DEPARTMENT OF NATURAL RESOURCES

FISHERIES LAKE MANAGEMENT PLAN

LAKE NAME (DOW):	REGION:	AREA:	COUNTY:	ACRES (surface | littoral):	CLASS:
Stony (11-0371-00)	NW	Walker	Cass	**Total 563 Littoral 179**	**23**

Information Tier:	Lake Priority Rank:	Next Plan Revision: 2033

Revisions: ☐ Initial Plan | ☒ Species | ☒ Goals/Objectives | ☒ Stocking | ☐ Survey | ☐ Other:

Primary Species:	Secondary Species:
Walleye, Smallmouth Bass	**Black Crappie, Largemouth Bass, Northern Pike, Yellow Perch**

Management Goals:

- Maintain a modest Walleye fishery that provides angling opportunity for harvestable fish.
- Reduce high-density Northern Pike population.
- Preserve self-sustaining populations of Black Crappie, Bluegill, Largemouth Bass, Smallmouth Bass.
- Increase Yellow Perch abundance, providing increased forage for game-fish species.
- Preserve aquatic health through the protection of riparian habitats and risk mitigation to reduce the spread of aquatic invasive species (AIS).

Management Objectives:

- Walleye: Gill net catch rate of 3 to 5 fish/net.
- Smallmouth Bass: Spring electrofishing catch rate of 15 to 40 fish/hour, PSD > 70, RSD-P > 30, RSD-M > 10.
- Black Crappie: Gill net catch rate of 1 to 3 fish/net, PSD > 50, RSD-P > 20.
- Largemouth Bass: Spring electrofishing catch rate of 20 to 40 fish/hour, PSD > 50, RSD-P > 30.
- Northern Pike: Gill net catch rate ≤ 12 fish/net, PSD > 30, RSD-P > 5.
- Yellow Perch: Gill net catch rate ≥ 10 fish/net.
- Protect/restore desirable aquatic and riparian habitats (e.g., water quality, aquatic and riparian vegetation, and shoreline substrate) where appropriate.
- Reduce risk of spreading AIS through public outreach.

Operational Plan Summary:

- Base stocking: Stock Walleye fry at a rate of 1,000 fry/littoral acre (LA) (179,000 fry) during even-numbered years.
- Stocking contingency: None.
- Regulation(s): None.
- Surveys: Standard surveys conducted in 2026, 2029, 2032. Largemouth and Smallmouth bass electrofishing surveys conducted in 2026 and 2032.
- Evaluation(s): Continue evaluating Walleye stocking strategies and bass population response to regulation discontinuation.
- Habitat: Identify critical habitat in need of protection and/or restoration and pursue as appropriate.
- Next plan revision: 2034

Additional Jurisdictions and Tribal Partners:

APPROVALS

Area Fisheries Supervisor (e-signature):

LAKE NAME (DOW):	REGION:	AREA:	COUNTY:	ACRES (surface | littoral):	CLASS:
Stony (11-0371-00)	NW	Walker	Cass	**Total 563 Littoral 179**	**23**
Regional Fisheries Manager (e-signature):					

Description of lake

Stony Lake is a 563-acre, class 23 lake located east of Hackensack, MN. Stony Lake is a hardwater, mesotrophic lake with a mean trophic state index (TSI) score of 37 and a mean Secchi depth of 19.7 feet. The lake includes 179 littoral acres (LA), 6.58 miles of shoreline, and a maximum depth of 50 feet. A MNDNR owned public access is located on the south shore. Water levels have varied a total of 1.0 foot since 1952 (Figure 1).

Description of fish community

Stony Lake possesses warmwater and coolwater fish communities and is managed primarily for Walleye and Smallmouth Bass and secondarily for Black Crappie, Largemouth Bass, Northern Pike, and Yellow Perch. Additional species sampled in Stony Lake include Black Bullhead, Bluegill, Brown Bullhead, Hybrid Sunfish, Pumpkinseed, Rock Bass, Yellow Bullhead, White Sucker, Banded Killifish, Blackchin Shiner, Blacknose Shiner, Bluntnose minnow, Central Mudminnow, Golden Shiner, Johnny Darter, Mimic Shiner, and Tadpole Madtom.

Management history

Stocking

Various fish species were stocked in Stony Lake prior to 1947. From 1947 to 1971, fish stockings included Northern Pike (1962, 1968, 1970, 1971), Walleye fingerlings (1947, 1951, 1956, 1962, 1965, and 1967), and Largemouth Bass (1948 and 1971). Walleye fry stocking by the MNDNR occurred from 1973, 1982-84, and 1987 at a rate of 2,800 fry per littoral acre (LA). Walleye fingerlings were stocked by the MNDNR annually from 1990 to 1993 at a rate of 0.3 lbs./LA. Walleye stocking was discontinued after 1993 in response to evidence of adequate natural reproduction. Private Walleye fingerling stockings occurred in 2007 and 2008 at rates of 0.8 lbs./LA and 1.1 lbs./LA, respectively. Minnesota DNR Walleye fingerling stockings have occurred from 2014 to 2022 during even-numbered years at a target rate of 1.0 lbs./LA (172 - 206 lbs.).

Walleye Stocking Evaluation

A stocking evaluation workbook (WAESTOCK 2017V8) was used to evaluate effects of stocking activities on the Walleye population. Gill net assessments were used to evaluate stocking effects on recruitment using age-specific gill net catch rates (ages 1-6). Effective stocking translates to stronger year classes produced during stocked years, which in turn should increase overall abundance and result in increased catch and harvest of Walleye by anglers. The return of fish to anglers is the overall goal of any stocking program for a recreational fishery.

The evaluation of Stony Lake Walleye stocking used data from eight assessments conducted from 1989 to 2023 and stocking records from 1983 to 2022. Since fingerling stocking was implemented, three standard surveys have been completed on Stony Lake (2018, 2021, and 2023). Walleye catch per unit effort (CPUE) has remained below the management goal (3 to 5 fish/net) across all three surveys. Nearly all Walleye sampled in gill nets corresponded only

with stocked year classes. Fingerling-stocked year classes were not more abundant than those observed in the historical context from natural reproduction (1994 to 2006). Gill net CPUE declined from a mean of 10.3 (1994 to 2006) to 2.3 (2014 to 2022) fish per net. The declining trend in the relative strength of fingerling stocked year classes, in combination with the reduced contribution of naturally produced fish during non-stocked years persisting to older ages, resulted in an overall decline in recruitment. The absence of naturally produced fish after fingerling stocking was implemented suggests the possibility of competition (density-dependent effects) among cohorts for limited forage. Concurrently, abundance of Yellow Perch in gill nets has been consistently low with increases in CPUE of Northern Pike since 2013. Given these observations, fingerling stocking will be discontinued in favor of fry stockings at a rate of 1,000 fry/LA in 2024. Fry stockings may more closely emulate the success of naturally produced year-classes and slightly negate predation from Northern Pike (Figures 2-7).

Special and Experimental Regulations

A 12-20" protected slot limit (PSL), possession limit of 6 fish, one over 20" allowed in possession was implemented on Largemouth Bass in 2004 and discontinued in 2014.

Surveys and Evaluations Completed

Initial Survey: 1952
Re-survey: 1973, 1984, 1999
Creel Survey: 1988 (Gustafson 1989), 2000 (Cook and Trenholm 2001), 2011 (Shavlik 2012)
Population Assessments: 1989, 1994, 2005, 2008, 2013
Targeted Survey YOY Walleye: 1990, 1994, 1997, 2003, 2014, 2015, 2017
Targeted Survey EF Largemouth Bass: 1994, 2001-2010, 2012, 2013, 2018, 2021
Targeted Survey EF Smallmouth Bass: 2006, 2008, 2010, 2012, 2013, 2016, 2018, 2021
Index of Biotic Integrity (IBI): 2021
Standard Survey: 2018, 2021, 2023

Managed Fish Species – Status and Trends

Walleye: Gill net CPUE has ranged from 1.7 to 11.2 fish/net but has remained below management goals since 2018 (Figure 8). Growth approximates the Walker Area lakes age-4 mean of 15.98 inches (Figure 9). Further details regarding management can be found in the "*Walleye Stocking Evaluation*" section.

Smallmouth Bass: Smallmouth Bass were first sampled in 2006. Since then, seven electrofishing surveys have been completed and CPUE has ranged from 2.1 to 48.3 fish/hour (Figure 10). PSD goals have been met or exceeded in every survey since 2016 (Figure 11). Growth initially exceeded the Walker Area lakes age-4 mean of 12.24 however, has continued to slow since 2008 (Figure 12). Anecdotal evidence indicates Smallmouth Bass had been infrequently observed in the lake as far back as the 1960s.

Northern Pike: Gill net CPUE has ranged from 1.1 to 24.0 fish/net but have remained over 9.0 pike/net since 1999 (Figure 13). The population is dominated by small pike with few fish exceeding 25 inches in historic surveys (Figure 14). PSD goals have been met in only three surveys (Figure 15).

Yellow Perch: Gill net CPUE has ranged from 1.4 to 50.4 fish/net but, has remained below long-range management goals since 2005. CPUE has declined considerably since 1999 with increasing Northern Pike abundance, and Walleye fingerling stockings likely explanations (Figure 16). Yellow Perch growth has continued to decline Since 2008 (Figure 17).

Black crappie: Gill net CPUE has ranged from 0.2 to 9.3 fish/net (Figure 18). Proportional stock density (PSD) and relative stock density-preferred (RSD-P) goals have been met in every survey since 1984 (Figure 19), and growth has approximated or exceeded the Walker Area lakes age-4 mean of 8.36 inches since 1984 (Figure 20).

Largemouth Bass: Fourteen electrofishing surveys targeting Largemouth Bass have been completed since 1994 with CPUE varying from 16.0 to 92.3 fish/hour (Figure 24). PSD goals have been met or exceeded in every survey except 2005. (Figure 25). Growth has approximated or exceeded the Walker Area lakes age-4 mean of 10.85 inches in all surveys (Figure 26).

Other Projects

A targeted survey of nearshore fish species in Stony Lake was conducted on July 2nd, 2018, by Walker Area Fisheries Staff. Data collected during this nearshore survey were combined with trap net and gill net data to calculate a Fish-based Index of Biological Integrity (FIBI) score for the lake.

The FIBI Tool-2 was used for scoring and resulted in an FIBI score of 58, which is above both the impairment threshold (45) but below the exceptional threshold (64) for this tool. A total of 18 species were sampled including six species that are intolerant of disturbance (Blackchin Shiner, Blacknose Shiner, Banded Killifish, Mimic Shiner, Rock Bass, and Smallmouth Bass).

