

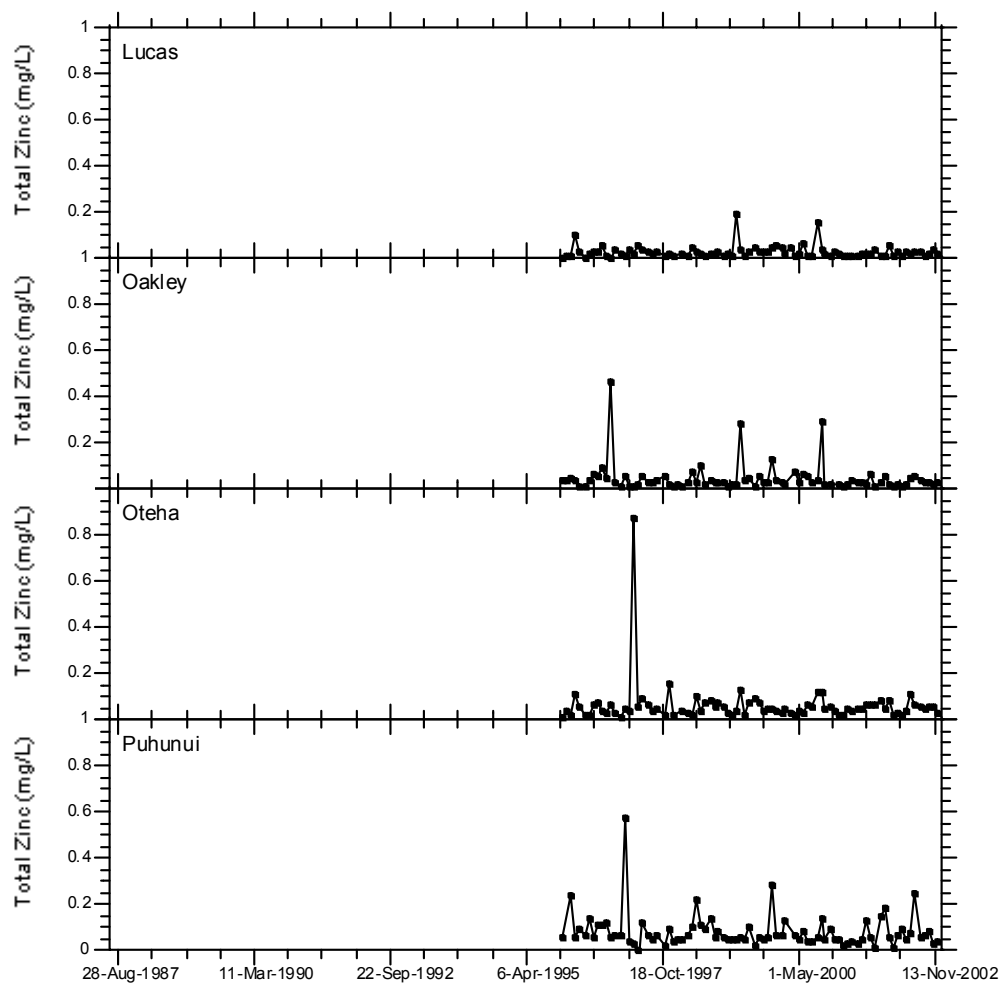
APPENDIX 21: FRESHWATER – TOTAL ZINC

(Note that $\text{g/m}^3 = \text{g m}^{-3} = \text{mg/L}$)

a) Total zinc (mg/L) during January 2002 to December 2002

Date	Lucas	Oakley	Oteha	Puhinui
10-Jan-02	0.052	0.023	0.080	0.053
4-Feb-02	0.011	0.011	0.016	0.013
7-Mar-02	0.026	0.023	0.024	0.062
2-Apr-02	0.008	0.014	0.022	0.091
1-May-02	0.028	0.018	0.037	0.046
5-Jun-02	0.020	0.047	0.112	0.070
3-Jul-02	0.024	0.055	0.065	0.244
6-Aug-02	0.032	0.034	0.056	0.053
5-Sep-02	0.006	0.031	0.046	0.067
2-Oct-02	0.023	0.024	0.056	0.086
5-Nov-02	0.036	0.022	0.058	0.024
02-Dec-02	0.015	0.024	0.031	0.036
Median	0.024	0.024	0.051	0.058
IQR/median %	64	46	60	53

b) The graphs on the following pages show total zinc measurements from January 1992 to December 2002 (where data available).



SALINE SITES DATA TABLES AND TIME-SERIES

APPENDIX 22: SALINE – TEMPERATURE

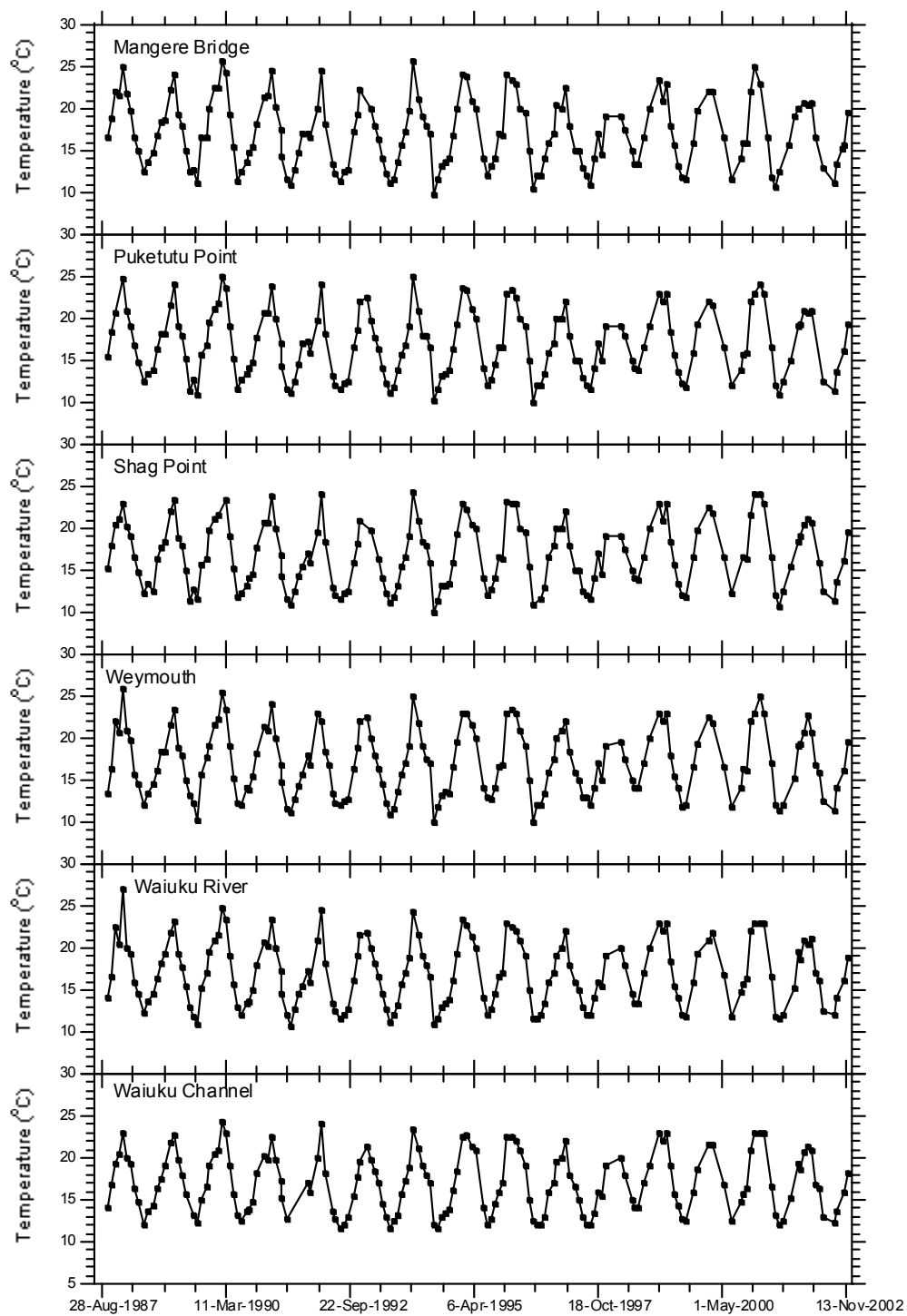
a) Temperature (deg C) during January 2002 - December 2002

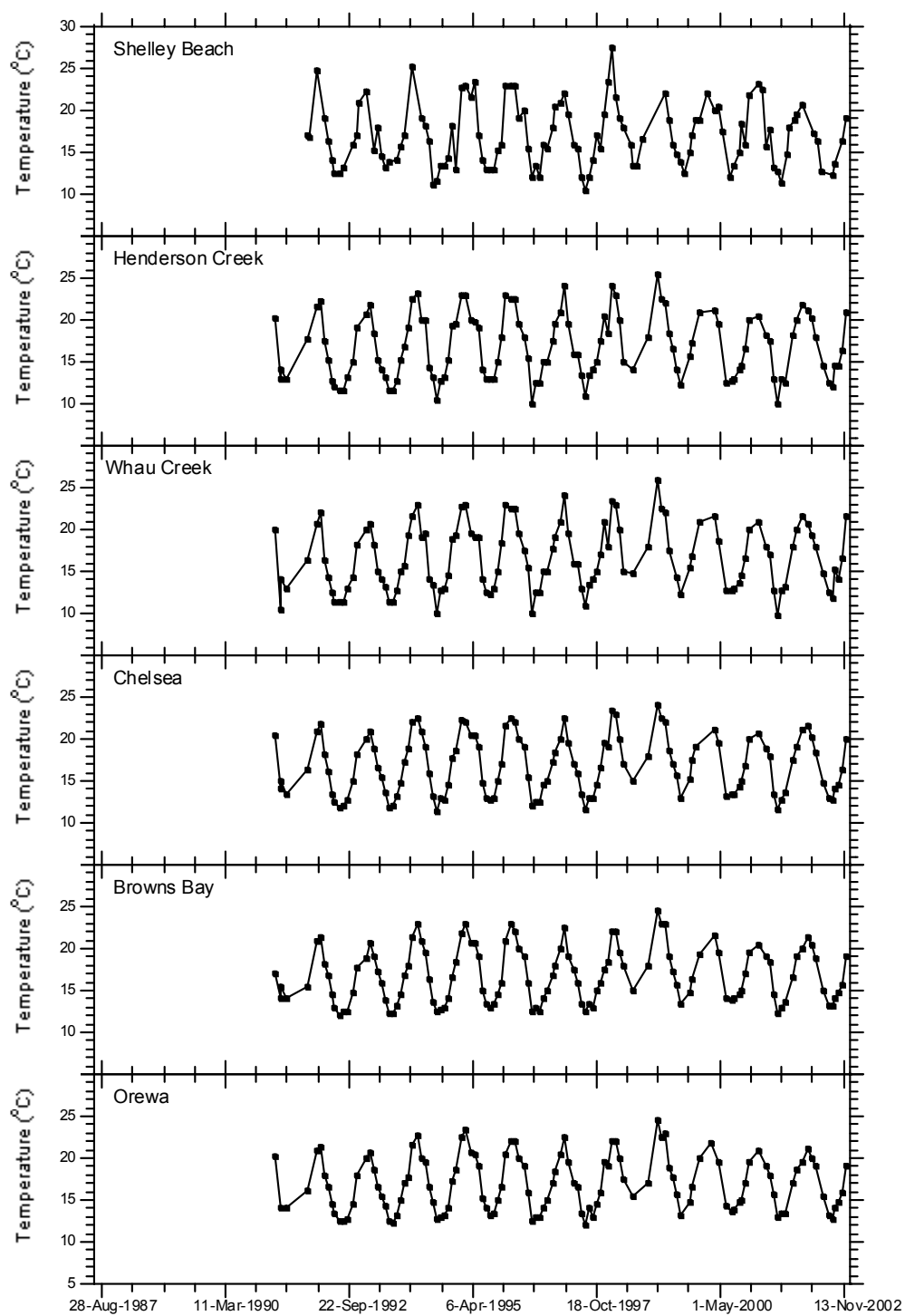
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	19.9	21.2	18.2	21.9	20.7	19.5	20.9	20.4	20.8	18.9	20.8	20.9	20.7	21.5
14-Feb-02	21.3	21.5	20.5	21.1	20.4	21.2	20.7	21.1		20.6	21.4	20.4	22.7	20.6
18-Mar-02	20.5	20.2	20.2	20.3	20.8	19.9	20.9	20.8		20.1	20.9	21.2	20.6	19.4
15-Apr-02	18.8	18.4	19.0	18	16.6	19.2	16.9	16.8	17.2	19	16.9	17.1	16.8	17.9
14-May-02					15.7		15.9	16	16.4		16.3	16.2	15.9	
14-Jun-02	15.1	14.8	15.8	14.6	12.9	15.4	12.5	12.6	12.8	15.8	12.9	12.6	12.4	14.7
25-Jul-02	13.1	12.9	13.9	12.5		13.1				13.8				12.6
27-Aug-21	13.2	12.8	13.8	12.1	11.2	12.8	11.4	11.4	12.2	13.2	12.2	12	11.4	11.8
9-Sep-02	14.0	14.1	13.0	14.6	13.5	14.0	13.6	13.6	13.5	14.2	13.7	14.1	14.1	15.2
7-Oct-02	14.7	14.6	14.5	14.6	15.2	14.8				14.6				14.2
5-Nov-02	15.6	16.3	15.2	16.4	15.6	16.0	16.1	16.1	16.4	15.2	15.9	16.2	16.2	16.5
4-Dec-02	19.2	20.1	18.4	20.9	19.6	19.0	19.4	19.5	19.2	18.7	18.2	18.8	19.5	21.6
Median	15.6	16.3	15.8	16.4	15.7	16.0	16.5	16.5	16.4	15.8	16.6	16.7	16.5	16.5
IQR/Median %	33	36	28	37	36	31	38	36	27	29	36	32	35	34

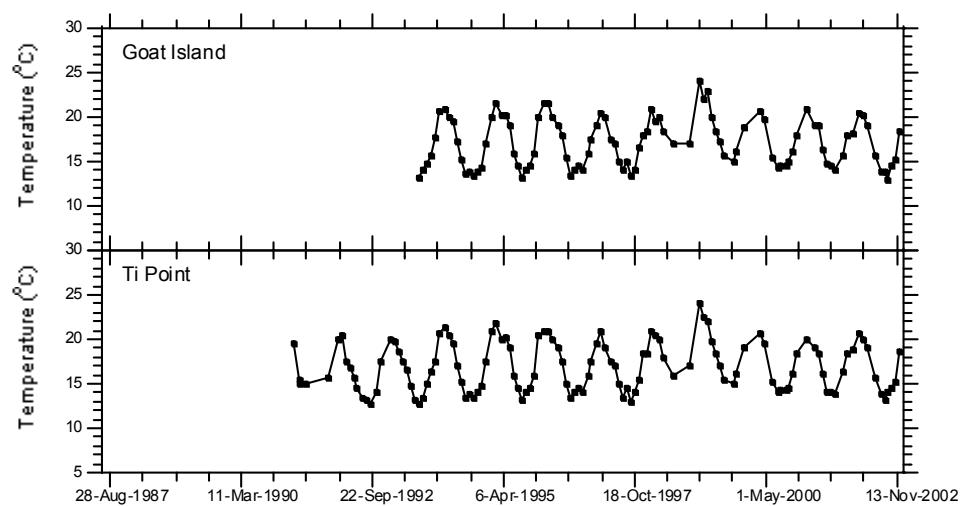
NB: Temperature values are for the measurement taken on the day closest (within 4 days) to the time samples were taken.

