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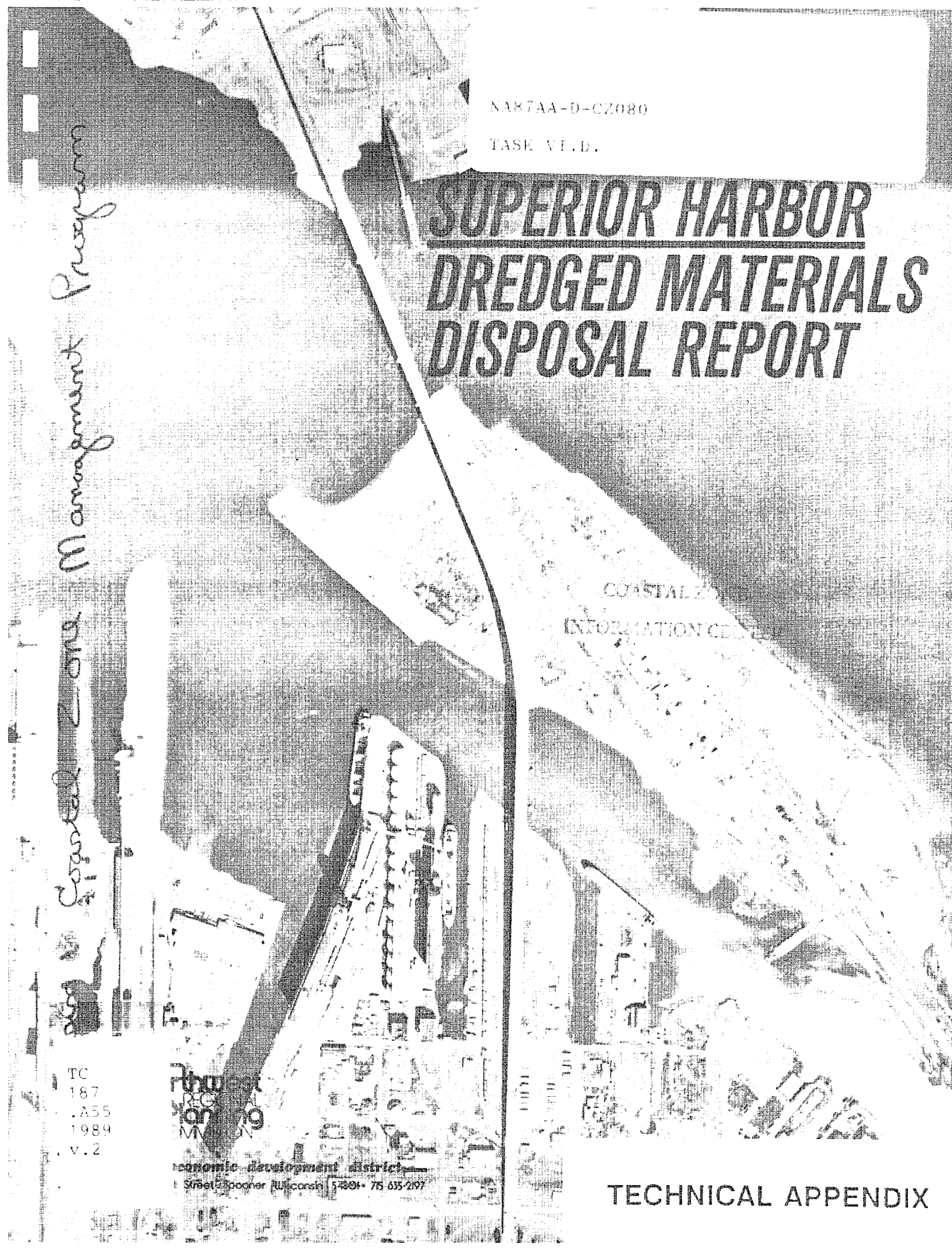
TASK VI.D.

SUPERIOR HARBOR DREDGED MATERIALS DISPOSAL REPORT



Coastal Zone Management Program

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Northwest Regional Planning Commission
economic development district
Street Spooner Wisconsin 54801 • 715 635-2197

TECHNICAL APPENDIX

SUPERIOR HARBOR

DREDGED MATERIALS

DISPOSAL REPORT

TECHNICAL APPENDIX

1989

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Appendix I

Temperature and Oxygen Profiles

Bunge Slip Site

Sample form

November 15, 1988 Bunge Slip Sampling Site
Water Depth 5.5-8m No ice

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	3.0	12.2
1	2.5	12.2
2	2.5	12.3
3	2.5	12.3
4	2.4	12.3
5	2.5	12.3
5.5 (bottom)	2.6	12.3

December 9, 1988 Bunge Slip Sampling Site

Water Depth 5.5-8m 12 cm ice

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	0.4	11.0
1	0.4	10.9
2	0.5	10.8
4	0.5	10.6
6	1.0	10.5
7 (bottom)	1.0	8.6

December 22, 1988
Water Depth 5.5-7.8m

Bunge Slip Sampling Site
31.2 cm ice

Physical/Chemical Data

Sample Depth (m)	Temperature (C)	Oxygen (ppm)
Surface	0.1	10.8
1	0.0	10.8
2	0.0	10.6
3	0.0	10.6
4	0.0	10.5
5	0.1	10.4
6	0.1	10.3
7	0.1	10.2
7.8 (bottom)	0.1	10.2

December 29, 1988
Water Depth 5.5-7.5m

Bunge Slip Sampling Site
42 cm ice

Physical/Chemical Data

Sample Depth (m)	Temperature (C)	Oxygen (ppm)
Surface	0.0	10.3
1	0.0	10.6
2	0.0	10.4
3	0.0	10.2
4	0.0	10.0
5	0.0	10.0
6	0.0	9.9
7	0.1	9.8
7.5 (bottom)	0.1	9.8

January 11, 1989
Water Depth 5.5-7.8m

Bunge Slip Sampling Site
46 cm ice

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	0.0	10.4
1	0.0	10.3
2	0.0	10.2
3	0.0	10.2
4	0.0	10.2
5	0.0	10.2
6	0.0	10.1
7	0.0	10.0
7.8 (bottom)	0.0	8.8

January 26, 1989
Water Depth 7.5 - 8m

Bunge Slip Sampling Site
Ice 53-60cm

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	-1.0	10.4
1	-1.0	10.4
2	-1.0	10.2
3	-0.8	10.0
4	-0.8	10.0
5	-0.8	9.8
6	-0.5	9.7
7	-0.5	9.3
8	-0.2	5.9

February 16, 1989 Bunge Slip Sampling Site

Water Depth 4.0 - 7.5 m Ice Depth - 68 cm

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	0.0	12.4
1	0.0	12.2
2	0.0	12.2
3	0.0	12.0
4	0.0	11.9
5	0.0	11.8
6	0.0	11.8
7	0.0	11.6
(bottom)	0.0	11.2

March 10, 1989 Bunge Slip Sampling Site

Water Depth 3.5 - 7.5 m Ice Thickness - 64 cm

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	0.0	11.4
1	0.0	11.6
2	0.0	11.6
3	0.0	11.5
4	0.0	11.4
5	0.0	11.4
6	0.0	11.4
7	0.0	11.2
(bottom)	0.0	11.2

April 24, 1989 Bunge Slip Sampling Site

Water Depth 4.5 - 7.5 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	3.0	11.9
1	3.0	11.9
2	3.0	11.9
3	3.0	11.8
4	3.0	11.8
5	3.0	12.0
6	3.0	12.0
7	3.0	12.0
(bottom)	3.0	12.0

May 6, 1989 Bunge Slip Sampling Site

Water Depth 5.0 - 6.0 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	6.9	11.0
2	6.9	11.0
4	6.5	10.4
6	6.5	10.0
(bottom)		

May 8, 1989 Bunge Slip Sampling Site

Water Depth 5.0 - 7.5 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	8.2	11.3
1	8.0	11.2
2	7.8	10.5
3	7.2	10.6
4	7.0	10.4
5	6.8	10.4
6	6.0	10.0
7	6.0	10.0
(bottom)	6.0	10.0

May 13, 1989 Bunge Slip Sampling Site

Water Depth 5.0 - 8.0 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	11.9	9.6
1	10.3	9.6
2	10.0	9.4
3	10.0	9.3
4	9.9	9.4
5	9.8	9.4
6	9.5	9.2
7	9.0	9.2
(bottom)	8.9	9.0

May 16, 1989 Bunge Slip Sampling Site

Water Depth 8.0 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	15.5	10.4
1	15.1	10.3
2	14.0	10.1
3	12.5	9.5
4	11.4	9.5
5	11.2	9.3
6	11.0	9.4
7	10.5	9.4
8	10.2	9.5

May 20, 1989 Bunge Slip Sampling Site

Water Depth 7.0 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	13.9	9.4
1	13.9	9.5
2	13.1	9.3
3	12.5	10.2
4	12.2	10.1
5	12.1	10.2
6	12.0	10.1
7	11.9	10.1

May 22, 1989 Bunge Slip Sampling Site

Water Depth 7.5 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	16.1	9.6
1	15.3	9.6
2	14.2	9.3
3	13.8	9.0
4	13.5	9.0
5	13.0	8.8
6	12.5	8.7
7	12.0	8.4
7.5	12.0	8.4

May 25, 1989 Bunge Slip Sampling Site

Water Depth 5.5m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	12.8	8.6
1	12.8	8.6
2	12.8	8.6
3	12.5	8.6
4	12.4	8.6
5	12.3	8.6
5.5	12.2	8.7

June 1, 1989 Bunge Slip Sampling Site

Water Depth 5.0 - 8.0 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	13.5	10.8
1	12.0	10.6
2	11.5	10.4
3	11.0	10.8
4	11.0	10.6
5	10.9	10.5
6	10.2	10.5
7	10.2	10.4
8	10.2	11.4

June 5, 1989 Bunge Slip Sampling Site

Water Depth 7.5m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	13.9	10.6
1	13.9	10.7
2	13.9	10.7
3	12.9	10.8
4	12.1	10.6
5	12.1	10.6
6	12.0	10.5
7	11.8	10.4
7.5	11.4	10.0

June 8, 1989 Bunge Slip Sampling Site

Water Depth 8.0m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	9.8	12.4
1	9.5	12.4
2	9.2	12.3
3	9.2	12.4
4	9.2	12.4
5	9.0	12.3
6	9.0	12.4
7	9.0	12.2
8	8.8	11.9

June 9, 1989 Bunge Slip Sampling Site

Water Depth 7.0m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	10.9	11.8
1	10.5	11.2
2	10.0	11.0
3	10.0	11.8
4	9.9	10.7
5	9.9	10.4
6	10.0	10.5
7	9.8	10.4

June 15, 1989 Bunge Slip Sampling Site

Water Depth 8.0m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	10.0	10.5
1	9.9	10.8
2	9.8	10.7
3	9.6	10.5
4	9.5	10.6
5	9.5	10.7
6	9.5	10.7
7	9.2	10.6
8	9.2	10.6

Physical/Chemical Data

July 10, 1989 Bunge Slip Sampling Site

Water Depth 6.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.2	10.2
1	17.4	10.0
2	16.2	9.5
3	15.5	9.5
4	15.2	9.6
5	15.0	9.5
6	14.7	9.9
(bottom)	14.2	9.7

Physical/Chemical Data

July 14, 1989 Bunge Slip Sampling Site

Water Depth 7.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	16.5	9.9
1	16.5	9.8
2	16.2	9.7
3	14.0	9.2
4	13.5	9.5
5	12.7	10.2
6	12.3	10.4
(bottom)	12.0	9.5

Physical/Chemical Data

July 17, 1989 Bunge Slip Sampling Site

Water Depth 6.0 - 9.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	17.5	10.6
1	15.0	10.5
2	14.0	10.5
3	14.0	10.2
4	13.5	9.9
5	13.0	9.9
6	13.0	10.2
7	12.8	9.9
(bottom)	12.5	9.7

Physical/Chemical Data

July 24, 1989 Bunge Slip Sampling Site

Water Depth 7.3 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	19.6	10.4
1	17.5	10.5
2	16.8	10.3
3	16.2	10.0
4	15.5	9.3
5	14.5	7.6
6	13.8	7.8
7	13.2	7.2
(bottom)	13.0	6.3