Data from this survey will contribute biological information about the health of the fish community to the Leech Lake River Watershed assessment process in coordination with MN Pollution Control Agency. These data are also used to help inform watershed protection strategies.

Social Aspects

General Information

The previous Largemouth Bass regulation was reviewed in 2013 for potential modification or discontinuation in 2014. Given the success observed with the Largemouth Bass regulation, the Walker Fisheries office proposed modifying the 12-20” PSL to a 14-20” PSL and including Smallmouth Bass, as this population had become established with good size quality. Concerns about the regulation were expressed from property owners, who hypothesized that bass were consuming or competing with young Walleye and thus adversely impacting the Walleye population. A diet study completed on ten lakes in Minnesota found that Largemouth Bass and Walleye diets were significantly different from each other. Conversely, the diets of Northern Pike and Walleye overlapped considerably and both largely consumed Yellow Perch (Glade et al. 2022). A Wisconsin study indicated that Largemouth Bass predation is not a primary factor affecting Walleye abundance (Kelling et al 2016). Declines in Walleye recruitment did occur shortly after the bass regulation was implemented however, competition for Yellow Perch with the high-density Northern Pike population likely drove this change.

Fishing Pressure and Other Recreational Use

Summer fishing pressure was estimated on a number of area lakes using aerial boat counts in 1999-2000 and average trip length and angler/boat statistics reported in the literature (Cook and Trenholm 2001); there was no creel survey accompanying this effort.

Roving summer creel surveys were completed in 1988 (Gustafson 1989) and 2011 (Shavlik 2012). Respectively, fishing pressure on Stony Lake decreased from 29.45 hours/acre to 13.96 hour/acre. Walleye harvest observed in the creel increased from zero observed in 1988 to 0.10 fish/acre in 2011, but it was noted in the 1988 creel survey that all sampling occurred during daylight hours and the lake was known as a night fishery. In 2011, 29% of anglers targeted bass, whereas 32% of anglers targeted Walleye. Lake residents and resort guests tended to target bass, Walleye, Northern Pike, and Black Crappie most frequently, whereas anglers using the public access tended to target bass, Walleye, and Northern Pike. Overall, Walleye (32%), bass (25%), and Northern Pike (22%) were the most commonly sought species, while harvest was dominated by Sunfish, Northern Pike, and Black Crappie (Shavlik 2012).

Public Input

The Stony Lake Association holds an active interest in the management of the lake's fishery with a particular interest in Walleye management. The Stony Lake Association purchased Walleye fingerlings from a private vendor in 2007 and 2008.

An open comment period in the summer of 2013 with a public input meeting held in Walker on September 25, 2013 to discuss modifications to the bass regulation. Approximately 110 comments were received, several of which were repeat comments from multiple individuals. Of these initial comments, 103 were reviewed and considered for the decision to maintain, modify, or remove the 12-20" PSL on the Stony Lake Largemouth Bass population. A total of 76 comments were received by telephone, email, mail, or walk-in, and an additional 27 comments were received at the public input meeting. A total of nine comments were ambiguous (not specific to a regulation change), while two comments supported alternative regulations (14-20" PSL on LMB only; 20" minimum length limit on all bass). Of the remaining comments, 87 supported reverting to the Statewide regulation entirely, none supported continuing the 12-20" PSL, and five supported modifying the regulation to a 14-20" PSL and including Smallmouth Bass in addition to Largemouth Bass. It should be noted that the distribution of comments received was heavily skewed (approximately 95%) by the lake association and other property owners around the lake. The regulation was discontinued for the 2014 angling season.

Limiting Factors

Habitat

Expansive shoreline development alters a lake's water quality and fish habitat by increasing surface runoff as well as through the removal of aquatic vegetation. Shoreline development on Stony Lake has more than doubled over the survey history.

Water Quality

Trend analysis has been performed annually from 1994 to 2023 with an increasing trend in clarity beginning in 2008 (MN Pollution Control Agency Lakes and Streams Web 2022).

Fish Community

A low forage base of Yellow Perch coupled with competition and/or predation by Northern Pike is likely affecting Walleye recruitment.

Invasive Species

No AIS have been reported in Stony Lake.

Climate Change

Climate change will bring increased air temperatures, with larger increases in the winter months (MDH 2014). As a result, the duration of winter ice will be shorter. Periods of extreme heat are likely to be more frequent and severe (Wadsworth 2009; MDH 2014). Waters will be exposed to higher temperatures, for longer periods, increasing surface water losses to evaporation. Lakes will stratify earlier and stay stratified longer. Surface waters will warm more quickly, reach higher temperatures, and stay warmer longer into the fall, improving conditions for warmwater fish species like Largemouth Bass, Smallmouth Bass, and Sunfish. Hypolimnetic waters will be subjected to longer periods of oxygen depletion during stratified periods, reducing habitat availability for coldwater species like Burbot. (Gunn et al. 2004).

Rationale for Management Species Selection, Goals, and Objectives

Primary and Secondary Management Species

Stony Lake is moderately productive but supports a low-density forage base relative to historic surveys and other similarly classified lakes. The lake's primary management species are Walleye and Smallmouth Bass, and the secondary management species are Black Crappie, Largemouth Bass, Northern Pike, and Yellow Perch.

Goals and Objectives

Primary Management Species

Walleye: Gill net catch rate 3.0 to 5.0 fish/net. The catch rate objective was reduced from 6.0 fish/net to better reflect the long-term median (3.8 fish/net). Based on the stocking history and CPUE data it is believed that changing from fingerling to fry stocking holds the potential to increase Walleye recruitment.

Smallmouth Bass: Spring electrofishing catch rate of 15 to 40 fish/hour, PSD > 70, RSD-P > 30, RSD-M > 10.

Secondary Management Species

Black Crappie: Gill net catch rate of 1 to 3 fish/net, PSD > 50, RSD-P > 20.

Largemouth Bass: Spring electrofishing catch rate of 20 to 40 fish/hour, PSD > 50, RSD-P > 30.

Northern Pike: Gill net catch rate ≤ 12.0 fish/net, PSD > 30, RSD-P > 5.

Yellow Perch: Gill net catch rate ≥ 10 fish/net.

Operational Plan Detail

Stocking

Stock Walleye fry (MIS strain) biennially, at 1,000/LA (179,000 fry) during even years beginning in 2024.

Habitat Development and Protection

As of 2023, 155 lots containing homes or cabins were developed on the lake, in addition to two resorts. Stoney Lake is in the Leech Lake River major watershed (1,335 mi^2) and the Boy River Sub-watershed (232 mi^2). The Leech Lake River Watershed is primarily forested, contains numerous wetlands, over 750 lakes, and approximately 277 miles of streams and rivers. (MPCA 2016). The sub-watershed encompasses Ten Mile Lake, Pleasant Lake, Webb Lake, Child Lake, Woman Lake, and Girl Lake. Land use is primarily forest (45.8%) followed by open water (34.1%), Wetland (16.4%), developed

land (1.6%), rangeland (1.8%), and cropland (0.3%). https://www.pca.state.mn.us/sites/default/files/wq-ws3-07010102.pdf (Figure 27).

Acquisition

Acquisition of the remaining undeveloped shoreline is unlikely. Easements to protect relatively natural sections of the lakeshore should be explored when possible if landowners are willing.

Outreach

Provide information and advice to lakeshore residents on Walleye stocking strategy, restoring native vegetation, stabilizing shorelines, and reducing the risk of AIS introduction.

Surveys and Evaluation

Standard surveys will continue every three years (2026, 2029, 2032) on Stony Lake to evaluate Walleye fry stocking and collect data on primary and secondary management species to evaluate management goals. Spring electrofishing surveys will be completed every six years to collect management data on Largemouth and Smallmouth bass (2026, 2032).

Northern Pike

- Measure (TL) and weight, collect cleithra and scales and record sex/maturity from all fish sampled in gill nets. Fish will not be aged but structures will be archived.

Walleye

- Measure (TL) and weight, collect otoliths and scales and record sex/maturity from all fish sampled in gill nets.

Black Crappie

- Measure (TL) and weight, determine sex/maturity, collect and record otoliths and scales from summer trap netting and from gill net mortalities, up to 5 fish per 10 mm length group, and 10 fish per 25mm length group greater than 300mm.

Bluegill

- Measure (TL) and weight, determine sex/maturity, collect and record otoliths and scales from summer trap netting and from gill net mortalities, up to 5 fish per 10 mm length group.

Largemouth Bass

- Measure (TL) and weight, collect otoliths/scales from 5 fish per 10 mm length group, and 10 fish per 25mm length group greater than 300mm, determine sex/maturity from gill net mortalities.

Smallmouth Bass

- Measure (TL) and weight, collect otoliths/scales from 5 fish per 10 mm length group, and 10 fish per 25mm length group greater than 300mm, determine sex/maturity from gill net mortalities.

Yellow Perch

- Measure (TL) and weight, collect/record otoliths, scales, and sex/maturity from a minimum of 10 representative fish per mesh per net up to a maximum total sample size of 100 fish from gill nets

Previous Management Plans (A = amendment; MP = management plan revision; R = regulation):

2014: MP. Stock Walleye fingerlings (MIS strain) biennially, at 1.0 lbs./LA during even numbered years (179 lbs.). Maintain a Walleye gill net catch rate ≥ 6.0 fish/net. Revert to statewide regulation for Largemouth Bass in 2014.

2010: MP. Continue with the 12-20” PSL for Largemouth Bass and spring electrofishing targeting Black Bass to evaluate regulation effectiveness. No stockings planned as the Walleye population had demonstrated excellent natural reproduction at the time of the most recent survey.

1998: MP. Operational plan included proposing a creel survey, identifying Walleye spawning areas, fall electrofishing for young-of-year Walleye, and determining means to reduce Northern Pike recruitment. An abundant Centrarchid population was noted. No Walleye stocking was planned due to excellent natural reproduction that was occurring.

1991: MP. Walleye recruitment was assessed and stocked year classes were not making significant contributions to the population relative to non-stocked year classes. Walleye stocking was discontinued except for fingerlings from the Stony Lake Association's co-op rearing pond, and fall electrofishing for age-0 Walleye was proposed. Spring electrofishing for Largemouth Bass and Black Crappie were identified as survey needs.

