	J103		J104		J105		J106		J107		J108		JW03		JW02		JW01		S103	
Latitude:N	45-30.0		45-30.1		45-30.0		45-30.0		45-30.1		45-30.0		45-45.0		45-45.0		45-45.0		45-40.1	
Longitude:E	141-10.0		140-53.0		140-40.0		140-20.0		139-59.9		139-40.0		141- 0.0		141-10.0		141-20.1		142- 0.2	
Date	1996/12/03		1996/12/03		1996/12/03		1996/12/03		1996/12/03		1996/12/03		1996/12/04		1996/12/04		1996/12/04		1996/12/04	
Time(JST)	13:33		15:43		18:10		19:53		21:36		23:21		04:38		06:32		07:20		10:14	
Weather	C		C		C		C		C		BC		BC		BC		BC		C	
Air Temp.	2.5		1.8		1.3		0.9		0.8		0.5		0.9		1.1		1.1		2.4	
Bar	1020.5		1021.0		1021.0		1020.6		1020.0		1020.0		1018.0		1017.6		1017.6		1016.5	
Wind Dir	WSW		WSW		SW		WSW		WSW		WSW		W		W		WSW		WSW	
Wind Spd/F	S 9		S 9		S 8		S 8		S 8		S 7		S 7		S 10		S 9		S 10	
Transparency																				
Depth	128		430		548		395		595		846		493		122		124		57	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	7.3	34.208	8.2	34.244	5.3	34.143	6.6	34.239	6.3	34.240	6.4	34.187	6.9	34.166	6.3	34.241	6.8	34.215	7.2	34.187
10m	7.64	34.206	8.39	34.240	5.93	34.137	7.14	34.223	7.06	34.222	6.40	34.174	7.27	34.161	7.63	34.221	7.16	34.213	7.88	34.172
20m	7.53	34.190	8.39	34.241	5.93	34.137	7.15	34.223	7.07	34.222	6.41	34.174	7.27	34.163	7.63	34.221	7.13	34.211	7.88	34.171
30m	7.33	34.156	8.39	34.241	5.91	34.134	7.15	34.223	7.07	34.221	6.37	34.173	7.26	34.159	7.63	34.221	6.97	34.203	7.88	34.171
50m	7.23	34.139	8.39	34.240	5.84	34.124	7.16	34.222	7.07	34.221	5.55	34.107	7.24	34.155	7.64	34.221	6.63	34.178		
75m	7.10	34.116	7.88	34.226	5.68	34.110	7.14	34.221	7.03	34.217	5.14	34.110	7.24	34.154	7.57	34.217	6.37	34.153		
100m	6.80	34.182	7.55	34.214	5.61	34.100	4.47	34.120	4.26	34.134	2.76	34.095	6.97	34.114	6.95	34.197	6.14	34.129		
125m			6.33	34.196	4.04	34.111	3.63	34.089	3.56	34.107	2.25	34.081	6.26	34.154						
150m			4.66	34.136	3.05	34.094	2.62	34.081	2.83	34.093	1.96	34.080	3.82	34.104						
200m			2.90	34.087	2.08	34.081	1.85	34.082	1.91	34.081	1.46	34.079	2.42	34.073						
250m			1.51	34.080	1.62	34.080	1.33	34.078	1.49	34.078	1.19	34.078	1.80	34.077						
300m			1.21	34.076	1.25	34.077	1.04	34.074	1.15	34.077	0.95	34.076	1.27	34.077						
400m			0.94	34.074	0.63	34.074			0.69	34.073	0.64	34.073	0.97	34.075						
500m					0.29	34.069			0.48	34.071	0.45	34.071								
600m									0.34	34.070										
700m																				
800m																				
900m																				
1000m																				

Table 6-29

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	S102		S101		S300		S301		S399		S302		S404		S403		S402		S401	
Latitude:N	45-34.9		45-31.3		45-27.6		45-30.0		45-32.5		45-35.0		45-30.0		45-20.0		45-12.5		45- 8.6	
Longitude:E	142- 0.2		142- 0.2		142- 7.2		142-10.0		142-12.5		142-15.1		142-50.0		142-40.0		142-32.5		142-28.7	
Date	1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/04		1996/12/04	
Time(JST)	11:07		11:51		12:33		13:10		13:33		14:09		16:32		17:50		19:06		19:41	
Weather	C		S		S		C		S		C		C		S		C		C	
Air Temp.	2.4		1.7		2.0		2.5		2.5		2.2		1.6		1.8		2.3		2.4	
Bar	1016.0		1015.5		1015.0		1014.5		1014.5		1014.0		1014.5		1014.0		1013.8		1014.5	
Wind Dir	WSW		WSW		WSW		W		W		SW		SW		WSW		WSW		W	
Wind Spd/F	S 9		S 13		S 9		S 7		S 4		S 6		S 9		S 9		S 10		S 9	
Transparency																				
Depth	44		22		28		36		44		48		118		97		61		38	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	8.0	34.070	7.8	33.971	7.9	34.036	7.7	34.055	7.9	34.161	7.8	34.17*	3.2	32.039	2.9	32.278	4.6	33.175	6.4	33.872
10m	8.29	34.068	7.90	33.965	8.02	34.034	7.94	34.054	8.08	34.167	7.96	34.171	3.35	32.051	2.82	32.279	4.80	33.193	7.54	33.873
20m	8.26	34.069			8.03	34.037	7.94	34.054	8.09	34.169	7.97	34.171	3.36	32.051	2.87	32.352	6.20	33.631	7.82	33.974
30m	8.28	34.068					7.94	34.055	8.09	34.171	7.97	34.172	3.36	32.052	3.15	32.557	7.40	34.005		
50m													3.36	32.067	3.51	33.513	7.49	34.034		
75m													1.85	32.731	5.08	33.842				
100m													-0.23	32.977						
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-30

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	S102		S101		O15		OA10		O13		O12		O11		OA01		OA02		OA03	
Latitude:N	45-34.0		45-31.1		45-30.1		45-30.0		45-20.0		45-12.6		45- 8.0		44-48.7		44-52.5		45- 0.1	
Longitude:E	142- 0.0		142- 0.0		142-10.2		142-30.1		142-40.1		142-32.6		142-28.0		142-48.3		142-52.5		143- 0.1	
Date	1996/12/09		1996/12/09		1996/12/09		1996/12/09		1996/12/09		1996/12/09		1996/12/09		1996/12/09		1996/12/09		1996/12/09	
Time(JST)	11:21		11:51		12:35		13:51		15:00		15:56		16:32		18:44		19:17		20:12	
Weather	C		C		S		C		BC		C		C		S		C		B	
Air Temp.	-3.1		-2.7		-3.0		-2.5		-2.3		-2.7		-2.9		-2.8		2.2		-2.1	
Bar	1018.5		1018.5		1018.5		1019.0		1019.0		1020.0		1020.0		1021.6		1021.8		1022.0	
Wind Dir	W		W		W		W		WNW		W		WNW		WSW		W		W	
Wind Spd/F	F 5		F 6		F 5		F 5		F 6		F 5		F 3		F 2		F 3		F 3	
Transparency	6		5		5		6		10		9									
Depth	41		27		38		82		98		62				44		84		131	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.2	32.541	7.0	33.948	6.7	33.932	3.2	32.399	2.4	32.237	2.5	32.250	6.3	32.875	2.2	32.284	2.2	32.470	2.6	30.422
10m	7.30	33.861	7.41	33.938	7.73	33.938	3.64	33.116	2.60	32.216	2.75	32.252	6.59	33.836	2.50	32.284	2.69	32.467	2.81	32.201
20m	7.35	33.872			7.73	33.938	5.56	33.695	2.60	32.216	4.53	33.031	7.08	33.973	3.44	32.825	2.78	32.527	2.82	32.201
30m	7.37	33.880			7.71	33.934	5.83	33.752	2.66	32.249	6.72	33.840			3.39	32.841	4.53	33.250	2.82	32.202
50m							5.83	33.753	4.60	33.532	7.14	33.955					5.60	33.502	2.93	32.708
75m							5.86	33.757	4.85	33.589									5.13	33.789
100m																			5.37	33.873
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-31

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	OA04		O25		O24		O23		O22		OA11		OA12		OA13		OA14		O35	
Latitude:N	45-10.0		45- 0.1		44-50.1		44-40.1		44-35.1		44-17.6		44-22.5		44-30.0		44-40.0		44-50.1	
Longitude:E	143-10.0		143-40.1		143-30.0		143-20.0		143-15.0		143-37.5		143-42.5		143-50.0		144- 0.0		144-20.0	
Date	1996/12/09		1996/12/09		1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10	
Time(JST)	21:23		23:30		00:47		02:06		02:48		04:59		05:37		06:37		07:49		09:27	
Weather	BC		C		C		BC		BC		B		B		BC		BC		BC	
Air Temp.	-2.3		-2.1		-1.0		-0.8		-0.9		-3.0		-2.2		-1.2		-0.2		0.2	
Bar	1022.0		1022.5		1022.5		1022.5		1022.5		1022.9		1023.0		1023.0		1023.2		1023.0	
Wind Dir	W		WSW		SSW		S		SSW		SSW		SSW		SSW		SSW		SSW	
Wind Spd/F	F 3		F 1		F 3		F 2		F 2		F 3		F 3		F 3		F 3		F 4	
Transparency																	25		15	
Depth	131		170		150		115		75		46		91		164		188		153	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.3	30.539	2.2	32.274	1.9	31.222	1.8	32.270	2.0	32.228	2.1	32.236	2.5	32.424	1.8	32.19*	3.3	32.483	4.2	33.08*
10m	2.48	32.031	2.27	32.274	2.24	32.156	2.20	32.258	2.43	32.221	2.46	32.230	2.97	32.418	2.17	32.197	3.53	32.860	4.11	33.082
20m	2.49	32.032	2.32	32.304	2.24	32.156	2.23	32.262	2.79	32.337	2.54	32.253	3.00	32.422	2.86	32.611	3.52	32.860	4.11	33.083
30m	2.49	32.032	2.36	32.342	2.25	32.160	2.61	32.413	4.27	32.925	2.92	32.387	3.01	32.433	3.47	32.812	3.54	32.862	4.11	33.083
50m	2.50	32.035	3.04	32.656	2.75	32.509	2.46	32.616	6.08	33.592			5.86	33.668	3.57	32.846	3.52	32.880	4.13	33.084
75m	2.49	32.254	2.93	32.828	4.11	32.880	4.13	33.370					5.71	33.722	3.81	32.918	0.83	33.022	1.71	33.194
100m	2.96	32.594	1.51	33.146	3.38	32.919	6.13	33.833					1.16	33.115	-0.24	33.097	-0.92	33.251		
125m			1.02	33.198	2.77	33.160							-0.42	33.123	-0.37	33.129	0.22	33.252		
150m			0.91	33.198									2.67	33.476	-0.05	33.187				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-32

