Results of Back Bay Salinity and Water Clarity Monitoring, 1987 and 1988

by
Ron Southwick

Department of Game & Inland Fisheries
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Introduction

As part of the Fish Division's on-going monitoring program on Back Bay, water samples were collected monthly during 1987 and 1988 at 24 stations (Figure 1). Salinity, water clarity, pH, and other selected water quality parameters were monitored (see Appendix).

The City of Virginia Beach began pumping seawater into Back Bay in 1965. Salinity records show the pumping of seawater into the Bay continued until at least 1973 (Figure 2). Based on very low salinity values from 1974 to 1977 and the lack of pumping records from the City of Virginia Beach, it can be assumed that no or very little pumping was done during this time period.

The pier which housed the pump burned down in May 1977, destroying the pump. The pier was rebuilt and a larger capacity pump was installed in August 1978, and seawater pumping was resumed. The city pumped almost continuously until June 1985, raising the average salinity in Back Bay as high as 4.9 ppt (1981). The seawater pump was shut down in June 1985 when the City of Virginia Beach initiated a variable pumping schedule recommended by a consultant firm (Roy Mann Associates Inc. 1984). Under this variable pumping schedule, the volume of

Roy Mann Associates, Inc. 1984. A management plan for Back Bay, Volume I and II. Roy Mann Associates, Inc., Boston, MA.

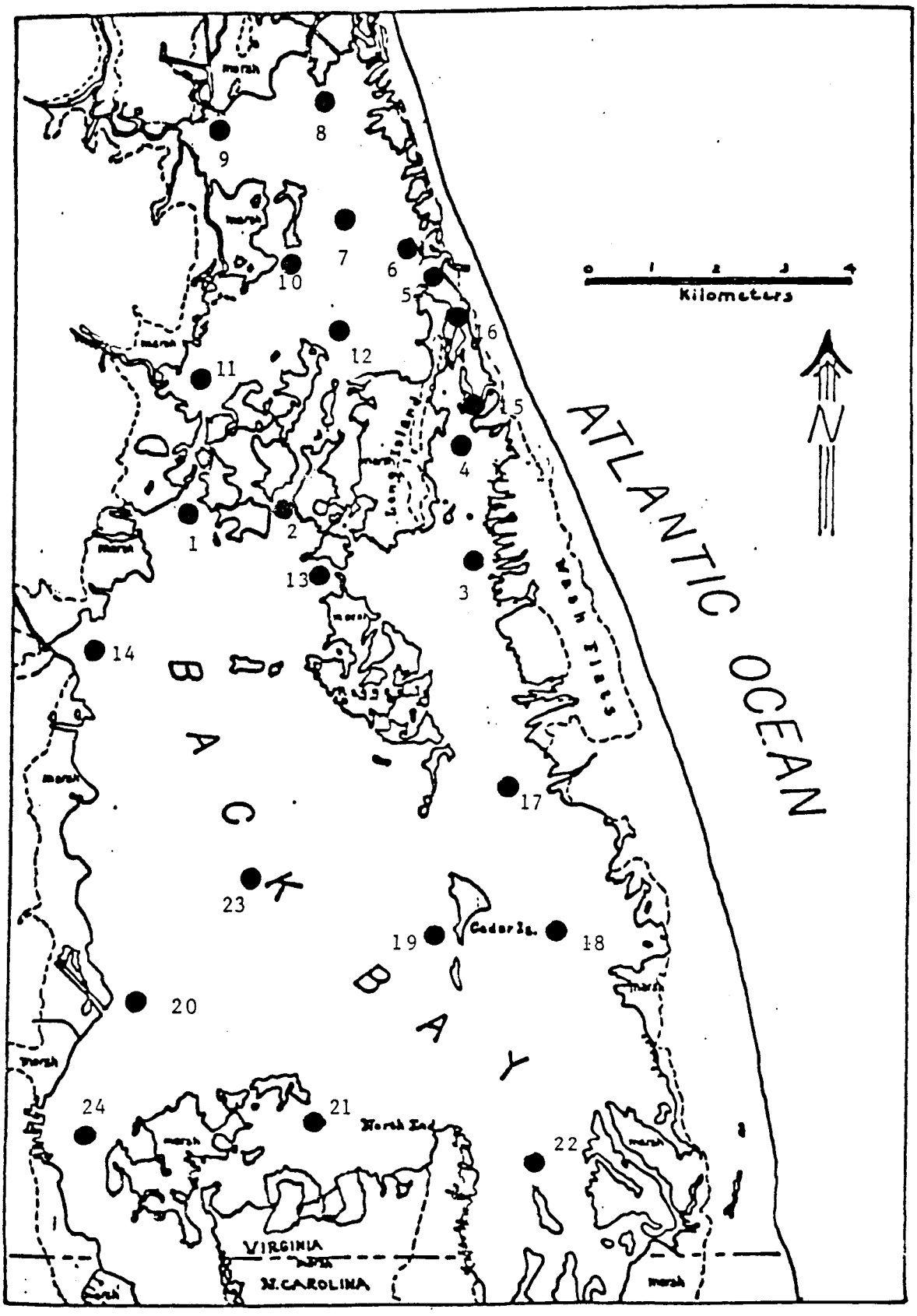

Figure 1. Water Monitoring station location in Back Bay, Virginia Beach, Va.

seawater pumped in a given month was calculated from an equation incorporating rainfall, evaporation, and watershed losses. Using the variable pumping schedule, the city did not pump any seawater until March 1987. The average salinity at that time was 1.3 ppt. Pumping continued until August 1987, when the city discontinued its seawater pumping operation at the request of the VDGIF.

Methods

Water sample monitoring at the 24 stations included temperature (C), specific conductance (micromhos/cm), salinity (ppt), turbidity (NTU), Secchi disk visability (inches), and pH. In addition, water samples were collected for nutrient anaylses at six selected stations. Results of the nutrient samples will be reported in a separate report. All of the samples were collected from the upper 1 ft. of the water column, and usually collected between the tenth and twentieth day of each month.

Results and Discussion

Mean salinity by month during 1987 and 1988 ranged from a high of 3.6 ppt in January 1987 down to 1.3 ppt in March 1988

