You have received two packets and copies of single letters.

Packet #1 shows the results of the gill net studies at the rookery at the Consumers Power Project south of Ludington. This operation is designed to show fish populations, not to catch fish in volume for scientific reasons. And there is one page showing creel census studies which were started after they realized there had been a sharp drop in the perch catching report in Ludington.

It allows you to see how the drop in fish numbers has caused the economic impact in our area, of job loss, launching fees, fewer fish licenses sold, fewer boat and trailer registrations, and less sales tax collected. Mason County went from 200 boats fishing for perch at the Project to zero. The County also went from 25 bait dealers to three.

Packet #2 contains charts showing the E.Coli count found on public beaches along Lake Michigan in the three county area covered by District 10 Health Dept. Included in the area are numerous public beaches, township and city beaches, four state parks, and one National park.

The Natural Heritage Division has repeatedly ignored public comments, plus, I am told, ignored repeated comments from the fisheries division, for well over 30 years. Information which should have been, could be and can be documented from a public roadway or from observation areas. The first sign of nesting activity was in 1969-70. The Natural Heritage Division does not admit to it until well into the 2000's as stated in the copy of the letter from Ray Rustem.

Packet #2 page 1. An overall picture of the Consumers Power Project.

page 2. Shows approximate beach locations.

page 3. Gives the mileage from the rookery to indicated beaches.

The next 8 pages show the beach closings. There was never a time when the same beach was closed two days in a row. This is because of the water current movement. There were 34 beach closings over eight years. If you had taken water samples seven days a week, you would have to assume there would be seven times as many closings, or 238. At the bottom of page 6, in 2009, note the action taken by the township board to request of the Health Dept. that no testing be done at the Silver Lake Creek Outlet.

I'm giving you a copy of a letter from the District 10 Health Dept., asking for some help in the solution of the problem. Consumers Power Co. is not the problem. They are a victim also. The Cormorants have forced our native Seagulls off the Barrier Reef to nestings on their buildings in such a density

that, I am told, people who work there have to wash their vehicles every day before leaving because of the feces deposited on them.

For scientific reasons as well as health, safety and financial reasons, the rookery at the Project should go to absolute zero. There is no other place that i am aware of where they have the long term history of these gillnet studies, and E.Coli beach studies covering as many miles of beach and having only a single rookery in the area. According to Federal regulations, it is now legal to take the Cormorants on any man-made object to zero. We owe it to the citizens of this state to do this.

PLEASE NOTE THAT IN 1972 THERE WERE 13.9.4 PERCH CAUGHT FOR EACH SALMON. ALSO THAT WERE ALWAYS MORE PERCH CAUGHT THAN ALEWIVES.

Table 6. Total number and percent composition of fish collected with bottom gill nets in Lake Michigan from 1972-1977.

Species	1972 (n=150)		1973 (n=126)		1974 (n=120)		1975 (n=157)		1976 (n=119)		1977 (n=138)	
	Total Number	% of Total No.	Total Number	% of Total No.	Total Number	% of Total No.	Total Number	% of Total No.	Total Number	% of Total No.	Total Number	% of Total No.
Yellow perch	6,857	50.7	6,214	58.3	5,748	56.8	4,761	44.0	4,376	39.9	3,228	31.2
Alewife	2,071	15.3	1,126	10.6	990	9.8	1,397	12.9	3,556	32.4	3,207	31.0
Spottail shiner	1,323	9.8	849	8.0	1,110	11.0	972	9.0	314	2.9	728	7.0
Longnose sucker	889	6.6	345	3.2	396	3.9	445	4.1	351	3.2	591	5.7
White sucker	850	6.3	628	5.9	701	6.9	812	7.5	372	3.4	547	5.3
Rainbow smelt	435	3.2	927	8.7	311	3.1	926	8.6	912	8.3	392	3.8
Lake trout	430	3.2	267	2.5	314	3.1	584	5.4	325	3.0	587	5.7
Round whitefish	374	2.8	193	1.8	346	3.4	583	5.4	534	4.9	791	7.6
Lake whitefish	83	0.6	9	0.1	18	0.2	29	0.3	25	0.2	64	0.6
Bloater	71	0.5	4	<0.1	8	<0.1	24	0.2	9	0.1	11	0.1
Burbot	28	0.2	11	0.1	8	<0.1	14	0.1	17	0.2	15	0.1
Trout-perch	26	0.2	20	0.2	8	<0.1	39	0.4	38	0.3	48	0.5
Lake chub	26	0.2	3	<0.1	3	<0.1	11	0.1	5	<0.1	2	<0.1
Chinook salmon	25	0.2	21	0.2	21	0.2	55	0.5	39	0.4	32	0.3
Brown trout	22	0.2	12	0.1	75	0.8	74	0.7	48	0.4	66	0.6
Steelhead trout	12	0.1	1	<0.1	11	0.1	1	<0.1	1	<0.1	6	0.1
Shorthead redhorse	4	<0.1	5	0.1	18	0.2	9	0.1	9	0.1	9	0.1
Coho salmon	3	<0.1	16	0.2	8	0.1	34	0.3	26	0.2	5	<0.1
Lake sturgeon	1	<0.1										
Carp	1	<0.1	4	<0.1	5	0.1	17	0.2	1	<0.1	2	<0.1
Northern pike	1	<0.1			2	0.1						
Walleye	1	<0.1			1	0.1	3	<0.1	1	<0.1	1	<0.1
Longnose dace			2	<0.1	2	0.1	15	0.1				
Lake herring			1	<0.1								
Sea lamprey			1	<0.1								
Gizzard shad					8	0.1	4	<0.1	5	<0.1	4	<0.1
Ninespine stickleback					5	0.1						
Slimy sculpin					3	0.1			1	<0.1	1	<0.1
Northern hog sucker					1	0.1						
Smallmouth bass							3	<0.1			1	<0.1
Brook trout									1	<0.1	1	<0.1
TOTAL	13,533		10,639		10,121		10,812		10,966		10,339	

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Feb. 23. 2009 10:10AM Consumers Energy No. 0565 P. 3

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Species	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
Chinook	514.00	431.00	234.00	307.00	296.00	310.00	457.00	213.00	248.00	363.00	206.00	158.00	151.00	287.00	283.00	204.00
Coho	62.00	136.00	162.00	106.00	61.00	51.00	77.00	62.00	56.00	89.00	20.00	231.00	4.00	12.00	16.00	10.00
Steelhead	37.00	30.00	18.00	54.00	31.00	86.00	60.00	12.00	16.00	5.00	5.00	7.00	9.00	12.00	4.00	5.00
Brown trout	268.00	294.00	245.00	340.00	159.00	439.00	360.00	152.00	142.00	112.00	99.00	61.00	81.00	72.00	54.00	44.00
Lake Trout	298.00	167.00	255.00	176.00	194.00	302.00	98.00	135.00	313.00	156.00	135.00	66.00	176.00	252.00	213.00	105.00

Species	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
All Salmonid Species	1179.00	1058.00	914.00	983.00	741.00	1188.00	1052.00	574.00	775.00	725.00	464.00	523.00	421.00	635.00	570.00	368.00

Species	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
Yellow Perch	7,840	6,739	6,455	3,828	2,464	2,993	845.00	191.00	741.00	62.00	43.00	17.00	24.00	30.00	23.00	131.00

