

# **Natural Resources Commission Meeting**

Policy Committee on  
Wildlife and Fisheries

September 13, 2018

# Proposed Orders

- For Information – NRC
  - Special Fishing Regulations for Warmwater Species on Select Waters (FO 206.19)
  - Designated Trout Streams for Michigan (FO 210.19)
  - State-Licensed Commercial Fishing (FO 243.19)
  - Fishing Tournament Registration (FO 250.19)

# Proposed Orders

- For Action – NRC
  - Order to Expand the Boundary of Highland Field Trial Lands (WCO # 15 of 2018)
  - Spawning Closures (FO 204.19)
  - Fishing Regulations – Sylvania Wilderness Area – Ottawa National Forest, Gogebic County (FO 212.19)
  - Netting Regulations (FO 229.18A)
  - Ice Fishing Shanty Regulations (FO 251.18)
- For Action – Director
  - Removal of the Temporary Closures on Department-managed Lands at the Otsego Dam Structure and Certain Surrounding Areas, Allegan County (WCO #4 of 2018)

# **NRC Policy Committee on Wildlife and Fisheries**

- Fisheries Chief Update
  - Fishing Regulations
  - Brown Trout Strains & Stocking
  - Michigan Angler Demographics & Future Angler Recruitment
- Wildlife Chief Update
  - White-Nose Syndrome in Bats

# **Department of Natural Resources**

## **Fisheries Division**

Chief's Update

Jim Dexter

September 13, 2018

# Largemouth Bass Virus?

- Last observed in Michigan, 15 years ago
- Indiana / Michigan border
- Extended hot weather periods
- No external signs of disease
- Bass appear lethargic
- Kills only large fish, but in low numbers

# Largemouth Bass Virus?

- 5 lakes to date, NE Lower Peninsula
- Testing is on-going
- Typically a southern U.S. disease
- If true, decreased catch of larger fish
- No harm at population level

# Results of spring walleye egg-take & stocking, NLMMU

- Harsh late spring, winter-like conditions
- Bay de Noc egg-take late (May 1)
- Walleye run mostly concluded
- No eggs transferred for Sault Tribal ponds
- Receiving condition of SOM rearing ponds, not the best



# NLMMU Walleye Program

- June 25, Sault tribe had 200,000 SF, St. Mary's strain
- St. Mary's strain not desired for Little Bay de Noc
- Stocked into Lake Charlevoix
- Unit began pond harvest on June 30, very poor results
- Finished pond harvest, last in state, on July 20

# Next Steps

- Review of strain & genetic information
- Define a policy for appropriate use
- Secure MOU with tribe for rearing assistance

# Red Swamp Crayfish Control Efforts

- First known infestations occurred in 2017
  - Intensive trapping since 2017 has removed > 11,000
  - Single infestation in Novi accounts for > 7,000



# Red Swamp Crayfish Control Efforts

- Evaluating more effective control measures
  - Carbon dioxide shown to be deterrent that causes RSC to leave pond making them easier to capture (Auburn University study)
- Partnered with USGS & MSU to implement CO<sub>2</sub> treatments in Novi
- 611 RSC were removed



**Thank you!**

# **2018 Fisheries Orders**

Natural Resources  
Commission  
September 13, 2018

# **Fisheries Orders For Information Only**

- 206: Special Fishing Regulations for Warmwater Species on Select Lakes
- 210: Designated Trout Streams for Michigan
- 243: State-Licensed Commercial Fishing
- 250: Fishing Tournaments

# Fisheries Orders For Information Only

- 206:
  - Remove “scented material” provision
    - Wakeley Lake and Jones Lake (Crawford Co.)
    - North Manitou Lake and Florence Lake (Leelanau Co.)
    - Deer Lake basin (Marquette Co.)
    - Lake of the Clouds (Ontonagon Co.)

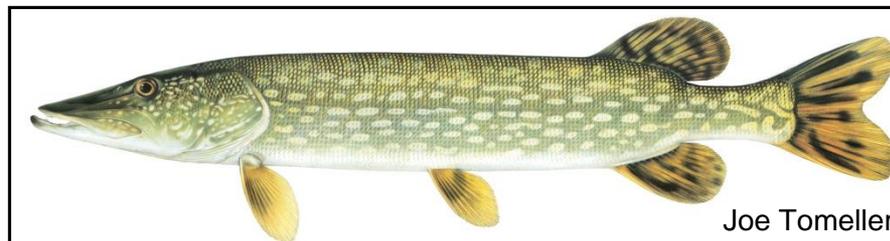


# Fisheries Orders For Information Only

- 206:

## Northern Pike

- Add lakes with up to 5 northern pike may be taken with 1 only greater than 24”
  - Iron Lake, Railroad Lake (Iron Co.)
  - Shakey Lakes Chain, Beecher Lake, Long Lake, East Lake, Resort Lake, Baker Lake, Spring Lake (Menominee Co.)



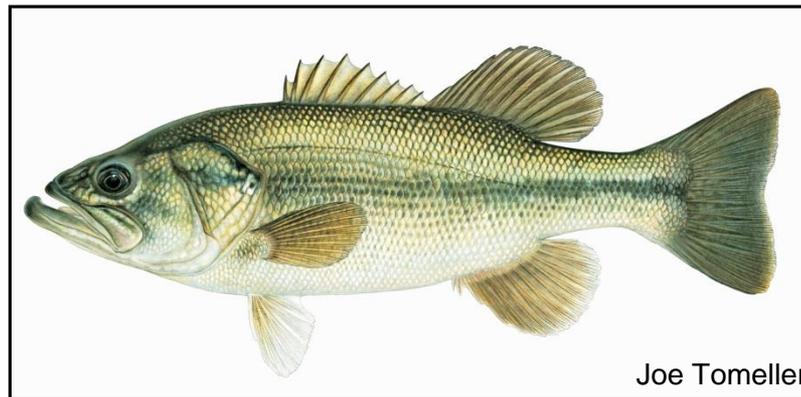
# Fisheries Orders For Information Only

- 206:

## Bass

– Add lakes with 10” min. size limit

- Crooked Lake (Van Buren Co.) and Little Crooked Lake (Van Buren and Cass Co.)

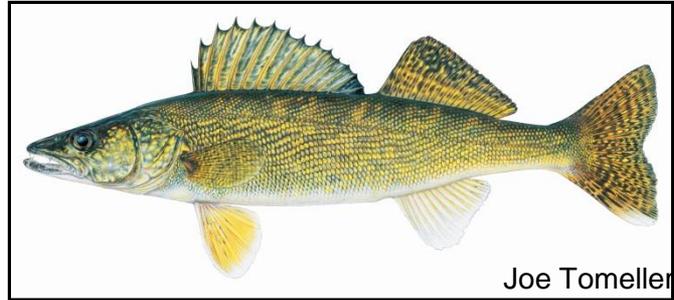


Joe Tomelleri

# Fisheries Orders For Information Only

- 206:

## Walleye



- Remove possession limit and possession season exception from Mullett Lake, Cheboygan River and Black River.
- Possession limit will return to statewide reg. of 5 fish
- Possession season exception will be retained in FO-204 as spawning closure

# Fisheries Orders

## For Information Only

- 210: Designated Trout Streams for Michigan
  - Remove waters no longer suitable for trout because of temperature
    - Black River from Kleber Dam downstream to Red Bridge (Cheboygan Co.)
    - Dickerson Creek (Ionia and Montcalm Co.)

# Fisheries Orders

## For Information Only

- 243: State-Licensed Commercial Fishing
  - Renew without modification
  - Necessary to clarify commercial fishing law for protection, preservation, maintenance, and harvesting of fish

# Fisheries Orders

## For Information Only

- 250: Fishing Tournaments (New Order)
  - Moves bass tournament information from FO-215 into this Order
  - Add muskellunge and walleye tournament requirements



**Thank You**

Questions?

# Brown Trout Management in the Great Lakes

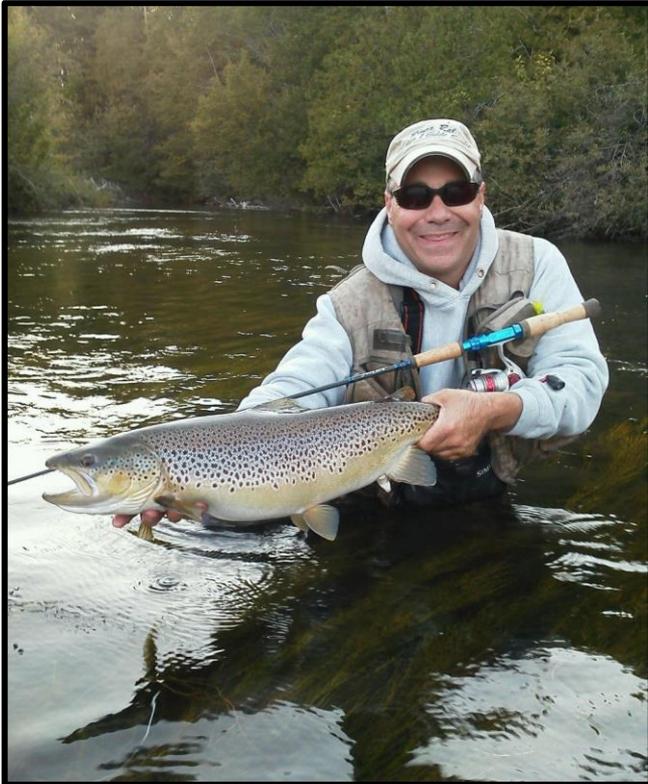


Todd Kalish  
Fisheries Bureau Deputy Director  
Wisconsin DNR

Ed Eisch  
Fish Production Program Manager  
Michigan DNR

# Brown Trout Management

- Managed extensively both inland and in Great Lakes



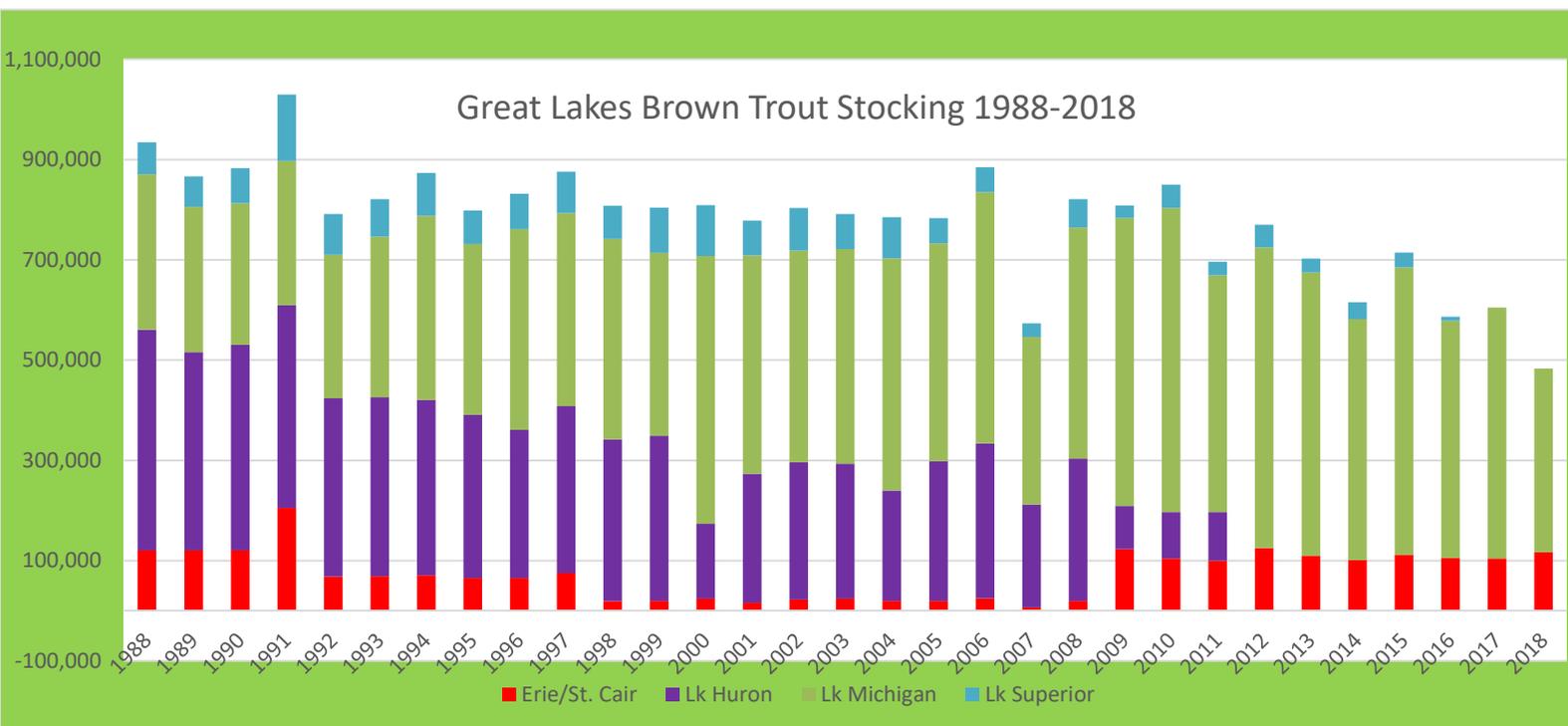
# Brown Trout Stocking in MI

- First stocked in 1883 in Pere Marquette River system
- Major component of stocking program
- Brood strategy has evolved
- Averaged 1.3 million yearlings annually
  - Now producing ~1.0 million



# Great Lakes Stocking History

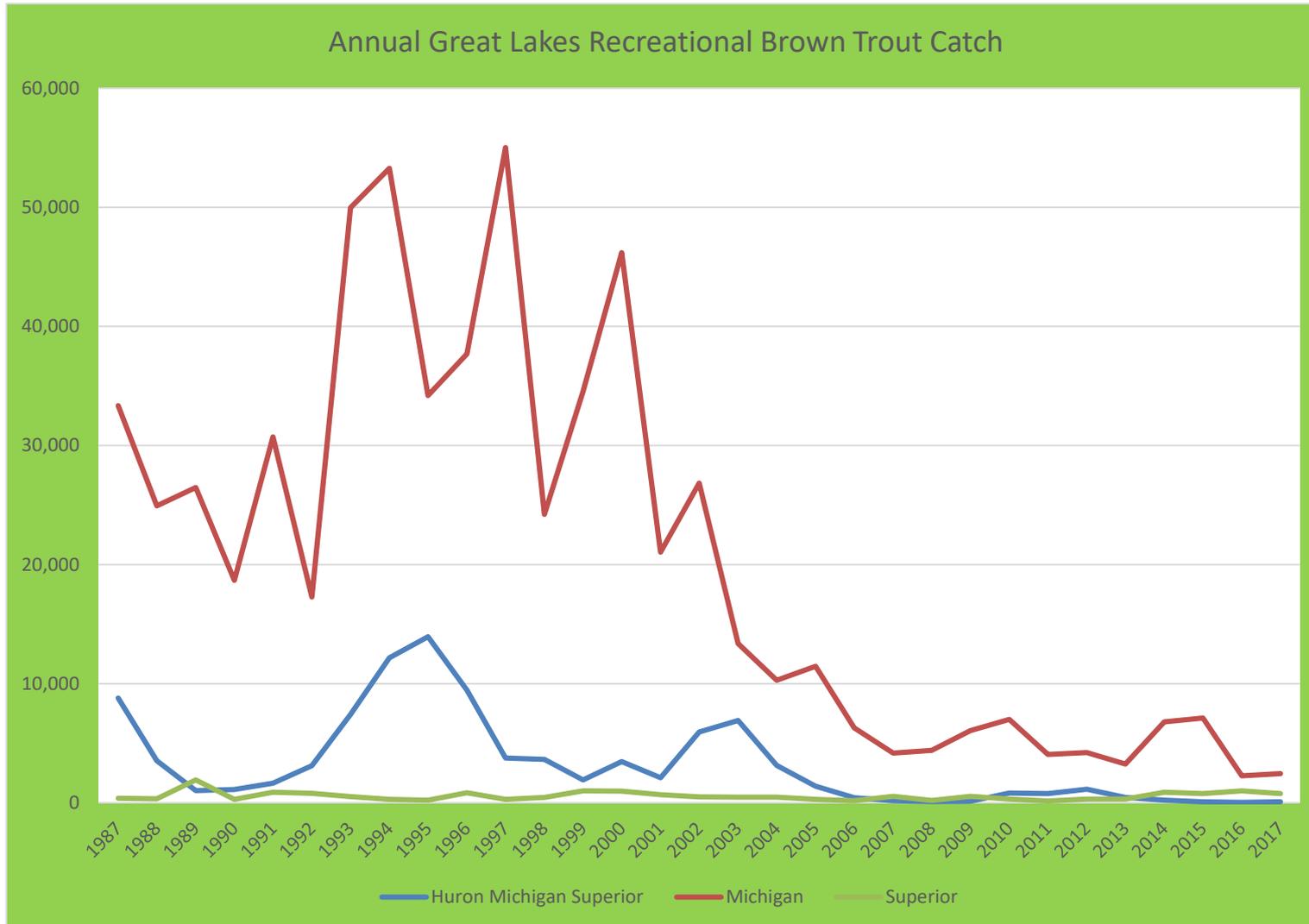
- Lake Superior stocking discontinued in 2017
- Lake St. Clair stocking discontinued in 2019
- Lake Huron stocking discontinued in 2012