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	O34		O33		O32		OA20		O31		OA21		OA22		OA23		OA24		O41	
Latitude:N	44-29.9		44-20.0		44- 9.9		44- 5.0		44- 2.1		44- 2.0		44-10.0		44-20.0		44-29.9		44-22.0	
Longitude:E	144-20.0		144-19.9		144-20.1		144-20.0		144-20.0		144-50.0		144-50.1		144-50.0		144-50.0		145-20.0	
Date	1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10		1996/12/10	
Time(JST)	11:19		12:33		13:38		14:09		14:29		16:22		17:09		18:20		19:30		21:43	
Weather	BC		C		C		C		BC		C		C		C		BC		BC	
Air Temp.	0.6		0.6		1.1		1.5		1.6		2.3		2.3		2.5		2.9		3.0	
Bar	1022.0		1021.0		1020.0		1020.0		1020.0		1019.6		1020.0		1019.8		1019.6		1018.0	
Wind Dir	S		S		ESE		E		ESE		ESE		ESE		ESE		SSE		SW	
Wind Spd/F	F 3		F 2		F 2		F 2		F 1		F 3		F 2		F 2		F 3		F 4	
Transparency	16		11		11		11		11											
Depth	883		266		115		38		35		80		590		1077		1577		139	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.9	31.779	2.5	32.475	2.3	32.298	2.6	32.328	2.6	30.457	2.7	32.287	2.7	32.559	3.8	31.663	4.0	33.073	2.8	32.312
10m	2.95	32.502	2.67	32.468	2.35	32.283	2.75	32.327	2.87	32.263	2.85	32.267	2.85	32.595	3.95	33.037	4.15	33.070	2.82	32.319
20m	3.30	32.584	2.93	32.527	2.34	32.284	2.77	32.342	2.94	32.329	2.88	32.285	3.03	32.623	3.94	33.037	4.16	33.071	2.94	32.348
30m	3.20	32.624	3.23	32.628	2.45	32.348	2.75	32.349	3.30	32.483	2.97	32.339	3.16	32.679	3.83	33.029	4.15	33.070	2.96	32.356
50m	3.75	32.873	3.29	32.656	2.54	32.376			3.01	32.365	3.33	32.740	3.68	33.019	4.18	33.072	3.25	32.502		
75m	2.55	33.015	3.47	32.801	3.24	32.589					3.55	32.835	3.45	33.045	3.71	33.054	3.51	32.663		
100m	1.28	33.174	3.01	32.890	3.20	32.776					3.39	32.910	0.49	33.102	1.74	33.234	3.63	32.815		
125m	1.12	33.225	2.22	32.993							3.25	33.066	-0.17	33.188	1.20	33.250	3.70	32.944		
150m	1.04	33.259	1.48	33.050							2.95	33.156	-0.02	33.237	1.20	33.289				
200m	1.37	33.348	-0.28	33.147							0.57	33.099	0.24	33.287	1.43	33.386				
250m	1.37	33.394	1.12	33.389							2.29	33.429	1.01	33.400	1.13	33.422				
300m	1.34	33.422									2.50	33.505	1.13	33.454	1.10	33.459				
400m	1.51	33.518									2.61	33.631	1.71	33.611	1.76	33.616				
500m	1.71	33.627									1.88	33.636	1.65	33.698	1.76	33.725				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-33

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199612		199612		199612		199612		199612		199612		199612		199612		199612		199612	
Station No	O42		O43		O44		O45		O46		O36		O26		OA05		O14		S3	
Latitude:N	44-30.1		44-40.1		44-50.0		45- 0.1		45-10.1		45- 8.0		45-10.1		45-19.9		45-30.0		45-37.0	
Longitude:E	145-19.9		145-19.9		145-20.0		145-20.1		145-20.0		144-19.9		143-50.0		143-19.8		142-49.9		141-59.9	
Date	1996/12/10		1996/12/10		1996/12/11		1996/12/11		1996/12/11		1996/12/11		1996/12/11		1996/12/11		1996/12/11		1996/12/11	
Time(JST)	22:29		23:40		00:49		01:57		03:07		07:04		09:17		11:40		13:45		16:53	
Weather	BC		C		C		BC		BC		BC		S		BC		BC		S	
Air Temp.	3.1		3.3		3.3		3.2		3.3		3.4		1.8		3.1		3.1		2.5	
Bar	1018.0		1017.0		1016.0		1016.5		1014.0		1011.3		1011.5		1009.5		1008.0		1007.7	
Wind Dir	SE		SE		SSE		SSE		SSE		S		W		SSW		SW		SSW	
Wind Spd/F	F 4		F 4		F 5		F 4		F 4		F 4		F 4		F 3		F 3		F 5	
Transparency											16		9		9		14			
Depth	1695		2186		2200		2500		2700		794		336		141		119		44	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.7	32.355	3.5	30.135	3.4	32.798	2.4	32.804	4.3	33.076	4.4	31.428	1.7	30.932	2.6	32.059	2.9	32.186	7.3	32.693
10m	2.54	32.363	3.54	32.746	3.37	32.800	3.39	32.808	4.45	33.071	4.30	33.108	1.70	32.282	2.49	32.062	2.82	32.163	7.61	34.176
20m	2.50	32.436	3.54	32.747	3.41	32.811	3.39	32.845	4.46	33.071	4.29	33.108	1.73	32.315	2.50	32.116	2.81	32.163	7.53	34.176
30m	2.67	32.520	3.54	32.746	3.41	32.814	3.41	32.933	4.45	33.072	4.22	33.104	1.75	32.334	2.49	32.134	2.47	32.185	7.47	34.175
50m	3.02	32.640	3.54	32.746	3.54	32.833	3.38	32.977	4.45	33.073	3.43	33.046	1.77	32.573	2.51	32.142	2.91	32.370		
75m	2.72	32.825	3.57	32.765	3.81	32.912	1.22	33.115	4.46	33.073	3.42	33.097	1.31	32.720	2.51	32.146	2.59	33.144		
100m	2.02	32.940	3.38	32.869	1.76	33.276	0.29	33.179	2.43	33.257	1.37	33.197	2.60	33.125	2.47	32.188	4.42	33.579		
125m	1.29	33.030	2.00	33.138	4.04	33.582	0.08	33.197	1.62	33.325	1.54	33.247	1.64	33.254	1.97	32.777				
150m	1.25	33.185	1.09	33.221	2.71	33.484	0.03	33.238	1.59	33.366	1.26	33.279	0.01	33.181						
200m	1.42	33.318	2.21	33.457	1.82	33.427	0.28	33.299	1.69	33.488	1.45	33.366	1.14	33.328						
250m	1.76	33.426	2.00	33.534	1.18	33.425	0.71	33.371	1.62	33.546	1.36	33.427	0.88	33.313						
300m	1.44	33.461	1.94	33.589	2.38	33.580	1.45	33.486	1.64	33.606	1.03	33.448	0.57	33.326						
400m	1.67	33.602	1.62	33.643	2.16	33.633	1.42	33.586	1.71	33.739	1.76	33.611								
500m	1.64	33.707	1.90	33.764	2.22	33.720	1.73	33.749	1.88	33.851	1.75	33.707								
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-34

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199612		199702		199702		199702		199702		199702		199702		199702		199702		199702	
Station No	S4		J11		J12		J13		JW11		JW12		J21		J22		J23		J24	
Latitude:N	45-40.1		45-30.0		45-29.9		45-29.9		44-59.9		45- 0.1		44-30.1		44-29.9		44-30.0		44-30.0	
Longitude:E	142- 0.0		141-40.0		141-24.9		141-10.0		141-30.1		141-15.2		141-30.0		141-15.1		141- 0.0		140-40.1	
Date	1996/12/11		1997/02/19		1997/02/19		1997/02/19		1997/02/19		1997/02/19		1997/02/19		1997/02/20		1997/02/20		1997/02/20	
Time(JST)	17:17		12:57		14:15		15:27		18:37		19:48		22:45		00:05		01:29		03:27	
Weather	C		C		S		C		C		C		C		S		S		C	
Air Temp.	3.2		-3.3		-3.4		-3.0		-2.9		-3.2		-1.7		-2.0		-1.9		-1.3	
Bar	1008.0		1003.0		1003.5		1004.0		1005.5		1006.0		1006.0		1006.0		1005.0		1004.5	
Wind Dir	WSW		NNW		NNW		NW		WNW		WNW		WNW		NW		WNW		WNW	
Wind Spd/F	F 6		F 5		F 4		F 6		F 5		F 5		F 4		F 4		F 4		F 6	
Transparency			9		10		15													
Depth	55		56		115		129		66		86		79		119		204		144	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	6.8	34.176	2.0	33.465	3.3	34.191	3.8	34.135	4.1	34.177	3.9	33.394	4.2	34.190	5.1	34.184	4.8	34.174	5.3	34.166
10m	7.13	34.164	2.60	33.788	4.14	34.156	4.04	34.141	4.46	34.173	4.63	34.181	5.06	34.186	5.47	34.190	5.31	34.186	5.60	34.186
20m	7.06	34.162	2.81	33.865	4.15	34.157	4.04	34.141	4.46	34.173	4.62	34.183	5.06	34.186	5.47	34.190	5.32	34.189	5.61	34.186
30m	6.94	34.161	3.05	33.946	4.15	34.157	4.05	34.141	4.46	34.173	4.63	34.182	5.06	34.185	5.48	34.190	5.28	34.190	5.61	34.185
50m					4.15	34.158	4.05	34.140	4.47	34.172	4.63	34.182	5.06	34.185	5.46	34.190	5.27	34.189	5.61	34.186
75m					4.15	34.157	4.05	34.140			4.61	34.183			5.38	34.189	5.27	34.189	5.60	34.185
100m					4.16	34.158	4.06	34.141							5.35	34.189	5.27	34.189	5.60	34.184
125m																	5.25	34.188	4.89	34.168
150m																	5.18	34.187		
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-35