Physical/Chemical Data

July 28, 1989 Bunge Slip Sampling Site

Water Depth 7.2 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	17.0	10.2
1	17.0	10.1
2	17.0	9.8
3	16.5	9.7
4	15.0	10.5
5	14.6	10.5
6	14.5	10.6
7	14.0	10.4
(bottom)	14.0	10.2

Physical/Chemical Data

August 1, 1989 Bunge Slip Sampling Site

Water Depth 8.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	15.5	10.2
1	15.5	10.0
2	14.5	10.0
3	14.0	10.0
4	14.0	9.9
5	14.0	10.2
6	14.0	9.8
7	13.5	8.6
(bottom)	13.5	8.3

Physical/Chemical Data

August 2, 1989 Bunge Slip Sampling Site

Water Depth 6.0 - 7.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	16.0	9.8
1	16.0	9.9
2	15.5	10.0
3	15.0	10.0
4	14.8	9.9
5	14.0	9.5
(bottom)	10.8	9.1

Physical/Chemical Data

August 4, 1989 Bunge Slip Sampling Site

Water Depth 7.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	16.0	10.2
1	15.3	10.3
2	15.0	10.6
3	14.5	10.8
4	14.2	10.9
5	14.1	11.0
6	14.0	11.0
(bottom)	13.9	11.4

Physical/Chemical Data

August 7, 1989 Bunge Slip Sampling Site

Water Depth 7.6 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	14.2	10.2
1	14.0	10.2
2	13.5	9.8
3	13.2	9.8
4	13.1	9.8
5	13.0	9.8
6	13.0	9.7
7	13.0	9.8
(bottom)	13.0	9.4

Physical/Chemical Data

August 14, 1989 Bunge Slip Sampling Site

Water Depth 7.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	19.0	8.7
1	18.7	8.5
2	18.3	8.5
3	17.5	8.6
4	17.0	8.7
5	15.9	8.8
6	15.2	8.8
7	13.5	8.8
(bottom)	12.8	8.2

Physical/Chemical Data

August 16, 1989 Bunge Slip Sampling Site

Water Depth 4.5 - 7.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.0	8.4
1	17.5	7.8
2	17.0	8.2
3	17.0	8.0
4	16.5	8.0
5	16.5	8.2
6	16.0	7.8
7	15.0	7.5
(bottom)	15.5	7.5

Physical/Chemical Data

August 21, 1989 Bunge Slip Sampling Site

Water Depth 7.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.8	8.6
1	17.8	8.6
2	18.7	7.8
3	18.2	7.7
4	18.0	7.4
5	17.5	7.3
6	17.2	7.0
7	17.2	6.7
(bottom)	17.2	6.2

Physical/Chemical Data

August 24, 1989 Bunge Slip Sampling Site

Water Depth 5.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.3	8.3
1	18.0	8.2
2	18.0	8.2
3	17.7	8.1
4	17.7	7.9
5	17.5	7.5
(bottom)	17.5	7.5

Physical/Chemical Data

August 28, 1989 Bunge Slip Sampling Site

Water Depth 7.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	21.0	8.5
1	21.0	8.3
2	20.8	8.3
3	20.2	7.7
4	20.0	7.6
5	19.8	7.7
6	19.5	6.9
(bottom)	19.5	6.7

Physical/Chemical Data

August 29, 1989 Bunge Slip Sampling Site

Water Depth 5.0 - 7.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	20.0	7.6
1	20.0	7.6
2	20.0	7.5
3	20.0	7.8
4	20.0	7.8
5	19.8	7.4
(bottom)	19.5	7.9

Physical/Chemical Data

September 5, 1989 Bunge Slip Sampling Site

Water Depth 7.3m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.2	7.8
1	18.0	7.8
2	17.8	7.7
3	17.8	7.7
4	17.8	7.6
5	17.8	7.7
6	17.5	7.6
7	17.5	7.6
(bottom)	17.5	7.6

Physical/Chemical Data

Spetember 8, 1989 Bunge Slip Sampling Site

Water Depth 7.6 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	20.5	9.0
1	19.5	8.5
2	19.3	8.3
3	19.0	8.2
4	19.0	8.2
5	19.0	8.2
6	18.5	7.9
7	18.5	7.9
(bottom)	18.5	7.9

Physical/Chemical Data

September 12, 1989 Bunge Slip Sampling Site

Water Depth 7.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	16.5	7.4
1	16.4	7.3
2	16.2	7.4
3	16.2	7.4
4	16.0	7.4
5	16.0	7.6
6	15.8	7.8
7	15.8	7.9
(bottom)	15.6	8.0

Physical/Chemical Data

September 14, 1989 Bunge Slip Sampling Site

Water Depth 6.0 - 7.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	15.2	8.6
1	15.2	8.4
2	15.2	8.6
3	14.9	8.5
4	15.0	8.8
5	13.5	8.9
6	13.2	9.0
(bottom)	13.3	8.9

Appendix II

Temperature and Oxygen Profiles

Interstate Hole Site

November 17, 1988 Interstate Island Sampling Site

Water Depth 9 - 10m No ice

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	2.0	13.1
1	2.0	13.1
2	2.0	13.1
3	1.9	13.0
4	2.0	13.0
5	2.0	13.0
6	2.0	12.9
7	2.0	12.8
8	2.0	12.8
9	2.0	12.8
9.5 (bottom)	2.0	12.8

November 28, 1988 Interstate Island Sampling Site

Water Depth 8-10m Ice 3/4 to 1/2" at sampling site

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	0.8	11.6
1	0.8	11.4
2	0.8	11.4
3	0.8	11.4
4	0.8	11.4
5	0.8	11.4
6	0.9	11.4
7	0.9	11.4
8 (bottom)	1.0	11.4

January 5, 1989
Water Depth 8 - 9m

Interstate Sampling Site
27 cm ice

Physical/Chemical Data

Sample Depth (m)	Temperature (C)	Oxygen (ppm)
Surface	0.0	10.4
1	0.0	10.3
2	0.0	10.0
3	0.0	10.1
4	0.0	10.2
5	0.0	10.1
6	0.0	10.0
7	0.0	10.1
8	0.0	10.1
9 (bottom)	0.0	10.1

January 15, 1989
Water Depth 8.5 - 10m

Interstate Sampling Site
Ice depth 40cm

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	0.0	8.4
1	0.0	8.2
2	0.0	9.2
3	0.0	9.4
4	0.0	9.6
5	0.0	9.6
6	0.0	9.6
7	0.0	9.5
8	0.0	9.4
(bottom)	0.0	9.8

February 6,1980
Water Depth 9.0m

Interstate Island Sampling Site
Ice Thickness 48cm

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	-1.0	10.1
1	-1.0	10.1
2	-1.0	10.05
3	-0.9	10.0
4	-0.9	9.9
5	-0.9	9.9
6	-0.8	9.9
7	-0.8	9.9
8	-0.8	9.5
9 (bottom)	-0.8	9.0

February 23, 1989 Interstate Sampling Site

Water Depth 5.5 - 9 m Ice Depth - 58 cm

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	0.0	11.6
1	0.0	11.5
2	0.0	11.6
3	0.0	11.6
4	0.0	11.5
5	0.0	11.5
6	0.0	11.5
7	0.0	11.4
8	0.0	11.4
(bottom)	0.0	11.4

March 9, 1989 Interstate Sampling Site

Water Depth 5.5-8.5 Ice Thickness - 60 cm

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	0.0	11.6
1	0.0	11.6
2	0.0	11.6
3	0.0	11.6
4	0.0	11.6
5	0.0	11.6
6	0.0	11.6
7	0.0	11.6
8	0.0	11.6
(bottom)	0.0	11.6

April 17, 1989 Interstate Sampling Site

Water Depth 10 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	1.5	12.4
1	1.5	12.5
2	1.5	12.6
3	1.5	12.6
4	1.5	12.7
5	1.5	12.7
6	1.5	12.7
7	1.5	12.7
8	1.5	12.7
9	1.5	12.7
10	1.5	12.7

May 1, 1989 Interstate Sampling Site

Water Depth 6.5 - 9.5 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	6.9	10.1
1	6.9	10.1
2	6.9	10.1
3	6.9	9.9
4	6.9	9.9
5	6.9	9.9
6	6.9	9.9
7	6.9	9.9
8	6.5	9.8
9	6.5	9.8
(bottom)	6.5	9.8

May 7, 1989 Interstate Sampling Site
Water Depth 6.5-11m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	8.8	9.9
1	8.5	9.9
2	8.1	10.0
3	8.0	10.0
4	7.8	10.0
5	7.5	10.1
6	7.0	10.2
7	6.9	10.3
8	6.8	10.4
9	6.8	10.2
10	6.7	10.0
11	6.5	8.0

May 11, 1989 Interstate Sampling Site

Water Depth 6.5 - 9.0m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	10.3	10.05
1	10.1	10.05
2	10.1	10.10
3	10.0	10.10
4	10.0	10.20
5	9.9	10.20
6	9.5	10.40
7	9.5	10.40
8	9.5	10.60
9	9.8	10.60

May 13, 1989 Interstate Sampling Site

Water Depth 6.5 - 10m

Physical/Chemical Data

Sample depth (m)	Temperature °C	Oxygen (ppm)
Surface	11.0	10.2
1	11.0	10.2
2	11.0	10.2
3	10.9	10.2
4	10.8	10.2
5	10.5	10.2
6	10.2	10.5
7	10.2	10.4
8	10.0	10.4
9	9.5	10.4
10	9.5	10.5

May 15, 1989 Interstate Sampling Site

Water Depth 5.5 - 9 m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	13.4	9.6
1	13.0	9.4
2	12.8	9.6
3	12.3	9.6
4	11.4	9.8
5	10.4	9.8
6	10.3	9.8
7	10.0	9.8
8	9.8	9.9
(bottom)	9.7	9.6

May 20, 1989 Interstate Sampling Site

Water Depth 8.5m

Physical/Chemical Data

Sample depth (m)	Temperature °C	Oxygen (ppm)
Surface	14.1	9.4
1	14.1	9.4
2	14.1	9.3
3	14.0	9.2
4	14.0	9.2
5	14.0	9.2
6	14.0	9.2
7	13.9	9.2
8	12.5	9.1
8.5	11.9	9.0

May 22, 1989 Interstate Sampling Site

Water Depth 8.5m

Physical/Chemical Data

Sample depth (m)	Temperature °C	Oxygen (ppm)
Surface	15.0	8.8
1	15.0	8.8
2	14.8	8.8
3	14.8	8.7
4	14.5	8.7
5	14.5	8.5
6	14.0	8.5
7	13.0	8.4
8	12.9	8.3
8.5	12.9	8.3

May 25, 1989 Interstate Sampling Site

Water Depth 9m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	14.6	8.1
1	14.6	8.1
2	14.5	8.1
3	14.5	8.1
4	14.5	8.1
5	14.5	8.1
6	14.4	8.2
7	14.4	8.2
8	14.4	8.4
9	14.3	8.6

May 30, 1989 Interstate Sampling Site

Water Depth 6.5 - 9.0m

Physical/Chemical Data

Sample depth (m)	Temperature °C	Oxygen (ppm)
Surface	12.0	9.9
1	12.0	9.7
2	12.0	9.7
3	12.0	9.7
4	12.0	9.7
5	12.0	9.7
6	12.0	9.5
7	12.0	9.6
8	12.0	9.4
9	12.0	9.0

June 1, 1989 Interstate Sampling Site

Water Depth 9.0m

Physical/Chemical Data

Sample depth (m)	Temperature °C	Oxygen (ppm)
Surface	13.2	10.2
1	13.1	10.2
2	13.0	10.3
3	12.2	10.3
4	12.0	10.2
5	12.0	10.3
6	12.0	10.3
7	12.0	10.4
8	12.0	10.4
9	12.0	10.4

June 5, 1989 Interstate Sampling Site

Water Depth 10.0m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	14.0	9.8
1	14.4	9.7
2	14.2	9.6
3	14.1	9.6
4	14.0	9.5
5	14.0	9.5
6	14.0	9.5
7	14.0	9.5
8	13.9	9.5
9	13.7	9.6
10	13.5	9.5