# Great Lakes Stocking History

- Decreasing success in Lake Huron
  - Stocking windows
  - Offshore stocking
  - Fall yearlings
- Ecological changes in Lake Michigan
  - Shift to zonal management
  - Brown Trout Zone

# Are They Returning To Creel?



# When Does Stocking Work?

- Ecological conditions influence year class success
- Spring climatic conditions seem key
  - Slow warm-up seems to favor extended nearshore fishery
- No “silver bullet” strain

# Wisconsin DNR Great Lakes Brown Trout Overview – Lake Michigan

- Wild Rose strain (domestic)
- Seeforellen strain (wild)
- 1996 strain study
- 2016 Lake Michigan Committee predator reduction recommendation

Species	Average Lake Michigan stocking and harvest numbers from 2010-2015		Approximate hours to catch one fish	Annual cost to raise and stock based on average stocking numbers
	Stocked	Harvested		
Chinook	997,743	210,901	9.75	\$199,548
Lake trout	776,273	25,458		Federal program
Brown trout	716,452	17,482	40.8	\$874,071
Coho	444,136	75,929	15.7	\$541,845
Rainbow	420,943	65,178	23.2	\$513,550

# Wisconsin DNR Great Lakes Brown Trout Overview – Lake Michigan

- 2016 decisions
  - 3-year stocking plan
  - Discontinued Wild Rose strain
  - Stock approximately 376,000 Seeforellen strain annually
  - 75% of quota allocated equally
  - 25% of quota allocated based on directed effort & harvest rate / number
  - Evaluation

# Wisconsin DNR Great Lakes Brown Trout Overview – Lake Superior

- Wild Rose & other strains
- Seeforellen strain
- Low harvest rates in 1987-2010
  - 1,595
- Stocking changes in 2009
  - Phase out Wild Rose strain
  - Yearlings only
  - Stock offshore
  - Clips
  - Consistent stocking

Year	Stocked Number		Harvest
	Seeforellen	Yearling	Other Yearling
1987	0	165,270	3,203
1988	0	79,231	2,554
1989	0	0	4,340
1990	0	126,229	1,677
1991	0	16,262	1,020
1992	0	0	5,906
1993	0	238,633	2,870
1994	0	67,095	1,729
1995	0	121,709	1,116
1996	0	101,582	534
1997	47,796	74,879	688
1998	10,000	69,915	765
1999	0	5,971	1,426
2000	0	89,517	1,563
2001	0	127,970	1,121
2002	8,110	7,879	635
2003	37,304	39,735	421
2004	8,541	25,236	526
2005	59,271	33,596	527
2006	88,976	3,768	620
2007	99,848	24,684	2,246
2008	0	0	1,200
2009	0	83,945	833
2010	0	94,367	765
2011	38,933	20,106	1,749
2012	114,487	3,369	2,552
2013	242,197	0	2,040
2014	158,949	0	2,395
2015	149,471	0	3,580
2016	159,743	0	3,659
2017	181,393	0	3,624
2018	154,206	0	TBD

# Wisconsin DNR Great Lakes Brown Trout Overview – Lake Superior

- Harvest increasing
  - 2015-2017: 3,621
- Stocking plans for 2018-2021
  - Current stocking target of 150,000 / year
  - Stock 5-10% higher than target levels through study period
  - Continue with Seeforellen strain
  - Attempt to create a brood river (Pikes Creek)

# Wisconsin DNR Great Lakes Brown Trout Overview – Lake Superior

Specific 2017 and 2018 Lake Superior Brown Trout Stocking Locations

Port	Location	2017 Stocked	2018 Stocked
Saxon	Saxon	34,996	14,200
Washburn	Ashland Lighthouse	10,125	9,163
NA	Washburn Coal Dock	11,749	9,072
Washburn	Green Can	10,000	0
Washburn	Sanitarium Point	5,224	5,096
Washburn	Bono Creek	0	8,849
Washburn	Houghton Point	0	4,900
Bayfield	Bodins	9,568	9,300
Bayfield	Van Tassels	5,223	9,134
Bayfield	Basswood Island	24,048	17,269
Bayfeild	Madeline Island	13,040	17,176
Bayfield	Souix	11,245	8,820
Little Sand Bay	Little Sand Bay	21,997	17,935
Superior	Superior	24,400	23,265
	Total	181,615	154,206

# Wisconsin DNR Great Lakes Brown Trout Overview – Lake Michigan

Brown Trout Allocation Strategy						
STEP 1	STEP 4					
	Reduction based on equal number per county					
County	Base stocking number is 0.75 of total allotment	Strategy comprises 0.25 of stocking number	Stocking number per county	LMFT best professional judgement (fall fingerlings)	LMFT offset for chinook salmon reduction of 20,000 (yearlings)	Total Stocking number per county
Kenosha	21,545	6,587	28,132			28,132
Racine	21,545	6,460	28,006			28,006
Milwaukee	21,545	15,510	37,056	20,000		57,056
Ozaukee	21,545	9,585	31,131			31,131
Sheboygan	21,545	9,153	30,698			30,698
Manitowoc	21,545	6,195	27,741			27,741
Kewaunee	21,545	7,085	28,630			28,630
Door (Lake Michigan)	21,545	4,902	26,448			26,448
Green Bay (Door)	21,545	4,299				
Green Bay (Oconto)	21,545	4,098				
Green Bay (Marinette)	21,545	5,126	78,159	20,000	20,000	118,159
TOTAL	237,000	79,000	316,000	40,000		376,000

**Thank You!**

# ANGLER DEMOGRAPHICS

## How Michigan's Angler Participation is Changing Now & in Years to Come

NATURAL RESOURCE COMMISSION MEETING

SEPTEMBER 13, 2018

**Richelle Winkler**, Associate Professor of Sociology & Demography, Dept of Social Sciences

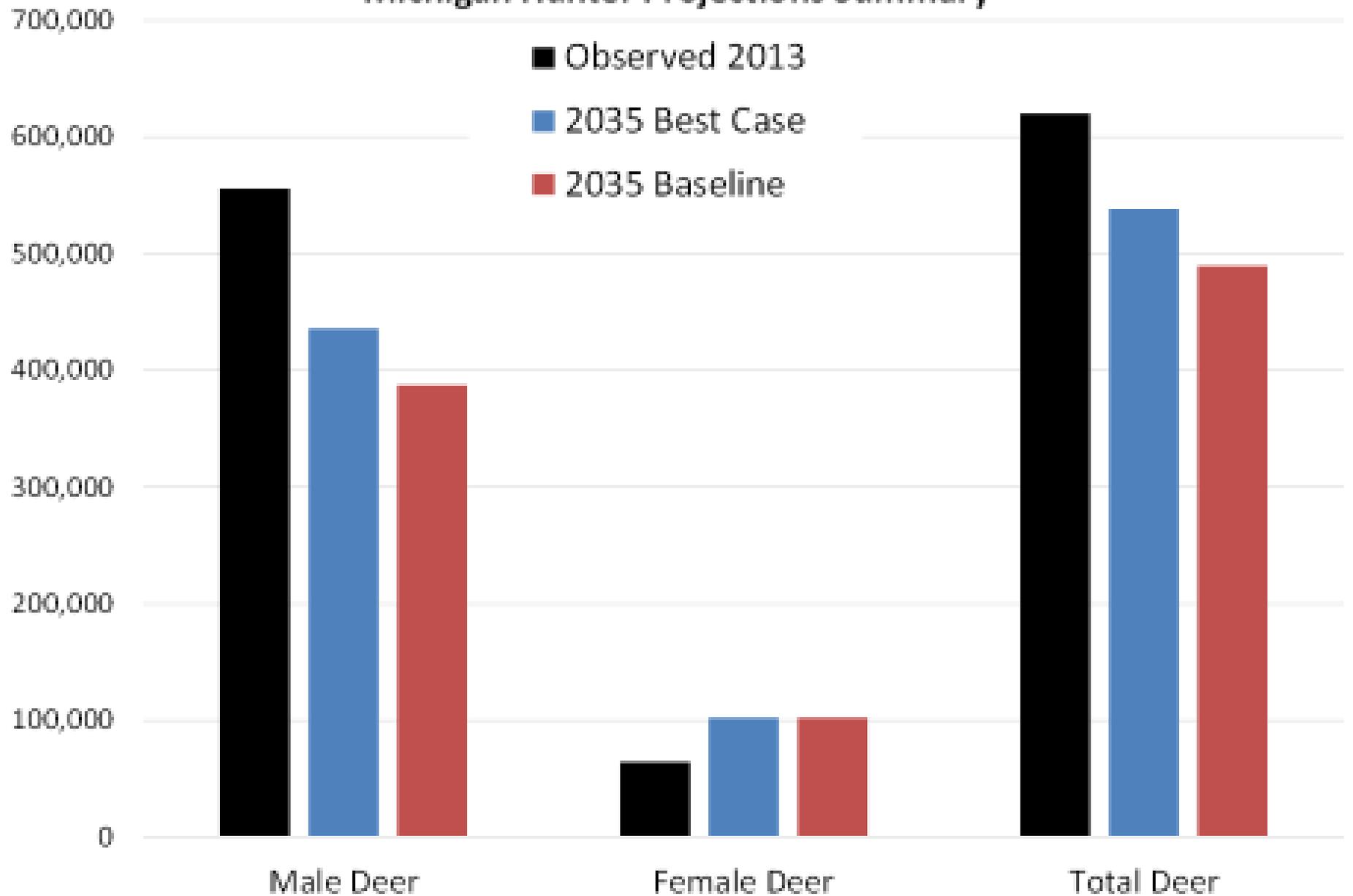
**Erin Burkett**, PhD Candidate, Environmental and Energy Policy Program



**Michigan  
Technological  
University**

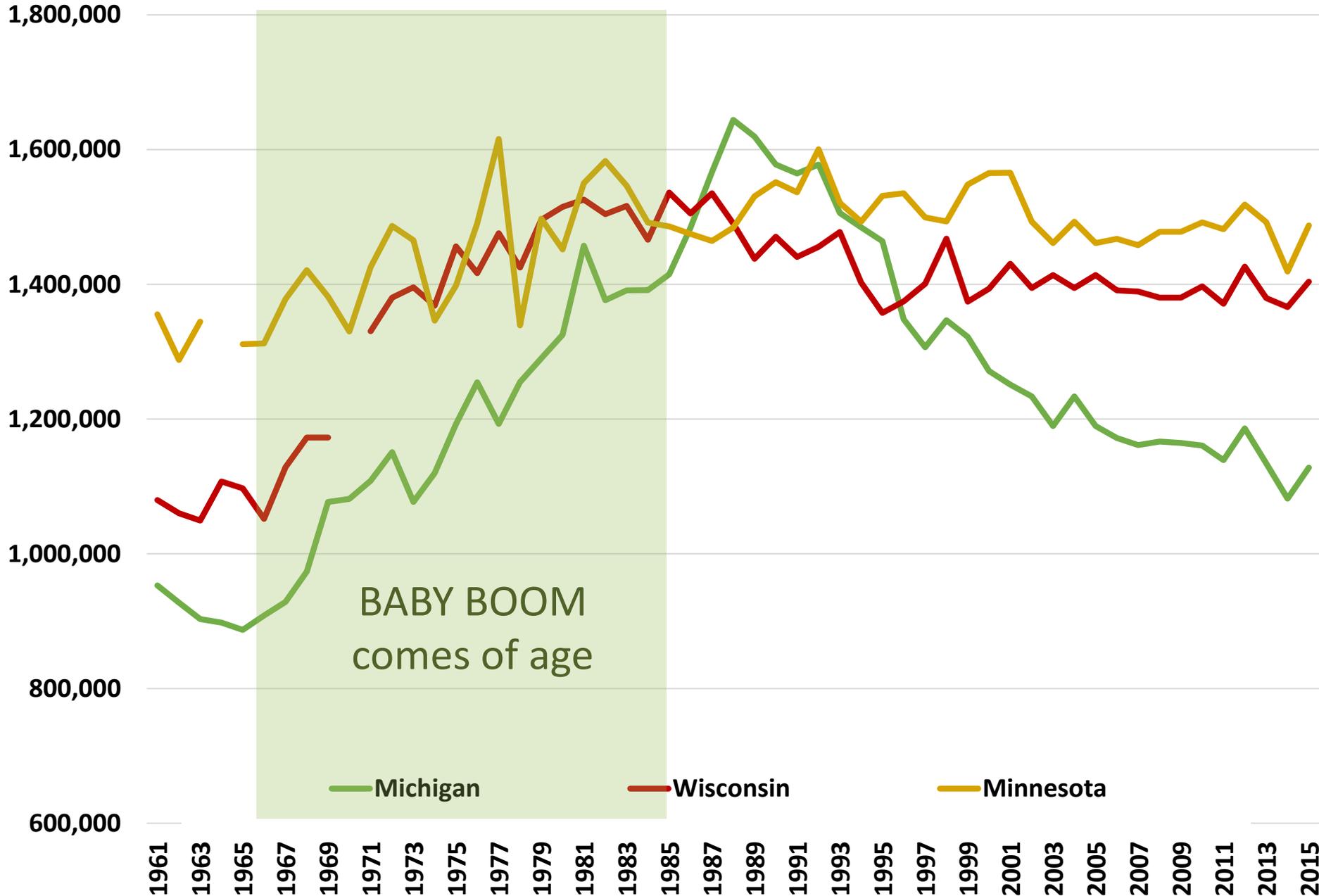


## Michigan Hunter Projections Summary



**Fishing**

# Number of Paid License Holders, 1961-2015



NOTE: Includes residents and non-residents. Source: US Fish and Wildlife Service

# Aims

1. Describe recent patterns in Michigan angler participation by age, sex & county

Compare with Minnesota & Wisconsin

2. Analyze generational differences fishing participation
3. Project future anglers- implications for management

# Data

- State license records by single year age, sex, county of residence. State residents.
- Anglers age 17+
- Years: 2000-2016
- Unique individuals- any fishing license & GL salmon/trout anglers
- Generate participation rates:  $\div$  Total population (US Census Bureau)

