

INTEGRATING SOCIAL SCIENCE INTO WMA MANAGEMENT

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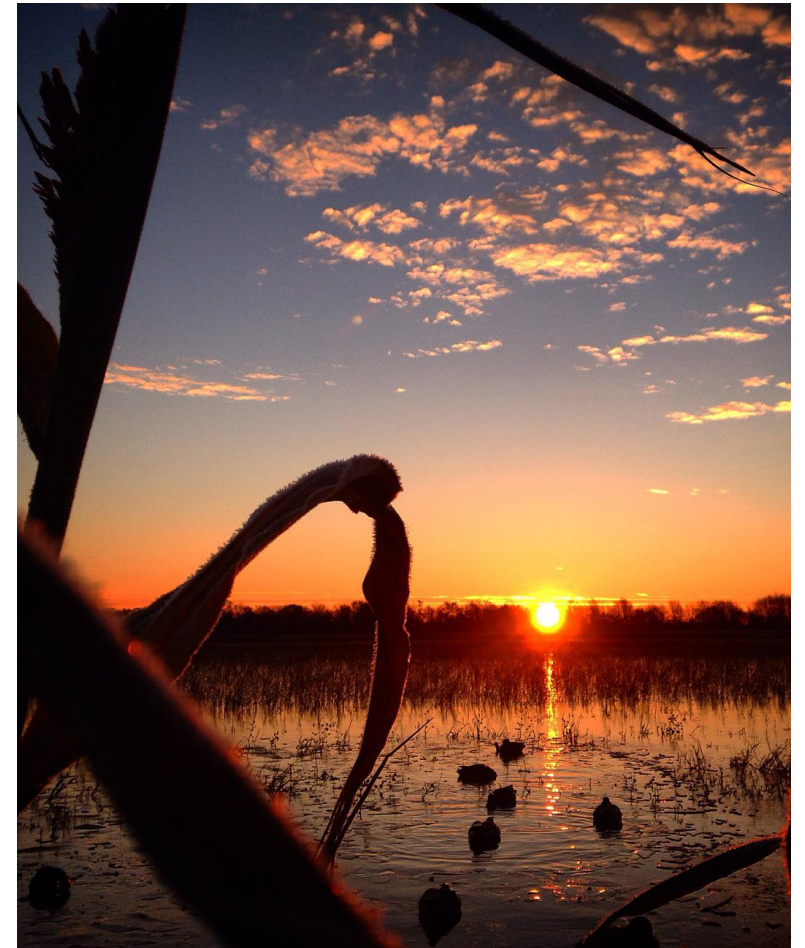


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OUTLINE

- Michigan DNR's use of social science to improve WMA management and planning
 - Understanding stakeholder use of WMAs, attitudes and preferences, and stewardship potential
 - Interesting birdwatcher results
 - 10-Year WMA planning effort
 - Structured decision-making process



BACKGROUND

- North American Model
- Changing demographics
- Declining hunting participation
- Increasing wildlife watching participation
- Unsustainable model
- Impacts to SWAs
- Relevancy and need to be more inclusive and responsive to broader set of stakeholders
- Impacts to Waterfowl and Wetland Conservation