June 9, 1989 Interstate Sampling Site

Water Depth 8.5m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	12.2	9.6
1	12.2	9.6
2	12.0	9.6
3	11.9	9.6
4	11.9	9.6
5	11.9	9.5
6	11.9	9.6
7	11.9	9.5
8	11.8	9.3
8.5	11.8	9.6

June 14, 1989 Interstate Sampling Site

Water Depth 10.0m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	11.0	10.2
1	11.0	10.1
2	11.0	10.2
3	11.0	10.1
4	11.0	10.0
5	11.0	10.1
6	11.0	10.1
7	11.0	10.1
8	11.0	10.1
9	11.0	10.0
10	11.0	9.8

June 15, 1989 Interstate Sampling Site

Water Depth 11.7m

Physical/Chemical Data

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	11.3	10.8
1	11.2	10.3
2	11.1	10.2
3	10.1	11.1
4	10.1	11.1
5	11.0	10.0
6	11.0	10.0
7	11.0	10.0
8	11.0	10.0
9	11.0	9.9
10	11.0	9.9
11	11.0	9.9
11.7	11.0	9.7

Physical/Chemical Data

July 10, 1989 Interstate Sampling Site

Water Depth 8.8 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.6	8.9
1	18.5	8.6
2	18.5	8.9
3	18.5	8.9
4	18.3	9.2
5	18.1	9.0
6	18.0	8.9
7	18.0	8.8
8	18.0	8.8
9	18.0	8.8
(bottom)	18.0	8.8

Physical/Chemical Data

July 12, 1989 Interstate Sampling Site

Water Depth 7.0 - 10.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	16.5	9.6
1	16.5	9.3
2	16.5	9.1
3	16.4	9.0
4	16.4	9.0
5	16.3	8.9
6	16.2	8.9
7	16.2	8.9
8	16.2	8.9
9	16.2	8.9
10	16.2	8.9
(bottom)	16.2	8.8

Physical/Chemical Data

July 14, 1989 Interstate Sampling Site

Water Depth 8.8 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	16.4	9.5
1	16.4	9.3
2	16.2	9.4
3	16.0	9.4
4	16.0	9.5
5	16.2	9.5
6	16.3	9.4
7	16.1	9.4
8	16.0	9.5
9	15.8	9.6
(bottom)	15.8	9.9

Physical/Chemical Data

July 17, 1989 Interstate Sampling Site

Water Depth 8.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	13.5	9.5
1	13.5	9.2
2	13.5	9.2
3	13.3	9.1
4	13.2	9.1
5	13.0	9.1
6	13.0	9.0
7	13.0	9.0
8	13.0	9.1
(bottom)	13.0	9.3

Physical/Chemical Data

July 24, 1989 Interstate Sampling Site

Water Depth 8.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	19.0	10.3
1	19.0	10.4
2	18.0	10.0
3	17.0	9.5
4	17.0	9.4
5	16.5	8.7
6	16.0	8.6
7	16.0	8.5
8	16.0	8.2
9	16.0	8.2
(bottom)	16.0	8.2

Physical/Chemical Data

July 25, 1989 Interstate Sampling Site

Water Depth 7.0 - 10.0 m

Sample Depth (m)	Temperature °C	Oxygen(ppm)
Surface	18.9	10.2
1	19.0	10.0
2	18.9	10.2
3	17.5	9.8
4	17.2	9.6
5	16.7	9.2
6	17.2	8.6
7	17.2	8.6
8	15.9	8.2
(bottom)	15.8	7.5

Physical/Chemical Data

July 28, 1989 Interstate Sampling Site

Water Depth 8.8 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	16.3	8.8
1	16.4	8.8
2	16.4	8.8
3	16.4	8.9
4	16.2	8.9
5	16.2	8.9
6	16.2	9.0
7	16.2	9.1
8	16.0	9.1
(bottom)	16.0	9.1

Physical/Chemical Data

August 1, 1989 Interstate Sampling Site

Water Depth 10.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	15.2	9.5
1	15.2	9.5
2	15.2	9.5
3	15.0	9.5
4	15.0	9.3
5	15.0	9.2
6	15.0	9.1
7	15.0	9.2
8	14.5	9.2
9	14.5	8.4
(bottom)	14.5	8.5

Physical/Chemical Data

August 4, 1989 Interstate Sampling Site

Water Depth 11.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	17.0	9.5
1	17.0	9.5
2	17.0	9.4
3	17.0	9.6
4	17.0	9.6
5	17.0	9.7
6	16.5	9.6
7	16.5	9.7
8	16.0	9.1
9	16.0	8.6
10	15.5	8.5
(bottom)	15.5	8.0

Physical/Chemical Data

August 9, 1989 Interstate Sampling Site

Water Depth 7.0 - 10.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	16.0	12.0
1	15.5	12.0
2	14.0	11.0
3	13.5	10.8
4	13.5	10.4
5	13.2	10.4
6	13.0	10.0
7	13.0	10.0
8	13.0	9.4
9	13.0	9.2
(bottom)	13.0	9.4

Physical/Chemical Data

August 14, 1989 Interstate Sampling Site

Water Depth 8.8 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.5	8.9
1	18.5	9.2
2	18.5	9.3
3	18.7	9.1
4	18.7	8.4
5	18.7	8.6
6	18.5	8.5
7	18.5	8.5
8	18.5	8.4
9	18.4	8.5
(bottom)	18.2	8.6

Physical/Chemical Data

August 21, 1989 Interstate Sampling Site

Water Depth 8.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.9	8.4
1	18.8	8.4
2	18.8	8.3
3	18.8	8.3
4	18.5	8.1
5	18.2	8.0
6	18.2	8.0
7	18.2	8.0
8	18.1	8.0
(bottom)	18.0	8.3

Physical/Chemical Data

August 23, 1989 Interstate Sampling Site

Water Depth 4.5 - 9.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.8	8.4
1	18.7	8.3
2	18.7	8.3
3	18.7	8.2
4	18.5	8.1
5	18.3	8.0
6	18.2	8.0
7	18.2	8.0
(bottom)	18.1	8.3

Physical/Chemical Data

August 24, 1989 Interstate Sampling Site

Water Depth 8.8 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	18.5	8.0
1	18.5	7.9
2	18.5	8.0
3	18.5	7.9
4	18.5	8.2
5	18.5	8.0
6	18.5	7.8
7	18.5	7.8
8	18.5	8.0
9	18.5	7.9
(bottom)	18.5	7.7

Physical/Chemical Data

August 28, 1989 Interstate Sampling Site

Water Depth 9.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	20.2	7.6
1	20.2	7.5
2	20.2	7.4
3	20.2	7.4
4	20.2	7.6
5	20.2	7.5
6	20.2	7.5
7	20.2	7.4
8	20.0	7.6
9	20.0	7.5
(bottom)	20.0	7.3

Physical/Chemical Data

September 5, 1989 Interstate Sampling Site

Water Depth 11.0 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	19.0	7.7
1	19.0	7.6
2	19.0	7.6
3	19.0	7.6
4	18.8	7.4
5	18.8	7.5
6	18.8	7.6
7	18.8	7.7
8	18.8	7.7
9	18.8	7.7
10	18.8	8.1
11	18.8	8.0
(bottom)	19.0	8.0

Physical/Chemical Data

September 8, 1989 Interstate Sampling Site

Water Depth 9.8 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	20.0	8.1
1	20.0	8.1
2	20.0	8.1
3	20.0	8.0
4	20.0	8.1
5	20.0	8.1
6	20.0	8.2
7	20.0	8.1
8	20.0	8.1
9	20.0	8.1
10	20.0	8.2
(bottom)	20.0	8.2

Physical/Chemical Data

September 12, 1989 Interstate Sampling Site

Water Depth 11.5 m

Sample Depth (m)	Temperature °C	Oxygen (ppm)
Surface	17.2	7.7
1	17.2	7.7
2	17.2	7.6
3	17.2	7.6
4	17.2	7.5
5	17.2	7.6
6	17.2	7.6
7	17.2	7.7
8	17.2	8.0
9	17.2	8.2
10	17.0	7.8
11	17.0	7.8
(bottom)	17.0	7.9

Appendix III

Gill Net Catch Records

Bunge Slip Site

Catch data from 24 hr gill net set

Bunge Slip - November 15, 1988

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Bullhead	Rock Bass	White Sucker	Yellow Perch	Spottail Shiner
1"	(48) 7 90-99mm 19 100-109mm 21 110-119mm 1 120-129mm					(1) 110mm
1 1/2"		(1) 163mm		(2) 147 mm 157 mm	(5) 3 140mm 2 145mm	
2"					(1) 227mm	
2 1/2"		(7) 2 210-219mm 3 220-229mm 1 240mm 1 254mm				
3"		(3) 232, 245, 275mm			(1) 280 mm	
3 1/2"		(8) 2 240-249mm 2 250-259mm 2 260-269mm 2 270-279mm	(1) 215mm	(3) 390mm 401mm 411mm	(1) 274mm	
4"		(2) 280, 301mm	(1) 250mm	(2) 408, 419mm		
Total	48	21	2	7	8	1

Grand total = 67 fish

Catch data from 24 hr gill net set

Bunge Slip - December 9, 1988

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Burbot	White Sucker
1"	(9) 6 100-109mm 3 110-119mm		
1 1/2"			
2"			
2 1/2"		(1) 355mm	
3"			
3 1/2"			
4"			(3) 421, 429, 444mm
Total	9	1	3

Grand Total = 13 fish

Catch data from 24 hr gill net set

Bunge Slip - December 22, 1988

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Walleye	White Perch
1"	(8) 6 100-109mm 1 110-119mm 1 120-129mm		
1 1/2"			
2"			
2 1/2"			
3"		(1) 333 mm	
3 1/2"			(1) 247 mm
4"			
Total	8	1	1

Grand Total = 10 fish

Catch data from 24 hr gill net set

Bunge Slip - December 29, 1988

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Northern	White Sucker	Ruffe
1"	(16) 5 90- 99mm 11 100-109mm			
1 1/2"				
2"				(1) 157 mm
2 1/2"				
3"		(1) 496 mm		
3 1/2"			(2) 420, 451 mm	
4"			(1) 404 mm	
Total	16	1	3	1

Grand Total = 21 fish

Catch data from 24 hr gill net set

Bunge Slip - January 11, 1989

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Burbot	White Sucker	Northern Pike	Ruffe
1"	(24) 2 90- 99mm 12 100-109mm 9 110-119mm 1 120-129mm				
1 1/2"					(1) 155 mm
2"					
2 1/2"					
3"				(1) 632 mm	
3 1/2"		(1) 480 mm			
4"			(1) 427 mm	(1) 715 mm	
Total	24	1	1	2	1

Grand Total = 29 fish

Catch data from 24 hr gill net set

Bunge Slip - January 26, 1989

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Burbot	White Sucker	Northern Pike	Yellow Perch
1"	(12) 1 90-100mm 7 100-110mm 4 110-120mm				
1 1/2"					
2"					
2 1/2"					
3"			(1) 315mm	(1) 550mm	
3 1/2"		(1) 555mm	(4) 2 380-390mm 1 390-400mm 1 400-410mm		(1) 265mm
4"			(4) 1 390-400mm 1 400-410mm 2 410-420mm		
Total	12	1	9	1	1

Grand Total = 24 fish

Catch data from 24 hr gill net set

Bunge Slip - February 16, 1989

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Northern	White Sucker
1"	(16) 3 90-99 mm 11 100-109mm 2 110-119mm		
1 1/2"			
2"			
2 1/2"		(1) 618mm	
3"			
3 1/2"			
4"			(2) 405, 428 mm
Total	16	1	2

Grand Total = 19 fish

Catch data from 24 hr gill net set

Bunge Slip - March 10, 1989

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Ruffe	White Sucker	Smelt	Northern Pike
1"	(15) 6 90-99 mm 9 100-109mm			(3) 139, 142, 150 mm	
1 1/2"		(1) 114 mm			
2"					
2 1/2"					
3"					
3 1/2"			(1) 147 mm		(1) 741 mm
4"			(1) 147 mm		
Total	15	1	2	3	1

