Integrating Social Information into Joint Venture Goals and Planning

Mark P. Vrtiska, Ph.D.
Waterfowl Program Manager
Nebraska Game and Parks Commission

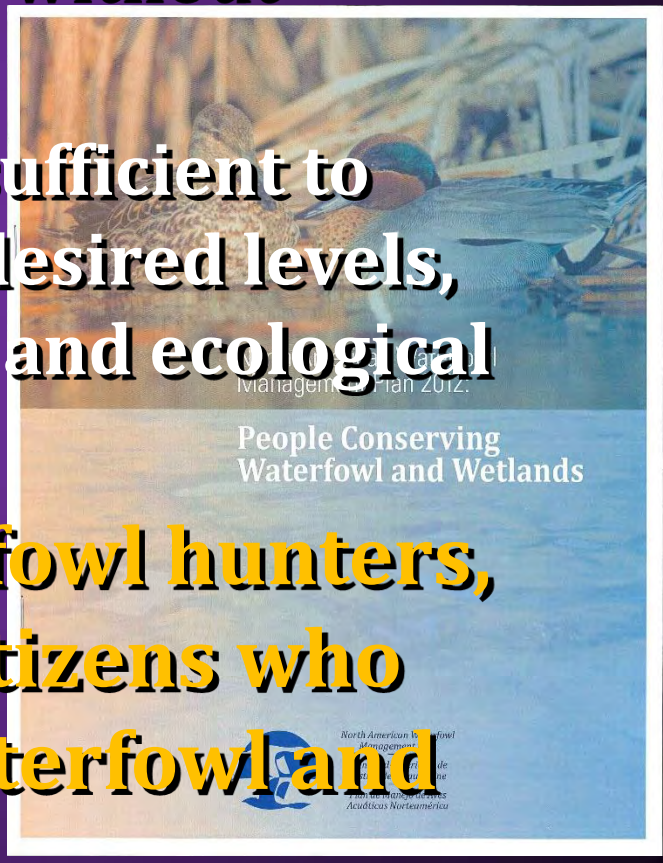

CM 20 25 30 35 40 45 50 55 60 65 70 75

2012 North American Waterfowl Management Plan Goals:

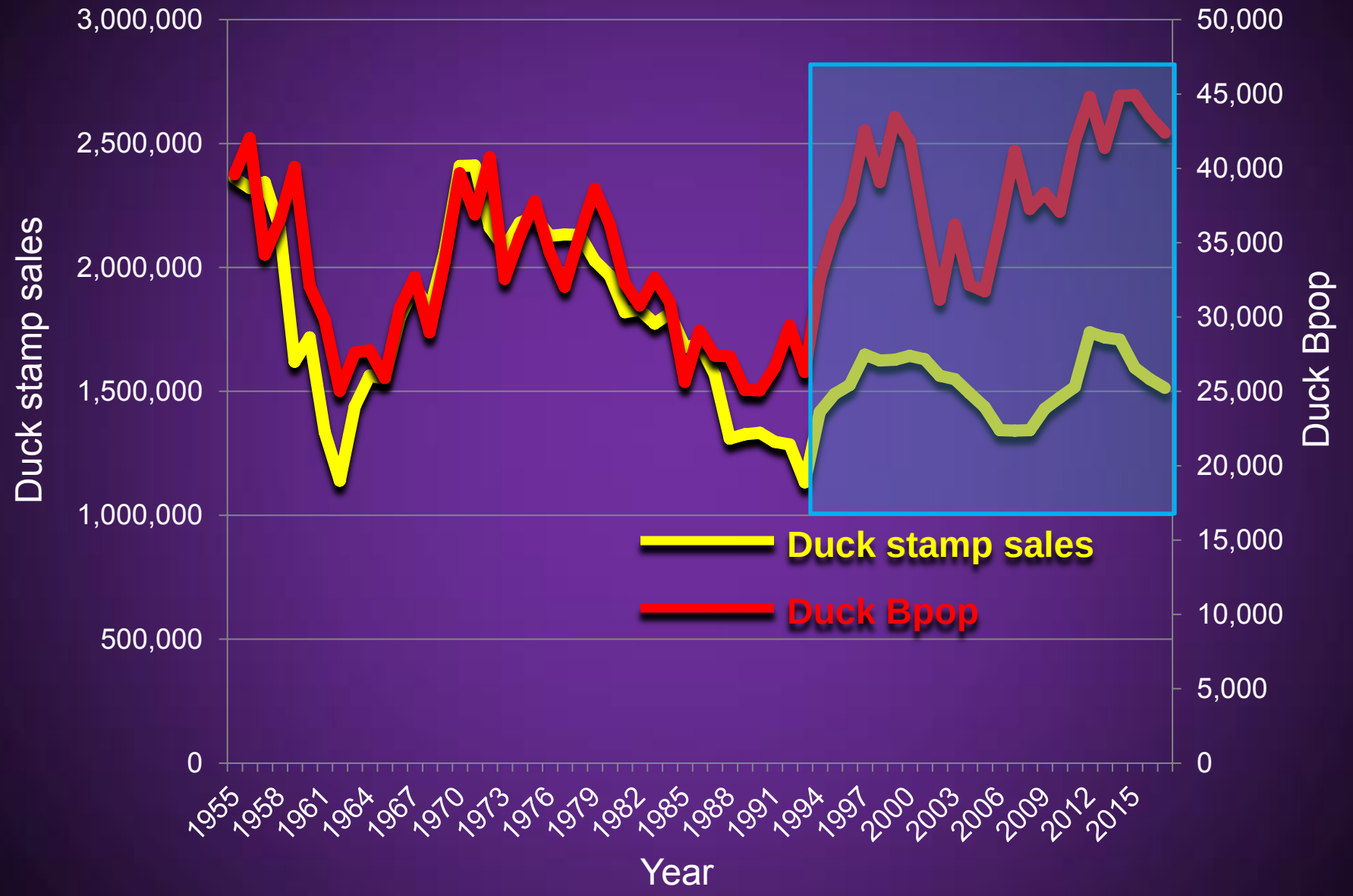
1. Abundant and resilient waterfowl populations to support hunting and other uses without imperiling habitat.

2. Wetlands and related habitats sufficient to sustain waterfowl populations at desired levels, while providing places to recreate and ecological services that benefit society.

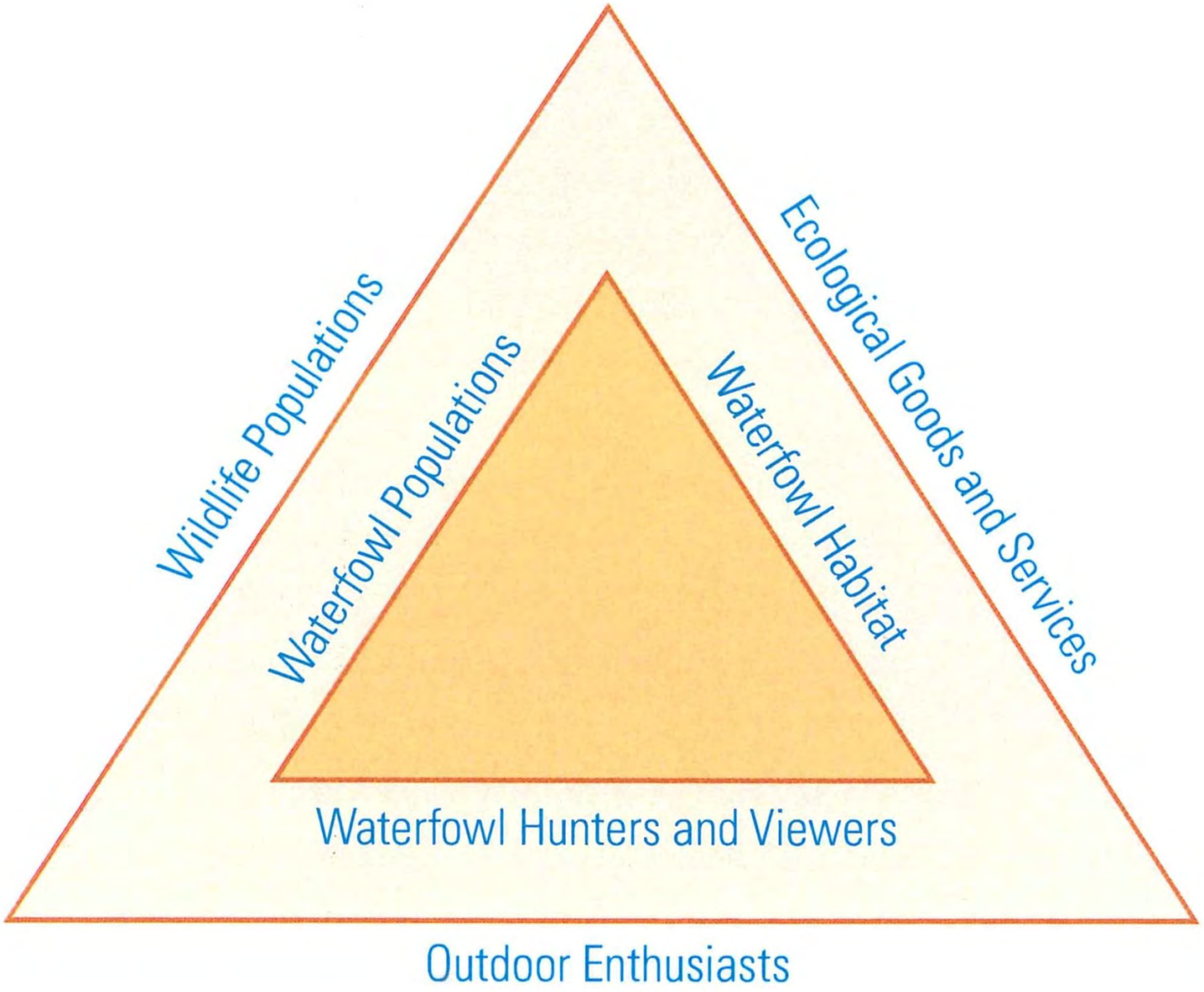
3. Growing numbers of waterfowl hunters, other conservationists, and citizens who enjoy and actively support waterfowl and wetlands conservation.