1985: MP. Walleye fry stocking was proposed, with a mid-range objective of determining contribution of stocked and non-stocked year classes to the catch. Other plans included identifying means to reduce Northern Pike recruitment and considering liberal bag limits for Northern Pike and Sunfish.

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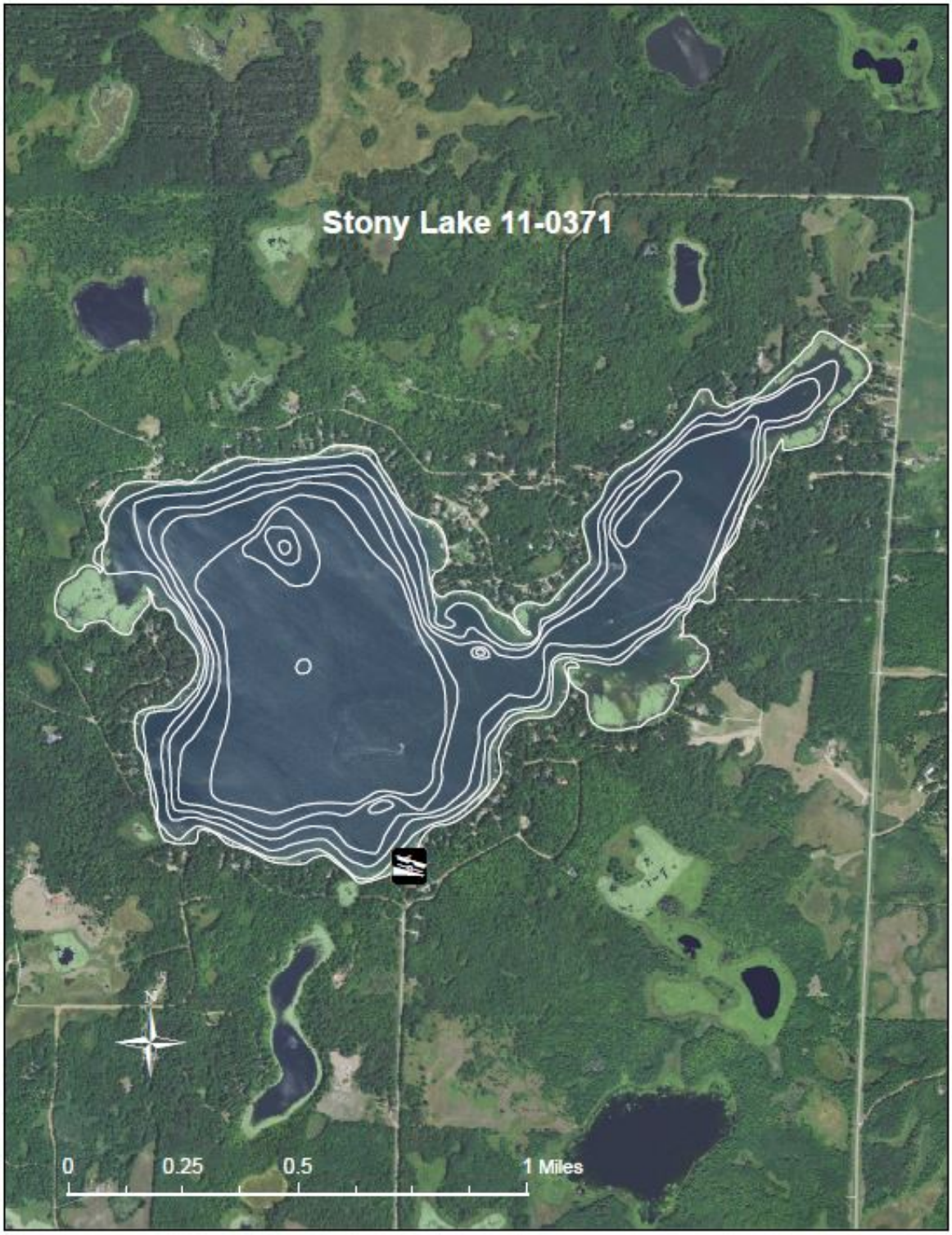

Figure 1. Stony Lake (DOW # 11-0371) bathymetry in Cass County, Minnesota.

Stocking History

Lake/DOW Stony 11-0371-00 LA 179 SA 576 Lake Class 23

	Age Corrected GN CPUE for Year Class Survey Year									Avg CPE	Stocking History By Year-class**		Stocking History by Year Stocked Fingerling/Yearling/Adults		Stocking History by Year for Fry	Notes	
	1989	1994	1999	2005	2008	2013	2018	2023			Pounds	Rate	Pounds	Rate	Number	Type**	Comment
1983	2.8									2.8					500,000	FRY	
1984	1.0									1.0					500,000	FRY	
1985	0.5									0.5							
1986	0.5									0.5							
1987	0.3									0.3					500,000	FRY	
1988	0.0	3.2								1.6							
1989		1.2								1.2							
1990		1.1								1.1	31	13.1	31	13.10		F	
1991		3.1								3.1	54	12.0	54	12.00		F	
1992		4.1								4.1	49	27.0	49	27.00		F	
1993		1.5	0.4							0.9	12	14.3	12	14.25		F	
1994			1.4							1.4							
1995			3.5							3.5							
1996			2.6							2.6							
1997			2.8							2.8							
1998			0.7							0.7							
1999				2.8						2.8							
2000				0.5						0.5							
2001				5.6						5.6							
2002				4.3	2.4					3.4							
2003				1.8	1.0					1.4							
2004				0.2	2.5					1.4							
2005					2.0					2.0							
2006					5.4					5.4							
2007					0.8	2.8				1.8	205	20.0	205	20.0		F	
2008						2.1				2.1	134	29.9	134	29.9		F	
2009						1.0				1.0							
2010						0.4				0.4							
2011						1.3				1.3							
2012						1.0	0.7			0.9							
2013							0.5			0.5							
2014							1.1			1.1	206	15.2	206	15.2		F	
2015							0.6			0.6							
2016							0.4			0.4	179	25.5	179	25.5		F	
2017							0.0	0.0		0.0							
2018								0.0		0.0	172	16.5	172	16.5		F	
2019								0.0		0.0							
2020								0.0		0.0	180	23.0	180	23.0		Y	
2021								0.0		0.0							
2022								0.0		0.0	179	32.0	179	32.0		F	
2023																	
2024																	

Figure 2. Stony Lake (11-0371), Walleye stocking history 1983-2022.

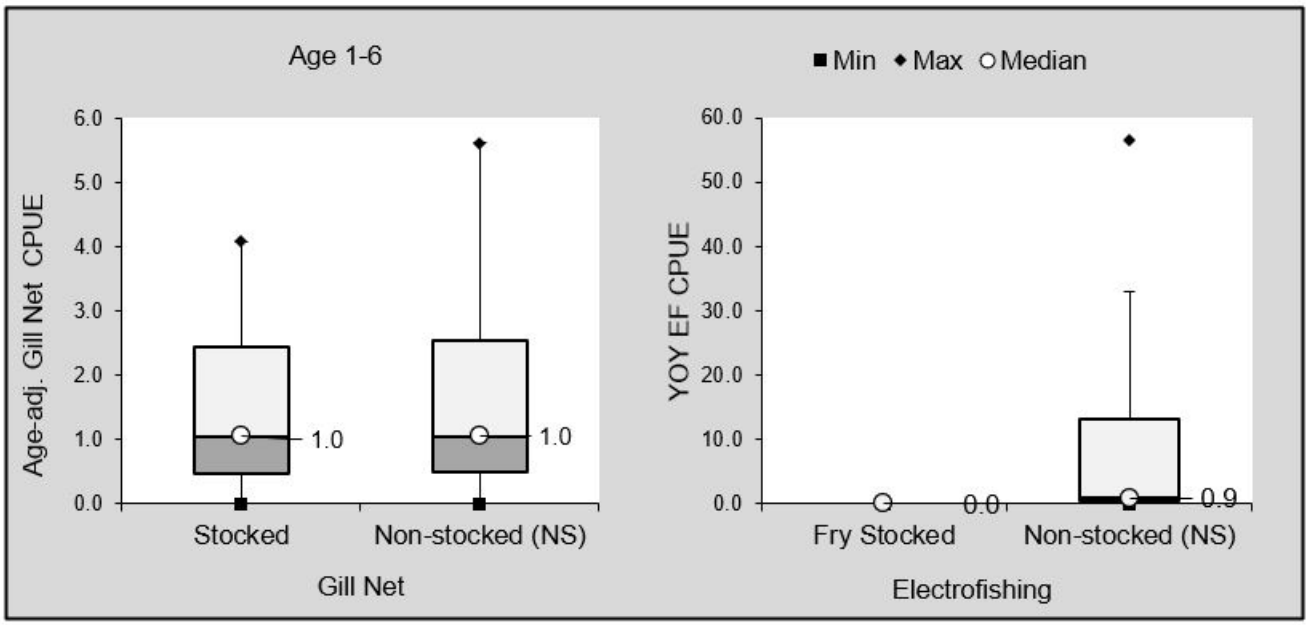

Figure 3. Year-class specific gill net catch rates for Walleye age-1 to age-6, Stony Lake (11-0371).