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199702		199702		199702		199702		199702		199702		199702		199702		199702		199703	
Station No	J25		J14		J15		J16		J17		J18		JW03		JW02		JW01		S103	
Latitude:N	44-29.9		45-30.0		45-29.9		45-30.1		45-30.0		45-30.0		45-45.1		45-45.0		45-45.0		45-40.0	
Longitude:E	140-20.1		140-53.1		140-39.9		140-20.1		140- 0.0		139-40.0		141- 0.1		141-10.1		141-20.0		142- 0.0	
Date	1997/02/20		1997/03/04		1997/03/04		1997/03/04		1997/03/04		1997/03/05		1997/03/05		1997/03/05		1997/03/05		1997/03/10	
Time(JST)	05:42		14:03		15:30		18:22		21:06		00:33		06:44		07:45		08:38		14:39	
Weather	C		C		C		BC		C		C		BC		BC		C		BC	
Air Temp.	-2.0		-5.6		-5.2		-4.7		-4.1		-5.0		-5.5		-5.1		-5.0		-1.8	
Bar	1005.0		1010.4		1010.3		1011.0		1011.5		1013.7		1014.5		1015.0		1015.5		1017.0	
Wind Dir	WNW		WNW		NW		W		WNW		NW		WNW		NW		WNW		W	
Wind Spd/F	F 5		F 5		F 5		F 6		F 4		F 5		F 5		F 4		F 4		S 11	
Transparency			16		20								9		9					
Depth	254		436		545		400		590		836		497		124		127		55	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	5.1	34.115	3.8	34.146	3.8	34.155	2.8	34.082	2.3	34.169	2.4	34.244	3.4	34.159	2.0	33.905	1.9	33.928	2.2	34.029
10m	5.42	34.190	4.00	34.174	4.25	34.195	3.44	34.173	3.51	34.179	3.16	34.171	3.57	34.178	2.20	33.919	2.52	33.951	2.56	34.022
20m	5.42	34.190	4.02	34.175	4.25	34.195	3.45	34.173	3.51	34.179	3.18	34.171	3.57	34.178	3.36	34.136	2.54	33.950	2.56	34.022
30m	5.42	34.190	4.05	34.179	4.25	34.194	3.45	34.173	3.51	34.178	3.18	34.171	3.56	34.178	3.48	34.162	2.54	33.949	2.56	34.022
50m	5.42	34.190	4.08	34.184	4.25	34.195	3.45	34.173	3.51	34.178	3.18	34.170	3.57	34.178	3.55	34.173	2.56	33.953		
75m	5.39	34.188	4.09	34.188	4.25	34.195	3.21	34.154	3.51	34.177	2.19	34.122	3.42	34.164	3.53	34.174	2.87	33.993		
100m	4.77	34.185	4.11	34.190	4.26	34.193	2.45	34.116	3.36	34.166	2.01	34.116	2.94	34.143	3.53	34.174	3.89	34.173		
125m	3.79	34.166	4.11	34.190	4.24	34.192	2.19	34.097	2.64	34.124	1.89	34.111	2.85	34.139						
150m	3.34	34.159	4.11	34.190	3.85	34.171	1.79	34.085	2.36	34.108	1.74	34.102	2.81	34.139						
200m	2.24	34.105	4.10	34.189	2.75	34.122	1.31	34.081	1.65	34.083	1.61	34.093	2.71	34.137						
250m	1.45	34.077	2.24	34.112	1.37	34.081	0.99	34.080	1.24	34.080	1.25	34.085	1.84	34.093						
300m			1.50	34.083	1.00	34.078	0.60	34.066	1.02	34.078	0.93	34.078	1.28	34.080						
400m					0.64	34.075			0.65	34.075	0.59	34.074	0.82	34.076						
500m					0.42	34.073			0.48	34.074										
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-36

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199703		199703		199703		199703		199703		199703		199703		199703		199703		199703	
Station No	S102		S101		S300		S301		S399		S302		S404		S403		S402		S401	
Latitude:N	45-35.0		45-31.1		45-27.0		45-30.1		45-32.6		45-35.0		45-30.0		45-19.9		45-12.5		45- 9.1	
Longitude:E	142- 0.0		142- 0.1		142- 8.1		142-10.0		142-12.5		142-15.0		142-50.1		142-39.8		142-32.5		142-29.2	
Date	1997/03/10		1997/03/10		1997/03/10		1997/03/10		1997/03/10		1997/03/10		1997/03/10		1997/03/10		1997/03/11		1997/03/11	
Time(JST)	15:54		16:48		17:32		18:22		18:47		19:41		22:32		23:41		01:10		01:42	
Weather	C		BC		BC		C		C		C		B		B		B		B	
Air Temp.	-2.3		-2.2		-2.7		-2.5		-2.5		-2.8		-3.4		-3.4		-3.4		-4.0	
Bar	1017.0		1016.5		1016.5		1016.5		1016.5		1016.5		1016.0		1016.0		1015.4		1015.1	
Wind Dir	WNW		WNW		WNW		WNW		WNW		WNW		NW		WSW		SW		WSW	
Wind Spd/F	S 10		S 10		S 8		S 7		S 7		S 7		S 2		S 3		S 2		S 1	
Transparency																				
Depth	41		27		22		37		44		49		119		99		62		43	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.0	34.005	1.5	34.00*	1.8	33.969	1.7	33.98*	2.2	34.057	-0.9	32.984	-1.8	32.67*	-1.8	32.595	-1.7	32.71*	-1.6	32.736
10m	2.54	33.997	2.12	34.018	2.00	33.962	2.37	33.982	2.61	34.029	-0.43	33.160	-1.77	32.674	-1.77	32.571	-1.41	32.736	-1.36	32.731
20m	2.54	33.997					2.37	33.981	2.61	34.029	0.61	33.591	-1.77	32.681	-1.76	32.570	0.51	33.531	2.01	33.885
30m	2.54	33.997							2.61	34.029	1.62	33.935	-1.77	32.682	-1.75	32.571	1.33	33.742	2.00	33.962
50m													-1.76	32.683	-1.70	32.587	1.71	33.841		
75m													-0.94	32.901	0.78	33.668				
100m													0.98	33.390						
125m																				
150m																				
200m																				
250m																				
300m																				
400m																				
500m																				
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-37

Table 6 Results of serial oceanographic observations. Hokkaido Wakkanai Fisheries Experimental Station

Stn-prefix	199703		199703		199703		199703		199703		199703		199703		199703		199703		199703	
Station No	J101		J102		J103		J104		J105		J106		JW03		JW02		JW01		S10N	
Latitude:N	45-30.0		45-30.0		45-30.0		45-30.1		45-30.0		45-29.9		45-45.0		45-45.0		45-45.1		45-41.6	
Longitude:E	141-40.0		141-25.0		141-10.0		140-53.0		140-40.0		140-20.1		141- 0.1		141-10.1		141-20.2		142- 0.1	
Date	1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/12		1997/03/13		1997/03/13		1997/03/13		1997/03/13	
Time(JST)	11:08		12:51		15:20		17:40		19:33		22:14		02:35		04:10		04:55		14:50	
Weather	C		C		C		BC		C		B		BC		B		B		C	
Air Temp.	-1.6		-1.6		-2.1		-2.5		-1.9		0.0		-3.1		-3.4		-3.2		-0.3	
Bar	1017.5		1017.0		1018.0		1020.0		1020.5		1021.0		1023.5		1024.5		1024.5		1023.6	
Wind Dir	W		WNW		NW		NW		WNW		N		E		N		WNW		SE	
Wind Spd/F	S 9		S 12		S 10		S 7		S 4		S 9		S 3		S 2		S 5		S 3	
Transparency																				
Depth	55		112		130		440		544		398		489		123		126		60	
Equipment	CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD		CTD	
STND. Dep	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
0m	2.3	34.003	1.5	33.881	3.3	34.180	3.8	34.202	3.7	34.202	2.7	34.196	2.9	34.184	3.2	34.214	2.8	34.122	1.4	33.73*
10m	2.28	33.999	2.02	33.862	3.72	34.173	4.03	34.193	3.98	34.192	3.38	34.176	3.49	34.174	3.57	34.182	3.32	34.150	1.39	33.779
20m	2.27	33.999	2.01	33.862	3.72	34.174	4.03	34.194	3.98	34.192	3.34	34.174	3.46	34.171	3.57	34.182	3.31	34.151	2.02	33.971
30m	2.27	33.999	2.02	33.862	3.73	34.175	4.03	34.193	3.99	34.192	3.31	34.173	3.31	34.158	3.57	34.182	3.32	34.150	2.03	33.979
50m	2.28	34.005	3.67	34.095	3.73	34.174	4.03	34.193	3.98	34.193	3.24	34.168	3.05	34.135	3.57	34.181	3.32	34.150	2.02	33.980
75m			3.16	34.088	3.71	34.172	4.04	34.193	3.98	34.193	3.17	34.162	2.79	34.107	3.52	34.178	3.32	34.150		
100m			3.12	34.137	3.70	34.171	4.04	34.192	3.98	34.193	3.14	34.159	2.82	34.111	3.32	34.164	3.34	34.161		
125m							4.03	34.191	3.89	34.190	3.12	34.167	2.91	34.123						
150m							3.85	34.184	3.74	34.185	2.11	34.105	2.91	34.125						
200m							3.71	34.184	1.87	34.094	1.30	34.079	2.76	34.111						
250m							3.12	34.157	1.17	34.079	0.97	34.077	2.51	34.113						
300m							1.60	34.087	0.91	34.076	0.73	34.075	1.44	34.084						
400m							0.59	34.075	0.55	34.073			0.85	34.076						
500m									0.27	34.071										
600m																				
700m																				
800m																				
900m																				
1000m																				

Table 6-38

Part II. Results of Chemical Analyses

Water samples were taken with Nansen bottle cast on R/V Oyashio Maru cruises in South of Hokkaido, Japan Sea, from April 1990 to February 1991. Sea temperature was determined with Nansen bottles equipped with reversing thermometers. Salinity was measured with an Auto-Lab salinometer (PSS-78). Dissolved oxygen was analyzed in the land laboratory by the Winkler method within 24 hours after sampling at sea. Sea water samples of 200 to 500 ml from selected depth were filtered through Whatman GF/F glass fiber filter covered with a thin layer of MgCO_3 on board immediately after sampling, stored at -20 in a deep freezer, and brought back to the land laboratory. The GF/C filter had been changed to GF/F glass fiber filter since 1995. These samples were analyzed with a Turner Designs Fluorometer Model 10 to determine concentration of chlorophyll *a*. Nutrients ($\text{NO}_2\text{-N}$, $\text{NO}_3\text{-N}$ and $\text{PO}_4\text{-P}$) were analyzed with Technicon Auto-Analyzer II. $\text{SiO}_3\text{-Si}$ was analyzed with molybdenum blue method.