Duck Stamp Sales and Duck Breeding Populations, 1955-2017

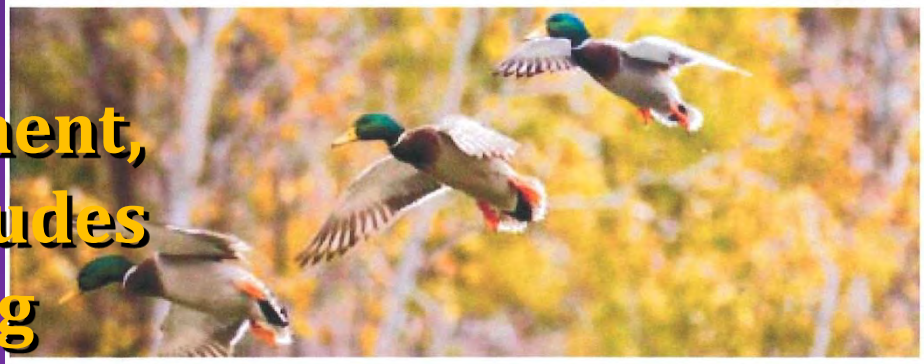


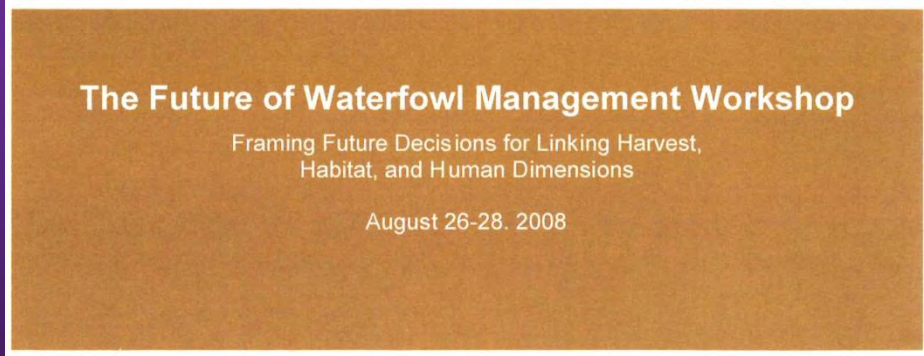
Waterfowl Hunter Recruitment and Retention Strategy - 2007


Wildlife Populations
Ecological Goods and Services
Waterfowl Populations
Waterfowl Habitat
Waterfowl Hunters and Viewers
Outdoor Enthusiasts

The Future of Waterfowl Management Workshop Minneapolis, MN, 2008.

Recommended expanded capacity for survey, assessment, and modeling of social attitudes related to waterfowl hunting and habitat conservation to assure the necessary and appropriate consideration of human dimensions elements in a unified framework for waterfowl management.





The North American Waterfowl Management Plan (NAWMP) - 1986

"...The goals in this Plan should be sufficient to maintain populations of ducks of various species and their habitats at levels acceptable to people who use and enjoy them..."

The North American Waterfowl Management Plan - 1986

"...Meeting these goals would provide the opportunity for 2.2 million hunters in Canada and the United States to harvest 20 million ducks annually. It would also provide benefits to millions of people interested in waterfowl for purposes other than hunting. An overall objective of management agencies is to accommodate the diverse public interests in waterfowl and to assure that all citizens can benefit from abundant waterfowl populations."

Growing numbers of waterfowl hunters, other conservationists, and citizens who enjoy and actively support waterfowl and wetlands conservation.

Wildlife Society Bulletin; DOI: 10.1002/wsb.791

Original Article

Incorporating Human Dimensions Objectives Into Waterfowl Habitat Planning and Delivery

PATRICK K. DEVERS,[1] *U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Laurel, MD 20708, USA*
ANTHONY J. ROBERTS, *U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Laurel, MD 20708, USA*
SCOTT KNOCHE, *Patuxent Environmental and Aquatic Research Laboratory, Morgan State University, St. Leonard MD 20685, USA*
PAUL I. PADDING, *U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Laurel, MD 20708, USA*
ROBERT RAFTOVICH, *U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Laurel, MD 20708, USA*

ABSTRACT The 2012 revision of the North American Waterfowl Management Plan (NAWMP) explicitly recognized the need to increase recruitment and retention of waterfowl hunters, birdwatchers, and other conservationists to maintain support for wetland conservation. The incorporation of human dimensions objectives within the NAWMP has compelled waterfowl and wetland managers to consider whether and to what extent landscape characteristics such as public land access; the type, amount, and location of wetlands; and site infrastructure will increase support for wetland conservation among user groups. Further, it has forced the waterfowl community to consider the possible trade-offs between managing land to achieve

Human Behavior

Social Psychology

Economics

Political Science

Human Dimensions

Communication

Sociology

Marketing

Anthropology

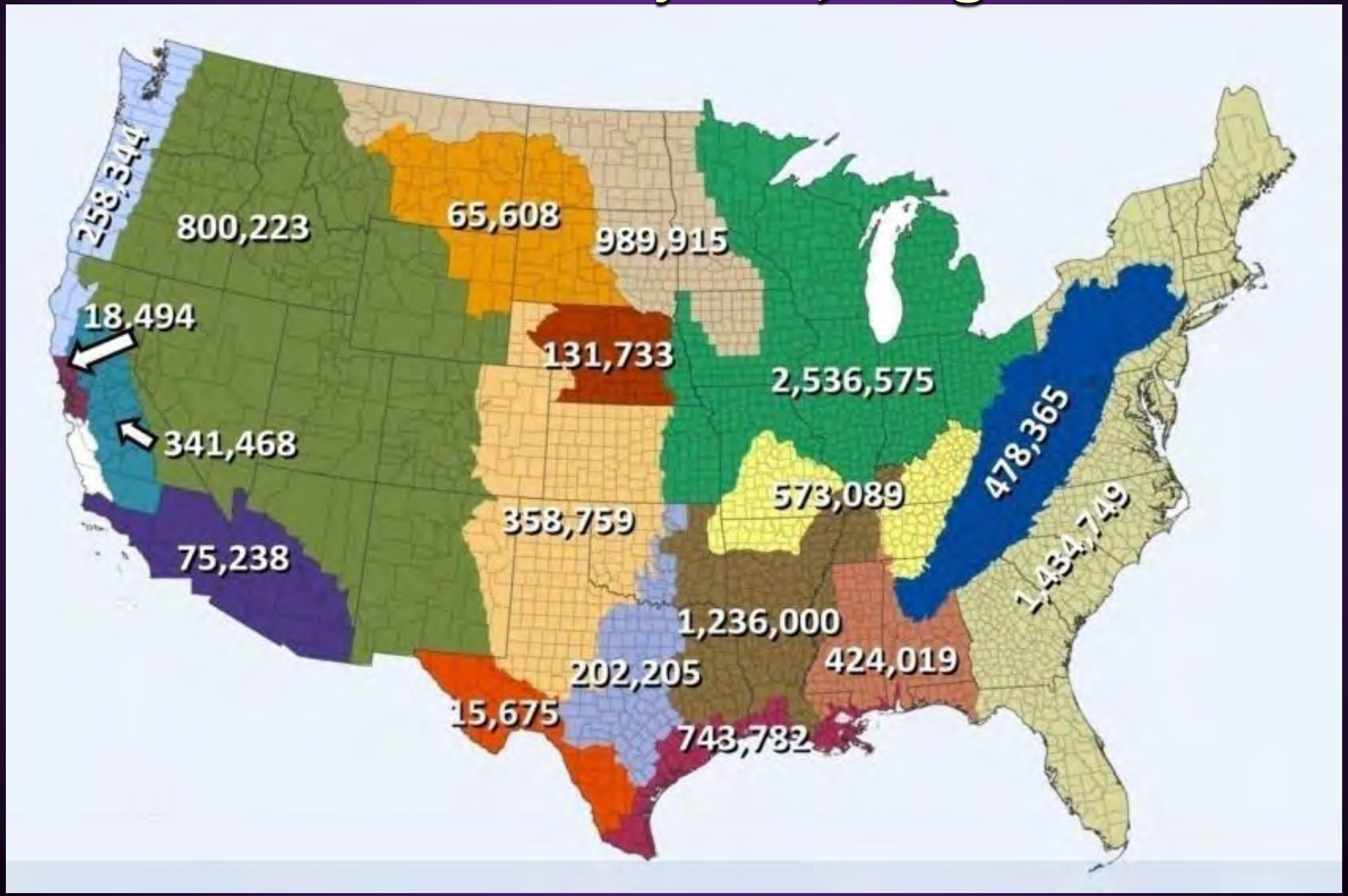
Human Dimensions in Waterfowl Management

Definition of HD in wildlife management:

- How people value/use wildlife;
- How they want wildlife to be managed;
- How they affect or are affected by wildlife & wildlife management decisions.

Upper Mississippi/Great Lakes Joint Venture

Waterfowl hunter days (10 million) distributed by U.S. JV region



Goal for Waterfowl Supporters

NAWMP Goal 3: **"Growing numbers of waterfowl hunters, other conservationists, and citizens who enjoy and actively support waterfowl and wetlands conservation."**

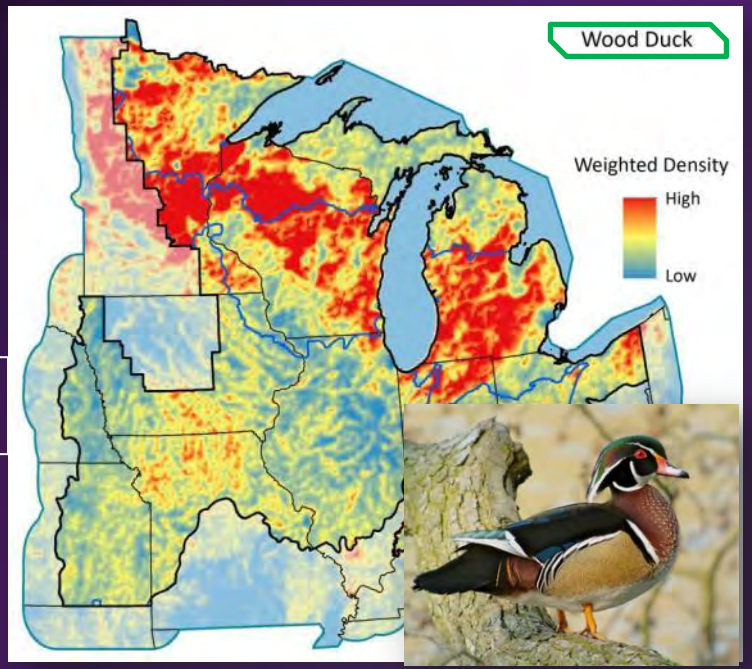
Objective: We will increase waterfowl conservation support among various constituencies to at least the levels experienced during the last two decades.