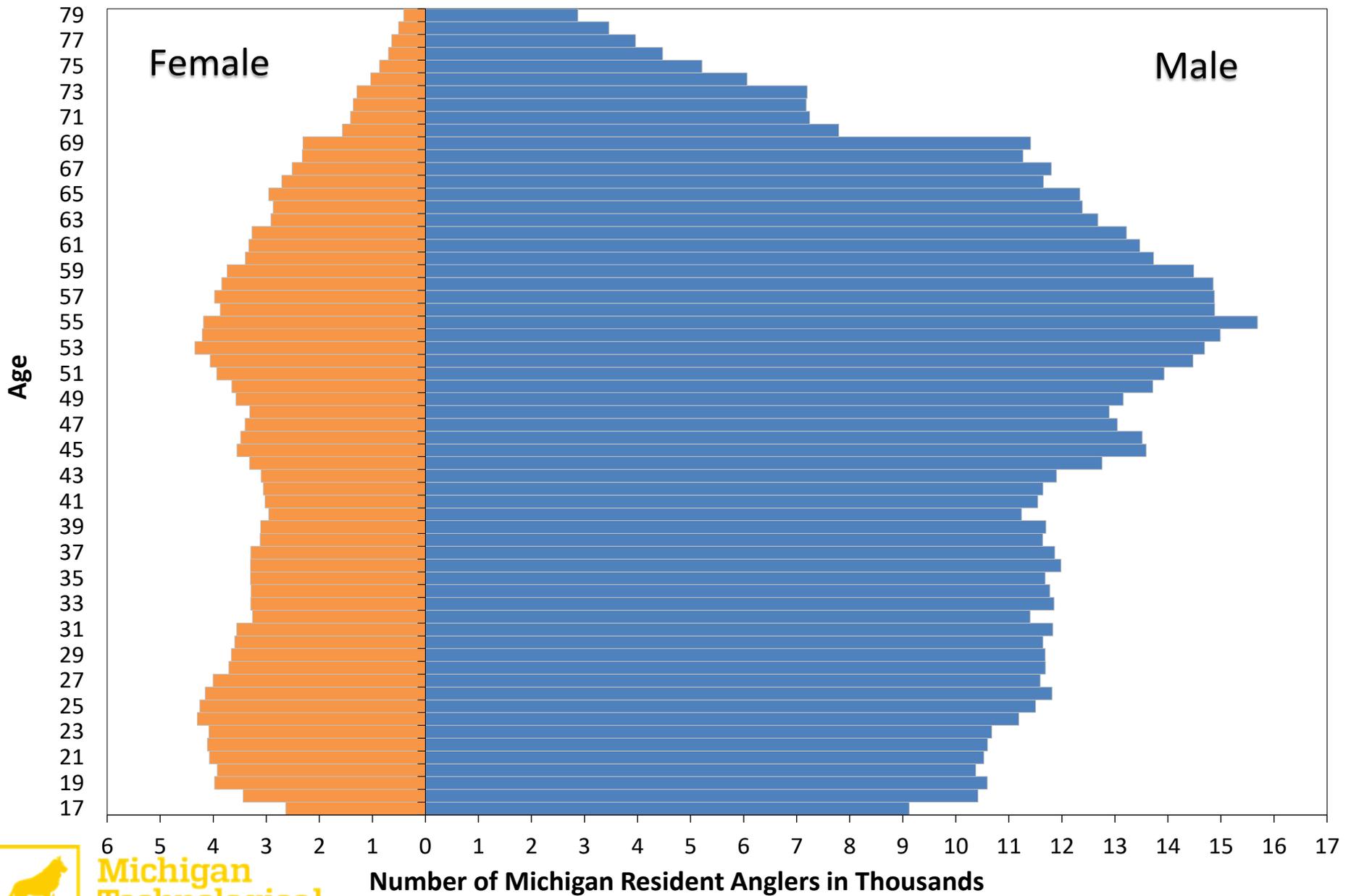
# AGE & GEOGRAPHY



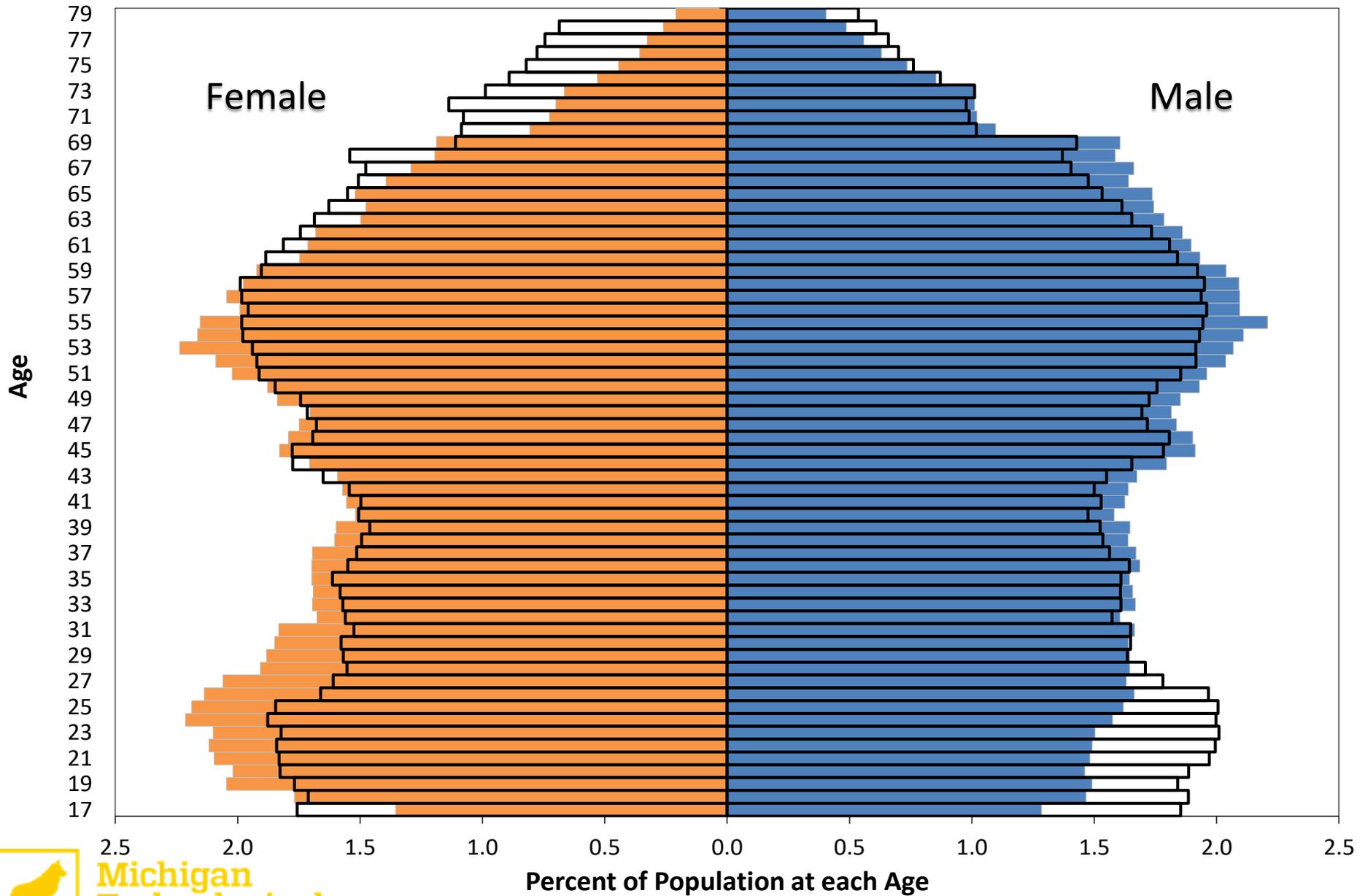
Michigan  
Technological  
University

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# Michigan Anglers by Age & Sex, 2016



# Age Structure of Michigan Anglers, 2016

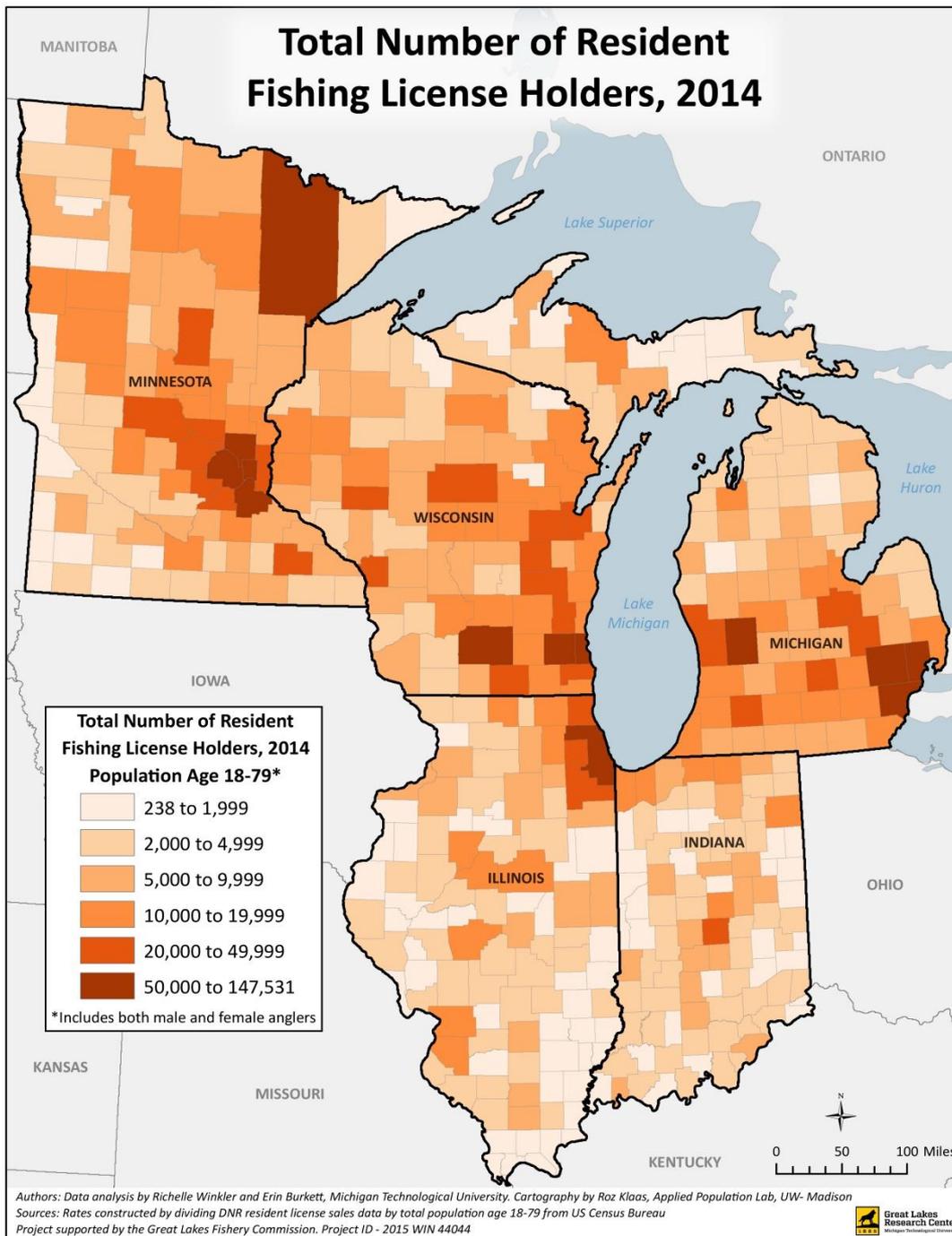


# Geographic Distribution

- What county is home to the greatest # of anglers?

Wayne County:  $n = 76,040$  male anglers. 10% of males fished in 2014

# Total Number of Resident Fishing License Holders, 2014



# Geographic Distribution

- What county is home to the greatest # of anglers?

- Hennepin County: n= 118,534 male anglers. 22% of males fished in 2014

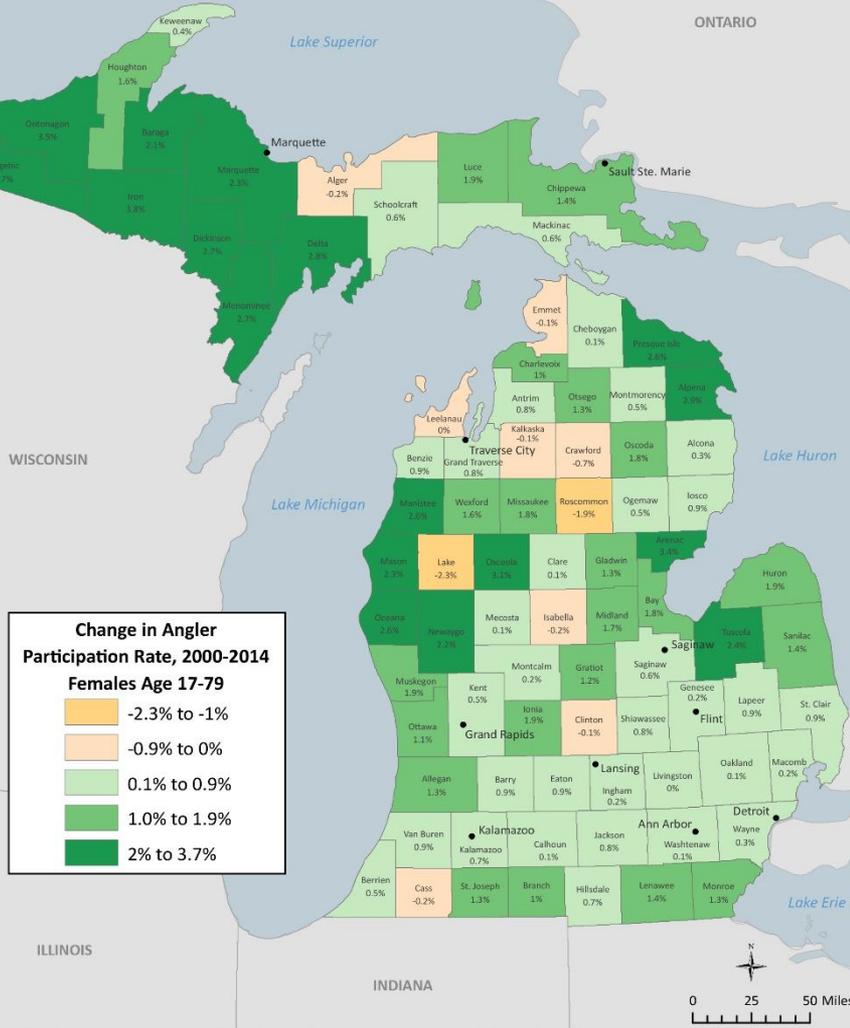
- Greatest participation rate?

Montmorency County: n=1,978 male anglers.  
54% of males fished in 2014.

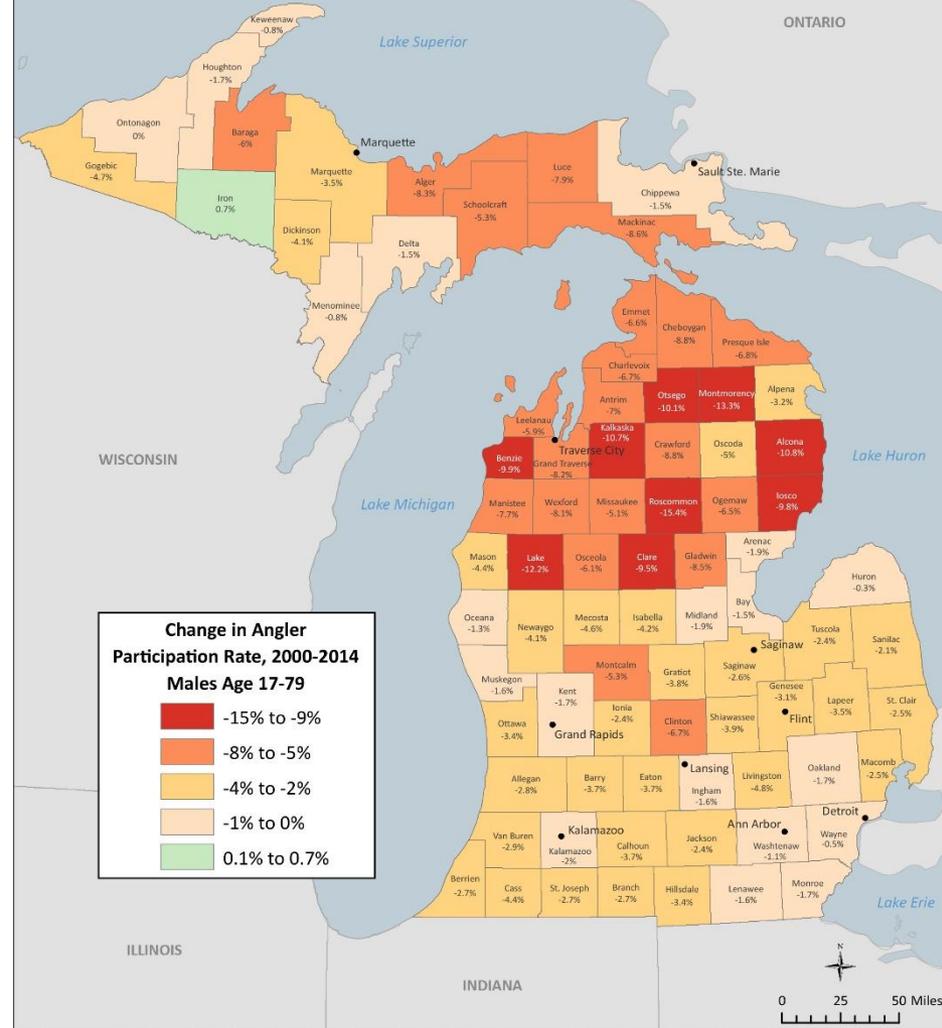
Followed by Presque Isle (50%) and Ontonagon (49%).