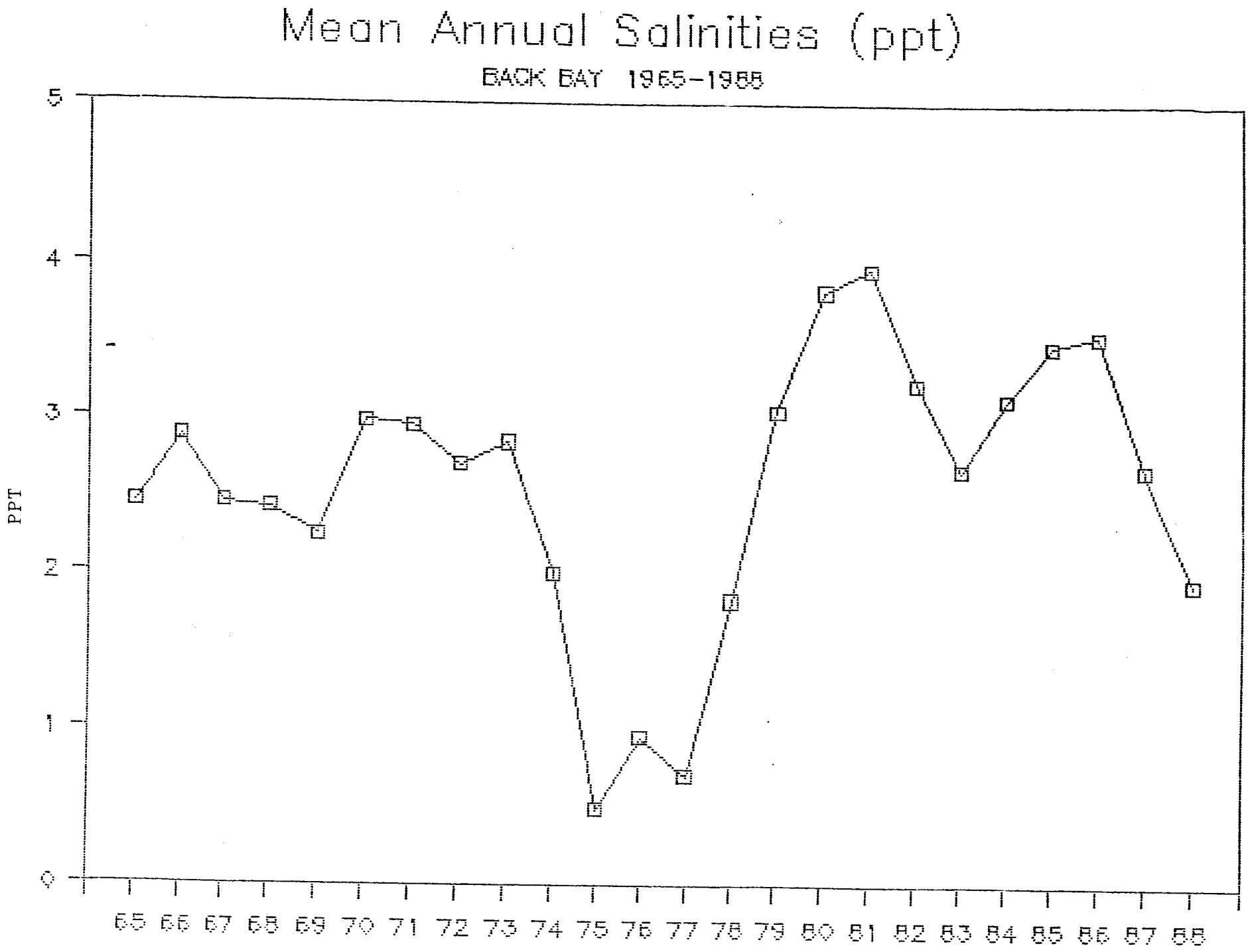

Figure 2. Mean annual salinities in Back Bay, 1965-1988.

(Figure 3). The annual means for these two years (2.7 ppt-1987 and 2.1 ppt -1988) are the lowest annual mean salinities since the seawater pumping was re-initiated in 1978. Even though seawater pumping was discontinued in August 1985, there have been increases in salinity since that time (Figure 4). The first increase occurred in April 1988 during a severe northeast storm which resulted in an ocean washover, raising the average salinity from 1.3 ppt to 2.1 ppt. After dropping in May of that year, the salinity began to increase until October 1988. This appears to be a natural phenomena caused by predominant South winds during the summer months, pushing more saline water from Currituck Sound into Back Bay. Similar trends were observed in previous years.

Water clarity was very poor in Back Bay in 1987 and 1988 (Figure 5). Mean Secchi disk visibility during this period ranged from 2.6 inches (March, 1987) to 12 inches (April & July, 1987). The annual means for 1987 and 1988 were 7.4 inches and 6.8 inches respectfully. Conversely, turbidity values remained high (Figure 6). The annual NTU means were 35.4 (1987) and 40.3 (1988). These trends appear to be correlated with the continuing decline in aquatic vegetation.

A survey to determine the abundance of aquatic vegetation in Back Bay was done by the Department's Game Division during 1987 and 1988. They found that only 4% to 7% of the bay contained some type of aquatic grass during the prime growing

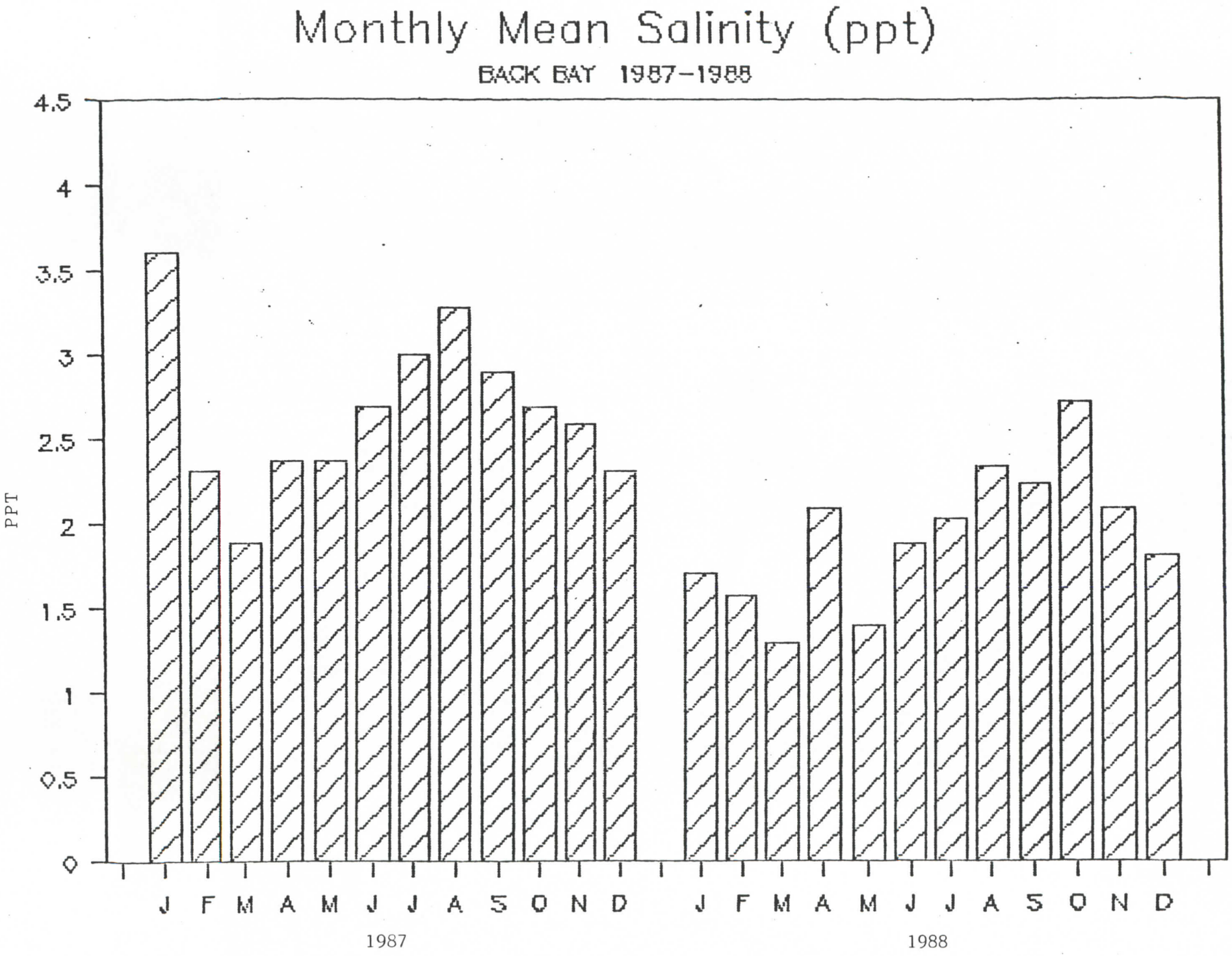

Figure 3. Monthly salinity (means) from 24 stations in Back Bay, 1987-1988.