2018

North American Waterfowl Management
Plan (NAWMP) Update

**Connecting People,
Waterfowl, and Wetlands**



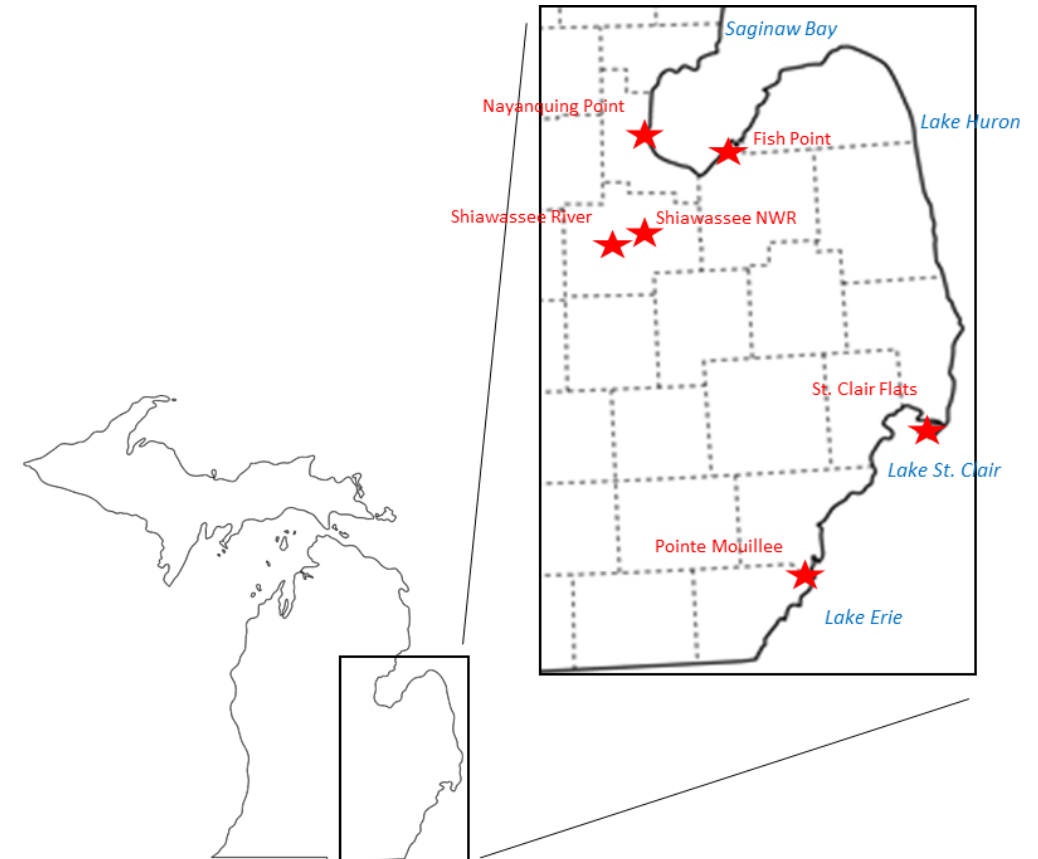
North American Waterfowl
Management Plan

Plan nord-américain de
gestion de la sauvagine

Plan de Manejo de Aves
Acuáticas de Norteamérica

MICHIGAN COASTAL WILDLIFE MANAGEMENT AREAS

- Intensively managed for waterfowl and waterfowl hunting
- Provide diverse wildlife habitat & diverse recreation



RESEARCH PURPOSE

Understand potential support for coastal WMAs and stewardship potential of key stakeholders to address sustainable wildlife conservation, and agency concerns about relevancy and funding



ACKNOWLEDGEMENTS



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- Michigan DNR, Wildlife Division
- U.S. Fish and Wildlife Service through the Pittman-Robertson Wildlife Restoration Act Grant MI W-155-R



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QUANTITATIVE SURVEYS

- 4 stakeholder groups
 - Waterfowl Hunter
 - Birdwatcher
 - Angler
 - Community Member
- Web-based and mail
- Data collected August 2019-January 2020