The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show temperature measurements from January 1992 to December 2002 (where data available).







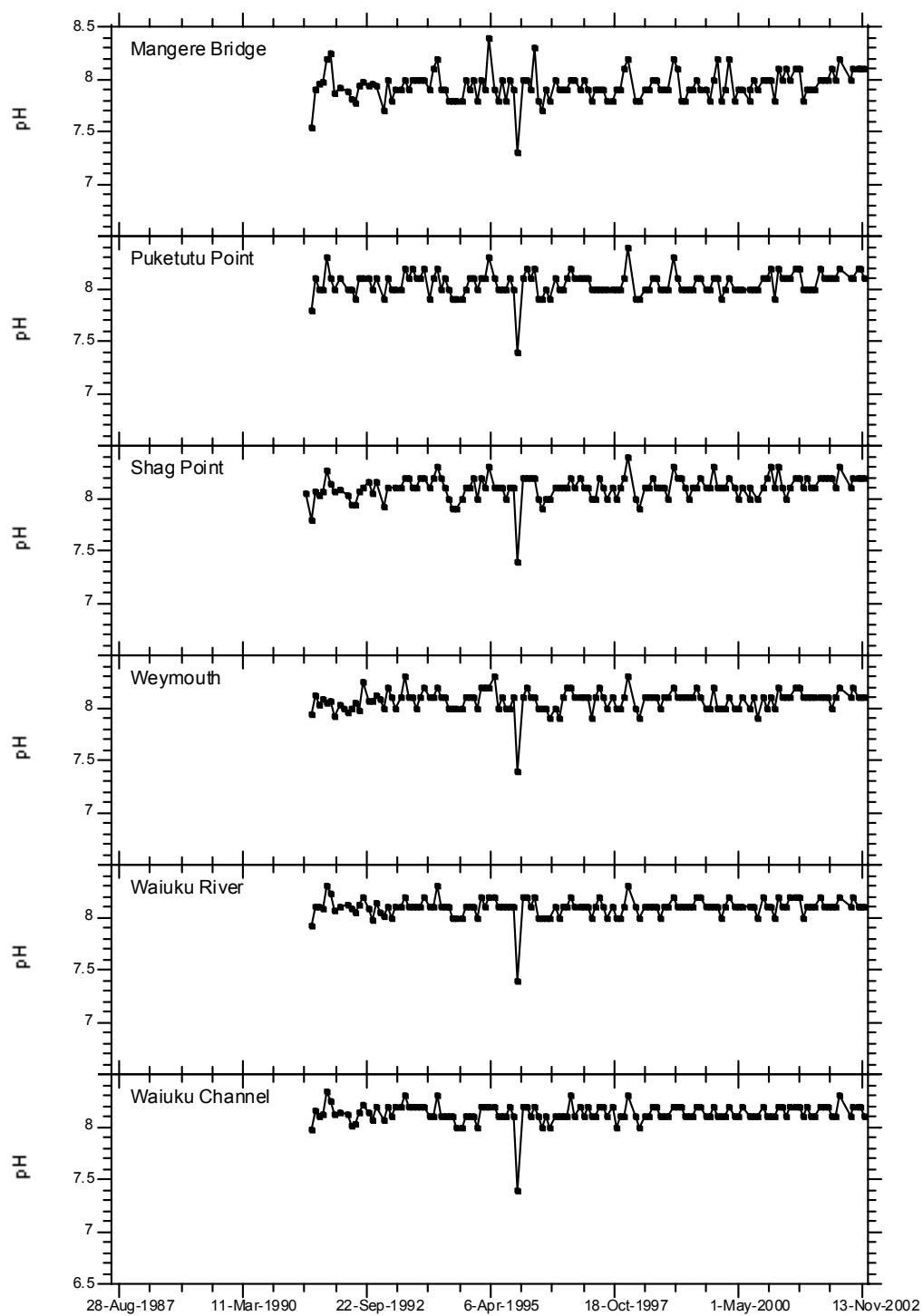
APPENDIX 23: SALINE – pH

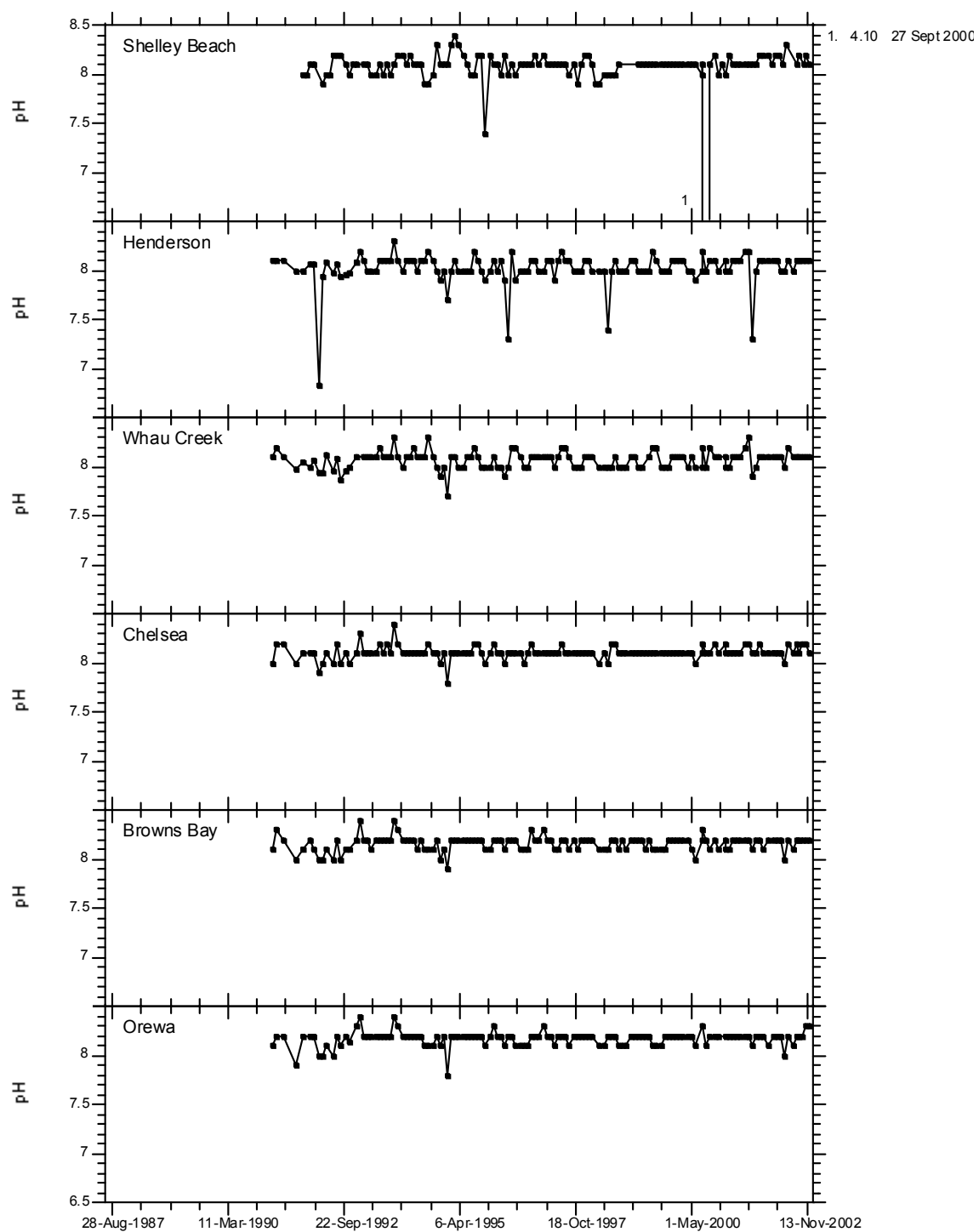
a) pH (units) during January 2002 - December 2002

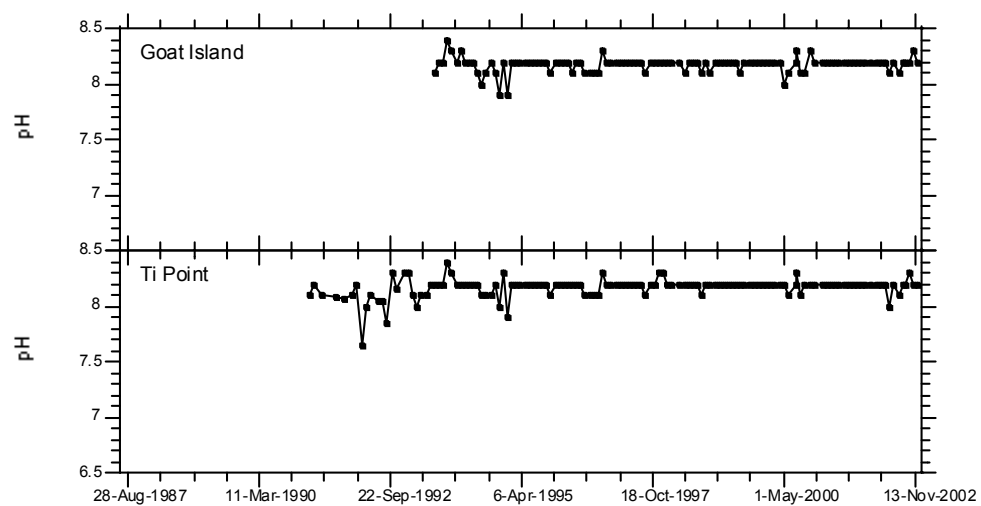
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	8.2	8.1	8.2	8.1	8.0	8.1	8.2	8.2	8.2	8.2	8.2	8.2	8.1	8.1
14-Feb-02	8.2	8.1	8.2	8.1	8.0	8.2	8.1	8.2	8.1	8.2	8.2	8.1	8.1	8.1
18-Mar-02	8.2	8.1	8.2	8.1	8.0	8.2	8.1	8.2	8.2	8.2	8.2	8.1	8.1	8.1
15-Apr-02	8.2	8.1	8.2	8.0	8.1	8.2	8.1	8.2	8.2	8.2	8.1	8.1	8.0	8.1
14-May-02	8.0	8.0	8.1	8.0	8.0	8	8.1	8.1	8.1	8.0	8.1	8.1	8.1	8.0
14-Jun-02	8.2	8.2	8.2	8.1	8.2	8.2	8.2	8.3	8.3	8.2	8.3	8.2	8.2	8.2
25-Jul-02	8.1	8.1	8.1	8.0		8.1				8.1				8.1
27-Aug-21	8.2	8.2	8.2	8.1	8.0	8.2	8.1	8.1	8.1	8.2	8.1	8.1	8.1	8.1
9-Sep-02	8.2	8.1	8.2	8.1	8.1	8.2	8.1	8.2	8.2	8.2	8.2	8.2	8.2	8.1
7-Oct-02	8.2	8.2	8.2	8.1	8.1	8.2	8.2	8.2	8.1	8.3	8.2	8.1	8.1	8.1
5-Nov-02	8.2	8.2	8.3	8.1	8.1	8.3	8.2	8.2	8.2	8.2	8.2	8.1	8.1	8.1
4-Dec-02	8.2	8.1	8.2	8.1	8.1	8.3	8.1	8.2	8.1	8.2	8.1	8.1	8.1	8.1
Median	8.2	8.1	8.2	8.1	8.1	8.2	8.1	8.2	8.2	8.2	8.2	8.1	8.1	8.1
IQR/Median %	0.0	1.2	0.0	0.3	1.2	0.3	1.2	0.0	1.2	0.0	1.2	0.6	0.0	0.0

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show pH measurements from January 1992 to December 2002 (where data available).







APPENDIX 24: SALINE – SUSPENDED SOLIDS

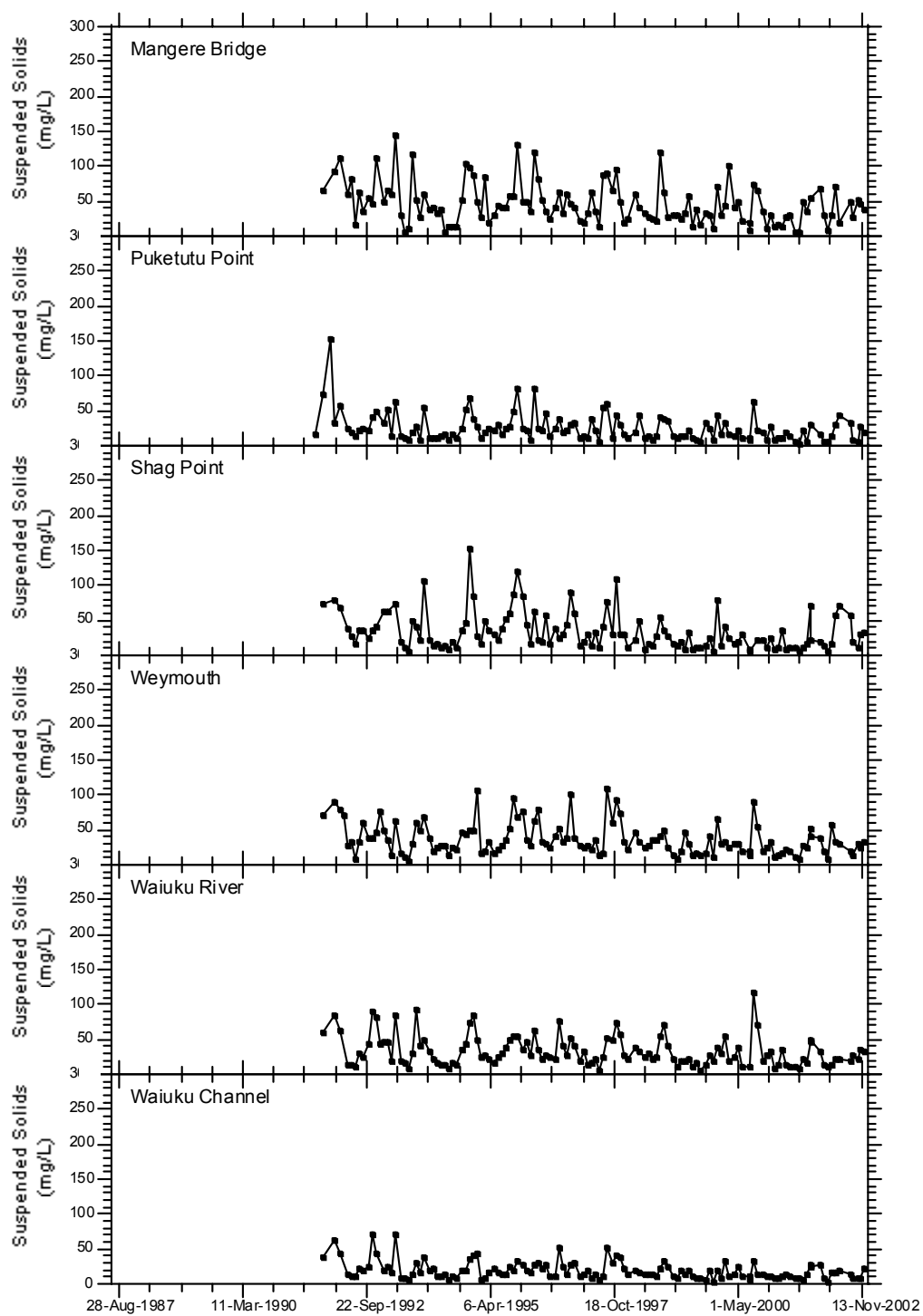
(Note that $\text{g/m}^3 = \text{g m}^{-3} = \text{mg/L}$)

