

## LAKE MANAGEMENT STATUS REPORT

**Date of Report:** 1/22/2024      **Fisheries Manager:** Rob Hilsabeck  
**District No.:** 4   **LAKE NAME:** Emiquon Preserve   **County:** Fulton  
**Water No.:** 15099   **Ownership:** TNC with Public Coop   **Acreage:** 4000+

**1.** All Fish - 2 pole and line fishing only.

<u>Species</u>	<u>Size Limit</u>	<u>Creel Limit</u>
Largemouth bass	18 inch minimum	1 fish/day
Bluegill		25 fish/day
Channel catfish	NONE	6 fish/day
Walleye, Sauger, Or Hybrid Walleye	14 inch minimum	6 fish/day
White & Black Crappie	9 inch minimum	25 fish/day

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No live minnows for fishing bait.

**2.**

1. IDNR spring trapnet survey was completed on 4/4 and 4/5/2023.

2. State Fair fish collection with DC boat electrofishing on 8/8/2023.

3. Annual fall survey Thompson/Flag lake with DC boat electrofishing on 10/16 and 10/17/2023.

4. Approximately 2000 Alligator Gar at an average length of 13 inches were stocked on 8/30/2023 from Jake Wolf Hatchery.

**3. IDNR Spring Fish Population survey results and indices:**

On 4/4/2023 and 4/5/2023 Thompson and Flagg Lakes were sampled with trapnets. A total of 48 net nights of effort was utilized with 1.5 inch mesh nets. The following number of fish and size ranges were collected:

Largemouth bass -	81 fish from 9.8 to 19.7 inches.
Bluegill -	10 fish from 6.1 to 8.3 inches.
Black Crappie -	209 fish from 6.9 to 14.1 inches.
White Crappie -	53 fish from 9.2 to 14.6 inches.
Hybrid Crappie-	2 fish from 13.4 to 15.8 inches.
Pumpkinseed sunfish -	0 fish.
Pumpkinseed x Bluegill-	1 fish at 7.5 inches.
Bowfin -	96 fish from 19.3 to 30.2 inches.
Common Carp -	26 fish from 15.5 to 28.9 inches.
Gizzard Shad -	121 fish from 8.1 to 16.7 inches.
Black Bullhead -	0 fish.
Yellow Bullhead -	1 fish at 13.8 inches.
Brown Bullhead -	4 fish from 13.5 to 14.6 inches.
Channel Catfish -	143 fish from 13.9 to 30.8 inches.
White Bass-	33 fish from 9.6 to 17.0 inches.
Yellow Bass-	612 fish from 7.1 to 13.1 inches.
Carp x Goldfish hybrid-	1 fish at 15.1 inches.
Freshwater drum-	51 fish from 7.8 to 18.0 inches.
Grass carp-	1 fish at 36.3 inches.
Longnose gar-	0 fish.
Shortnose gar-	4 fish at 23.4 to 30.3 inches.
Spotted gar-	18 fish from 22.6 to 28.9 inches.
Smallmouth Buffalo-	0 fish.
Bigmouth Buffalo-	1 fish at 31.1 inches.
Silver Carp-	2 fish at 36.7 to 39.5 inches.
Bighead Carp-	1 fish at 43.5 inches.
White Perch-	0 fish.

1471 Total

### 3. IDNR Fall Fish Population survey results and indices:

On 10/16 and 10/17/2023, six stations were sampled by two, D.C. electro fishing boats for a total on-time of 185 minutes. The following number of fish and size ranges were collected:

Largemouth bass -	90 fish from 4.4 to 21.7 inches.
Bluegill -	372 fish from 1.2 to 8.5 inches.
Black Crappie -	151 fish from 6.3 to 15.2 inches.
White Crappie -	26 fish from 5.9 to 13.6 inches.
Pumpkinseed sunfish -	2 fish at 2.4 inches.
Pumpkinseed x Bluegill-	0 fish.
Bowfin -	29 fish from 14.3 to 31.0 inches.
Common Carp -	37 fish from 8.2 to 28.5 inches.
Common Carp x Goldfish-	1 fish at 15.1 inches.
Warmouth -	28 fish from 1.6 to 6.1 inches.
Gizzard Shad -	170 fish from 4.3 to 15.5 inches.
Golden Shiner -	6 fish from 2.0 to 7.3 inches.
Smallmouth Buffalo-	19 fish from 12.6 to 28.3 inches.
Bigmouth Buffalo-	41 fish from 12.4 to 28.3 inches.
Black Buffalo-	0 fish.
Yellow Bullhead-	3 fish from 4.2 to 13.1 inches.
Freshwater Drum-	45 fish from 3.6 to 16.0 inches.
Yellow Bass-	66 fish from 2.8 to 13.6 inches.
Channel Catfish-	60 fish from 13.3 to 29.9 inches.
Flathead Catfish-	3 fish from 16.5 to 24.1 inches.
Hybrid Striped Bass-	0 fish.
White Bass-	6 fish from 10.0 to 15.3 inches.
Brook Silverside-	8 fish from 1.6 to 3.5 inches.
Starhead topminnow-	observed
Grass carp-	1 fish at 34.5 inches.
Silver carp-	2 fish from 36.2 to 39.8 inches.

1166 Total

In 2023, starhead topminnows were observed on the western shoreline of Thompson Lake during the fall boat electrofishing survey.

**LAKE MANAGEMENT STATUS REPORT**  
**EMIQUON**  
**Catch Per Unit of Effort**

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		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Largemouth Bass																		
fish/minute		13.1	3	2.8	6.2	6.1	5.5	3.4	3.3	1.4	1.8	4.1	1.8	1.2	2.5	1.4	0.8	0.49
Stock fish+/minute		0.78	2.5	2.4	6.1	6	5.5	2.8	3.2	1.1	1.4	3.9	1.8	0.88	2.5	1.4	0.67	0.44
lbs/hour		85.1	76.9	164	536	646	632	348	381	117	186	526	216	62	246	155	87	65
fish/net night					10.1	26	5.79	5.98	14.3	13.1	4.85	6.8	12.5	4.5		4	2.3	1.7
lbs/net night					11.8	42.4	10.2	13	34.3	33.8	13.1	20.5	35.2	4.6		12.4	6.2	4.5
White Bass																		
fish/minute		0	0	0	0	0	0	0	0	0	0.01	0	0.03	0	0.04	0.02	0.01	0.03
lbs/hour		0	0	0	0	0	0	0	0	0	0.6	0	0.77	0	3	3		
fish/net night					0	0	0	0	0	0	0	1.2	1.5	1.5		2.7	2.4	0.69
lbs/net night					0	0	0	0	0	0	0	1.5	2.03	1.9		3.8		
Bluegill																		
fish/minute		0.16	1.2	1.8	0.48	2.2	2.8	1.2	0.65	0.74	1.1	0.83	0.81	0.79	3.6	2.2	2	2.01
Stock fish+/minute		0.16	0.11	1.3	0.37	1.9	2.4	0.7	0.61	0.59	0.67	0.57	0.71	0.33	3.4	2.1	1.4	1.8
lbs/hour		2.35	1.75	11.1	5.46	27.7	32.3	12.8	5.41	5.9	7.3	8.16	11.9	2	26.4	32.9		18.1
fish/net night					12.1	16.9	12.5	3.08	0.98	3.46	6.6	7.2	11.1	1.1		0.29	0.44	0.21
lbs/net night					3.24	8.92	5.62	1.35	0.39	1.59	3.16	3.39	4.85	0.46		0.09		0.06
Black Crappie																		
fish/minute		2.1	0.05	0.09	0.05	0.52	2.74	1.18	0.35	0.42	0.15	1.81	3.9	0.69	2.2	2.2	1.9	0.81
lbs/hour		9.31	1.26	1.2	3.42	30.2	165	53.7	19.4	16.7	6.9	119	255	17.5	91.1	109		43.6
fish/net night					16.6	6	9.65	7.3	11	12.5	7.9	10.9	21.4	17.9		7.8	6.7	4.35
lbs/net night					11.9	4.44	11.8	6.25	8.76	9.31	7.35	11.7	22	16.1		7.7		4.7
White Crappie																		
fish/minute		0	0	0	0	0	0.03	0	0.01	0.01	0	0	0.02	0.06	0.07	0.19	0.17	0.14
lbs/hour		0	0	0	0	0	0.48	0	0.2	0.67	0.27	0	0.77	1.19	4.2	9.9		7.1
fish/net night					0	0	0.15	0.03	1.55	2	2.23	1.7	0.71	0.42		1.2	1.3	0.29
lbs/net night					0	0	0.08	0.02	0.65	1.26	1.98	1.53	0.59	0.32		1.1		0.29
Pumpkinseed																		
fish/minute		0.08	0.31	0.33	0.1	0.17	0.32	0.12	0.05	0.2	0.26	0.17	0.2	0.17	0.13	0.03	0.12	0.01
lbs/hour		0.21	0.66	2.8	0.46	3.76	3.07	2.19	0.31	1.5	2.1	0.41	1.13	0.53	0.36	0.15		
fish/net night					5.76	0.4	0.52	0.58	0.58	0.88	0.38	0.3	1.5	0.04		0	0	0
lbs/net night					1.64	0.15	0.27	0.19	0.24	0.46	0.2	0.14	0.62	0.01		0		
Green Sunfish																		
fish/minute		0.04	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lbs/hour		0.08	0.08	0	0	0	0	0	0	0	0	0	0	0		0		
fish/net night					0	0	0	0	0	0	0	0	0	0		0	0	0
lbs/net night					0	0	0	0	0	0	0	0	0	0		0		