# Change in Total Resident Female Angler Participation Rate, 2000-2014



# Change in Total Resident Male Angler Participation Rate, 2000-2014



Authors: Data analysis by Richelle Winkler and Erin Burkett, Michigan Technological University, Cartography by Roz Klaas, Applied Population Lab, UW- Madison  
 Sources: Rates constructed by dividing Michigan DNR resident license sales data by total population age 17-79 from US Census Bureau  
 Project supported by the Great Lakes Fishery Commission. Project ID - 2015 WIN 44044

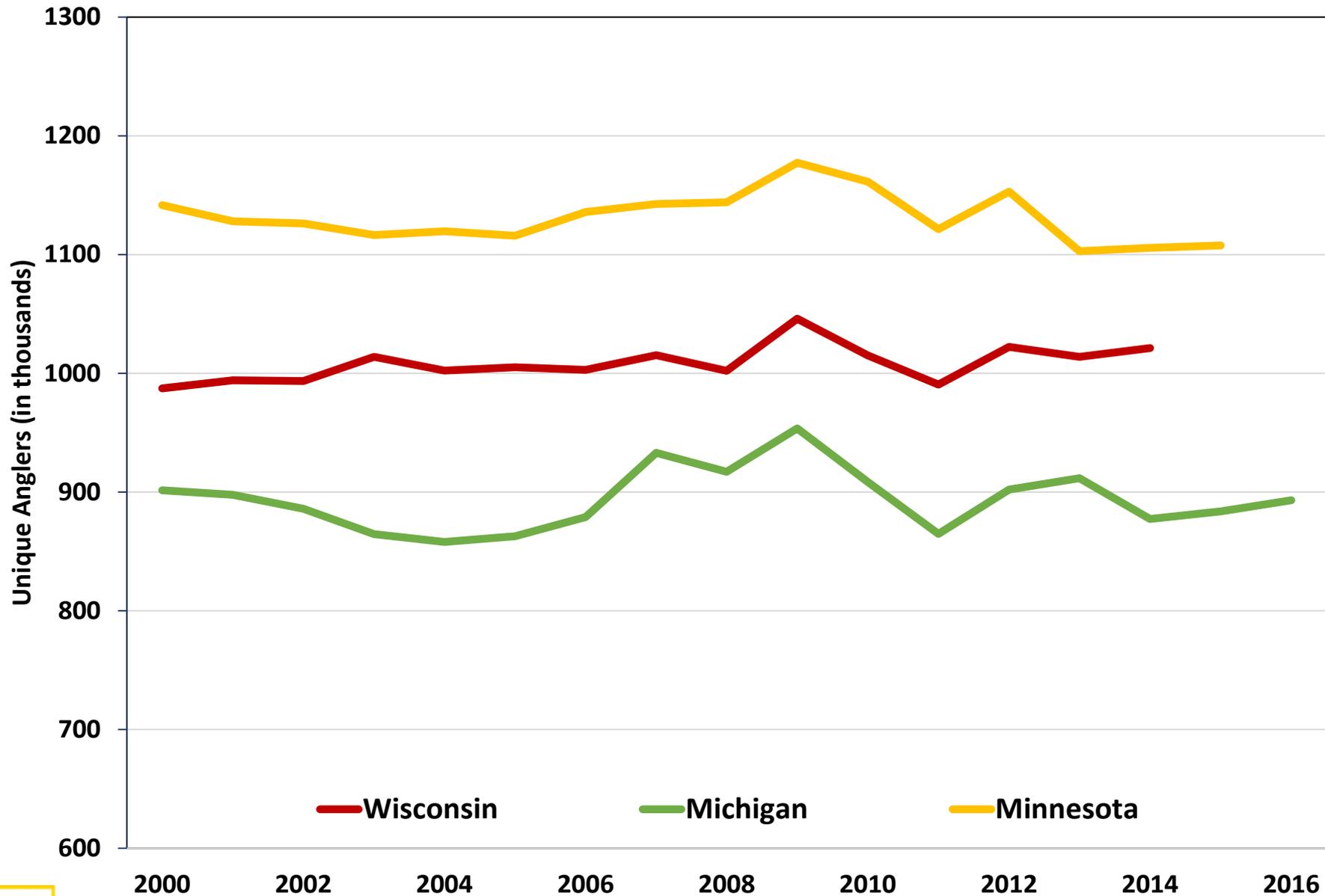


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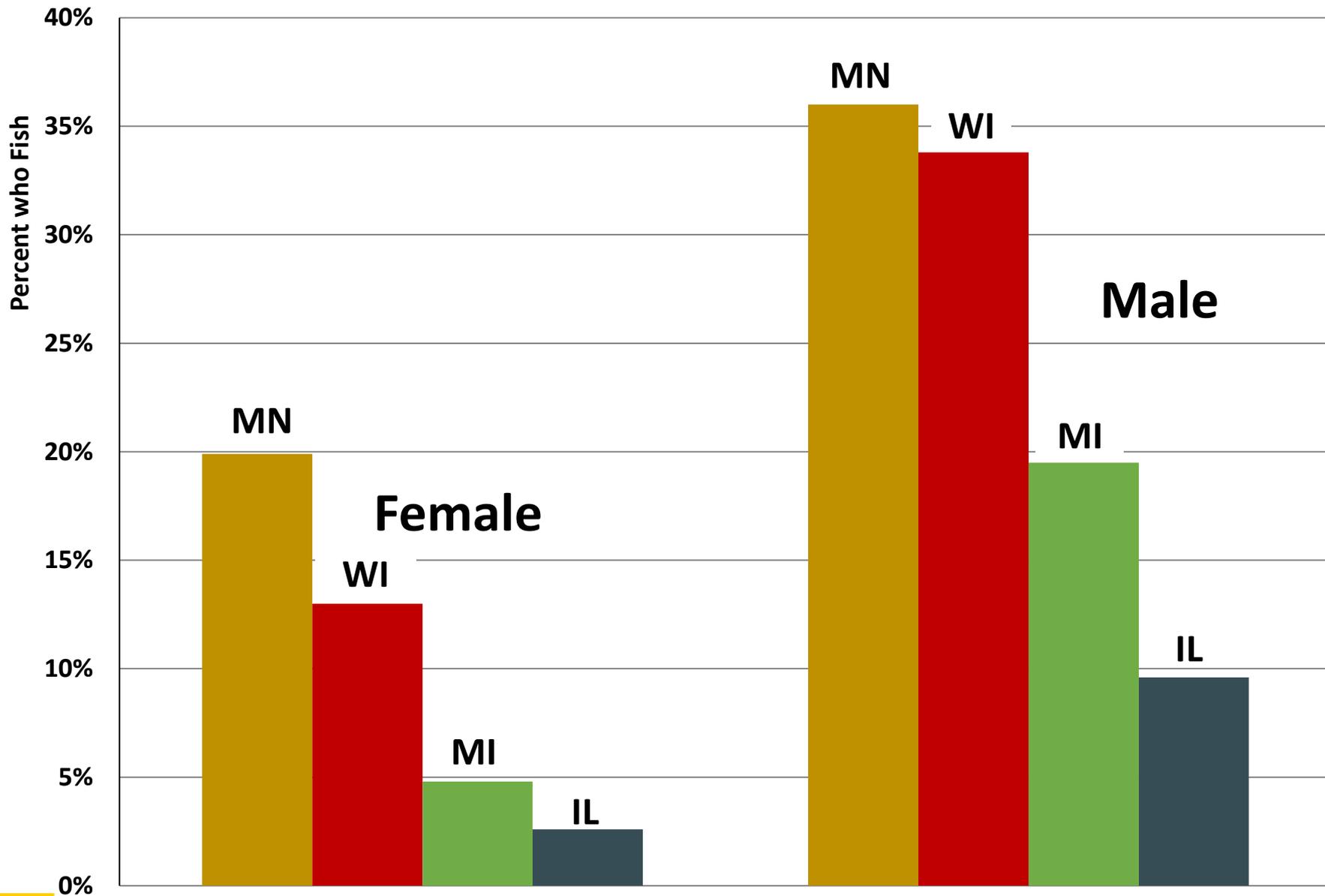