Table 7. Results of chemical analysis. Hokkaido Central Fisheries Experimental Station. N.D.;not detected

Station No	Position		Japanese Standard		Depth m	Temperature	Salinity P.S.U.	Dissolved oxygen ml	Nutrients, $\mu\text{g-atoms/l}$				Chlorophyll-a
	Latitude N	Longitude E	Date	Time					NO ₃ -N	NO ₂ -N	PO ₄ -P	NH ₄ -N	Si
199604J34	43-29.9	140-20.2	1996/4/8	16:08	0	6.8	34.107						
					295	1.24	34.076						
					397	0.85	34.077						
					499	0.58	34.073						
199604J35	43-29.8	140-00.2	1996/4/9	0:32	0	5.8	34.129						
					10	5.88	34.130						
					20	5.87	34.129						
					30	5.46	34.127						
					50	4.06	34.110						
					74	3.39	34.099						
					99	2.73	34.090						
					124	2.14	34.081						
					148	1.70	34.077						
					199	1.43	34.084						
					295	0.95	34.078						
					399	0.66	34.075						
					500	0.50	34.074						
					600	0.41	34.075						
					199604J38	43-29.9	139-00.2	1996/4/6	6:24	0	5.4	34.138	
10	5.64	34.134											
20	5.63	34.135											
30	5.64	34.133											
50	5.43	34.132											
75	5.35	34.131											
100	5.36	34.130											
125	4.99	34.124											
149	4.40	34.132											
199	3.14	34.101											
296	1.34	34.077											
396	1.00	34.081											
498	0.73	34.082											
597	0.55	34.077											
199604J41	42-30.0	139-40.0	1996/4/9	16:48						0	7.6	33.884	
					10	7.51	34.060					1.15	
					20	7.11	34.085					1.05	
					30	7.10	34.084					1.30	
					50	7.06	34.085					1.15	
					75	7.07	34.080					1.18	
					100	6.87	34.085					0.84	
					125	5.67	34.112					0.10	
					162	4.47	34.102					0.13	
					212	2.75	34.090					0.04	
					310	1.39	34.071						
					411	0.93	34.072						

Table 7. Results of chemical analysis. Hokkaido Central Fisheries Experimental Station. N.D.;not detected

Station No	Position		Japanese Standard		Depth m	Temperature	Salinity	Dissolved P.S.U. oxygen ml	Nutrients, $\mu\text{g-atoms/l}$				Chlorophyll-a	
	Latitude N	Longitude E	Date	Time					NO ₃ -N	NO ₂ -N	PO ₄ -P	NH ₄ -N	Si	$\mu\text{g/l}$
199604J46	42-30.0	138-00.2	1996/4/10	2:04	512	0.57	34.071							
					612	0.47	34.069							
					0	5.9	34.121						3.92	
					10	5.07	34.136						5.49	
					20	4.86	34.136						5.30	
					30	4.56	34.136						2.29	
					50	3.86	34.134						0.40	
					75	3.62	34.136						0.17	
					100	3.36	34.132						0.05	
					125	3.07	34.124						0.03	
					149	2.75	34.119						0.02	
					199	2.14	34.104						0.01	
					298	1.08	34.079							
					397	0.76	34.076							
					496	0.56	34.075							
199606J38	43-30.0	139-00.1	1996/6/3	22:55	596	0.48	34.069							
					0	10.0	34.078							
					11	9.90	34.078							
					20	9.87	34.088							
					30	9.08	34.106							
					49	7.32	34.182							
					74	6.17	34.143							
					98	5.05	34.117							
					122	3.77	34.094							
					149	2.88	34.084							
					198	2.00	34.072							
					295	1.12	34.072							
					393	0.81	34.071							
					489	0.63	34.070							
					586	0.52	34.068							
199606J41	42-30.0	139-40.2	1996/6/4	16:31	0	13.1	34.288	N.D.	N.D.	0.16		1.9	0.28	
					10	12.99	34.303	N.D.	N.D.	0.11		1.7	0.25	
					20	13.02	34.413	N.D.	N.D.	0.11		1.8	0.37	
					30	11.44	34.539	N.D.	N.D.	0.18		3.6	1.49	
					50	9.38	34.292	1.5	0.05	0.38		5.4	0.26	
					75	6.95	34.177	6.5	N.D.	0.61		10.5	0.04	
					99	5.95	34.154	9.3	N.D.	0.64			0.02	
					124	5.44	34.133	10.1	N.D.	0.67		10.0	0.01	
					141	5.26	34.127	10.9	N.D.	0.75		12.1	0.01	
					192	4.31	34.105	11.9	N.D.	0.83		15.3	0.01	
					281	1.88	34.067	16.3	N.D.	1.33		26.6		
					375	1.29	34.064	23.1	N.D.	1.33		31.8		
					467	0.82	34.072	25.4	N.D.	1.74		51.5		
					559	0.57	34.074	25.7	N.D.	1.70		43.0		

Table 7. Results of chemical analysis. Hokkaido Central Fisheries Experimental Station. N.D.;not detected

Station No	Position		Japanese Standard		Depth m	Temperature	Salinity P.S.U.	Dissolved oxygen ml	Nutrients, $\mu\text{g-atoms/l}$				Chlorophyll-a $\mu\text{g/l}$	
	Latitude N	Longitude E	Date	Time					$\text{NO}_3\text{-N}$	$\text{NO}_2\text{-N}$	$\text{PO}_4\text{-P}$	$\text{NH}_4\text{-N}$	Si	
199606J46	42-30.2	138-00.2	1996/6/5	1:31	0	10.0	34.030		N.D.	N.D.	0.16		0.6	0.56
					10	9.97	34.028		N.D.	N.D.	0.14		0.5	0.48
					20	7.84	34.040		N.D.	N.D.	0.16		0.7	0.96
					30	5.36	34.078		N.D.	N.D.	0.38		3.0	1.67
					50	4.48	34.087		5.0	0.11	0.56		8.0	0.84
					75	2.35	34.095		15.4	N.D.	0.92		17.3	0.05
					100	1.99	34.089		18.2	N.D.	1.04		18.6	0.01
					125	1.67	34.082		15.4	N.D.	1.11		16.5	0.00
					150	1.59	34.091		14.3	N.D.	1.12		19.1	0.00
					200	1.41	34.088		15.7	N.D.	1.31		20.8	0.00
					300	0.91	34.074		18.9	N.D.	1.34		29.4	
					400	0.68	34.071		23.2	N.D.	1.55		34.9	
					500	0.52	34.068		25.9	N.D.	1.80		38.1	
					600	0.43	34.067		23.3	N.D.	1.66		41.4	
199606J27	44-30.1	139-30.1	1996/6/8	1:58	0	10.3	34.052							
					194	1.98	34.073							
					278	1.22	34.073							
					375	0.85	34.069							
					423	0.64	34.070							
199608J38	43-30.0	139-00.1	1996/7/29	22:31	0	18.4	33.879							
					247	1.35	34.091							
					339	0.84	34.074							
					436	0.67	34.084							
					537	0.51	34.087							
199608J41	42-30.1	139-40.1	1996/7/30	17:38	633	0.42	34.081							
					0	19.8	34.049		N.D.	N.D.	N.D.		2.4	0.09
					10	19.82	34.045		N.D.	N.D.	N.D.		2.4	0.08
					20	19.26	34.080		N.D.	N.D.	N.D.		2.5	0.10
					30	16.28	34.300		N.D.	N.D.	N.D.		2.9	0.15
					50	10.84	34.453		1.9	0.13	0.19		4.5	0.81
					75	8.46	34.264		1.4	0.14	0.22		4.6	0.31
					99	6.50	34.189		8.2	N.D.	0.43		4.5	0.10
					124	5.41	34.167		10.6	N.D.	0.63		12.8	0.02
					172	4.74	34.139		11.5	N.D.	0.87		7.8	0.01
					218	2.97	34.091		14.6	N.D.	0.88		18.7	0.01
					298	1.42	34.075		18.4	N.D.	1.40		29.5	
					378	0.95	34.079		20.7	N.D.	1.59		26.3	
					460	0.69	34.078		22.5	N.D.	1.45		34.9	
542	0.49	34.076		23.5	N.D.	1.44		46.1						
199608J46	42-30.1	138-00.2	1996/7/31	3:23	0	18.4	33.671		N.D.	N.D.	N.D.		1.3	0.16
					10	18.31	33.669		N.D.	N.D.	0.07		1.1	0.12
					20	8.84	34.012		N.D.	N.D.	0.18		1.3	0.19
					30	4.83	34.055		3.5	0.12	0.54		5.0	0.30
					50	3.10	34.088		13.5	0.15	1.08		18.6	0.33

Table 7. Results of chemical analysis. Hokkaido Central Fisheries Experimental Station. N.D.; not detected