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Warmouth																		
fish/minute		0	0.03	0.05	0.01	0.06	0.08	0.04	0.04	0.18	0.05	0.1	0.03	0.01	0.01	0.02	0.17	0.15
lbs/hour		0	0.13	0.33	0.02	1.6	0.55	0.62	0.16	0.62	0.27	0.51	0.09	0.15	0.01	0.07		
fish/net night					0.06	0.13	0.25	0	0	0	0.06	0	0.04	0		0	0	0
lbs/net night					0.02	0.05	0.12	0	0	0	0.03	0	0.02	0		0		
O. spotted Sunfish																		
fish/minute		0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lbs/hour		0.01	0	0	0	0	0	0	0	0	0	0	0	0		0		
fish/net night					0	0	0	0	0	0	0	0	0	0		0	0	0
lbs/net night					0	0	0	0	0	0	0	0	0	0		0		
Redear Sunfish																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lbs/hour		0	0	0.16	0	0	0	0	0	0	0	0	0	0		0		
fish/net night					0.02	0	0	0	0	0	0	0	0	0		0	0	0
lbs/net night					0.01	0	0	0	0	0	0	0	0	0		0		
Redspotted Sunfish																		
fish/minute		0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0
lbs/hour		0	0	0	0	0.11	0	0	0	0	0	0	0	0		0		
fish/net night					0	0	0	0	0	0	0	0	0	0		0	0	0
lbs/net night					0	0	0	0	0	0	0	0	0	0		0		
Black Bullhead																		
fish/minute		0.07	0.02	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lbs/hour		0.8	0.57	0.79	0.5	0	0	0	0	0	0	0	0	0		0		
fish/net night					1.58	0	0.9	0.43	0.05	0.21	0.06	0	0	0		0.02	0	0
lbs/net night					2.18	0	1.88	1.04	0.11	0.45	0.14	0	0	0		0.02		
Brown Bullhead																		
fish/minute		0	0	0.02	0	0.01	0.01	0.01	0.01	0.01	0	0	0.03	0	0	0	0	0
lbs/hour		0	0	1.02	0	0.56	1.33	0.26	0.9	0.74	0.38	0	2.18	0		0		
fish/net night					0.86	0.43	1.02	0.45	0	0.96	0.73	0.8	0.5	0.27		0.08	0.02	0.08
lbs/net night					1.1	0.64	1.98	0.73	0	1.96	1.71	1.73	0.96	0.49		0.15		
Yellow Bullhead																		
fish/minute		0	0	0	0	0.02	0	0.01	0.01	0.01	0	0.01	0.02	0.01	0.01	0	0	0.02
lbs/hour		0	0	0	0.28	0.8	0	0.31	0.18	0.65	0	0.14	0.28	0.02	0.31	0		
fish/net night					0	0	0.08	0.08	0.03	0.21	0.04	0.2	0.04	0.23		0.06	0.04	0.02
lbs/net night					0	0	0.17	0.08	0.04	0.23	0.04	0.15	0.05	0.29		0.1		

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Channel Catfish																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0	0	0.24	0.41	0.1	0.32
lbs/hour		0	0	0	0	0	0	0	0	0	0	0	0	0	49.5	62.4		47
fish/net night					0	0	0	0	0.3	1.25	0.4	0.6	0.54	1.4		1.9	1.8	3
lbs/net night					0	0	0	0	0.86	4.17	2.98	5.01	4.6	8.48		11.9		14.1
Flathead Catfish																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.02
lbs/hour		0	0	0	0	0	0	0	0	0	0	0	0	0		1.9		
fish/net night					0	0.03	0	0.03	0	0	0	0	0	0		0	0	0
lbs/net night					0	0.41	0	0.55	0	0	0	0	0	0		0		
Spotted Gar																		
fish/minute		0	0	0	0.02	0	0	0.06	0	0	0	0	0	0.01	0	0	0	0
lbs/hour		0	0	0.12	0.43	0	0	0.05	0	0	0	0	0	1.05		0		
fish/net night					0.06	0.03	0.73	0.23	0.23	1.38	0.06	0	0.75	0.69		0.04	0.15	0.38
lbs/net night					0.54	0.04	1.39	2.49	2.57	5.78	0.11	0	1.64	4.48		0.3		
Shortnose Gar																		
fish/minute		0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0
lbs/hour		0	0	0	0	0	0	0.04	0	0	0	0	0	0		0		
fish/net night					0	0	0.02	0	0.25	0.67	0.02	0	0.13	0.29		0.06	0.02	0.08
lbs/net night					0	0	0.03	0	0.46	1.35	0.05	0	0.37	0.68		0.5		
Longnose Gar																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lbs/hour		0	0	0	0	0	0	0	0	0	0	0	0	0		0		
fish/net night					0	0	0.06	0	0	0.04	0	0	0.04	0.02		0	0.02	0
lbs/net night					0	0	0.13	0	0	0.07	0	0	0.14	0.06		0		
Bowfin																		
fish/minute		0.01	0.05	0.03	0.03	0.04	0.25	0.17	0.12	0.19	0.28	0.57	0.34	0.17	0.77	0.21	0.15	0.16
lbs/hour		2.26	5.49	9.07	5.65	7.55	65.9	51.6	37.7	29.9	59.5	140	70.9	40	96.5	47.5		44.9
fish/net night					0.4	0.7	0.65	0.18	1.78	3.75	1.7	1.6	3.79	3.4		4.3	0.69	2