NOTE: THE DOUBLE ZEROS ARE MEANINGLESS

TABLE E-4

BARRIER NET MONITORING PROGRAM
LUDINGTON PUMPED STORAGE PLANT

MONTHLY SHORELINE NET CATCH SUMMARY

2007

SPECIES	Size (Inches)	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		TOTAL	
		Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside
Chinook salmon	4-5	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	2
	>5-12	0	0	0	0	0	0	0	2	1	3	2	3	0	1	3	9
	>12-20	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	>20	0	0	0	0	0	0	0	0	6	0	6	14	2	1	14	15
Coho salmon	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>12	0	0	0	0	0	0	0	0	1	1	1	2	0	1	2	4
Steelhead	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5-12	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	>12	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	2
Lake trout	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>12	0	2	0	25	0	5	6	20	0	3	0	1	3	21	9	77
Brown trout	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5-12	0	0	0	0	0	1	1	3	0	0	0	0	0	0	1	4
	>12	0	5	0	10	0	5	1	9	0	1	2	1	2	0	5	31
Yellow perch	4-5	0	0	0	0	0	1	1	0	0	1	0	1	0	0	1	3
	>5	0	0	0	0	3	6	0	11	2	11	0	0	0	0	5	28
Smelt	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alewife	4-5	0	0	0	1	8	79	6	77	2	19	0	2	0	1	16	179
	>5	0	0	0	24	34	859	5	236	13	5	8	6	0	1	60	1131
Chub	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5	0	0	0	0	0	0	3	1	0	1	0	0	0	0	3	2
Target Species	>=4		9	1	61	45	956	24	361	25	46	19	30	7	26	121	1489
Nontarget Species	>=4	3	14	3	32	8	47	7	69	7	58	11	89	3	78	42	387
All Species Total	>=4	3	23	4	93	53	1003	31	430	32	104	30	119	10	104	163	1876

DATA FROM APPROX. 4/6 TEST NET SETTINGS

HDR/LMS

TABLE E-4

BARRIER NET MONITORING PROGRAM
LUDINGTON PUMPED STORAGE PLANT

MONTHLY SHORELINE NET CATCH SUMMARY

2008

SPECIES	Size (Inches)	APRIL Inside	APRIL Outside	MAY Inside	MAY Outside	JUNE Inside	JUNE Outside	JULY Inside	JULY Outside	AUGUST Inside	AUGUST Outside	SEPTEMBER Inside	SEPTEMBER Outside	OCTOBER Inside	OCTOBER Outside	TOTAL Inside	TOTAL Outside
Chinook salmon	4-5	0	0	1	1	2	0	1	3	0	0	0	0	0	0	4	4
	>5-12	0	0	0	1	0	1	0	3	1	2	1	6	0	0	2	13
	>12-20	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
	>20	0	0	0	0	0	0	0	0	3	11	5	20	0	3	8	34
Coho salmon	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5-12	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	>12	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Steelhead	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5-12	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	>12	3	3	0	0	0	0	0	0	0	1	0	0	0	0	3	4
Lake trout	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>12	1	15	1	22	0	9	0	7	11	28	0	13	7	84	20	178
Brown trout	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5-12	0	0	0	0	1	0	3	3	1	2	0	1	0	0	5	6
	>12	0	5	1	2	0	14	0	3	1	1	0	2	0	4	2	31
Yellow perch	4-5	0	0	0	0	1	0	5	0	1	1	0	1	0	0	7	2
	>5	0	0	0	0	10	8	0	19	0	6	2	6	0	1	12	40
Smelt	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5	0	8	0	0	0	0	0	0	0	0	0	0	2	0	2	8
Alewife	4-5	0	0	0	0	1	12	61	82	5	21	1	38	0	5	68	158
	>5	0	12	0	13	129	1653	81	1030	15	96	28	98	6	7	259	2909
Chub	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	>5	1	0	0	1	8	1	18	22	12	39	18	46	3	2	60	111
Target Species	>=4	5	43	3	46	152	1698	169	1172	50	208	55	232	18	106	452	3505
Nontarget Species	>=4		18	2	13	25	82	11	92	5	38	3	22	1	63	47	328
All Species Total	>=4	5	61	5	59	177	1780	180	1264	55	246	58	254	19	169	499	3833

DATA FROM APPROX. 4/6 TEST NET SETTINGS

HDR/LMS

TABLE 4.2-1

BARRIER NET MONITORING PROGRAM
LUDINGTON PUMPED STORAGE PROJECT

MONTHLY GILL NET CATCH AND EFFECTIVENESS SUMMARY

2009

SPECIES	Size (Inches)	APRIL Inside	APRIL Outside	MAY Inside	MAY Outside	JUNE Inside	JUNE Outside	JULY Inside	JULY Outside	AUGUST Inside	AUGUST Outside	SEPTEMBER Inside	SEPTEMBER Outside	OCTOBER Inside	OCTOBER Outside	TOTAL Inside	TOTAL Outside	Percent Effective
Chinook salmon	4-5	0	0	0	0	5	5	3	5	0	0	0	0	0	0	8	10	20.0
	>5-12	0	0	0	5	2	1	3	7	1	21	0	44	1	0	7	78	91.0
	>12-20	0	1	0	0	4	6	5	6	0	4	0	1	1	0	10	18	44.4
	>20	0	4	0	2	0	2	1	10	3	39	7	15	0	0	11	72	84.7
Coho salmon	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	>5-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	>12	0	0	0	0	0	0	0	0	2	1	5	5	2	0	9	6	*
Steelhead	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	>5-12	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	100.0
	>12	5	7	0	1	0	0	0	0	0	0	1	0	0	0	6	8	25.0
Lake trout	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	>5-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	>12	4	52	3	85	3	18	37	40	0	29	17	85	23	39	87	348	75.0
Brown trout	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	>5-12	0	0	0	0	0	2	7	16	0	8	0	1	0	0	7	27	74.1
	>12	1	3	1	17	4	20	16	33	1	9	2	11	0	0	25	93	73.1
Yellow perch	4-5	0	0	0	0	1	7	0	1	6	1	0	0	0	0	7	9	22.2
	>5	0	3	5	2	4	71	0	24	2	2	0	1	0	0	11	103	89.3
Smelt	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	>5	0	1	0	0	0	1	1	2	0	5	0	0	2	2	3	11	72.7
Alewife	4-5	0	0	0	7	22	339	148	722	24	94	22	247	0	0	216	1409	84.7
	>5	0	0	7	346	31	1869	101	2235	16	506	6	435	0	1	161	5392	97.0
Chub	4-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	>5	1	0	9	1	32	1	33	2	2	1	2	3	0	2	79	10	*
Target Species	>=4	11	72	25	466	108	2342	355	3103	57	720	62	848	29	44	647	7595	91.5
Nontarget Species	>=4	3	19	68	106	54	115	34	104	33	159	8	59	16	86	216	648	66.7
All Species Total	>=4	14	91	93	572	162	2457	389	3207	90	879	70	907	45	130	863	8243	89.5

DATA FROM APPROX. 416 TEST NET SETTINGS

Note: Percent Effectiveness = ((Outside Catch - Inside Catch) / Outside Catch) * 100. All negative numbers are denoted by "*".