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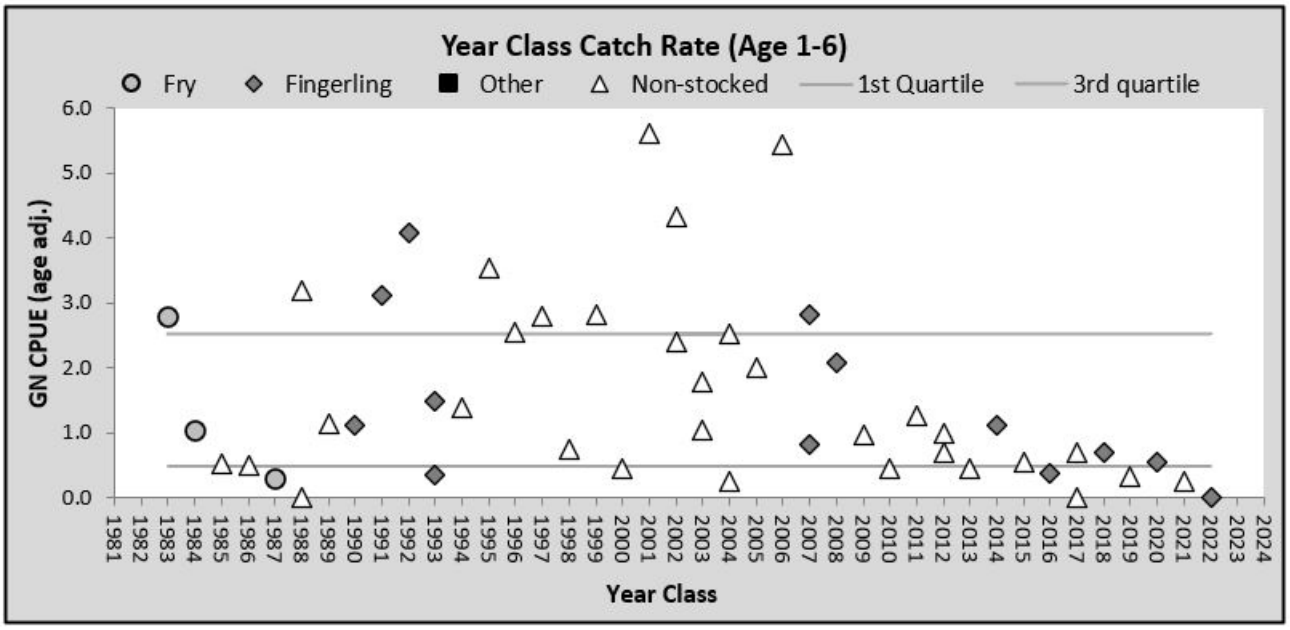

Figure 4. Year-class strength measured by gill net catch rates for various Walleye life stages stocked, Stony Lake (11-0371).

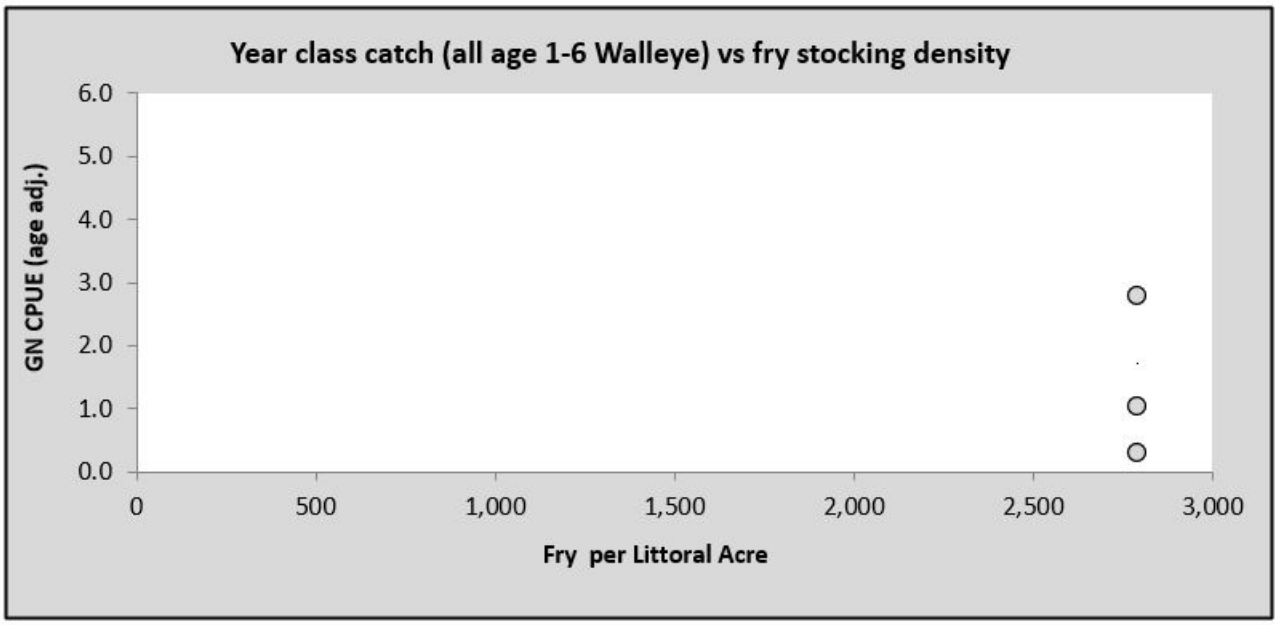

Figure 5: Year-class strength of fry stockings in relation to stocking density, Stony Lake (11-0371).

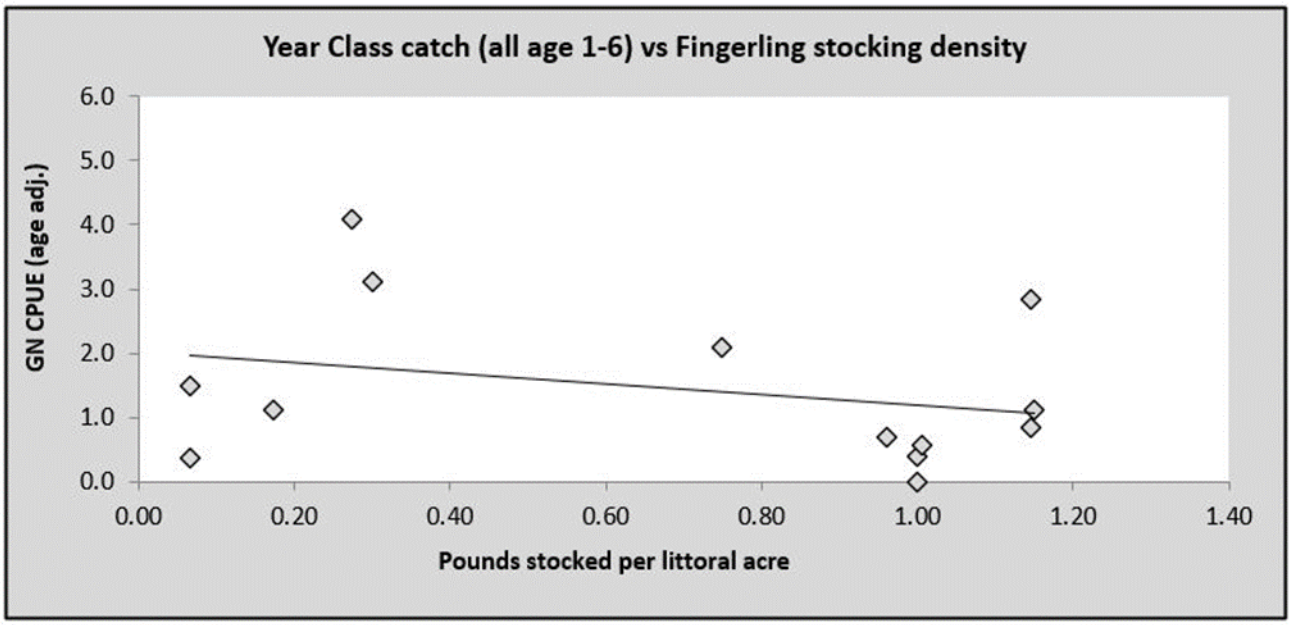

Figure 6. Year-class strength of fingerling stockings in relation to stocking density, Stony Lake (11-0371).

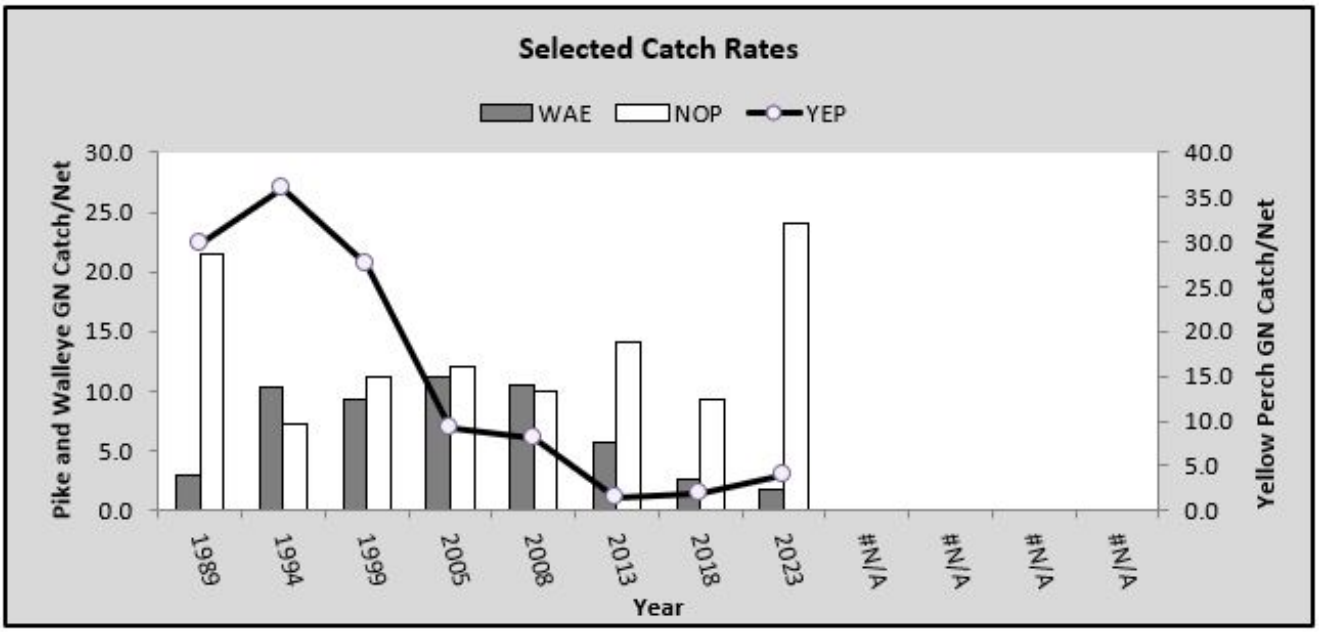

Figure 7. Walleye, Northern Pike, and Yellow Perch relative abundance 1989-2023, Stony (DOW# 11-0371).

