

**Supplemental Material for Fisheries Report  
49: 2025 Michigan Great Lakes Recreational  
Fisheries:  
Creel Surveys, Charter Reporting, and  
Historical Trends**

This supplemental Excel file provides expanded tables, detailed data, and appendices referenced in the associated journal publication.

Archival information for research purposes.

[LINK TO PUBLICATION PDF](#)

# Correction for creel data and estimates of Lake Michigan interval sites

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## Introduction

In recent years, Mark Vass and I have been working on examining possible changes in the timing of fishing boats going out in the early morning caused by mussel invasion. Mussel invasion on Lake Michigan is the extensive colonization by zebra and quagga mussels, invasive species from Europe, which arrived via ship ballast water in the 1980s and have profoundly altered the ecosystem, impacting food webs, harming native species, clogging infrastructure, and affecting recreation by filtering vast amounts of plankton, leading to clearer but less productive waters and threatening fish like whitefish.

During the process of comparing Lake Michigan fishing boat incoming and outgoing clerk interval count data for this purpose, I found that for 32 site-years, the interval counts were recorded as instantaneous counts (see the definition below and also see Su and Liu 2025). This resulted in great underestimation of the effort, harvest, and catch for these instances. The affected sites include MANISTEE (128) from 2000 to 2024 and ONEKAMA (127) from 2015 to 2024, and other sites in years from 2009 to 2019 (see the table below).

The implication is that we need to correct both the creel data and correct the estimates for these cases. I have made the correction of the data at my end, and re-run the estimates for these cases. I have updated the creel estimate database. This writing provides the results of the correction.

## Methods

Two types of count methods have been used in the creel surveys of the Michigan’s recreational fisheries. The first type is referred to as roving counts, which are counts of angling units (e.g., shore anglers, fishing boats) that are actively fishing in the survey area (e.g., along the shore, on the lake). This type of count is also called instantaneous or progressive counts. This count method is a general count method and can be used for all fishing modes. The other type is called interval counts. Interval counts are counts of fishing boats that are entering or returning from the fishing area at an access site. Only 15 sites in Lake Michigan use interval counts. Other Great Lakes sites use roving counts. These two count types produce counts of different natures and estimates produced by them are quite different (Lockwood et al. 1999; Su and Liu 2025).

Lake Michigan interval count sites are listed in the following table, and the count duration is 30 minutes.

Table 1. List of the interval count sites in Lake Michigan.

P_CODE	SITE	LAKE	COUNTY	PORT	STATD
122	122	MI	BENZIE	PLATTE BAY PLATTE RIVER TO WEIR	MM6
124	124	MI	BENZIE	FRANKFORT-ELBERTA	MM5
126	126	MI	MANISTEE	ARCADIA	MM6
127	127	MI	MANISTEE	PORTAGE LAKE-ONEKAMA	MM6
128	128	MI	MANISTEE	MANISTEE	MM6
134	134	MI	MASON	LUDINGTON	MM6
139	139	MI	OCEANA	PENTWATER	MM6
149	149	MI	MUSKEGON	MUSKEGON	MM7
153	153	MI	OTTAWA	GRAND HAVEN	MM7
156	156	MI	OTTAWA	HOLLAND STATE PARK	MM7
160	160	MI	ALLEGAN	SAUGATUCK	MM8
162	162	MI	VAN BUREN	SOUTH HAVEN	MM8
164	164	MI	BERRIEN	BENTON HARBOR ST. JOE RIVER	MM8
166	166	MI	BERRIEN	NEW BUFFALO	MM8
312	312	MI	MUSKEGON	MONTAGUE-WHITEHALL (WHITE LAKE)	MM7

## Results

SITE	YEAR	MONTH	MODE
ESTIMATES	ESTIMATES	ESTIMATES	ESTIMATES
✓	✓	✓	✓
162 Or 164	2009		"boat"
162 Or 164	2011		"boat"
162 Or 164	2012		"boat"
122 Or 162 Or 164	2013		"boat"
149 Or 153 Or 162 Or 1	2014		"boat"
127 Or 139 Or 312	2015		"boat"
127 Or 134	2016		"boat"
124 Or 127	2017		"boat"
124 Or 127	2018		"boat"
124 Or 127	2019		"boat"
127 Or 128	2020		"boat"
127 Or 128	2022		"boat"
127 Or 128	2023		"boat"
127 Or 128	2024		"boat"

EFFORT	Sites											
	122	124	127	128	134	139	149	153	162	164	312	
2009									129694	91850		
2011									109695	112961		
2012									83031	63299		
2013	<b>715</b>								10931	13403		
2014							51433	49205	84474	73792		
2015			2379			16111					17615	
2016			482		33228							
2017		27119	3234									
2018		8945	964									
2019		4881	739									
2020			1162	4584								
2022			521	7474								
2023			1163	8304								
2024			653	10285								

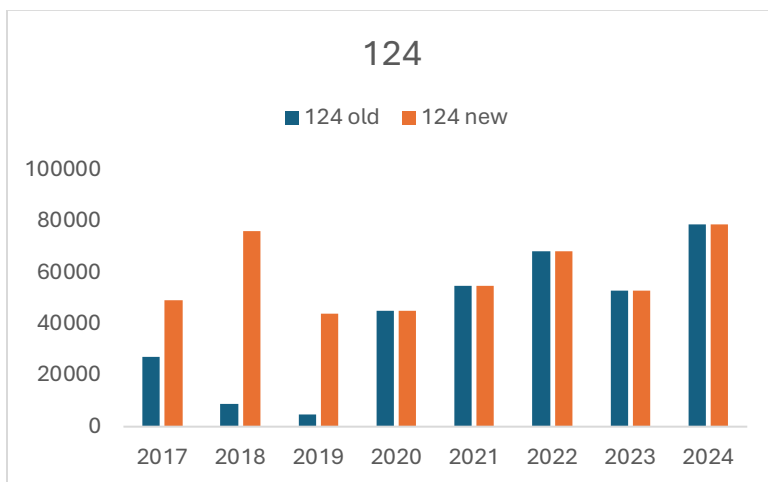
Table 2. EFFORT (angler-hours) before the correction.