Targeting Conservation

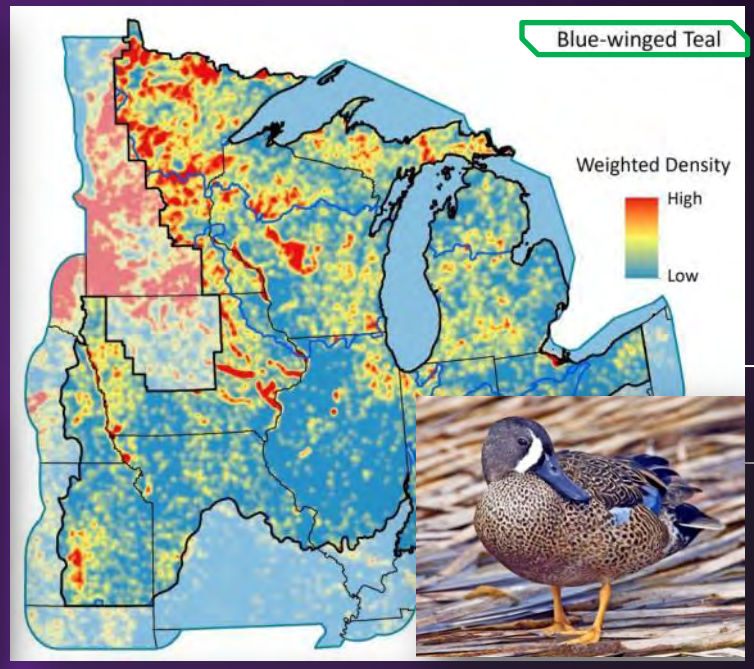
Objectives	Spatial Data
Maximize focal species recruitment through conservation of high quality breeding habitats	Density and distribution of key breeding habitats for ducks
Maximize focal species survival and body condition with habitat focus on cross-seasonal effect (non-breeding period)	Duck harvest relative to wetland abundance - surrogate for non-breeding wetland area limitation
Maximize hunter retention and recruitment	Harvest distribution of ducks and geese – reflects successful hunter distribution
Maximize waterfowl viewer / recreationist retention and recruitment	Human distribution and distance to potential habitat areas
Minimize nutrient and sediment runoff detrimental to river system ecology – Gulf Hypoxia focus	Mississippi River sub-basins (8-digit HU) most impaired (high cultivated cropland / development coverage)
Maximize health, function, and biological diversity of Great Lakes coastal zones – coastal wetland focus	Great Lakes coastal sub-basins (8-digit HU) most impaired (cultivated cropland / development coverage)