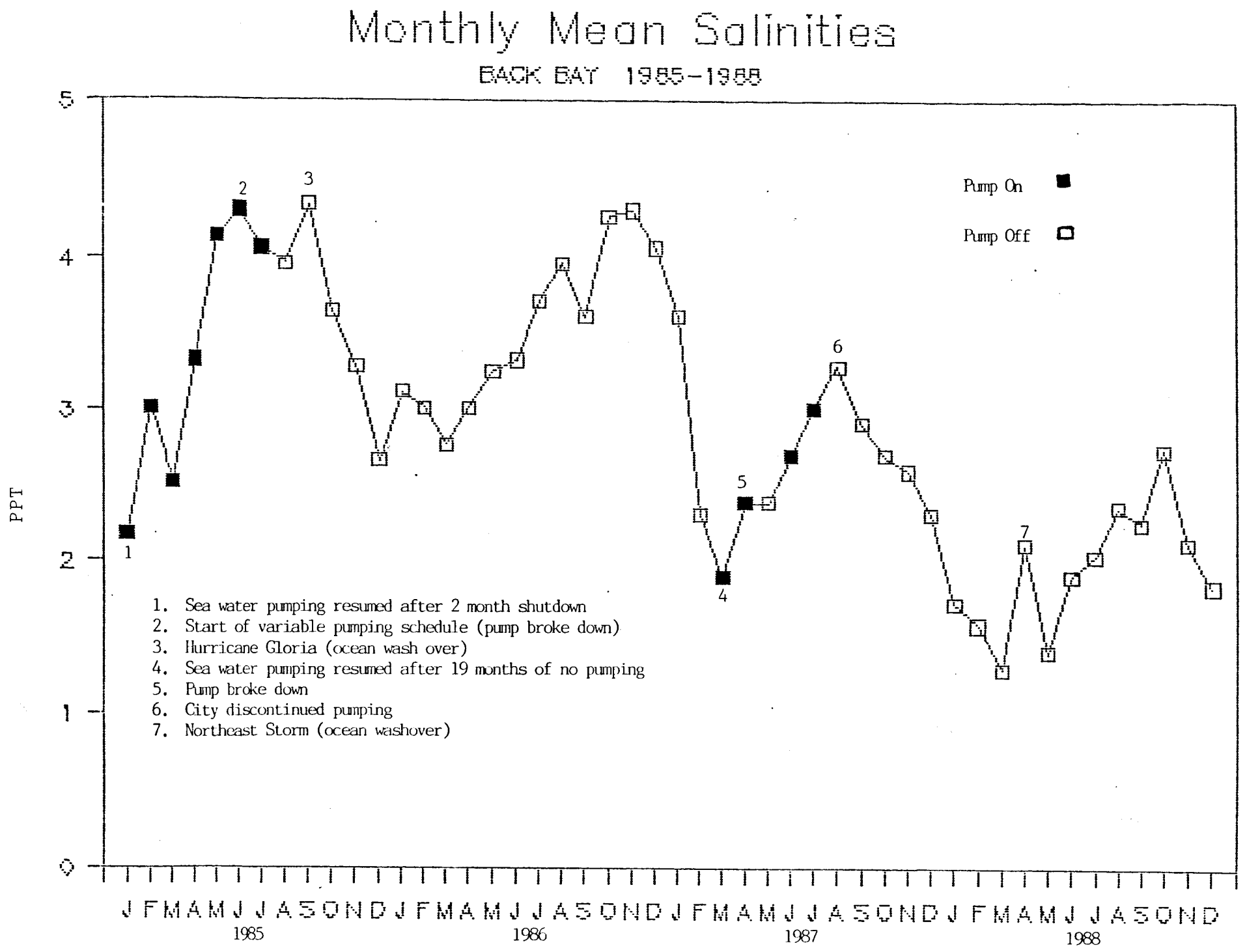

Figure 4. Mean salinities, chronological history and pumping records for Back Bay, 1985-1988.

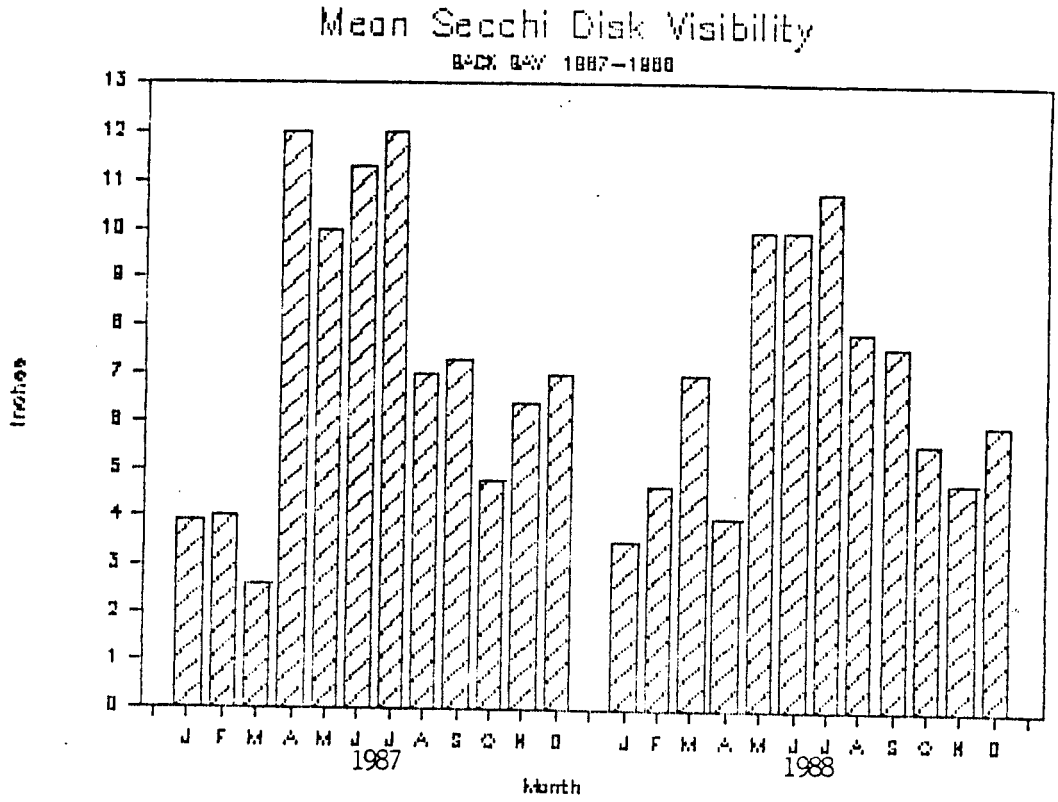

Figure 5. Mean secchi disk visiability at 24 stations on Back Bay, 1987-1988.

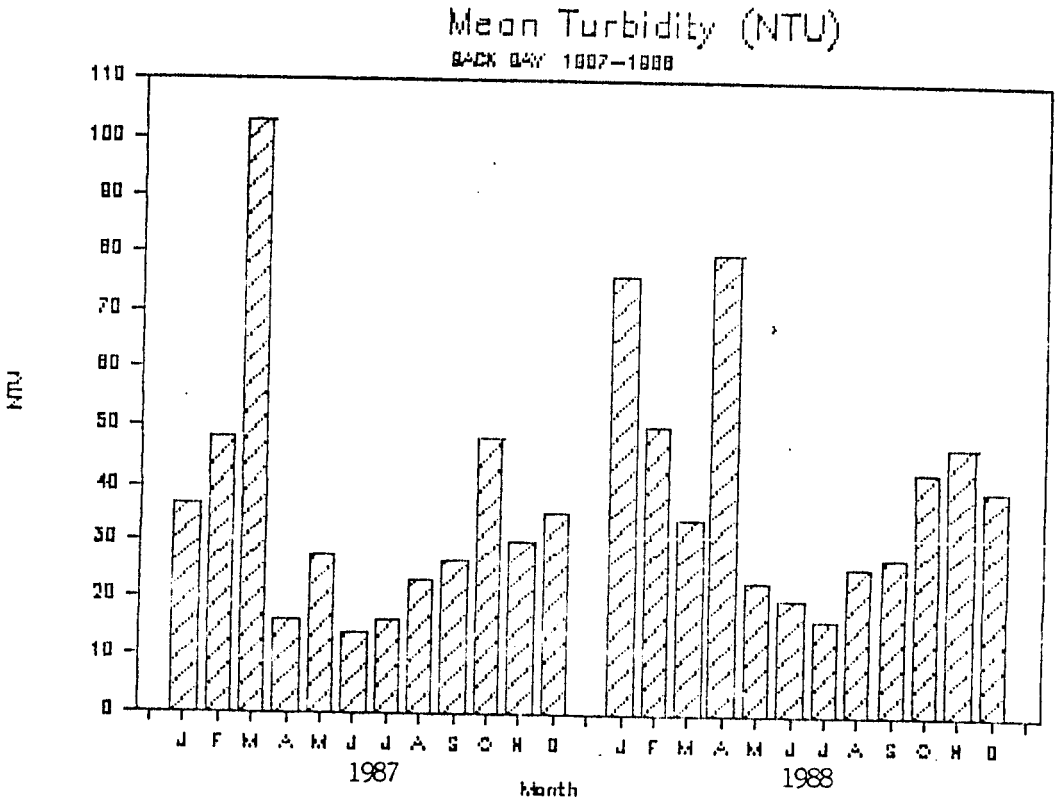

Figure 6. Mean turbidity values from samples taken at 24 stations on Back Bay, 1987-1988.