Grand Total = 22 fish

Catch data from 24 hr gill net set

Bunge Slip - April 24, 1989

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Ruffe	Long Nose Sucker	Smelt	Spottail Shiner	Yellow Perch	Lake Chub
1"	(40)	(1)		(11)	(9)		
1 1/2"				(4)		(5) 130-145 mm	(1)
2"		(1)	(1) 380 mm			(1) 180 mm	
2 1/2"				(1)			
3"			(1) 340 mm				
3 1/2"							
4"							
Total	40	2	2	16	9	6	1

Grand Total = 76 fish

Catch data from 24 hr gill net set

Bunge Slip - May 8, 1989

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Yellow Perch	Burbot	Walleye	Black Bullhead
1"	(6)				
1 1/2"		(1) 143 mm			
2"					
2 1/2"			(1) 356 mm		
3"				(2) 328, 340 mm	
3 1/2"					
4"					(1) 255 mm
Total	6	1	1	2	1

Grand Total = 11 fish

Catch data from 24 hr gill net set

Bunge - May 23, 1989

Number caught (in parentheses) and lengths

Mesh Size	White Sucker	Longnose Sucker	Yellow Perch	Trout-Perch	Emerald Shiner	Ruffe
1"				(9) 4 90-109 mm 5 110-129 mm	(1) 122 mm	
1 1/2"		(1) 160 mm	(4) 138, 140, 149, 150 mm			(1) 135 mm
2"			(1) 187 mm			
2 1/2"	(5) 2 270-289 mm 3 290-309 mm		(1) 231 mm			
3"	(3) 341, 370, 425 mm					
3 1/2"	(1) 305 mm					
4"						
Total	9	1	6	9	1	1

Grand Total = 27 fish

Catch data from 24 hr gill net set

Bunge Slip - June 8, 1989

Number caught (in parentheses) and lengths

Mesh Size	Burbot	White Sucker	Troutperch	Black Bullhead	Yellow Perch
1"			(9) 9 95-105 mm	(1) 98 mm	
1 1/2"				(1) 135 mm	(1) 130 mm
2"					(1) 225 mm
2 1/2"					(1) 228 mm
3"				(1) 231 mm	(3) 265, 270 286 mm
3 1/2"		(1) 437 mm			
4"	(1) 574 mm				
Total	1	1	9	3	6

Grand Total = 20 fish

Catch data from 24 hr gill net set

Bunge Slip - June 20-21, 1989

Number caught (in parentheses) and lengths

Mesh Size	Burbot	White Sucker	Redhorse Sucker	Yellow Perch	Troutperch
1"					(1) 101 mm
1 1/2"				(1) 142 mm	
2"				(2) 148, 184 mm	
2 1/2"					
3"		(2) 349, 430 mm	(1) 410 mm	(1) 292 mm	
3 1/2"	(1) 469 mm	(2) 377, 414 mm			
4"		(1) 414 mm			
Total	1	5	1	4	1

Grand Total = 12 fish

Catch data from 24 hr gill net set

Bunge Slip - July 5-6, 1989

Number caught (in parentheses) and lengths

Mesh Size	Walleye	Redhorse Sucker	Yellow Perch	Lake Herring	Sturgeon
1"					
1 1/2"					
2"		(1) 224 mm	(1) 200 mm	(1) 286 mm	
2 1/2"					
3"	(1) 364 mm	(5) 344, 379, 379 381, 396 mm			
3 1/2"		(3) 421, 436, 441 mm			(1) 435 mm
4"		(3) 469, 474, 475 mm			
Total	1	12	1	1	1

Grand Total = 16 fish

Catch data from 24 hr gill net set

Bunge Slip - July 17-18, 1989

Number caught (in parentheses) and lengths

Mesh Size	Trout Perch	Redhorse	Ruffe	Black Bullhead	Yellow Perch	White Sucker
1"	(1) 104 mm					
1 1/2"					(10) 3 120-139mm 7 140-159mm	
2"			(1) 172 mm		(1) 180 mm	(1) 280 mm
2 1/2"					(4) 215, 226mm 226, 262mm	
3"		(1) 407 mm				(1) 429 mm
3 1/2"				(1) 267 mm	(2) 294, 395mm	(2) 336, 340mm
4"		(2) 435, 440 mm				(2) 398,475mm
Total	1	3	1	1	17	6

Grand Total = 29 fish

Catch data from 24 hr gill net set

Bunge Slip - August 2-3, 1989

Number caught (in parentheses) and lengths

Mesh Size	Yellow Perch	Walleye	Black Bullhead	Carp	White Sucker
1"	(1) 100 mm				
1 1/2"	(1) 144 mm				
2"	(9) 145, 172, 173, 190, 195, 199, 203, 215, 221 mm		(2) 149, 167 mm		
2 1/2"	(2) 230, 239 mm	(1) 348 mm		(1) 237 mm	
3"	(1) 282 mm		(4) 220, 250, 255, 264 mm		
3 1/2"					
4"					(1) 405 mm
Total	14	1	6	1	1

Grand Total = 23 fish

Catch data from 24 hr gill net set

Bunge Slip - August 15-16, 1989

Number caught (in parentheses) and lengths

Mesh Size	Yellow Perch	Smelt	Walleye	Ruffe	Black Bullhead	Redhorse Sucker	White Sucker
1"	(1) 127mm	(1) 125mm					
1 1/2"	(1) 137mm			(1) 128mm	(1) 125mm		
2"	(3) 180, 204, 206mm		(2) 240,271mm		(5) 137,140,150, 160, 182mm		(1) 245mm
2 1/2"	(6) 223,232,248, 275,294,295mm						
3"	(1) 254mm					(1) 360mm	
3 1/2"							
4"						(2) 432,446mm	
Total	12	1	2	1	6	3	1

Grand Total = 26 fish

Catch data from 24 hr gill net set

Bunge Slip - August 29-30, 1989

Number caught (in parentheses) and lengths

Mesh Size	Spottail Shiner	White Perch	North. Pike	Trout Perch	Ruffe	Yellow Perch	Black Bullhead	White Sucker
1"	(2) 104,107mm			(2) 109,109mm		(2) 107,109mm		
1 1/2"					(2) 124mm 155mm	(5) 142,145, 157,165, 188mm		
2"		(1) 191mm				(3) 183,216, 244mm	(3) 170, 173,185mm	
2 1/2"		(1) 216mm				(9) 208,218,229, 244,251,254, 264,279,282mm		
3"			(1) 660mm					
3 1/2"							(5) 254,267,279, 284,292mm	
4"							(2) 284, 300mm	(2) 417, 434mm
Total	2	2	1	2	2	19	10	2

Grand Total = 40 fish

Catch data from 24 hr gill net set

Bunge Slip - September 13-14,1989

Number caught (in parentheses) and lengths

Mesh Size	Trout Perch	White Bass	Black Bullhead	Red-horse	Yel. Perch	White Sucker	Ruffe
1"	(2) 106,126mm						
1 1/2"		Bl. crappie (1) 142mm			(4) 140,145 147,161mm		(2) 130, 135mm
2"	LN Sucker (1) 207mm	(3) 180,192mm	(13) 6 160-179mm 3 180-199mm 3 200-219mm 1 295mm		(9) 106,160,170, 171,196,207, 211,232,240mm	(2) 203, 273mm	
2 1/2"		(5) 195,200,200 201,219mm	(1) 225mm	(1) 277mm	(6) 205,211,220 232,248,257mm	(2) 275, 277mm	
3"		(2) 200,215mm	(9) 7 240-260mm 220,282mm	L. Trout (1) 603mm		(2) 352,360mm	
3 1/2				(3) 404,405 414mm	(1) 294mm	(1) 440mm	
4"		No. Pike (1) 685mm		(1) 415mm			
Total	2	1	1	10	1	23	5	1	20	7	2

Grand Total = 73 fish

Appendix IV

Gill Net Catch Records

Interstate Hole Site

Catch data from 24 hr gill net set

Interstate Island - November 17, 1988

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Walleye	Yellow Perch	Ruffe	Spottail Shiner
1"				124 mm	(1)
1 1/2"	(1) 105 mm				(1) 116 mm
2"					
2 1/2"		(1) 280 mm	(1) 266 mm		
3"					
3 1/2"					
4"					
Total	1	1	1	1	1

Grand Total = 5 fish

Catch data from 24 hr gill net set

Interstate Island - November 28, 1988

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Burbot	Spottail Shiner
1"	(2) 106 mm		(1) 105 mm
1 1/2"			
2"			
2 1/2"			
3"			
3 1/2"			
4"		(2) 470, 560 mm	
Total	2	2	1

Grand total = 5 fish

Catch data from 24 hr gill net set

Interstate Island - January 5, 1989

Number caught (in parentheses) and lengths

Mesh Size	Troutperch
1"	(1) 104 mm
1 1/2"	
2"	
2 1/2"	
3"	
3 1/2"	
4"	
Total	1

Grand Total = 1 fish

Catch data from 24 hr gill net set

Interstate site - January 15, 1989

Number caught (in parentheses) and lengths

Mesh Size	Ruffe	Walleye
1"	(1) 93mm	
1 1/2"		
2"		
2 1/2"		(1) 313mm
3"		
3 1/2"		
4"		
Total	1	1

Grand Total = 2 fish

Catch data from 24 hr gill net set

Interstate Island - February 6, 1989

Number caught (in parentheses) and lengths

Mesh Size	Troutperch
1"	(2) 110mm, 115mm
1 1/2"	
2"	
2 1/2"	
3"	
3 1/2"	
4"	
Total	2

Grand Total = 2 fish

Catch data from 24 hr gill net set

Interstate - February 23, 1989

Number caught (in parentheses) and lengths

Mesh Size	Smelt
1"	(1) 156 mm
1 1/2"	
2"	
2 1/2"	
3"	
3 1/2"	
4"	
Total	1

Grand Total = 1 fish

Catch data from 24 hr gill net set

Interstate - March 9, 1989

Number caught (in parentheses) and lengths

Mesh Size	Smelt
1"	(1) 149 mm
1 1/2"	
2"	
2 1/2"	
3"	
3 1/2"	
4"	
Total	1

Grand Total = 1 fish

Catch data from 24 hr gill net set

Interstate - April 17-19, 1989

Number caught (in parentheses) and lengths

Mesh Size	Smelt	Walleye	Ruffe	Burbot	White Sucker
1"	(55)				
1 1/2"	(1) 195 mm		(1) 131 mm		
2"					(1) 256 mm
2 1/2"					
3"					
3 1/2"		(1) 358 mm			
4"		(1) 415 mm		(3) 520, 552, 470 mm	
Total	56	2	1	3	1

Grand Total = 63 fish

Catch data from 48 hr gill net set

Interstate - May 1, 1989

Number caught (in parentheses) and lengths

Mesh Size	Troutperch	Ruffe	White Sucker	Smelt
1"	(2) 118, 115 mm			(427) 18 71- 90 mm 116 91-100 mm 137 101-120 mm 125 121-140 mm 45 141-160 mm 36 161-180 mm
1 1/2"				(29) 3 161-180 mm 14 181-200 mm 7 201-220 mm 3 221-260 mm 2 281-300 mm
2"		(1) 160 mm	(4) 205-230 mm	
2 1/2"				
3"				
3 1/2"				
4"				
Total	2	1	4	456

Grand Total = 463 fish

Catch data from 24 hr gill net set

Interstate - May 15, 1989

Number caught (in parentheses) and lengths

Mesh Size	Smelt	Troutperch	Yellow Perch	Longnose Sucker	White Sucker
1"	(23) 1 121-140 mm 7 141-160 mm 15 161-180 mm	(6)			
1 1/2"					
2"			(1) 188 mm	(1) 377 mm	
2 1/2"					(1) 280 mm
3"				(3) 365, 385, 411 mm	(1) 364 mm
3 1/2"					
4"					
Total	23	6	1	4	2

Grand Total = 36 fish

Catch data from 24 hr gill net set

Interstate - May 30, 1989

Number caught (in parentheses) and lengths

Mesh Size	Walleye	White Sucker	Yellow Perch	Troutperch
1"			(1) 110 mm	(1) 92 mm
1 1/2"				
2"	(1) 360 mm			
2 1/2"				
3"		(1) 353 mm	(1) 310 mm	
3 1/2"		(5) 397, 400, 405 420, 434 mm		
4"		(4) 410, 432, 437 460 mm		
Total	1	10	2	1