Density and distribution of key breeding habitats for ducks

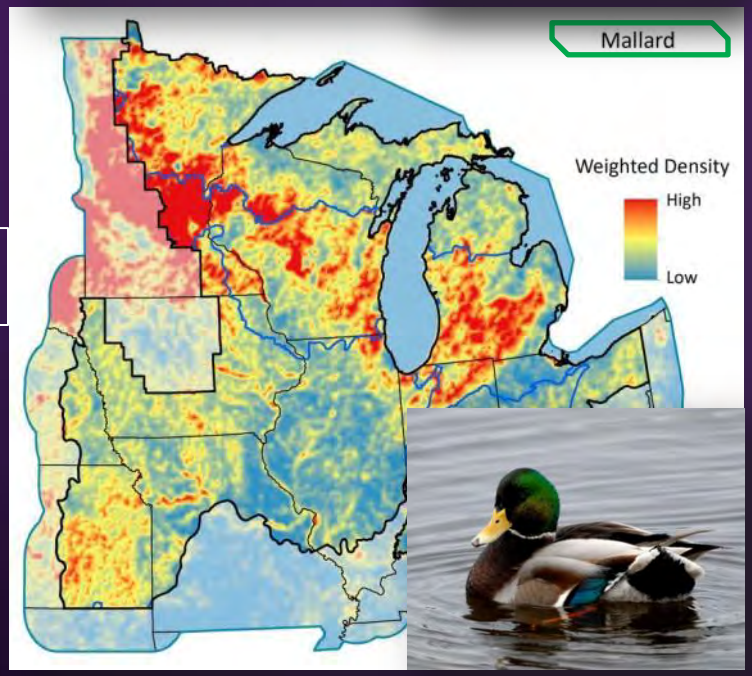
20%



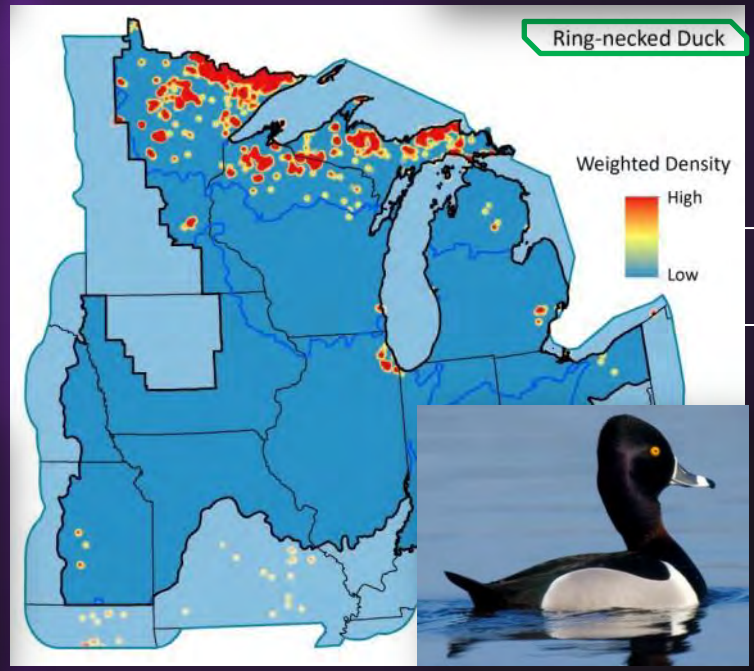
14%



45%

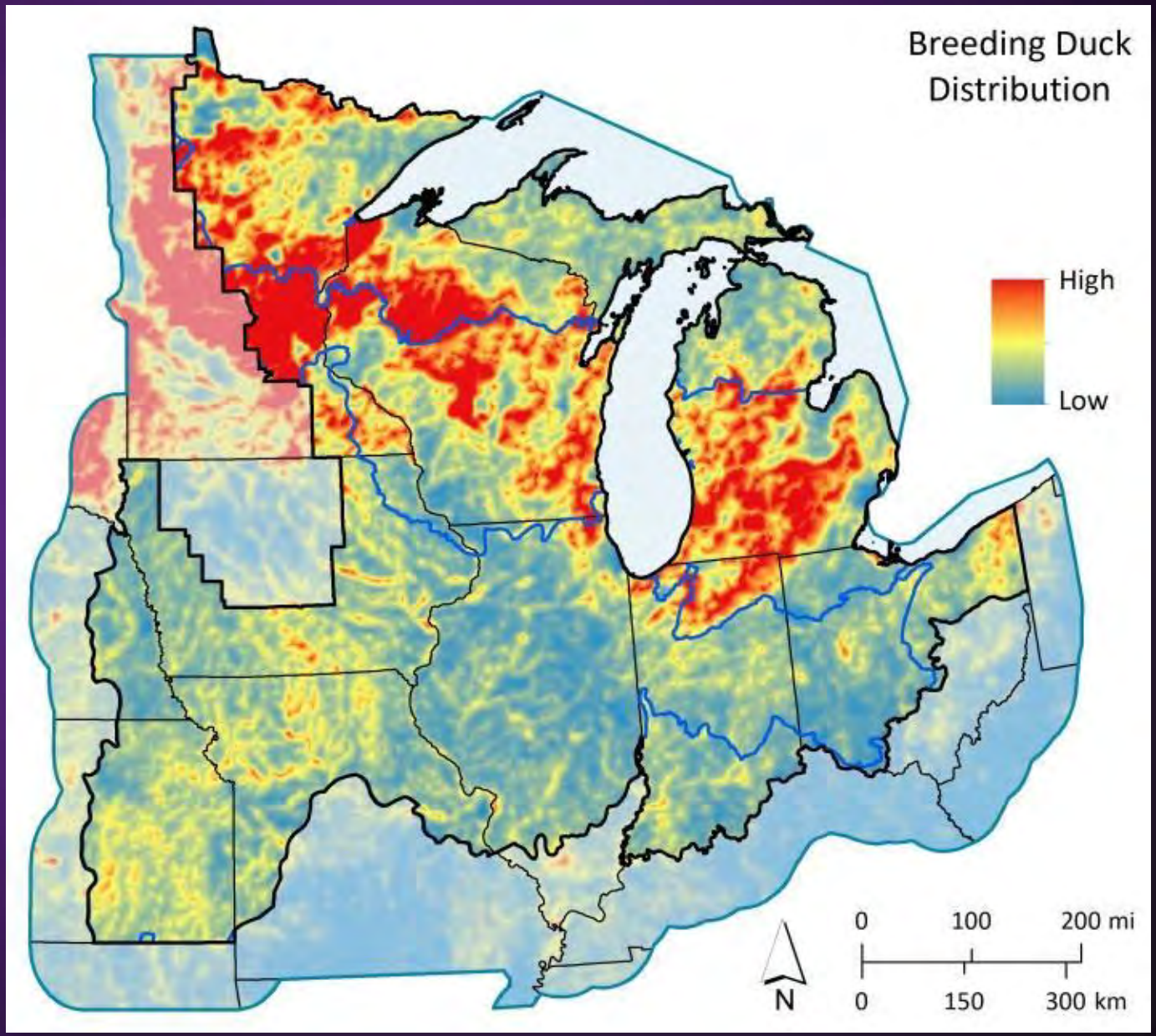


6%



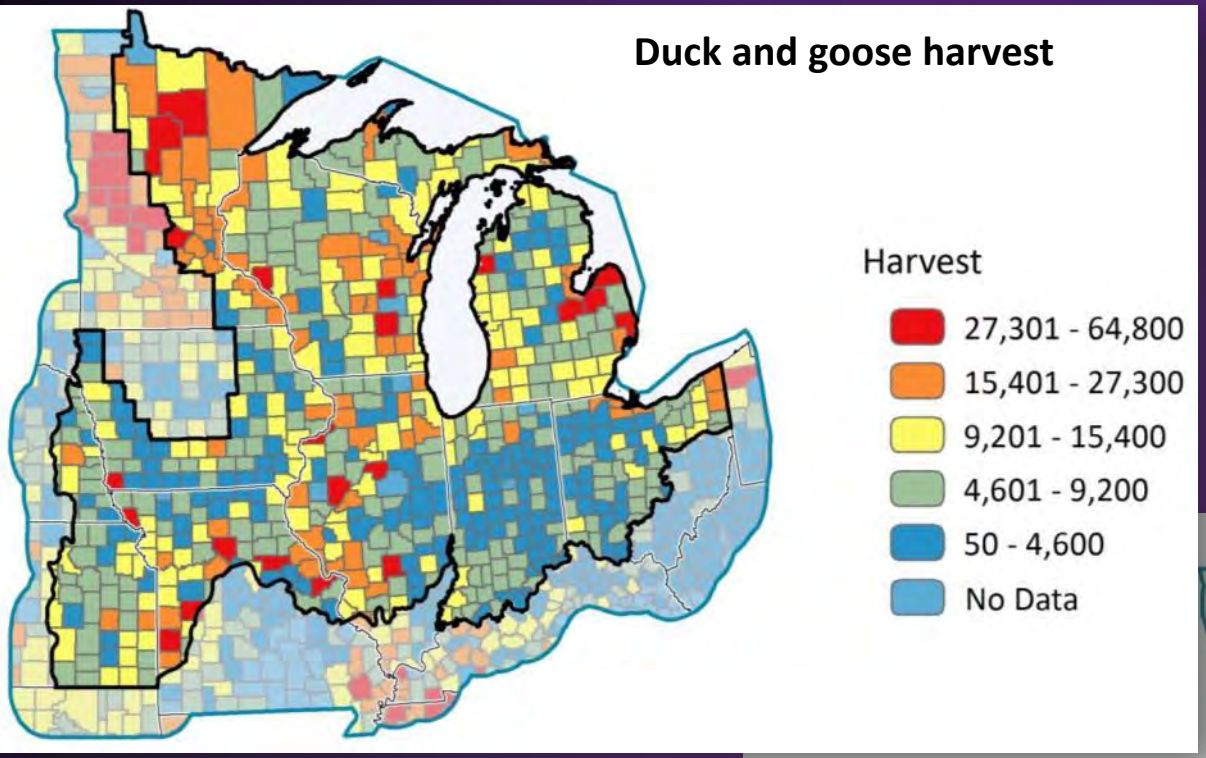
Density and distribution of key breeding habitats for ducks