		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Black Buffalo																		
fish/minute		0	0	0	0	0	0	0	0.01	0	0	0	0.01	0	0.01	0	0.04	0
lbs/hour		0	0	0	0	0	0	0	1.55	0	2.1	0	6.21	0	2	0		
fish/net night					0	0	0	0	0	0	0	0	0	0		0	0	0
lbs/net night					0	0	0	0	0	0	0	0	0	0		0		
Common Carp																		
fish/minute		0	0	0.05	0.17	0.23	0.68	0.12	0.08	0.05	0.03	0.07	0.34	0.03	0.48	0.62	0.21	0.2
lbs/hour		0	0	5.56	57.2	35.6	169	41.2	36.6	27.2	20.9	29.8	146	12.4	175	165	60	52.5
fish/net night					5.42	1.55	1.94	1.85	1.95	1.83	2.1	2.3	1.4	4.2		0.9	1.04	0.54
lbs/net night					13	6.63	7.01	6.14	11.5	12.8	14.1	23.2	11.7	27.8		8.2	5.5	3.5
Goldfish																		
fish/minute		0.98	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lbs/hour		4.58	0.52	0	0.61	0	0	0	0	0	0	0	0	0		0		
fish/net night					0.42	0.05	0	0.05	0	0	0	0	0	0		0	0	0
lbs/net night					0.21	0.07	0	0.08	0	0	0	0	0	0		0		
Goldfish x C Carp																		
fish/minute		0	0	0	0	0.02	0	0	0	0	0	0	0	0	0	0.01	0	0.01
lbs/hour		0	0	0	0	1.96	0	0	0	0	0	0	0	0		2.1		
fish/net night					0	0	0.1	0	0	0	0.06	0	0.04	0.1		0	0	0.02
lbs/net night					0	0	0.32	0	0	0	0.27	0	0.17	0.5		0		
Silver Carp																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0.01	0	0	0.05	0	0.06	0.01
lbs/hour		0	0	0	0	0	0	0	0	0	1.03	0.55	0	0	48.4	0		16.5
fish/net night					0	0	0	0	0	0	0	0	0	0.35		0.02	0.02	0.04
lbs/net night					0	0	0	0	0	0	0	0	0	5.1		0.31		1.11
Bighead Carp																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lbs/hour		0	0	0	0	0	0	0	0	0	0	0	0	0		0		
fish/net night					0	0	0	0	0	0	0	0	0	0.08		0	0	0.02
lbs/net night					0	0	0	0	0	0	0	0	0	2.28		0		0.75
Grass Carp																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0.02	0	0	0.02	0.01	0	0.01
lbs/hour		0	0	0	0	0	0	0	0	0	0	5.31	0	0	7.89	7.3		12.4
fish/net night					0	0	0	0	0	0	0	0	0.13	0.04		0.04	0.06	0.02
lbs/net night					0	0	0	0	0	0	0	0	2.35	0.86		1.06		0.41



		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Sauger																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0
lbs/hour		0	0	0	0	0	0	0	0	0	0	0	0.93	0		0		
fish/net night					0	0	0	0	0	0	0	0	0	0		0	0	0
lbs/net night					0	0	0	0	0	0	0	0	0	0		0		
Grass Pike																		
fish/minute		0	0	0	0	0	0	0.01	0	0	0	0	0	0.01	0	0	0	0
lbs/hour		0	0	0	0	0	0	0.05	0.01	0	0	0	0	0.1		0		
fish/net night					0	0.03	0	0	0	0	0	0	0	0		0	0	0
lbs/net night					0	0.01	0	0	0	0	0	0	0	0		0		
Freshwater Drum																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0.14	0.57	0.38	0.14	0.45	0.24
lbs/hour		0	0	0	0	0	0	0	0	0	0	0	3.52	9.09	11.5	7.73		9.8
fish/net night					0	0	0	0	0	0	0.04	0	0.54	0.23		0.29	2.44	1.06
lbs/net night					0	0	0	0	0	0	0.04	0	0.31	0.14		0.28		0.57
White Perch																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0
lbs/hour		0	0	0	0	0	0	0	0	0	0	0	0.15	0		0		
fish/net night					0	0	0	0	0	0	0	0	0	0		0	0.02	0
lbs/net night					0	0	0	0	0	0	0	0	0	0		0		
Yellow bass																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0.03	0.02	0.49	1.2	1.1	0.36
lbs/hour		0	0	0	0	0	0	0	0	0	0	0	0.04	0.06	0.7	13.3		5.3
fish/net night					0	0	0	0	0	0	0	0	0.25	5.79		26.2	14.5	12.75
lbs/net night					0	0	0	0	0	0	0	0	0.16	1.88		16.3		7.3
Hybrid Striped Bass																		
fish/minute		0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0
lbs/hour		0	0	0	0	0	0	0	0	0	0	0	0	0	3	1.3		
fish/net night					0	0	0	0	0	0	0	0	0	0		0	0	0
lbs/net night					0	0	0	0	0	0	0	0	0	0		0		
TotalE minutes		166	268	260	218	180	106	216	234	225	243	120	120	205	128	140	135	185
Total Trapnet nights					50	40	48	40	40	24	48	24	24	48	0	48	48	48

# LAKE MANAGEMENT STATUS REPORT

Emiquon

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## Sportfish Indices:

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Largemouth Bass																		
Stock Number		130	658	628	386	1086	580	443	538	238	350	462	211	180	316	195	90	82
PSD		20	1	91	97	97	97	94	82	91	91	95	95	48	84	92	86	84
RSD13				48	84	94	94	93	79	77	86	91	93	48	64	91	81	77
RSD14		19	0.2	6	28	79	84	90	77	62	76	83	83	46	55	67	71	74
RSD15				2	9	43	62	76	72	55	67	76	69	44	53	43	49	67
RSD16		15	0.2	0.3	3	7	14	31	47	35	42	45	36	30	48	36	36	54
RSD17				0.2	1	3	4	8	17	18	27	31	21	17	34	24	26	32
RSD18		7	0	0.2	1	2	1	2	1	3	10	9	8	4	11	9	17	22
RSD19					1	1	0.2	1	0.4	0	4	5	3	2	5	2	7	11
Wr < 8"		102	106	102	120	99	133	114	101	90	110	105	128	105	107	115	106	97
Wr > 8"		114	103	100	102	106	101	101	95	96	98	99	95	107	99	98	100	104
YAR		83	7	0.2	0	0	0	0.2	0.1	0.4	0.2	0.1	0	0.9	0	0.4	0.1	0.1
CPUE Stock		0.78	2.5	2.4	6.1	6	5.5	2.8	3.2	1.1	1.4	3.9	1.8	0.88	2.5	1.4	0.67	0.44
CPUE All		13	3	2.8	6.2	6.1	5.5	3.4	3.3	1.4	1.8	4.1	1.8	1.2	2.5	1.4	0.8	0.5
Effort Min		166	268	260	63	64	106	160	170	225	243	120	120	205	128	140	135	185
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bluegill																		
Stock #		26	30	344	81	348	860	151	142	133	162	68	85	69	453	294	193	337
PSD		50	43	39	59	70	85	46	28	40	37	57	67	10	68	76	49	26
RSD7		50	23	6	41	55	68	27	16	16	17	35	51	6	21	46	22	7
RSD7.5		50	10	2	27	49	59	21	10	11	14	29	46	3	13	25	8	4
RSD8		39	0	0.6	19	31	43	13	8	9	12	22	29	0	11	5	3	1
Wr > 5"		107	119	103	110	103	106	94	93	95	97	94	100	99	99	102	100	94
YAR		1	16	2	0	0.4	0.2	2	2	1.6	2.5	1.1	0.6	16.7	0.3	2.3	0.4	0.1
CPUE Stock		0.16	0.11	1.3	0.37	1.9	2.4	0.7	0.61	0.59	0.67	0.57	0.71	0.33	3.5	2.1	1.4	1.8
CPUE All		0.16	1.2	1.6	0.49	2.2	2.8	1.2	0.65	0.74	1.1	0.83	0.81	0.79	3.6	2.2	2	2
Effort		166	268	260	218	180	106	216	234	225	243	120	120	205	128	140	135	185
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Pumpkinseed																		
Stock#		10	41	64	294	44	55	44	31	59	57	11	50	15	11	3	13	0
PSD		0	12	45	99	86	73	77	81	49	70	73	84	13	36	0	15	0
RSD7		0	5	11	20	68	53	48	55	41	56	64	70	13	9	0	0	0
RSD7.5		0	0	3	4	59	42	34	39	37	39	55	58	13	9	0	0	0
RSD8		0	0	2	0	43	36	21	26	27	25	27	24	0	0	0	0	0
Wr > 4"		101	113	104	118	109	102	95	100	102	99	103	100	85	93	108	93	0
YAR			12	0.6	0	0	0.3	0.2	0.2	0.6	0.9	2.1	0.4	12	2		0.2	100
ECPUE Stock		0.06	0.16	0.25	0.02	0.16	0.28	0.12	0.05	0.2	0.26	0.17	0.2	0.05	0.09	0.02	0.1	0
Trap CPUE					5.8	0.36	0.52	0.48	0.58	0.88	0.38	0.29	1.5	0.04		0	0	0