# COMPARING STATES

# Number of Unique Resident Anglers, 2000-2016 (Ages 18-79)



# State Resident Fishing Participation Rates by Gender (2014)

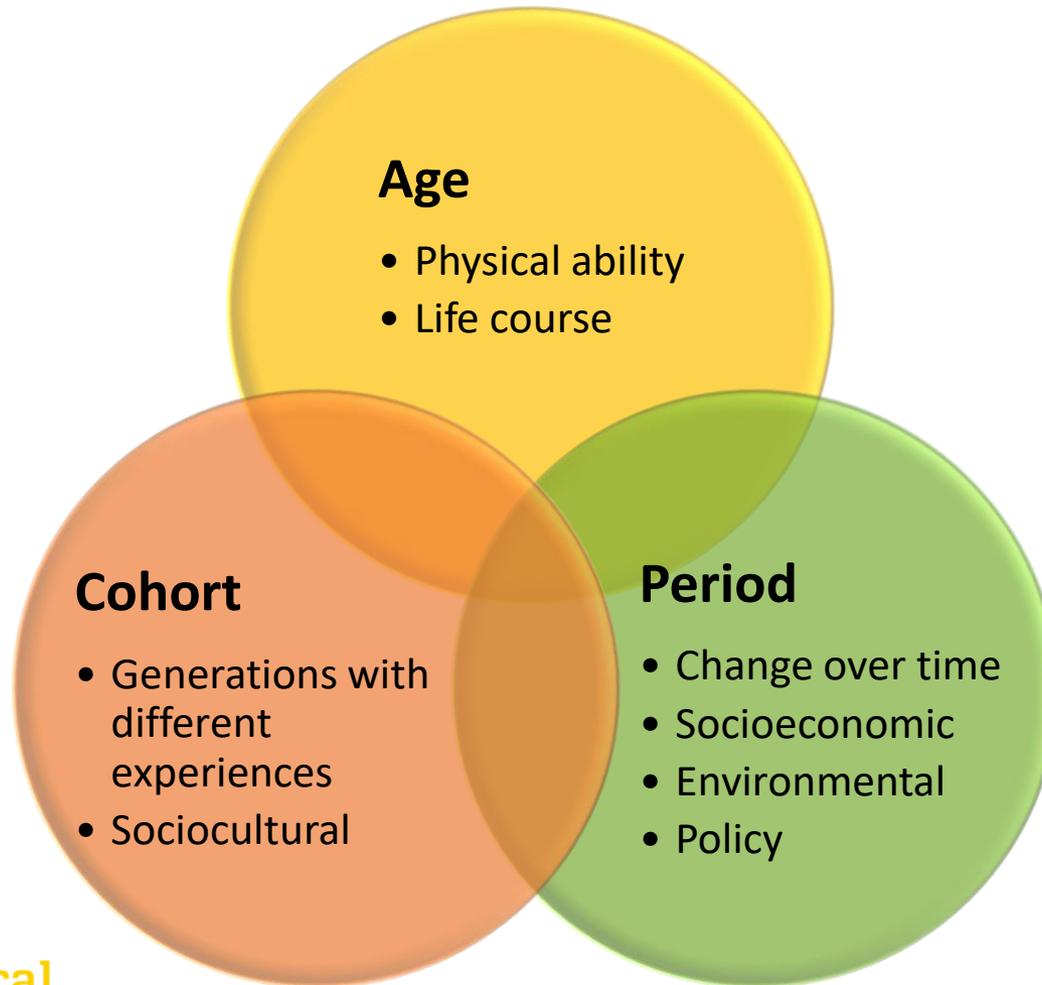


# AGE, TIME PERIOD & BIRTH COHORT

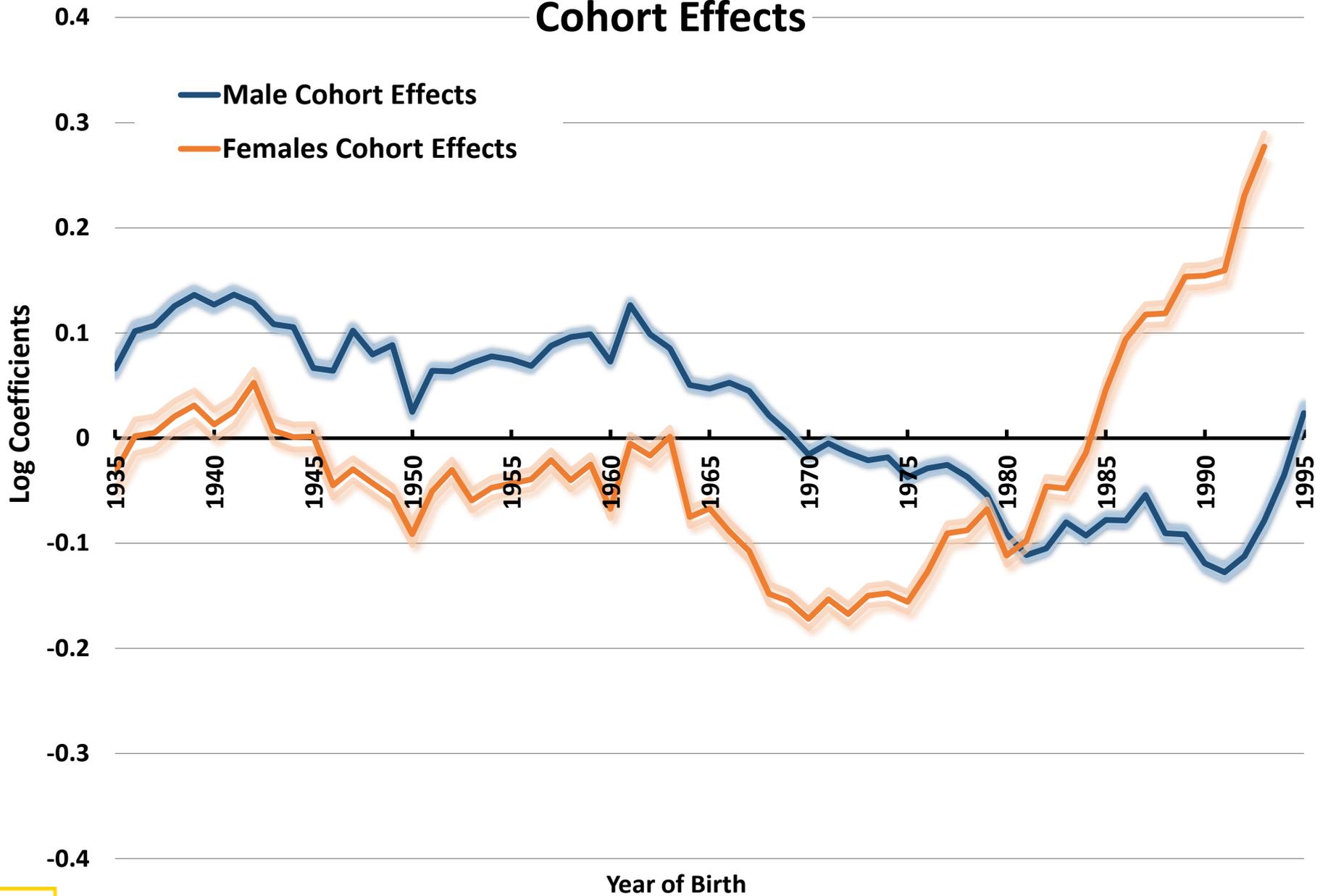


# METHOD: AGE-PERIOD-COHORT ANALYSIS

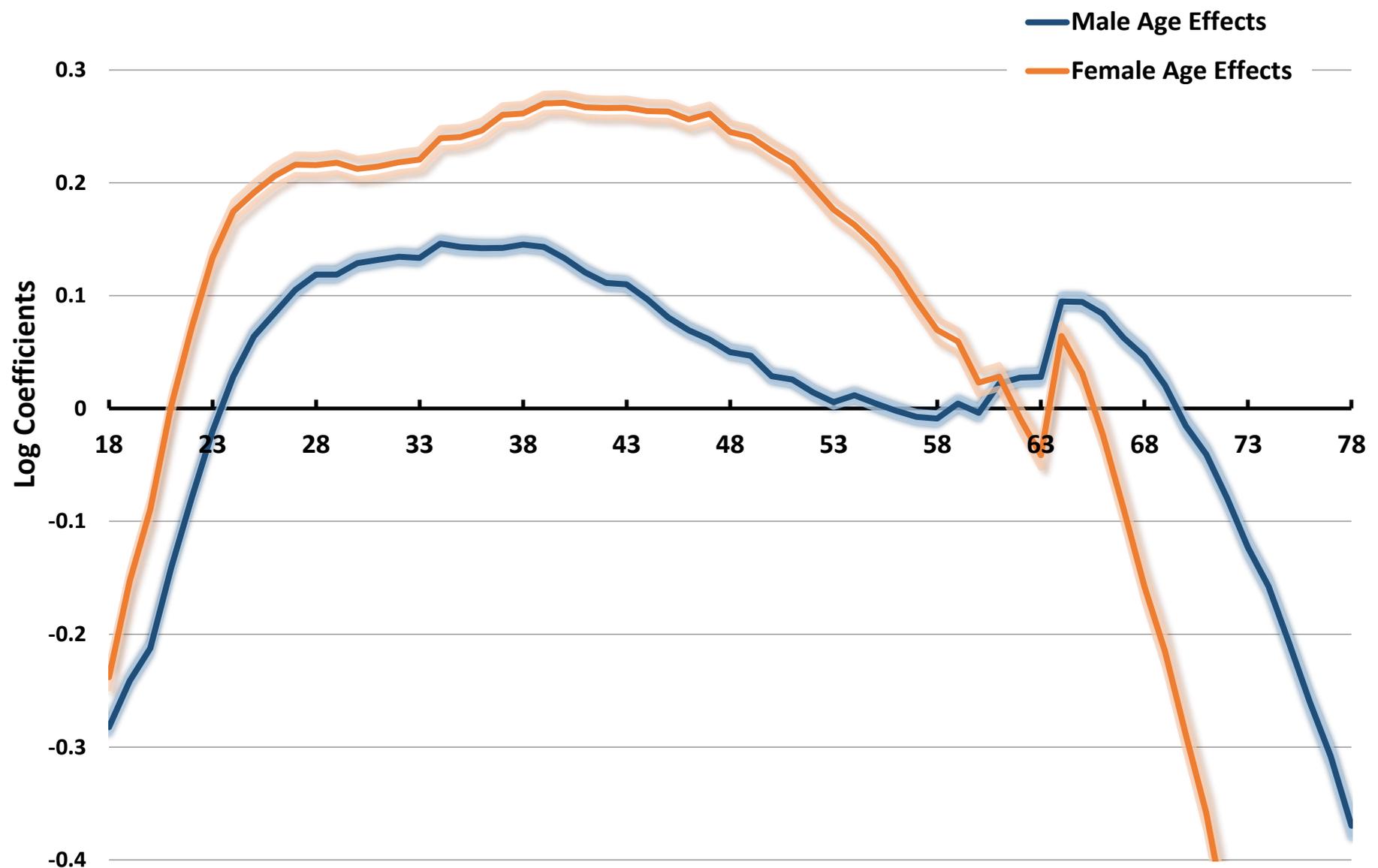
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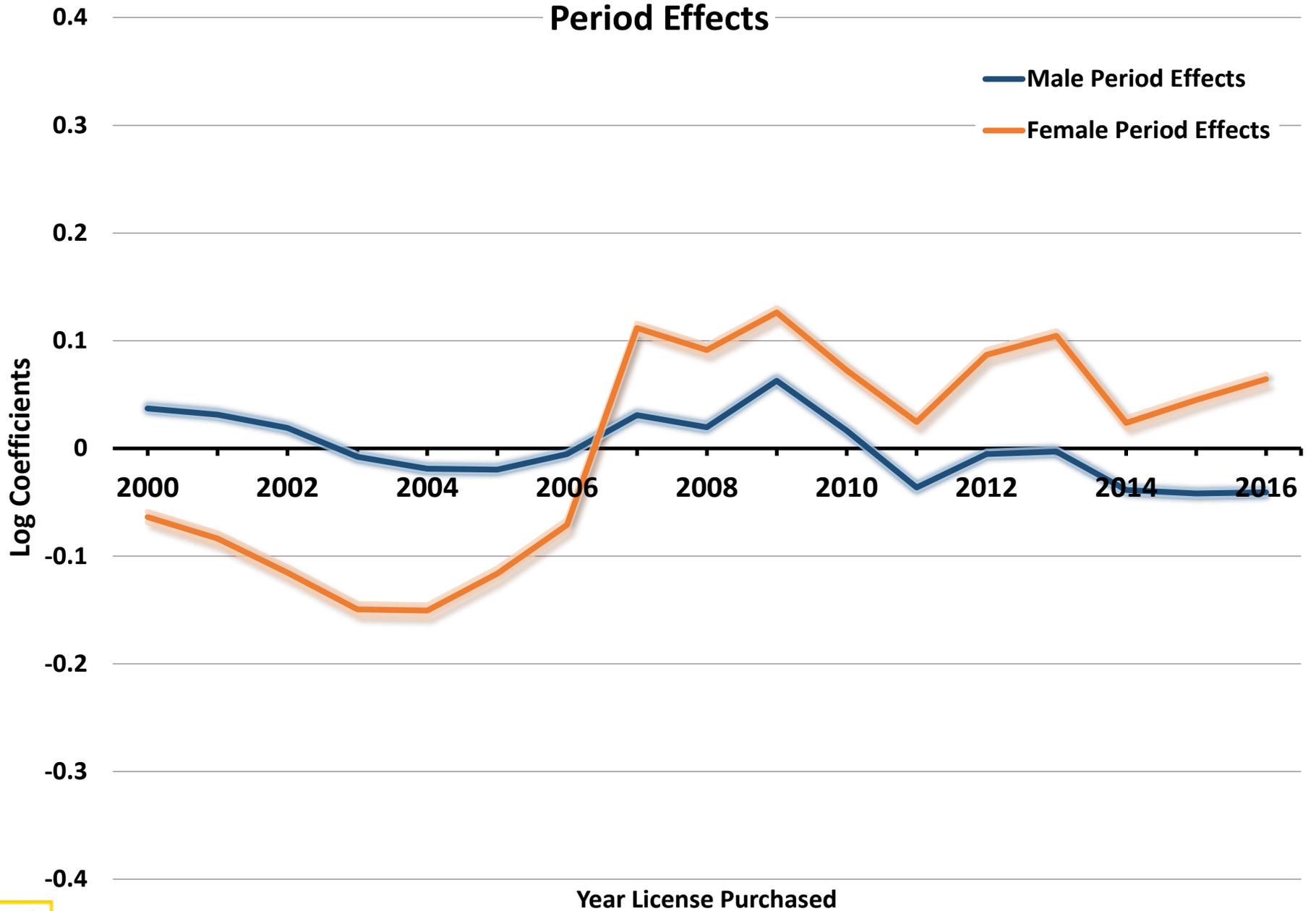
# Cohort Effects



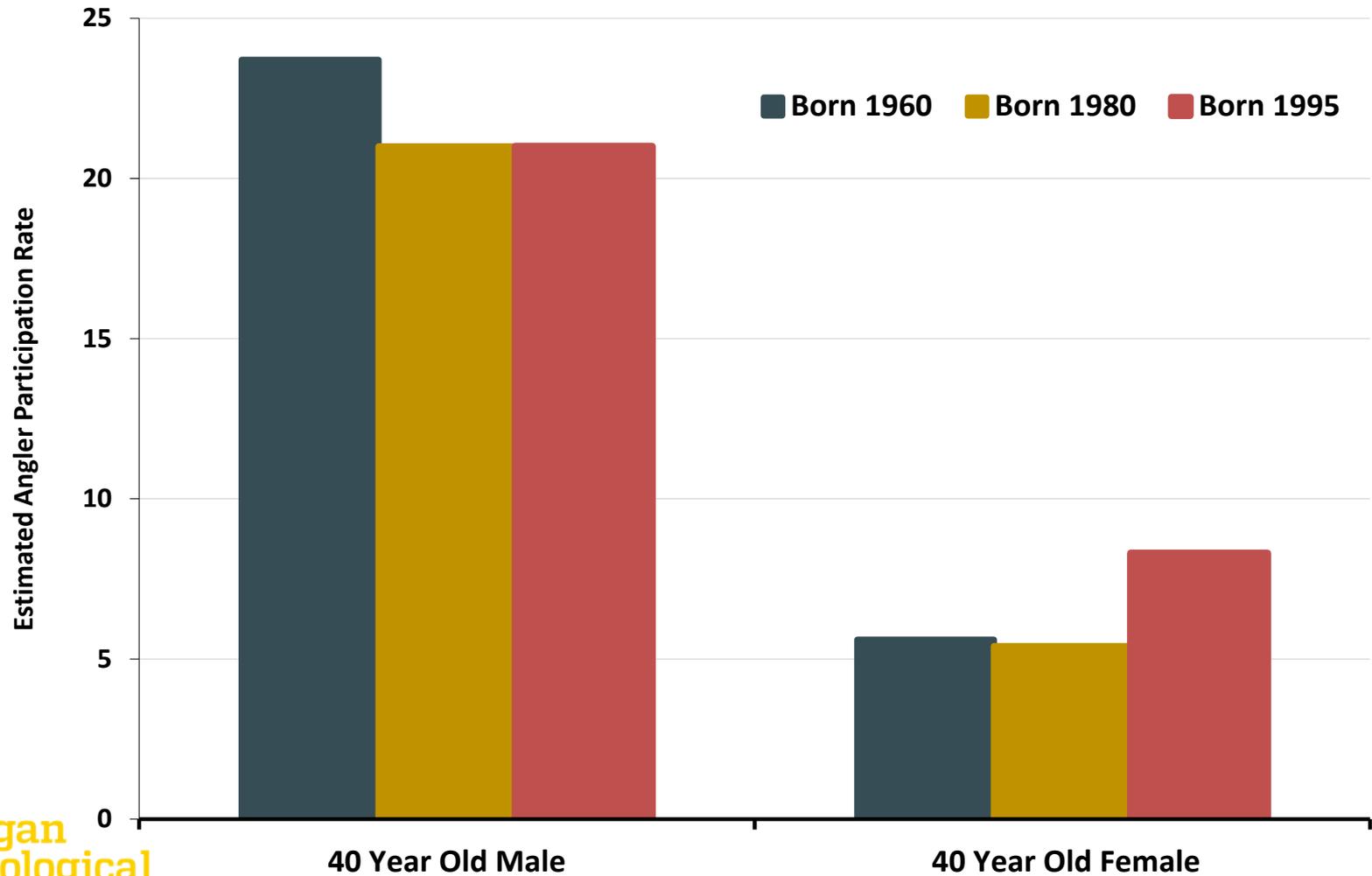
# Age Effects



# Period Effects



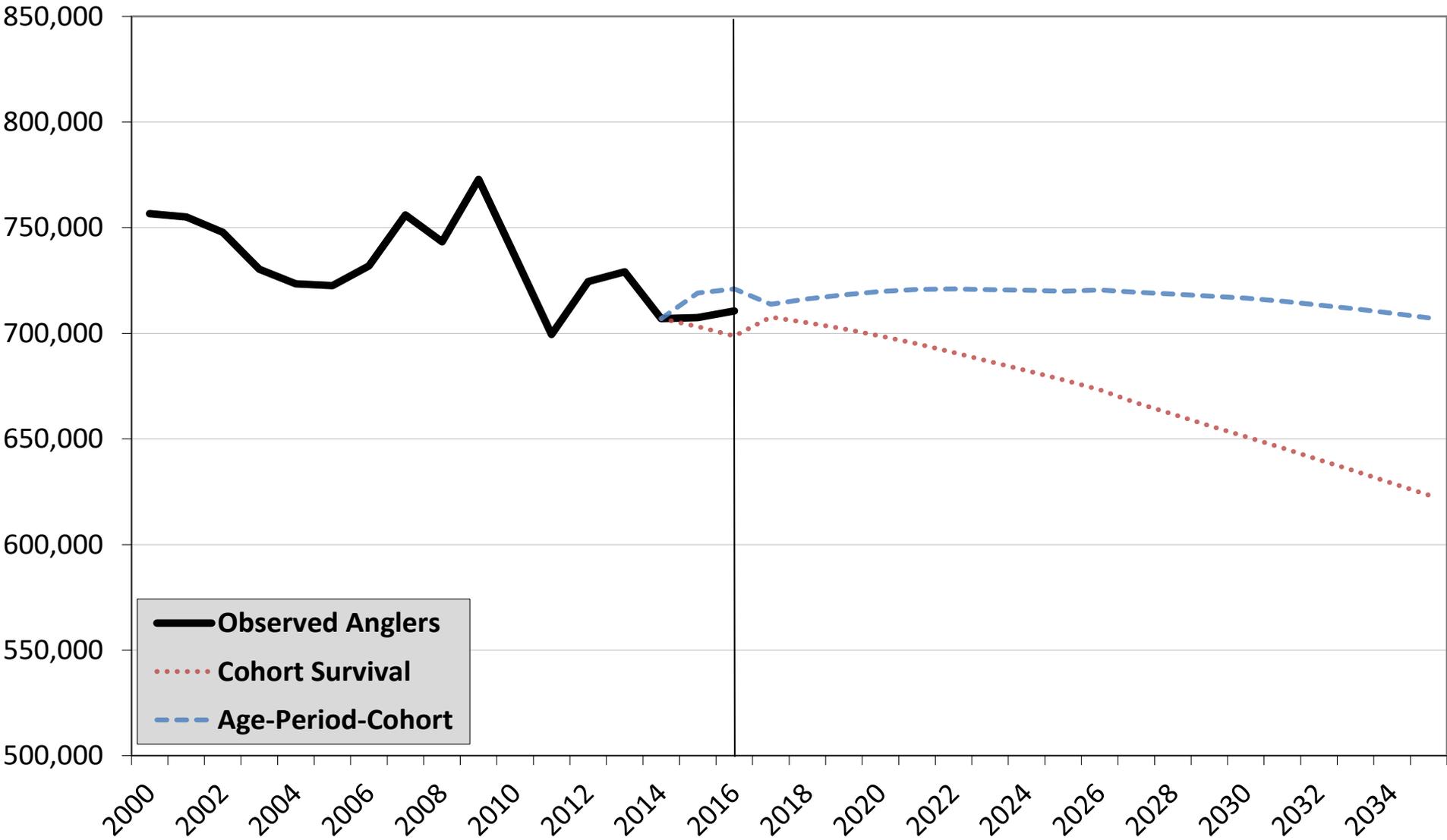
# WHAT'S THE REAL IMPACT?