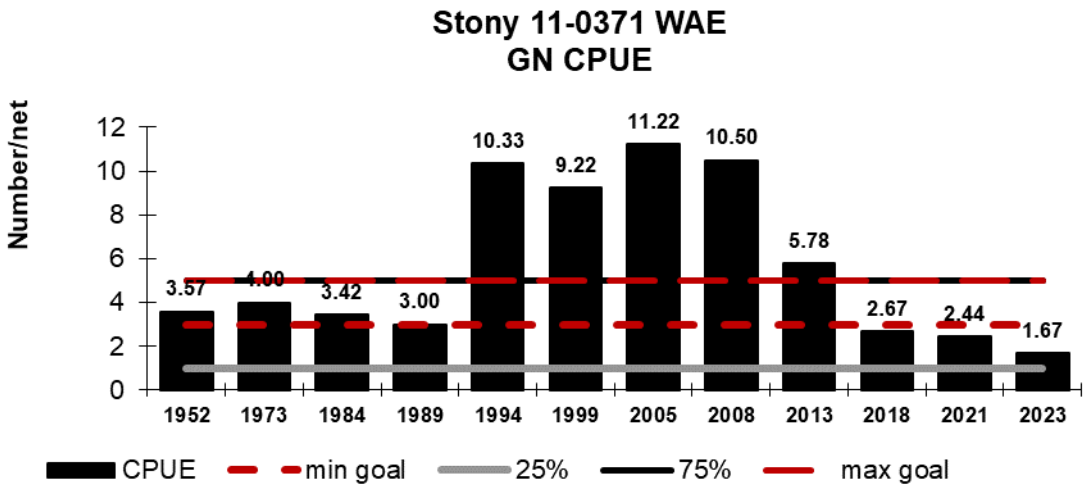

Figure 8. Walleye gill net CPUE 1952-2023, long-range management goal, and lake class interquartile range.

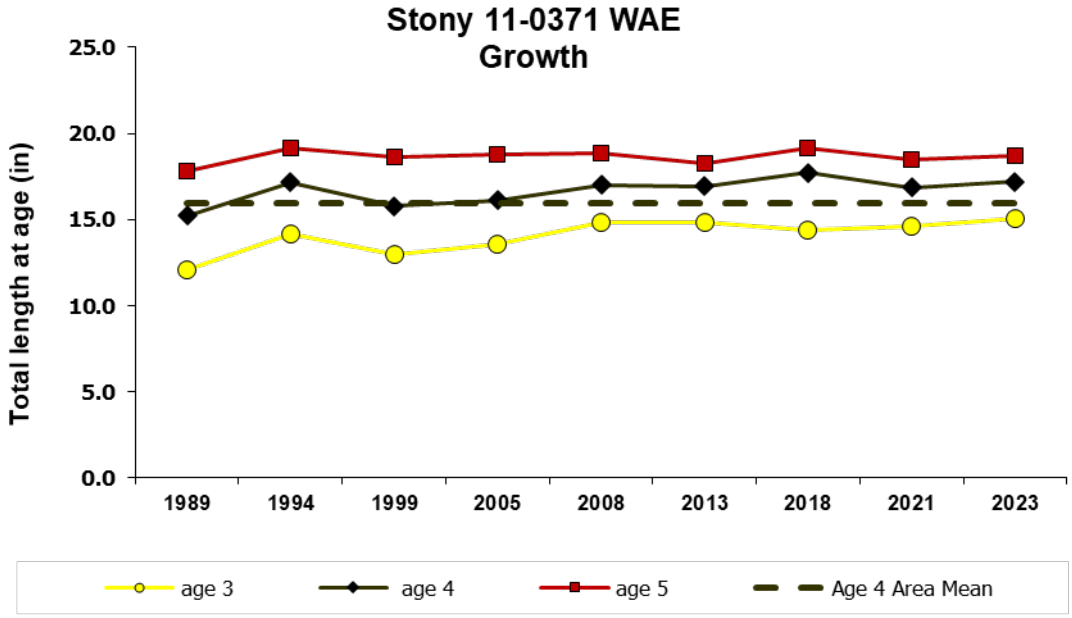

Figure 9. Walleye growth rates 1952-2023.

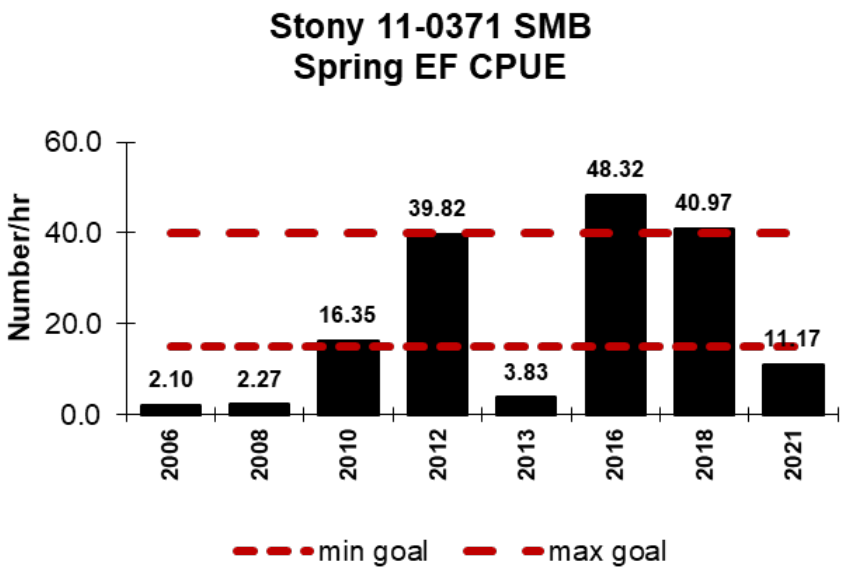

Figure 10. Smallmouth Bass electrofishing CPUE 2006-2021, long-range management goal, and lake class interquartile range.

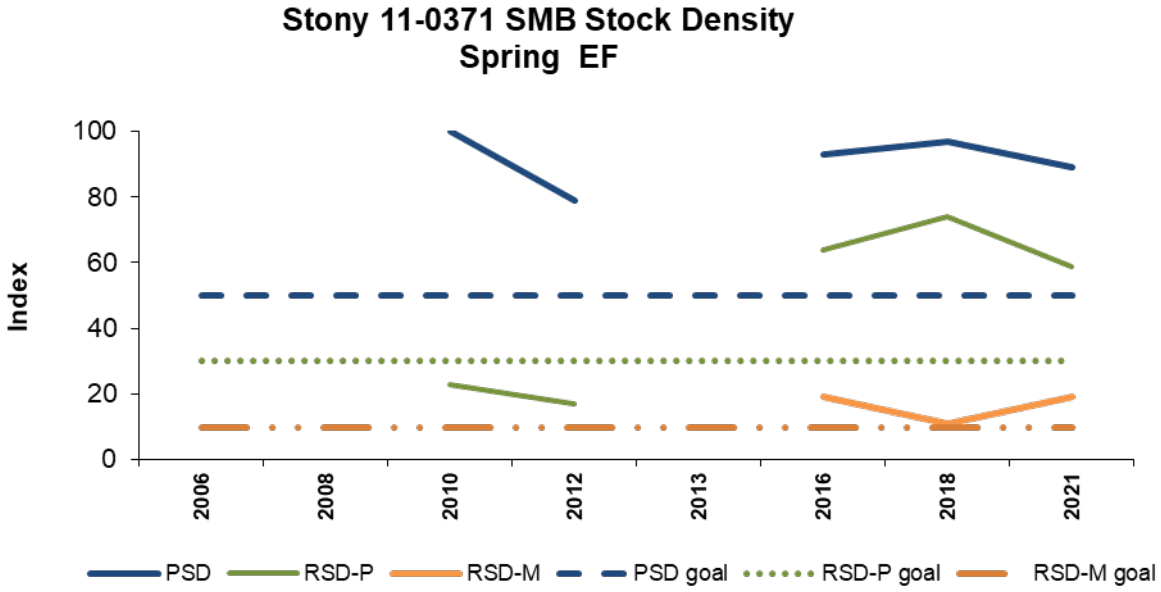

Figure 11. Smallmouth Bass stock indices and long-range goals 2006-2021.

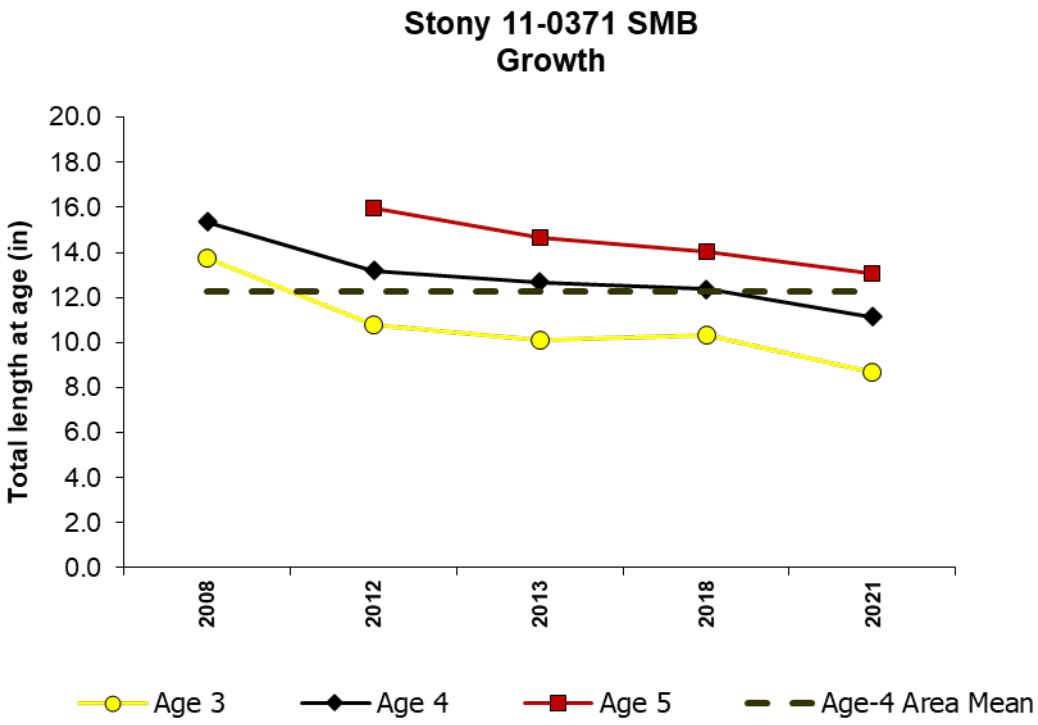

Figure 12. Smallmouth Bass growth rates 2008 – 2021.