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Black Crappie																		
Stock#		92	16	4	841	330	752	472	497	390	415	479	980	973	281	314	225	151
PSD		28	81	100	97	85	92	95	99	96	98	100	98	100	95	97	99	99
RSD9		24	19	100	83	57	81	82	96	83	94	99	93	95	93	91	98	96
RSD10		12	19	100	83	56	75	65	78	71	87	97	89	86	84	81	82	93
RSD11		2	6	50	34	52	59	29	29	28	56	80	75	63	59	62	51	68
Wr < 8"		108	114	107	104	100	102		96	90	98		100	101	100	101	100	98
Wr > 8"		89	110	108		109	102	97	94	91	97	95	96	97	103	103	107	94
YAR		12	0	5	0	0	0	0.1	0	0.1	0	0	0	0	0.1	0.2	0	0.02
ECPUE all		2.1	0.05	0.09	0.05	0.52	2.7	1.2	0.35	0.42	0.15	1.8	3.9	0.69	2.2	2.2	1.7	0.8
Trap CPUE					16.6	5.5	9.7	7.3	11	12.5	7.9	10.9	21.4	17.9		7.8	6.7	4.4
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
White Crappie																		
Stock #		0	0	0	0	0	8	1	63	51	108	41	19	29	9	26	23	26
PSD							100	100	100	100	100	100	100	100	100	100	100	77
RSD9							100	100	77	88	99	95	90	93	78	96	96	77
RSD10							63	100	19	73	97	71	68	76	67	89	74	77
RSD11							25	100	5	45	91	56	68	69	67	81	61	73
Wr							105	100	101	98	108	105	105	100	113	116	107	100
YAR							0.2		0	0	0	0	0	0.1	0	0	0	0
ECPUE									0	0.01	0	0	0.02	0.06	0.07	0.19	0.17	0.14
Trap CPUE							0.03		1.6	2	2.2	1.7	0.71	0.42		1.2	1.3	1.1
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Channel Catfish																		
Stock#		0	0	0	14	0	0	0	12	30	19	15	13	67	29	92	84	143
PSD					100				25	93	95	80	100	99	66	92	89	97
RSD18					100				25	100	95	80	100	96	62	89	69	85
Wr					120				114	113	122	112	110	103	95	95	88	93
Trap CPUE					0.35				0.3	1.3	0.4	0.63	0.54	1.4		1.9	1.8	3
Total E minutes		166	268	260	218	180	106	216	234	225	243	120	120	205	128	140	135	185
Total Trapnet nights					50	40	48	40	40	24	48	24	24	48	0	48	48	48

4. In 2023, the water level in Emiquon was near 2,400 surface acres.

The Nature Conservancy and research partners documented the readings for depth, temperature and turbidity with YSI stations and hand held units on the site. The water clarity has continued to decrease and has been a detriment for submerged rooted aquatic plant growth. The shift in the fish population with the introduction of non-native carp has promoted this vegetation and clarity reduction.

On 4/2/2007, the fish rehabilitation of the water bodies at the Emiquon Preserve was initiated. 440 gallons of Rotenone Synprenfish was applied from 4/2 through 4/4/2007. The application was accomplished using drip stations, motorized sprayers, backpack sprayers and boat bailer. A minimum total of 21 IDNR personnel and 6 TNC personnel were utilized to accomplish the rehabilitation over the 3 days. The fish species that were observed in the fish kill count included: common carp, grass carp, goldfish, black bullheads, bluegill, gizzard shad, freshwater drum, shortnose gar, buffalo sp., river carpsucker, largemouth bass, green sunfish, orange spotted sunfish and crappie sp. The majority of the fish biomass was composed of common carp, grass carp, buffalo sp. and freshwater drum.

On 4/16/2007, the fish restocking for the Emiquon Preserve was initiated. The species of fish that were stocked into the connected water areas as brood fish included: largemouth bass, white crappie, black crappie, bluegill, bowfin, spotted gar, channel catfish, brown bullhead, warmouth, orangespotted sunfish, pumpkinseed sunfish, golden shiner, brook silverside, and blackstripe topminnow. Walleye and largemouth bass were also stocked at the fry size into the main water area. Other fish species that were stocked into semi-connected water areas included: tadpole madtom, mud darter, log perch, blackside darter, spottail shiner, starhead topminnow, central mudminnow, lake chubsucker and pirate perch. A total of 24 fish species were introduced to the site in 2007. The attached stocking record provides a detailed description of the history of the fish stocking.

In 2008, the main lake was stocked with brood fish from the following species: spotted gar, longnose gar, orangespotted sunfish, brown bullhead, tadpole madtom, logperch, Johnny darter, slenderhead darter, central mudminnow, blackstripe topminnow, emerald shiner, mud darter, golden shiner, warmouth sunfish, lake chubsucker, pirate perch, black crappie, white crappie, sauger, channel catfish, grass pike, bluegill and starhead topminnow. A total of 23 fish species were introduced

to the site in 2008.

In 2008, the main lake was stocked with brood fish from the following species: spotted gar, longnose gar, orangespotted sunfish, brown bullhead, tadpole madtom, logperch, Johnny darter, slenderhead darter, central mudminnow, blackstripe topminnow, emerald shiner, mud darter, golden shiner, warmouth sunfish, lake chubsucker, pirate perch, black crappie, white crappie, sauger, channel catfish, grass pike, bluegill and starhead topminnow. A total of 23 fish species were introduced to the site in 2008.

In 2009, limited fish stocking occurred with the addition of 76 brown bullhead in March from North and South Spring Lake State Fish and Wildlife Area.

In 2010, Flathead catfish and red spotted sunfish were stocked into Thompson Lake.

In 2011, Red spotted sunfish were stocked into Thompson Lake.

In 2012 to 2019, no intentional fish stockings occurred into Thompson or Flag Lakes.

In 2020, 45 alligator gar were stocked by the IDNR.

From 2021 thru 2022, no intentional fish stockings occurred into Thompson or Flag Lakes.

The five years of stockings (33 species) and surveys (19 additional species) have resulted in a potential of at least 52 fish species now present in the preserve in 2023.

An additional group of fish species was potentially introduced with the flood waters that overtopped the levee in late April of 2013. The staff with the Nature Conservancy completed a report with the following observations: "we observed numerous nonnative, invasive adult common carp and a few native shortnose gar being swept in over the north Coal Creek levee Wednesday through Saturday (24-27 April 2013). Some shortnose gar and abundant common carp were seen immediately downstream of the inflows, apparently trying to get back over the levees.

Two dying silver carp also were identified. We assume the fish in this area inside the levees had been swept in over the levees, but it is also possible they were from the lake or associated wetlands and had been attracted to the area near the overtopping by flows and/or constituents in the waters flowing in over the levees.

On Monday 29 April 2013, staff seined for 10 minutes the small area where water was flowing north over the north Coal Creek levee; they collected only 11 mosquito fish. Hundreds of dead and dying fish were evident in the shallow waters near the

interior toes of the levees at the north Coal Creek and south Thompson levees, possibly because they couldn't make it to the lakes through the very shallow water as it spread out across the prairie. By casual observation, we estimate well over 95% of the dead fish were common carp, but with additional seining and inspection near the toe of the north Coal Creek and south Thompson levees, we also collected or saw a few individuals the following species: emerald shiner, red shiner, silver chub, grass carp, silver carp, black bullhead, bigmouth and smallmouth buffalo, gizzard shad, and largemouth bass. As above, we assume these fish came in with floodwaters, but it's also possible they were lake fish that were attracted from the lake to these areas of inflowing water and its associated constituents."

IDNR fisheries completed an hour electrofishing run on May 6, 2013 in an attempt to document any new fish species that may have been introduced with the flood event. The collection of 1 bigmouth buffalo and 1 shortnose gar indicated that some new fish species were most likely introduced with the flood waters.

#### **2023 IDNR Fisheries Data:**

In 2023, spring trap netting was completed from 4/4 to 4/5 with 48 net nights of effort.

In October of 2023, six separate electrofishing runs were sampled on 10/16 and 10/17 with 2 D.C. electro fishing boats.

The following narrative is based on the annual IDNR surveys from 2007 through 2023.

In 2023, the largemouth bass population was sampled by 90 fish by electrofishing. The largemouth bass population was defined by an average year of recruitment with 8 fish sampled from 4.4 to 8.0 inches.