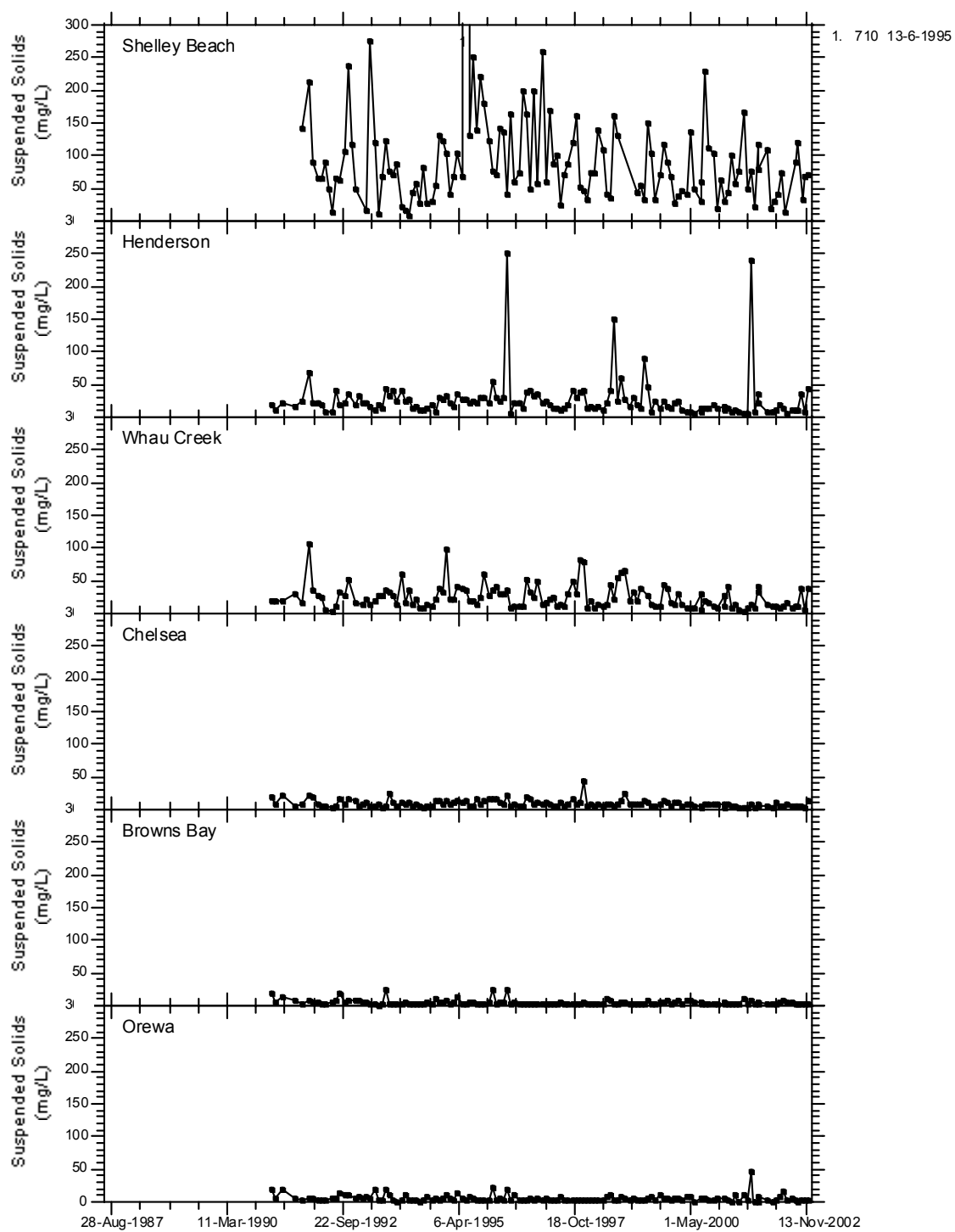
a) Suspended solids (mg/L) during January 2002 - December 2002

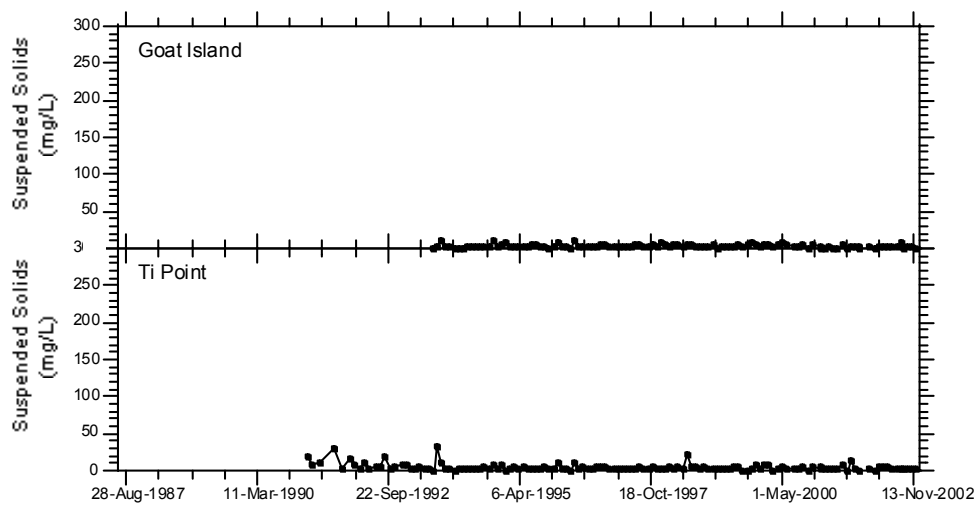
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	2.7	5.5	4.2	9.0	67.0	2.6	16.0	20.0	110.0	2.9	28.0	34.0	37.0	14.0
14-Feb-02	1.5	4.2	0.7	9.6	31.0	1.3	5.4	15.0	18.0	0.8	8.7	15.0	19.0	12.0
18-Mar-02	4.0	10.0	1.7	12.0	7.7	2.6	4.3	5.2	29.6	4.7	3.9	11.4	9.1	11.0
15-Apr-02	4.7	5.2	3.0	19.0	30.2	8.9	15.0	17.0	41.0	4.3	17.0	14.5	56.5	8.3
14-May-02	7.6	6.3	1.6	13.8	72.0	16.7	29.0	58.0	75.0	4.5	15.6	21.0	32.0	11.4
14-Jun-02	5.4	8.3	1.9	4.8	19.0	3.2	45.1	70.3	14.0	3.0	18.5	22.6	28.9	15.9
25-Jul-02	5.7	4.4	1.8	10.4		6.7				3.6				7.8
27-Aug-21	2.5	4.8	9.6	9.9	50.0	2.5	33.0	58.0	90.0	3.9	13.0	20.0	19.0	11.0
9-Sep-02	4.0	6.8	1.4	12.1	28.0	1.1	7.3	20.0	120.0	2.1	8.5	28.0	14.0	10.2
7-Oct-02	2.0	5.2	2.1	36.0	53.0	2.3	4.3	10.8	33.9	4.0	7.4	21.1	30.0	39.2
5-Nov-02	3.2	2.7	1.6	8.9	46.0	2.4	28.5	30.0	69.0	3.9	9.1	35.6	25.7	6.4
4-Dec-02	2.4	13.8	0.8	44.0	38.0	1.7	19.6	32.5	70.0	3.7	20.6	31.6	32.1	39.0
Median	3.6	5.4	1.8	11.2	38.0	2.6	16.0	20.0	69.0	3.8	13.0	21.1	28.9	11.2
IQR/Median %	67	46	44	50	59	75	140	146	74	29	70	58	45	42

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show suspended solids measurements from January 1992 to December 2002 (where data available).







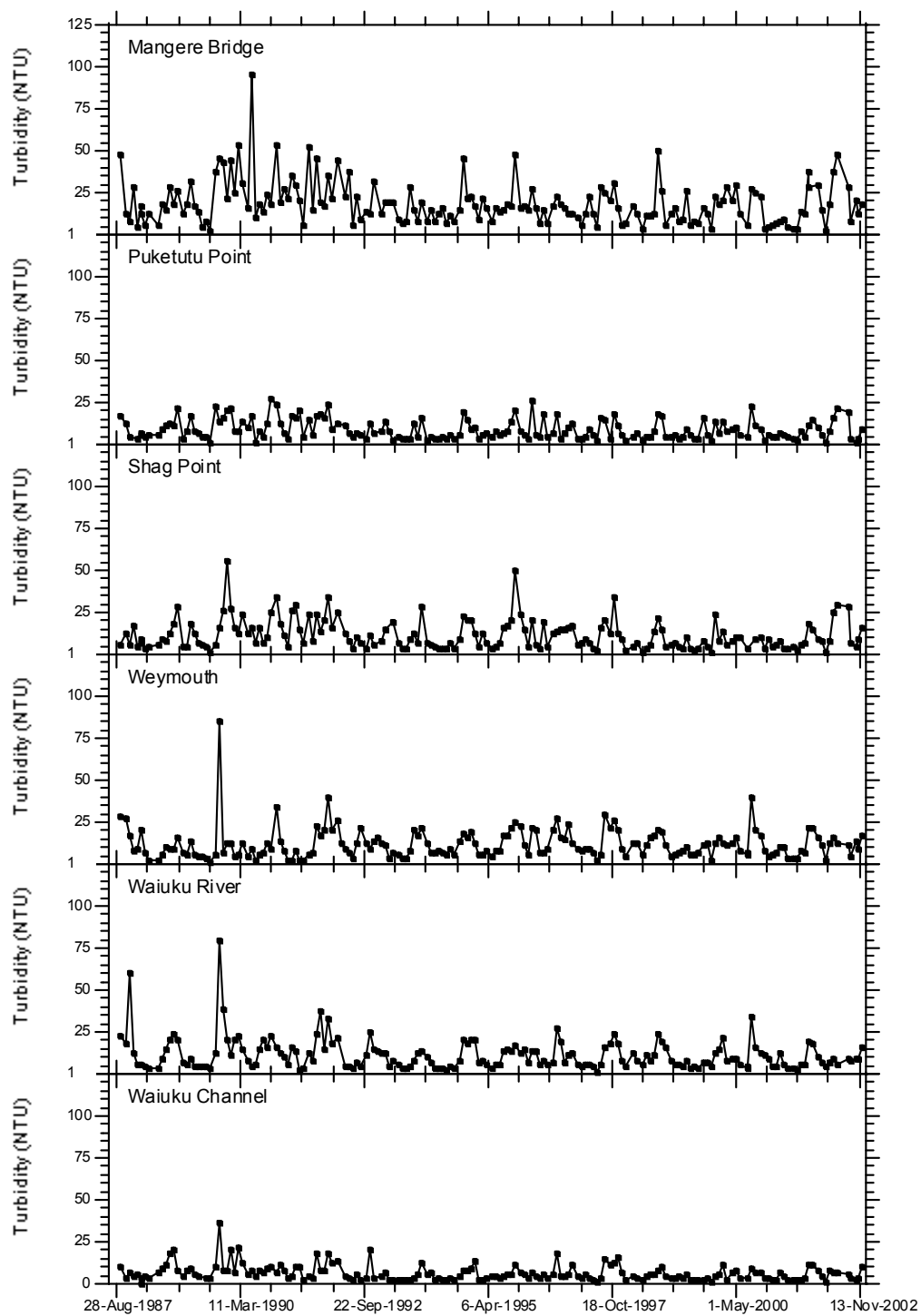
APPENDIX 25: SALINE – TURBIDITY

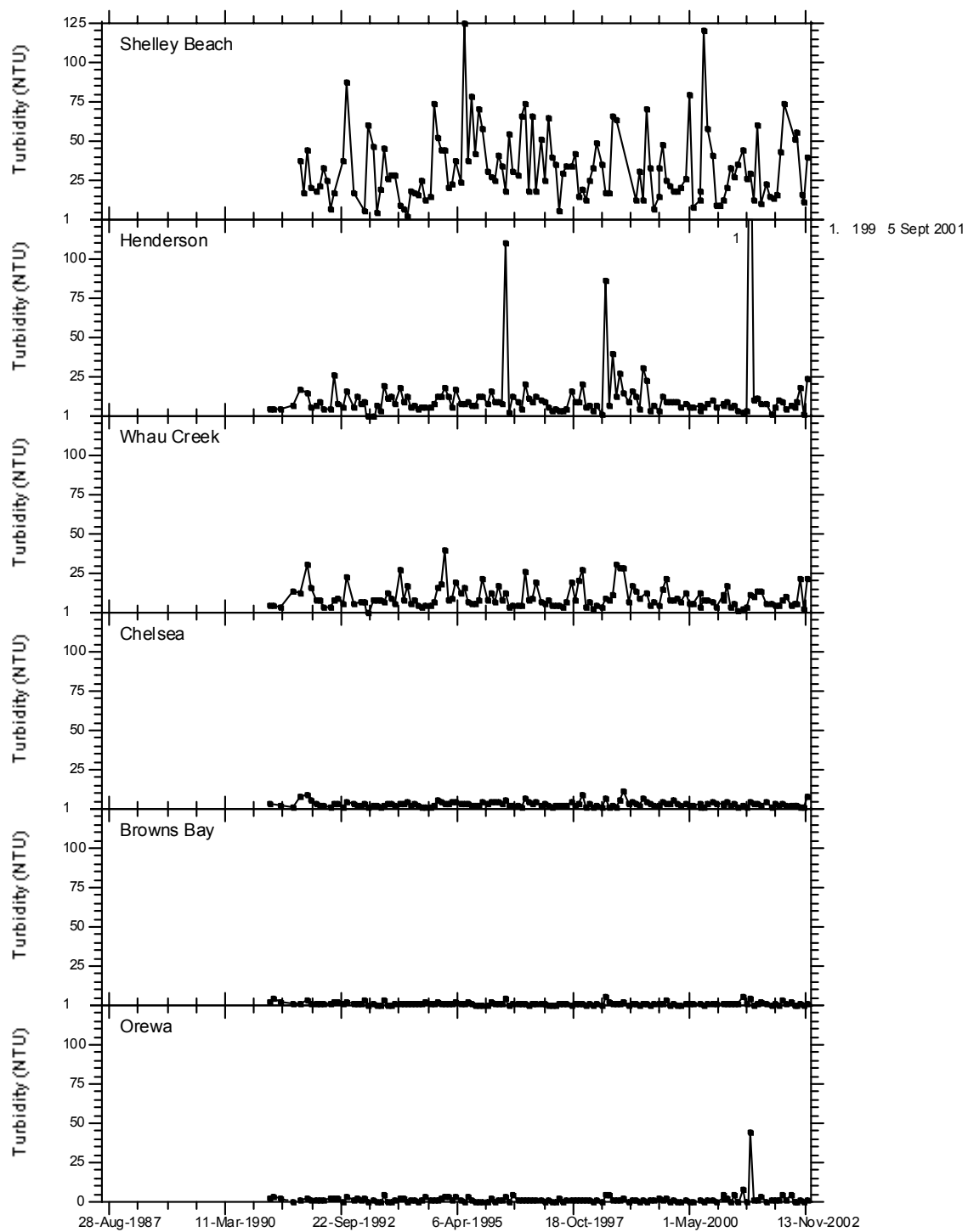
a) Turbidity (NTU) during January 2002 - December 2002