# PROJECTIONS

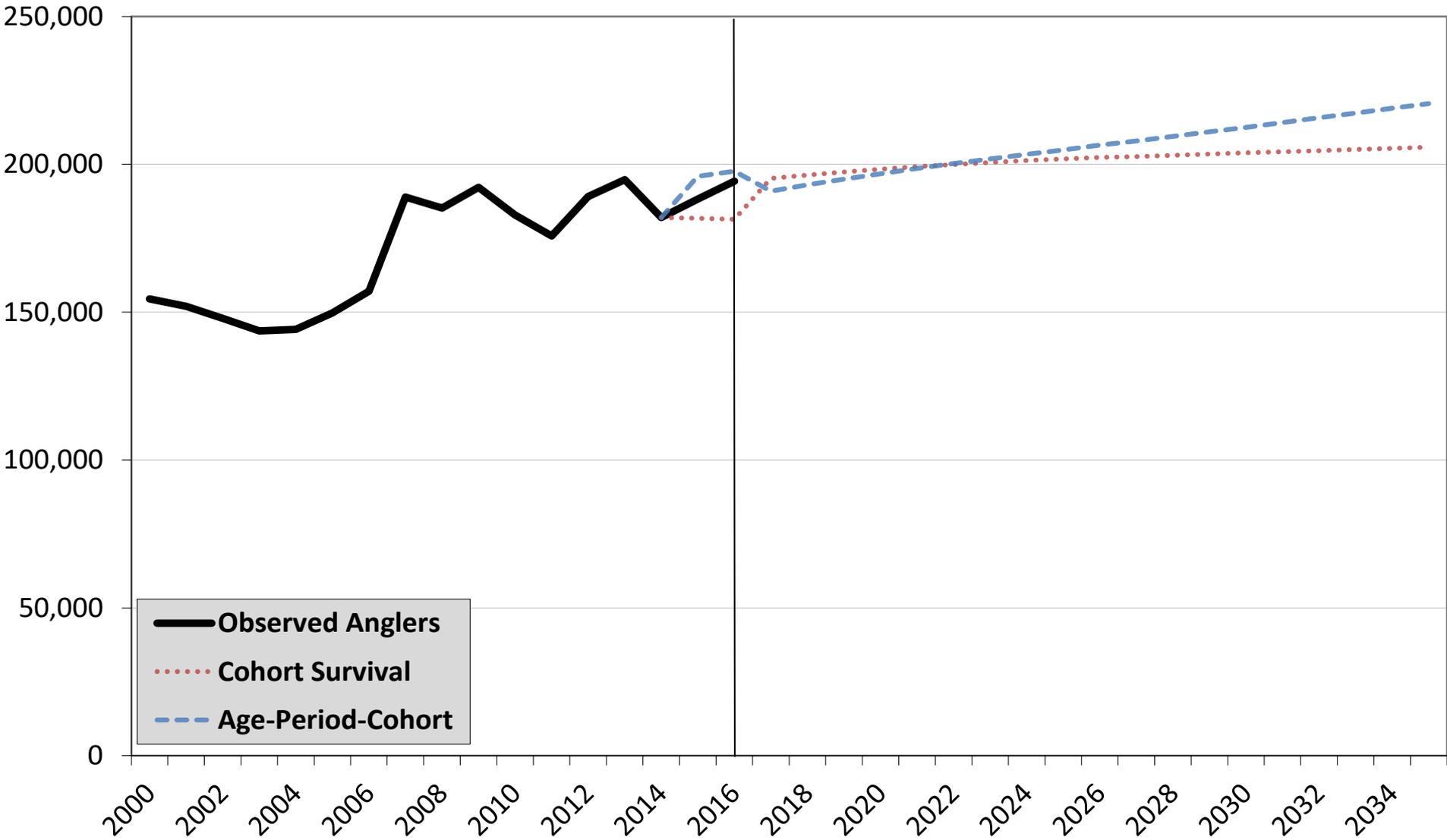
# MI Resident Angler Projection: 2000-2035

Includes only Males Ages 17-79

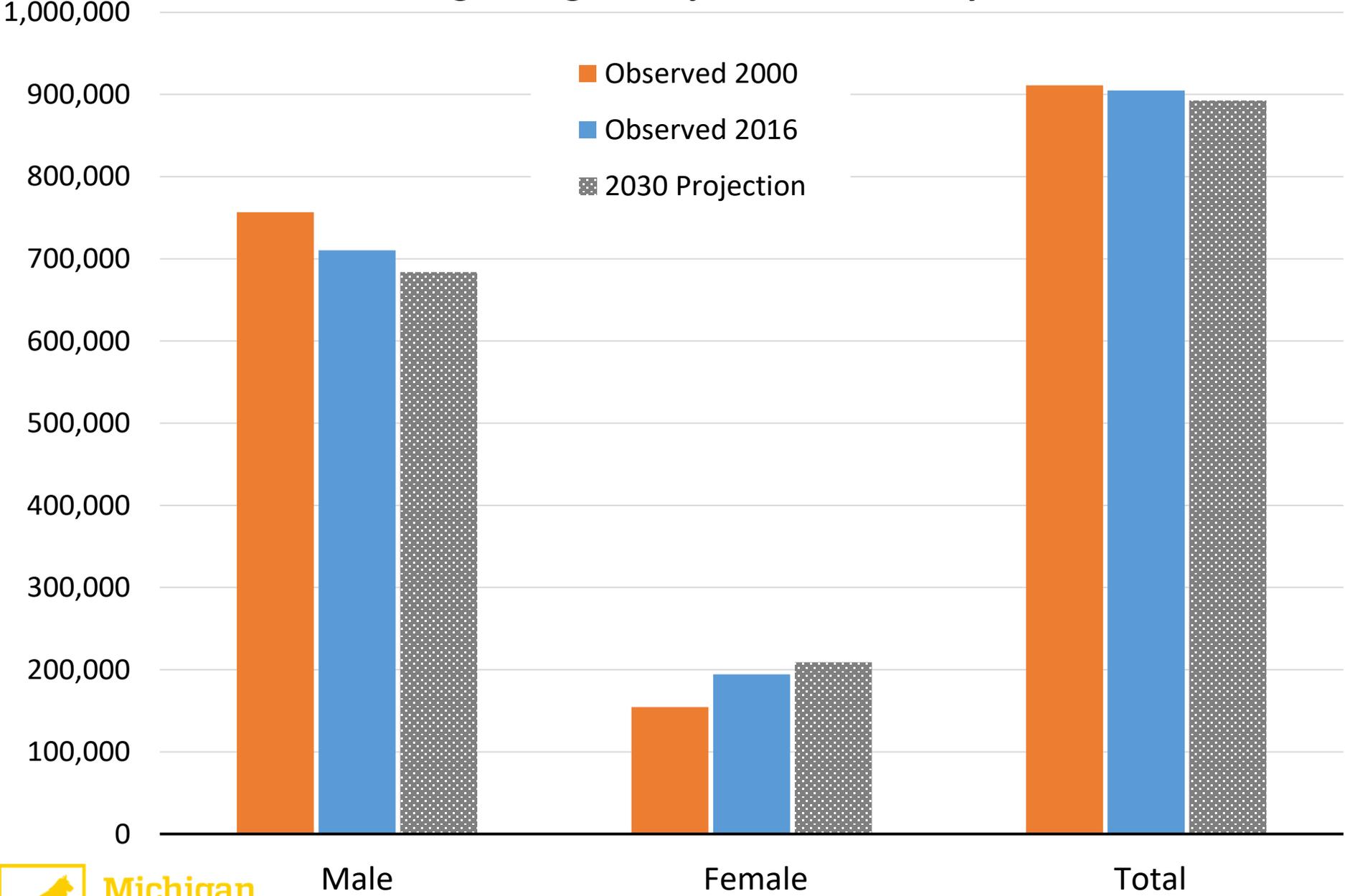


# MI Resident Angler Projection: 2000-2035

Includes only Females Ages 17-79

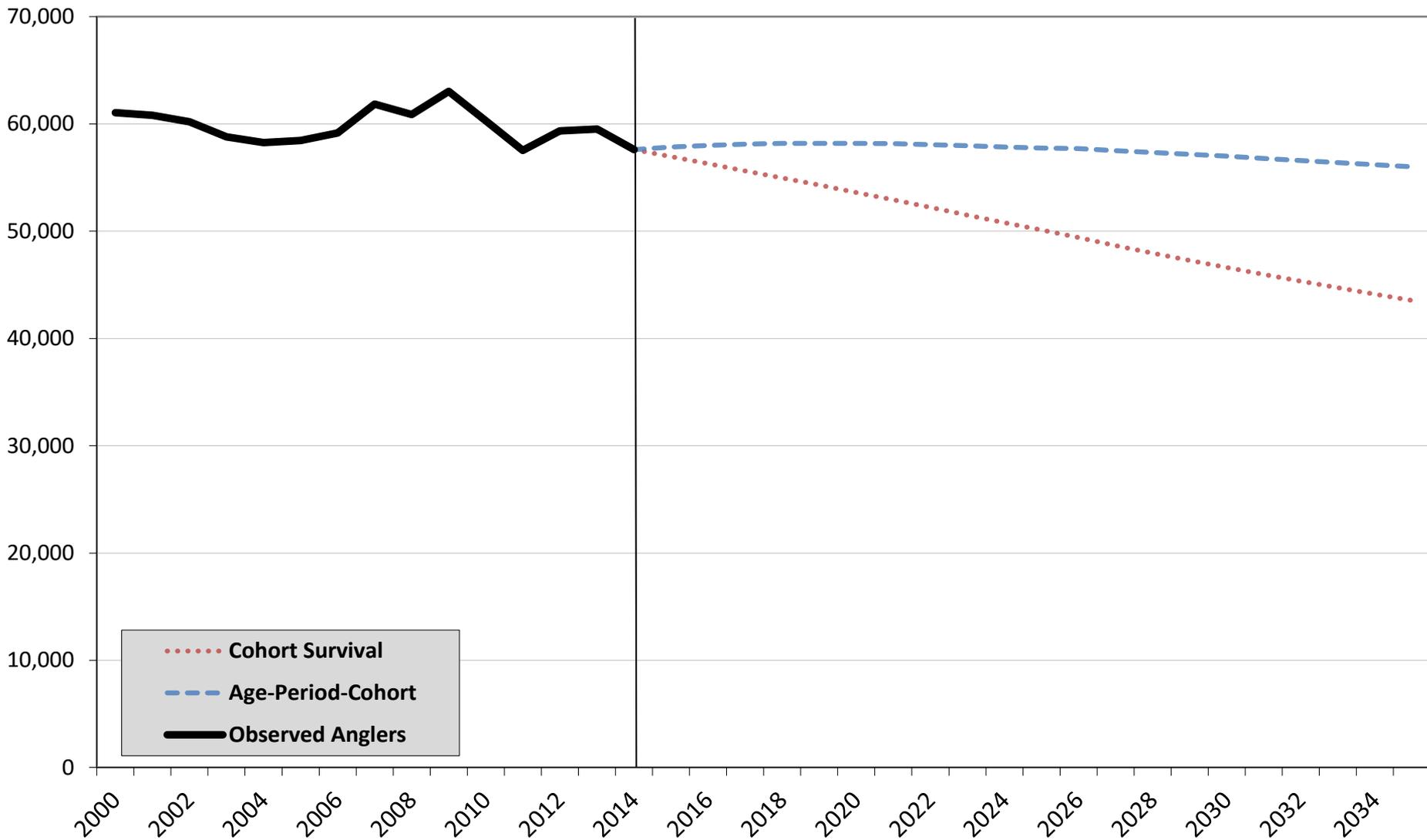


# Michigan Angler Projections Summary



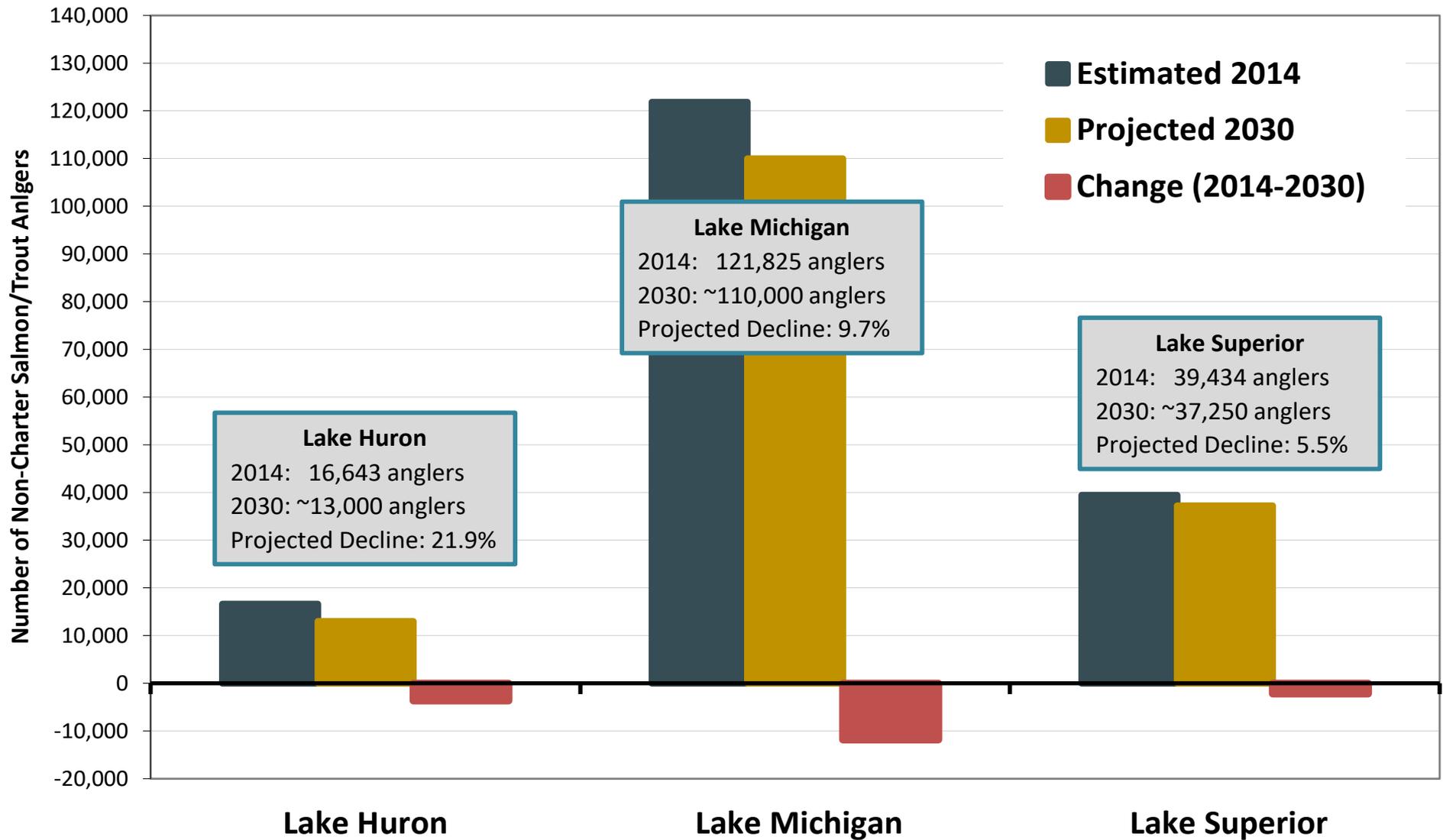
# MI Resident GL Salmon/Trout Angler Projection: 2000-2035

Includes Males and Females Ages 17-79



# Upper Lakes Salmon/Trout Angler Projection: 2014-2030

Includes Males and Females Ages 18-75



# Findings

- About 11-12% of Michigan adults purchase a fishing license each year.  
~ 900,000 people.  
Significant cultural factor, but < peer states- Wisconsin & Minnesota
- Generational differences matter
  - Males: earlier cohorts fished more, decreased since 1970
  - Females: more recent cohorts, since 1985 way more likely to fish
- Age also matters: 25-50 key; drop after 65
- Female participation generally increasing across age and cohort
- Male anglers could stabilize if Boomers keep fishing & recruit new gens OR continue to decline, from ~710K to ~625K in 2035 if patterns continue
- Female anglers likely to increase but not enough to make up for loss of males.



# Implications

- Angler decline not as dire as hunter, but on brink & effects funding/engagement when combined with hunter decline
  - Stakeholders increasingly not hunters & anglers
  - For R3: Family/spousal programs & licenses
  - Engage women- marketing and decisions
- Opportunity for increasing female participation. Depends on maintaining young women across life & recruiting more (like other states)
  - Family programs
  - Target women
- Accessibility for older anglers as well as recruiting new generations could temper male decline

# Resources & Acknowledgements

Reports, Data & Maps available online at:

<https://www.mtu.edu/greatlakes/fishery/index.html>

This research was funded by the Great Lakes Fishery Commission, project ID 2015\_WIN\_44044 entitled “Angler Demographics: An Age-Period-Cohort Analysis.”