The fall 2023 electrofishing survey indicated that the largemouth bass population density has continued to drop. The collection rate of stock size bass (over 8 inches) dropped from 1.4 fish per minute in 2021 at 155 pounds per hour, to .67 fish per minute at 87 pounds per hour in 2022, and down to .44 fish per minute at 65 pounds per hour in 2023. This was a decline from the 2.5 fish per minute and 246 pounds per hour collected in 2020. The goal is a collection rate of 1 bass per minute.

The bass population structure is currently skewed high due to the limited number of fish under 12 inches in length. The PSD value of 84 is above the typical objective of a PSD index rating of from 40 to 60. In other words, 84% of the Emiquon bass population was over 12 inches in length. The RSD15 value of 67, RSD18 value of 22 and RSD19 value of 11 were also very high. The

body condition rating (Wr) did remain in the good level at an average of 104 in 2023. The previous 5 years had shown a trend of lower body condition values into the 80's for the bass from 16 to 19 inches. In 2021 thru 2023 the largemouth bass data was much improved for this size group of fish.

Overall, the largemouth bass population appears to be declining in overall density. The population appears to be in balance with the current forage and water conditions available in the Emiquon Preserve. The main concern will be the need for stronger year class production and recruitment over the next several years.

The goal of the initial 18 inch minimum size limit was to create a high density bass population. The predation exerted by this population is necessary to control the exotic and invasive fish reproduction and recruitment that may occur. This predation is also the key to maintain the native species balance within the habitat.

In 2023 the bluegill population was sampled by 372 fish by electrofishing. The survey samples represent a bluegill population with a distribution from 1.2 to 8.5 inches long. The bluegill recruitment was low again in 2023 with a Yr of .1. The last high recruitment year for bluegill was in 2019. The body condition remained good with an average Wr of 94 for the fish over 5 inches. The bluegill electrofishing collection rate for stock size fish (over 3.1 inches) was 1.8 fish per minute in 2023. This is close to the 1.4 fish per minute in 2022. But this is a decrease from 2.1 fish per minute in 2021 and from the 3.4 fish per minute collected in 2020. This density trend will be evaluated in the future.

The bluegill PSD value of 26 for electrofishing was close to the objective range of 20 to 40. But it is a decrease from the 49 in 2022. The Bluegill population structure appears to be primarily under 7 inches in length. The bluegill RSD7 was at 7 which is within objective range of 5 to 20, but is below the previous 5-year average of 29. The RSD8 value of 1 is low and is reflected in the lower numbers of quality bluegill that have existed at Emiquon since 2019.

The dense areas of submerged aquatic vegetation is the key to allow the current bluegill population the potential for an excellent spawn and recruitment. These large areas of vegetated habitat would also provide a preferred niche for the *Lepomis* sp. in competition with the expanding gizzard shad and common carp population. However, these vegetation areas have not been present at high levels in the last 3 years.

The current bluegill (Lepomis sp.) regulation is a maximum harvest of 25 fish per day per angler. The main scope of this regulation is to prevent wanton waste by anglers.

The black crappie population was sampled by 151 stock sized fish by electrofishing in 2023. The black crappie electrofishing collection rate was .81 fish per minute for all sizes in 2023. This rate was below the previous 5-year average of 2.2 fish per minute of electrofishing.

The black crappie sample shows a low number of fish in the YOY class up to 5.9 inches long and multiple year classes from 7.9 to 14.0 inches long. The body condition was still a good Wr of 94 for the fish over 8 inches.

The white crappie population was again sampled at a low density at .14 fish per minute. The size range was from 5.9 to 13.6 inches in length. The body condition average was very good at a Wr of 100. The future emergence of the white crappie population to a common occurrence will probably depend upon the water clarity. In a lake habitat with both species of crappie, the black crappie tend to dominate in clearer water, while the white crappie tend to succeed with more turbid conditions.

The overall crappie density was reduced in both the trap netting and electrofishing surveys in 2023. This lower density trend is evident in all the Centrarchidae populations in Emiquon in 2023. A dense crappie population with larger fish present, will feed on the gizzard shad population and provide additional predation upon potential exotic and invasive fish species reproduction.

The current crappie regulation is a 9-inch minimum size limit and a maximum harvest of 25 fish per day per angler. The goal of this regulation is to maintain a dense crappie population and allow a sustainable high, yearly harvest.

60 channel catfish were sampled in 2023 by electrofishing and 143 in trap nets. This continues the upward density trend since their consistent sampling that started in 2014. In 2023, the size ranged from 13.3 to 30.8 inches in length. The body condition was good in 2023 with a Wr value of 93. If turbid water conditions exist in the future, channel catfish recruitment should continue at a high level.

The current channel catfish regulation is a maximum harvest of 6 fish per day per angler. The main scope of this regulation is to prevent wanton waste by anglers.



In 2023 the pumpkinseed population was sampled by 2 fish by electrofishing. These fish were both 2.4 inches in length. The pumpkinseed electrofishing collection rate for stock size fish (over 3.1 inches) was 0 fish per minute. This continues the rapid population decline over the last 5 years. Our electrofishing effort in the large rip rap in front of the control gate in the main ditch held all the fish sampled in 2023.

Dense stands of submerged aquatic vegetation will be a key to allow the current pumpkinseed population the potential for an improved spawn and recruitment in the future.

No Red Spotted Sunfish were collected in 120 minutes of sampling the dense, woody debris of beaver lodges and the large rip-rap present in the main ditch section. Red Spotted Sunfish were stocked into the complex in 2010 and 2011, and only 1 fish has been resampled by IDNR in the fall 2011 electrofishing survey. Other Red Spotted Sunfish introduction efforts have been successful over this same time period in Banner Marsh SFWA, Snakeden Hollow SFWA and the Hennepin-Hopper TWI lake complex. The key to the Red Spotted Sunfish population establishment and continued recruitment into these sites, appears to be directly attributed to dense submerged rooted aquatic plant beds.

In 2023, the warmouth sunfish population was sampled by 28 fish that ranged from 1.6 to 6.1 inches in length. This population appears to be present in a very low density.

The bowfin population was sampled by 96 fish in the spring trap net survey and 29 fish in the fall electrofishing surveys. The size ranged from 14.3 to 31.0 inches in length. Several year classes appear to be present. The body condition of many of these fish was average to poor in 2022 and 2023. I have no easy explanation for this, and it will be evaluated going forward. The bowfin population has seen an increase in density and biomass in the sampling over the past 10 years. In 2023 the electrofishing rates were .16 fish per minute. This is consistent with the 5 year average collection rate for the Emiquon Preserve.

18 spotted gar, 4 shortnose gar and 0 longnose gar were sampled by trap nets in 2023. These populations appear to be present in low density populations in the Emiquon Preserve.

Brook Silversides and Golden Shiners were sampled in very low densities in Thompson Lake in 2023. And the Starhead topminnows were observed on the western shoreline of Thompson Lake in the limited submerged aquatic vegetation near the boat ramp during the fall boat electrofishing survey. Submerged aquatic vegetation will be the key to maintain both the golden shiner and starhead topminnow populations in the Emiquon Preserve.

In 2023, 0 black bullhead, 4 brown bullheads and 4 yellow bullheads were sampled in the fish surveys. The bullheads should maintain low density populations with high water clarity and dense submerged aquatic plant habitat conditions. However, with increased turbidity, these populations will have the potential for increased recruitment to adult size fish.

No goldfish were sampled in 2012 thru 2023. 2 goldfish x common carp hybrids were sampled in 2021, none in 2022, and 2 in 2023. The goldfish population and their hybrids will remain very low with good water quality and clarity.

In 2023, the gizzard shad population continued to be present at a stable level. In the fall of 2023, the population ranged from 4.3 to 15.5 inches in length.

Since 2012, the gizzard shad population has maintained a stable and numerous population density. It appears this dense shad population may continue to grow at a slow rate each year with the average relative weight values in the upper 80's. This helps the predatory fish by keeping the gizzard shad year classes in small enough size ranges for a longer time.

This expanding gizzard population will likely continue to impact the food web dynamics and water clarity in the Emiquon Preserve. Food and space competition may increase with *Lepomis* sp. While the largemouth bass and black crappie populations may benefit from a much larger size selection of gizzard shad to meet the optimum forage size for the different sizes of predators present in the population.