HDR/LMS

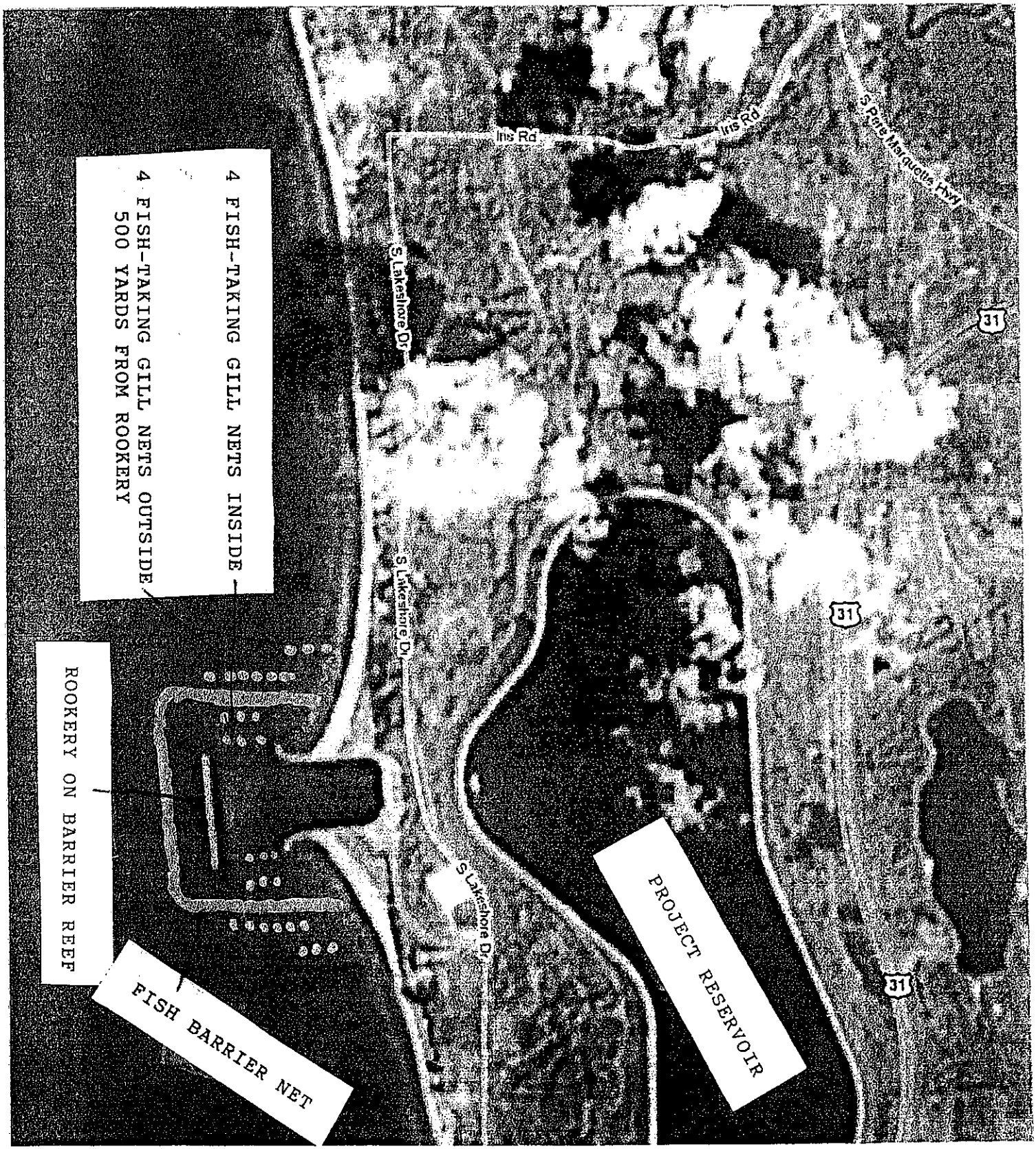
Estimated yellow perch harvest, targeted effort, and targeted harvest rates for the Ludington sport-fishery 1985-2011.

Year	Harvest (#fish)	Targeted effort (hrs spent fishing for yellow perch)	Targeted catch rates (#perch per hour, if targeting them)
1985	121,230		
1986	64,712		
1987	229,841		
1988	178,483		
1989	115,202		
1990	119,587		
1991	112,761		
1992	244,697		
1993	160,525		
1994	25,723		
1995	7,208		
1996	59,454		
1997	8,701	11,027	0.8
1998	5,219	13,498	0.4
1999	149	1,097	0.1
2000	1	1,205	0.0
2001	0	1,042	0.0
2002	9	1,560	0.0
2003	0	941	0.0
2004	53	593	0.1
2005	0	214	0.0
2006	814	746	1.1
2007	852	1,040	0.8
2008	10,012	5,090	2.0
2009	0	1,967	0.0
2010	0	197	0.0
2011	1,845	686	2.7

DICK UNDERWOOD

Google Maps Address **Ludington, MI**

To see all the details that are visible on the screen,use the "Print" link next to the map.



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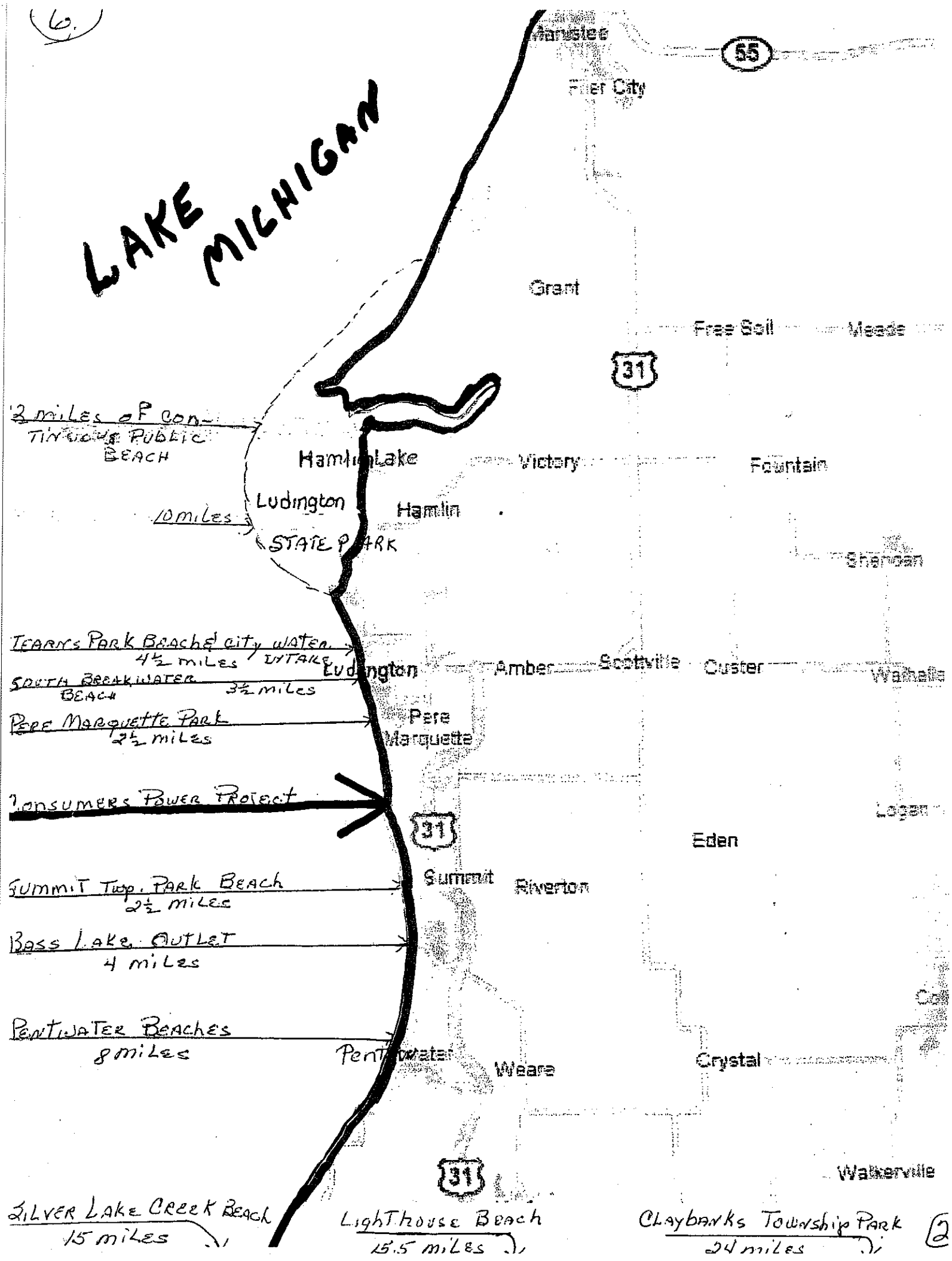
LAKE MICHIGAN
Manistee
55
Filer City
Grant
Free Soil
Meade
31
2 miles of continuous public beach
Hamlin Lake
Victory
Fountain
Ludington
Hamlin
10 miles
STATE PARK
Sheridan
Tearns Park Beach city water intake
4½ miles
Ludington
Amber
Scottville
Custer
Walhalla
South Breakwater Beach
3½ miles
Pere Marquette Park
2½ miles
Pere Marquette
Consumers Power Project
31
Logan
Eden
Summit Twp. Park Beach
2½ miles
Summit
Riverton
Bass Lake Outlet
4 miles
Pentwater Beaches
8 miles
Pentwater
Weare
Crystal
31
Walkerville
Silver Lake Creek Beach
15 miles
Lighthouse Beach
15.5 miles
Claybanks Township Park
24 miles