season (March - July). This is a dramatic decline from the 72% to 88% coverage during the 1972-1978 period. With little or no vegetation, destabilization of the Bay's bottom occurs. Without vegetation, wind activity produces waves, churning up bottom sediments, thus causing higher turbidities. The high turbidity then prevents aquatic vegetation from becoming established. Light penetration readings conducted by the U.S. Geological Survey and the Fish Division at seven sites on Back Bay in 1987 and 1988 found the turbidity high enough to prevent sunlight from reaching the bay's bottom at all but one of the sites. That one site did have some limited vegetation present.

The pH of the water in Back Bay ranged from 7.2 to 8.4. There appears to be a seasonal trend in pH, with higher values during the summer months. This is probably caused by the saline water being pushed up from Currituck Sound during the same period. Another probable factor could be due to the abundant phytoplankton present in Back Bay.

If seawater is not re-introduced into Back Bay, it is expected that the salinity in Back Bay will continue to decline to more "normal" levels as time progresses. It is also expected that water clarity will not improve unless some type of vegetation can be introduced and/or established under the harsh conditions now present in Back Bay.

APPENDIX

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: January 13, 1987 WATER LEVEL: 9.8 ft. COLLECTED BY: MDN & RS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	4.9°C	4200	3.9	11.1	31	4"	
2	4.7	4200	3.9	11.1	32	4"	
3	4.8	3800	3.5	10.0	33	5"	7.5
4	4.8	3800	3.4	9.7	33	5"	
5	4.3	3200	3.1	8.9	38	3"	7.4
6	4.8	3300	3.2	9.1	38	4"	
7	4.8	3500	3.4	9.7	41	3"	
8	4.9	3300	3.2	9.1	38	3"	
9	4.8	3100	3.0	8.6	34	5"	7.3
10	4.5	3500	3.4	9.7	34	3"	
11	4.7	3800	3.5	10.0	35	4"	
12	4.5	3800	3.5	10.0	33	3"	
13	4.8	4200	3.9	11.1	28	4"	
14	4.8	4200	3.9	11.1	26	5"	7.4
15	4.6	3200	3.1	8.9	47	3"	
16	4.9	3300	3.2	9.1	40	3"	
17	4.8	3900	3.8	10.9	45	4"	
18	4.9	4000	3.8	10.9	41	3"	
19	4.8	4000	3.8	10.9	56	3"	
20	5.4	4200	3.9	11.1	37	4"	7.4
21	5.1	4200	3.9	11.1	36	5"	
22	4.9	4400	4.1	11.7	36	5"	7.4
23	5.0	4200	3.9	11.1	43	4"	
24	5.5	4200	4.0	11.4	35	5"	
MEAN	4.8	3812.5	3.6	10.3	37.1	3.9"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

Water level too low to get to by boat.

BACK BAY WATER CHEMISTRY

DATE: February 25, 1987 WATER LEVEL: 8.7 ft. COLLECTED BY: MDN & RS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	(%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	5.2°C	2750	2.6	7.4	33	6"	
2	5.0	2780	2.7	7.7	37	5"	
3	5.3	2700	2.4	6.9	42	4"	7.3
4	*	*	*	*	*	*	*
5	5.5	2220	2.0	5.7	37	3"	7.1
6	5.2	2230	1.9	5.4	58	3"	
7	5.2	2010	1.9	5.4	58	3"	
8	5.2	2370	2.2	6.3	42	4"	
9	6.2	1710	1.5	4.3	42	4"	7.1
10	5.3	2430	2.2	6.3	52	3"	
11	5.8	2480	2.2	6.3	53	3"	
12	5.2	2375	2.2	6.3	55	3"	
13	5.0	2810	2.7	7.7	35	5"	
14	5.8	2680	2.4	6.9	57	3"	7.3
15	*	*	*	*	*	*	*
16	*	*	*	*	*	*	*
17	5.2	2780	2.6	7.4	43	5"	
18	5.6	2750	2.6	7.4	32	6"	
19	5.8	2920	2.8	8.0	48	5"	
20	6.1	2580	2.3	6.6	69	3"	7.2
21	6.0	2780	2.7	7.7	58	3"	
22	5.6	2630	2.5	7.1	42	6"	7.3
23	6.0	2620	2.3	6.6	52	3"	
24	6.6	1720	1.5	4.3	65	3"	
MEAN	5.6°C	2493.1	2.3	6.6	48.1	4.0"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

Water level too low to get to by boat.

BACK BAY WATER CHEMISTRY

DATE: March 18, 1987 WATER LEVEL: 8.2 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	8.1°C	2650	2.1	6.0	69	3"	
2	8.9	2650	2.1	6.0	67	3"	
3	7.9	2590	2.0	5.7	87	2"	7.3
4	*	*	*	*	*	*	
5	7.5	2310	1.8	5.1	140	2"	7.3
6	8.2	2300	1.8	5.1	145	2"	
7	8.9	2200	1.8	5.1	125	2"	
8	8.0	2150	1.6	4.6	121	2"	
9	8.5	1880	1.5	4.3	123	2"	7.3
10	8.5	2200	1.8	5.1	125	2"	
11	8.1	2550	2.0	5.7	120	2"	
12	8.9	2510	2.0	5.7	120	2"	
13	8.8	2660	2.1	6.0	72	3"	
14	8.4	2680	2.0	5.7	125	2"	7.4
15	*	*	*	*	*	*	
16	*	*	*	*	*	*	
17	9.0	2520	2.0	5.7	73	3"	
18	8.8	2680	2.0	5.7	78	3"	
19	8.8	2600	2.0	5.7	85	3"	
20	8.0	2520	2.0	5.7	125	2"	7.4
21	7.0	2610	2.1	6.0	120	2"	
22	7.5	2600	2.1	6.0	40	7"	7.2
23	8.8	2500	2.0	5.7	140	2"	
24	7.0	1480	1.1	3.1	62	3"	
MEAN	8.3	2421	1.9	5.4	103	2.6"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

ATE: April 13, 1987 WATER LEVEL: 10.4 ft. COLLECTED BY: MDN & RS

TATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	16.8°C	3320	2.4	6.8	24	9"	
2	17.0	3475	2.4	6.8	16	9"	
3	17.0	3590	2.5	7.1	15	14"	7.4
4	17.0	3650	2.6	7.4	17	11"	
5	17.0	3790	2.7	7.7	19	11"	7.5
6	17.0	3780	2.7	7.7	16	13"	
7	16.5	3600	2.7	7.7	13	17"	
8	17.8	3500	2.3	6.6	20	9"	
9	16.8	2800	1.9	5.4	18	10"	7.5
10	16.7	3580	2.6	7.4	13	17"	
11	16.2	3420	2.3	6.6	14	17"	
12	16.8	3520	2.5	7.1	16	13"	
13	17.2	3500	2.4	6.8	18	10"	
14	16.8	3220	2.3	6.6	17	10"	7.5
15	17.3	3710	2.6	7.4	16	13"	
16	17.2	3575	2.5	7.1	15	13"	
17	17.8	3500	2.4	6.8	12	15	
18	17.0	3310	2.2	6.3	11	16"	
19	17.8	3330	2.2	6.3	15	16"	
20	16.7	3180	2.2	6.3	15	9"	7.5
21	16.8	3240	2.2	6.3	18	10"	
22	17.5	3260	2.2	6.3	19	11"	7.5
23	16.8	3230	2.3	6.6	19	11"	
24	18.1	3310	2.2	6.3	12	14"	
EAN	17.1	3433	2.4	6.8	16	12"	7.5