Targeting best areas for breeding habitat conservation

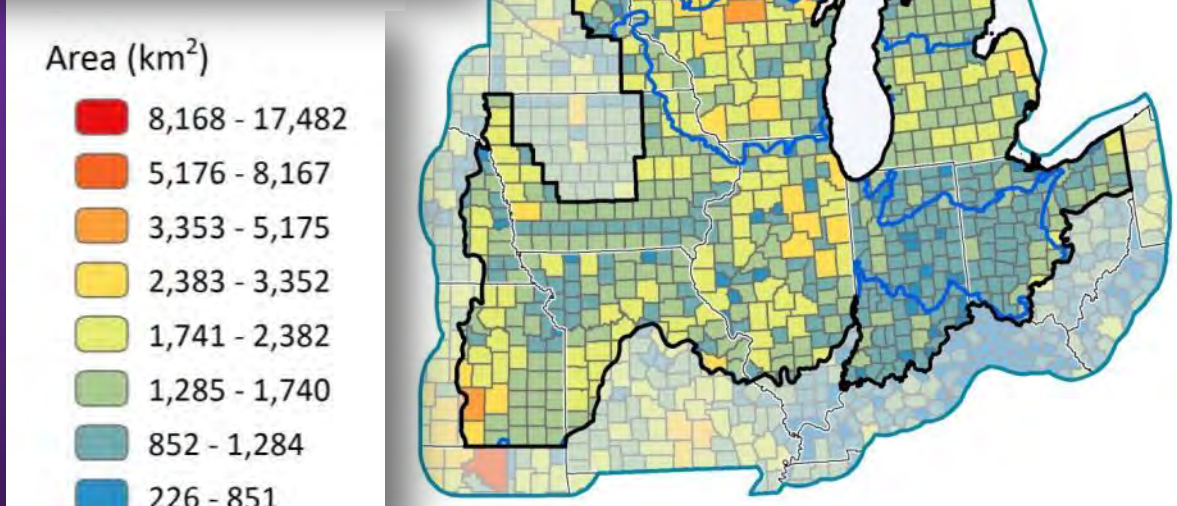


Distribution of waterfowl harvest

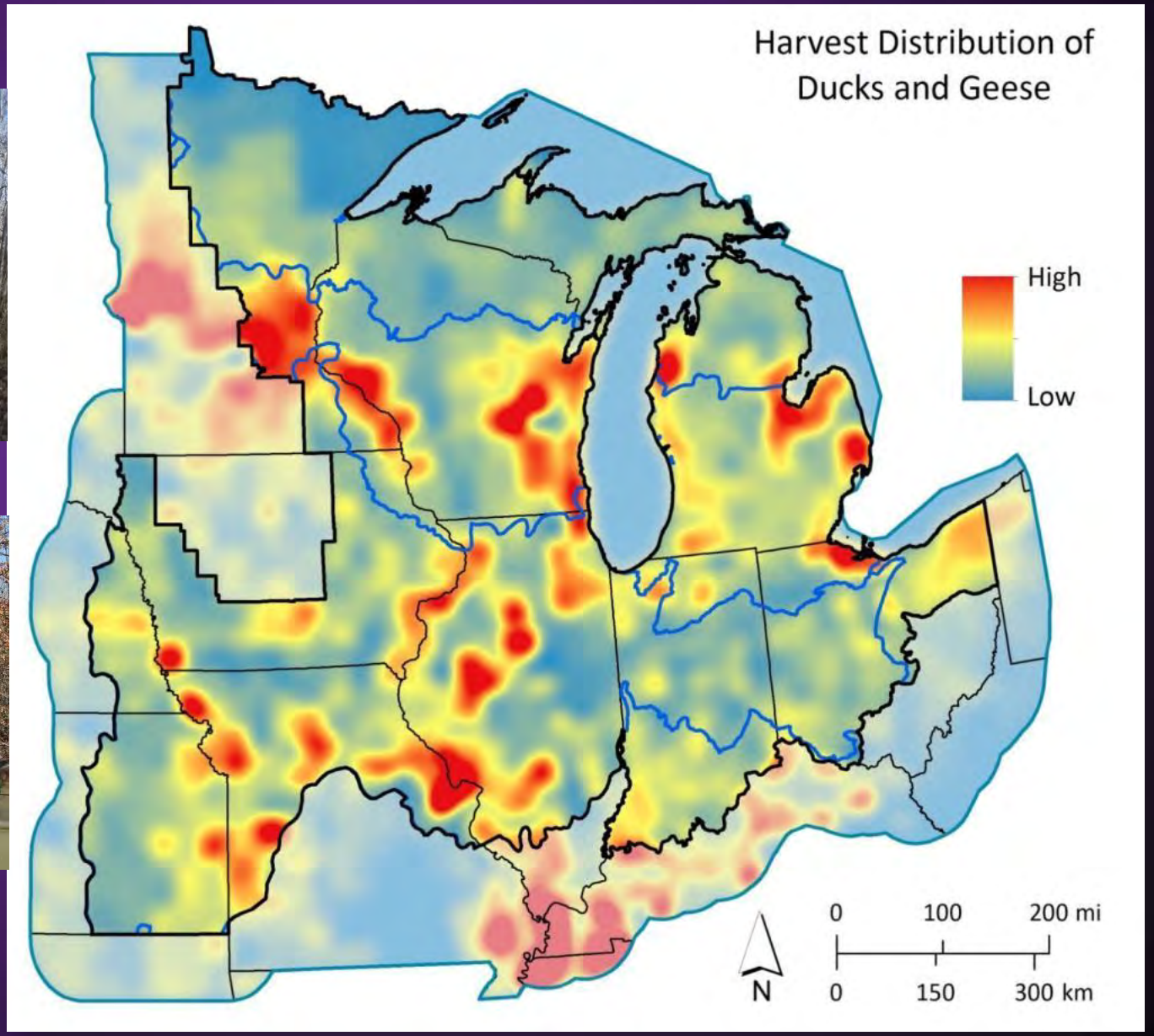
Duck and goose harvest



County size

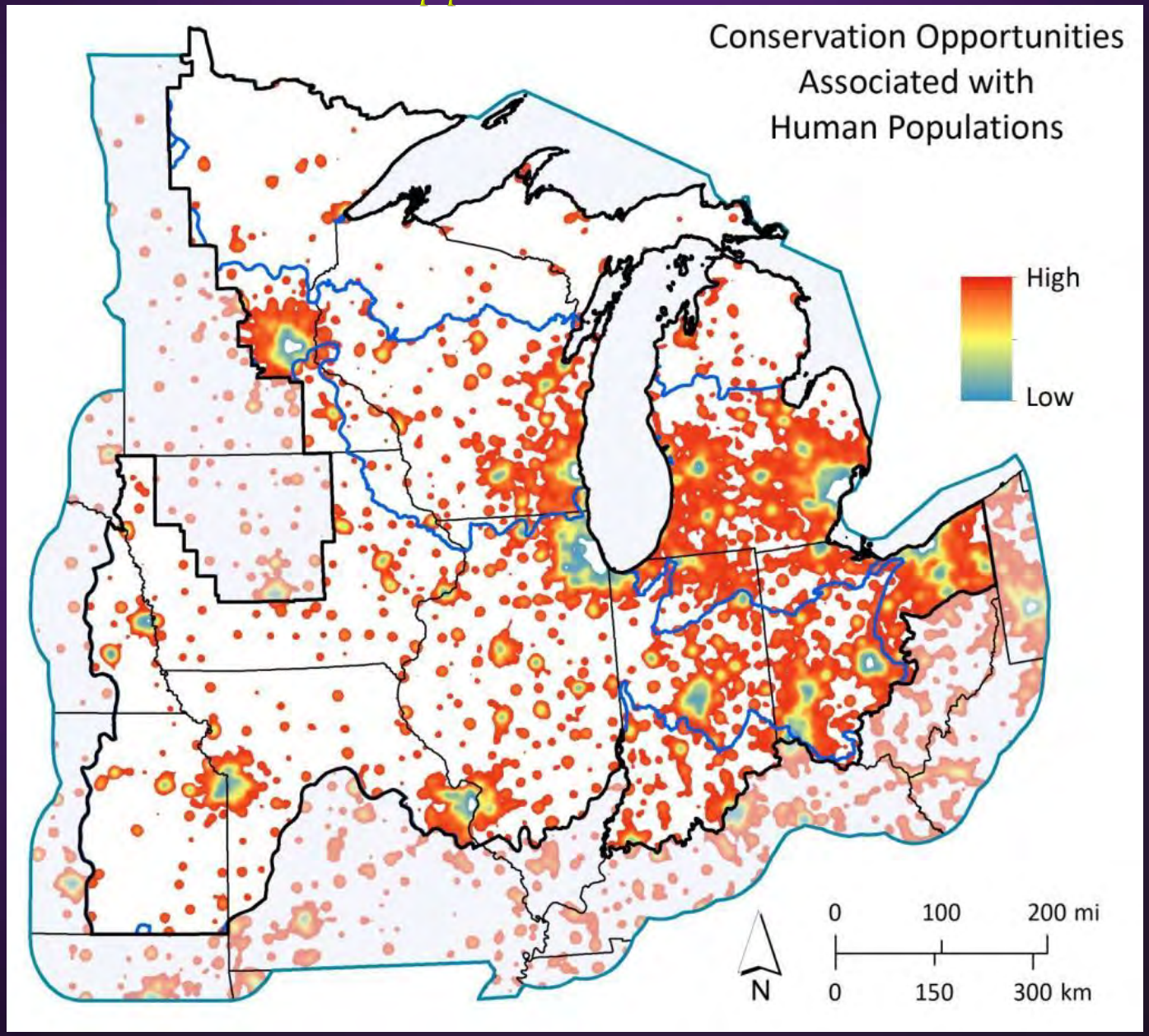


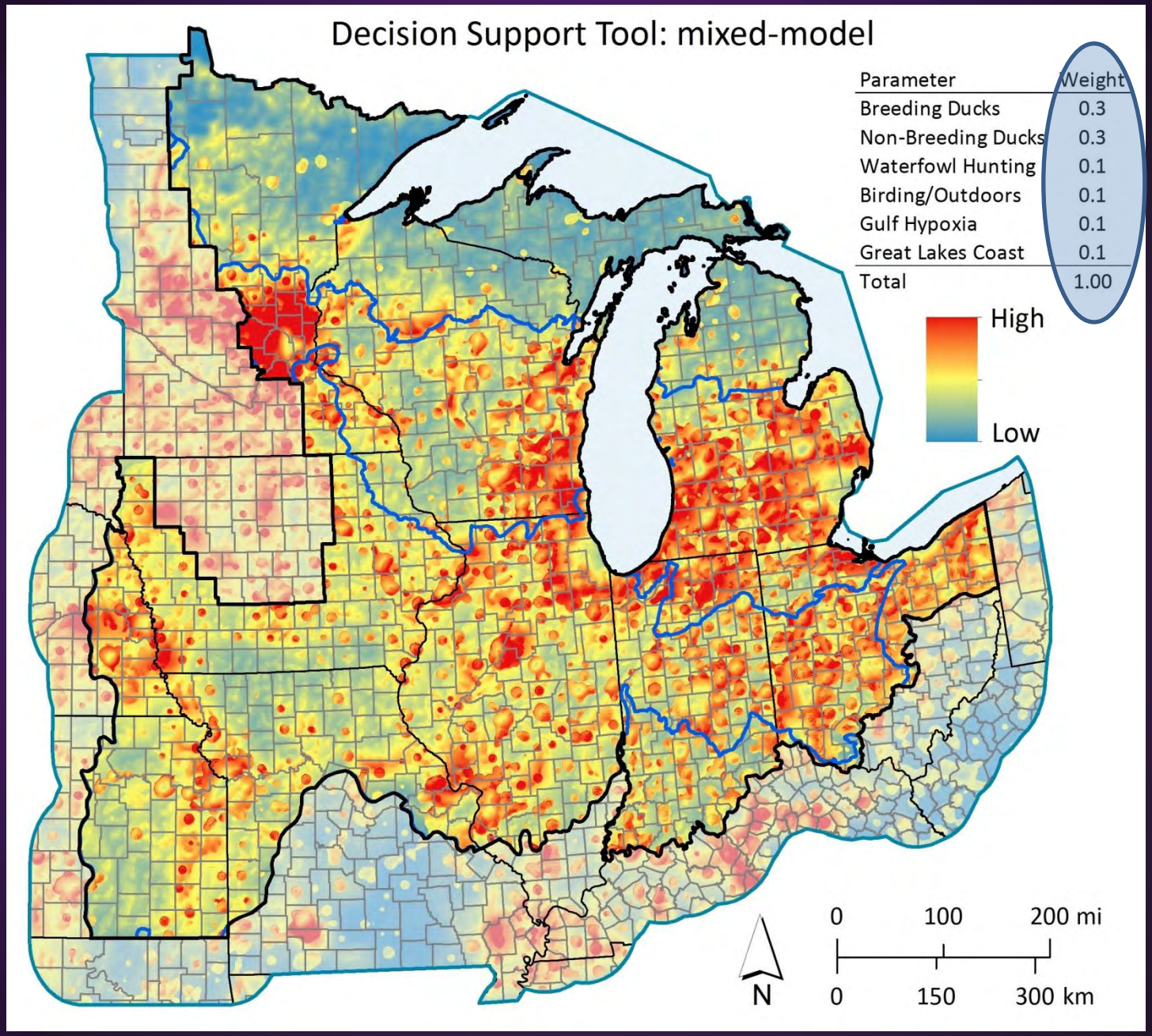
Distribution of waterfowl harvest = waterfowl hunting community = *Maximize hunter retention and recruitment*



Distribution of people – birders/potential nature enthusiasts

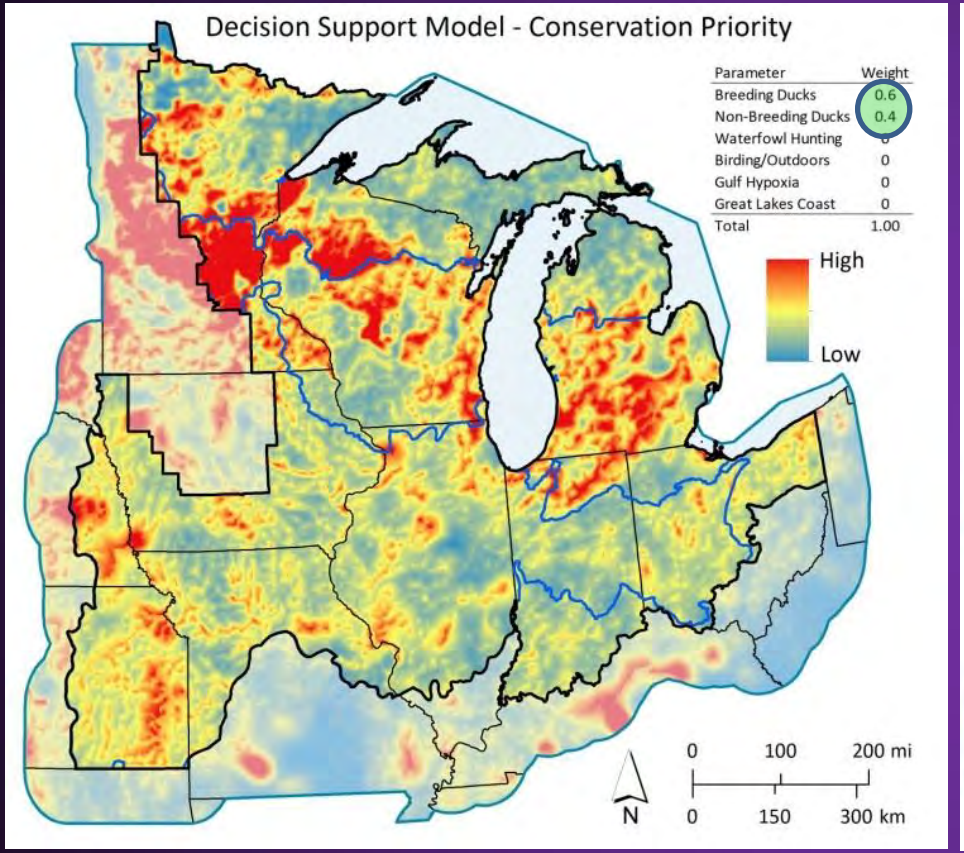
(Maximize birder supporter recruitment and retention)