Grand Total = 14 fish

Catch data from 24 hr gill net set

Interstate - June 15, 1989

Number caught (in parentheses) and lengths

Mesh Size	Walleye	Ruffe	White Sucker	Yellow Perch	Troutperch
1"		(1) 103 mm	(1) 115 mm		(3) 100, 101 105 mm
1 1/2"				(1) 144 mm	
2"					
2 1/2"	(1) 315 mm				
3"					
3 1/2"			(2) 405, 410 mm		
4"			(1) 423 mm		
Total	1	1	4	1	3

Grand Total = 10 fish

Catch data from 24 hr gill net set

Interstate - June 29-30, 1989

Number caught (in parentheses) and lengths

Mesh Size	Walleye	White Sucker	Redhorse Sucker	Yellow Perch	Trout-perch	Black Bullhead
1"					(1) 105 mm	
1 1/2"				(1) 141 mm		
2"		(3) 223, 224, 239 mm				
2 1/2"	(1) 300 mm			(2) 225, 262 mm		
3"		(1) 368 mm		(3) 265, 271, 279 mm		(1) 160 mm
3 1/2"			(2) 356, 417 mm	(2) 257, 278 mm		
4"			(2) 402, 437 mm			
Total	1	4	4	8	1	1

Grand Total = 19 fish

Catch data from 24 hr gill net set

Interstate - July 12-13, 1989

Number caught (in parentheses) and lengths

Mesh Size	Yellow Perch	Walleye	Black Bullhead	Redhorse	White Sucker
1"	(1) 109 mm				
1 1/2"	(3) 145, 156 181 mm				
2"	(1) 282 mm		(1) 234 mm		(1) 238 mm
2 1/2"	(2) 238, 265 mm	(1) 301mm			(1) 229 mm
3"					
3 1/2"				(1) 410 mm	
4"				(1) 430 mm	
Total	7	1	1	2	2

Grand Total = 13 fish

Catch data from 24 hr gill net set

Interstate - July 25 - 26, 1989

Number caught (in parentheses) and lengths

Mesh Size	Yellow Perch	Walleye	Ruffe	Redhorse	White Sucker
1"					
1 1/2"		(1) 323 mm	(4) 122, 127 mm 135, 135 mm		
2"					
2 1/2"	(1) 264 mm				(1) 279 mm
3"				(2) 365, 390 mm	
3 1/2"					
4"					
Total	1	1	4	2	1

Grand Total = 9 fish

Catch data from 24 hr gill net set

Interstate - August 8-9, 1989

Number caught (in parentheses) and lengths

Mesh Size	Yellow Perch	Walleye	Ruffe	Redhorse	White Sucker
1"					
1 1/2"		(2) 275,301 mm	(2) 137,143 mm		
2"		(1) 297 mm			(2) 236, 250 mm
2 1/2"	(2) 226, 247 mm				(4) 254, 278, 280, 280 mm
3"		(2) 376, 380 mm			
3 1/2"					
4"				(2) 410, 422 mm	
Total	2	5	2	2	6

Grand Total = 17 fish

Catch data from 24 hr gill net set

Interstate - August 22-23, 1989

Number caught (in parentheses) and lengths

Mesh Size	Trout Perch	Walleye	Ruffe	Yellow Perch	Yellow Bullhead	White Sucker
1"	(1) 112mm					
1 1/2"		(1) 224mm	(2) 143,150mm			
2"		(2) 253,324mm				
2 1/2"				(2) 239,255mm		(1) 312mm
3"						(1) 343mm
3 1/2"					(2) 268,286mm	(1) 416mm
4"						
Total	1	3	2	2	2	3

Grand Total = 13 fish

Catch data from 24 hr gill net set

Interstate - Setember 6-7, 1989

Number caught (in parentheses) and lengths

Mesh Size	Yellow Perch	Walleye	Ruffe	Black Bullhead	Redhorse	White Sucker
1"						
1 1/2"	(2) 148,151mm		(2) 125,128mm			(1) 170mm
2"		(1) 370mm		(1) 160mm		
2 1/2"	(3) 167,221,230mm					(2) 176,369mm
3"					(1) 392mm	
3 1/2"						
4"						
Total	5	1	2	1	1	3

Grand Total = 13 fish

Appendix V

Trawl Catch Records

Bunge Slip Site

Trawl Summary Bunge Slip Sampling Site

May 6, 1989

	Trawl 1	Trawl 2
Length of Trawl	8 minutes	1 minute
Average Speed	1.3 mph	1.2 mph

Abundance () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(26)	(23)	54
Spottail Shiner	(13)	(5)	20
Emerald Shiner	(8)	(2)	10
Black Bullhead	(7)	(1)	8
	1 20-39 mm 2 40-59 mm 1 60-79 mm 1 80-99 mm 1 100-119 mm		
Yellow Perch	(5)	(2)	7
	40,48,71,74,85 mm	78,41 mm	
White Sucker	(5)		5
	70,79,84,85,90 mm		
Johnny Darter	(2) 54,65 mm		2
Carp	(2) 54,70 mm		2
Walleye	(1) 198 mm		1
White Perch	(1) 104 mm		1
Total	70	33	113

Trawl Summary

Bunge Slip Sampling Site

May 11, 1989

	Trawl 1	Trawl 2
Length of Trawl	6 minutes	No Second Trawl
Average Speed	1.0 mph	

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(11)		18
Emerald Shiner	(5) 46,55,78,81,105mm		8
Spottail Shiner	(3) 60,63,65mm		5
Ruffe	(1) 102mm		2
Total	20		33

Trawl Summary

Bunge Slip Sampling Site

May 13, 1989

	Trawl 1	Trawl 2
Length of Trawl	6.5 minutes	5 Minutes
Average Speed	0.7 mph	0.7 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(21)		18
Emerald Shiner	(226)	(14) 8 60-79mm 6 80-99mm	209
Spottail Shiner	(1) 89mm	(2) 60,79mm	3
Carp	(1) 118mm		1
White Sucker	(1) 92mm		1
Yellow Bullhead	(1) 92mm	(3) 123,130,160mm	3
Yellow Perch		(1) 143mm	1
Total	251	20	236

Trawl Summary

Bunge Slip Sampling Site

May 16, 1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	0.83 min.
Average Speed	1.0 mph	1.6 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	-	(1)	2
Spottail Shiner	(3) 58,63,71mm	-	5
Yellow Perch	(1) 93mm	-	2
Johnny Darter	(1) 42mm	-	2
Total	(5)	(1)	11

Trawl Summary — Bunge Slip Sampling Site

May 20, 1989

	Trawl 1	Trawl 2	Trawl 3
Length of Trawl	4.75 min.	1.50 min.	1.50 min.
Average Speed	1.4 mph	1.0 mph	1.0 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Trawl 3	Avg/10 min.
Trout Perch	(15) 2 50-69mm 2 70-89mm 6 90-109mm 5 110-129mm	(5) 2 70-89mm 2 90-109mm 1 110-129mm	(3) 2 90-109mm 1 110-129mm	30
Emerald Shiner	(6) 5 70-99mm 1 178mm	(2) 78 & 84mm	(6) 6 70-99mm	18
Black Bullhead	(3) 115,116,127mm	(1) 171mm	(1) 139mm	5
Brown Bullhead	(1) 143mm			1
Rainbow Smelt	(1) 72mm			1
Spottail Shiner	(1) 62mm	(1) 63mm		2
Total	(27)	(9)	(10)	57

Trawl Summary

Bunge Slip Sampling Site

May 22, 1989

	Trawl 1
Length of Trawl	8.0 min.
Average Speed	0.8 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Avg/10 min.
Trout Perch	(76) 50-69mm 6 70-89mm 10 90-109mm 46 110-129mm 13 130=149mm 1	95
Black Bullhead	(2) 110,140mm	3
Emerald Shiner	(1) 56mm	1
Spottail Shiner	(1) 66mm	1
Total	(80)	100

Trawl Summary — Bunge Slip Sampling Site

May 25, 1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	5.0 min.
Average Speed	1.4 mph	1.4 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(48)	(34)	82
	40-59mm 3	40-59MM 2	
	60-79mm 14	60-79mm 12	
	80-99mm 18	80-99mm 7	
	100-119mm 13	100-119mm 13	
Emerald Shiner	(8)	(45)	53
	40-59mm 5	40-59mm 22	
	60-79mm 2	60-79mm 16	
	80-99mm 7		
		100-119mm 1	
Spottail Shiner	(15)	(4)	19
	40-59mm 1		
	60-79mm 11	60-79mm 4	
	80-99mm 2		
	100-119mm 1		
Black Bullhead	(2) 111,112mm	(1) 115mm	3
Rainbow Smelt	(1) 56mm	(1) 49mm	2
White Sucker		(1) 231mm	1
Yellow Perch	(2) 134,233mm		2
Total	(76)	(86)	162

Trawl Summary

Bunge Slip Sampling Site

June 1, 1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	5.0 min.
Average Speed	1.0 mph	1.0 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(73)	(27)	100
	40-59mm 4	40-59MM 1	
	60-79mm 21	60-79mm 2	
	80-99mm 28	80-99mm 13	
	100-119mm 18	100-119mm 10	
	120-139mm 2	120-139mm 1	
Spottail Shiner	(5)	(4)	9
	40-59mm 2	40-59mm 2	
	60-79mm 3	60-79mm 1	
		100-119mm 1	
Emerald Shiner	(2) 60,74mm	(1) 76mm	3
Black Bullhead	(1) 140mm	(1) 115mm	2
Rainbow Smelt	(1) 68mm	(1) 68mm	2
White Sucker	(1) 326mm		1
Yellow Perch		(1) 118mm	1
Ruffe		(1) 88mm	1
Sculpin		(1) 48mm	1
Total	(83)	(37)	120

Trawl Summary Bunge Slip Sampling Site

June 5, 1989

	Trawl 1	Trawl 2
Length of Trawl	5.1 min.	5.0 min.
Average Speed	1.0 mph	1.0 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(63) 40-59mm 3 60-79mm 25 80-99mm 18 100-119mm 17	(8) 40-59MM 1 60-79mm 2 80-99mm 5	71
Spottail Shiner	(2) 64,67mm		2
Emerald Shiner	(1) 56		1
Black Bullhead	(1) 134mm	(1) 178mm	2
Rainbow Smelt	(1) 59mm		1
White Sucker	(1) 69mm		1
Sculpin	(1) 81mm		1
Total	(70)	(9)	79

Trawl Summary

Bunge Slip Sampling Site

June 9, 1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	5.0 min.
Average Speed	1.0 mph	1.0 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(21) 50-69mm 7 70-89mm 10 90-109mm 3 110-129mm 1	(3) 70-89mm 3	24
Black Bullhead	(6) 100-119mm 2 120-139mm 2 140-159mm 2	(1)	7
Spottail Shiner	(2) 62,90mm	(4) 65,68,70,75mm	6
Emerald Shiner	(1) 57mm	(1) 80mm	2
Rainbow Smelt	(2) 57,59mm		2
Yellow Bullhead		(1) 97mm	1
White Sucker	(1) 146mm		1
Total	(34)	(10)	43

Trawl Summary

Bunge Slip Sampling Site

June 15,1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	5.0 min.
Average Speed	1.1 mph	1.2 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(12) 50-69mm 9 70-89mm 3	(18) 50-69mm 4 70-89mm 9 90-109mm 3 110-129mm 2	30
Emerald Shiner	(4) 50-69mm 2 70-89mm 2 90-109mm	(3) 70-89mm 1 90-109mm 2	7
Black Bullhead	(3) 110-129mm 3	(10) 110-129mm 6 130-149mm 4	13
Rainbow Smelt	(1) 68mm	(1) 62mm	2
Spottail Shiner	(1) 63mm	(1) 60mm	2
Yellow Bullhead	(1) 108mm		1
Yellow Perch	(1) 136mm		1
Total	(23)	(32)	56