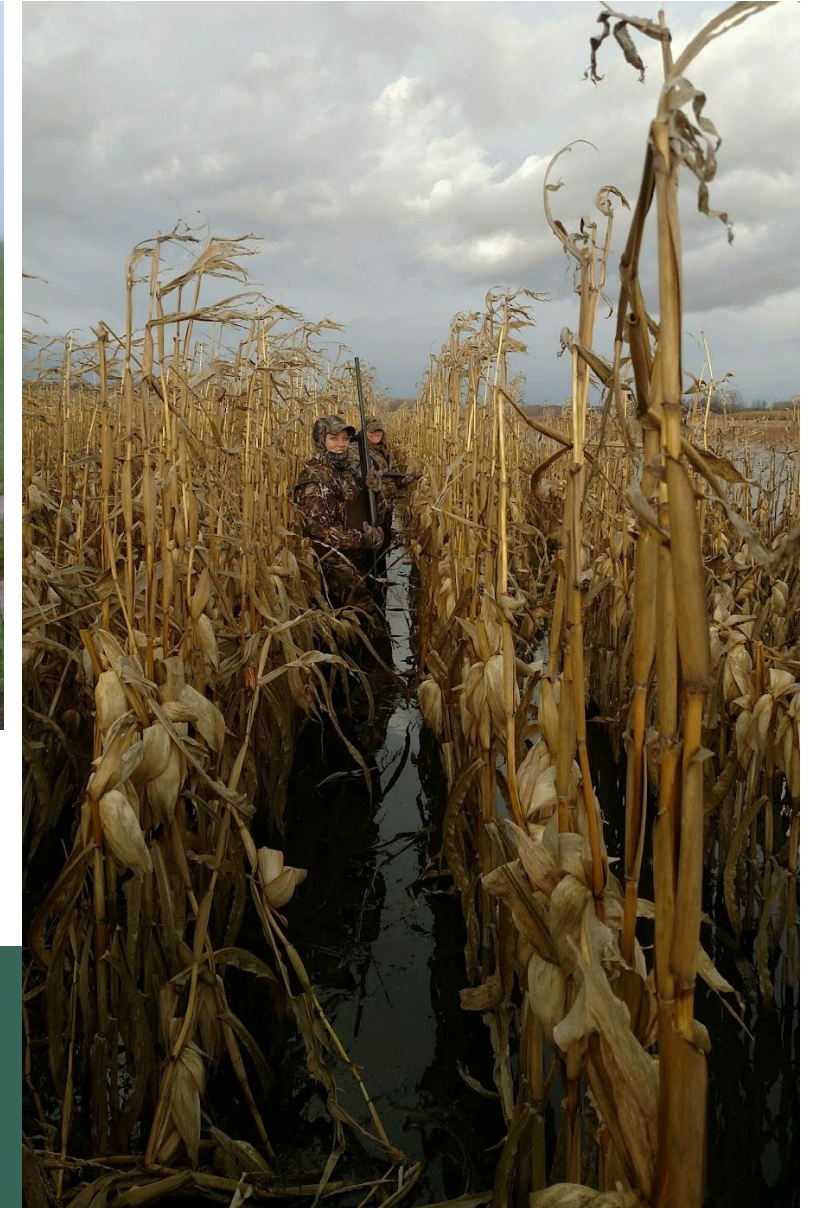


MSU IRB Project 00003031

KEY BIRDWATCHER RESULTS

- 83% had heard of WMAs
- 54% had visited at least one WMA in the last year
- 58% knew how WMA management was funded
- 73% were members of a conservation or environmental organization