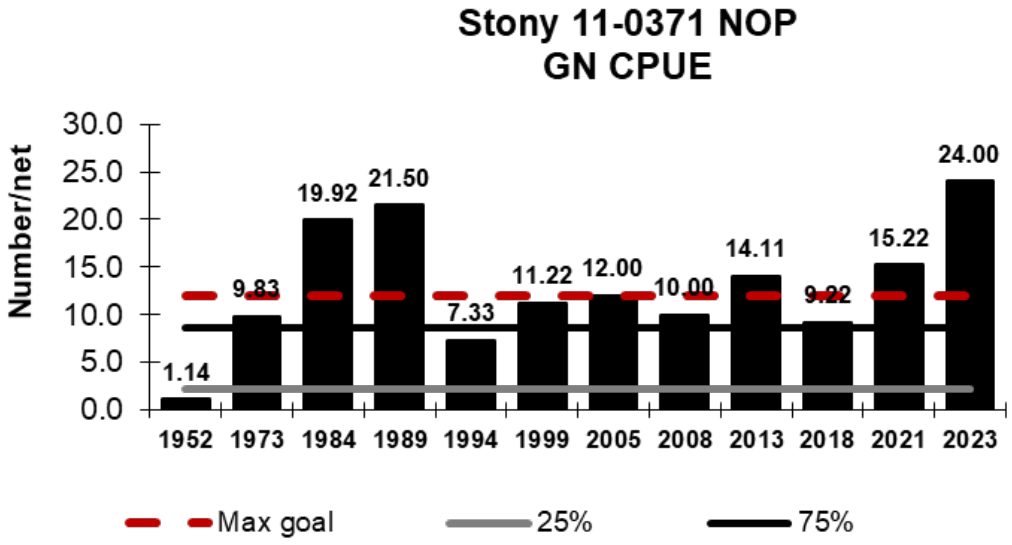

Figure 13. Northern Pike gill net CPUE 1952-2023, long-range management goal and lake class interquartile range.

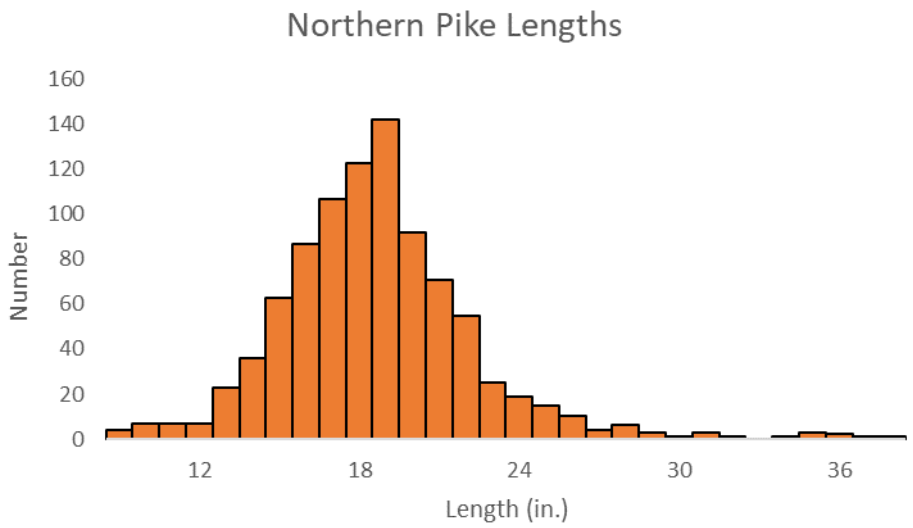

Figure 14. Northern Pike length frequency 1973 -2023.

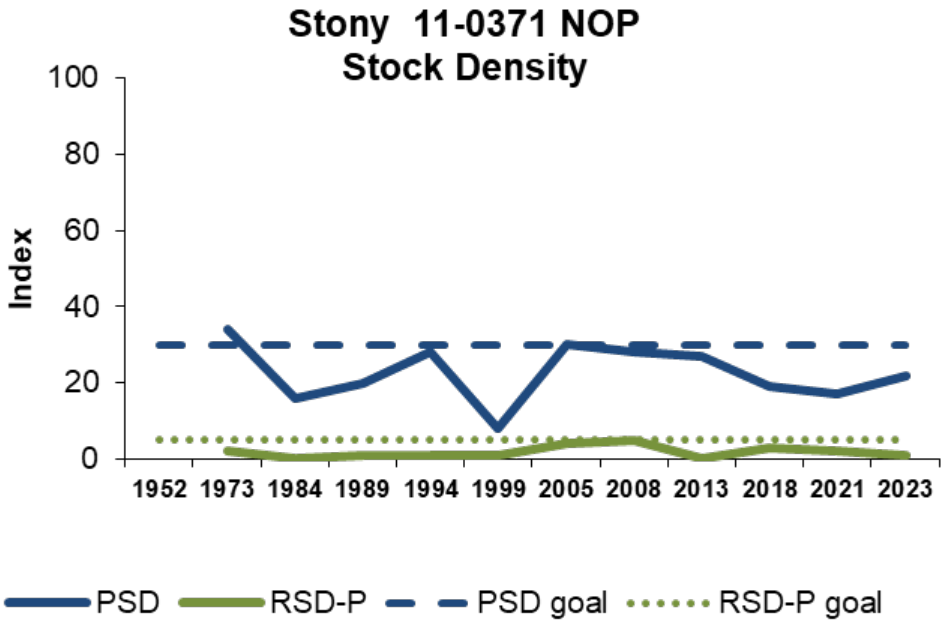

Figure 15. Northern Pike stock indices 1973-2023.

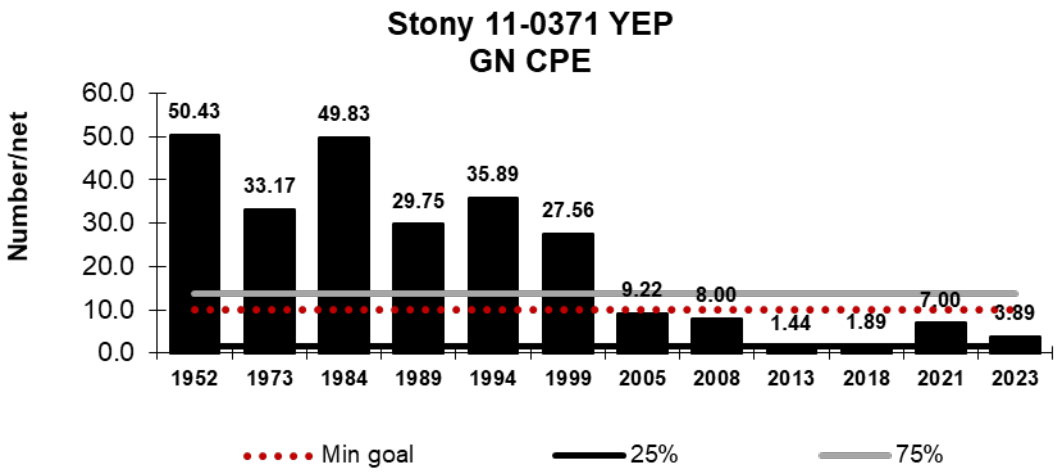

Figure 16. Yellow Perch gill net CPUE 1952-2023 and long-range management goal, and lake class interquartile range.

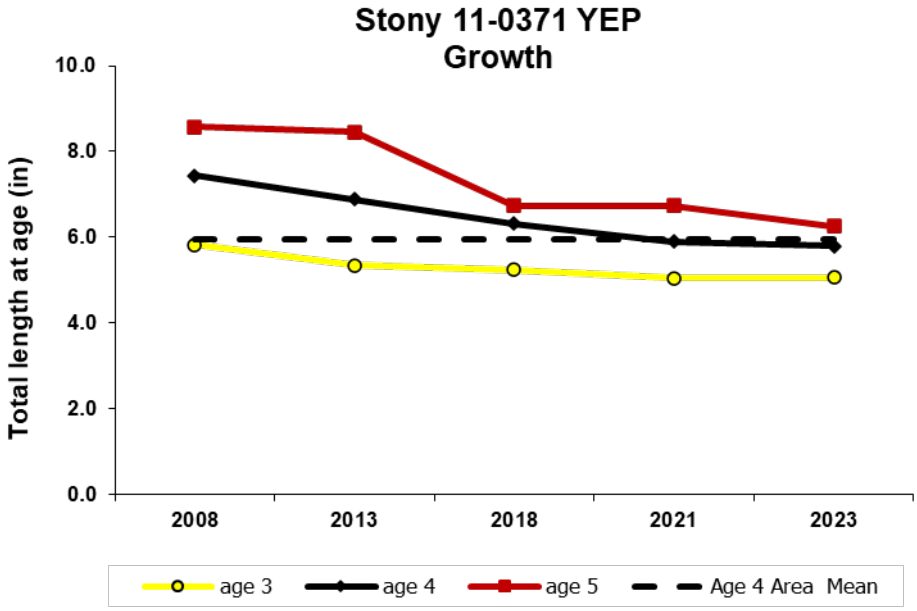

Figure 17. Yellow Perch growth rates 2008 – 2023.

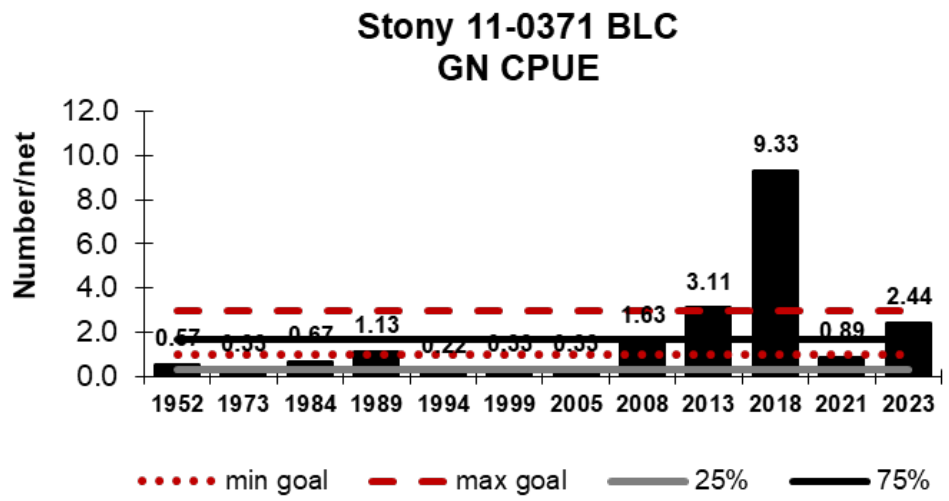

Figure 18. Black Crappie gill net CPUE 1952-2023 and long-range management goal, and lake class interquartile range.