Common carp were sampled by 26 fish in the spring trap nets, and 37 fish from the fall electro fishing in 2023. These fish ranged from 8.2 to 28.9 inches long. The catch rate and poundage rate for the trap nets was .54 fish per net night and 3.5 pounds per net. This is a decline from the previous 5-year average of 1.9 fish per net night and 13.3 pounds per net. The catch rate and poundage for the electrofishing for 2023 was .20 fish per minute and 52.5 pounds per hour. This is a decline from the previous 5-year average of .34 fish per minute and 112 pounds per hour.

The 2020 and 2021 catch rate and pounds per hour for common carp had shown a dramatic increase in the Emiquon Preserve. This increase in catch rate may have partly be due to the lower water level during the fall 2020 and 2021 sampling time frame. And maybe the commercial fishing harvest is reducing the density by the 2022 and 2023 survey numbers? The body condition on the carp in 2023 was an average Wr of 96. The future common carp population dynamics may continue to have sever effects on the aquatic habitat in the Emiquon Preserve.

The following is the historical perspective of the common carp IDNR sampling in the Emiquon Preserve. The biomass CPUE was 5.56 pounds per hour in 2009, and had increased to 57.20 pounds per hour in 2010. In 2011 it had decreased to 35.63 pounds per hour of electrofishing. In 2012 it had jumped to 168.9 pounds per hour of electrofishing. In 2013 the fall electrofishing rate was down to .12 fish per minute and 41.2 pounds per hour. In 2014 the fall electrofishing rate was .08 fish per minute and 36.6 pounds per hour. In 2015 the fall electrofishing rate was .05 fish per minute and 27.2 pounds per hour. In 2016 the fall electrofishing rate was .03 fish per minute and 20.9 pounds per hour. In 2017 the fall electrofishing rate was .07 fish per minute and 29.8 pounds per hour. In 2018, the fall electrofishing rate was .34 fish per minute and 146 pounds per hour. In 2109, the fall electrofishing rate was .03 fish per minute and 12.4 pounds per hour. In 2020, the fall electrofishing rate was .48 fish per minute and 175 pounds per hour. This was a substantial increase from the rate since the 2012 fall survey.

On July 15,2013 an electrofishing survey was completed and the documentation of the mortality of hundreds of carp from 10.6 to 28.7 inches in length. Live carp were collected with body ulcers and gill necrosis. These symptoms and the species specific nature of the mortality was indicative of a virus, perhaps the Koi Herpesvirus (KHV) disease. The mortality event time frame was from June through July 2013. Studies on this virus suggest that it could reoccur yearly in carp populations that have been exposed to it. In 2014 through 2021, no major carp mortality was observed or documented at the site.

The Black bullhead, yellow bullhead, goldfish, common carp and green sunfish had adult fish survive the rotenone rehabilitation and have had limited recruitment at this time. The gizzard shad may have also survived the rehabilitation, or they were an inadvertent introduction through back siphoning on a pump to the Illinois River. Each of these species will be able to maintain a population in the Preserve. The level of the density of these

populations will depend mainly upon the predation pressure of the largemouth bass and Lepomis sp. populations, and the competition factors with the habitat quality. If the aquatic habitat and water quality is compromised and degraded in the Preserve, these aggressive species will have the ability to expand in density.

The gizzard shad will cause negative food competition with the centrarchids and topminnows if their population density is high and the habitat structure is mostly open water.

In 2014, 2 black buffalo from 16.5 to 18.1 inches long and 8 bigmouth buffalo from 16.1 to 26.4 inches long were sampled in the fall electrofishing sample. These undoubtedly came into the Preserve with the flood waters in 2013. In 2016, 3 white bass from 9.4 to 14.2 inches and 1 silver carp at 20.5 inches were collected during the fall electrofishing sample. In 2017, 2 grass carp at 15.5 and 28.3 inches and 1 silver carp at 15.4 inches were collected in the fall survey. These fish were collected in the main ditch in front of the new control structure with the Illinois River. In 2018, 3 grass carp from 32.3 to 35.8 inches, 9 yellow bass from 3.1 to 11.4, 1 white perch at 8.5 inches, and 30 freshwater drum from 7.5 to 13.0 inches were collected. In 2019, the total nonnative fish collected in these surveys were 209 common carp, 5 carp x goldfish hybrid, 17 silver carp, 4 bighead carp and 4 grass carp. In 2020, the total nonnative fish collected in the fall electrofishing survey were 61 common carp, 6 silver carp and 2 grass carp. In 2021, the total nonnative fish collected were 130 common carp, 1 silver carp and 3 grass carp. In 2022, the total nonnative fish collected were 79 common carp, 9 silver carp and 3 grass carp. In 2023, the total nonnative fish collected were 63 common carp, 4 silver carp, 2 grass carp, 1 bighead carp and 2 carp x goldfish hybrids.

These new fish species collections probably entered the Preserve from the Illinois River through the new control structure site. The size of these fish indicate that they arrived through a large passage like the control structure. The silver carp, bighead carp and the grass carp had extremely robust body conditions. Their growth rate is currently at an accelerated rate in the Preserve. No reproduction and recruitment has been documented at this time for the Asian carp species.

The presence of an expanding population of grass carp and silver carp is an ominous sign for the future aquatic habitat in the Preserve. The rapid removal of the submerged aquatic plant community through consumption by the grass carp, and decreased water clarity from algal blooms stimulated by the silver carp

biomass may soon reach a critical tipping point. Then the reduced water clarity will allow the potential for the common carp to achieve very high reproduction and recruitment in the Preserve. A rapid degradation of the aquatic habitat, submerged aquatic plant community, and native fish population is the factual, proven result from a high common carp density.

The yellow bass introduction into the Emiquon Preserve has allowed this population to expand rapidly since 2018. The catch per minute rate by electrofishing went up from .49 fish per minute in 2020 to 1.2 fish per minute in 2021 and 1.1 fish per minute in 2022. However in 2023, the catch per minute dropped to .36 fish per minute by electrofishing. And the corresponding catch rate per trap net night went from 26.2 in 2021, to 14.5 in 2022, and then to 12.8 in 2023. The body condition of the yellow bass was also noted by poor condition in 2023 with a  $W_r$  average of 84. It is interesting to note that the yellow bass population appears to be showing a similar decline as noted with the Centrarchidae populations in Emiquon.

The freshwater drum population appears to have established stable populations level since the initial 2018 electrofishing catch rate of .14 fish per minute. In 2023, the freshwater drum catch rate was .24 fish per minute. And the freshwater drum trap net CPUE went from .54 fish per net night in in 2018 to 1.06 fish per net night in 2023.

In 2023, both the Smallmouth and Bigmouth Buffalo populations showed increases in density and recruitment to the Emiquon Preserve. The fall electrofishing survey collected 19 smallmouth buffalo from 12.6 to 28.3 inches in length, and 41 bigmouth buffalo from 12.4 to 28.3 inches in length. The previous 5-year catch rate for electrofishing was .01 fish per minute for smallmouth buffalo and .08 for bigmouth buffalo. In 2023, the catch rate increased to .1 fish per minute for smallmouth buffalo and up to .22 for bigmouth buffalo. Higher population densities of both of these species will contribute to higher turbidity levels and phytoplankton biomass levels.

From a sportfish management perspective, the increase in the yellow bass, buffalo and freshwater drum populations is considered a negative factor for food, habitat and space competition for other more important fish species like bluegill, crappie and young largemouth bass.

**Recommended Lake Management Activities with Rationale for Implementation:**

On 6/25/2020, 45 Alligator Gar at an average length of 380mm and 262 g were stocked into the Emiquon Preserve. They were measured, weighed, and implanted with a PIT tag for future individual identification.

On 8/30/2023, 2000 Alligator Gar at an average length of 13 inches were stocked into the Emiquon Preserve from Jake Wolf Hatchery. 509 of these fish were measured, weighed, and implanted with a PIT tag for future individual identification.

Fish Stocking (2022-2025), Alligator gar stocking of up to 2,000 fish over 10 inches annually as available.

Historical background:

The Illinois Department of Natural Resources, Division of Fisheries established the initial Alligator Gar Reintroduction and Management Plan for Illinois in 2009.