7.

The approximate distances from the Rookery at Consumers Power Project are:

NORTH

2 1/2 Miles to Pere Marquette Park

3 1/2 Miles to South Breakwater Beach

4 1/2 Miles to Stearns Park Beach (The water intake for the the city of Ludington is here.)

6 1/2 Miles the Lincoln Channel

10 Miles to Ludington State Park, Sauble River Channel

Starting approximately 6 miles North of the Project, there is 12 miles of continued public beach extending further North.

23 Miles to Manistee Public Beach

40 Miles, approx., to Arcadia Park Beach

SOUTH

2 1/2 Miles to Summit Twp. Park Beach

4 Miles to Bass Lake Outlet

8 Miles to Pentwater Beaches

15 Miles to Silver Lake Creek Beach

15.5 Miles to Lighthouse Beach

24 Miles to Claybanks Township Park

DHD#10 2011 Beach Monitoring Program Results – E-coli Colony Count Geometric Daily Mean for Weeks 1 - 11 (Parts per Million)

Site #	DEQ #	Location	Week 1 (June 27)	Week 2 (July 4)	Week 3 (July 11)	Week 4 (July 18)	Week 5 (July 25)	Week 6 (Aug. 1)	Week 7 (Aug. 8)	Week 8 (Aug. 15)	Week 9 (Aug. 22)	Week 10 (Aug. 29)	Week 11 (Sept. 5)
1	389	Claybanks Township Park - Oceana	2.8	5.1	458.7 (15.9)	25.5	3.1	13.2	8.8	6.4	23.7	55.6	9.1
2	390	Whiskey Creek Inlet - Oceana	5.9	2.5	162.6	48.2	5.2	34.9	2.9	5.5	19.9	13.2	23.8
3	388	Stony Lake Inlet - Oceana	12.0	7.5	62.6	158.3	6.1	19.2	17.5	9.3	4.1	9.5	8.9
4	423	Lighthouse Beach - Oceana	11.0	13.1	1871.6 (43.5)	69.7	16.9	14.5	8.7	6.6	63.5	2.3	6.9
6	399	Mears State Park - Oceana	9.8	1.8	3.0	13.4	19.7	3.9	7.0	6.3	71.3	1.3	1.8
7	1562	South Summit Beach - Mason	1.3	6.9	9.4	16.3	55.4	2.9	4.3	4.4	5.9	5.8	2.3
8	1563	Bass Lake Outlet Beach - Mason	1.4	2.6	3.4	16.3	8.3	40.5	1.7	4.6	7.9	6.1	3.2
9	1564	Summit Township Beach - Mason	4.3	31.6	24.0	14.1	1.0	27.4	1.4	1.3	11.9	25.1	2.9
10	1565	Buttersville Beach - Mason	1.5	3.7	95.0	83.9	8.5	5.2	2.7	1.8	3.5	2.1	2.6
11	1566	South Pier Beach - Mason	2.5	40.7	45.6	30.1	2.0	7.9	5.2	4.8	5.2	3.1	2.3
12	1557	Arcadia Park Beach - Manistee	379.9 (16.4)	15.1	5.0	4.7	12.4	3.2	15.1	2.0	7.1	2.9	1.3
13	1558	Pierport Beach - Manistee	33.4	13.8	1.0	4.2	9.7	4.0	30.4	1.6	4.1	2.3	1.0
14	1559	Onekema Beach - Manistee	10.9	10.0	7.7	4.3	13.3	1.3	2.1	2.9	1.3	7.0	1.8
15	1560	Bar Lake Outlet - Manistee	66.2	7.6	11.9	21.9	16.4	1.3	1.3	4.8	8.8	4.3	1.6
16	2109	Orchard Beach St. Park - Manistee	313.9 (16.4)	6.0	10.6	4.3	38.8	1.3	1.6	2.9	14.0	1.3	1.3
17	366	Fifth Avenue Beach - Manistee	8.1	19.5	143.1	4.8	23.6	7.7	8.2	3.8	387.3 (17.6)	4.3	37.3
18	367	First Street Beach - Manistee	246.9	3.3	2.3	34.1	11.9	1.6	2.5	48.0	32.4	4.8	8.0
19	1561	Irma Sundling Park - Manistee	154.4	8.9	11.6	2.3	53.9	2.1	14.9	1.0	4.8	3.7	2.5
20	368	Magoon Creek - Manistee	183.7	10.4	8.6	4.3	14.7	1.5	17.0	1.5	4.8	3.9	2.5
21	1568	Ludington State Park - Mason	30.4	12.4	9.9	9.5	7.7	8.5	225.4	4.2	33.1	5.4	14.5
22	1569	Sterns Park Beach - Mason	2.7	1.3	5.5	49.4	1.6	7.4	1.6	1.8	9.9	1.8	3.3

* Bacteria Colony Counts per sample **** Red Sample Results exceeded the 300 E-coli colonies daily mean limit. Please Note: Results in parentheses are the re-sample test results**

DHD#10 2010 Beach Monitoring Program Results – E-coli Colony Count Geometric Daily Mean for Weeks 1 - 10 (Parts per Million)