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

ATE: May 11, 1987 WATER LEVEL: 10.4 ft. COLLECTED BY: MDN & NS

TATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	(%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	18.8°C	3500	2.4	6.9	44	8"	
2	19.3	3550	2.3	6.8	47	8"	
3	20.5	3640	2.3	6.8	14	11"	7.7
4	21.0	3720	2.3	6.8	22	11"	
5	21.0	3710	2.3	6.8	17	9"	7.6
6	20.8	3660	2.3	6.8	32	8"	
7	20.0	3620	2.3	6.8	35	8"	
8	21.0	3650	2.3	6.8	32	7"	
9	19.8	3500	2.2	6.3	31	8"	7.7
10	19.8	3570	2.3	6.8	26	9"	
11	19.3	3530	2.3	6.8	26	10"	
12	20.0	3630	2.4	6.9	23	9"	
13	18.9	3490	2.3	6.8	25	10"	
14	18.8	3440	2.2	6.3	24	11"	7.6
15	21.5	3710	2.3	6.8	22	12"	
16	21.0	3720	2.2	6.3	21	11"	
17	22.2	3720	2.3	6.8	18	13"	
18	20.8	3520	2.2	6.3	25	10"	
19	20.0	3520	2.3	6.8	29	10"	
20	18.8	3430	2.3	6.8	29	10"	7.5
21	21.0	3500	2.2	6.3	25	12"	
22	20.4	3510	2.2	6.3	22	12"	7.6
23	18.5	3075	2.0	5.7	33	9"	
24	20.5	3630	2.2	6.3	27	12"	
AN	20.1	3564	2.3	6.8	27	10"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: June 29, 1987 WATER LEVEL: 9.9 ft. COLLECTED BY: R.S. & N.S.

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	25.9°C	4260	2.4	6.9	20	9"	
2	25.0	4290	2.4	6.9	24	6"	
3	25.5	4380	2.8	8.0	13	13"	7.6
4	25.5	5200	3.2	9.1	15	11"	
5	24.9	6200	3.9	11.1	15	12"	7.5
6	24.5	5800	3.3	9.4	15	12"	
7	25.1	4900	2.9	8.3	15	11"	
8	26.0	4800	3.0	8.6	12	12"	
9	25.1	4380	2.5	7.1	15	9"	7.6
10	25.1	4300	2.5	7.1	16	9"	
11	25.1	4440	2.6	7.4	12	11"	
12	25.1	4350	2.5	7.1	14	10"	
13	25.0	4280	2.4	6.9	16	10"	
14	25.5	4290	2.4	6.9	16	10"	7.7
15	25.0	5200	3.1	8.6	15	10"	
16	25.0	5600	3.4	9.7	17	10"	
17	26.0	4340	2.5	7.1	10	13"	
18	26.0	4320	2.5	7.1	8	13"	
19	25.5	4280	2.5	7.1	9	14"	
20	25.1	4120	2.4	6.9	15	9"	7.7
21	27.0	4380	2.5	7.1	11	13"	
22	26.0	4300	2.4	6.9	7	16"	7.7
23	25.2	4200	2.4	6.9	12	12"	
24	27.1	4400	2.5	7.1	10	15"	
MEAN	25.5	4625.4	2.7	7.7	13.8	11.3"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

ATE: July 22, 1987 WATER LEVEL: 10.0 ft. COLLECTED BY: RS & NS

TATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	(%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	30.0°C	5700	3.0	8.6	17	10"	
2	29.9	5700	3.0	8.6	22	12"	
3	30.0	5050	3.0	8.6	13	13"	7.8
4	30.0	4980	3.0	8.6	17	11"	
5	29.5	6000	3.2	9.1	16	10"	7.9
6	29.1	5800	3.1	8.9	20	9"	
7	29.0	6100	3.3	9.4	18	12"	
8	29.5	6300	3.5	10.0	16	12"	
9	30.0	6300	3.4	9.7	20	10"	8.0
10	29.5	6000	3.2	9.1	23	10"	
11	29.0	6000	3.2	9.1	17	13"	
12	29.0	6000	3.2	9.1	16	11"	
13	29.1	4980	2.8	8.0	18	12"	
14	30.0	5200	2.9	8.3	13	13"	8.1
15	30.0	5300	3.0	8.6	15	10"	
16	29.5	5800	3.1	8.9	18	10"	
17	29.9	4740	2.8	8.0	14	14"	
18	29.5	4820	2.8	8.0	12	15"	
19	29.5	4850	2.8	8.0	15	14"	
20	29.8	5200	2.9	8.3	14	14"	8.0
21	28.5	4920	2.9	8.3	13	13"	
22	29.9	4850	2.8	8.0	14	15"	8.1
23	29.5	4950	2.8	8.0	12	14"	
24	30.1	5200	3.0	8.6	15	11"	
EAN	29.6	5447.5	3.0	8.6	16.2	12"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: August 13, 1987 WATER LEVEL: 9.6 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	(%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	25.1°C	4890	3.4	9.7	15	10"	
2	24.8	5200	3.7	10.6	25	7"	
3	25.0	4780	3.0	8.6	15	8"	7.8
4	25.0	4780	3.0	8.6	17	8"	
5	25.0	5100	3.7	10.6	16	9"	8.0
6	24.9	5200	3.8	10.8	15	9"	
7	24.5	5200	3.5	10.0	25	5"	
8	25.0	5200	3.8	10.8	22	6"	
9	25.0	4610	3.3	9.4	43	4"	8.2
10	25.0	5500	3.8	10.8	24	6"	
11	25.0	5600	4.1	11.7	33	4"	
12	24.8	5200	4.0	11.4	19	7"	
13	24.8	4880	3.4	9.7	20	7"	
14	25.0	4710	3.3	9.4	27	6"	8.4
15	24.9	4800	3.0	8.6	19	8"	
16	25.0	5000	3.1	8.9	26	8"	
17	25.5	4650	2.9	8.3	15	11"	
18	25.0	4620	2.9	8.3	16	8"	
19	25.5	4870	3.0	8.6	17	8"	
20	25.0	4610	3.2	9.1	30	6"	8.1
21	26.0	4700	2.9	8.3	20	8"	
22	26.0	4680	2.9	8.3	14	9"	8.2
23	25.0	4600	3.2	9.1	30	6"	
24	26.0	4700	2.9	8.3	55	4"	
MEAN	25.1	4920	3.3	9.4	23	7"	8.1

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

ATE: Septemher 9, 1987 WATER LEVEL: 10.4 ft. COLLECTED BY: RS & DR. H.M.

ATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	26.0°C	4780	2.9	8.3	47	4"	
2	26.2	4750	2.9	8.3	43	4"	
3	26.5	5100	3.1	8.9	33	7"	8.0
4	26.5	5000	3.0	8.6	32	7"	
5	26.5	4900	3.0	8.6	27	8"	8.0
6	26.5	5100	3.1	8.9	32	7"	
7	26.5	5100	3.1	8.9	22	7"	
8	26.8	5100	3.1	8.9	25	7"	
9	26.0	5000	2.9	8.3	36	7"	8.0
10	26.5	5100	3.1	8.9	23	7"	
11	26.5	5000	2.9	8.3	23	7"	
12	26.2	4970	2.9	8.3	32	5"	
13	26.2	4800	2.9	8.3	33	5"	
14	26.1	4820	2.9	8.3	47	4"	8.0
15	26.5	5000	3.0	8.6	17	8"	
16	27.0	5000	3.0	8.6	19	8"	
17	27.0	5000	3.0	8.6	16	9"	
18	27.5	4480	2.9	8.3	12	10"	
19	26.5	4400	2.9	8.3	12	10"	
20	26.1	4430	2.7	7.7	23	6"	8.0
21	27.5	5000	3.0	8.6	19	9"	
22	26.5	3590	2.1	6.0	8	15"	8.0
23	26.1	4690	2.8	8.0	38	5"	
24	28.0	4550	2.9	8.3	17	9"	
AN	26.6°C	4819.2	2.9	8.3	26.5	7.3"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: October 23, 1987 WATER LEVEL: 9.1 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	13.0°C	3480	2.7	7.7	43	5"	
2	13.1	3420	2.6	7.4	47	4"	
3	13.0	3680	3.0	8.6	41	5"	7.6
4	12.0	3580	2.9	8.3	55	4"	
5	12.5	3580	2.8	8.0	53	4"	7.9
6	13.0	3600	2.9	8.3	53	5"	
7	13.0	3580	2.8	8.0	60	3"	
8	12.9	3500	2.6	7.4	56	4"	
9	12.9	3500	2.6	7.4	56	4"	8.0
10	13.0	3580	2.8	8.0	60	3"	
11	13.0	3520	2.6	7.4	50	4"	
12	13.0	3520	2.6	7.4	50	4"	
13	13.0	3520	2.8	8.0	54	4"	
14	13.9	3510	2.8	8.0	49	4"	7.7
15	11.8	3500	2.7	7.7	57	4"	
16	11.8	3520	2.8	8.0	67	4"	
17	14.0	3680	3.0	8.6	50	5"	
18	13.8	3610	2.9	8.3	35	7"	
19	13.8	3610	2.9	8.3	35	7"	
20	13.1	3200	2.2	6.3	36	5"	7.7
21	13.5	3400	2.6	7.4	36	7"	
22	13.9	3320	2.5	7.1	35	6"	7.7
23	13.0	3400	2.6	7.4	40	5"	
24	14.0	3220	2.4	6.6	36	7"	
MEAN	13.1°C	3501.3	2.7	7.7	48.1	4.8"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

TE: November 18, 1987 WATER LEVEL: 9.0 ft. COLLECTED BY: RS & MDN

ATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	15.2	3500	2.6	7.4	37	4"	
2	15.0	3520	2.7	7.7	40	5"	
3	14.8	3500	2.6	7.4	30	6"	7.8
4	15.0	3520	2.6	7.4	29	6"	
5	16.0	3690	2.8	8.0	28	7"	7.8
6	15.5	3640	2.8	8.0	31	6"	
7	14.8	3580	2.7	7.7	30	5"	
8	15.2	3660	2.8	8.0	38	5"	
9	15.1	3620	2.8	8.0	44	4"	7.8
10	14.9	3570	2.7	7.7	32	6"	
11	14.5	3570	2.7	7.7	33	6"	
12	14.5	3580	2.8	8.0	31	5"	
13	14.8	3440	2.5	7.1	32	6"	
14	14.8	3320	2.4	6.9	39	5"	7.8
15	15.9	3640	2.8	8.0	33	6"	
16	15.7	3590	2.8	8.0	31	7"	
17	15.2	3420	2.5	7.1	20	8"	
18	14.8	3400	2.5	7.1	24	8"	
19	14.8	3410	2.5	7.1	23	7"	
20	15.8	3320	2.3	6.6	24	7"	7.9
21	14.9	3480	2.5	7.1	26	8"	
22	15.4	3080	2.2	6.3	12	13"	7.8
23	14.0	3270	2.4	6.9	41	5"	
24	14.8	3420	2.4	6.9	20	8"	
AN	15.1°C	3489.2	2.6	7.4	30.3	6.4"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

ATE: December 15, 1987 WATER LEVEL: 9.6 ft. COLLECTED BY: R. S., N.S.

TATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	9.0°C	2700	2.2	6.3	40	6"	
2	9.0	2750	2.3	6.6	33	7"	
3	9.2	2790	2.3	6.6	28	8"	7.5
4	9.1	2800	2.3	6.6	27	8"	
5	9.0	2790	2.3	6.6	25	9"	7.5
6	9.0	2790	2.3	6.6	26	8"	
7	9.0	2790	2.3	6.6	33	7"	
8	9.1	2790	2.3	6.6	33	7"	
9	9.0	2660	2.2	6.3	37	7"	7.4
10	9.0	2790	2.3	6.6	35	7"	
11	9.0	2790	2.3	6.6	36	7"	
12	9.0	2790	2.3	6.6	35	7"	
13	9.0	2750	2.3	6.6	37	6"	
14	9.0	2640	2.2	6.3	47	5"	7.5
15	9.0	2790	2.3	6.6	30	8"	
16	9.0	2790	2.3	6.6	27	9"	
17	9.1	2750	2.2	6.3	35	6"	
18	9.1	2710	2.2	6.3	35	7"	
19	9.5	2720	2.2	6.3	40	6"	
20	8.5	2640	2.2	6.3	50	5"	7.6
21	9.5	2720	2.2	6.3	36	7"	
22	9.0	2760	2.3	6.6	32	8"	7.6
23	9.0	2640	2.2	6.3	56	5"	
24	9.5	2700	2.2	6.3	40	6"	
AN	9.1°C	2743.3	2.3	6.6	35.5	7.0"	

Water level too low to reach by boat.

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: January 12, 1988 **WATER LEVEL:** 8.4 ft. **COLLECTED BY:** RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	0.5°C	1750	1.8	5.1	87	3"	
2	0.8	1790	1.8	5.1	86	3"	
3	0.3	1860	1.9	5.4	82	3"	7.3
4	0.3	1860	1.9	5.4	82	3"	
5	0.5	1640	1.5	4.3	66	4"	7.5
6	0.8	1600	1.5	4.3	61	4"	
7	0.8	1600	1.5	4.3	67	4"	
8	1.1	1440	1.4	4.0	58	4"	
9	0.8	1250	1.1	3.1	58	5"	7.3
10	0.8	1680	1.7	4.9	60	4"	
11	0.8	1690	1.7	4.9	66	3"	
12	0.8	1680	1.7	4.9	77	3"	
13	0.5	1750	1.8	5.1	85	3"	
14	0.5	1680	1.7	4.9	90	3"	7.2
15	*						
16	*						
17	0.4	1800	1.9	5.4	75	4"	
18	0.5	1850	1.9	5.4	78	4"	
19	0.5	1850	1.9	5.4	80	4"	
20	0.5	1750	1.8	5.1	77	3"	7.3
21	0.5	1880	1.9	5.4	86	3"	
22	1.0	1920	1.9	5.4	82	3"	7.2
23	0.4	1750	1.8	5.1	94	3"	
24	0.8	1890	1.9	5.4	85	3"	
MEAN	0.6°C	1725.5	1.7	4.9	76.5	3.5"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: February 9, 1988 WATER LEVEL: 8.8 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	3.8°C	1810	1.6	4.6	62	4"	
2	3.5	1810	1.6	4.6	64	3"	
3	4.1	1800	1.6	4.6	53	5"	7.5
4	4.1	1800	1.6	4.6	50	6"	
5	4.1	1660	1.4	4.0	33	5"	7.6
6	3.5	1580	1.3	3.7	37	6"	
7	3.5	1690	1.5	4.3	48	4"	
8	3.5	1550	1.3	3.7	48	5"	
9	3.4	1500	1.2	3.4	52	5"	7.4
10	3.0	1690	1.5	4.3	54	4"	
11	3.0	1610	1.5	4.3	49	4"	
12	3.6	1700	1.5	4.3	50	4"	
13	3.2	1810	1.6	4.6	42	4"	
14	3.5	1790	1.6	4.6	68	3"	7.4
15	4.8	1790	1.6	4.6	60	5"	
16	3.9	1690	1.5	4.3	35	7"	
17	4.0	1850	1.7	4.9	43	5"	
18	4.0	1920	1.8	5.1	40	5"	
19	4.2	1910	1.8	5.1	51	4"	
20	3.5	1790	1.6	4.6	78	3"	7.4
21	5.0	1980	1.9	5.4	49	5"	
22	5.1	2020	1.9	5.4	33	7"	7.6
23	3.8	1790	1.6	4.6	68	4"	
24	5.4	1850	1.7	4.9	35	6"	
MEAN	3.9°C	1766.3	1.6	4.5	50.1	4.7"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: March 23, 1988 WATER LEVEL: 9.0 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	5.9°C	1960	1.2	3.4	54	4"	
2	6.0	2000	1.2	3.4	30	8"	
3	6.5	2280	1.3	3.7	20	9"	7.3
4	6.5	2260	1.3	3.7	24	8"	
5	6.2	2180	1.3	3.7	21	9"	7.3
6	6.0	2090	1.2	3.4	24	9"	
7	6.0	2010	1.2	3.4	28	8"	
8	6.8	2070	1.2	3.4	32	7"	
9	6.0	1800	1.1	3.1	45	6"	7.4
10	6.0	1970	1.2	3.4	39	7"	
11	6.0	2000	1.2	3.4	30	8"	
12	6.0	1990	1.2	3.4	38	6"	
13	6.0	2050	1.2	3.4	29	7"	
14	6.0	1990	1.2	3.4	84	3"	7.4
15	6.5	2210	1.3	3.7	20	9"	
16	6.5	2130	1.3	3.7	22	8"	
17	6.5	2310	1.4	4.0	25	8"	
18	6.9	2280	1.3	3.7	25	9"	
19	6.9	2280	1.3	3.7	23	8"	
20	6.0	2260	1.3	3.7	65	4"	7.3
21	6.9	2300	1.4	4.0	35	8"	
22	6.6	2260	1.3	3.7	20	10"	7.3
23	6.1	1820	1.1	3.1	55	4"	
24	6.8	2300	1.4	4.0	36	8"	
MEAN	6.3°C	2117	1.3	3.7	34	7"	