[https://www.ifishillinois.org/programs/alligatorgar\\_news.html](https://www.ifishillinois.org/programs/alligatorgar_news.html)

Alligator Gar (*Atractosteus spatula*) populations have been declining within their historic range for at least the past 50 years, and are considered to be extirpated from much of the northern reaches (Nature Serve 2015). Declines have been attributed to several factors, most notably over-exploitation and loss of important backwater spawning habitats from the construction of levees and lock-and-dams beginning in the early 1900s.

The reasons for reintroducing the Alligator Gar are twofold: Bringing back an extirpated species to Illinois waters is one of the goals. In addition, the Alligator Gar is becoming a popular trophy quarry for anglers and bow fishers in the southern part of their range. From 2010 to 2019, 9,195 alligator gar have been stocked in 10 water bodies in Illinois. These young-of-the-year fish are obtained from the United States Fish and Wildlife Service through their Pvt. John Allen Hatchery in Tupelo, Mississippi. The hatchery personnel at Pvt. John Allen collect brood fish each spring from the lower Mississippi River for this propagation. The USFWS has partnered with 13 states in the historic range of the alligator gar for their management and reintroduction.

The TNC Emiquon Preserve of Thompson and Flagg Lakes provides an opportunity to reintroduce the alligator gar into a large, restored backwater habitat of the Illinois River. This 6,000-acre site is owned by The Nature Conservancy with the goal of

floodplain restoration and the scientific research to guide the management of these ecosystems. The IDNR is one of many partners that is assisting the Nature Conservancy with the management and research at this site. The cooperative fish management agreement between the IDNR and TNC for Emiquon has facilitated the initial fish population rehabilitation, stocking, public fishing access and regulations.

The alligator gar stocked on 8/30/2023, began their journey to Illinois in May of 2023 as fry from the USFWS, Pvt. John Allen Hatchery. These fish were reared in indoor raceways at Jake Wolf Hatchery for 4 months. The fish management and research at Emiquon may allow these fish to contribute to our knowledge on their reintroduction back into Illinois.

Biological Surveys - Conduct annual surveys to measure trends in fishery population dynamics, angling regulations and progress toward management goals. In the fall, utilize by standardized methods, D.C. electrofishing to sample a target number of at least 100 stock-size largemouth bass. In the spring, assess the gar, bowfin, bullhead, black and white crappie, bluegill/sunfish, and channel catfish populations by a trap net survey.

Habitat Enhancement: Achieve desired water level for maximum potential shallow water habitat and submerged, rooted aquatic plants.

Lake Access: Public access to the water bodies on the Emiquon Preserve will be limited to registered boats. Electric trolling motors will be allowed. No gas motors will be allowed on the boats. No bank fishing will be allowed initially. In the future, limited bank fishing sites may be developed. In 2011, a new access for boats was completed with a concrete boat ramp with a gravel parking lot. The development of a boardwalk, canoe access and visitor area was completed in 2011.

The site has initially contained an inviolate refuge from public access. This refuge will attempt to serve as a limited disturbance area for all the wildlife utilizing the Preserve. This refuge will encompass approximately the eastern half of the former Thompson Lake basin, all the former Flag Lake basin and then to the Illinois River levee. This refuge area will be designated with marked buoys and signs. In 2019, more of Thompson Lake was opened to public access. The access time to the water bodies will be sunrise to sunset.

This access will be year-round, except during the Central Zone waterfowl hunting season. During the Central Zone waterfowl

hunting season, no water access will be allowed on hunting days. TNC currently anticipates waterfowl hunting will be allowed 3 days a week, thereby allowing fishing access 4 days a week. Ice fishing will be allowed when practical on the entire lake basin.

Fishing tournaments will need prior approval from TNC and the IDNR District Fisheries Biologist.

Water Level:

The major goals associated with water levels are to create a more natural hydrology and to provide shallow-water habitat over a relatively high proportion of the site. A more natural hydrograph will in general have higher water levels (for example 435 ft msl) in spring and lower and stable water levels (e.g., 428-430 ft msl) during the growing season, with a significant drawdown (e.g., 425 ft msl) every 5 to 10 years. Shallow water habitats (0-3 feet deep) are maximized over the area at water surface elevations from 430-432 feet above mean sea level, so such levels will be targeted for the growing season.

In the future, the Conservancy anticipates added water level management capabilities. Potential options include being able to manage the level by gravity flow into the Illinois River when river levels allow, new pump station, and a managed connection with the Illinois River.

Creel Survey: A future creel survey would provide valuable information. An INHS creel survey was completed in 2009. The creel survey summary showed largemouth bass dominated the catch in 2009 for 91% of the total catch with 80.6% anglers targeting largemouth bass. Crappie species were the target species for almost 8% of the anglers while 6% of the anglers targeted bluegill. Largemouth bass comprised 97% of total pounds caught of all species in Emiquon. An estimated 124,648 bass were caught and only 40 were harvested in 2009. The catch rate was 3.5 fish per hour per angler. The total pounds caught was 137,707 for an average weight of 1.10 pounds each.

Bluegill were the most harvested species with 59% of number harvested and 44% total harvested pounds. Bluegill comprised 6% of total fish caught. An estimated 8,110 bluegill were caught and 3,455 were harvested in 2009. The catch rate was .10 fish per hour per angler. The total pounds caught was 1,773 for an average weight of .22 pounds each.

An estimated 2,770 black crappie were caught and 1,583 were harvested in 2009. The catch rate was .07 fish per hour per angler. The total pounds caught was 1,879 for an average weight of .68 pounds each.



An estimated 1,327 pumpkinseed sunfish were caught and 803 were harvested in 2009. The catch rate was .02 fish per hour per angler. The total pounds caught was 358 for an average weight of .27 pounds each.

An estimate of 18657 angler hours were spent at Emiquon in 2009. The estimated harvest was 5881 fish at 2789 total pounds for all the species. Total numbers of fish harvested amounted to only 4% of total catch for the season.

The average angler time spent per trip was 4.3 hours.  
The average angler party size was 2 people.  
The average miles traveled per angler was 43.6 miles.  
The success rating (1-10) given by anglers for their trip was 7.6.

Contaminate Sampling: Fish flesh, composite, contaminate samples were collected for black bullhead, bluegill, black crappie and largemouth bass from Thompson Lake in May and June of 2009. The fish collected were from size ranges that represented fish reproduction from within Thompson Lake. The results for black bullhead and bluegill were received back from the IEPA lab in October of 2010. The contaminate levels from these samples for pesticides and PCBs were all below the level of concern. However the Mercury level was elevated in largemouth bass(.21 mg/kg) and black crappie(.25 mg/kg). The largemouth bass sample averaged 245mm and 187g in size. The black crappie sample averaged 227mm and 200g in size.

In 2011, fish flesh samples were collected by the IDNR for common carp, largemouth bass, black crappie, bluegill, and black bullhead to assess the contaminate levels. The contaminate levels from these samples for pesticides and PCBs were all below the level of concern. However the Mercury level was elevated in black crappie(.18 mg/kg) and black bullhead(.076 mg/kg). The black crappie sample averaged 208mm and 154g in size. The black bullhead sample averaged 386mm and 940g in size.

And in 2015, fish flesh samples were collected by the IDNR for 2 sizes of largemouth bass, 2 sizes of bluegill, 2 sizes of black crappie and 2 sizes of carp to assess the Mercury levels. The Mercury level was elevated in largemouth bass, black crappie and common carp. The largemouth bass average sample size group of 290mm and 339g had a mercury level of .14 mg/kg. The largemouth bass average sample size group of 410mm and 907g had a mercury level of .38 mg/kg. The black crappie average sample size group of 269mm and 324g had a mercury level of .12 mg/kg. The black crappie average sample size group of 304mm and 430g had a

mercury level of .084 mg/kg. The bluegill average sample size group of 142mm and 60g had a mercury level of .022 mg/kg. The bluegill average sample size group of 164mm and 103g had a mercury level of .044 mg/kg. The common carp average sample size group of 491mm and 1699g had a mercury level of .060 mg/kg. The common carp average sample size group of 651mm and 4038g had a mercury level of .073 mg/kg.