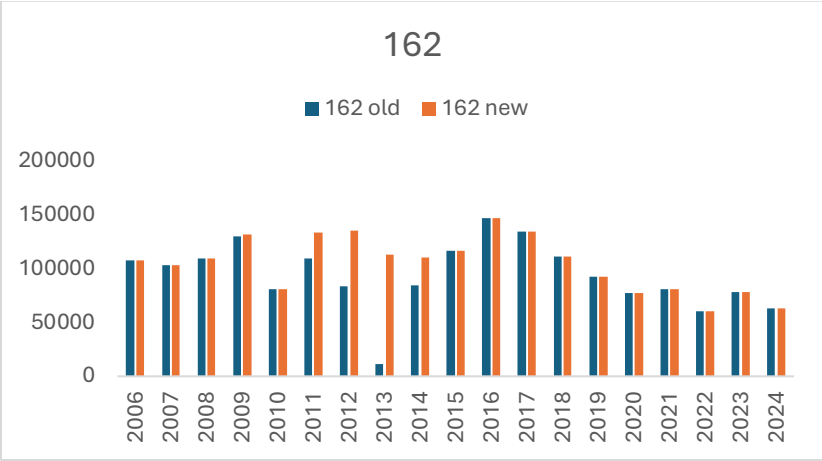
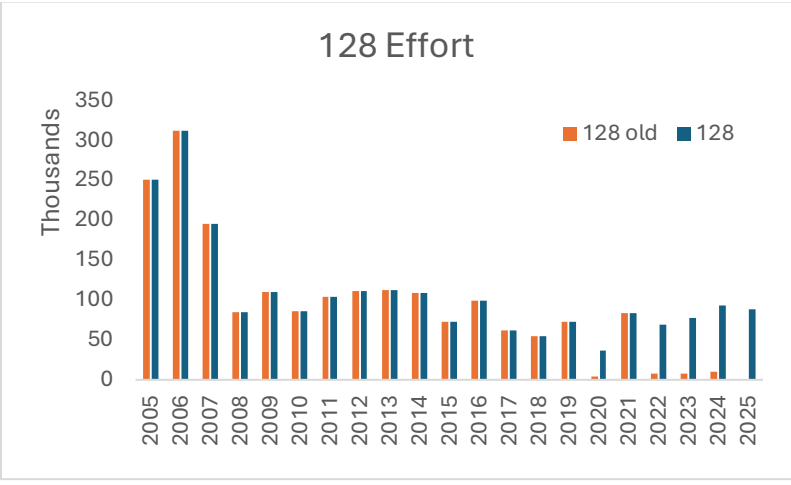
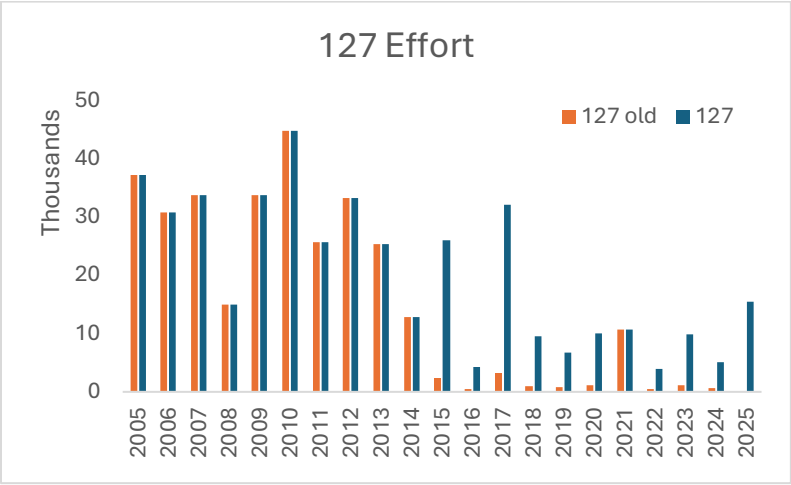
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2019	4881	739	
2020		1162	4584
2022		521	7474
2023		1163	8304
2024		653	10285

Table 3. Corrected effort (angler-hours).

SITES											
	122	124	127	128	134	139	149	153	162	164	312
<b>2009</b>									131503	131665	
<b>2011</b>									133581	146026	
<b>2012</b>									135081	91212	
<b>2013</b>	4794								112810	131964	
<b>2014</b>							57445	55574	110021	115166	
<b>2015</b>			25959			16111					26666
<b>2016</b>			4288		74338						
<b>2017</b>		47591	32104								
<b>2018</b>		76047	9527								
<b>2019</b>		44010	6673								
<b>2020</b>			10077	36194							
<b>2022</b>			3960	69071							
<b>2023</b>			9928	77269							
<b>2024</b>			5148	92990							





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