Trawl Summary

Bunge Slip Sampling Site

June 19, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	0.9 mph	0.9 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(16)	(17)	33
	1 40-59mm	1 40-59 mm	
	8 60-79 mm	12 60-79 mm	
	3 80-99 mm	3 80-99 mm	
	4 100-119 mm	1 100-119 mm	
Smelt	(2) 56, 70 mm		2
Black Bullhead	(1) 135 mm	(1) 115 mm	2
Lake Chub		(1) 160 mm	1
Sculpin		(1) 50 mm	1
Total	19	20	39

Trawl Summary

Bunge Slip Sampling Site

June 22, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.0 mph	0.9 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch		(18)	36
	CLAY BALL	2 40-59 mm 11 60-79 mm 2 80-99 mm 2 100-119 mm 1 120-139 mm	
Emerald Shiners		(1) 81 mm	2
Smelt		(2) 57, 60 mm	4
Burbot		(1) 98 mm	2
Total		22	44

Trawl Summary

Bunge Slip Sampling Site

June 26, 1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 minutes	5.0 minutes
Average Speed	1.0 mph	1.0 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(14)	(9)	23
	1 40-59 mm		
	11 60-79 mm	4 60-79 mm	
	2 80-99 mm	5 80-99 mm	
Black Bullheads	(8)	(20)	28
	5 100-119 mm	8 100-119 mm	
	3 120-139 mm	10 120-139 mm	
		2 140-159 mm	
Sculpins	(3) 40-59 mm	(1) 40 mm	4
Emerald Shiners		(1) 79 mm	1
Lake Chub		(1) 49 mm	1
Smelt		(2) 69, 72 mm	2
Total	25	34	59

Trawl Summary

Bunge Slip Sampling Site

June 30, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.6 mph	1.7 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(66)	(32)	98
	13 40-59 mm	3 40-59 mm	
	35 60-79 mm	20 60-79 mm	
	16 80-99 mm	8 80-99 mm	
	2 100-119 mm	1 100-119 mm	
Emerald Shiners	(1) 90 mm		1
Smelt	(3) 55, 59, 60 mm		3
White Sucker	(1) 77 mm		1
Sculpin	(1) 40 mm	(2) 44, 69 mm	3
Black Bullhead	(3) 70, 105, 128 mm		3
Total	75	34	109

Trawl Summary

Bunge Slip Sampling Site

July 3, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.7 mph	1.7 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(19)	(26)	45
	1 20-39 mm	1 20-39 mm	
	1 40-59 mm	4 40-59 mm	
	12 60-79 mm	14 60-79 mm	
	3 80-99 mm	4 80-99 mm	
	2 100-119 mm	3 100-119 mm	
Spottail Shiners		(1) 61 mm	1
Smelt	(5)	(2) 55, 73 mm	7
	2 40-59 mm		
	3 60-79 mm		
Emerald Shiners	(2) 44, 55 mm	(1) 41 mm	3
Sculpin	(2) 45, 55 mm	(1) 58 mm	3
Black Bullhead	(2) 123, 140 mm		2
Yellow Perch	(1) 150 mm		1
Burbot	(1) 60 mm		1
Total	32	31	63

Trawl Summary

Bunge Slip Sampling Site

July 7, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.5 mph	1.6 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(70)	(50)	120
	5 20-39 mm	0 20-39 mm	
	3 40-59 mm	2 40-59 mm	
	41 60-79 mm	26 60-79 mm	
	15 80-99 mm	13 80-99 mm	
	6 100-119 mm	7 100-119 mm	
		2 120-139 mm	
Smelt	(2) 58, 62 mm	(1) 65 mm	3
Emerald Shiners	(17)	(2) 66, 78 mm	19
	10 60-79 mm		
	7 80-99 mm		
Sculpin	(1) 63 mm	(3) 40,51,61 mm	4
Black Bullhead		(1) 128 mm	1
Yellow Perch		(1) 234 mm	1
Spottail Shiner	(1) 73 mm		1
Total	91	58	149

Trawl Summary

Bunge Slip Sampling Site

July 10, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	900 rpm	900 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(9) 2 40-59mm 6 60-79mm 1 120-139mm	(12) 2 40-59mm 8 60-79mm 2 80-99mm	21
Rainbow Smelt	(4) 1 20-39mm 2 60-79mm 1 160-179mm	(3) 61, 75, 124mm	7
Emerald Shiners	-	(1) 45 mm	1
Total	13	16	29

Trawl Summary

Bunge Slip Sampling Site

July 14, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	800 rpm	800 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(30) 1 20-39mm 1 40-59mm 19 60-79mm 8 80-99mm 1 100-119mm	(13) 1 20-39mm 2 40-59mm 6 60-79mm 2 80-99mm 2 100-119mm	43
Slimey Sculpin	(10) 3 40-59mm 6 60-79mm 1 80-99mm	(5) 1 20-39mm 4 40-59mm	15
Emerald Shiners	-	(7) 1 40-59mm 5 60-79mm 1 80-99mm	7
Ruffe	(2) 29, 155mm	-	2
Yellow Perch	(1) 129mm	-	1
Rainbow Smelt	-	(1) 37mm	1
Burbot	-	(1) 215mm	1
Redhorse sucker	-	(1) 392mm	1
Total	43	28	71

Trawl Summary

Bunge Slip Sampling Site

July 17, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	800 rpm	856 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(28) 15 20-39mm 3 40-59mm 5 60-79mm 4 80-99mm 1 100-119mm	(13) 5 20-39mm 2 40-59mm 4 60-79mm 2 80-99mm	41
Black Bullhead	(2) 120, 128mm	(1) 151mm	3
Emerald Shiners	(1) 57mm	(4) 90, 96, 101, 102mm	5
Slimey Sculpin	(1) 48mm	(3) 51, 56, 57mm	4
Yellow Perch	(1) 141mm	(1) 188mm	2
Total	33	22	55

Trawl Summary

Bunge Slip Sampling Site

July 21, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	850 rpm	900 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(9) 2 20-39mm 2 40-59mm 3 60-79mm 2 80-99mm	(9) 5 20-39mm 1 40-59mm 2 60-79mm 1 80-99mm	18
Rainbow Smelt	(1) 68mm	(2) 31, 48mm	3
Black Bullhead	(1) 155mm	-	1
Walleye	(1) 247mm	-	1
Slimey Sculpin	-	(1) 55mm	1
Total	12	12	24

Trawl Summary

Bunge Slip Sampling Site

July 24, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	825 rpm	900 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(6) 28, 74, 85 89, 95, 101mm	No catch	6
Rainbow Smelt	(1) 66mm		1
Emerald Shiners	(1) 86mm		1
Ruffe	(2) 126, 145mm		2
Slimey Sculpin	(2) 64, 65mm		2
Total	12	0	12

Trawl Summary

Bunge Slip Sampling Site

July 28, 1989

	Trawl 1	Trawl 2
Length of Trawl	4.75 minutes	5.25 minutes
Average Speed	739 rpm	750 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(25) 8 20-39mm 2 40-59mm 8 60-79mm 3 80-99mm 4 100-119mm	(8) 5 20-39mm 3 60-79mm	33
Ruffe	(2) 131, 142mm	(1) 107mm	3
Emerald Shiners	(2) 59, 66mm	(2) 65, 97mm	4
Slimey Sculpin	(2) 48, 50mm	-	2
Black Bullhead	(2) 144, 155mm	(1) 162mm	3
Redhorse Sucker	(1) 453mm	-	1
Walleye	(1) 280mm	(1) 292mm	2
Yellow Perch	-	(1) 155mm	1
Total	35	14	49

Trawl Summary

Bunge Slip Sampling Site

August 1, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	805 rpm	800 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Black Bullhead	(34) 2 80-99mm 7 100-119mm 13 120-139mm 11 140-159mm 1 235mm	(61) 3 80-99mm 8 100-119mm 29 120-139mm 15 140-159mm 5 160-179mm 1 254mm	95
Trout Perch	(4) 79, 89 90, 125mm	(28) 7 20-39mm 5 60-79mm 12 80-99mm 4 100-119mm	32
Rainbow Smelt	-	(1) 140mm	1
Emerald Shiners	(3) 68, 82, 93mm	-	3
Yellow Perch	(1) 138mm	-	1
Brown Bullhead	-	(2) 169, 182mm	2
Slimey Sculpin	-	(1) 89mm	1
White Sucker	-	(1) 188mm	1
Channel Catfish	-	(1) 33mm	1
Total	42	95	137

Trawl Summary

Bunge Slip Sampling Site

August 4, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	800 rpm	800 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(22) 4 20-39mm 5 40-59mm 6 60-79mm 4 80-99mm 3 100-119mm	(25) 11 20-39mm 3 40-59mm 5 60-79mm 3 80-99mm 1 100-119mm 2 120-139mm	47
Rainbow Smelt	-	(8) 4 20-39mm 2 40-59mm 1 60-79mm 1 180-199mm	8
Emerald Shiners	(1) 83mm	(1) 80mm	2
Black Bullhead	(4) 104, 125 127, 153mm	(3) 130, 134 147mm	7
Johnny Darter	-	(1) 32mm	1
Total	27	38	65

Trawl Summary

Bunge Slip Sampling Site

August 7, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	800 rpm	800 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(85) 36 20-39mm 13 40-59mm 14 60-79mm 17 80-99mm 3 100-119mm 1 120-139mm 1 140-159mm	(76) 1 0-19mm 51 20-39mm 9 40-59mm 8 60-79mm 6 80-99mm 1 100-119mm	161
Black Bullhead	(56) 8 80-99mm 7 100-119mm 20 120-139mm 15 140-159mm 6 160-179mm	(10) 1 60-79mm 2 80-99mm 2 100-119mm 3 120-139mm 2 140-159mm	66
Rainbow Smelt	(7) 7 20-39mm	(3) 35, 36, 37mm	10
Emerald Shiners	(5) 26, 79, 80 85, 88mm	(1) 54mm	6
Ruffe	(1) 52mm	-	1
Yellow Perch	(1) 172mm	-	1
Redhorse Sucker	(1) 413mm	-	1
Johnny Darter	-	(2) 31, 50mm	2
Channel Catfish	(1) 20mm	(1) 27mm	2
Total	157	93	250

Trawl Summary

Bunge Slip Sampling Site

August 14, 1989

	Trawl 1	Trawl 2
Length of Trawl	3 minutes	7 minutes
Average Speed	800 rpm	800 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(11) 5 20-39mm 1 40-59mm 3 60-79mm 2 80-99mm	(24) 1 0-19mm 3 20-39mm 1 40-59mm 11 60-79mm 3 80-99mm 2 100-119mm 3 120-139mm	35
Emerald Shiners	(6) 4 60-79mm 2 80-99mm	(11) 1 40-59mm 7 60-79mm 3 80-99mm	17
Spottail Shiners	-	(1) 76mm	1
Johnny Darter	(1) 25mm	(1) 25mm	2
Slimey Sculpin	-	(1) 51mm	1
White Sucker	(1) 191mm	-	1
Redhorse Sucker	-	(1) 432mm	1
Total	19	39	58

Trawl Summary

Bunge Slip Sampling Site

August 21, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5.25 minutes
Average Speed	750 rpm	750 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(12) 4 20-39mm 2 40-59mm 1 60-79mm 4 80-99mm 1 120-139mm	(16) 5 20-39mm 5 40-59mm 0 60-79mm 2 80-99mm 4 100-119mm	27
Rainbow Smelt	-	(9) 1 20-39mm 6 40-59mm 1 60-79mm 1 80-99mm	9
Emerald Shiner	(9) 2 60-79mm 7 80-99mm	(13) 3 60-79mm 10 80-99mm	21
Ruffe	(1) 152mm	(1) 151mm	2
Johnny Darter	(1) 28mm	-	1
Slimey Sculpin	-	(1) 30mm	1
Total	23	40	61

Trawl Summary

Bunge Slip Sampling Site

August 24, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	900 rpm	900 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(5) 28, 37, 40 67, 88mm	(8) 4 20-39mm 1 40-59mm 2 60-79mm 1 80-99mm	13
Rainbow Smelt	(15) 1 20-39mm 14 40-59mm	(12) 4 20-39mm 8 40-59mm	27
Emerald Shiners	(1) 85mm	(3) 77, 77, 79mm	4
Slimey Sculpin	(1) 25mm	-	1
Ruffe	(1) 21mm	-	1
Total	23	23	46