ATTITUDES AND PREFERENCES FOR WMA MANAGEMENT

KEY BIRDWATCHER RESULTS

- Importance of:

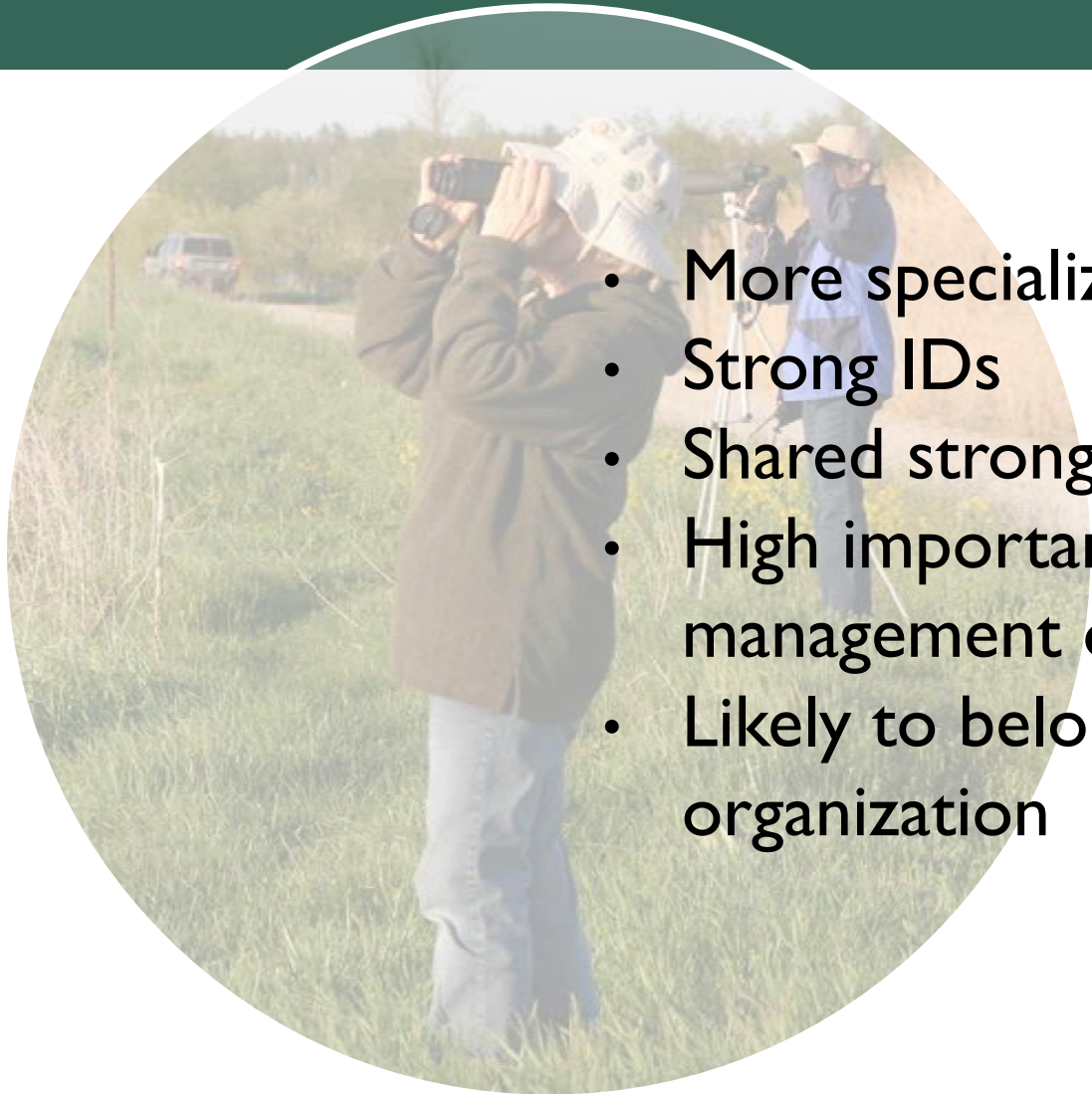
- Habitat for migrating and nesting waterfowl
- Refuge areas
- Managing wetlands for diversity of species
- Protecting wetlands
- Non-game
- A diversity of habitats