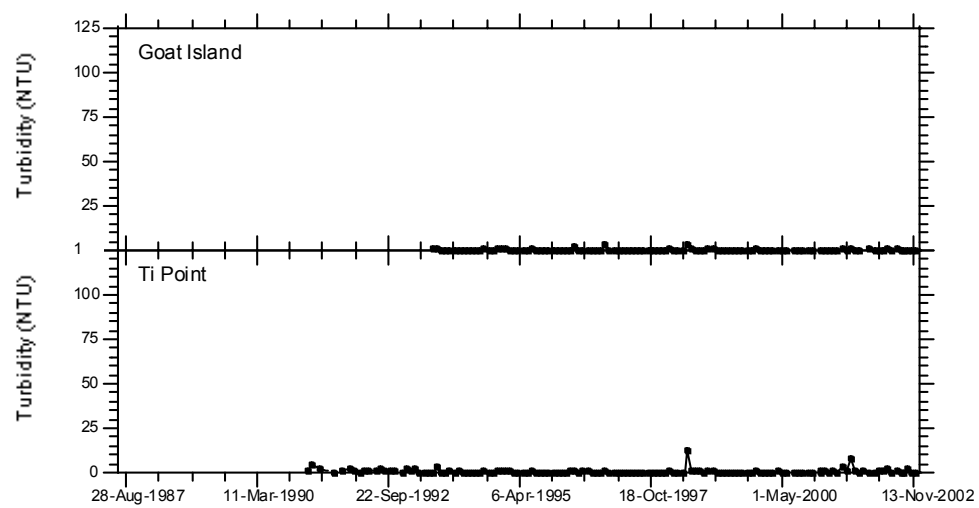
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	1.1	4.5	1.0	8.0	30.0	0.5	10.0	9.4	23.0	0.5	8.4	10.0	16.0	6.0
14-Feb-02	0.6	1.7	0.5	0.9	15.0	0.9	5.2	8.2	15.0	0.3	4.4	7.0	11.0	5.7
18-Mar-02	1.7	3.3	0.3	6.3	2.5	0.8	1.5	1.5	14.0	0.7	1.2	4.3	2.7	4.7
15-Apr-02	0.5	2.3	0.5	10.6	18.1	1.5	8.6	7.8	16.1	0.7	8.4	6.5	12.9	4.7
14-May-02	3.8	2.9	0.7	8.7	37.5	4.7	16.2	25.6	43.1	2.2	7.4	9.0	15.7	7.6
14-Jun-02	0.8	2.5	0.5	5.0	48.0	0.8	22.0	30.0	74.0	0.5	6.7	6.1	13.0	10.1
25-Jul-02	2.2	2.2	0.7	6.5		4.3				1.7				4.5
27-Aug-21	0.4	2.0	0.5	5.4	28.2	0.4	19.9	28.3	50.7	0.5	6.2	8.6	11.6	5.9
9-Sep-02	0.3	2.2	0.2	9.2	8.4	0.2	3.3	6.5	56.3	0.3	3.0	7.9	4.8	5.3
7-Oct-02	0.9	1.7	0.5	18.2	20.0	1.1	1.7	4.5	16.0	1.9	2.1	9.2	14.0	22.1
5-Nov-02	0.5	0.7	0.4	1.7	13.0	0.6	2.9	8.6	11.0	0.5	3.6	9.5	8.6	1.8
4-Dec-02	1.0	7.5	0.4	23.8	18.3	0.7	9.6	16.4	39.5	0.5	10.8	15.7	16.8	21.1
Median	0.8	2.2	0.5	7.2	18.3	0.8	8.6	8.6	23.0	0.5	6.2	8.6	12.9	5.8
IQR/Median %	93	49	40	59	83	88	117	161	137	96	75	30	39	61

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show turbidity measurements from January 1992 to December 2002 (where data available).







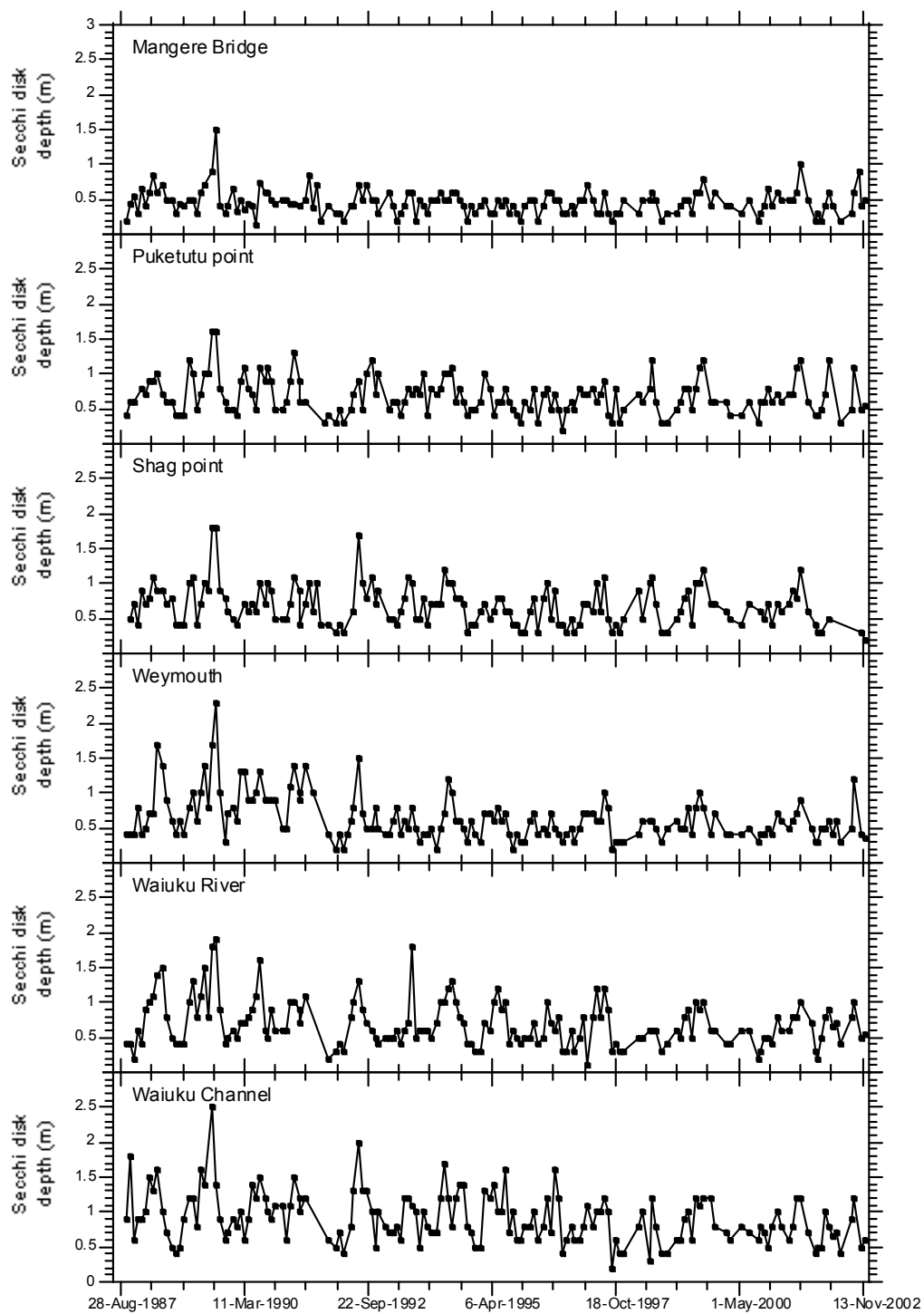
APPENDIX 26: SALINE – SECCHI DEPTH

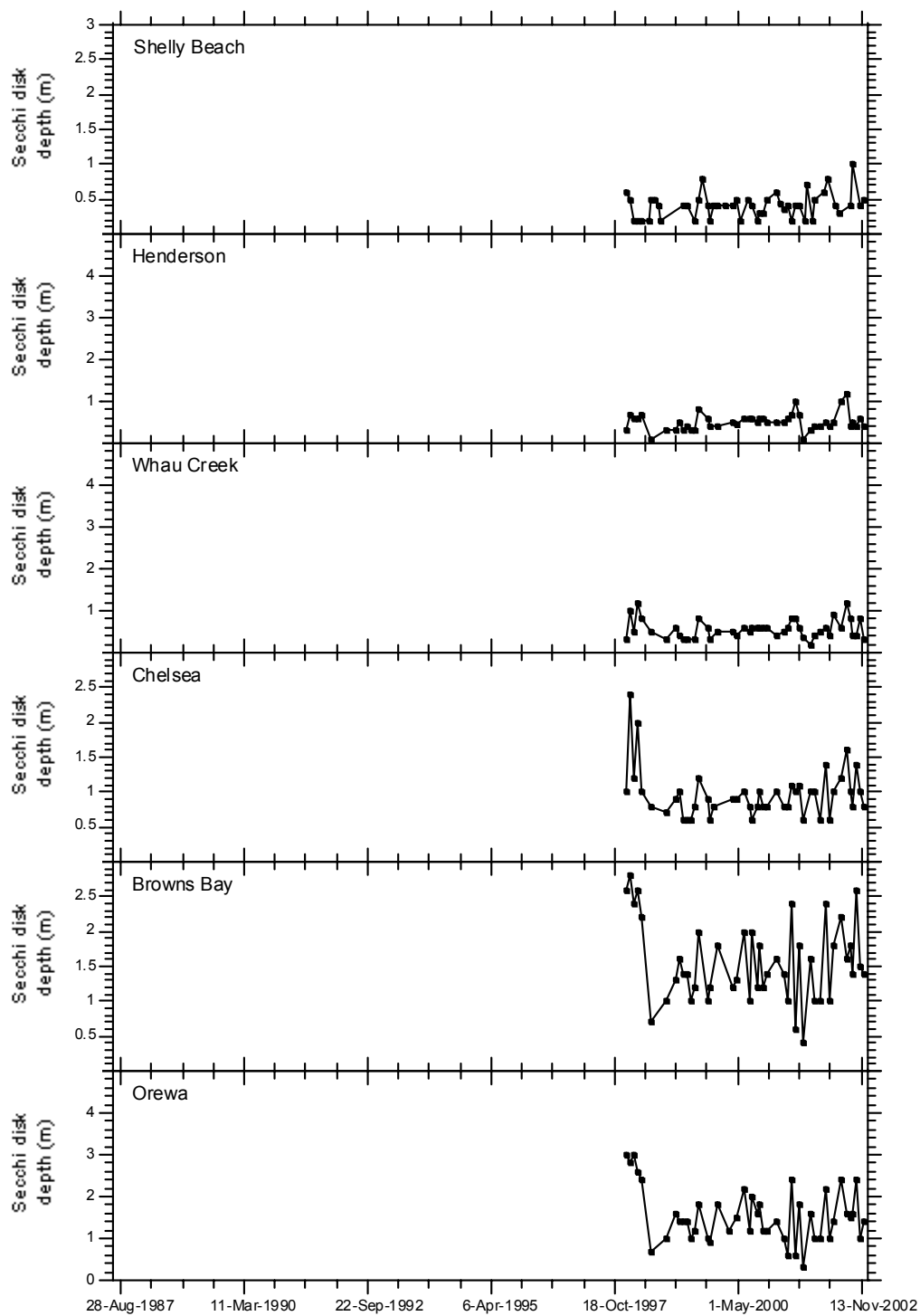
a) Secchi depth (m) during January 2002 - December 2002

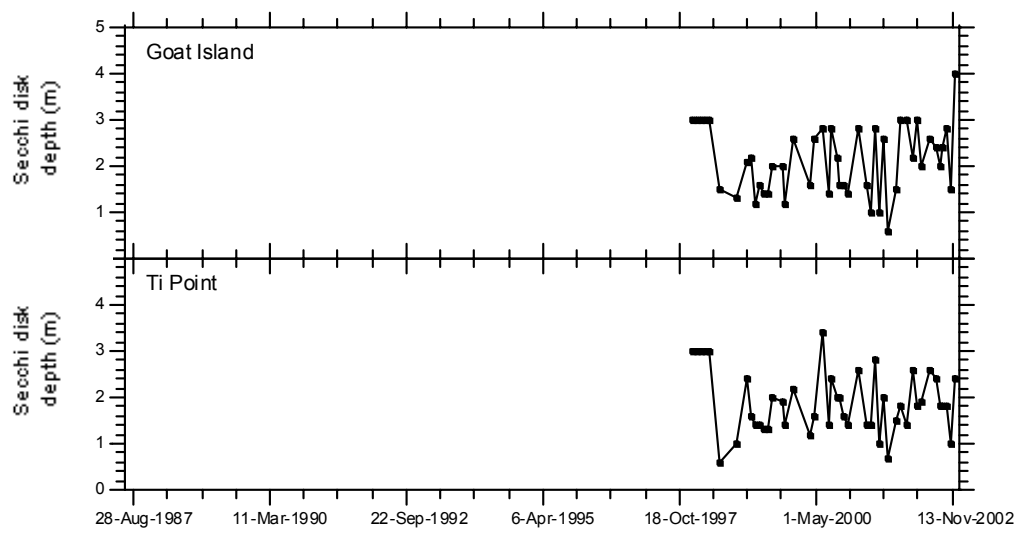
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	1.0	0.6	3.0	0.4	0.2	1.0	0.5		0.3	1.4	0.5	0.5	0.5	0.5
14-Feb-02	2.4	1.4	2.2	0.5	0.4	2.2	0.7	0.6		2.6	1.0	0.8	0.5	0.6
18-Mar-02	1.0	0.6	3.0	0.4	0.6	1.0	1.2	0.8	0.5	1.8	0.8	0.9	0.6	0.4
15-Apr-02	1.8	1.0	2.0	0.5	0.4	1.4	0.5	0.6		1.9	0.7	0.7	0.4	0.9
14-May-02					0.3		0.5	0.4			0.7	0.7	0.6	0.6
14-Jun-02	2.2	1.2	2.6	1.0	0.2	2.4	0.3	0.3		2.6	0.4	0.4	0.3	
25-Jul-02	1.6	1.6	2.4	1.2		1.6				2.4		0.8		1.2
27-Aug-21	1.8	1.0	2.0	0.4	0.3	1.5	0.5	0.4		1.8	0.9	1.0	0.5	0.8
9-Sep-02	1.4	0.8	2.4	0.5	0.6	1.6	1.1	1.0		1.8	1.2		1.2	0.4
7-Oct-02	2.6	1.4	2.8	0.4	0.9	2.4	0.5			1.8		0.5		0.4
5-Nov-02	1.5	1.0	1.5	0.6	0.4	1.0	0.6	0.4	0.3	1.0	0.5		0.4	0.8
4-Dec-02	1.4	0.8	4.0	0.4	0.5	1.4	0.4	0.5	0.2	2.4	0.6	0.6	0.4	0.3
Median	1.6	1.0	2.4	0.5	0.4	1.5	0.5	0.5	0.3	1.8	0.7	0.7	0.5	0.6
IQR/Median %	38	50	33	30	63	47	33	40	25	33	52	43	35	67

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show Secchi depth measurements from January 1992 to December 2002 (where data available).