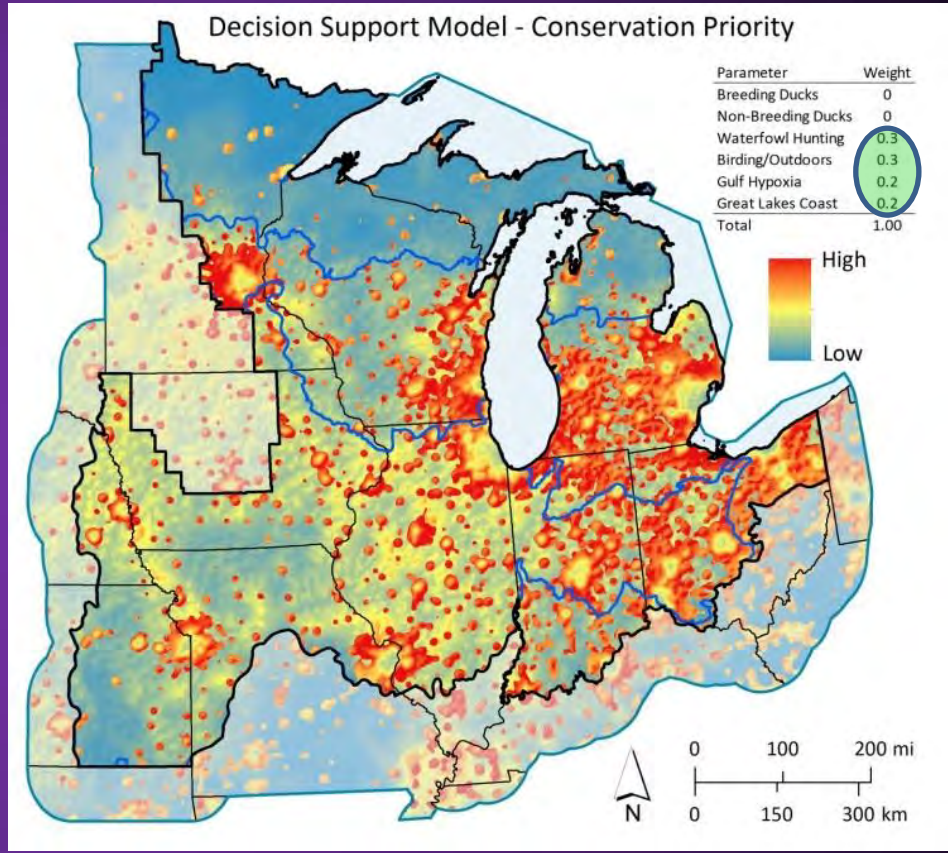


Mixed Model: Biological & Social Values

Biological Model



Social Model



Atlantic Coast Joint Venture

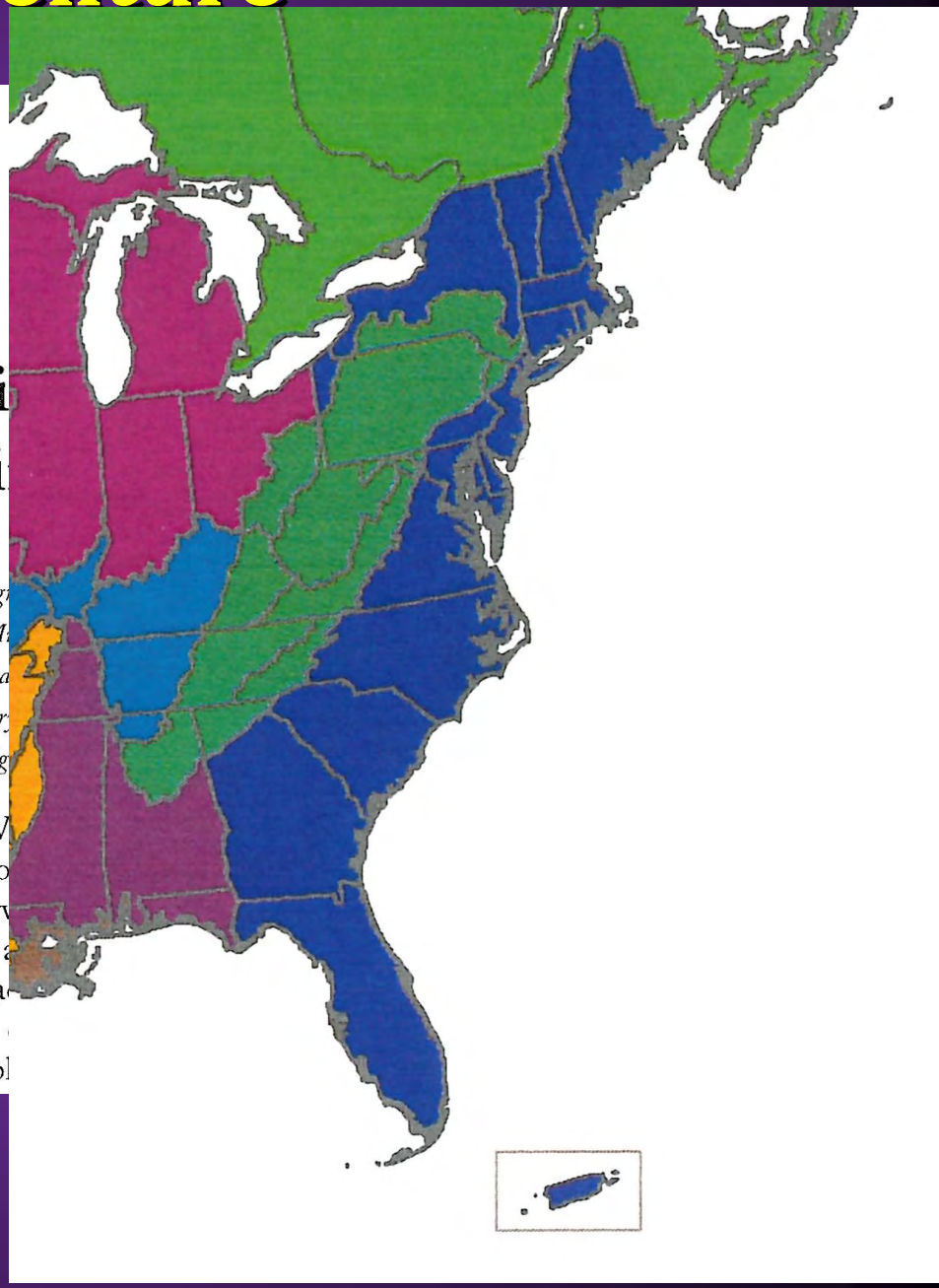
Wildlife Society Bulletin; DOI: 10.1002/wsb.791

Original Article

Incorporating Human Dimensi
Into Waterfowl Habitat Planni

PATRICK K. DEVERS,[1] *U.S. Fish and Wildlife Service, Division of Migr*
ANTHONY J. ROBERTS, *U.S. Fish and Wildlife Service, Division of M*
SCOTT KNOCHE, *Patuxent Environmental and Aquatic Research Labora*
PAUL I. PADDING, *U.S. Fish and Wildlife Service, Division of Migrator*
ROBERT RAFTOVICH, *U.S. Fish and Wildlife Service, Division of Mig*

ABSTRACT The 2012 revision of the North American W
recognized the need to increase recruitment and retentio
conservationists to maintain support for wetland conserv
objectives within the NAWMP has compelled waterfowl a
what extent landscape characteristics such as public land a
and site infrastructure will increase support for wetland
forced the waterfowl community to consider the possibl



Atlantic Coast Joint Venture

- Used similar data sets – USFWS waterfowl hunter harvest data (county level).
- Refined with banding data.

The Cornell Lab of Ornithology
Exploring and Conserving Nature
eBird

- Used eBird data for birdwatchers and their travel characteristics.

Atlantic Coast Joint Venture

U.S. Fish & Wildlife Service

National Wetlands Inventory

Examined site (travel cost, public land (ha), wetland (ha), county area, Atlantic and Great Lakes Coast counties, and individual (income, age, gender and education) characteristics on trips by hunters and birdwatchers.

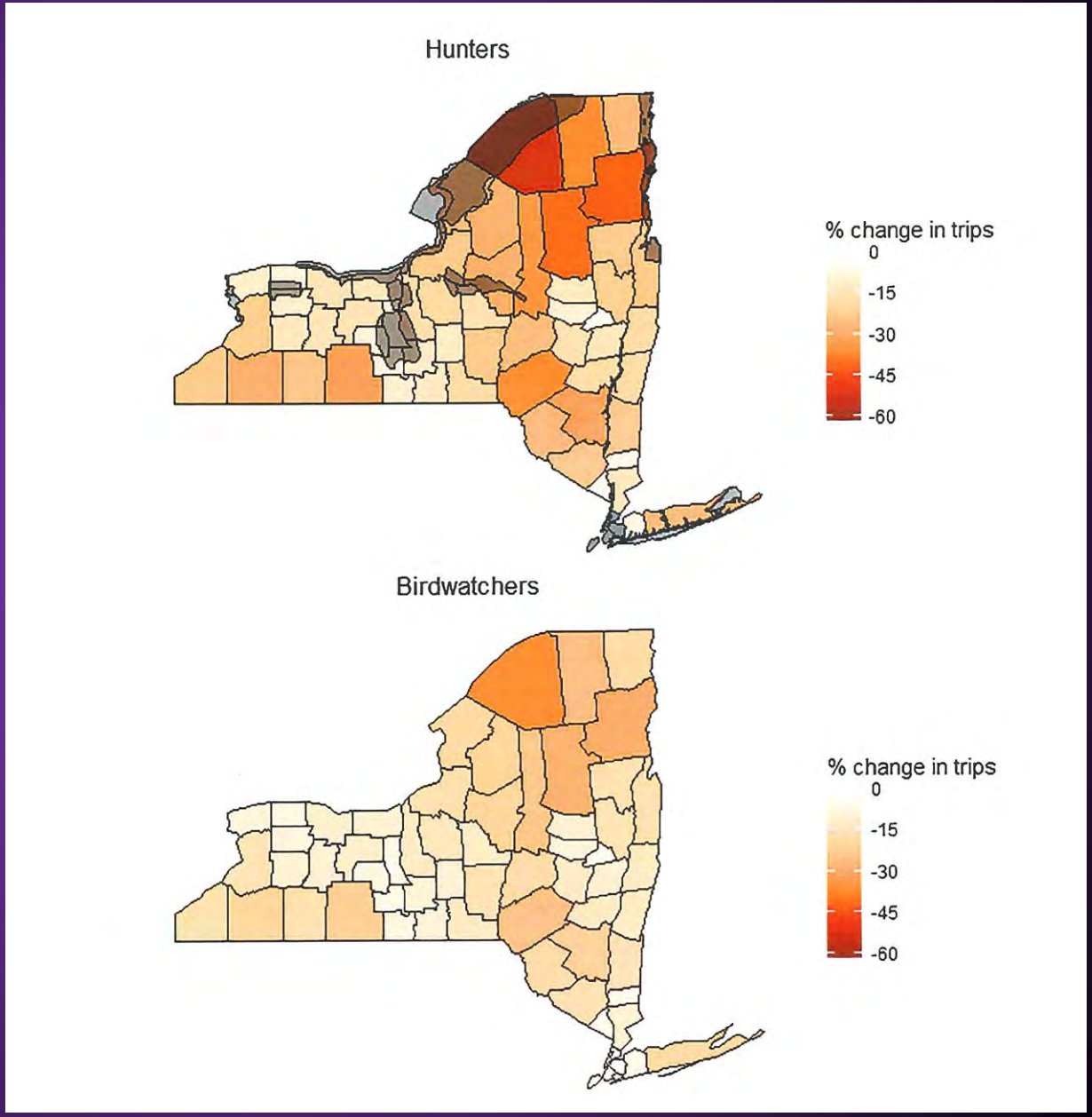
Atlantic Coast Joint Venture

Examined site (travel cost, public land (ha), wetland (ha), county area, Atlantic and Great Lakes Coast counties, and individual (income, age, gender and education) characteristics on trips by hunters and birdwatchers.

Both groups = travel costs, wetland area, Atlantic/Great Lakes counties positive influence on # of trips.

Atlantic Coast Joint Venture

% change in trips with 10% loss in wetlands.