Site #	DEQ #	Location	Week 1 (June 28)	Week 2 (July 6)	Week 3 (July 12)	Week 4 (July 19)	Week 5 (July 26)	Week 6 (Aug 2)	Week 7 (Aug 9)	Week 8 (Aug. 16/ 17)	Week 9 (Aug. 23)	Week 10 (Aug. 30)
1	389	Claybanks Township Park - Oceana	55.4855	42.8010	96.8399	76.8347	22.3738	11.1495	13.9864	230.2669	1.0000	26.4660
2	390	Whiskey Creek Inlet - Oceana	74.7458	53.3662	18.9491	142.6904	20.8378	3.6342	13.8208	*329.9963* & 2.6684	19.7434	16.9386
3	388	Stony Lake Inlet - Oceana	20.7143	64.7573	86.7226	43.8992	7.1138	9.7400	32.3452	22.4296	3.9149	38.6383
4	423	Lighthouse Beach - Oceana	1.5874	18.6434	1.8171	255.9696	9.1657	9.7400	33.9807	11.3393	28.1556	116.9406
6	399	Mears State Park - Oceana	1.4422	2.0000	7.8837	134.1309	53.8804	14.0946	2.2894	17.3470	16.8122	3.6342
7	1562	South Summit Beach - Mason	1.0000	31.4408	7.8297	219.5239	62.6175	23.3921	10.2599	64.6190	3.1072	36.6547
8	1563	Bass Lake Outlet Beach - Mason	1.8171	3.4200	9.5244	133.5398	14.4097	9.5244	2.0801	17.2892	2.0000	8.9127
9	1564	Summit Township Beach - Mason	106.714	65.1055	7.6631	11.0521	10.2599	9.8132	9.9666	10.9972	1.8171	50.6060
10	1565	Buttersville Beach - Mason	19.9331	11.6570	2.7144	44.2969	14.1080	6.4633	6.5030	15.0192	2.0801	9.1458
11	1566	South Pier Beach - Mason	1.2599	5.6462	14.8881	53.6215	10.0033	15.9399	8.9876	6.2145	1.5874	9.1577
12	1557	Arcadia Park Beach - Manistee	8.4061	48.0512	9.7400	8.8790	9.6905	1.0000	2.2894	9.4354	1.0000	1.2599
13	1558	Pierport Beach - Manistee	3.3019	13.9248	3.4200	25.3984	4.7177	1.5874	90.5038	13.3887	1.0000	1.5874
14	1559	Onekema Beach - Manistee	2.4662	2.4662	4.9324	26.6273	1.4422	2.2894	2.8845	37.0095	1.0000	1.2599
15	1560	Bar Lake Outlet - Manistee	2.2894	13.6082	3.3019	31.9896	57.5469	4.3795	12.5571	28.6684	2.2894	1.2599
16	2109	Orchard Beach St. Park - Manistee	2.0000	20.9841	2.1544	55.9557	1.8171	1.0000	17.7686	31.1584	2.0000	1.2599
17	366	Fifth Avenue Beach - Manistee	12.8301	3.1072	8.9628	45.3163	8.1433	7.8514	20.5197	27.2936	2.2894	23.5855
18	367	First Street Beach - Manistee	32.4974	32.4557	50.4170	5.2415	28.8962	59.4152	36.6189	39.0650	8.5453	6.6494
19	1561	Irma Sundling Park - Manistee	18.6242	4.1602	11.7543	103.0073	10.4830	11.2924	13.8418	15.8209	3.6342	3.6342
20	368	Magoon Creek - Manistee	106.7344	28.4387	26.5769	121.0136	35.1466	2.7144	20.0532	19.6747	4.0412	3.1072
21	1568	Ludington State Park - Mason	9.5244	28.9885	83.3360	31.2982	4.8203	13.1617	14.0946	16.4913	16.1086	5.7690
22	1569	Sterns Park Beach - Mason	6.0368	6.2145	88.3095	8.5086	1.5874	2.0801	1.0000	(B)	3.342	1.5874

* Bacteria Colony Counts per sample **** Bolded Sample Results exceeded the 300 colonies daily mean limit.**

Please Note:

A) Only 1 beach exceeded the 300 colonies daily limit during the 2010 monitoring season. An Swimming Advisory was issued on August 17th for Whiskey Creek in Oceana County for samples taken on August 16, 2010. The colony count was recorded at 329.9963. Resamples for the beach on August 17th produced levels far below the daily limit (2.6684). On August 17th, the advisory was lifted.

B) Samples not taken at Stearns Beach on August 16th due to closure of beach by the City of Ludington Police Department – Extreme undertow/rip tide at the beach.

DHD#10 2009 Beach Monitoring Program Results – E-coli Colony Count Geometric Daily Mean for Weeks 1 - 12 (Parts per Million)

Site #	DEQ #	Location	Week 1 (June 15)	Week 2 (June 22)	Week 3 (June 29)	Week 4 (July 6)	Week 5 (July 13)	Week 6 (July 20)	Week 7 (July 27)	Week 8 (Aug. 3 & 4)	Week 9 (Aug. 10)	Week 10 (Aug. 17)	Week 11 (Aug. 24)	Week 12 (Aug. 31)
1	389	Claybanks Township Park - Oceana	1.00	17.15	42.59	6.08	5.52	6.80	11.04	13.82	157.61	130.01	18.87	37.32
2	390	Whiskey Creek Inlet - Oceana	1.82	16.43	67.12	8.41	6.84	20.81	19.45	22.27	217.19	194.44	4.16	34.83
3	388	Stony Lake Inlet - Oceana	1.71	7.56	22.10	57.37	25.45	3.91	10.66	45.95	225.77	120.62	2.88	16.85
4	423	Lighthouse Beach - Oceana	1.00	1.26	20.26	12.53	2.62	5.31	11.20	33.57	128.30	106.62	5.19	19.05
5	362	Silver Creek Inlet - Oceana	1.44	6.00	9.73	40.13	6.00	XX	XX	XX	XX	XX	XX	XX
6	399	Mears State Park - Oceana	2.08	4.04	81.95	7.96	4.38	35.50	38.91	10.18	5.13	4.58	6.07	6.16
7	1562	South Summit Beach - Mason	1.00	1.26	40.64	1.00	2.62	1.44	30.96	19.89	17.67	49.19	3.17	18.95
8	1563	Bass Lake Outlet Beach - Mason	1.00	1.82	39.55	4.64	8.04	1.44	25.34	7.28	2.47	6.04	9.65	16.27
9	1564	Summit Township Beach - Mason	1.26	1.00	37.96	14.85	10.86	1.26	49.06	37.13	61.54	64.96	22.57	1.00
10	1565	Buttersville Beach - Mason	1.59	1.00	17.10	22.96	3.21	4.93	58.71	20.17	31.64	8.57	5.24	4.58
11	1566	South Pier Beach - Mason	2.62	1.00	32.50	4.16	5.31	1.00	2.47	64.17	23.78	16.03	3.91	1.26
12	1557	Arcadia Park Beach - Manistee	1.00	1.00	33.48	1.00	1.26	1.26	2.29	29.47	1.26	4.13	2.29	1.00
13	1558	Pierport Beach - Manistee	1.44	1.00	40.75	1.82	1.00	1.26	28.26	12.97	1.59	51.35	1.26	1.26
14	1559	Onekema Beach - Manistee	1.26	1.00	7.86	4.82	1.26	3.63	16.92	7.31	1.26	3.30	6.32	1.59
15	1560	Bar Lake Outlet - Manistee	6.60	1.00	234.64	1.00	1.00	2.15	6.30	15.66	25.58	46.12	3.63	2.22
16	2109	Orchard Beach St. Park - Manistee	1.82	1.00	150.11	9.58	1.00	2.29	116.46	37.84	40.25	5.94	7.94	1.00
17	366	Fifth Avenue Beach - Manistee	6.21	33.61	5.83	4.16	87.08	4.31	10.59	66.49	21.21	16.00	3.11	5.31
18	367	First Street Beach - Manistee	2.29	3.30	61.52	23.55	11.32	15.49	47.96	31.52	15.89	14.28	1.00	4.93
19	1561	Irma Sundling Park - Manistee	1.26	1.00	80.01	3.63	2.29	1.82	11.63	326.97/12.16	27.68	12.93	1.00	12.56
20	368	Magoon Creek - Manistee	1.00	1.00	83.60	1.26	3.63	1.82	9.44	78.41	51.94	12.06	1.59	9.65
21	1568	Ludington State Park - Mason	5.43	4.04	22.59	8.89	7.83	6.46	11.74	71.73	8.62	13.01	1.44	6.21
22	1569	Sterns Park Beach - Mason	9.41	3.63	28.23	28.22	4.48	3.78	4.48	105.50	5.45	2.88	2.71	5.65