OCEAN WASHOVER ONE WEEK EARLIER DUE TO NORTHEAST STORM

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: April 19, 1988 WATER LEVEL: 10.0 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	(%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	12.2°C	2290	1.9	5.4	88	3"	
2	12.0	4900	3.5	10.0	78	3"	
3	13.1	3500	2.6	7.4	73	4"	7.3
4	11.9	2900	2.3	6.6	92	3"	
5	11.9	2900	2.3	6.6	56	6"	7.2
6	13.1	2500	2.0	5.7	57	6"	
7	11.5	2650	2.1	6.0	85	3"	
8	13.1	2180	1.6	4.6	71	4"	
9	14.5	1810	1.2	3.4	70	4"	7.3
10	12.1	2220	1.8	5.1	90	3"	
11	13.5	2050	1.4	4.0	110	3"	
12	11.5	3600	2.9	8.3	110	2"	
13	11.0	3850	3.0	8.6	86	3"	
14	11.8	3100	2.5	7.1	110	3"	7.3
15	11.8	2900	2.3	6.6	60	4"	
16	12.5	2500	2.0	5.7	61	7"	
17	13.1	2180	1.6	4.6	44	7"	
18	12.5	3100	2.5	7.1	45	8"	
19	12.5	3100	2.5	7.1	40	8"	
20	13.4	1980	1.3	3.7	125	2"	7.3
21	12.0	2500	2.0	5.7	100	3"	
22	12.0	3100	2.5	7.1	50	6"	7.2
23	13.3	2050	1.4	4.0	120	2"	
24	13.3	2150	1.5	4.3	95	2"	
MEAN	12.5°C	2750	2.1	6.0	80	4"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: May 16 1988 WATER LEVEL: 10.2 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	20.5°C	2300	1.4	4.0	17	12"	
2	20.5	2290	1.4	4.0	22	10"	
3	20.5	2490	1.5	4.3	17	11"	7.6
4	20.0	2410	1.5	4.3	18	10"	
5	19.8	2280	1.3	3.7	19	10"	7.7
6	20.1	2280	1.3	3.7	20	9"	
7	20.1	2240	1.3	3.7	16	9"	
8	20.5	2020	1.2	3.4	17	12"	
9	20.5	1790	1.0	2.9	17	12"	7.4
10	20.1	2190	1.3	3.7	22	8"	
11	20.5	2190	1.3	3.7	24	9"	
12	20.1	2190	1.3	3.7	26	8"	
13	20.5	2260	1.3	3.7	18	12"	
14	20.5	2100	1.2	3.4	26	8"	7.6
15	19.9	2340	1.4	4.0	16	10"	
16	19.8	2280	1.3	3.7	22	9"	
17	20.8	2550	1.6	4.6	17	11"	
18	20.2	2510	1.5	4.3	22	10"	
19	20.2	2510	1.5	4.3	20	10"	
20	20.1	2060	1.2	3.4	41	6"	7.6
21	20.1	2580	1.6	4.6	27	8"	
22	20.1	2510	1.5	4.3	22	10"	7.6
23	20.5	2180	1.3	3.7	48	6"	
24	20.5	2480	1.5	4.3	26	8"	
MEAN	20.3	2293	1.4	4.0	23	10"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: June 20 1988 WATER LEVEL: 10.1 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	25.5 C	2760	1.7	4.9	32	7"	
2	25.5	2920	1.8	5.1	38	6"	
3	25.1	3150	1.9	5.4	15	13"	7.5
4	25.5	3190	2.0	5.7	16	13"	
5	25.0	3100	1.9	5.4	20	10"	7.5
6	25.0	2920	1.8	5.1	25	8"	
7	25.2	2910	1.8	5.1	25	8"	
8	25.1	3000	1.9	5.4	21	9"	
9	26.0	2960	1.9	5.4	34	6"	7.6
10	25.5	2920	1.8	5.1	25	8"	
11	25.5	2880	1.8	5.1	24	8"	
12	25.5	2860	1.8	5.1	20	8"	
13	25.5	3000	1.9	5.4	20	10"	
14	26.0	2910	1.8	5.1	23	8"	7.5
15	25.0	3100	1.9	5.4	15	13"	
16	25.0	3110	1.9	5.4	17	10"	
17	25.1	3200	2.0	5.7	16	13"	
18	25.5	3220	2.0	5.7	12	14"	
19	25.0	3190	2.0	5.7	17	12"	
20	26.0	2760	1.7	4.9	15	12"	7.5
21	25.5	3150	1.9	5.4	15	12"	
22	25.0	3190	2.0	5.7	10	16"	7.6
23	25.0	2910	1.8	5.1	14	12"	
24	25.9	3290	2.0	5.7	12	14"	
MEAN	25.4 C	3025	1.9	5.4	20	10"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: July 13, 1988 WATER LEVEL: 10.6 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	26.9	3600	1.9	5.4	22	9"	
2	26.9	3680	2.0	5.7	24	8"	
3	27.0	3900	2.2	6.3	13	12"	7.6
4	26.9	3890	2.1	6.0	14	12"	
5	26.9	3830	2.1	6.0	17	12"	7.7
6	26.9	3738	2.1	6.0	26	8"	
7	27.0	3630	1.9	5.4	20	8"	
8	27.0	3780	2.1	6.0	25	8"	
9	27.0	3550	1.9	5.4	17	7"	7.7
10	27.0	3660	2.0	5.7	21	8"	
11	27.0	3660	2.0	5.7	19	9"	
12	26.9	3620	1.9	5.4	21	7"	
13	26.9	3760	2.0	5.7	13	12"	
14	26.9	3710	2.0	5.7	17	10"	7.7
15	26.8	3860	2.1	6.0	13	11"	
16	26.8	3830	2.1	6.0	15	11"	
17	27.0	3980	2.2	6.3	12	14"	
18	27.0	3920	2.2	6.3	10	14"	
19	27.0	3690	2.0	5.7	12	14"	
20	27.0	3660	2.0	5.7	13	12"	7.7
21	27.0	3640	2.0	5.7	12	15"	
22	27.0	3870	2.1	6.0	10	15"	7.7
23	27.0	3680	2.0	5.7	13	12"	
24	27.0	3850	2.1	6.0	13	12"	
MEAN	27.0 C	3751.3	2.0	5.8	16.3	10.8"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: August 15, 1988 WATER LEVEL: 10.5 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	28.5°C	4050	2.1	6.0	29	7"	
2	28.2	4180	2.2	6.3	43	5"	
3	28.1	4620	2.6	7.4	20	10"	7.8
4	28.1	4480	2.4	6.9	19	10"	
5	28.0	4420	2.4	6.9	24	7"	7.8
6	28.0	4290	2.2	6.3	33	6"	
7	28.5	4190	2.2	6.3	40	6"	
8	28.5	4210	2.2	6.3	39	6"	
9	28.5	4150	2.2	6.3	26	7"	7.3
10	28.5	4220	2.2	6.3	29	7"	
11	28.5	4190	2.2	6.3	30	7"	
12	28.5	4190	2.2	6.3	28	7"	
13	28.5	4300	2.2	6.3	35	6"	
14	29.0	4220	2.2	6.3	27	7"	7.9
15	28.1	4600	2.5	7.1	17	10"	
16	28.1	4530	2.5	7.1	22	7"	
17	28.1	4590	2.5	7.1	20	10"	
18	28.5	4890	2.9	8.3	13	10"	
19	28.5	4500	2.4	6.9	20	8"	
20	28.9	4450	2.5	7.1	21	10"	7.9
21	28.9	4490	2.5	7.1	20	9"	
22	29.0	4520	2.5	7.1	17	10"	7.8
23	29.0	4090	2.1	6.0	24	8"	
24	28.9	4490	2.5	7.1	16	10"	
MEAN	28.5°C	4202.5	2.35	6.7	25.5	7.9"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: SEPTEMBER 12, 1988 WATER LEVEL: 10.0 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	23.0°	3980	2.2	6.3	25	8"	
2	22.7	4020	2.2	6.3	38	6"	
3	22.9	4250	2.4	6.9	25	8"	7.9
4	23.0	4200	2.4	6.9	25	8"	
5	23.0	3820	2.1	6.0	27	8"	7.9
6	22.5	3810	2.1	6.0	37	6"	
7	22.9	3820	2.1	6.0	37	6"	
8	23.0	3840	2.1	6.0	35	6"	
9	23.0	3410	2.0	5.7	26	7"	7.9
10	23.0	3880	2.1	6.0	37	6"	
11	23.2	3880	2.1	6.0	39	6"	
12	23.0	3820	2.1	6.0	32	7"	
13	22.6	4010	2.2	6.3	33	6"	
14	23.1	3940	2.2	6.3	25	8"	8.0
15	23.0	4160	2.3	6.6	30	8"	
16	23.1	3930	2.2	6.3	30	8"	
17	23.2	4280	2.4	6.9	17	10"	
18	23.0	4280	2.4	6.9	16	10"	
19	22.1	4090	2.2	6.3	24	8"	
20	23.5	3980	2.2	6.3	18	8"	7.9
21	23.1	4250	2.4	6.9	20	9"	
22	23.0	4340	2.4	6.9	14	10"	7.9
23	23.2	3990	2.2	6.3	21	8"	
24	23.9	4120	2.3	6.6	25	8"	
MEAN	23.0°C	4004.2	2.2	6.4	27.3	7.6"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: OCTOBER 12, 1988 WATER LEVEL: 9.0 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	(%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	14.9°C	3900	2.8	8.0	44	5"	
2	14.8	3910	2.8	8.0	40	5"	
3	14.8	3890	2.8	8.0	46	5"	7.6
4	14.9	3720	2.8	8.0	48	5"	
5	14.0	3510	2.5	7.1	50	5"	7.7
6	14.2	3510	2.5	7.1	50	4"	
7	14.2	3600	2.6	7.4	51	5"	
8	14.8	3600	2.6	7.4	45	6"	
9	14.8	3600	2.6	7.4	41	6"	7.7
10	14.8	3680	2.7	7.7	45	5"	
11	15.1	3900	2.8	8.0	50	5"	
12	14.8	3690	2.7	7.7	55	5"	
13	14.8	3880	2.8	8.0	44	5"	
14	14.9	3900	2.8	8.0	36	6"	7.6
15	14.3	3700	2.7	7.7	45	5"	
16	14.8	3300	2.3	6.6	47	6"	
17	15.0	3810	2.8	8.0	50	6"	
18	15.0	4080	2.9	8.3	23	7"	
19	15.0	3840	2.8	8.0	56	4"	
20	15.2	3880	2.8	8.0	25	7"	7.6
21	15.6	4200	3.0	8.6	33	7"	
22	15.2	4200	3.0	8.6	27	8"	7.7
23	14.9	3880	2.8	8.0	46	5"	
24	15.8	3950	2.9	8.3	35	7"	
MEAN	14.9°C	3797.1	2.7	7.8	43	5.6"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