Station No	Position		Japanese Standard		Depth m	Temperature	Salinity	Dissolved P.S.U. oxygen ml	Nutrients, $\mu\text{g-atoms/l}$				Chlorophyll-a	
	Latitude N	Longitude E	Date	Time					$\text{NO}_3\text{-N}$	$\text{NO}_2\text{-N}$	$\text{PO}_4\text{-P}$	$\text{NH}_4\text{-N}$	Si	$\mu\text{g/l}$
199608J27	44-29.9	139-30.1	1996/8/2	10:10	75	2.12	34.079		15.4	N.D.	1.23		23.2	0.04
					100	1.72	34.074		16.4	N.D.	0.93		23.8	0.01
					125	1.42	34.075		18.4	N.D.	1.30		30.5	0.00
					150	1.26	34.085		16.2	N.D.	1.02		25.2	0.00
					200	1.18	34.091		16.1	N.D.	1.22		24.9	0.00
					300	1.03	34.095		17.4	N.D.	1.19		27.0	
					399	0.70	34.077		22.0	N.D.	1.59		38.2	
					499	0.53	34.079		22.6	N.D.	1.54		40.4	
					599	0.44	34.078		23.1	N.D.	1.79		42.2	
					0	18.1	33.850							
199610J35	43-30.0	140-00.1	1996/9/30	16:09	151	2.19	34.087							
					200	1.75	34.080							
					300	1.01	34.077							
					400	0.67	34.088							
					0	19.6	33.938							
					203	5.04	34.135							
199610J38	43-30.1	139-00.1	1996/9/30	21:35	301	1.91	34.076							
					399	1.07	34.076							
					499	0.76	34.074							
					597	0.55	34.075							
					0	19.1	33.864							
					224	1.29	34.076							
199610J41	42-30.0	139-40.1	1996/10/1	8:01	308	1.13	34.086							
					400	0.91	34.080							
					488	0.63	34.072							
					581	0.49	34.072							
					0	19.5	33.955	N.D.	N.D.	N.D.		1.9	0.30	
					10	19.48	33.959	0.5	N.D.	0.03		1.8	0.15	
					20	16.84	34.177	N.D.	N.D.	N.D.		2.3	0.36	
					30	12.09	34.390	0.6	0.22	0.10		3.4	0.79	
					50	9.34	34.343	5.4	0.06	0.35		4.9	0.11	
					75	7.73	34.252	7.5	0.01	0.42		6.5	0.05	
					100	6.11	34.180	9.7	N.D.	0.48		7.1	0.00	
					125	4.76	34.128	11.6	N.D.	0.51		6.3	0.00	
					168	3.06	34.092	14.5	N.D.	N.D.		7.0	0.00	
					218	2.07	34.075	16.2	N.D.	N.D.		17.7	0.00	
306	1.13	34.075	19.6	N.D.	0.91		32.7							
398	0.74	34.072	14.4	N.D.	0.95		36.0							
491	0.57	34.068	23.3	N.D.	1.06		46.6							
586	0.44	34.069	23.4	N.D.	1.77		50.9							
199610J46	42-29.9	137-59.9	1996/10/3	8:53	0	17.8	33.776	N.D.	N.D.	0.07		1.3	0.10	
					10	17.68	33.781	N.D.	N.D.	0.08		1.3	0.08	
					20	16.12	33.904	N.D.	N.D.	0.08		1.2	0.10	
					30	6.10	34.068	N.D.	N.D.	0.22		2.1	0.17	

Table 7. Results of chemical analysis. Hokkaido Central Fisheries Experimental Station.										N.D.;not detected					
Station No	Position		Japanese Standard		Depth m	Temperature	Salinity	Dissolved P.S.U. oxygen ml	Nutrients, $\mu\text{g-atoms/l}$				Chlorophyll-a		
	Latitude N	Longitude E	Date	Time					NO ₃ -N	NO ₂ -N	PO ₄ -P	NH ₄ -N	Si	$\mu\text{g/l}$	
199612J35	43-30.1	140-00.1	1996/12/3	16:36	50	3.05	34.064		10.2	N.D.	0.51		7.0	0.25	
					75	1.76	34.059		14.4	N.D.	0.88		12.6	0.13	
					100	1.51	34.078		15.7	N.D.	0.91		19.1	0.02	
					125	1.36	34.080		16.2	N.D.	1.14		22.7	0.00	
					150	1.31	34.086		15.6	N.D.	0.69		23.0	0.00	
					200	1.21	34.091		15.6	N.D.	1.12		19.6	0.00	
					300	1.03	34.091		17.2	N.D.	1.20		26.3		
					400	0.68	34.076		22.1	N.D.	1.61		29.6		
					500	0.50	34.074		23.1	N.D.	1.13		37.8		
					600	0.41	34.072		23.0	N.D.	1.80		42.4		
					0	7.0	34.198								
					276	1.26	34.078								
					363	0.99	34.081								
452	0.73	34.077													
544	0.55	34.078													
641	0.39	34.073													
199612J38	43-30.0	139-00.2	1996/12/3	22:47	0	8.5	34.274								
					187	4.90	34.125								
					284	2.58	34.086								
					389	1.37	34.078								
					491	0.92	34.079								
					585	0.72	34.076								
199702J41	42-30.0	139-40.2	1997/1/29	6:26	0	6.7	34.160		N.D.	N.D.	0.40		8.6	0.33	
					10	7.15	34.193		N.D.	N.D.	N.D.		6.8	0.24	
					20	7.18	34.194		4.7	0.13	0.36		7.3	0.28	
					30	7.18	34.193						7.3	0.26	
					50	7.13	34.198		4.9	N.D.	0.16		7.0	0.27	
					75	7.15	34.194		4.7	N.D.	0.25		7.3	0.27	
					99	6.34	34.171		7.3	N.D.	0.38		7.4	0.05	
					124	5.01	34.128		9.5	0.02	0.44		8.3	0.01	
					146	3.92	34.109		12.6	0.02	0.54		9.7	0.02	
					197	2.30	34.077		15.7	N.D.	0.98		22.0	0.01	
					292	1.27	34.078		18.1	N.D.	1.01		25.6		
					394	1.03	34.092		17.6	N.D.	1.31		19.8		
					493	0.71	34.081		21.8	N.D.	0.73		35.6		
590	0.51	34.078		23.4	N.D.	1.79		48.0							

Part III. Plankton Collection Records

Vertical hauls with a paired NORPAC net (45 cm × 180 cm, conical, NGG 54 and NXX 13, 0.33 and 0.10 mm mesh openings, respectively) or a standard NORPAC net (NGG 54) were carried out from the near sea bottom to the surface but sometimes from a depth of 150 m to the surface when the bottom was deeper than 150m. A flowmeter (RGS, Rigosha) was mounted at the center of the mouth ring of each net to register the volume of water filtered by the net. Calibrations of the flowmeter on board were means of repeated vertical tows without nets on each observation. Wet weight measurements of the preserved samples with 10% formalin seawater solution were all together carried out at the land laboratory of Central Fisheries Experimental Station, Yoichi.

Table 8-1. Calibration data of flow-meters used for NORPAC net samplings, Oyashio Maru, April 1996- March 1997 .

Date	1996/4/10	1996/4/10	1996/6/5	1996/6/5	1996/8/2	1996/8/2	1996/10/1	1996/10/1	1996/12/4	1996/12/4
Wire length(m)	100	100	100	100	100	100	100	100	100	100
Wire angle(°)	-	-	-	-	0-2	0-2	-	-	-	-
RGS No.	1782	1787	1782	1787	2401	2399	2401	2399	2401	2399
Revolution	1058	1100*	781	764*	591*	537*	833*	888*	901	983
	1053	1079	778	799	668*	962*	791	866	907	909
	1053	1081	806	801	629	769	830	859	937	898*
	1066*	1074*	822*	817*	634	771	791	865	882*	914
	1041*	1075	773*	786	629	767	764*	857*	1043*	1078*
Mean revolution per 100m	1055	1078	788	795	629	771	804	863	915	935

Table 8-2. Calibration data of flow-meters used for NORPAC net samplings, Hokushin Maru, April 1996- March 1997 .

Date	1996/4/16	1996/6/3	1996/8/3	1996/10/3	1996/12/9	1997/3/4
Wire length(m)	100	100	100	100	100	100
Wire angle(°)	3-7	10-15	-	-	4-5	-
RGS No.	1500	1500	1500	1500	1500	1500
Revolution	1075*	1056	1079	1052	1060*	1400*
	1028	1049*	1062	1090	1000	1165
	998*	1068*	1012	1150*	980*	1169
	1025	1062	1010*	1020*	990	1101*
	1029	1065	1093*	1050	1005	1215
Mean revolution per 100m	1027	1061	1051	1064	998	1183

Table 8-3. Calibration data of flow-meters used for NORPAC net samplings, Hokuyo Maru, April 1996- March 1997 .

Date	1996/4/16	1996/6	1996/8/2	1996/8/2
Wire length(m)	150	100	100	100
Wire angle(°)	-	-	-	-
RGS No.	0	0	2401	2399
Revolution	1304*	724	629	767
	1233	711*	591*	537*
	1166	725	668*	962*
	1189	733	629	769
	1112*	834*	634	771
Mean revolution per 100m	797	727	631	769

Table 8-4. Calibration data of flow-meters used for NORPAC net samplings, Kinsei Maru, April 1996- March 1997 .

Date	1996/5/29	1996/10/1
Wire length(m)	100	100
Wire angle(°)	-	6-13
RGS No.	2427	2427
Revolution	569	613*
	537*	628
	581	672*
	584	659
		662
Mean revolution per 100m	578	650

Table 9. Data on plankton samples collected by vertical hauls with a paired NORPAC net or a standard NORPAC net, from April 1996 to March 1997.