- Importance of:

- Non-hunting recreation
- A diversity of habitats
- Desire changes:
 - More and diverse opportunities
 - More access (physical and temporal)

BIRDWATCHER AND WATERFOWL HUNTER SIMILARITIES

- More specialized and committed
- Strong IDs
- Shared strong conservationist IDs
- High importance of wildlife management objectives
- Likely to belong to conservation organization



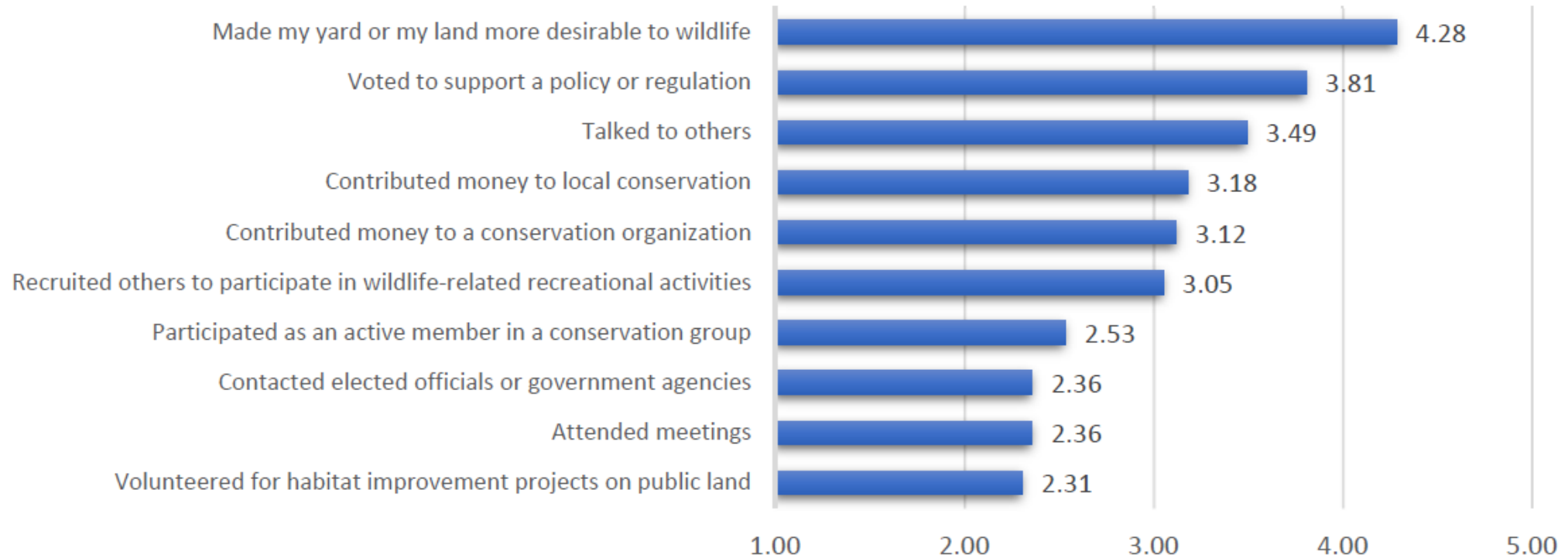


CONSERVATION BEHAVIORS



KEY BIRDWATCHER RESULTS

Mean Frequency of Participation in Conservation Behaviors



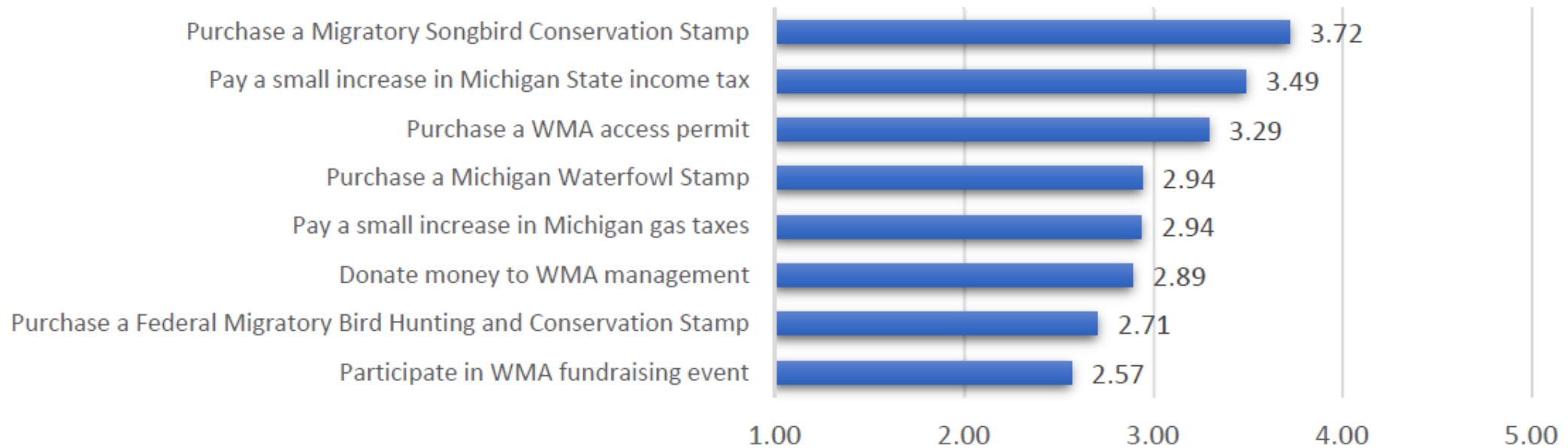
Mean frequency of participation (1=never, 2=rarely, 3=occasionally, 4=often, 5=very often)

SUPPORT FOR A DIVERSITY OF FUNDING OPTIONS



KEY BIRDWATCHER RESULTS

Mean Likelihood of Participating in Actions to Support Funding for WMA Management



Mean Likelihood of Participation (1=not at all likely, 2=somewhat unlikely, 3=neither unlikely nor likely, 4=somewhat likely, 5=very likely)

SUPPORT FOR FUNDING OPTIONS - REGRESSION RESULTS



Duck Stamp

- Male -
- Rural -
- Income +
- Know WMA +
- Know Funding +
- Conservation Behavior +
- Waterfowl Hunter ID +



Songbird Stamp

- Male -
- Rural -
- Membership +
- Conservation Behavior +
- Birdwatcher ID +
- Waterfowl Hunter ID -
- Angler ID -



WMA-Specific

- Male -
- Rural -
- Know WMA +
- Conservation Behavior +
- Birdwatcher ID +
- Waterfowl Hunter ID +