* Bacteria Colony Counts per sample **** Bolded Sample Results exceeded the 300 colonies daily mean limit.**

Please Note:

A) Only 1 beach exceeded the 300 colonies daily limit during the 2009 monitoring season. An Advisory was issued on August 4th for Sundling Park in Manistee County for samples taken on August 3, 2009. The colony count was recorded at 326.76. Resamples for the beach on August 4th produced levels far below the daily limit (12.16). On August 5th, the advisory was lifted.

B) DHD10 received notice from Golden Township that they no longer wanted the Silver Creek Inlet Beach tested. Officers of the Township provided DHD10 Board Minutes from May of 2009 in which they approved not having the beach tested. They posted the beach as not being monitored.

DHD#10 2008 Beach Monitoring Program Results – E-coli Colony Count Geometric Daily Mean for Weeks 1 - 10 (Parts per Million)

Site #	DEQ #	Location	Week 1 ** July 7/8	Week 2 ** July 14/15	Week 3 ** July 21/22	Week 4 ** July 28	Week 5 ** August 4/5	Week 6 ** August 11	Week 7 ** August 18	Week 8 ** August 25
1	389	Claybanks Township Park – 64	18.1	27.02	33.17	6.75	7.36	7.11	7.27	3.63
2	390	Whiskey Creek Inlet – 64	18.76	17.66	6.54	4.16	4.76	12.60	11.29	1.59
3	388	Stony Lake Inlet – 64	32.06	12.24	14.99	28.71	57.64	46.41	43.39	10.66
4	423	Lighthouse Beach – 64	119.67	149.44	6.6	9.36	**395.29/22.36**	13.95	4.82	8.89
5	362	Silver Creek Inlet – 64	123.3	**410.24/43.91**	7.37	6.54	**469.81/16.92**	5.24	7.06	4.64
6	399	Mears State Park – 64	4.76	5.65	**426.32 / 1.82**	2.00	6.32	10.90	2.52	1.44
7	1562	South Summit Beach – 53	7.49	23.95	64.94	14.83	76.69	18.43	35.99	3.27
8	1563	Bass Lake Outlet Beach – 53	13.28	26.3	80.19	12.32	73.21	18.62	41.33	17.97
9	1564	Summit Township Beach –53	29.04	52.92	73.93	11.66	152.89	1.44	39.61	1.00
10	1565	Buttersville Beach – 53	207.15	53.6	20.26	13.99	100.59	18.59	4.93	1.26
11	1566	South Pier Beach – 53	33.42	1.26	1.00	64.29	210.18	1.00	27.62	2.29
12	1557	Arcadia Park Beach – 51	1.26	4.48	24.3	1.00	1.00	28.64	23.13	1.00
13	1558	Pierport Beach – 51	79.3	10.13	14.33	1.59	1.00	10.18	10.26	6.21
14	1559	Onekema Beach – 51	7.21	16.98	92.05	1.59	2.15	5.65	1.00	1.44
15	1560	Bar Lake Outlet – 51	185.22	56.32	18.05	14.23	5.77	3.78	37.70	1.44
16	2109	Orchard Beach St. Park – 51	76.75	75.1	24.17	15.31	3.66	4.10	32.91	2.08
17	366	Fifth Avenue Beach – 51	38.39	74.59	101.06	25.15	5.65	10.70	14.74	23.24
18	367	First Street Beach – 51	297.93	13.52	37.52	69.39	11.32	6.60	48.99	2.29
19	1561	Irma Sundling Park – 51	3.3	16.95	290.52	3.42	6.21	21.47	130.85	2.00
20	368	Magoon Creek – 51	**1291.07/105.93**	26.01	244.43	4.16	9.08	20.63	32.21	2.29
22	1568	Ludington State Park – 53	28.03	4.31	35.09	21.09	171.47	10.38	18.11	23.82
23	1569	Sterns Park Beach - 53	2.08	1.82	21.57	10.26	28.63	18.03	63.08	5.27

** Geometric Mean for Bacteria Colony Counts per sample **Bolded Sample Results exceeded the 300 colonies daily mean limit.**

2610 1070 1630 325 1791 284 628 119

TOTAL 8457

DHD#10 2007 Beach Monitoring Program Results – E-coli Colony Count Geometric Daily Mean for Weeks 1 - 10 (Parts per Million)

e #	DEQ #	Location	Week 1 *	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
1	389	Claybanks Township Park - Oceana	137.51	18.43	6.14	2.29	2.62	23.63	4.38	48.16	4.00	20.45
2	390	Whiskey Creek Inlet - Oceana	276.66	15.26	19.08	1.59	6.42	26.96	7.49	31.07	11.29	17.94
3	388	Stony Lake Inlet - Oceana	9.97	13.39	18.25	3.91	3.78	13.82	5.94	155.56	14.77	5.89
4	423	Lighthouse Beach - Oceana	6.60	24.90	11.48	21.46	20.49	31.38	17.90	10.00	8.24	15.09
5	362	Silver Creek Inlet - Oceana	***626.36*** ** (53.01)	16.66	24.66	59.82	25.75	40.30	71.76	6.04	7.27	21.39
6	399	Mears State Park - Oceana	14.22	9.58	4.48	18.55	18.02	41.92	5.77	11.66	10.65	36.11
7	1562	South Summit Beach - Mason	4.93	19.70	3.30	5.24	1.26	85.31	38.48	2.29	118.72	2.29
8	1563	Bass Lake Outlet Beach - Mason	20.95	8.32	25.82	5.43	1.26	63.77	27.31	1.82	21.99	2.62
9	1564	Summit Township Beach - Mason	6.21	44.38	9.86	4.31	1.00	66.06	2.71	45.19	8.76	9.47
10	1565	Buttersville Beach - Mason	35.09	2.08	2.15	2.47	42.72	285.91	12.13	1.00	1.71	2.15
11	1566	South Pier Beach - Mason	2.47	21.90	150.58	***743.86*** ** (45.80)	1.00	244.17	14.30	1.26	2.00	8.62
12	1557	Arcadia Park Beach - Manistee	1.00	3.30	5.67	1.82	1.00	9.49	2.62	1.44	51.58	2.62
13	1558	Pierport Beach - Manistee	8.24	4.48	3.30	4.58	1.82	31.97	7.91	1.26	31.00	1.44
14	1559	Onekema Beach - Manistee	1.44	8.04	1.44	1.00	1.00	6.69	9.97	1.00	7.37	2.71
15	1560	Bar Lake Outlet - Manistee	1.00	8.88	9.17	1.00	1.26	4.61	9.16	21.69	4.58	8.57
16	2109	Orchard Beach St. Park - Manistee	2.00	7.66	13.39	12.65	1.26	15.66	6.46	1.82	22.39	4.93
17	366	Fifth Avenue Beach - Manistee	2.08	75.13	15.44	3.48	11.89	188.55	40.16	30.38	46.77	23.52
18	367	First Street Beach - Manistee	1.82	9.52	14.80	48.24	5.74	***350.58*** ** (45.39)	23.04	4.93	***407.86*** ** ***(29.60)***	11.14
19	1561	Irma Sundling Park - Manistee	2.29	8.29	4.31	26.80	7.94	118.87	73.10	1.00	54.37	1.26
20	368	Magoon Creek - Manistee	2.62	10.13	2.00	18.44	1.82	34.97	70.54	34.97	22.48	1.00
21	1568	Ludington State Park - Mason	3.42	6.00	11.27	21.90	6.95	48.78	11.79	125.97	2.71	7.31
22	1569	Sterns Park Beach - Mason	1.82	3.63	1.44	3.83	1.59	22.18	21.04	82.91	15.27	4.51