APPENDIX 27: SALINE – CHLORIDE

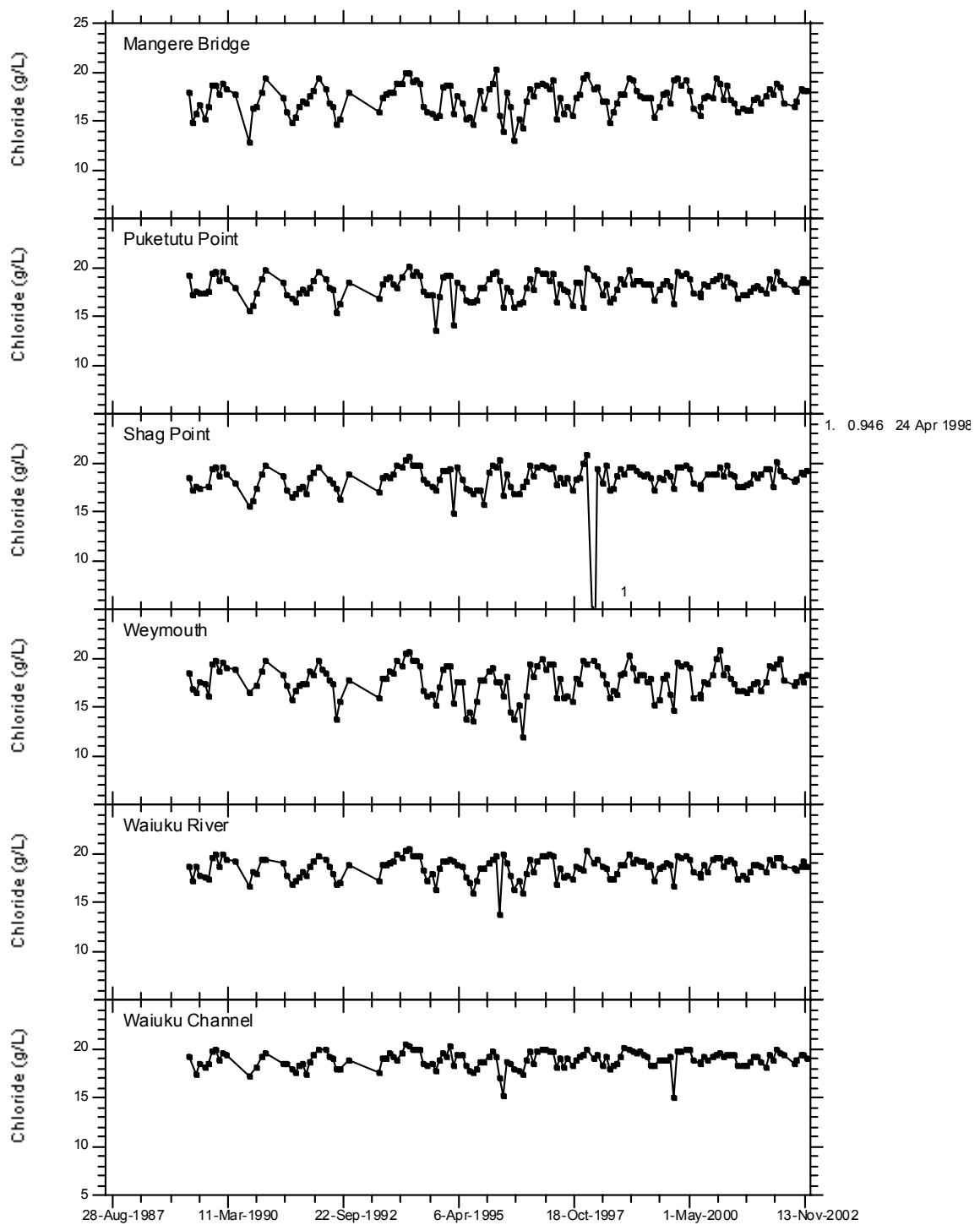
(Note that $\text{kg/m}^3 = \text{kg m}^{-3} = \text{g/L}$)

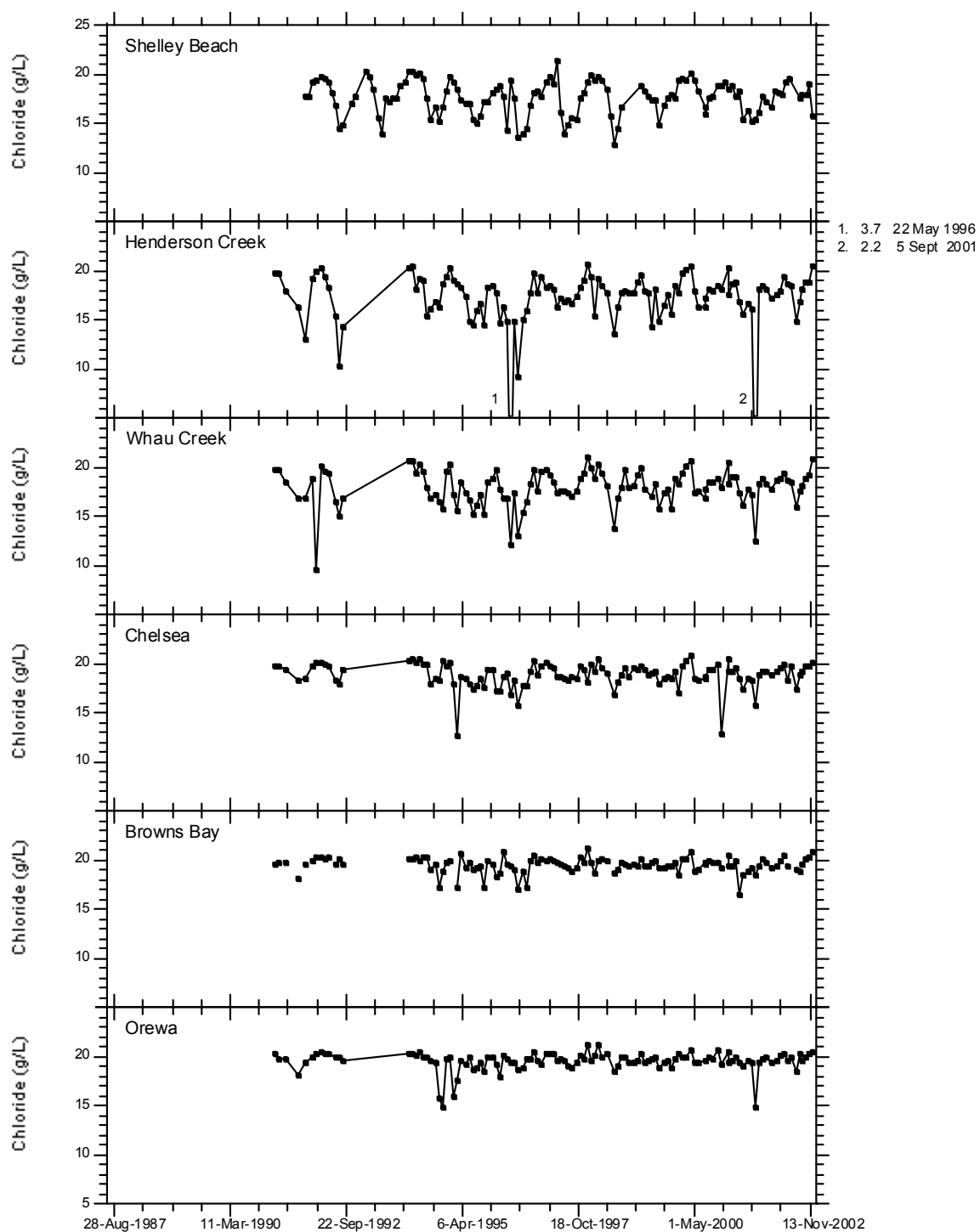
a) Chloride (g/L) during January 2002 - December 2002

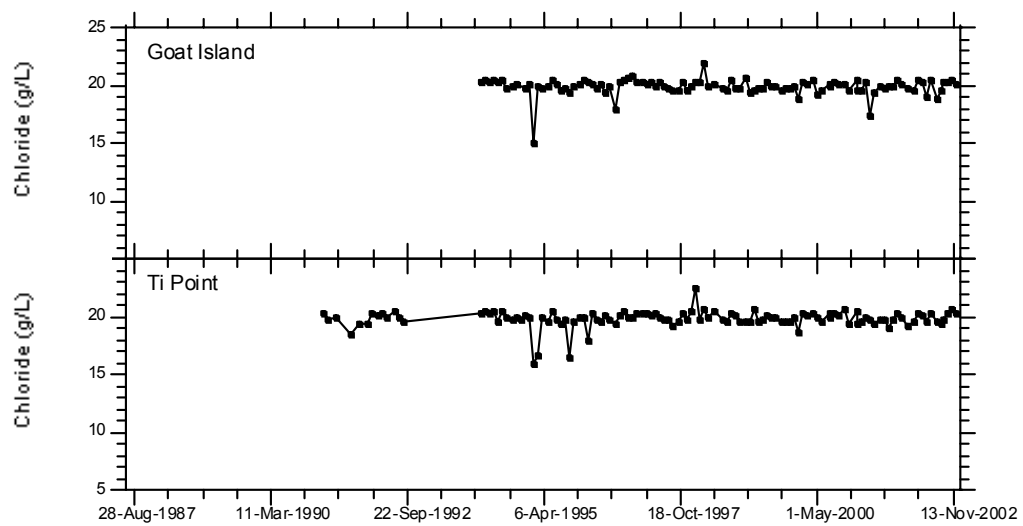
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	19.2	18.9	19.8	17.2	17.5	19.3	17.4	19.3	16.7	19.1	18.1	18.2	17.5	17.8
14-Feb-02	19.5	19.3	19.6	17.6	18.4	19.5	18.8	19.3	18.4	19.5	19.4	19.3	19.2	18.7
18-Mar-02	19.9	19.6	20.5	18.0	17.8	20.0	17.9	17.5	18.1	20.2	18.9	18.8	19.0	18.9
15-Apr-02	20.5	19.9	20.3	19.4	18.8	20.3	19.5	20.1	17.9	20.2	19.9	19.6	19.3	19.4
14-May-02	19.4	18.3	18.9	18.7	18.5	19.5	18.7	19.1	19.1	19.5	19.5	19.6	19.9	18.6
14-Jun-02		19.8	20.5	18.5	16.9	20.0	18.4	18.6	19.5	20.3	19.4	18.6	17.8	18.4
25-Jul-02	19.0	17.4	18.8	14.8		18.5		18.1	17.6	19.5				16.0
27-Aug-21	18.9	18.8	19.5	16.8	16.5	20.3	17.7	18.3	17.8	19.3	18.5	18.4	17.1	17.5
9-Sep-02	19.5	19.1	20.2	18.1	17.0	19.5	17.5	19.1	17.8	19.8	18.7	18.2	17.6	18.1
7-Oct-02	20.0	19.7	20.3	18.8	18.2	20.0	18.5	18.8	19.0	20.2	19.3	18.6	18.2	18.9
5-Nov-02	20.3	19.8	20.4	18.9	18.1	20.2	18.7	19.2	15.8	20.7	19.3	19.2	17.6	19.2
4-Dec-02	20.9	20.2	20.1	20.5	18.1	20.5	18.5			20.3	19.0	18.7	18.3	20.8
Median	19.5	19.4	20.2	18.3	18.1	20.0	18.5	19.1	17.9	20.0	19.3	18.7	18.2	18.7
IQR/Median %	5	5	4	7	6	4	5	4	5	4	3	4	8	5

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show chloride measurements from January 1992 to December 2002 (where data available).