Pay Tax

- Education +
- Rural -
- Membership +
- Conservation Behavior +
- Birdwatcher ID +
- Waterfowl Hunter ID -
- Angler ID -
- Outdoor Enthusiast ID -
- Conservationist ID +

TYOLOGY OF SUPPORT FOR FUNDING OPTIONS

- Lowest Conservationist ID
- Lowest conservation behavior
- Lowest membership
- Lowest income

Opposed



- Highest Waterfowl Hunter ID
- High membership
- Highest knowledge of funding
- Highest knowledge of WMAs
- Mostly Men
- Youngest
- Lowest education
- Most rural
- Highest income

Traditional



- Moderate Birdwatcher ID
- Low conservation behavior

Traditional + Songbird



- Highest Birdwatcher ID
- High Conservationist ID
- High membership
- Lowest knowledge of funding
- Mostly women
- Oldest
- Most educated

New



- High Birdwatcher ID
- Highest Conservationist ID
- Highest conservation behavior
- Highest membership
- Mostly women
- Highly educated
- Most urban

Universal Support





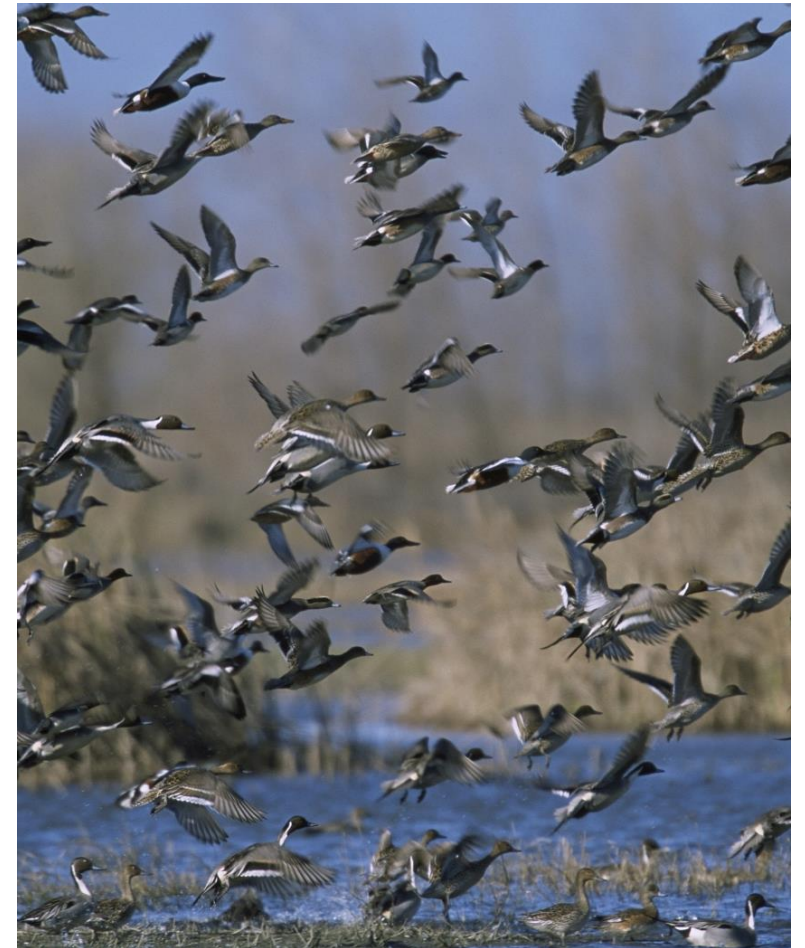
BIRDWATCHERS HOLD POTENTIAL AS WMA STEWARDS

NEXT STEPS – MANAGED WATERFOWL HUNT AREA PLAN



BACKGROUND

- Set and clarify habitat and recreation management goals and objectives
- Address declining hunter numbers
- Address projected declines in budgets and workforce
- Increase agency relevancy
- Recognize and promote the year-round wildlife habitat and recreation opportunities
- Need adaptation and resiliency for a changing climate



PROCESS



- Formal, science-based, transparent, and inclusive
- Multiple opportunities for internal input and feedback
- Multiple opportunities for a diversity of external stakeholders to provide input and feedback
- Structured Decision Making



Fig. Gleason et al.
(2021)