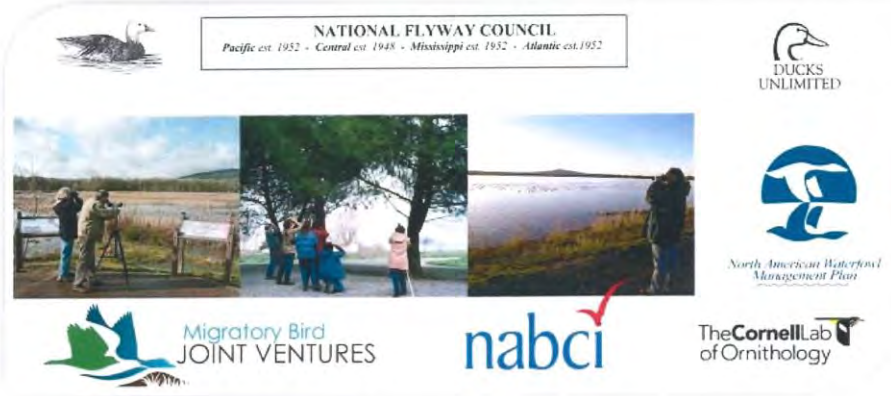
National Survey of Waterfowl Hunters: Summary Report Central Flyway

2018

North American Birdwatching Survey:

Summary Report Central Flyway

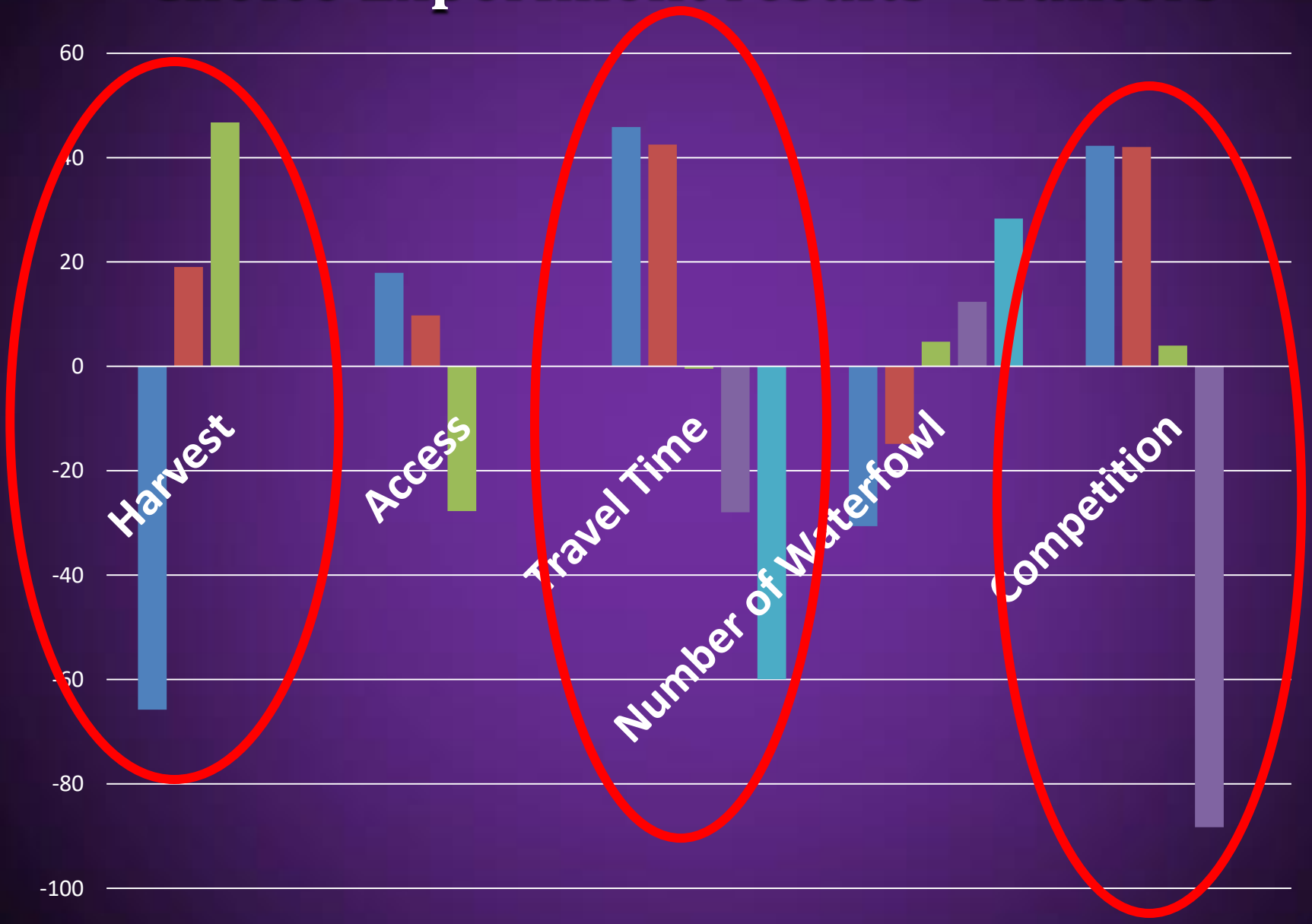
2018



Discrete Choice Modeling - Waterfowl Hunt Attributes and Levels

Attribute	Choices				
Harvest	1 bird	3 birds	6 birds	--	--
Access	Easy	Moderate	Difficult	--	--
Travel Time	30 mins	1 hour	2 hours	3 hours	4 hours
Number of waterfowl	25 or less	50	250	500	1000 or more
Competition	None	Low	Moderate	High	--

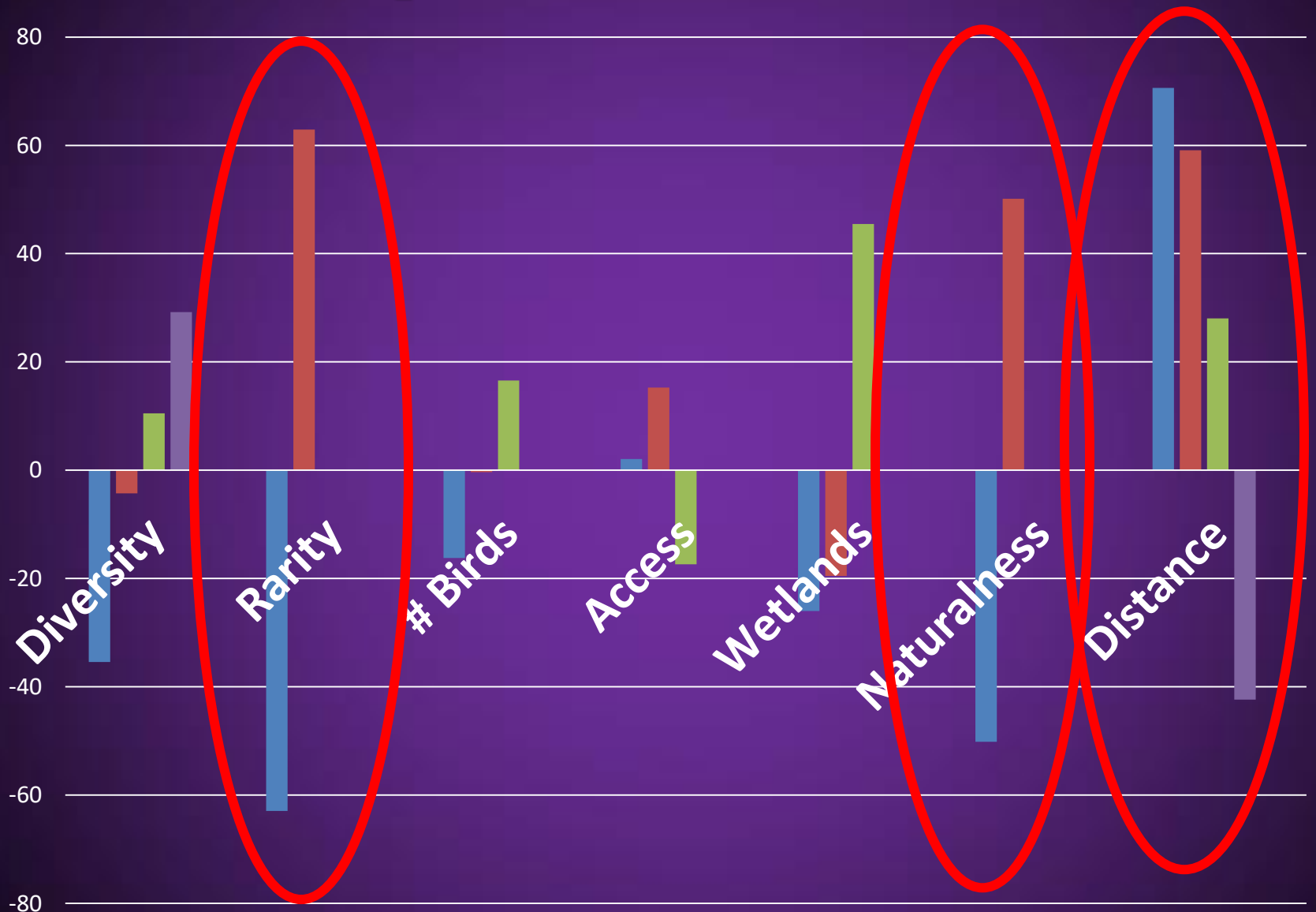
Choice Experiment results - Hunters



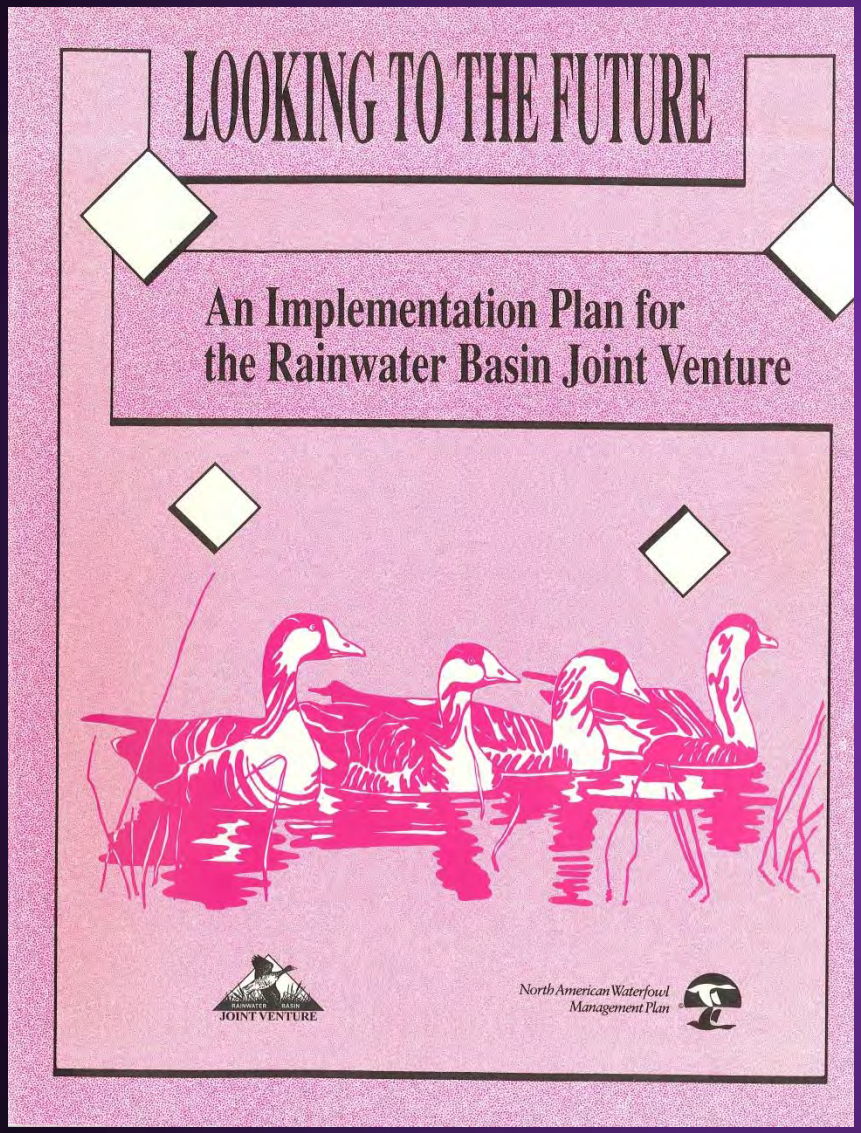
Discrete Choice Modeling - Birdwatching Attributes and Levels

Attribute	Choices				
Diversity	<10 species	<20 species	<30 species	>40 species	--
Rarity	None	Present	--	--	--
# of Birds	<100	Hundreds	Thousands	--	--
Access	Easy	Moderate	Difficult		
Wetlands	None	Yes – no ducks	Yes - ducks	--	--
Naturalness	Developed	Natural	--	--	--
Distance	<2 miles	<25 miles	<50 miles	<100 mi	<200 mi

Choice Experiment results - Watchers



Rainwater Basin JV?