Station No.	Position		Japan Standard Time		Length of wire (m)	Angle of wire (degree)	Estimated depth of haul (m)	Net	Flow meter (RGS)		Estimated volume of water filtered (m ³)	Wet weight of sample (g)		Permanent Sample No.	Vessel	Remarks
	Lat N	Long E	Date	Hour					No.	Rev.		per haul	per 1000m ³			
J31	43-20	141-10	1996/4/8	10:10	31	28	27	N52GG	1787	485	7.2	0.80	111	C96001	Oyashio-Maru	
J32	43-30	141-00	1996/4/8	13:06	87	30	75	N52GG	1787	1219	18.1	4.38	243	C96002	Oyashio-Maru	
J31	43-20	141-10	1996/6/3	11:38	38	28	34	N52GG	1782	417	8.4	3.80	450	C96003	Oyashio-Maru	
J32	43-30	141-00	1996/6/3	12:52	97	24	89	N52GG	1782	1474	29.9	12.20	409	C96004	Oyashio-Maru	*1
J31	43-20	141-10	1996/7/29	10:18	39	27	35	N52GG	2399	256	5.3	0.66	124	C96005	Oyashio-Maru	
J32	43-30	141-00	1996/7/29	11:35	154	14	149	N52GG	2399	670	13.9	1.22	88	C96006	Oyashio-Maru	
J31	43-20	141-10	1996/9/30	9:59	35	14	34	N52GG	2399	202	3.8	1.04	277	C96007	Oyashio-Maru	
J32	43-30	141-00	1996/9/30	11:20	92	12	90	N52GG	2399	504	9.4	1.58	169	C96008	Oyashio-Maru	
J31	43-20	141-10	1996/12/3	9:59	35	20	33	N52GG	2399	239	4.1	0.80	197	C96009	Oyashio-Maru	
J32	43-30	141-00	1996/12/3	11:16	90	23	83	N52GG	2399	1074	18.3	0.19	10	C96010	Oyashio-Maru	
J31	43-20	141-10	1996/4/8	10:15	31	28	27	N13XX	1782	258	3.9			C96011	Oyashio-Maru	*2
J32	43-30	141-00	1996/4/8	13:06	87	30	75	N13XX	1782	1045	15.8	0.74	47	C96012	Oyashio-Maru	
J33	43-30	140-40	1996/4/8	14:42	167	17	160	N52GG	1787	2163	32.0	3.96	124	C96013	Oyashio-Maru	*3
J33	43-30	140-40	1996/4/8	14:42	167	17	160	N13XX	1782	1913	28.9	33.12	1147	C96014	Oyashio-Maru	
J34	43-30	140-20	1996/4/8	16:10	162	22	150	N52GG	1787	2120	31.4	6.76	215	C96015	Oyashio-Maru	*G
J34	43-30	140-20	1996/4/8	16:10	162	22	150	N13XX	1782	1868	28.2	22.40	794	C96016	Oyashio-Maru	
J41	42-30	139-40	1996/4/9	17:50	154	14	149	N52GG	1787	2070	30.7	3.68	120	C96017	Oyashio-Maru	*4
J41	42-30	139-40	1996/4/9	17:50	154	14	149	N13XX	1782	2280	34.4	8.00	232	C96018	Oyashio-Maru	*3
J43	42-30	139-00	1996/4/9	21:15	164	24	150	N52GG	1787	1939	28.7	4.56	159	C96019	Oyashio-Maru	*5
J43	42-30	139-00	1996/4/9	21:15	164	24	150	N13XX	1782	1825	27.5	15.20	552	C96020	Oyashio-Maru	*3
J45	42-30	138-20	1996/4/10	0:30	162	22	150	N52GG	1787	2002	29.7	4.84	163	C96021	Oyashio-Maru	*3
J45	42-30	138-20	1996/4/10	0:30	162	22	150	N13XX	1782	1038	15.7	8.32	531	C96022	Oyashio-Maru	*3
J47	42-30	137-30	1996/4/10	5:10	154	13	150	N52GG	1787	2113	31.3	4.64	148	C96023	Oyashio-Maru	*6
J47	42-30	137-30	1996/4/10	5:10	154	13	150	N13XX	1782	1802	27.2	20.96	771	C96024	Oyashio-Maru	
J31	43-20	141-10	1996/6/3	10:01	38	28	34	N13XX	1787	346	6.9	8.72	1260	C96025	Oyashio-Maru	
J32	43-30	141-00	1996/6/3	12:52	97	24	89	N13XX	1787	512	10.2	29.60	2891	C96026	Oyashio-Maru	*G
J33	43-30	140-40	1996/6/3	14:26	180	40	138	N52GG	1782	2139	43.3	13.20	305	C96027	Oyashio-Maru	*7
J33	43-30	140-40	1996/6/3	14:26	180	40	138	N13XX	1787	1787	35.7	21.44	600	C96028	Oyashio-Maru	*8
J34	43-30	140-20	1996/6/3	16:13	190	38	150	N52GG	1782	2672	54.1	3.64	67	C96029	Oyashio-Maru	*7
J34	43-30	140-20	1996/6/3	16:13	190	38	150	N13XX	1787	2067	41.3	11.92	288	C96030	Oyashio-Maru	*7
J41	42-30	139-40	1996/6/4	17:30	160	20	150	N52GG	1782	1472	29.8	6.28	211	C96031	Oyashio-Maru	*9
J41	42-30	139-40	1996/6/4	17:30	160	20	150	N13XX	1787	944	18.9	16.48	873	C96032	Oyashio-Maru	*9
J43	42-30	139-00	1996/6/4	20:55	164	24	150	N52GG	1782	1362	27.6	6.56	238	C96033	Oyashio-Maru	*10
J43	42-30	139-00	1996/6/4	20:55	164	24	150	N13XX	1787	1171	23.4	18.08	772	C96034	Oyashio-Maru	*10
J45	42-30	138-20	1996/6/5	0:00	151	8	150	N52GG	1782	1028	20.8	6.16	296	C96035	Oyashio-Maru	*11
J45	42-30	138-20	1996/6/5	0:00	151	8	150	N13XX	1787	843	16.9	8.96	531	C96036	Oyashio-Maru	
J47	42-30	137-30	1996/6/5	4:30	150	9	148	N52GG	1782	2399	48.6	5.08	105	C96037	Oyashio-Maru	
J47	42-30	137-30	1996/6/5	4:30	150	9	148	N13XX	1787	2401	48.0	7.36	153	C96038	Oyashio-Maru	
J31	43-20	141-10	1996/7/29	10:18	39	27	35	N13XX	2401	222	5.7	2.20	384	C96039	Oyashio-Maru	
J32	43-30	141-00	1996/7/29	11:35	88	13	86	N13XX	2401	427	8.9	7.60	857	C96040	Oyashio-Maru	

Table 9. Data on plankton samples collected by vertical hauls with a paired NORPAC net or a standard NORPAC net, from April 1996 to March 1997.

Station No.	Position		Japan Standard Time		Length of wire (m)	Angle of wire (degree)	Estimated depth of haul (m)	Net	Flow meter (RGS)		Estimated volume of water filtered (m ³)	Wet weight of sample (g)		Permanent Sample No.	Vessel	Remarks
	Lat N	Long E	Date	Hour					No.	Rev.		per haul	per 1000m ³			
J33	43-30	140-40	1996/7/29	13:12	210	45	148	N52GG	2399	2453	51.0	6.34	124	C96041	Oyashio-Maru	*9
J33	43-30	140-40	1996/7/29	13:12	210	45	148	N13XX	2401	2114	54.6	5.04	92	C96042	Oyashio-Maru	
J34	43-30	140-20	1996/7/29	15:00	203	43	148	N52GG	2399	2311	48.0	1.94	40	C96043	Oyashio-Maru	
J34	43-30	140-20	1996/7/29	15:00	203	43	148	N13XX	2401	2006	51.8	6.08	117	C96044	Oyashio-Maru	
J41	42-30	139-40	1996/7/30	18:40	173	31	148	N52GG	2399	1728	35.9	3.80	106	C96045	Oyashio-Maru	
J41	42-30	139-40	1996/7/30	18:40	173	31	148	N13XX	2401	1274	32.9	5.80	176	C96046	Oyashio-Maru	
J43	42-30	139-00	1996/7/30	22:25	153	12	150	N52GG	2399	1516	31.5	6.00	190	C96047	Oyashio-Maru	
J43	42-30	139-00	1996/7/30	22:25	153	12	150	N13XX	2401	1340	34.6	7.20	208	C96048	Oyashio-Maru	
J45	42-30	138-20	1996/7/31	1:46	150	5	149	N52GG	2399	1009	21.0	19.16	914	C96049	Oyashio-Maru	
J45	42-30	138-20	1996/7/31	1:46	150	5	149	N13XX	2401	794	20.5	6.96	340	C96050	Oyashio-Maru	*12
J47	42-30	137-30	1996/7/31	6:10	150	3	150	N52GG	2399	979	20.3	11.28	554	C96051	Oyashio-Maru	*12 *G
J47	42-30	137-30	1996/7/31	6:10	150	3	150	N13XX	2401	523	13.5	11.42	846	C96052	Oyashio-Maru	*12 *G
J31	43-20	141-10	1996/9/30	9:59	35	14	34	N13XX	2401	193	3.9	4.32	1119	C96053	Oyashio-Maru	*13
J32	43-30	141-00	1996/9/30	11:20	92	12	90	N13XX	2401	187	3.7	3.84	1027	C96054	Oyashio-Maru	
J33	43-30	140-40	1996/9/30	12:47	151	8	150	N52GG	2399	1117	20.8	1.34	64	C96055	Oyashio-Maru	
J33	43-30	140-40	1996/9/30	12:47	151	8	150	N13XX	2401	855	17.1	3.84	225	C96056	Oyashio-Maru	
J34	43-30	140-20	1996/9/30	14:32	181	34	150	N52GG	2399	1670	31.1	2.24	72	C96057	Oyashio-Maru	
J34	43-30	140-20	1996/9/30	14:32	181	34	150	N13XX	2401	1585	31.7	13.76	434	C96058	Oyashio-Maru	*G
J41	42-30	139-40	1996/10/1	9:26	159	19	150	N52GG	2399	1610	30.0	0.84	28	C96059	Oyashio-Maru	
J41	42-30	139-40	1996/10/1	9:26	159	19	150	N13XX	2401	1481	29.6	4.08	138	C96060	Oyashio-Maru	
J43	42-30	139-00	1996/10/3	14:35	164	24	150	N52GG	2399	1463	27.2	2.96	109	C96061	Oyashio-Maru	
J43	42-30	139-00	1996/10/3	14:35	164	24	150	N13XX	2401	674	13.5	6.48	481	C96062	Oyashio-Maru	
J45	42-30	138-20	1996/10/3	11:17	159	19	150	N52GG	2399	1355	25.2	4.46	177	C96063	Oyashio-Maru	
J45	42-30	138-20	1996/10/3	11:17	159	19	150	N13XX	2401	701	14.0	6.88	491	C96064	Oyashio-Maru	
J47	42-30	137-30	1996/10/3	6:38	154	14	149	N52GG	2399	1233	22.9	5.40	235	C96065	Oyashio-Maru	
J47	42-30	137-30	1996/10/3	6:38	154	14	149	N13XX	2401	889	17.8	5.96	335	C96066	Oyashio-Maru	
J31	43-20	141-10	1996/12/3	9:59	35	20	33	N13XX	2401	154	2.7	2.00	747	C96067	Oyashio-Maru	*13
J32	43-30	141-00	1996/12/3	11:16	90	23	83	N13XX	2401	780	13.6	15.36	1132	C96068	Oyashio-Maru	*G
J33	43-30	140-40	1996/12/3	12:53	202.0	42	150	N52GG	2399	1895	32.3	1.58	49	C96069	Oyashio-Maru	*G
J33	43-30	140-40	1996/12/3	12:53	202	42	150	N13XX	2401	1480	25.7	10.80	420	C96070	Oyashio-Maru	*G
J34	43-30	140-20	1996/12/3	14:43	177.0	32	150	N52GG	2399	1835	31.2	0.84	27	C96071	Oyashio-Maru	
J34	43-30	140-20	1996/12/3	14:43	177	32	150	N13XX	2401	1220	21.2	3.16	149	C96072	Oyashio-Maru	
J31	43-20	141-10	1997/1/31	10:05	30.0	-	-	N13XX	2401	111	1.9	0.20	104	C97001	Oyashio-Maru	
J31	43-20	141-10	1997/1/31	10:05	30	-	-	N52GG	2399	271	4.6	0.68	147	C97002	Oyashio-Maru	
J32	43-30	141-00	1997/1/31	12:59	85	30	74	N13XX	2401	797	13.9	1.32	95	C97003	Oyashio-Maru	
J32	43-30	141-00	1997/1/31	12:59	85	30	74	N52GG	2399	1153	19.6	0.52	26	C97004	Oyashio-Maru	
J33	43-30	140-40	1997/1/31	14:30	181	34	150	N13XX	2401	1721	29.9	1.28	43	C97005	Oyashio-Maru	
J33	43-30	140-40	1997/1/31	14:30	181.0	34	150	N52GG	2399	1803	30.7	0.36	12	C97006	Oyashio-Maru	
J34	43-30	140-20	1997/1/31	16:12	181.0	34	150	N13XX	2401	1436	25.0	0.96	38	C97007	Oyashio-Maru	
J34	43-30	140-20	1997/1/31	16:12	181.0	34	150	N52GG	2399	1872	31.9	0.38	12	C97008	Oyashio-Maru	