Bacteria Colony Counts per sample **** Bolded Sample Results exceeded the 300 colonies daily mean limit.** #5-Resample7-5-07 (53.01), #11-Resample7-25-07 (45.80), #18 Resample 8-8-07(45.39) #18 Resample 8-29-07 (29.6)

DHD#10 2006 Beach Monitoring Program Results – E-coli Colony Count Geometric Daily Mean for Weeks 1 - 10 (Parts per Million)

ite #	DEQ #	Location	Week 1 **	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
1	389	Claybanks Township Park - Oceana	7.49	87.76	80.30	179.58	56.60	50.97	47.48	1.59	34.53	4.58
2	390	Whiskey Creek Inlet - Oceana	53.88	***1392.49****	51.42	126.32	55.30	16.94	126.93	1.26	16.66	3.11
3	388	Stony Lake Inlet - Oceana	7.61	117.63	144.00	123.47	76.00	38.03	39.80	14.42	34.93	8.71
4	423	Lighthouse Beach - Oceana	26.70	266.63	156.41	295.89	61.32	21.23	68.39	33.65	50.57	49.48
5	362	Silver Creek Inlet - Oceana	48.08	179.33	288.02	129.26	47.87	21.69	37.78	17.61	11.27	30.24
6	399	Mears State Park - Oceana	10.42	56.93	52.47	46.78	30.65	26.18	73.05	17.43	34.19	218.86
7	1562	South Summit Beach - Mason	11.29	80.28	129.69	39.19	37.68	13.51	24.91	8.41	4.16	20.98
8	1563	Bass Lake Outlet Beach - Mason	2.29	56.37	150.60	298.10	22.20	26.33	55.48	117.94	36.59	4.79
9	1564	Summit Township Beach - Mason	1.26	135.96	160.16	73.61	156.16	17.10	79.19	4.31	2.29	14.23
10	1565	Buttersville Beach - Mason	2.47	6.21	135.74	46.98	23.00	19.17	36.60	3.91	2.71	3.30
11	1566	South Pier Beach - Mason	9.28	6.91	83.90	38.30	38.97	46.25	16.26	14.33	6.07	5.81
12	1557	Arcadia Park Beach - Manistee	11.5	21.25	103.64	86.80	24.88	16.82	16.79	6.58	1.59	2.0
13	1558	Pierport Beach - Manistee	11.45	39.10	110.75	46.44	31.97	9.21	27.52	3.42	5.07	8.89
14	1559	Onekama Beach - Manistee	20.25	61.72	***1747.53****	18.60	16.49	15.21	28.07	3.42	3.42	2.52
15	1560	Bar Lake Outlet - Manistee	9.74	25.95	194.79	40.62	90.49	14.83	122.02	3.48	14.09	2.52
16	2109	Orchard Beach St. Park - Manistee	20.37	48.68	255.22	46.19	65.68	13.75	47.95	1.44	3.00	3.42
17	366	Fifth Avenue Beach - Manistee	85.75	60.84	103.40	41.28	51.88	48.49	96.03	5.52	26.31	37.81
18	367	First Street Beach - Manistee	4.79	31.48	183.46	192.51	222.54	14.43	81.39	7.65	58.47	15.55
19	1561	Irma Sundling Park - Manistee	27.04	69.78	***389.97****	18.44	6.32	92.20	57.58	64.42	19.92	8.43
20	368	Magoon Creek - Manistee	23.70	53.46	***1102.74****	297.09	9.08	18.29	26.34	42.94	6.84	6.69
21	1567	Manistee Nat'l Forest Beach - Mason										
22	1568	Ludington State Park - Mason	7.83	62.98	197.95	121.92	6.08	18.74	42.84	39.27	12.70	28.34
23	1569	Sterns Park Beach - Mason	8.41	30.31	197.07	26.09	22.24	16.94	5.13	6.72	25.76	34.79

Bacteria Colony Counts per sample **Bolded Sample Results exceeded the 300 colonies daily mean limit.** *Resample at Whiskey Creek 7-12-06 (Geometric Mean =58.40)
sample for 7-19-06 at Onekama Beach 5.63, Sundling Park 17.93, MagoonCreek 5.43:

3)

(10)

DHD#10 2005 Beach Monitoring Program Results - Geometric Daily Mean for Weeks 1 - 10 (Parts per Million)
(All Geometric Means rounded up to nearest whole number.)

te #	DEQ #	Location	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
1	389	Claybanks Township Park - Oceana	14	1	97	27	89	6	2	22	19	15
2	390	Whiskey Creek Inlet - Oceana	15	4	202	30	25	4	29	39	3	27
3	388	Stony Lake Inlet - Oceana	17	1	149	30	18	19	18	9	10	12
4	423	Lighthouse Beach - Oceana	20	8	174	25	29	51	3	46	18	26
5	362	Silver Creek Inlet - Oceana	24	61	145	23	65	40	12	34	30	40
6	399	Mears State Park - Oceana	10	243	119	83	61	25	77	17	15	37
7	1562	South Summit Beach - Mason	4	2	191	19	11	56	52	24	27	113
8	1563	Bass Lake Outlet Beach - Mason	3	27	213	17	16	43	54	42	28	30
9	1564	Summit Township Beach - Mason	34	7	220	50	110	14	1	5	26	128
10	1565	Buttersville Beach - Mason	4	1	86	33	6	7	30	33	7	15
11	1566	South Pier Beach - Mason	5	56	92	45	15	67	2	2	59	55
12	1557	Arcadia Park Beach - Manistee	15	1	246	11	18	8	4	13	2	25
13	1558	Pierport Beach - Manistee	2	1	106	4	17	<1	1	21	15	20
14	1559	Onekema Beach - Manistee	2	1	27	4	2	2	10	16	2	7
15	1560	Bar Lake Outlet - Manistee	7	21	212	53	27	1	7	7	16	10
16	2109	Orchard Beach State Park - Manistee	7	2	228	41	38	5	5	8	13	16
17	366	Fifth Avenue Beach - Manistee	17	21	35	61	18	18	14	17	29	118
18	367	First Street Beach - Manistee	166	8	**833 - (9)**	119	94	44	17	41	32	237
19	1561	Irma Sundling Park - Manistee	49	18	**441- (67)**	**730 - (90)**	13	51	9	47	15	88
20	368	Magoon Creek - Manistee	42	5	**443 - (41)**	42	15	3	16	40	10	18
21	1567	Manistee Nat'l Forest Beach -Mason	3	18	**373 - (33)**	65	8	76	27	39	51	15
22	1568	Ludington State Park - Mason	14	16	112	16	3	4	32	11	18	41
23	1569	Sterns Park Beach - Mason	8	4	61	6	30	49	2	23	7	32

Bacteria Colony Counts per sample < = when one of the testing sites is 0, the use of the arithmetic means is utilized

ıded Sample Results exceeded the 300 colonies daily mean limit. Resample of 4 beaches on 7/19/05 - all fell below the 300 colony count. Sundling Park re-sample of 7/27/0 1 to 90.