Trawl Summary

Bunge Slip Sampling Site

August 28, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.4 mph	1.4 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(22) 5 20-39mm 9 40-59mm 0 60-79mm 5 80-99mm 3 100-119mm	(36) 14 20-39mm 11 40-59mm 2 60-79mm 5 80-99mm 4 100-119mm	58
Ruffe	(3) 122, 137, 160mm	(3) 131, 132, 158mm	6
Rainbow Smelt	(1) 40mm	(3) 32, 39, 42mm	4
Slimey Sculpin	-	(3) 32, 53, 65mm	3
Spottail Shiners	(1) 113mm	-	1
Black Bullhead	-	(1) 223mm	1
Yellow Perch	-	(2) 145, 275mm	2
Total	27	48	75

Trawl Summary

Bunge Slip Sampling Site

September 1, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.3 mph	1.4 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(54) 27 20-39mm 19 40-59mm 1 60-79mm 6 80-99mm 1 100-119mm	(36) 14 20-39mm 15 40-59mm 0 60-79mm 4 80-99mm 3 100-119mm	90
Rainbow Smelt	(3) 33, 40, 45mm	(1) 48mm	4
Emerald Shiner	(6) 37, 45, 45 66, 68, 101mm	(3) 44, 59, 89mm	9
Spottail Shiners	(4) 69, 85 89, 90mm	(3) 82, 96, 100mm	7
Ruffe	(2) 114, 153mm	(4) 125, 127 140, 141mm	6
Yellow Perch	(2) 145, 152mm	(1) 111mm	3
Black Bullhead	(1) 165mm	-	1
Johnny Darter	-	(1) 31mm	1
White Bass	-	(1) 220mm	1
White Sucker	-	(1) 189mm	1
Carp(unidentified)	(1) 69mm	-	1
Channel Catfish	-	(1) 46mm	1
Total	73	52	125

Trawl Summary

Bunge Slip Sampling Site

September 5, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.5 mph	1.6 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(17) 1 20-39mm 11 40-59mm 1 60-79mm 3 80-99mm 1 100-119mm	(26) 5 20-39mm 5 40-59mm 2 60-79mm 12 80-99mm 2 100-119mm	43
Ruffe	(3) 120, 129, 130mm	(4) 87, 117 132, 141mm	7
Spottail Shiners	(7) 3 80-99mm 4 100-119mm	(2) 99, 109mm	9
Johnny Darter	(1) 57mm	-	1
Black Bullhead	(3) 157, 159, 284mm	(1) 160mm	4
Yellow Perch	(3) 139, 149, 174mm	(4) 105, 136 157, 165mm	7
White Sucker	(1) 132mm	-	1
Emerald Shiner	-	(1) 55mm	1
Yellow Bullhead	-	(1) 221mm	1
Total	35	39	74

Trawl Summary

Bunge Slip Sampling Site

September 8, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.6 mph	1.5 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(40) 3 20-39mm 10 40-59mm 3 60-79mm 15 80-99mm 8 100-119mm 1 120-139mm	(6) 28, 91, 91 95, 97, 102mm	46
Ruffe	(5) 109, 113, 129 131, 146mm	(1) 133mm	6
Black Bullhead	(8) 27, 30, 156 158, 183, 197 232, 237mm	-	8
Yellow Perch	(3) 106, 144, 145mm	-	3
Burbot	-	(1) 172mm	1
Spottail Shiners	(2) 86, 99mm	-	2
Channel Catfish	(2) 39, 42mm	(1) 128mm	3
Rainbow Smelt	(1) 49mm	-	1
White Sucker	(1) 149mm	-	1
Total	62	9	71

Trawl Summary

Bunge Slip Sampling Site

September 12, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.5 mph	1.5 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(4) 42, 95 111, 117mm	(35) 8 20-39mm 13 40-59mm 2 60-79mm 8 80-99mm 2 100-119mm 2 120-139mm	39
Rainbow Smelt	(5) 33, 41, 42 45, 59mm	(6) 35, 36, 37 37, 41, 47mm	11
Spottail Shiners	(2) 100, 101mm	(6) 86, 87, 93 97, 100, 103mm	8
Johnny Darter	(1) 56mm	(1) 40mm	2
Burbot	(1) 165mm	-	1
Emerald Shiner	-	(4) 42, 60, 80, 90mm	4
Channel Catfish	-	(1) 46mm	1
Yellow Perch	-	(1) 166mm	1
Total	13	54	67

Appendix VI

Trawl Catch Records

Interstate Hole Site

Trawl Summary — Interstate Sampling Site

May 7, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.0 mph	0.8 mph

Abundance () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(81)	(32)	113
Rainbow Smelt	(12)	(6)	18
	5 120-139mm 6 140-159mm 1 160-179mm	5 140-159mm 1 180-199mm	
Spottail Shiners	(19)	(14)	33
Johnny Darter	(2)		2
Yellow Perch	(2) 66, 84mm		2
Ruffe	(1) 133mm	(1) 130mm	2
Yellow Bullhead	(1) 102mm		1
White Sucker		(3) 262,336,354mm	3
Total Catch	118	56	174

Trawl Summary

Interstate Sampling Site

May 11, 1989

	Trawl 1	Trawl 2
Length of Trawl	6 minutes	4.5 minutes
Average Speed	1.0 mph	1.0 mph

Abundance () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(20)	(5)	24
Rainbow Smelt	(18) 7 120-139mm 9 140-159mm 1 160-179mm 1 180-199mm	(8) 1 120-139mm 6 140-159mm 1 160-179mm	25
Spottail Shiner	(3) 58,68,74mm		3
Johnny Darter	(3) 45,48,63mm		3
Yellow Bullhead	(2) 90,100mm	(1) 109mm	3
White Sucker	(1) 140mm	(2) 315,366mm	3
Channel Catfish	(1)		1
Long Nose Sucker		(1) 435mm	1
Total	48	17	62

Trawl Summary

Interstate Sampling Site

May 13, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	3.5 minutes
Average Speed	1.4 mph	1.0 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Rainbow Smelt	(8) 1 100-119mm 5 120-139mm 2 140-159mm	(8) 1 120-139mm 5 140-159mm 2 160-179	19
Trout Perch	(7)	(6)	15
Spottail Shiner	(3) 55,65,66mm		4
White Sucker	(2) 45,170mm		2
Johnny Darter	(2) 58,64mm		2
Ruffe		(1) 95mm	1
Total	22	15	43

Trawl Summary

Interstate Sampling Site

May 16, 1989

	Trawl 1	Trawl 2
Length of Trawl	4.25 min.	4.75 min.
Average Speed	0.9 mph	1.0 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(5)	(8)	14
White Sucker	(1) 235mm		1
Yellow Perch	(1) 135mm	(1) 186mm	2
Ruffe		(1) 123mm	1
Rainbow Smelt		(1) 145mm	1
Total	(7)	(11)	19

Trawl Summary

Interstate Sampling Site

May 20, 1989

	Trawl 1	Trawl 2
Length of Trawl	4.0 min.	5.0 min.
Average Speed	1.2 mph	1.0 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(7) 60-79mm 3 80-99mm 1 100-119mm 3	(9) 40-59mm 2 60-79mm 5 80-99mm 2	18
White Sucker	(1) 269mm	(1) 279mm	2
Emerald Shiner	(4) 79,82,82,83,mm	(23) 60-79mm 10 80-99mm 13	30
Spottail Shiner	(1) 63mm	(2) 66,68mm	3
Rainbow Smelt		(1) 135mm	1
Johnny Darter	(1) 35mm		1
Black Crappie	(1) 78mm		1
Channel Catfish		(1) 61mm	1
Total	(15)	(37)	58

Trawl Summary

Interstate Sampling Site

May 22, 1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	4.0 min.
Average Speed	0.9 mph	1.0 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(4) 64,64,98,-,mm	(9) 50-69mm 5 70-89mm 1 90-109mm 3	14
Spottail Shiner	(1) 63mm	(3) 60,66,69mm	4
Emerald Shiner	(1) 80mm	(2) 79,83mm	3
Johnny Darter		(2) 33,57mm	2
Yellow Perch	(1) 68mm		1
Total	(7)	(16)	24

Trawl Summary

Interstate Sampling Site

May 25, 1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	4.0 min.
Average Speed	1.0 mph	1.4 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(14)	(12)	28
	40-59mm 1	40-59mm 2	
	60-79mm 4	60-79mm 7	
	80-99mm 5	80-99mm 1	
	100-119mm 4	100-119mm 2	
White Sucker	(1) 111mm	(1) 200mm	2
Yellow Bullhead	(2) 65,90mm	(2) 76,81mm	4
Spottail Shiner	(1) 63mm	(2) 66,67mm	3
Emerald Shiner		(1) 75mm	1
Johnny Darter	(1) 38mm		1
Total	(21)	(19)	39

Trawl Summary — Interstate Sampling Site

June 1, 1989

	Trawl 1	Trawl 2
Length of Trawl	6.5 min.	6.0 min.
Average Speed	0.9 mph	0.9 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(22) 40-59mm 1 60-79mm 18 80-99mm 2 100-119mm 1	(28) 40-59MM 2 60-79mm 15 80-99mm 7 100-119mm 4	40
Yellow Perch	(1) 129mm	(3) 124,129,137mm	3
White Sucker		(2) 101,111mm	2
Yellow Bullhead		(2) 90,92mm	2
Spottail Shiner	(1) 62mm		1
Rainbow Smelt		(1) 64mm	1
Johnny Darter	(1) 47mm		1
Total	(25)	(36)	50

Trawl Summary Interstate Sampling Site

June 5, 1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	5.0 min.
Average Speed	1.1 mph	1.1 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(10) 40-59mm 1 60-79mm 7 80-99mm 1 100-119mm 1		10
Yellow Bullhead	(1) 47mm	(4) 47,59,81,91mm	5
Johnny Darter	(1) 33mm		1
Yellow Perch		(1) 66mm	1
Total	(12)	(5)	17

Trawl Summary

Interstate Sampling Site

June 9,1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	5.0 min.
Average Speed	1.0 mph	1.2 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(8) 50-69mm 5 70-89mm 1 90-109mm 2	(13) 50-69mm 3 70-89mm 6 90-109mm 4	21
Spottail Shiner	(1) 69mm		1
Yellow Perch	(1) 129mm		1
Yellow Bullhead		(1) 78mm	1
Total	(10)	(14)	24

Trawl Summary — Interstate Sampling Site

June 15,1989

	Trawl 1	Trawl 2
Length of Trawl	5.0 min.	5.0 min.
Average Speed	1.0 mph	1.0 mph

Abundance ( ) and Lengths of Fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(24) 50-69mm 9 70-89mm 13 90-109mm 2 -	(6) 50-69mm 2 70-89mm 3 - 110-129mm 1	30
Spottail Shiner		(2) 66,68mm	2
White Sucker	(1) 133mm		1
Black Bullhead	(1) 62mm		1
Lake Chub	(1) 94mm		1
Ruffe		(1) 133mm	1
Rainbow Smelt		(1) 55mm	1
Total	(27)	(10)	37

Trawl Summary

Interstate Sampling Site

June 19, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.0 mph	1.0 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(8)	(12)	20
	6 60-79 mm 1 80-99 mm 1 100-119 mm	6 60-79 mm 5 80-99 mm 1 100-119 mm	
Smelt	(1) 89 mm		1
Emerald Shiners		(1) 85 mm	1
Johnny Darter	(1) 42 mm		1
White Sucker		(1) 390 mm	1
Total	10	14	24

Trawl Summary

Interstate Sampling Site

June 22, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.0 mph	1.0 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(11)	(3)	14
	9 60-79 mm 1 80-99 mm 1 100-119 mm	3 60-79 mm	
Emerald Shiners	(1) 84 mm	(3) 80,80,81 mm	4
Johnny Darter		(1) 37 mm	1
Total	12	7	19