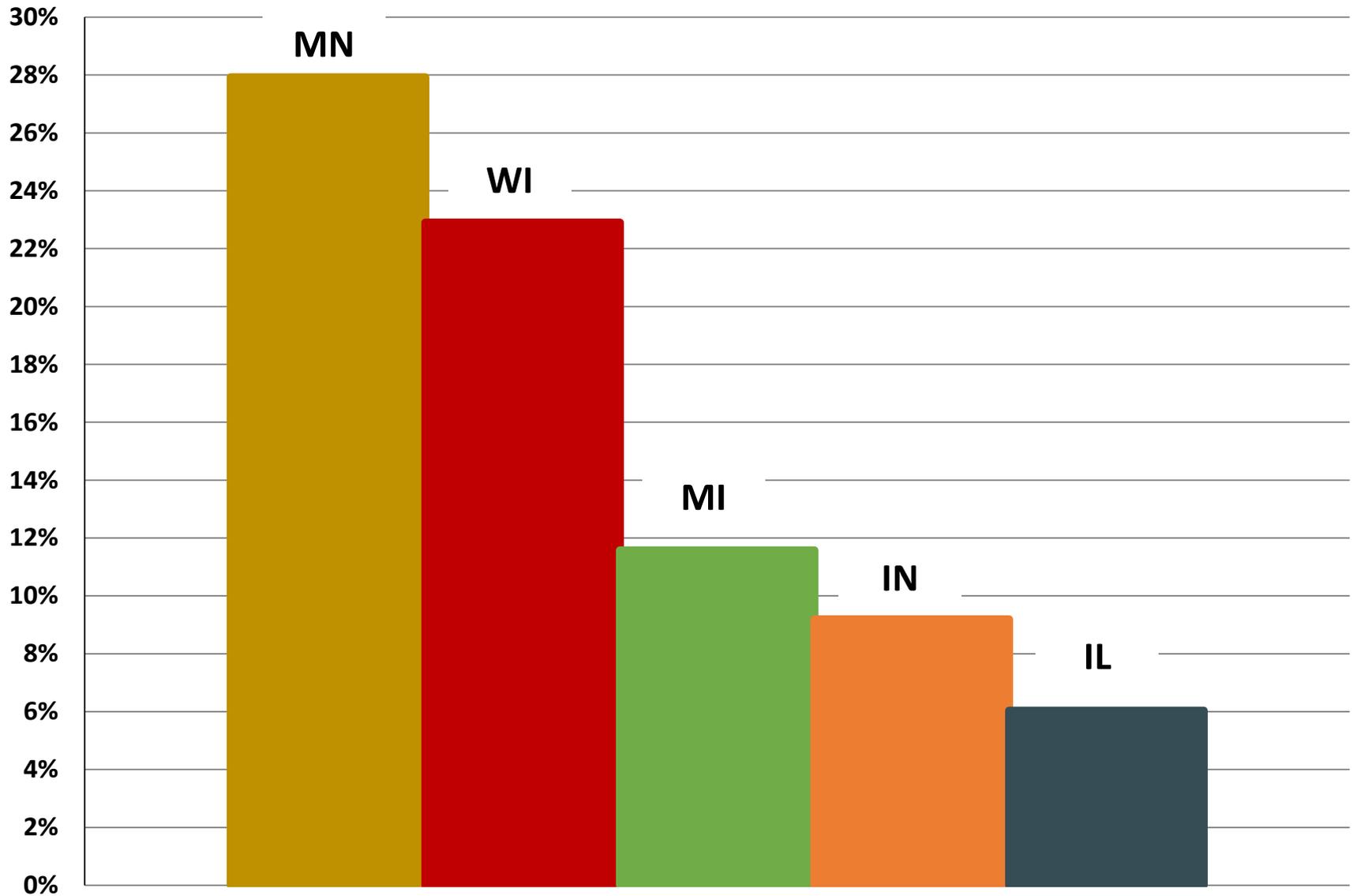
# QUESTIONS/DISCUSSION



# EXTRA SLIDES

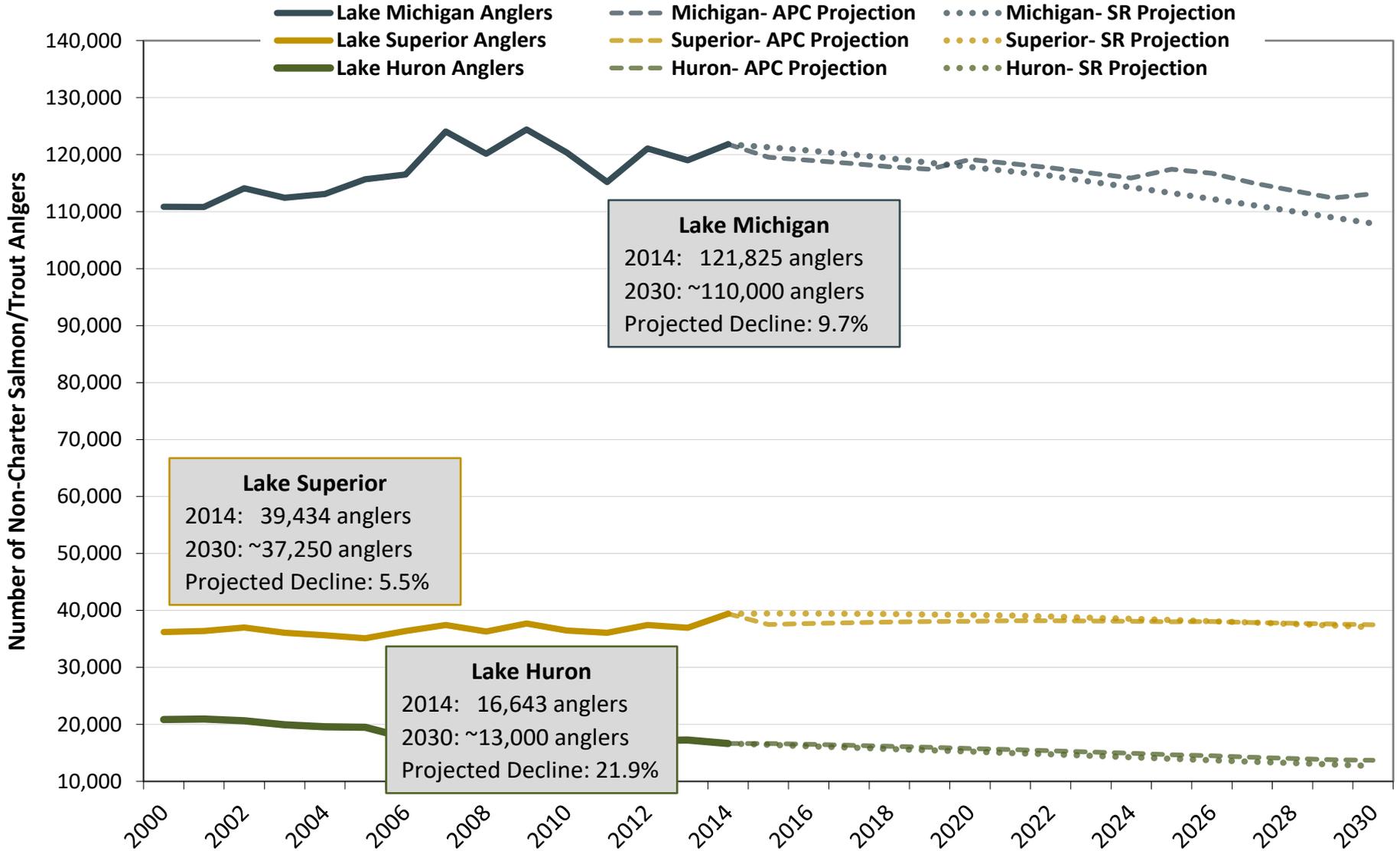
- NOTE- the slides that follow show the same results are presented before with changes in the scale of the y-axis and added information.

# State Resident Fishing Participation Rates, 2014 (Ages 18+)



# Upper Lakes Salmon/Trout Angler Projection: 2000-2030

Includes Males and Females Ages 18-75



**Thank You!**

# **Wildlife Chief Update**

**Bill Scullon**

**UP Field Operations Manager**

**&**

**Dean Beyer**

**Research Biologist**



# RESTORATION OF PREDATION-WOLF TRANSLOCATION TO ISLE ROYALE NATIONAL PARK



## Objectives:

- Reintroduce up to 20-30 wolves over a 3 year period
- Ensure reintroduction efforts establish adequate genetic variability to provide for a viable wolf population over a 20 year period
- Ensure predation is restored as a key ecosystem dynamic





# RESTORATION OF PREDATION-WOLF TRANSLOCATION TO ISLE ROYALE NATIONAL PARK





# RESTORATION OF PREDATION-WOLF TRANSLOCATION TO ISLE ROYALE NATIONAL PARK

## Criteria for selecting wolves from MI to translocate:

- Healthy
- 1 male and 1 female
- Not related (capture > 30 miles apart)
- Not habituated to humans
- Wolves associated with depredations okay if:
  - Event is not with a domestic pet
  - Events occurred > 1 year before
  - No signs of habituated behavior



# RESTORATION OF PREDATION-WOLF TRANSLOCATION TO ISLE ROYALE NATIONAL PARK

## Michigan Capture Operation

- October 6-19
- USDA Wildlife Services-trapping
- MDNR-logistics and planning
- Pre-capture scouting
- Minimize risk of conflicts with hunting dogs



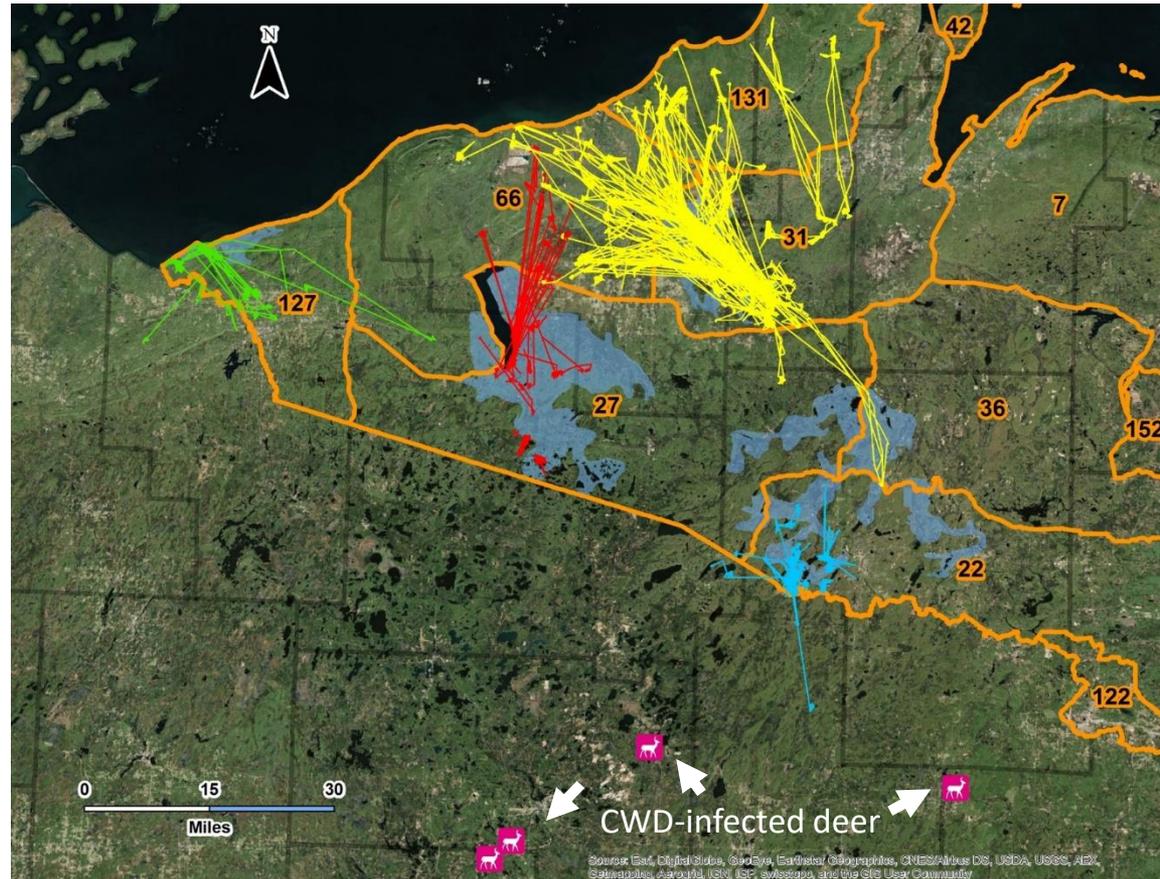
# Wildlife Chief Update

- Sturgeon River Sloughs Wildlife Management Area
- Bear Forum Update
- Status of Efforts to Translocate Sharp-tailed Grouse



# QUANTIFYING UPPER PENINSULA DEER MOVEMENTS AND ABUNDANCE: PREPARING FOR CWD MANAGEMENT

- 277 deer collared, spring migrations up to 48 mi.
- 12 entered WI, 1 within 20 mi of known CWD-infected deer.
- High winter density and long-distance migrations increase CWD transmission risk
- Movement information is critical for determining UP disease management zones



Source: Esri, DigitalGlobe, GeoEye, Earthstar/Geographics, CNES/Airbus DS, USDA, USGS, Aero, Swire, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