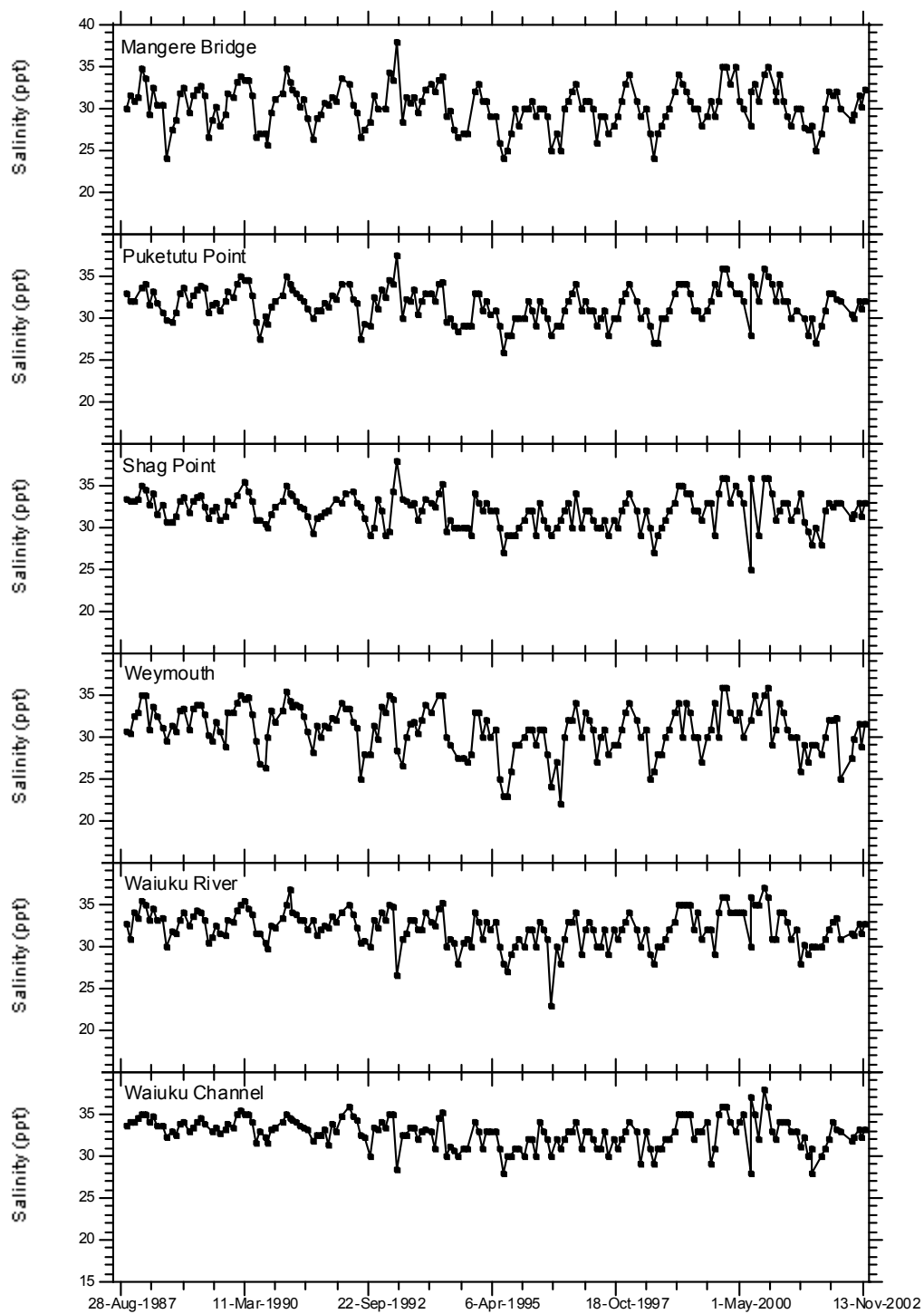
APPENDIX 28: SALINE – SALINITY

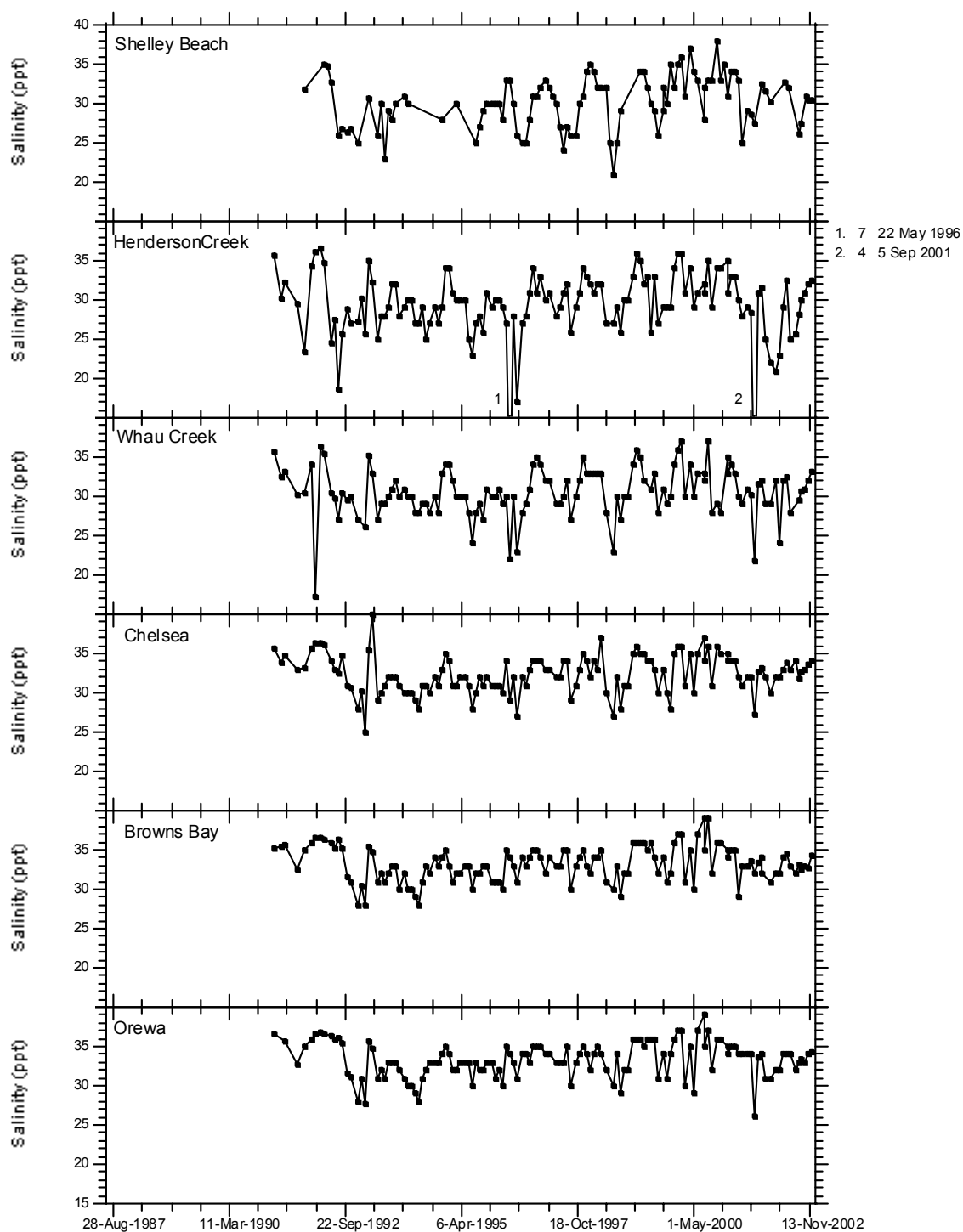
a) Salinity (ppt) during January 2002 - December 2002

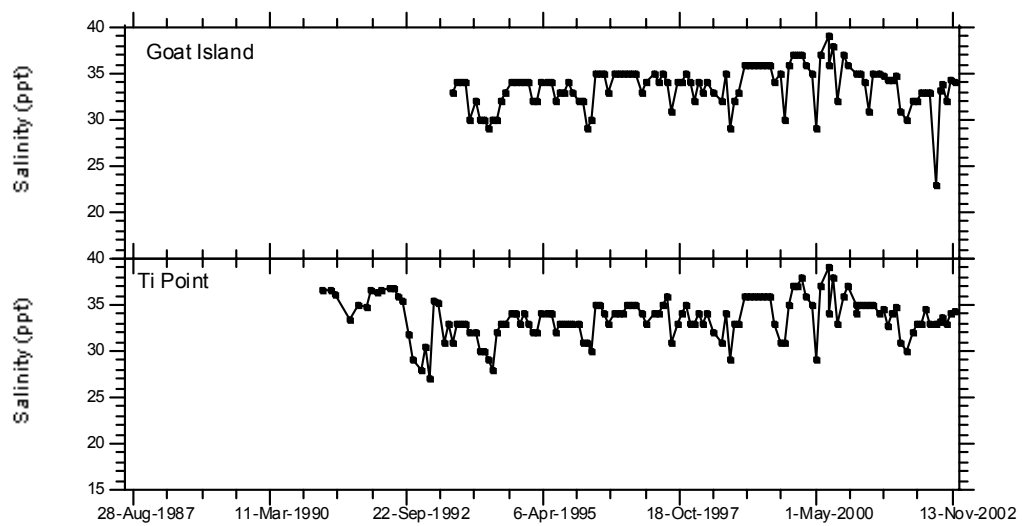
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	31.0	30.0	30.0	22.0	27.0	31.0	29.0	28.0	30.2	30.0	30.0	30.0	28.0	29.0
14-Feb-02	32.0	32.0	32.0	21.0	30.0	32.0	31.0	32.0		32.0	31.0	31.0	30.0	32.0
18-Mar-02	32.0	32.0	32.0	23.0	32.0	32.0	33.0	33.0		33.0	32.0	32.0	32.0	24.0
15-Apr-02	34.0	33.0	33.0	29.0	31.5	34.0	33.0	32.5		33.0	34.0	33.0	32.0	32.0
14-May-02	34.5	33.8	33.0	32.5	32.0	34.2	32.3	33.0	32.8	34.5	33.3	33.5	32.2	32.5
14-Jun-02	33.0	33.0	33.0	25.0	30.0	34.0	32.0	33.0	32.0	33.0	33.0	31.0	25.0	28.0
25-Jul-02	32.0	34.0	23.0	25.7		32.0				33.0				
27-Aug-21	33.1	31.8	33.1	28.3	28.6	33.0	30.4	31.1	26.2	33.2	31.9	31.5	27.5	29.6
9-Sep-02	32.5	32.8	33.8	30.1	29.4	33.5	30.1	31.6	27.6	33.6	32.2	31.3	29.8	30.8
7-Oct-02	33.0	33.0	32.0	31.0	31.6	33.0	32.0	33.0	31.0	33.0	33.2	32.8	31.5	31.0
5-Nov-02	32.7	33.6	34.3	32.0	30.2	34.0	31.2	31.4	30.5	34.2	32.3	31.7	28.8	32.1
4-Dec-02	34.4	34.0	34.0	32.4	32.2	34.4	32.1	32.9	30.5	34.3	33.2	32.8	31.6	33.2
Median	32.9	33.0	33.0	28.7	30.2	33.3	32.0	32.5	30.5	33.0	32.3	31.7	30.0	31.0
IQR/Median %	4	5	4	24	7	6	5	5	6	2	4	5	11	9

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show salinity measurements from January 1992 to December 2002 (where data available).







APPENDIX 29: SALINE – BIOCHEMICAL OXYGEN DEMAND

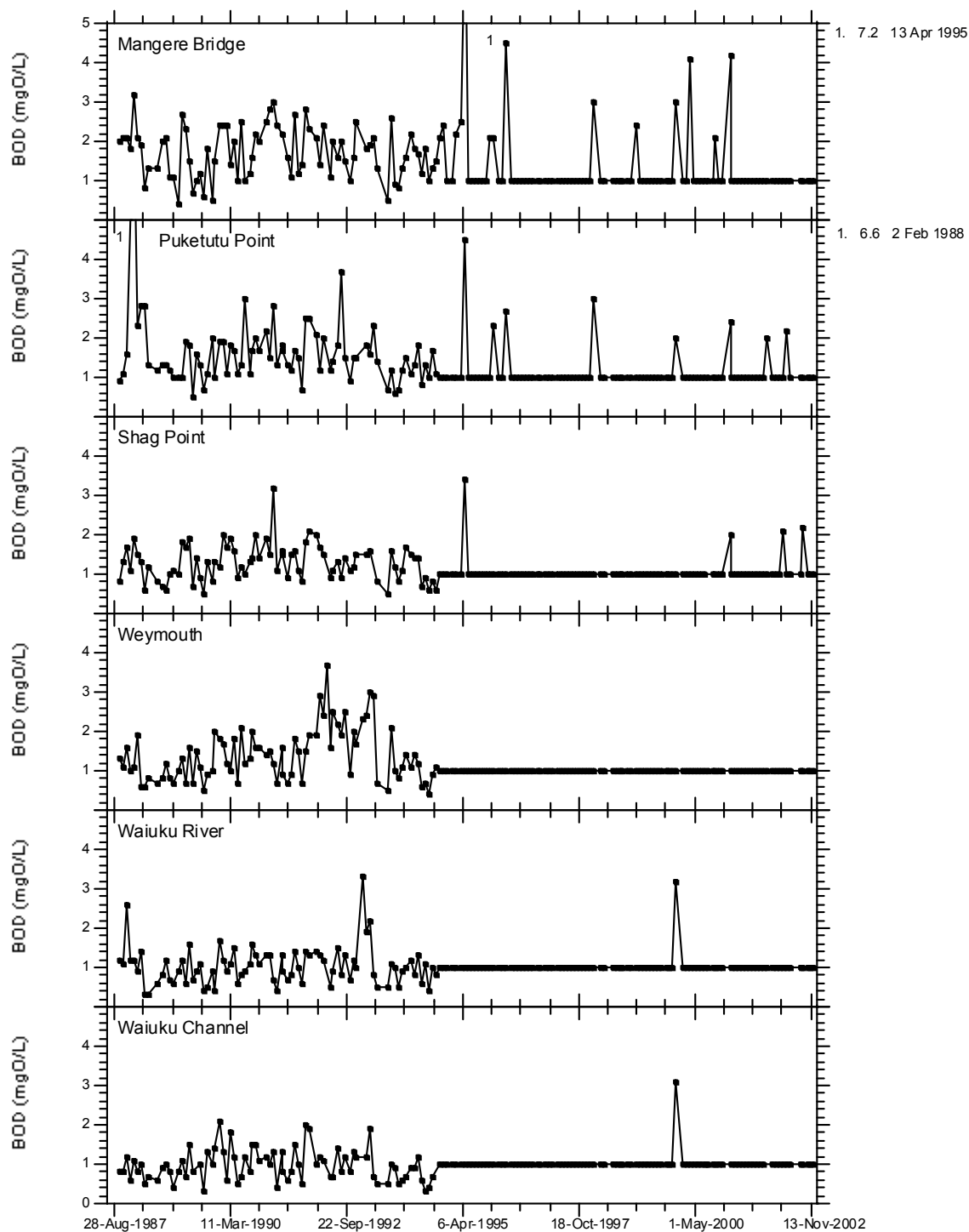
(Note that $\text{g/m}^3 = \text{g m}^{-3} = \text{mg/L}$)

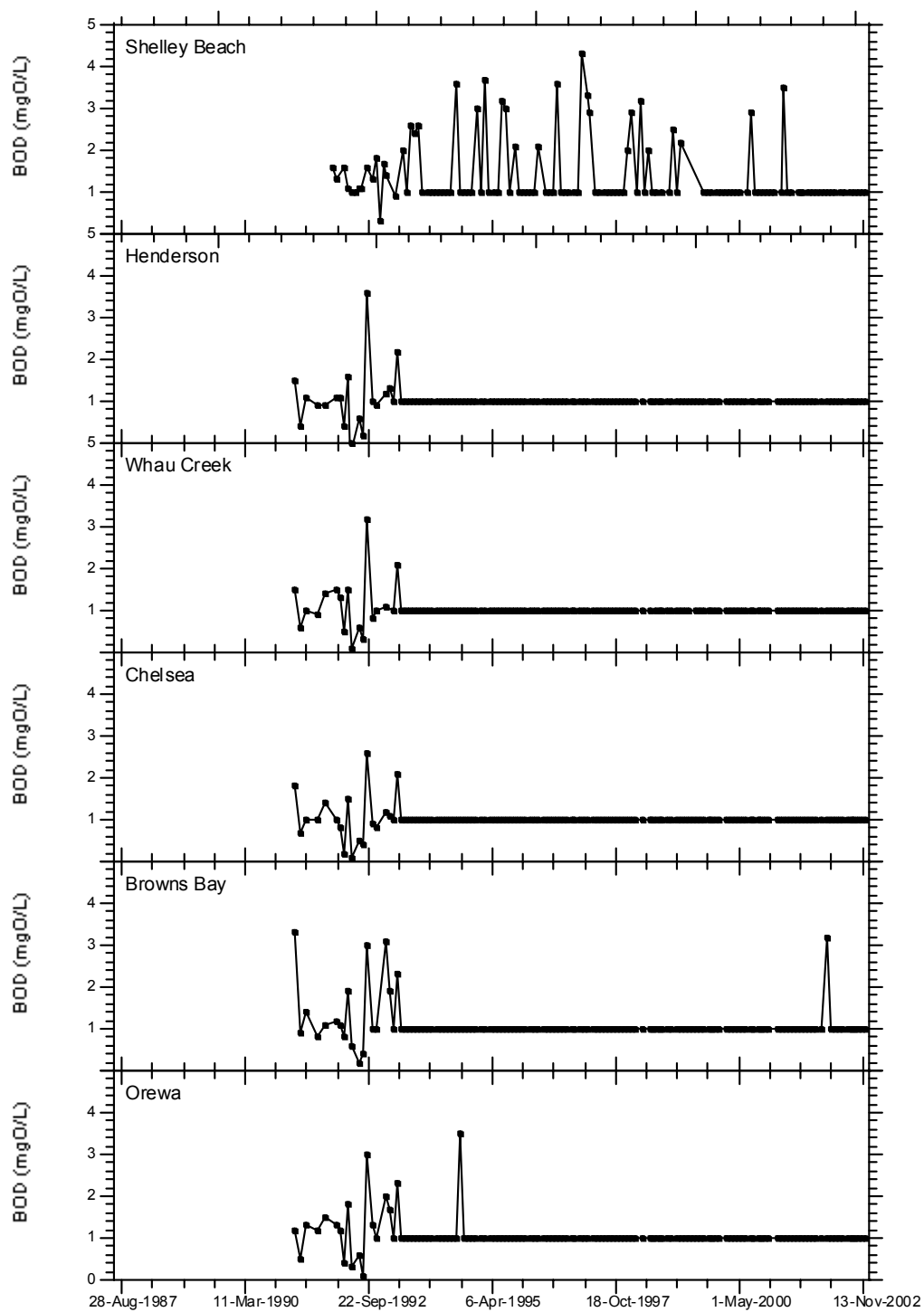
a) BOD (mg/L) during January 2002 - December 2002