Trawl Summary

Interstate Sampling Site

June 26, 1989

	Trawl 1	Trawl 2
Length of Trawl	4.5 minutes	5.5 minutes
Average Speed	1.1 mph	1.2 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(11)	(24)	35
	4 60-79 mm 5 80-99 mm 2 100-119 mm	12 60-79 mm 9 80-99 mm 3 100-119 mm	
Emerald Shiners	(1) 76 mm	(1) 76 mm	2
Spottail Shiners	(1) 75 mm	(1) 85 mm	2
Yellow Bullhead		(1) 95 mm	1
Total	13	27	40

Trawl Summary

Interstate Sampling Site

June 30, 1989

	Trawl 1	Trawl 2
Length of Trawl	4.5 minutes	5.5 minutes
Average Speed	1.6 mph	1.7 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(10)	(15)	25
	3 20-39 mm 4 60-79 mm 3 80-99 mm	1 20-39 mm 1 40-59 mm 10 60-79 mm 2 80-99 mm 1 100-119 mm	
Spottail Shiners	(1) 86 mm		1
Ruffe	(2) 109, 136 mm	(3) 95, 112, 139 mm	5
Walleye	(2) 241, 268 mm	(1) 270 mm	3
Total	15	19	34

Trawl Summary

Interstate Sampling Site

July 3, 1989

	Trawl 1	Trawl 2
Length of Trawl	4.5 minutes	5.5 minutes
Average Speed	1.6 mph	1.7 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(14)	(20)	34
	2 20-39 mm	4 20-39 mm	
	1 40-59 mm	1 40-59 mm	
	9 60-79 mm	12 60-79 mm	
	2 80-99 mm	3 80-99 mm	
Spottail Shiners	(1) 98 mm	(2) 56, 95 mm	3
Ruffe		(1) 137 mm	1
Smelt		(1) 64 mm	1
Total	15	24	39

Trawl Summary

Interstate Sampling Site

July 7, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.8 mph	1.6 mph

Abundance ( ) and lengths of fish

	Trawl 1	Trawl 2	Avg/10 minutes
Trout Perch	(75)	(44)	119
	22 20-39 mm	18 20-39 mm	
	0 40-59 mm	0 40-59 mm	
	41 60-79 mm	14 60-79 mm	
	6 80-99 mm	11 80-99 mm	
	6 100-119 mm	1 100-119 mm	
Smelt	(2) 57, 73 mm	(2) 56, 79 mm	4
Emerald Shiners		(1) 85 mm	1
Ruffe	(1) 144 mm	(4)	5
		3 100-119 mm	
		1 140-159 mm	
Walleye	(1) 215 mm		1
Total	79	51	130

Trawl Summary

Interstate Sampling Site

July 10, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	950 rpm	975 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(30) 11 20-39mm 1 40-59mm 11 60-79mm 5 80-99mm 2 100-119mm	(50) 21 20-39mm 0 40-59mm 27 60-79mm 2 80-99mm	80
Ruffe	(7) 5 20-39mm 91,102mm	(6) 6 20-39mm	13
Emerald Shiners	(2) 82, 94mm		2
Spottail shiners	(1) 100mm		1
Walleye	(1) 317mm	(1) 245mm	2
Total	41	57	98

Trawl Summary

Interstate Sampling Site

July 14, 1989

	Trawl 1	Trawl 2
Length of Trawl	4.33 minutes	5.67 minutes
Average Speed	944 rpm	900 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(33) 17 20-39mm 15 60-79mm 1 80-99mm	(17) 5 20-39mm 8 60-79mm 4 80-99mm	50
Ruffe	(15) 13 20-39mm 2 40-59mm	(7) 6 20-39mm 1 40-59mm	22
Rainbow Smelt	-	(1) 80mm	1
Total	48	25	73

Trawl Summary

Interstate Sampling Site

July 17, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	990 rpm	1000 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(14) 9 20-39mm 3 60-79mm 2 80-99mm	(13) 8 20-39mm 2 60-79mm 2 80-99mm 104mm	27
Ruffe	(4) 36, 108, 117, 127mm	(3) 30, 44, 108mm	7
Emerald Shiners	(1) 95mm	-	1
Rainbow Smelt	(1) 45mm	-	1
Walleye	(1) 368mm	(1) 304mm	2
Total	21	17	38

Trawl Summary

Interstate Sampling Site

July 21, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	995 rpm	1000 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(14) 11 20-39mm 2 60-79mm 1 100-119mm	(18) 16 20-39mm 2 60-79mm	32
Ruffe	(5) 2 20-39mm 1 40-59mm 1 100-119mm 1 140-159mm	(2) 29, 39 mm	7
Walleye	(4) 266, 283, 313, 353mm	-	4
Total	23	20	43

Trawl Summary

Interstate Sampling Site

July 24, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	900 rpm	900 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(34) 19 20-39mm 4 40-59mm 8 60-79mm 3 80-99mm	(32) 15 20-39mm 6 40-59mm 8 60-79mm 3 80-99mm	64
Ruffe	(4) 41, 46 112, 126mm	(3) 36, 39 128mm	7
Spottail Shiners	-	(1) 78mm	1
Total	38	36	74

Trawl Summary

Interstate Sampling Site

July 28, 1989

	Trawl 1	Trawl 2	
Length of Trawl	5 minutes	5 minutes	
Average Speed	795 rpm	800 rpm	
	Abundace () and lengths of fish		
	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(53) 22 20-39mm 7 40-59mm 16 60-79mm 7 80-99mm 1 100-119mm	(30) 16 20-39mm 4 40-59mm 5 60-79mm 4 80-99mm 1 100-119mm	83
Ruffe	(9) 1 20-30mm 8 40-59mm	(5) 42, 42, 46 115, 123mm	14
Channel catfish	(1) 75mm	(1) 19mm	2
Total	63	36	99

Trawl Summary

Interstate Sampling Site

August 1, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	790 rpm	820 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(158) 39 20-39mm 46 40-59mm 39 60-79mm 31 80-99mm 3 100-119mm	(86) 16 20-39mm 32 40-59mm 19 60-79mm 19 80-99mm	244
Ruffe	(7) 1 0-19mm 1 20-39mm 5 40-59mm	(10) 7 40-59mm 3 120-139mm	17
Spottail Shiners	-	(1) 70mm	1
Johnny Darter	(1) 47mm	(2) 52, 57mm	3
Slimey Sculpin	-	(1) 25mm	1
Channel Catfish	-	(2) 25, 29mm	2
Black Bullhead	-	(1) 15mm	1
Total	166	103	269

Trawl Summary

Interstate Sampling Site

August 4, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	800 rpm	800 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(102) 29 20-39mm 33 40-59mm 9 60-79mm 29 80-99mm 2 100-119mm	(202) 1 0-19mm 46 20-39mm 64 40-59mm 38 60-79mm 47 80-99mm 5 100-119mm 1 120-139mm	304
Ruffe	(5) 37, 43, 49 53, 135mm	(6) 19, 38, 38 49, 50, 51mm	11
Spottail Shiners	(1) 82mm	-	1
Black Bullhead	(2) 23, 28mm	-	2
Yellow Perch	-	(1) 230mm	1
Total	110	209	319

Trawl Summary

Interstate Sampling Site

August 7, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	995 rpm	1000 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(3) 40, 46, 86mm	(4) 41, 76 86, 89mm	7
Ruffe	(1) 43mm	-	1
Yellow Bullhead	-	(1) 30mm	1
Walleye	-	(1) 310mm	1
Total	4	6	10

Trawl Summary

Interstate Sampling Site

August 14, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	800 rpm	800 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(57) 20 20-39mm 13 40-59mm 4 60-79mm 16 80-99mm 4 100-119mm	(36) 2 0-19mm 16 20-39mm 13 40-59mm 1 60-79mm 3 80-99mm 1 100-119mm	93
Ruffe	(7) 38, 38, 51 57, 57, 114 127mm	(6) 19, 25, 32 44, 51, 127mm	13
Johnny Darter	(2) 32, 44mm	-	2
Channel Catfish	(2) 19, 38mm	-	2
Slimey Sculpin	(1) 32mm	-	1
White Sucker	(1) 279mm	-	1
Walleye	(5) 108, 292, 311 336, 362mm	(2) 305, 356mm	7
Yellow Perch	-	(1) 241mm	1
Total	75	45	120

Trawl Summary

Interstate Sampling Site

August 21, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	750 rpm	750 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(6) 1 20-39mm 5 40-59mm	(30) 2 20-39mm 16 40-59mm 1 60-79mm 11 80-99mm	36
Rainbow Smelt	-	(3) 54, 74, 88mm	3
Emerald Shiner	-	(3) 78, 80, 82mm	3
Ruffe	(1) 120mm	(1) 26mm	2
Black Bullhead	(1) 22mm	(1) 35mm	2
Black Crappie	(2) 110, 120mm	-	2
Walleye	(1) 115mm	(1) 310mm	2
White Sucker	-	(1) 363mm	1
Total	11	40	51

Trawl Summary

Interstate Sampling Site

August 24, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	800 rpm	900 rpm

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(50) 8 20-39mm 28 40-59mm 7 60-79mm 6 80-99mm 1 100-119mm	(45) 6 20-39mm 28 40-59mm 3 60-79mm 7 80-99mm 1 100-119mm	95
Johnny Darter	(1) 52mm	(2) 50, 53mm	3
Ruffe	(1) 59mm	(2) 27, 136mm	3
Spottail Shiners	(1) 48mm	-	1
Black Bullhead	-	(1) 24mm	1
Yellow Perch	-	(1) 207mm	1
Total	53	51	104

Trawl Summary

Interstate Sampling Site

August 28, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.9 mph	1.7 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(28) 20 40-59mm 3 60-79mm 5 80-99mm	(28) 1 20-39mm 19 40-59mm 2 60-79mm 5 80-99mm 1 100-119mm	56
Emerald Shiners	-	(9) 1 60-79mm 8 80-99mm	9
Ruffe	-	(3) 20, 28, 33mm	3
Total	28	40	68

Trawl Summary

Interstate Sampling Site

September 1, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.8	1.6 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(6) 48, 49, 52 61, 63, 107mm	(10) 1 20-39mm 7 40-59mm 2 80-99mm	16
Yellow Bullhead	(1) 73mm	(1) 102mm	2
Spottail Shiners	-	(1) 52mm	1
Ruffe	-	(1) 130mm	1
Channel Catfish	-	(1) 42mm	1
Yellow Perch	-	(1) 163mm	1
Total	7	15	22

Trawl Summary

Interstate Sampling Site

September 5, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.6 mph	1.5 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(7) 41, 51, 52 56, 61, 64 98mm	(27) 4 20-39mm 13 40-59mm 3 60-79mm 5 80-99mm 2 100-119mm	34
Ruffe	(2) 74, 137mm	(3) 29, 114, 127mm	5
Johnny Darter	(2) 40, 61mm	-	2
Spottail Shiners	-	(1) 51mm	1
Yellow Bullhead	-	(1) 26mm	1
Total	11	32	43

Trawl Summary

Interstate Sampling Site

September 8, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.6 mph	1.6 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(6) 50, 58, 59 60, 91, 92mm	(3) 56, 78, 85mm	9
Rainbow Smelt	(1) 44mm	(3) 44, 46, 55mm	4
Ruffe	(1) 138mm	(2) 128, 149mm .	3
Johnny Darter	-	(1) 35mm	1
Black Bullhead	-	(1) 28mm	1
Total	8	10	18

Trawl Summary

Interstate Sampling Site

September 12, 1989

	Trawl 1	Trawl 2
Length of Trawl	5 minutes	5 minutes
Average Speed	1.4 mph	1.6 mph

Abundace () and lengths of fish

	Trawl 1	Trawl 2	Avg/10 min.
Trout Perch	(11) 1 20-39mm 7 40-59mm 2 60-79mm 1 80-99mm	(4) 46, 62 63, 106mm	15
Ruffe	(7) 64, 67, 68 72, 73, 77 115mm	(9) 1 20-39mm 7 60-79mm 1 100-120mm	16
Rainbow Smelt	(3) 36, 39, 52mm	-	3
Spottail Shiners	-	(1) 51mm	1
Channel Catfish	-	(3) 25, 27, 37mm	3
Yellow Perch	-	(1) 115mm	1
Total	21	18	39