Table 9-2

Table 9. Data on plankton samples collected by vertical hauls with a paired NORPAC net or a standard NORPAC net, from April 1996 to March 1997.

Station No.	Position		Japan Standard Time		Length of wire (m)	Angle of wire (degree)	Estimated depth of haul (m)	Net	Flow meter (RGS)		Estimated volume of water filtered (m ³)	Wet weight of sample (g)		Permanent Sample No.	Vessel	Remarks
	Lat N	Long E	Date	Hour					No.	Rev.		per haul	per 1000m ³			
J41	42-30	139-40	1997/1/29	7:28	177	32	150	N13XX	2401	1484	25.8	1.42	55	C97009	Oyashio-Maru	
J41	42-30	139-40	1997/1/29	7:28	177	32	150	N52GG	2399	2008	34.2	0.42	12	C97010	Oyashio-Maru	
J43	42-30	139-00	1997/2/2	2:25	177.0	32	150	N13XX	2401	1765	30.7	3.28	107	C97011	Oyashio-Maru	*14
J43	42-30	139-00	1997/2/2	2:25	177.0	32	150	N52GG	2399	2025	34.5	4.58	133	C97012	Oyashio-Maru	*14
J45	42-30	138-20	1997/2/2	6:11	190	38	150	N13XX	2401	1878	32.7	2.30	70	C97013	Oyashio-Maru	*14
J45	42-30	138-20	1997/2/2	6:11	190	38	150	N52GG	2399	2386	40.6	12.36	304	C97014	Oyashio-Maru	*15
J47	42-30	137-30	1997/2/2	10:25	160.0	20	150	N13XX	2401	1410	24.5	0.64	26	C97015	Oyashio-Maru	
J47	42-30	137-30	1997/2/2	10:25	160.0	20	150	N52GG	2399	2022	34.4	0.46	13	C97016	Oyashio-Maru	
JH01	43-20	141-20	1997/1/31	11:05	15.0	27	13	N13XX	2401	123	2.1	0.42	196	C97101	Oyashio-Maru	
JH01	43-20	141-20	1997/1/31	11:05	15.0	27	13	N52GG	2399	334	5.7	0.36	63	C97102	Oyashio-Maru	
JC12	43-00	140-00	1997/1/29	10:40	160.0	20	150	N13XX	2401	1045	18.2	1.18	65	C97201	Oyashio-Maru	
JC22	42-00	139-40	1997/1/29	3:21	151	8	150	N13XX	2401	790	13.7	4.16	303	C97202	Oyashio-Maru	*14
P11	43-05	145-45	1996/4/13	17:26	151	7	150	N52GG	1500	872	13.5	-	-		Hokushin-Maru	*16
P13	42-45	145-55	1996/4/13	14:25	154	13	150	N52GG	1500	1594	24.8	5.16	208	K9606	Hokushin-Maru	*17
P15	42-15	146-00	1996/4/14	1:52	151	5	150	N52GG	1500	1657	25.7	3.80	148	K9607	Hokushin-Maru	
P16	42-00	146-00	1996/4/14	4:27	158	18	150	N52GG	1500	1604	24.9	4.54	182	K9608	Hokushin-Maru	*18
P17	41-30	146-00	1996/4/14	7:40	162	22	150	N52GG	1500	2518	39.1	10.18	260	K9609	Hokushin-Maru	*18
P11	43-05	145-45	1996/5/29	19:25	90	19	85	N52GG	1500	1098	16.6	24.92	1504	K9610	Hokushin-Maru	*19
P13	42-45	145-55	1996/5/29	22:45	173	30	150	N52GG	1500	2050	30.9	33.48	1082	K9611	Hokushin-Maru	
P15	42-15	146-00	1996/5/30	3:39	183	35	150	N52GG	1500	2465	37.2	9.60	258	K9612	Hokushin-Maru	
P16	42-00	146-00	1996/5/30	5:37	160	20	150	N52GG	1500	2965	44.8	3.96	88	K9613	Hokushin-Maru	
P17	41-30	146-00	1996/5/30	8:55	171	29	150	N52GG	1500	1975	29.8	8.70	292	K9614	Hokushin-Maru	
P11	43-05	145-45	1996/8/3	2:15	150	4	150	N52GG	1500	785	12.0	6.92	579	K9615	Hokushin-Maru	
P13	42-45	145-55	1996/8/3	6:22	153	12	150	N52GG	1500	1752	26.7	8.42	315	K9616	Hokushin-Maru	
P15	42-15	146-00	1996/8/3	12:18	156	16	150	N52GG	1500	1880	28.6	2.72	95	K9617	Hokushin-Maru	*18
P16	42-00	146-00	1996/8/3	14:12	152	9	150	N52GG	1500	2136	32.5	7.24	222	K9618	Hokushin-Maru	*18
P17	41-30	146-00	1996/8/3	18:26	151	8	150	N52GG	1500	1803	27.5	4.60	167	K9619	Hokushin-Maru	*18
P11	43-05	145-45	1996/10/2	21:26	90	5	90	N52GG	1500	638	9.6	1.90	197	K9620	Hokushin-Maru	*20
P13	42-45	145-55	1996/10/3	0:04	152	9	150	N52GG	1500	1160	17.5	3.02	172	K9621	Hokushin-Maru	*20
P15	42-15	146-00	1996/10/3	3:57	153	13	149	N52GG	1500	1770	26.7	4.08	153	K9622	Hokushin-Maru	*20
P16	42-00	146-00	1996/10/3	5:51	152	10	150	N52GG	1500	1730	26.1	2.14	82	K9623	Hokushin-Maru	*21
P17	41-30	146-00	1996/10/3	9:08	150	3	150	N52GG	1500	1788	27.0	2.42	90	K9624	Hokushin-Maru	*18
P11	43-05	145-45	1996/12/4	18:10	98	23	90	N52GG	1500	1385	22.2	0.16	7	K9625	Hokushin-Maru	
P13	42-45	145-55	1996/12/4	21:53	158	18	150	N52GG	1500	2675	42.8	1.90	44	K9626	Hokushin-Maru	
P15	42-15	146-00	1996/12/5	6:05	153	12	150	N52GG	1500	1210	19.4	1.30	67	K9627	Hokushin-Maru	
P16	42-00	146-00	1996/12/5	8:12	160	20	150	N52GG	1500	2040	32.6	1.98	61	K9628	Hokushin-Maru	*22
P17	41-30	146-00	1996/12/8	0:50	163	23	150	N52GG	1500	2110	33.8	1.46	43	K9629	Hokushin-Maru	
P11	43-05	145-45	1997/2/19	12:39	125	37	100	N52GG	1500	1860	25.2	0.62	25	K9701	Hokushin-Maru	*23
P13	42-45	145-55	1997/2/19	15:35	175	31	150	N52GG	1500	2470	33.5	0.24	7	K9702	Hokushin-Maru	
P15	42-15	146-00	1997/2/19	19:36	177	32	150	N52GG	1500	3048	41.3	2.12	51	K9703	Hokushin-Maru	

Table 9-3

Table 9. Data on plankton samples collected by vertical hauls with a paired NORPAC net or a standard NORPAC net, from April 1996 to March 1997.