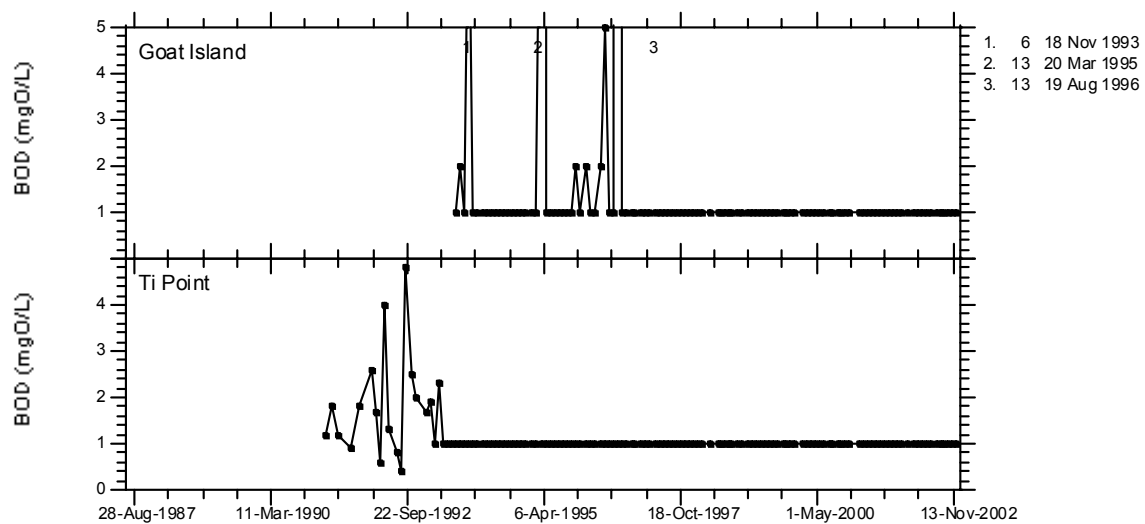
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
14-Feb-02	3.2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
18-Mar-02	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
15-Apr-02	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1	1.0	1.0	1.0	1.0	1.0
14-May-02	1.0	1.0	1.0	1.0	1.0	1.0	2.2	1.0	1.0	1.0	1.0	1.0	1.0	1.0
14-Jun-02	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
25-Jul-02	1.0	1.0	1.0	1.0		1.0				1.0				1.0
27-Aug-21	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
9-Sep-02	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.2	1.0	1.0	1.0	1.0	1.0
7-Oct-02	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5-Nov-02	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
4-Dec-02	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Median	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
IQR/Median %	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show BOD measurements from January 1992 to December 2002 (where data available).







APPENDIX 30: SALINE – DISSOLVED OXYGEN

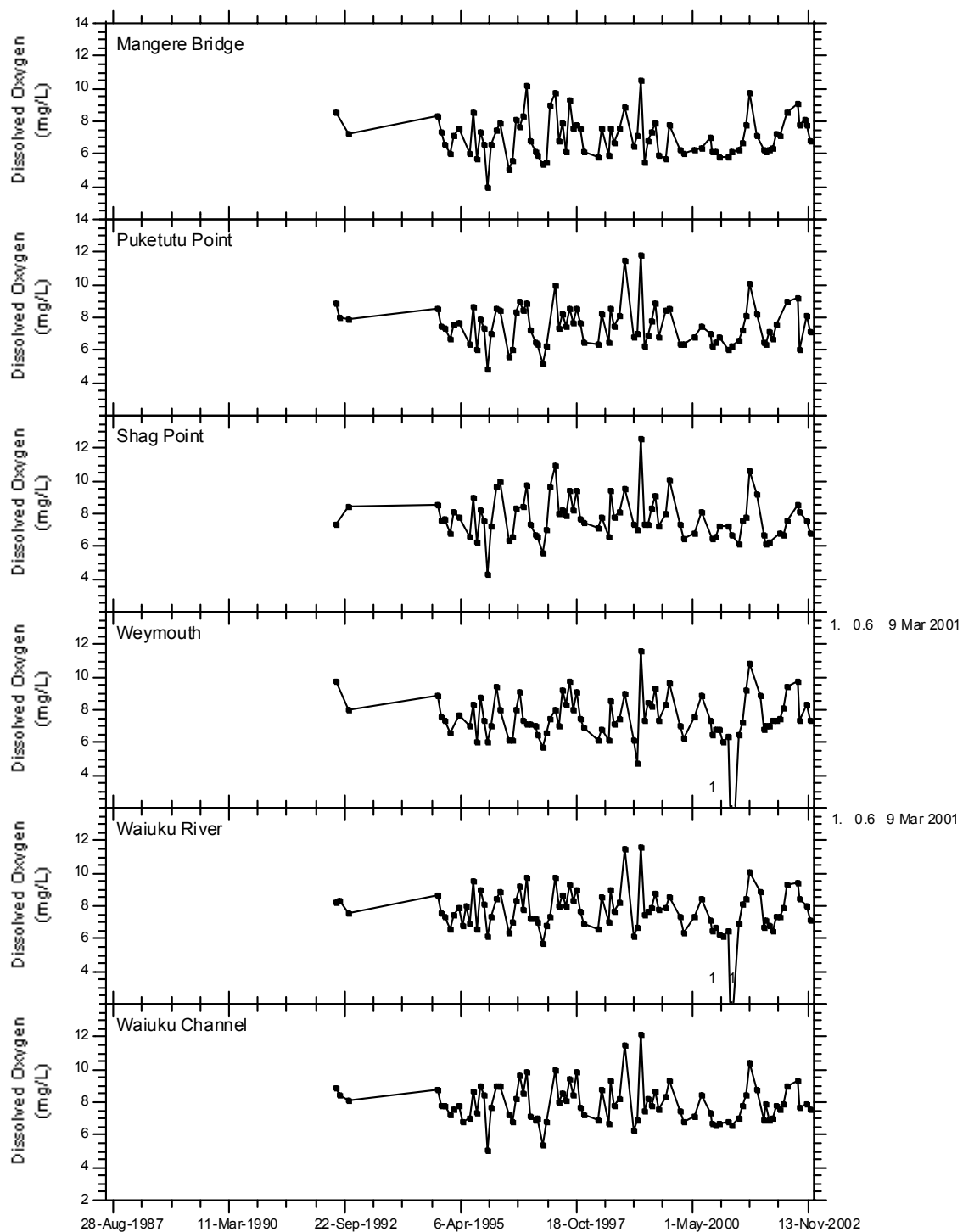
(Note that $\text{g/m}^3 = \text{g m}^{-3} = \text{mg/L}$)

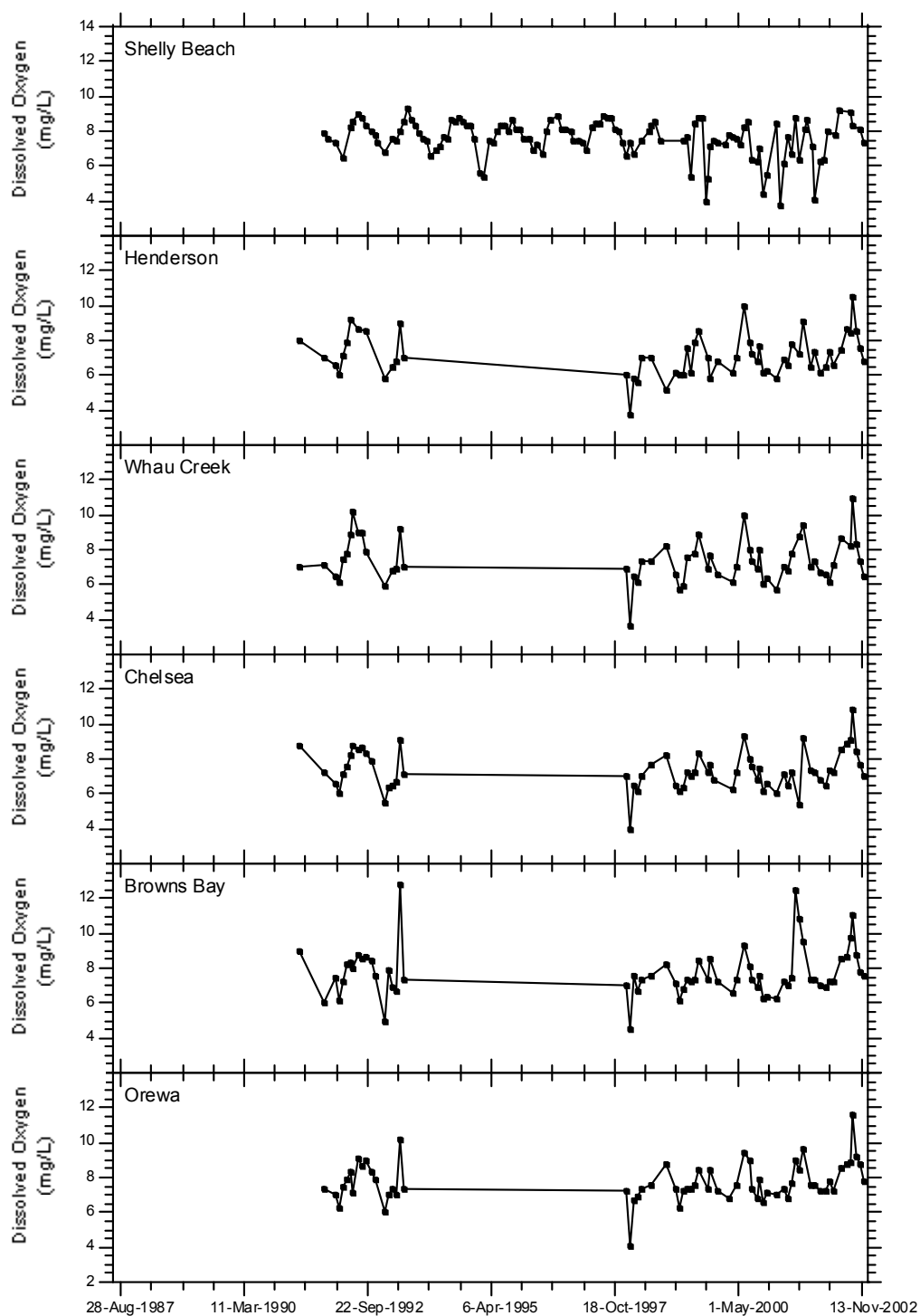
a) Dissolved oxygen (mg/L) during January 2002 - December 2002

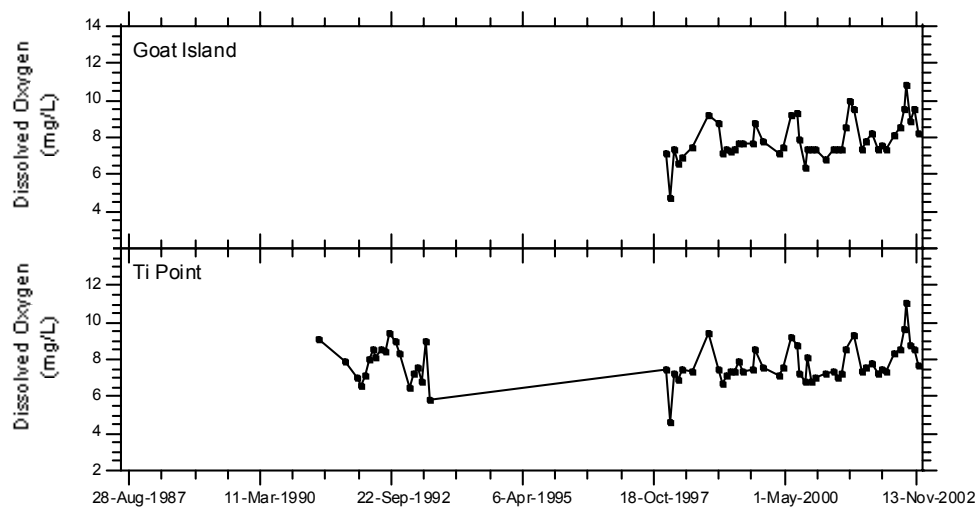
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	7.0	6.8	8.2	6.2	6.3	7.2	7.1	6.3	6.3	7.8	6.9	6.8	7.0	6.7
14-Feb-02	6.9	6.5	7.3	6.5	6.4	7.2	6.7	6.4		7.2	7.0	6.5	7.4	6.6
18-Mar-02	7.2	7.3	7.6	7.4	7.2	7.8	7.6	8.0		7.5	7.8	7.3	7.4	6.2
15-Apr-02	7.2	7.2	7.3	6.6	7.1	7.2	7.4	7.7	6.5	7.3	7.6	7.4	7.5	7.1
14-May-02				7.5	7.5		7.7	7.8	6.7	8.3	7.9	7.9	8.1	8.7
14-Jun-02	8.5	8.6	8.1	7.7	8.5	8.5	9.0	9.2	7.2	7.7	9.0	9.3	9.5	7.9
25-Jul-02	8.7	8.9	8.5	8.6		8.8				8.6				
27-Aug-21	9.8	9.1	9.4	8.4	9.1	8.9	9.2	9.1	8.1	9.6	9.3	9.4	9.8	8.2
9-Sep-02	11.1	10.8	10.8	10.5	7.8	11.5	6.1	8.3	8.1	11.1	7.2	8.4	7.3	11.0
7-Oct-02	8.8	8.4	8.9	8.6	8.1	9.2			7.7	8.8	7.5			8.3
5-Nov-02	7.8	7.7	9.5	7.6	7.8	8.8	8.1	8.1	7.6	8.6	7.9	8.0	8.3	7.4
4-Dec-02	7.5	7.0	8.3	6.8	6.8	7.8	7.1	7.4	6.8	7.7	7.6	7.1	7.3	6.5
Median	7.8	7.7	8.3	7.6	7.5	8.5	7.5	7.9	7.2	8.1	7.6	7.6	7.5	7.4
IQR/Median %	20	21	16	23	13	16	12	10	14	12	7	16	12	22

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show DO (mg/L) measurements from January 1992 to December 2002 (where data available).







