COASTAL WILDLIFE MANAGEMENT AREA VISITOR USE, EXPENDITURES, AND ECONOMIC IMPACT

Photos: MDNR

Why?

Wildlife managers and local leaders seek to understand the type and diversity of visitors using wildlife management areas (WMAs), as well as their visitor expenditures and estimates of economic impacts from their visits. This information provides a snapshot and informs goals and strategies for diversifying WMA uses and users, as well as insights into impacts to communities resulting from those uses and users. Together local leaders and WMA managers can determine mutual goals and opportunities for wildlife management and coastal community development.

Objectives

- Determine relative amount and type of recreation occurring on WMAs, including different seasons.
- Determine visitor expenditures using WMAs.
- Determine economic impact to communities of visitors using WMAs.

Background

The study area included five state-owned WMAs, which included State Wildlife Areas (SWAs) and State Game Areas (SGAs), and one federally-owned National Wildlife Refuge (hereafter WMAs) located in southeastern Michigan from Lake Huron's Saginaw Bay region south to western Lake Erie (Figure 1). While the five state-owned lands are managed primarily for wetlands conservation for waterfowl and waterfowl hunting, these lands provide ample non-hunting-related wildlife recreation opportunities. The federally owned lands are primarily managed for wildlife habitat for migratory birds. Three of the state WMAs are in top bird watching areas in Michigan. State and federal investment in infrastructure for wetland and habitat management is directed at meeting WMA-specific objectives.

Methods

This study was approved by the Michigan State University Institutional Review Board #435. This visitor use survey approach was adapted, in consultation with WMA managers, from the United States Geological Survey National Wildlife Refuge Visitor Survey. A stratified sampling design by season (spring March - May; summer June - August; and fall September - November) and day of week (weekday or weekend), resulted in data collection during a seven-week sampling period per season and two weekdays (either Monday/Wednesday or Tuesday/Thursday) and two weekend days per period in 2018. Simple random sampling was used to select specific days, as well as back-up dates, for each WMA and each season.

Visitors leaving the WMAs were intercepted by the research team and invited to complete the 20-question survey via Qualtrics on tablet computers. Respondents were asked about their WMA visit such as trip expenditures, demographics, potential for future visits, etc. and received a small incentive at the completion of the survey. The survey instrument was pilot tested with graduate students and Michigan Department of Natural Resources Wildlife Division staff to improve validity. Stata, Excel, and IMPLAN, were used to complete the descriptive statistics, visitor estimates, expenditure profiles, hunter site registrants, and input-output modeling.

Results

A large share of WMA visitors traveled 50 miles or less to arrive at the site. During spring, the percentage of visitors that said they resided within 50 miles of the WMA ranged from 61-87%. The range for summer surveys was 42-96% and 40-83% for fall.

	Spring	Summer	Fall
Average hours/trip	2.47	2.28	4.1
Returning visitors in last 12 months	80%	74%	87%
Top social media use: Facebook	58%	64%	64%
Average age	49 years	50 years	45 years
Gender: Male	85%	76%	95%
Completed college, technical school, graduate, or professional degree	48%	47%	52%
Race: White	82%	85%	90%
Annual household income before taxes and deductions >$57,000	53%	51%	74%

The top recreational activities occurring on the study area WMAs in different seasons are as follows.

Spring:

- Fishing 62% (n=138)
- Birdwatching 13% (n=28)
- Hiking/walking 10% (n=22)

Summer:

- Fishing (n=45%)
- Wildlife observation 14% (n=26)
- Birdwatching 12% (n=23)

Fall:

- Waterfowl hunting 73% (n=203)
- Fishing 5% (n=14)
- Hiking/walking 4% (n=12)

Average visitor expenditures varied across the six WMAs.

- Fish Point SWA $36.33
- Nayanquing Point SWA $35.78
- Pointe Mouillee SGA $19.03
- Shiawassee National Wildlife Refuge $40.08
- Shiawassee River SGA $31.01
- St. Clair Flats SWA-Harsens Island Unit $33.90

Visitor expenditures promote economic growth in the hosting communities. As these new dollars are spent and re-spent in the local economy, they generate economic multiplier effects that ranged from an estimated $110,931 to $360,208 in new expenditures, including income earned by workers and businesses.