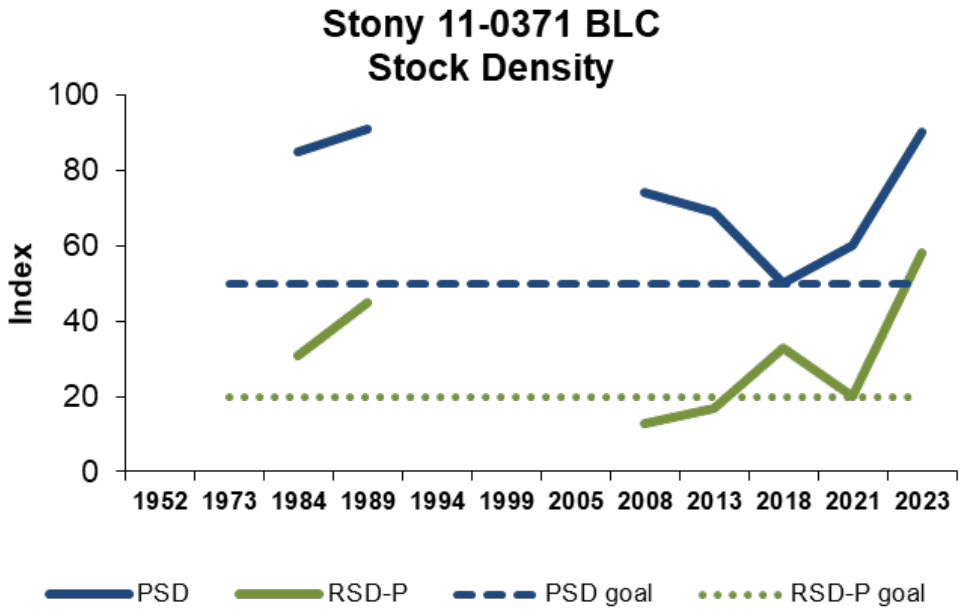

Figure 19. Black Crappie stock indices 1984-2023.

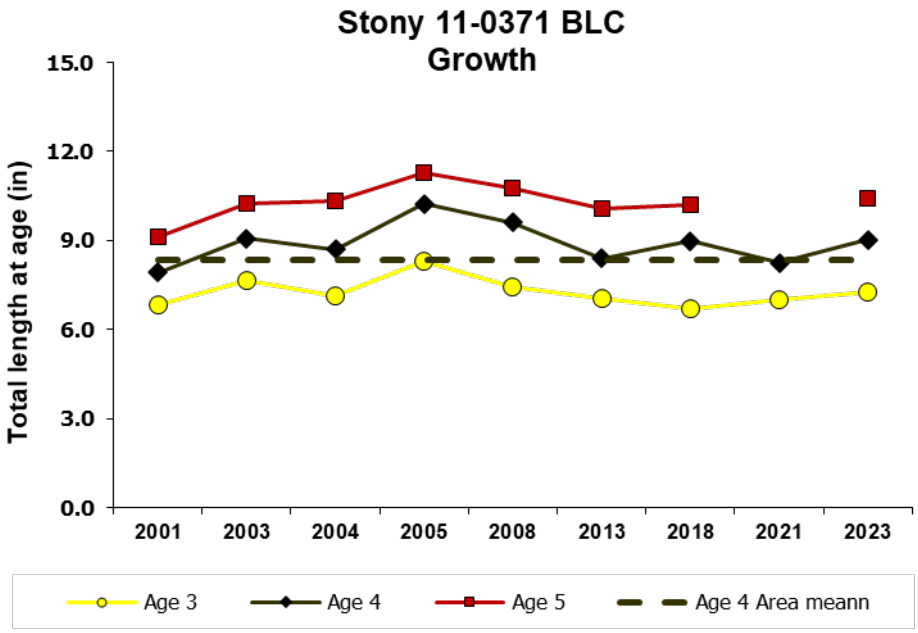

Figure 20. Black Crappie growth rates 2001 – 2023.

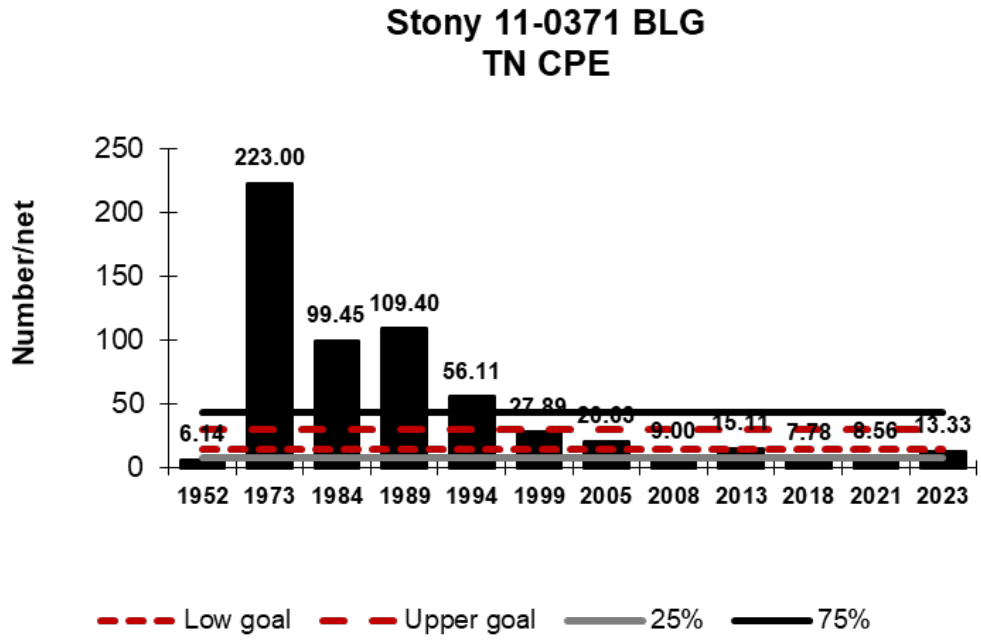

Figure 21. Bluegill trap net CPUE 1952 - 2023, long-range management goal, and lake class interquartile range.

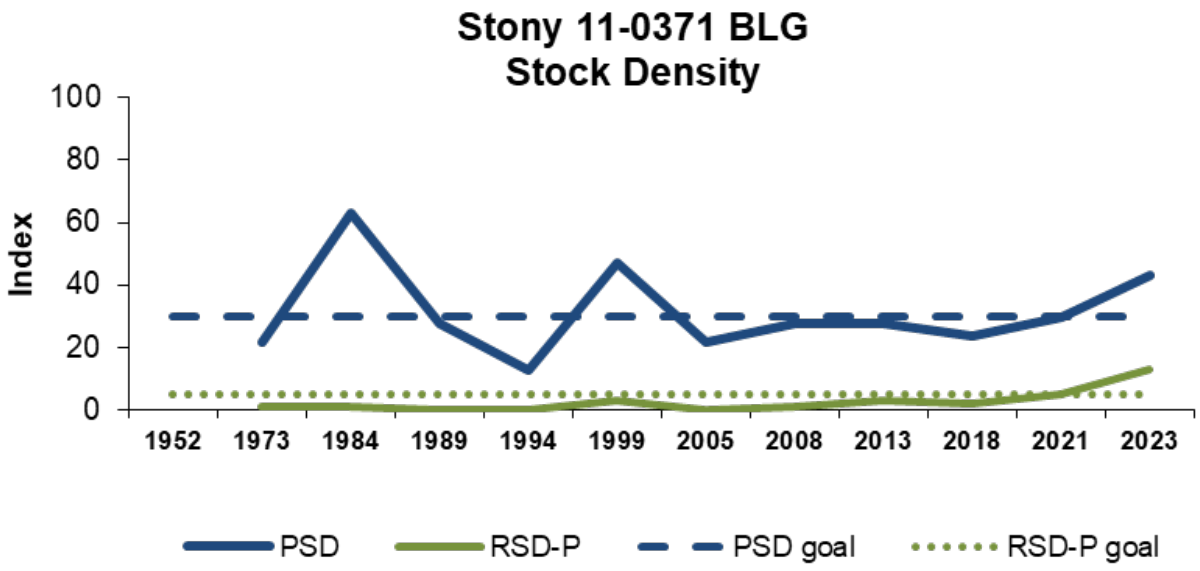

Figure 22. Bluegill stock indices 1973 - 2023.

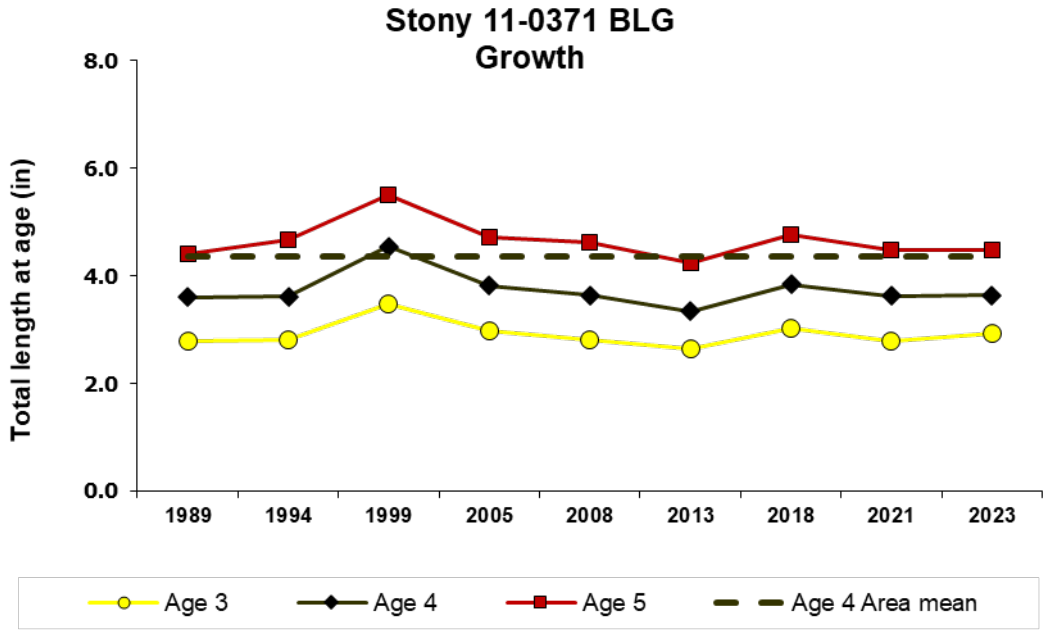

Figure 23. Bluegill growth rates 1952-2023.