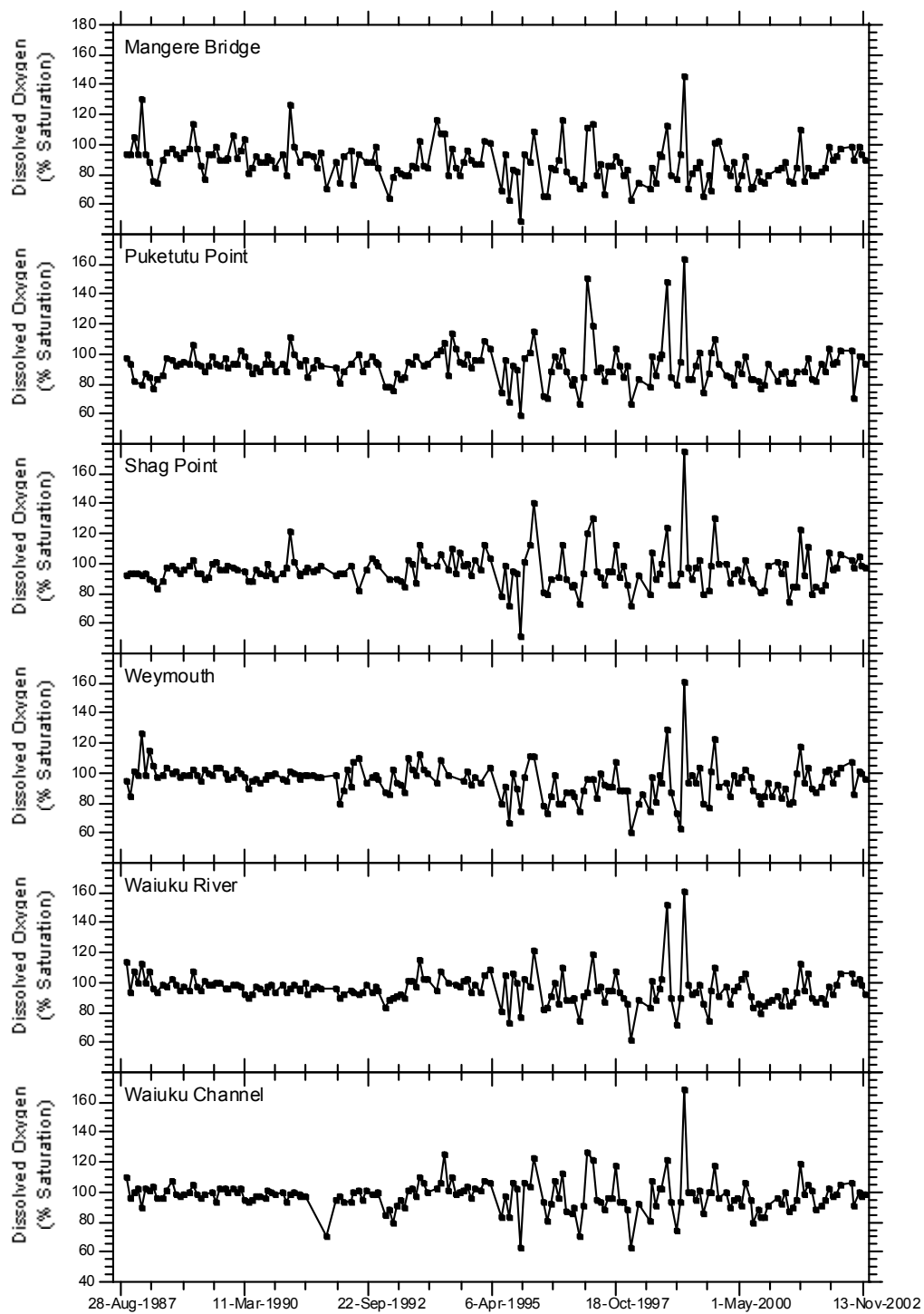
APPENDIX 31: SALINE – DISSOLVED OXYGEN % SATURATION

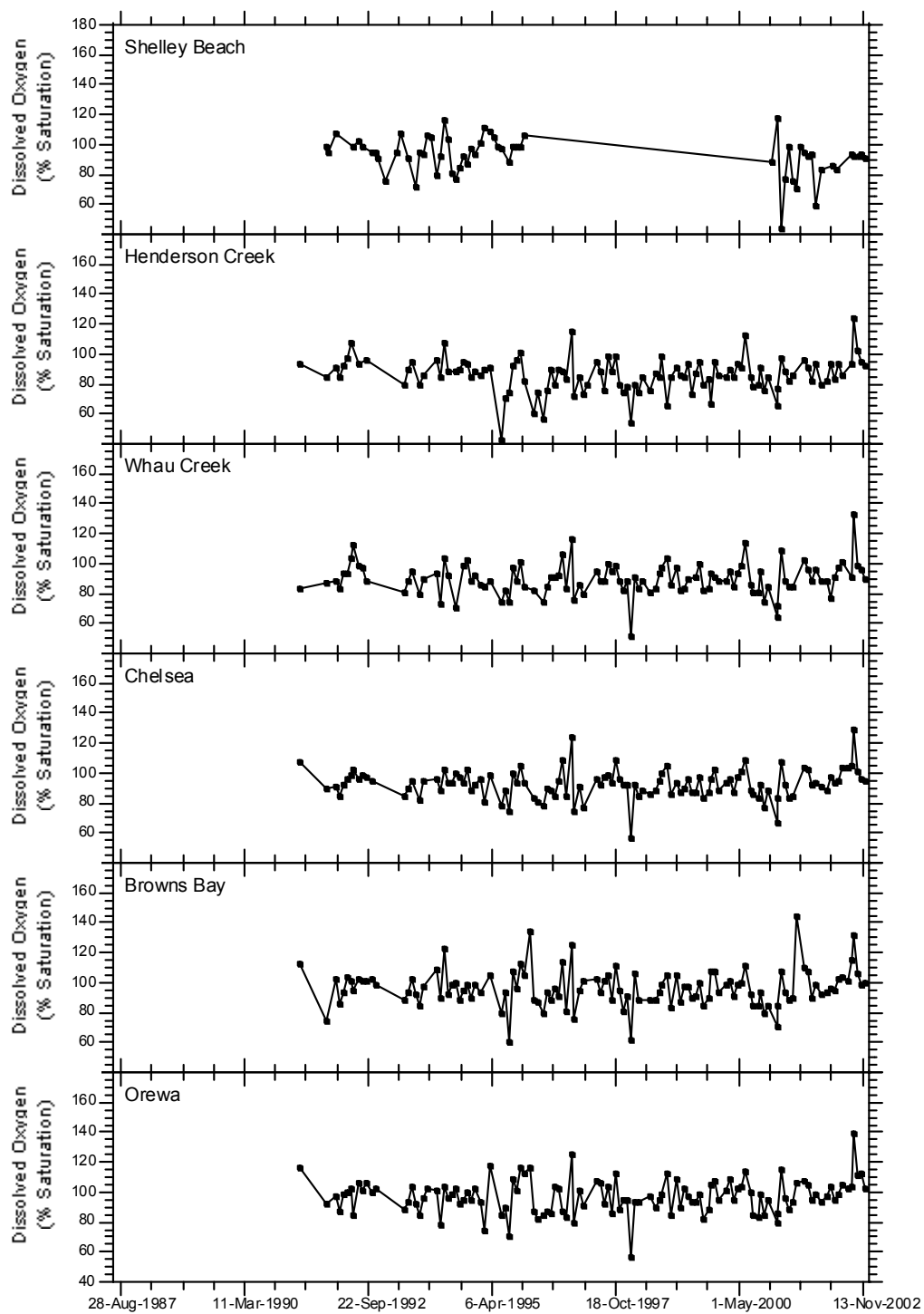
a) Dissolved oxygen (% saturation) during January 2002 - December 2002

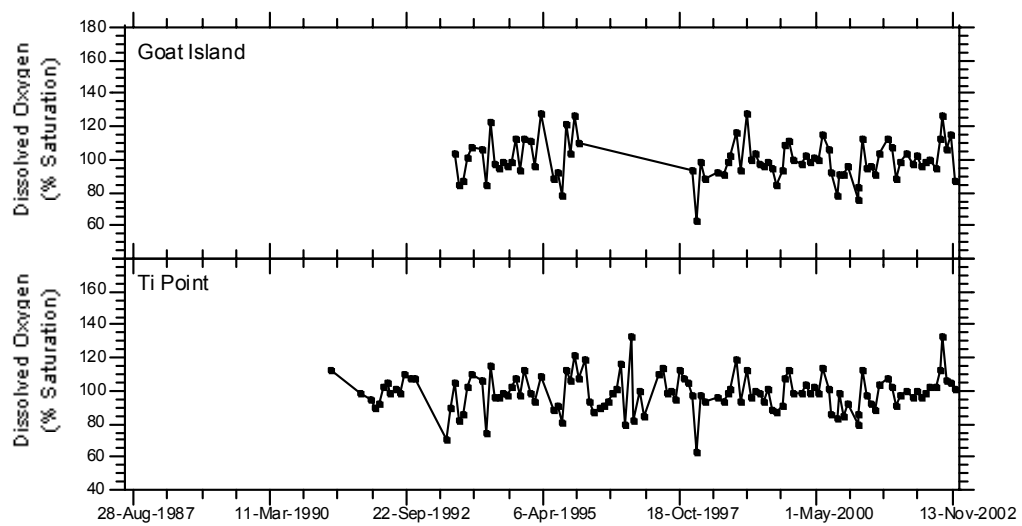
Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	92.0	91.0	104.0	80.0	81.8	94.0	93.7	81.8	83.9	100.0	91.5	90.3	91.5	89.0
14-Feb-02	93.7	88.6	97.4	82.2	85.0	97.5	89.0	86.0		96.2	95.0	86.0	101.0	88.2
18-Mar-02	96.1	97.2	102.3	93.4	98.2	103.2	103.9	108.1		100.4	102.6	96.7	102.3	77.5
15-Apr-02	94.4	93.6	95.6	82.7	89.6	95.4	93.2	96.0	86.1	95.6	97.0	92.8	93.0	90.5
14-May-02	102.4	95.3	98.8	93.5	92.1	99.0	94.8	96.7	82.8	98.9	98.2	98.1	99.9	96.7
14-Jun-02	103.6	104.0	99.9	85.6	97.0	105.1	102.9	106.2		102.4	104.8	105.9	103.6	101.5
25-Jul-02	101.0	104.0	95.0			102.0				102.0				
27-Aug-21	115.2	104.7	113.1	93.2	99.0	103.3	102.0	102.0	93.6	112.9	106.0	106.0	107.0	91.1
9-Sep-02	131.9	128.9	126.8	123.9	89.9	138.8	70.3	97.4	92.5	133.6	90.8	99.7	85.7	132.4
7-Oct-02	106.1	101.0	106.1	102.1	98.0	111.3	98.0	104.4	92.4	106.0	100.1	102.5	100.6	98.1
5-Nov-02	98.6	96.0	115.7	95.2	93.6	112.3	99.1	99.1	93.2	105.6	97.6	99.0	99.3	96.6
4-Dec-02	99.8	94.5	87.6	91.9	89.4	102.5	93.4	97.4	90.7	101.6	98.5	92.1	96.1	89.5
Median	100.4	96.6	101.1	93.2	92.1	102.9	94.8	97.4	91.6	101.8	98.2	98.1	99.9	91.1
IQR/Median %	9	10	11	11	9	8	8	7	8	6	5	9	7	9

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show DO (% saturation) measurements from January 1992 to December 2002 (where data available).







APPENDIX 32: SALINE – AMMONIA NITROGEN

(Note that $\text{g/m}^3 = \text{g m}^{-3} = \text{mg/L}$)

a) Ammonia nitrogen (mg/L) during January 2002 - December 2002

Date	Browns	Chelsea	Goat Isl	Henderson	Mangere	Orewa	Puketutu	Shag Point	Shelly	TiPoint	Waiuku Ch	Waiuku Rvr	Weymouth	Whau
16-Jan-02	0.005	0.005	0.005	0.010	0.060	0.005	0.020	0.010	0.020	0.005	0.005	0.005	0.020	0.005
14-Feb-02	0.010	0.020	0.005	0.030	0.110	0.005	0.080	0.010	0.020	0.005	0.010	0.030	0.010	0.02
18-Mar-02	0.005	0.005	0.005	0.010	0.050	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.020	0.005
15-Apr-02	0.005	0.005	0.005	0.005	0.180	0.005	0.100	0.070	0.020	0.005	0.040	0.050	0.070	0.005
14-May-02	0.005	0.020	0.005	0.005	0.250	0.005	0.290	0.120	0.060	0.005	0.050	0.050	0.060	0.005
14-Jun-02	0.005	0.005	0.005	0.005	0.330	0.005	0.210	0.160	0.080	0.005	0.050	0.050	0.070	0.005
25-Jul-02	0.020	0.060	0.005	0.040		0.050				0.040				0.02
27-Aug-21	0.005	0.005	0.005	0.005	0.200	0.005	0.140	0.080	0.040	0.005	0.005	0.010	0.030	0.01
9-Sep-02	0.005	0.020	0.040	0.060	0.090	0.040	0.120	0.020	0.030	0.040	0.020	0.020	0.030	0.07
7-Oct-02	0.005	0.005	0.050	0.010	0.020	0.020	0.040	0.005	0.010	0.030	0.005	0.020	0.020	0.01
5-Nov-02	0.050	0.040	0.060	0.060	0.060	0.040	0.030	0.010	0.020	0.040	0.005	0.020	0.020	0.06
4-Dec-02	0.005	0.005	0.020	0.005	0.040	0.005	0.110	0.005	0.040	0.030	0.005	0.020	0.020	0.005
Median	0.005	0.005	0.005	0.010	0.090	0.005	0.100	0.010	0.020	0.005	0.005	0.020	0.020	0.008
IQR/Median %	25	300	400	275	150	400	95	675	100	550	500	125	125	200

NB: The dates given are for the East Coast and Waitemata Harbour sites. The Manukau and Kaipara Harbour sites were visited on 9-Jan, 7-Feb, 8-Mar, 8-Apr, 8-May, 7-Jun, 20-Aug, 4-Sep, 16-Oct, 31-Oct and 29-Nov.

b) The graphs on the following pages show ammonia nitrogen measurements from January 1992 to December 2002 (where data available).