Figure 1. Lake Huron's Saginaw Bay region south to western Lake Erie

Table 1. Total effect economic impact estimates given state averages by season per area.

Area	Labor Income	Regional Income	Total Transactions
Fish Point WMA	$35,018	$61,525	$119,018
Nayanquing Point SWA	$40,173	$69,981	$130,205
Pointe Mouillee SGA	$112,223	$181,966	$341,203
Shiawassee National Wildlife Refuge	$117,185	$198,879	$360,208
Shiawassee River SGA	$36,326	$61,323	$110,913
St. Clair Flats SWA-Harsens Island Unit	$47,940	$80,987	$150,685

Discussion

Facebook is the predominant social media platform used by WMA users that are characterized as White, male, college educated, and 45-50 years old. Fishing was the predominant activity in spring and summer with waterfowl hunting the dominant fall activity, as expected. Even though three of six study areas are recognized as top birding areas in Michigan, few respondents report bird watching as their activity.

As is, without any specific integration of wildlife management with coastal community development, the WMAs do yield benefits to communities. The estimated visitor expenditures of visitors ranged from approximately $19 to $40 per area, with a range of economic impact between approximately $110,000 and $360,000 per area. However, this could be enhanced if communities and WMAs collaborated to identify desired goals, and strategies for implementation, such as promotion of areas to increase visitation.

Adapted from original research: Avers, B.A. (2022). Exploring stakeholders' support for and stewardship of Michigan's coastal wildlife management areas. [Doctoral dissertation, Michigan State University]

Avers, B.A., S.R. Miller, F. Lupi, and H.A. Triezenberg. (2023). Visitor use and economic impact of Michigan's coastal wildlife management areas. Department of Fisheries and Wildlife; MSU Extension, Michigan Sea Grant, Michigan State University.

Key findings

- WMA visitors were mostly White, male, and college educated, with an average age between 45-50 years old. Most WMA visitors were returning users that had visited in the past 12 months. Facebook was the social media platform used most by visitors.
- Primary recreational activities were similar across WMAs with fishing as the predominant activity in the spring and summer and waterfowl hunting in the fall.
- Time spent on the WMA differed by season with visitors spending the most time on WMAs in the fall.
- The estimated visitor expenditures of visitors ranged from approximately $19 to $40 per area.
- The overall annual economic impact to communities from WMA visitors is estimated between $110,913 and $360,208.
- WMAs are yielding benefits to the local communities. These benefits could be increased through strategic partnerships between wildlife agencies and local communities to increase visitation and recreational venues available to visitors of the WMAs and their communities.

Contacts

Dr. Barbara Avers
Waterfowl and Wetlands Specialist, Michigan Department of Natural Resources - Wildlife Division; Adjunct Assistant Professor MSU Fisheries and Wildlife Department

aversb@michigan.gov | (517) 930-1163

Dr. Heather Triezenberg
Associate Director and Extension Program Leader, Michigan Sea Grant, MSU Extension; Extension Specialist MSU Fisheries and Wildlife Department

vanden64@msu.edu | (517) 353-5508

ACKNOWLEDGEMENTS

We thank the participants in this research project and collaborators Frank Lupi and Steve Miller.. The results from this study would not exist without their willingness to share their perspectives. Funding for this research came from the U.S. Fish and Wildlife Service through the Pittman-Robertson Wildlife Restoration Act Grant MI W-155-R via a grant from the Michigan Department of Natural Resources, Wildlife Division. This study was prepared under awards NA140AR4170070, NA180AR4170102, NA17OAR4320152, and NA22OAR4170084 from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce through the Regents of the University of Michigan. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of the National Oceanic and Atmospheric Administration, the Department of Commerce, or the Regents of the University of Michigan. These data and related items of information have not been formally disseminated by NOAA and do not represent any agency determination, view or policy.

This research was funded by the Michigan Department of Natural Resources, Wildlife Division, under the Pittman-Robertson Wildlife Restoration Act.

Sea Grant MICHIGAN

MICHIGAN STATE UNIVERSITY | Extension

UNIVERSITY OF MICHIGAN

michiganseagrant.org/research

Michigan Sea Grant helps to foster economic growth and protect Michigan's coastal, Great Lakes resources through education, research and outreach. A collaborative effort of the University of Michigan and Michigan State University, Michigan Sea Grant is part of the NOAA-National Sea Grant network of 34 university-based programs.