And in 2016, fish flesh samples were collected from largemouth bass, bluegill, black crappie and carp. The Mercury level was elevated in largemouth bass, black crappie, common carp and bluegill. The largemouth bass average sample size group of 437mm and 1083g had a mercury level of .31 mg/kg. The black crappie average sample size group of 272mm and 308g had a mercury level of .059 mg/kg. The bluegill average sample size group of 177mm and 111g had a mercury level of .07 mg/kg. The common carp average sample size group of 611mm and 3032g had a mercury level of .04 mg/kg.

In 2017, fish flesh samples were collected from two sizes of brown bullheads. The Mercury level was slightly elevated in both. The brown bullhead sample size group of 366mm and 831g had a mercury level of .012 ug/g. The brown bullhead average sample size group of 415mm and 1138g had a mercury level of .016 ug/g.

From these results consumption advisories were issued for largemouth bass and black crappie from the Emiquon Preserve. The following is the mercury advisory ranges and description: (.06-.22 mg/kg)- 1 meal per week advisory for sensitive human populations, (.23-1.0 mg/kg)- 1 meal per month advisory for sensitive human populations.

The current Emiquon Preserve mercury levels put black crappie in the 1 meal per week advisory category. The largemouth bass will be in the 1 meal per month category due to the current 18 inch minimum harvest size regulation and mercury level for largemouth bass over 16 inches in length.

On 10/13 and 10/30/2020 contaminate fish flesh samples were collected for 1 size of silver carp, grass carp, bowfin, and 2 sizes of common carp and bigmouth buffalo. The results for mercury came back as .011 mg/kg for silver carp, .005 mg/kg for grass carp, .15 mg/kg for bowfin, .030 and .057 mg/kg for the 2 sizes of common carp, and .028 and .051 mg/kg for the 2 sizes of bigmouth buffalo.

From these results, only the bowfin fall into a mercury consumption advisory range of 1 meal per week for sensitive human populations (.06-.22 mg/kg).

On 4/6 and 4/7/2021 contaminate fish flesh samples were collected on 2 size groups of channel catfish and 1 size group of brown bullhead. The result for the larger channel catfish group that averaged 699mm came back at .049 mg/kg for mercury. This puts them below the advisory range for human consumption.

On April 3, 2012 flesh samples were collected for largemouth bass, black crappie, gizzard shad and bluegill for Viral Hemorrhagic Septicemia (VHS) virus and pathogen testing with Southern Illinois University. No VHS was identified, but Largemouth bass virus (LMBV) was observed in 1 sample and was confirmed using PCR. LMBV is a known pathogen in largemouth bass populations in Illinois and has caused no detectable impacts to Illinois populations.

In April 2014, 2015, 2016, and 2018 flesh samples were again collected for VHS and pathogen testing. NO VHS was identified from these samples for fish in the Emiquon Preserve.

Commercial Fishing: In 2019, The Nature Conservancy requested the ability of contracting with a commercial fisherman for the targeted removal of common carp and the Asian carp now present in the Emiquon Preserve. The IDNR commercial fishing permits and paperwork were completed in time for a late start in 2019.

Commercial fishing contracts were also allowed for 2020-2023.

The Nature Conservancy and the INHS will coordinate and document the removal effort by the contracted commercial fisherman.

**Fish Stocking in 2007 IDNR**

<u>Largemouth Bass:</u>	<b>Total:</b> 667 brood fish and 1,237,494 fry.
<u>White Crappie:</u>	150 brood fish
<u>Black Crappie:</u>	4,320 brood fish
<u>Bluegill:</u>	1,419 brood fish
<u>Bowfin:</u>	41 brood fish
<u>Spotted Gar:</u>	25 brood fish
<u>Channel Catfish:</u>	103 brood fish
<u>Brown Bullhead:</u>	30 brood fish
<u>Warmouth:</u>	71 brood fish
<u>Orangespotted Sunfish:</u>	311 brood fish
<u>Pumpkinseed Sunfish:</u>	300 brood fish
<u>Golden Shiner:</u>	65 brood fish
<u>Brook Silverside:</u>	600 brood fish
<u>Blackstripe Topminnow:</u>	156 brood fish
<u>Tadpole Madtom:</u>	13 brood fish
<u>Walleye:</u>	410,000 fry
<u>Mud darter (<i>Etheostoma asprigine</i>):</u>	50 fish
<u>Logperch (<i>Percina caprodes</i>):</u>	25 fish
<u>Blackside darter (<i>Percina maculata</i>):</u>	5 fish
<u>Spottail Shiner (<i>Notropis hudsonius</i>):</u>	8 fish
Starhead topminnow	107 fish
Central mudminnow	105 fish
Lake chubsucker	61 fish
Pirate Perch	25 fish

<b><u>Fish Stocking in 2008 IDNR</u></b>	<b><u>Total:</u></b>
<b><u>Spotted Gar:</u></b>	31 brood fish
<b><u>Longnose Gar:</u></b>	14 brood fish
<b><u>Orangespotted Sunfish:</u></b>	511 brood fish
<b><u>Brown Bullhead:</u></b>	22 brood fish
<b><u>Tadpole Madtom:</u></b>	34 brood fish
<b><u>Central Mudminnow:</u></b>	108 brood fish
<b><u>Blackstripe Topminnow:</u></b>	212 brood fish
<b><u>Emerald Shiner:</u></b>	150 brood fish
<b><u>Mud Darter:</u></b>	5 brood fish
<b><u>Golden Shiner:</u></b>	45 brood fish
<b><u>Warmouth Sunfish:</u></b>	8 brood fish
<b><u>Lake Chubsucker:</u></b>	217 brood fish
<b><u>Pirate Perch:</u></b>	84 brood fish
<b><u>Black Crappie:</u></b>	6 brood fish
<b><u>White Crappie:</u></b>	1 brood fish
<b><u>Sauger:</u></b>	20 brood fish
<b><u>Channel Catfish:</u></b>	3 brood fish
<b><u>Grass Pike:</u></b>	146 brood fish
<b><u>Bluegill:</u></b>	803 brood fish
<b><u>Starhead Topminnow:</u></b>	4942 brood fish
<b><u>Logperch:</u></b>	60 brood fish
<b><u>Johnny Darter:</u></b>	25 brood fish
<b><u>Slenderhead Darter:</u></b>	4 brood fish

<b><u>Fish Stocking in 2009 IDNR</u></b>	<b><u>Total:</u></b>
<b>Brown Bullhead</b>	<b>76 brood fish</b>

<b><u>Fish Stocking in 2010 IDNR</u></b>	<b><u>Total:</u></b>
<b>Flathead Catfish</b>	<b>3 YOY and 123 over 200mm 126</b>
<b>Sauger</b>	<b>3 Brood</b>
<b>Redspotted Sunfish</b>	<b>6847 YOY and brood</b>
<b>(Lepomis miniatus)</b>	

<b><u>Fish Stocking in 2011 IDNR</u></b>	<b><u>Total:</u></b>
<b>Redspotted Sunfish</b>	<b>206 YOY and brood</b>

**No Fish Stocking in 2012 to 2019 by IDNR**

<b><u>Fish Stocking in 2020 IDNR</u></b>	<b><u>Total:</u></b>
<b>Alligator gar</b>	<b>45 at 380mm average</b>

<b><u>Fish Stocking in 2023 IDNR</u></b>	<b><u>Total:</u></b>
<b>Alligator gar</b>	<b>2,000 at 330mm average</b>
<b>Other fish species sampled since 2007 rehabilitation:</b>	
<b>Common carp</b>	<b>Bigmouth Buffalo</b>
<b>Gizzard shad</b>	<b>Smallmouth Buffalo</b>
<b>Black bullhead</b>	<b>Black Buffalo</b>
<b>Yellow bullhead</b>	<b>Freshwater Drum</b>
<b>Green sunfish</b>	<b>White Bass</b>
<b>Goldfish</b>	<b>Silver Carp</b>
<b>Mosquito fish</b>	<b>Yellow Bass</b>
<b>Redear sunfish</b>	<b>White Perch</b>
<b>Shortnose gar</b>	<b>Grass Carp</b>
<b>Hybrid Striped Bass</b>	<b>Bighead Carp</b>