Station No.	Position		Japan Standard Time		Length of wire (m)	Angle of wire (degree)	Estimated depth of haul (m)	Net	Flow meter (RGS)		Estimated volume of water filtered (m ³)	Wet weight of sample (g)		Permanent Sample No.	Vessel	Remarks
	Lat N	Long E	Date	Hour					No.	Rev.		per haul	per 1000m ³			
P16	42-00	146-00	1997/2/19	21:45	255	54	150	N52GG	1500	2950	40.0	2.12	53	K9704	Hokushin-Maru	
P17	41-30	146-00	1997/2/20	1:25	188	37	150	N52GG	1500	2070	28.1	2.66	95	K9705	Hokushin-Maru	
P52	42-00	142-20	1996/5/29	5:18	152	9	150	N52GG	2427	953	26.3	10.44	397	H9603	Kinsei-Maru	
P54	41-40	142-00	1996/5/29	9:16	155	15	150	N52GG	2427	919	25.4	11.68	461	H9604	Kinsei-Maru	
P56	41-20	141-40	1996/5/29	13:47	151	6	150	N52GG	2427	828	22.8	2.98	130	H9605	Kinsei-Maru	
P56	41-20	141-40	1996/7/31	19:16	159	19	150	N52GG	2427	831	22.9	13.58	592	H9608	Kinsei-Maru	*24
P54	41-40	142-00	1996/7/31	22:57	158	17	151	N52GG	2427	882	24.3	2.52	104	H9607	Kinsei-Maru	
P52	42-00	142-20	1996/8/1	2:12	153	11	150	N52GG	2427	756	20.9	1.46	70	H9606	Kinsei-Maru	
P52	42-20	142-20	1996/10/1	5:20	152	10	150	N52GG	2427	969	23.9	1.18	49	H9609	Kinsei-Maru	
P54	41-40	142-00	1996/10/1	1:38	154	14	149	N52GG	2427	1046	25.7	3.04	118	H9610	Kinsei-Maru	
P56	41-20	141-40	1996/9/30	21:44	151	8	150	N52GG	2427	874	21.5	1.46	68	H9611	Kinsei-Maru	
P52	42-00	142-20	1996/11/26	13:35	173	30	150	N52GG	2427	1803	44.4	0.46	10	H9612	Kinsei-Maru	
P54	41-40	142-00	1996/11/26	17:05	150	3	150	N52GG	2427	1169	28.8	1.10	38	H9613	Kinsei-Maru	
J11	45-30	141-40	1996/4/16	10:05	50	0	50	N52GG		320	6.4	0.80	125	W9604	Hokuyo-Maru	
J13	45-30	141-10	1996/4/16	12:13	152	30	132	N52GG		1053	21.1	1.60	76	W9605	Hokuyo-Maru	
J15	45-30	140-40	1996/4/16	18:22	216	45	153	N52GG		2268	45.4	1.34	30	W9606	Hokuyo-Maru	
J17	45-30	140-00	1996/4/16	21:24	173	30	150	N52GG		1632	32.6	4.28	131	W9607	Hokuyo-Maru	*25
O21	44-30	143-10	1996/4/10	4:03	58	30	50	N52GG		495	9.9	2.44	246	W9608	Hokuyo-Maru	*26
O23	44-40	143-20	1996/4/10	2:47	122	27	109	N52GG		987	19.7	2.10	106	W9609	Hokuyo-Maru	*26
O24	44-50	143-30	1996/4/10	1:23	163	24	149	N52GG		1423	28.5	2.62	92	W9610	Hokuyo-Maru	*26
O26	45-10	143-50	1996/4/10	5:35	150	2	150	N52GG		1150	23.0	1.50	65	W9611	Hokuyo-Maru	
O23	44-40	143-20	1996/6/5	0:42	108	22	100	N52GG		797	17.5	4.14	237	W9612	Hokuyo-Maru	
O24	44-50	143-30	1996/6/4	23:11	185	33	155	N52GG		1853	40.6	-	-	W9613	Hokuyo-Maru	*27
O26	45-10	143-50	1996/6/6	15:36	150	2	150	N52GG		922	20.2	0.78	39	W9614	Hokuyo-Maru	*28
J11	45-30	141-40	1996/8/3	1:40	42	18	40	N52GG	2399	182	3.8	0.42	111	W9615	Oyashio-Maru	
J11	45-30	141-40	1996/8/3	1:40	42	18	40	N13XX	2401	24	0.6	0.96	1575	W9616	Oyashio-Maru	
J13	45-30	141-10	1996/8/2	23:25	100	6	99	N52GG	2399	673	14.0	2.94	210	W9617	Oyashio-Maru	
J13	45-30	141-10	1996/8/2	23:25	100	6	99	N13XX	2401	252	6.4	4.10	641	W9618	Oyashio-Maru	
J15	45-30	140-40	1996/8/2	20:45	151	7	150	N52GG	2399	1109	23.0	1.92	83	W9619	Oyashio-Maru	*29
J15	45-30	140-40	1996/8/2	20:45	151	7	150	N13XX	2401	778	19.8	4.68	237	W9620	Oyashio-Maru	
J17	45-30	140-00	1996/8/2	17:45	152	10	150	N52GG	2399	1282	26.6	6.08	228	W9621	Oyashio-Maru	*30
J17	45-30	140-00	1996/8/2	17:45	152	10	150	N13XX	2401	822	20.9	4.28	205	W9622	Oyashio-Maru	
O23	44-40	143-20	1996/7/30	8:13	144	46	100	N52GG		-	-	8.04	-	W9623	Hokuyo-Maru	*30
O24	44-50	143-30	1996/7/30	6:59	150	20	141	N52GG		-	-	0.78	-	W9624	Hokuyo-Maru	*31
O26	45-10	143-50	1996/7/30	1:20	152	2	152	N52GG		-	-	1.08	-	W9625	Hokuyo-Maru	*31
J11	45-30	141-40	1996/10/3	21:28	62	30	54	N52GG		512	11.2	0.38	34	W9626	Hokuyo-Maru	
J13	45-30	141-10	1996/10/3	19:20	120	12	117	N52GG		120	2.6	3.82	1452	W9627	Hokuyo-Maru	*32
J15	45-30	140-40	1996/10/3	1:53	164	24	150	N52GG		895	19.6	3.70	189	W9628	Hokuyo-Maru	
J17	45-30	140-00	1996/10/3	5:15	185	36	150	N52GG		1098	24.1	1.10	46	W9629	Hokuyo-Maru	
O23	44-40	143-20	1996/10/1	1:38	106	19	100	N52GG		702	15.4	1.08	70	W9630	Hokuyo-Maru	

Table 9. Data on plankton samples collected by vertical hauls with a paired NORPAC net or a standard NORPAC net, from April 1996 to March 1997.

Station No.	Position		Japan Standard Time		Length of wire (m)	Angle of wire (degree)	Estimated depth of haul (m)	Net	Flow meter (RGS)		Estimated volume of water filtered (m ³)	Wet weight of sample (g)		Permanent Sample No.	Vessel	Remarks
	Lat N	Long E	Date	Hour					No.	Rev.		per haul	per 1000m ³			
O24	44-50	143-30	1996/10/1	0:22	148	10	146	N52GG	1155	25.3	25.3	1.48	58	W9631	Hokuyo-Mar	*31
O26	45-10	143-50	1996/10/1	11:12	160	20	150	N52GG	1258	27.6	27.6	0.88	32	W9632	Hokuyo-Mar	
O23	44-40	143-20	1996/12/10	2:01	110	8	109	N52GG	827	18.1	18.1	0.76	42	W9633	Hokuyo-Mar	
O24	44-50	143-30	1996/12/10	0:41	150	26	135	N52GG	1201	26.3	26.3	1.62	62	W9634	Hokuyo-Mar	*33
O26	45-10	143-50	1996/12/11	9:11	167	25	151	N52GG	1179	25.8	25.8	1.04	40	W9635	Hokuyo-Mar	
J11	45-30	141-40	1997/2/19	12:48	68	47	46	N52GG	671	12.9	12.9	1.54	119	W9701	Hokuyo-Mar	
J13	45-30	141-10	1997/2/19	15:20	130	40	100	N52GG	1643	31.7	31.7	1.46	46	W9702	Hokuyo-Mar	
J15	45-30	140-40	1997/3/4	15:24	192	40	147	N52GG		-	-	0.22	-	W9703	Hokuyo-Mar	
J17	45-30	140-00	1997/3/4	21:00	160	30	139	N52GG	380	7.3	7.3	2.92	399	W9704	Hokuyo-Mar	

- | | | | |
|-----|--|-----|---|
| *1 | Large copepods abundant. | *21 | Euphausiids and <i>P. elegans</i> appear. |
| *2 | Unable to measure wet weight. | *22 | Sample greenish. |
| *3 | Euphausiids appear. | *23 | Slightly contaminated by bottom sands. |
| *4 | Large copepods appear. | *24 | Somewhat gelatinous. |
| *5 | Euphausiids abundant. | *25 | Phytoplankton abundant. <i>P. elegans</i> appear. |
| *6 | Phytoplankton abundant. | *26 | Euphausiids appear. |
| *7 | <i>Parasagitta elegans</i> appear. | *27 | Wet weight not measured, because bottom mud contaminated. |
| *8 | Excluding large gelatinous matter. | *28 | Excluding a piece of shell fragment. |
| *9 | Gelatinous, but well-drained. | *29 | Excluding two salps. |
| *10 | <i>Parasagitta elegans</i> and euphausiids appear. | *30 | Copepods abundant. |
| *11 | Large <i>P. elegans</i> appear. | *31 | Euphausiids appear. |
| *12 | Large zooplankton abundant. | *32 | Somewhat gelatinous. |
| *13 | Sample greenish. | *33 | <i>P. elegans</i> and amphipods appear. |
| *14 | Euphausiids appear. | *G | Gelatinous |
| *15 | Euphausiids and <i>Parasagitta elegans</i> appear. | | |
| *16 | Sample damaged. | | |
| *17 | <i>Parasagitta elegans</i> and <i>Neocalanus</i> appear. | | |
| *18 | <i>P. elegans</i> appear. | | |
| *19 | Phytoplankton abundant. | | |
| *20 | Euphausiids appear. | | |

DATA RECORD OF OCEANOGRAPHIC OBSERVATIONS No.12 HOKKAIDO FISH. EXP. STN. JAPAN 2005

北海道立水産試験場

北海道立中央水産試験場	〒046-8555 北海道余市町浜中町 238	TEL:0135-23-7451	FAX:0135-23-3141
北海道立函館水産試験場	〒042-0932 函館市湯川町 1-2-66	TEL:0138-57-5998	FAX:0138-57-5991
北海道立函館水試室蘭支場	〒051-0013 室蘭市舟見町 1-133-31	TEL:0143-22-2327	FAX:0143-22-7605
北海道立釧路水産試験場	〒085-0024 釧路市浜町 2-6	TEL:0154-23-6221	FAX:0154-23-6225
北海道立網走水産試験場	〒099-3119 網走市鱒浦 1-1-1	TEL:0152-43-4591	FAX: 0152-43-4593
北海道立稚内水産試験場	〒097-0001 稚内市末広 4-5-15	TEL:0162-32-7177	FAX:0162-32-7171

Hokkaido Central Fisheries Experimental Station

238 Hamanaka-cho Yoichi-cho Hokkaido Japan, 046-8555

<http://www.fishexp.pref.hokkaido.jp/exp/central/index.htm>

E-mail: ckaiyou@fishexp.pref.hokkaido.jp

平成 17 年 4 月発行

発行者 北海道立中央水産試験場 北海道余市町浜中町 238

編集者 北海道立中央水産試験場 海洋環境部 北海道余市町浜中町 238 TEL:0135-23-4020 FAX:0135-23-8721