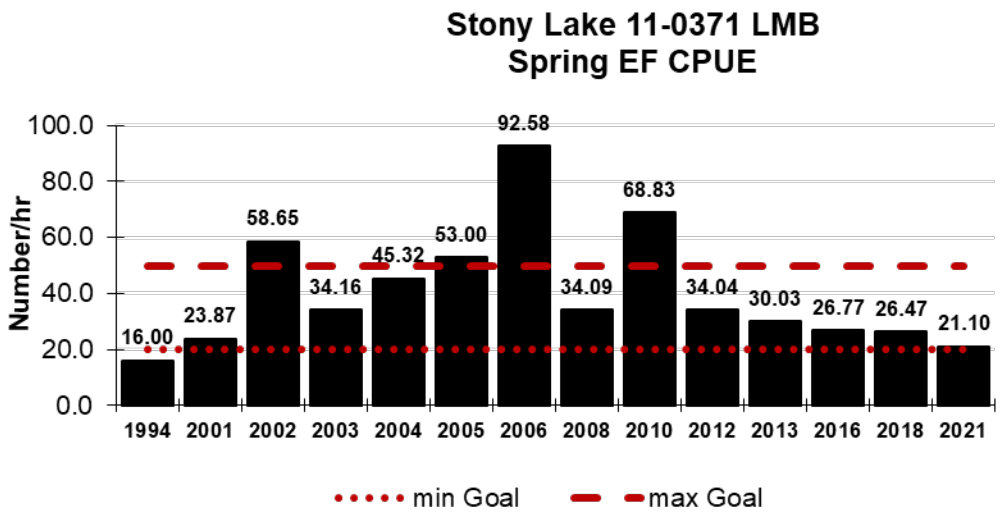

Figure 24. Largemouth Bass electrofishing CPUE 1994-2021, long-range management goals, and lake class interquartile range.

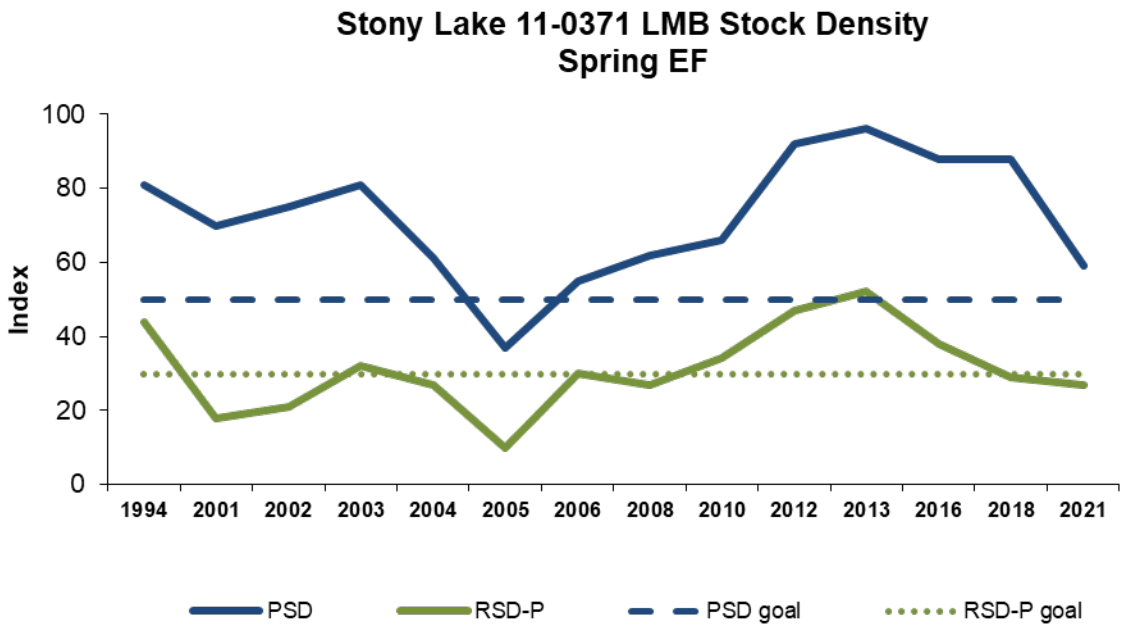

Figure 25. Largemouth Bass stock indices 1994-2021.

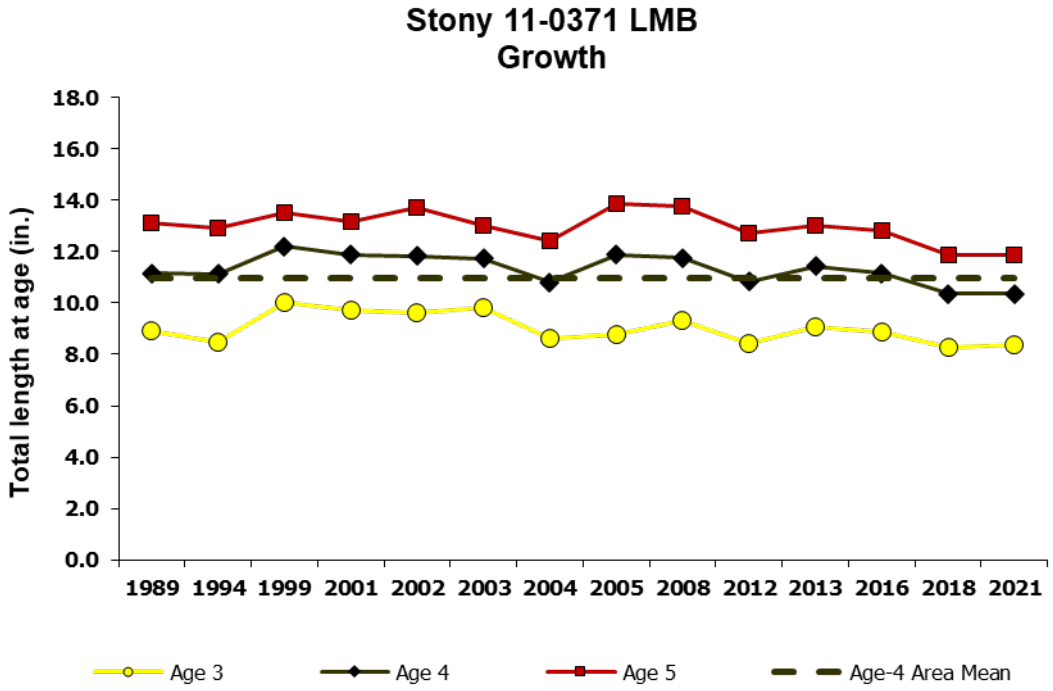

Figure 26. Largemouth Bass growth rates 1989 – 2021.

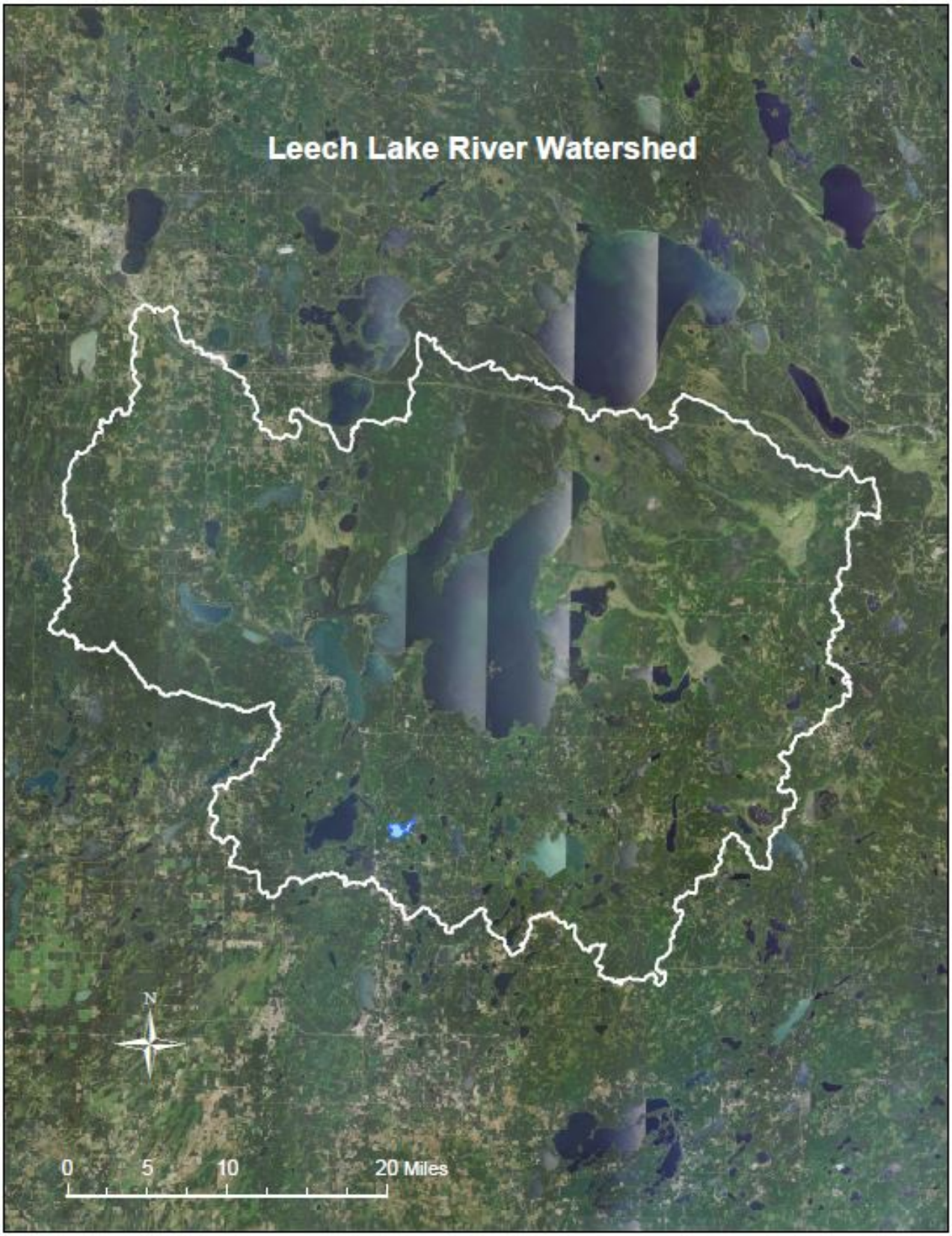

Figure 27. Leech Lake River watershed.