DATE: NOVEMBER 21, 1988 WATER LEVEL: 9.9 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	(%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	14.9°C	3110	2.1	6.0	56	4"	
2	14.9	3100	2.1	6.0	78	3"	
3	15.0	3180	2.1	6.0	40	4"	7.7
4	14.9	3180	2.1	6.0	38	6"	
5	14.4	3020	2.1	6.0	36	5"	7.6
6	14.8	3080	2.1	6.0	48	5"	
7	14.9	2990	2.0	5.7	46	5"	
8	14.9	3090	2.1	6.0	51	5"	
9	14.9	2900	2.0	5.7	34	7"	7.7
10	15.0	3010	2.1	6.0	53	4"	
11	14.9	3010	2.1	6.0	45	5"	
12	15.0	3050	2.1	6.0	49	5"	
13	14.9	3120	2.1	6.0	73	3"	
14	14.9	3110	2.1	6.0	51	5"	7.7
15	14.5	3010	2.1	6.0	55	5"	
16	14.9	3080	2.1	6.0	55	5"	
17	14.5	3180	2.1	6.0	38	5"	
18	14.9	3250	2.2	6.3	50	5"	
19	14.9	3280	2.2	6.3	39	5"	
20	15.2	3220	2.1	6.0	44	5"	7.7
21	14.9	3250	2.2	6.3	41	5"	
22	15.0	3510	2.4	6.9	27	6"	7.6
23	15.0	3180	2.1	6.0	47	5"	
24	15.0	3300	2.2	6.3	39	4"	
MEAN	14.9°C	3133.8	2.1	6.0	47.2	4.8"	

VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

BACK BAY WATER CHEMISTRY

* BAY FROZEN - UNABLE TO REACH BY BOAT

DATE: December 19, 1988 WATER LEVEL: 8.8 ft. COLLECTED BY: RS & NS

STATION NO.	WATER TEMP. (°C)	SPECIFIC CONDUCTANCE (MICROMHS/CM)	SALINITY (PPT)	SALINITY (%SS)	TURBIDITY (NTU)	SECCHI DISK VISIBILITY (INCHES)	pH
1	0.9°C	1810	1.8	5.1	65	4"	
2	1.0	1880	1.9	5.4	47	5"	
3	1.8	1800	1.8	5.1	43	5"	7.4
4	*						
5	1.8	2000	1.9	5.4	32	6"	7.4
6	*						
7	*						
8	*						
9	1.8	2000	1.9	5.4	35	7"	7.4
10	*						
11	*						
12	1.8	1810	1.8	5.1	37	5"	
13	0.5	1810	1.8	5.1	60	4"	
14	0.5	1800	1.8	5.1	46	5"	7.3
15	*						
16	*						
17	0.9	1810	1.8	5.1	51	4"	
18	1.0	1850	1.8	5.1	40	6"	
19	1.1	1900	1.9	5.4	35	6"	
20	1.1	1800	1.8	5.1	24	8"	7.3
21	1.0	1900	1.9	5.4	42	5"	
22	1.0	2000	1.9	5.4	20	9"	7.4
23	0.8	1800	1.8	5.1	49	5"	
24	1.0	1880	1.9	5.4	17	12"	
MEAN	1.1°C	1865.6	1.8	5.2	40.2	6"	