MyFiles\WPDOCS\Beach Monitoring\beach monitoring results2005.week2

4)

11

DHD//10 2004 Beach Monitoring Program Results - Geometric Daily Mean for Weeks 1 - 10 (Parts per Million)
(All Geometric Means rounded up to nearest whole number.)

e #	DEQ #	Location	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
1	389	Claybanks Township Park - Oceana	50	15	18	2	6	101	78	4	60	94
2	390	Whiskey Creek Inlet - Oceana	21	14	35	93	9	89	127	8	48	82
3	388	Stony Lake Inlet - Oceana	61	7	148	1	10	56	59	28	18	51
4	423	Lighthouse Beach - Oceana	51	27	30	8	21	29	169	35	18	50
5	362	Silver Creek Inlet - Oceana	23	6	25	6	50	4	154	20	6	56
6	399	Mears State Park - Oceana	14	10	11	5	38	108	43	14	3	89
7	1562	South Summit Beach - Mason	6	15	46	2	23	30	201	21	35	133
8	1563	Bass Lake Outlet Beach - Mason	9	13	8	27	1	373 (95)a	196	35	59	200
9	1564	Summit Township Beach - Mason	4	25	11	1	10	77	395(28)b	18	125	28
10	1565	Buttersville Beach - Mason	3	7	139	1	2	14	59	2	12	24
11	1566	South Pier Beach - Mason	10	14	90	13	21	4	105	18	17	11
12	1557	Arcadia Park Beach - Manistee	3	84	<1	<1	86	17	5	168	<3	66
13	1558	Pierport Beach - Manistee	10	63	<1	8	3	47	7	37	<1	10
14	1559	Onekema Beach - Manistee	12	158	2	3	3	4	1	15	3	39
15	1560	Bar Lake Outlet - Manistee	31	246	3	<4	<6	47	33	52	7	32
16	2109	Orchard Beach State Park - Manistee	9	254	4	3	2	107	20	90	3	14
17	366	Fifth Avenue Beach - Manistee	38	191	17	31	91	35	22	40	89	50
18	367	First Street Beach - Manistee	28	21	1	24	20	2	115	321(181)c	37	72
19	1561	Irma Sundling Park - Manistee	13	309	2	7	29	28	125	403(1015)c	23	55
20	368	Magoon Creek - Manistee	15	505	3	5	22	14	19	497(613)c	10	106
21	1567	Manistee Nat'l Forest Beach -Mason	11	302	2	18	10	11	2	435(45)c	21	50
22	1568	Ludington State Park - Mason	49	80	78	13	8	2	8	44	7	24
23	1569	Sterns Park Beach - Mason	22	84	9	12	103	90	1	3	83	12

Bacteria Colony Counts per sample < = when one of the testing sites is 0, the use of the arithmetic means is utilized

lded Sample Results exceeded the 300 colonies daily mean limit. a = Retest Week 6 8/12/04 - 95, b = Retest Week 7 8/19/04 - 28

Retest First Street - 181, Manistee National - 45, Sundling - 1015 (Beach Closed), Magoon Creek - 613 (Beach Closed).

District Health Department #10
Wexford County Office, 521 Cobbs Street, Cadillac, MI 49601
231-775-9942 fax: 231-775-5372

January 8, 2010

Doug Reeves
Wildlife Division
Michigan Dept. of Natural Resources
P.O. Box 30444
Lansing, MI 48909

Re: Wildlife Affects on Public Beaches

Dear Mr. Reeves;

District Health Department #10 has been monitoring the water quality at 22 public beaches on Lake Michigan (Manistee, Mason and Oceana counties) for the past six years. Although the water quality has improved significantly over this time, we continually assess the sites for existing or potential sources of contamination. We are often asked by both the public and by elected officials in the area as to the impact of wildlife populations, especially waterfowl, on the water quality of our beaches. At some sites where is a question at to the source of contamination being mainly human or wildlife based.

We would encourage your agency to consider this topic if any research grants are provided for the study of water quality in the Great Lakes.

Thank you for any consideration that you can provide.

Sincerely,

Tom Reichard
Environmental Health Director

cc: Linda VanGills, Health Officer

District Health Department #10
Wexford County Office, 521 Cobbs Street, Cadillac, MI 49601
231-775-9942 fax: 231-775-5372

CRAWFORD • KALKASKA
LAKE • MANISTEE
MASON • MECOSTA
MISSAUKEE • NEWAYGO
OCEANA • WEXFORD

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Tom Reichard
Environmental Health Director

cc: Linda VanGills, Health Officer

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

REBECCA A. HUMPHRIES
DIRECTOR

October 26, 2006

[redacted]

I am responding to your recent request for several pieces of information related to cormorants and fish stocking. The following is a list of your requests and the materials that are enclosed.

Information related to cormorant diet studies:
Enclosed is a copy of the Fisheries Division report of a study by Diana, Belyea, and Clark completed in the 1997. This study collected cormorants and analyzed the stomach contents of cormorants in the Les Cheneaux Islands.

More recently, United States Department of Agriculture (USDA), Wildlife Services has collected cormorant stomachs from birds taken in the Les Cheneaux Islands and Thunder Bay areas. These collections were completed as part of cormorant control efforts. I spoke with Mr. Peter Butchko who heads the state Wildlife Services office. He explained the analyses of collected stomachs has not yet been completed. Mr. Butchko is willing to share the results of these analyses when completed. You may contact Mr. Butchko at USDA, Wildlife Services, 2803 Jolly Road, Okemos, MI 48864. The phone number is 517-336-1928.

Information on nesting colonies in Michigan:
Enclosed is a spreadsheet containing nest site survey information conducted during 2005 and the Great Lakes colonial waterbird survey completed in 1997. The breakwater at Ludington was surveyed during the summer of 2006 and identified 482 nests. No nesting colony was found at this site during the 1997 Great Lakes colonial waterbird survey.

Information related to cost per fish for stocking brown trout and salmon:
I contacted the DNR Fisheries Division and requested information related to the cost per fish for stocking brown trout and salmon and received the following cost estimates from Mr. Gary Whelan.

Chinook salmon:	4¢ to 9¢ per fish
Coho salmon:	45¢ per fish
Steelhead:	60¢ per fish
Brown trout:	70¢ per fish

I believe this covers the information you were seeking. If you have any additional questions, you may contact me at 517-373-2457.

Sincerely,

Raymond Rustem
Natural Heritage Unit Supervisor

cc: Mr. Gary Whelan, DNR, Fisheries
Mr. Peter Butchko, USDA

NATURAL RESOURCES COMMISSION
Keith J. Charters, Chair • Mary Brown • Darnell Earley • Bob Garner • Gerald Hall • John Madigan • Frank Wheatlake