1. Define the **Problem** and decision context
2. Articulate **Objectives** and measures
3. Develop **Alternatives**
4. Predict **Consequences**
5. Evaluate **Tradeoffs**
6. Make decisions and implement
7. Learn and review

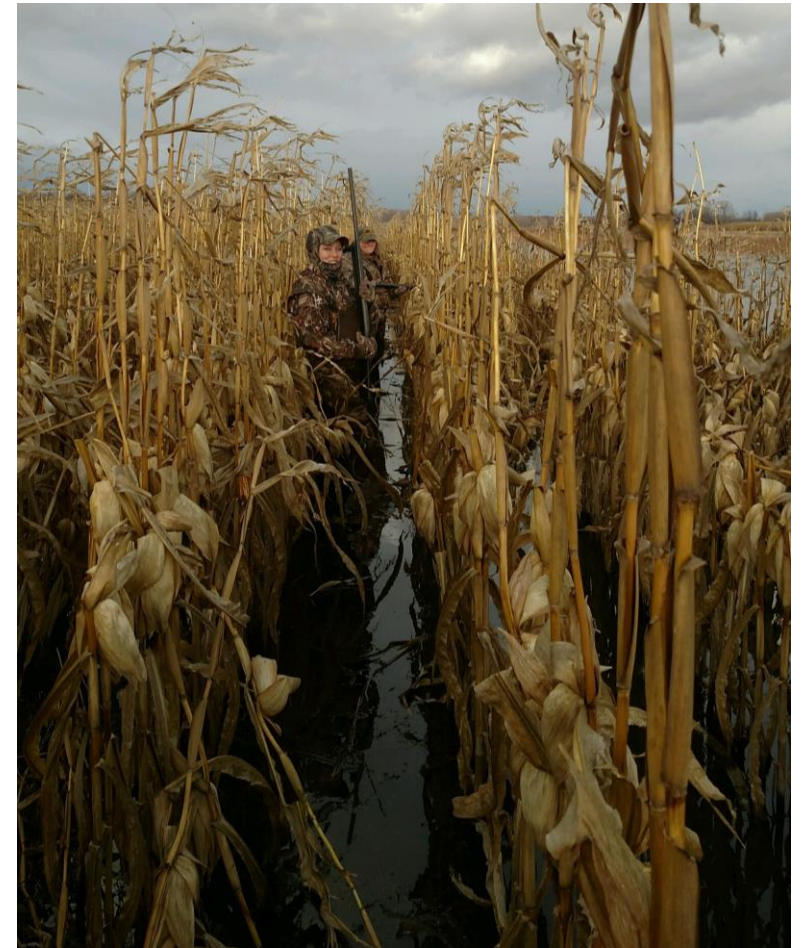
STRUCTURED DECISION MAKING BENEFITS



- A tool to make better decisions
- Defensible, transparent, and objective way to evaluate complex decisions
- Decompose decision-making complexity into component parts
- Decision parts are discussed formally and openly to support defensible decision making
- Distinguish science-based information from values-based decisions

DEFINING THE PROBLEM AND SETTING OBJECTIVES

- Internal issue scoping and prioritization with staff
- Stakeholder focus groups
- Conservation Partner Workshop
- 2 SDM Workshops with staff



FUNDAMENTAL AND MEANS OBJECTIVES

Maximize ecosystem function

- Maximize habitat for SWAP and T&E species
- Minimize impacts of invasive species
- Maximize natural hydrological processes
- Increase resilience of infrastructure and habitat to climate change

Maximize waterfowl abundance and diversity

- Maximize habitat for migratory waterfowl
- Maximize habitat for breeding waterfowl

Maximize satisfaction of waterfowl hunting experience

- Maximize hunting opportunities
- Maximize ability to see a bird while hunting
- Maximize ability to harvest a bird
- Maximize hunting safety
- Maximize physical access to areas

Maximize satisfaction of other outdoor recreation experiences

- Maximize opportunity for non-consumptive recreation
- Maximize opportunity for trapping and non-waterfowl hunting
- Minimize user conflict

Maximize capacity

- Minimize staff overburdening
- Minimize costs
- Increase information access, communication, outreach, and engagement with stakeholders, partners, and internally
- Maximize collaborations and partnerships



FINAL PRODUCT

- 10-year Managed Waterfowl Hunt Area Plan with weighted fundamental objectives
- Process for implementation

THANK YOU!



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