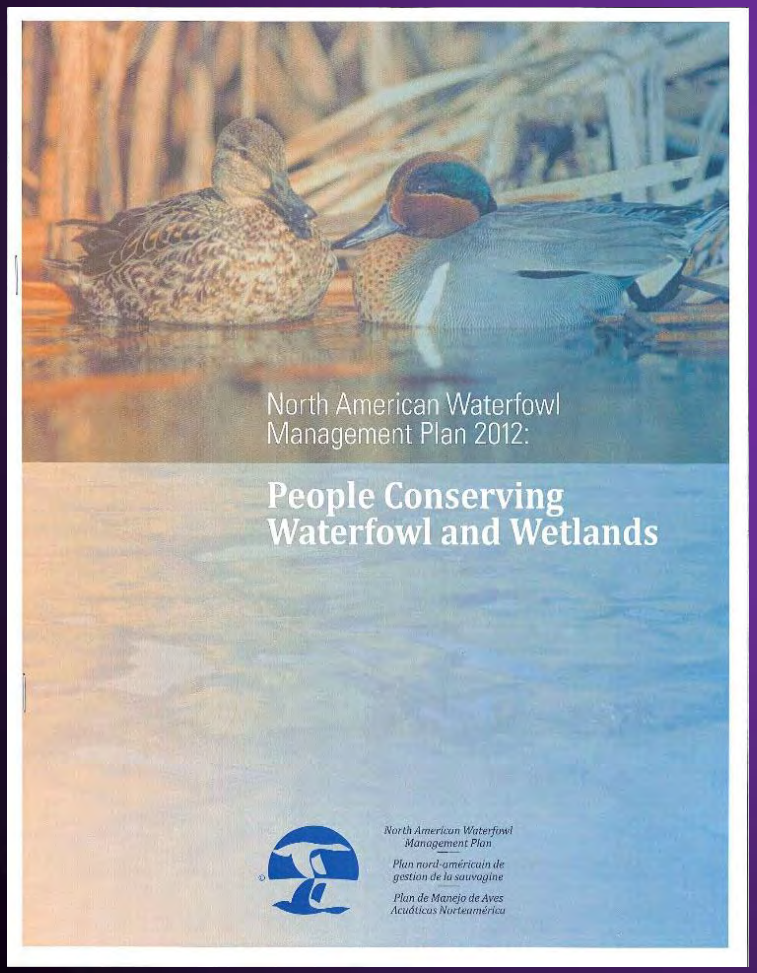


- HD needs were identified in RWBJV plans.
- Need to begin work on integrated approach.
- Exploring access to hunter data regarding satisfaction/use - which could establish hunter objectives.
- Preliminary data on some economic work.

Challenges:

- Establishing "People" Goals
  - What people?
    - Hunters
    - Non-consumptive users
    - Public
- Changing/modifying priorities/objectives
- Little or no HD expertise in JV or partners.
- Increased communication/cooperation.

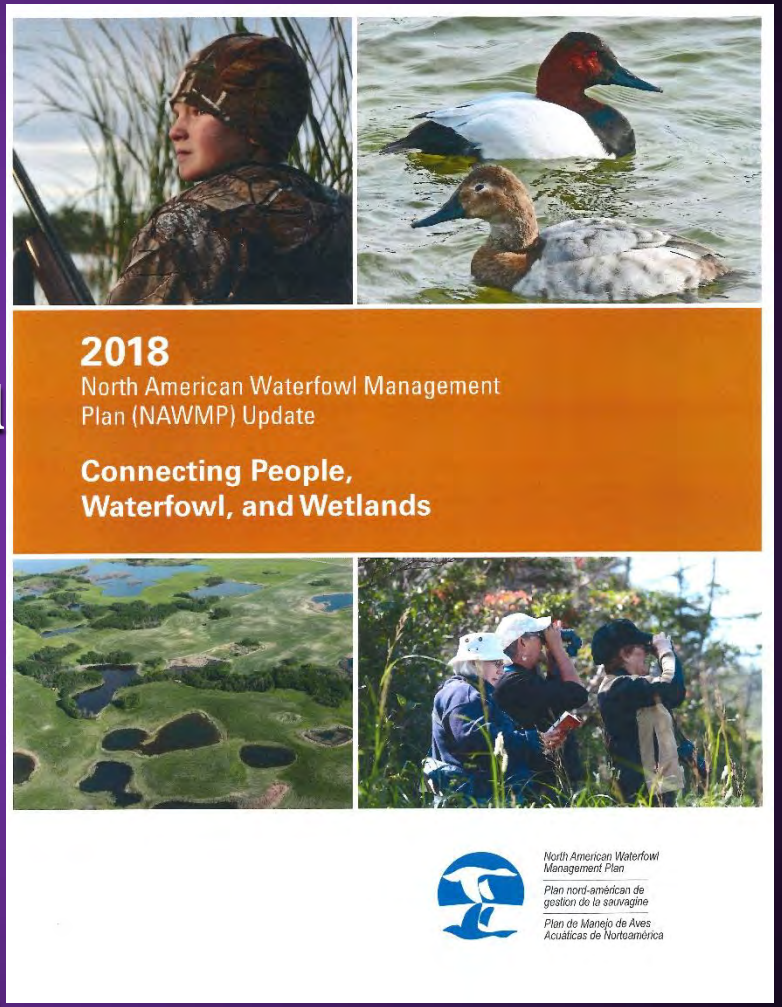
Growing numbers of waterfowl hunters, other conservationists, and citizens who enjoy and actively support waterfowl and wetlands conservation.



- Specific, numeric goals were set – but need more work (e.g., landowner objective).
- Goals need to align with other efforts (e.g., national R3 plans).
- Still a lot unknowns or assumptions about HD information.

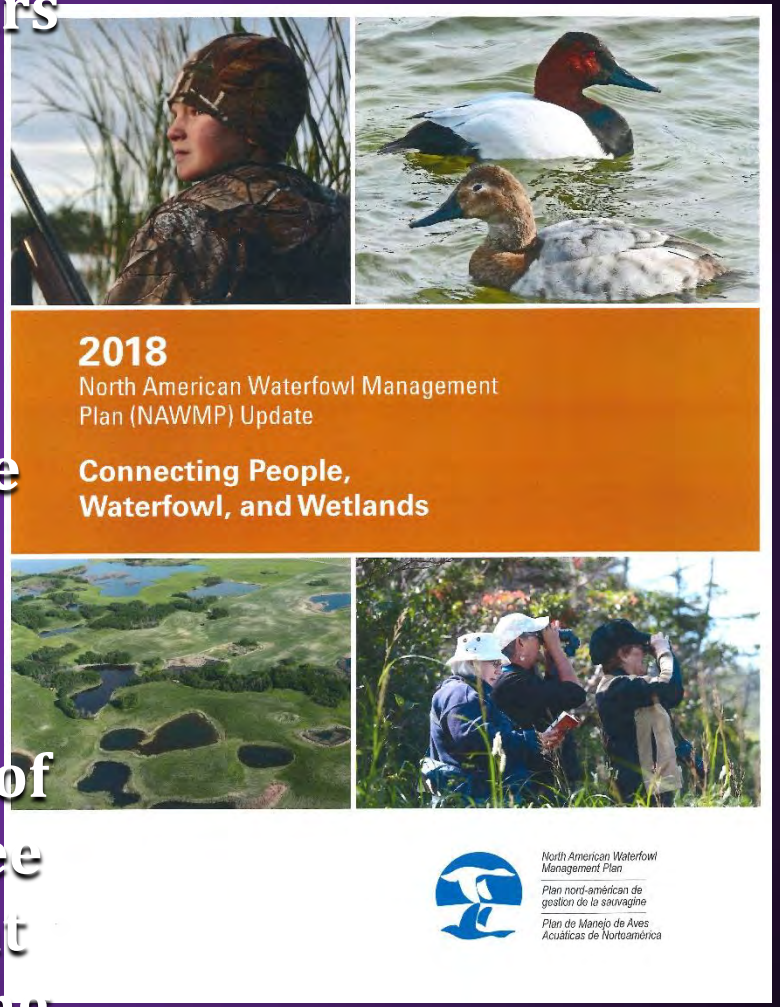
2018 NAWMP Update Recommendations:

- Focus conservation actions on waterfowl habitat and population management objectives and incorporate social science into planning and program delivery.
- Help people understand the opportunities for conservation and outdoor recreation resulting from NAWMP and how society benefits from waterfowl habitat.
- Compel people to take action to conserve waterfowl habitat.
- Identify key geographic areas where the best opportunities exist to meet the needs of waterfowl and people.



2018 NAWMP Update Recommendations:

- Establish a process to review and update Plan objectives every 10 years and provide guidance on implementation.
- Share knowledge from all work to integrate and balance The needs of habitat, waterfowl, and people.
- Bolster training programs for future waterfowl management professionals.
- Replace the Interim Integration Committee (IIC) with a new system of liaisons between the Plan Committee and the working groups and appoint ex-officio members from the working groups to the Plan Committee.



Human Dimensions in Waterfowl Management

How people value wildlife:

- Recreation
  - 77 million Americans participate in wildlife
- Education
  - Informing individuals how our world functions
- Aesthetics
  - Appreciate seeing wildlife in natural environment (wildlife viewing tours)
- Biological/Ecological
  - Pollination, seed dispersal, nutrient cycling

Human Dimensions in Waterfowl Management

How people value wildlife:

- Sociocultural
  - Hunting and fishing traditions that become important within culture.
- Commercial
  - Regional economy benefits from $ wildlife-users spend on food, lodging, fuel, & equipment.

Recruiting new, retaining old

- Why haven't they, or why did they quit?
- How do we get them into it or back into it?
- How many do we need or want?

- How are we going to engage non-consumptive users into paying for conservation?
- Do they already support conservation?