# STATUS OF MICHIGAN'S REINTRODUCED MOOSE POPULATION



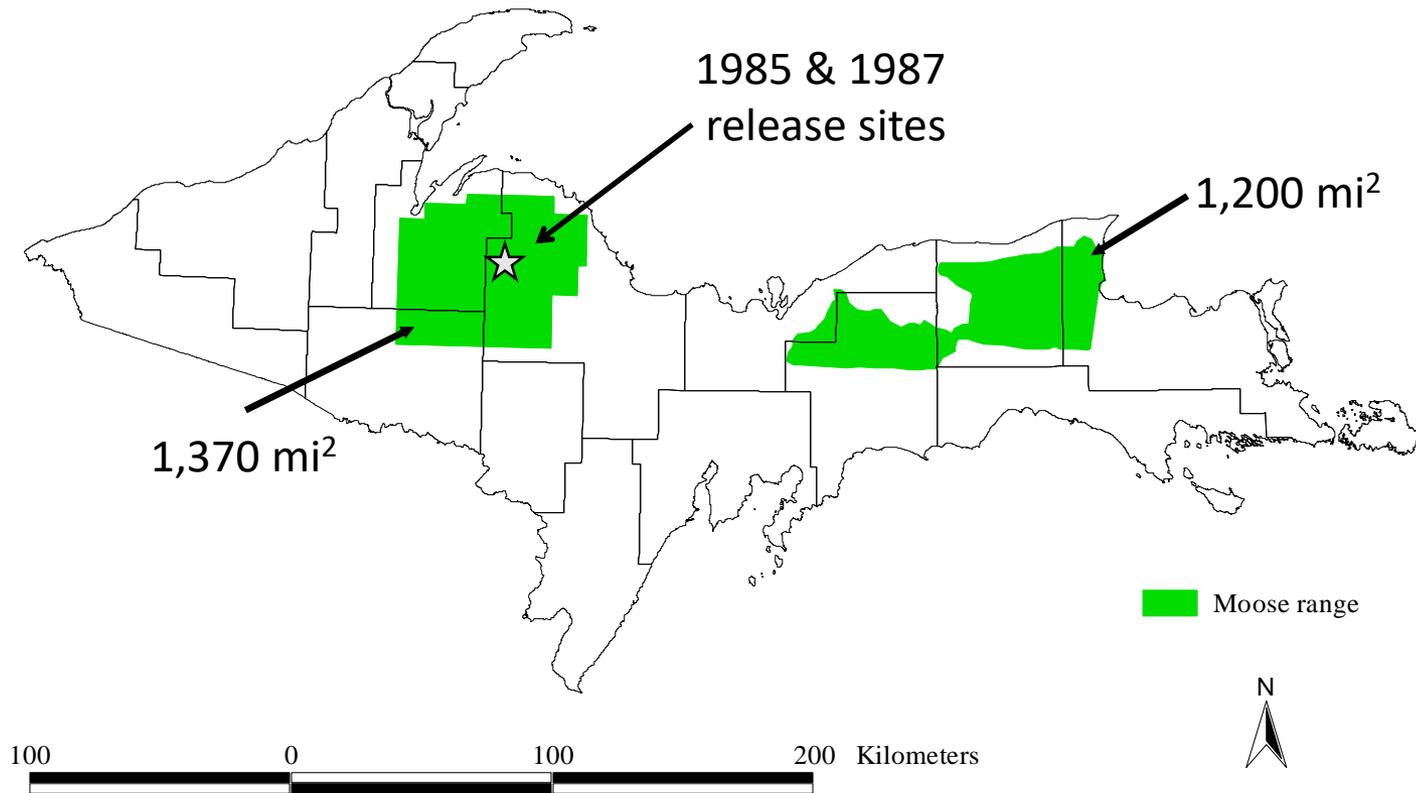
1985  
MOOSE LIFT I  
29 moose

1987  
MOOSE LIFT II  
30 moose

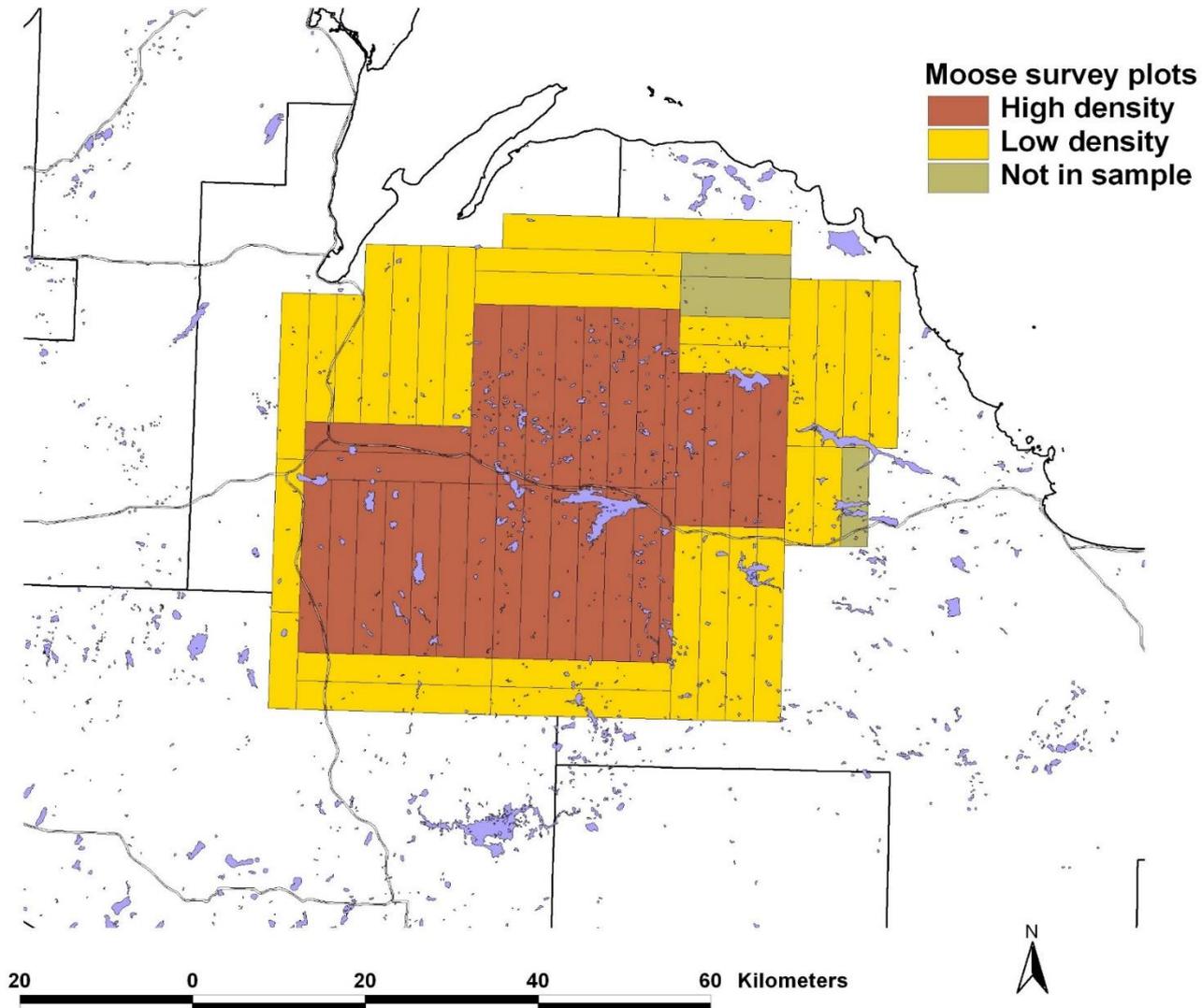


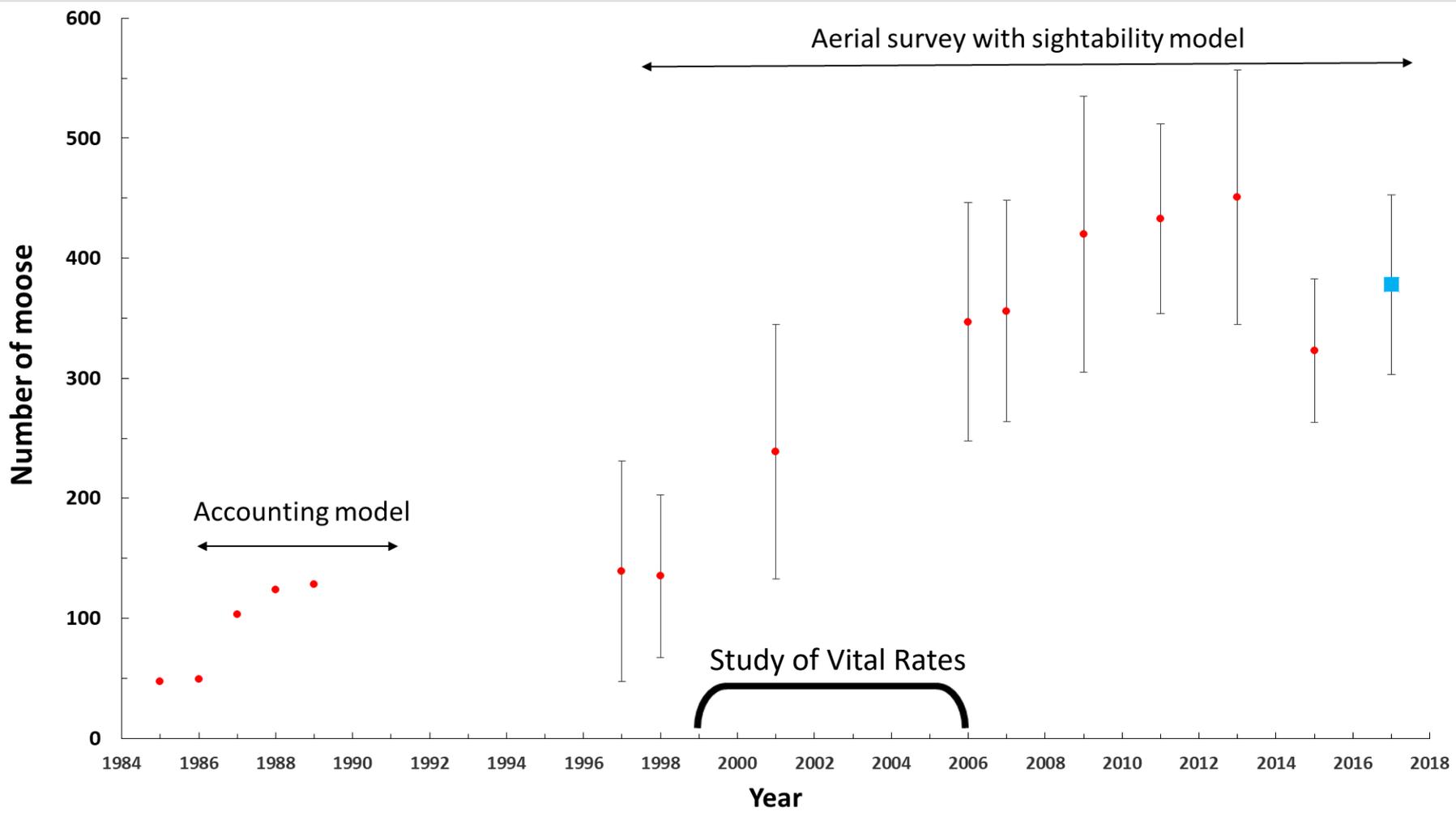
# Moose Distribution

(Outside of Isle Royale)

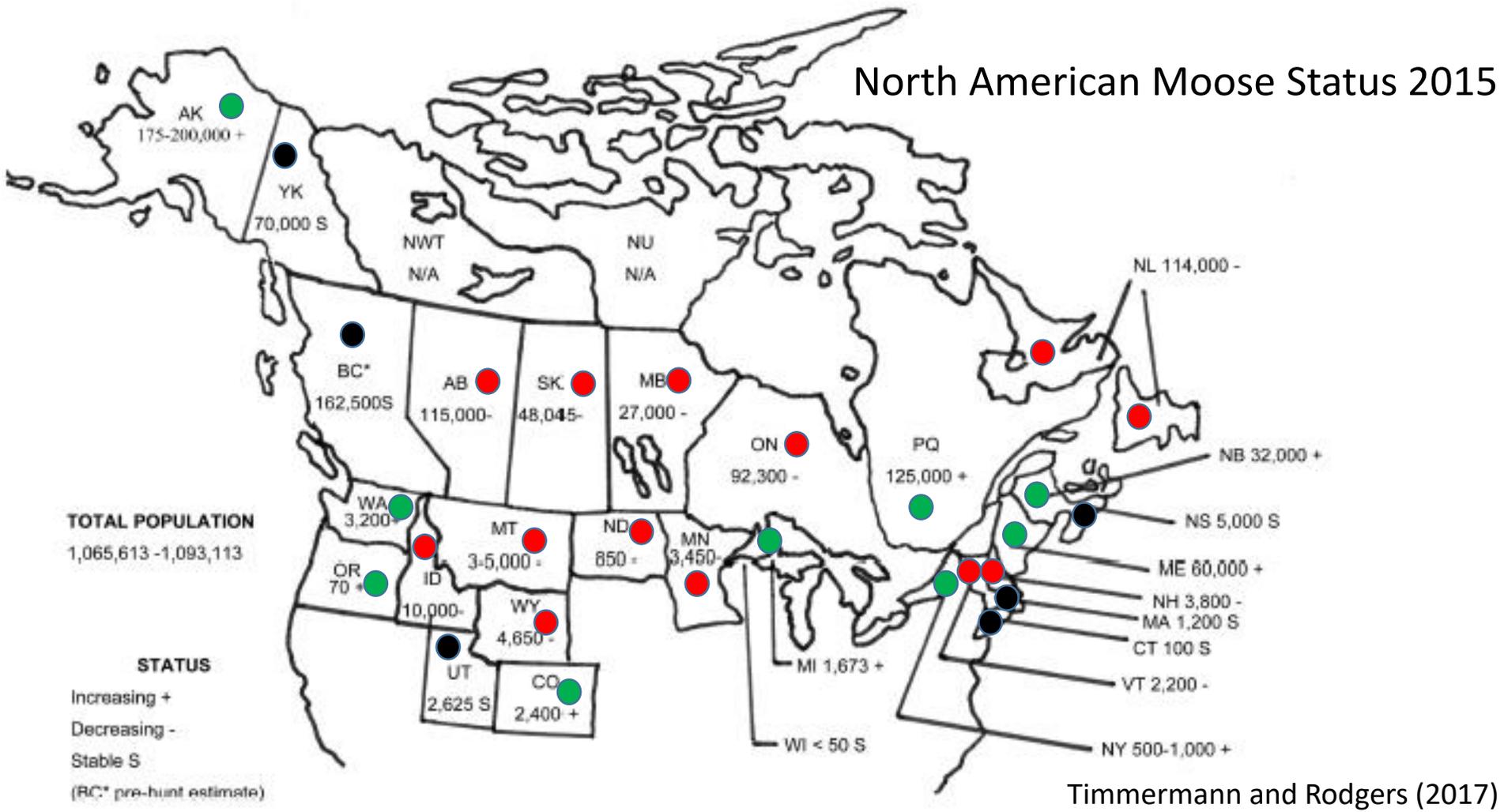


# Moose Abundance Monitoring Strategy





# North American Moose Status 2015



Timmermann and Rodgers (2017)

# Potential Limiting Factors

Brainworm



Liver Flukes



Predation



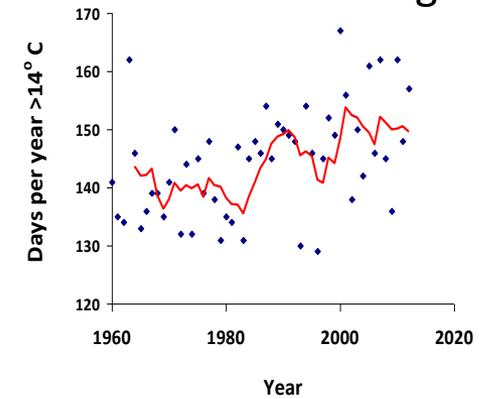
Harvest



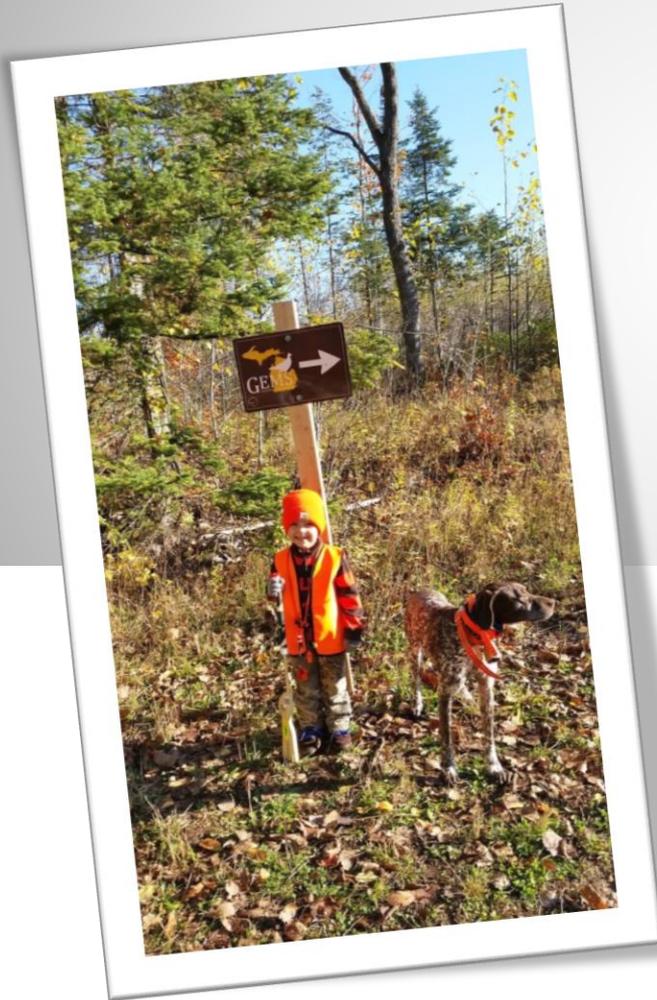
Winter Ticks



Climate Change



**Thank You!**



Grouse Enhanced Management Sites

**Bill Scullon**  
**Michigan Department**  
**Of Natural Resources**



# How it started



# How it started

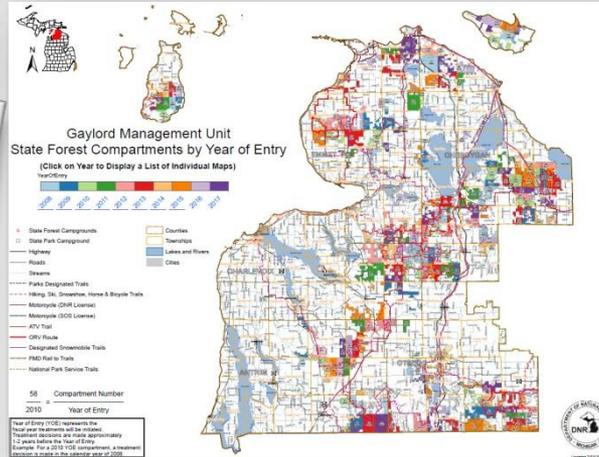


## the PARTNERS





# How it started



## the SITE PREP



# How it started

## the FIRST SEASON 2014



### 7 GEMS

6 state land  
1 federal forest  
23 businesses



# The result

great **FEEDBACK**



# The result

## 17 GEMS for 2016

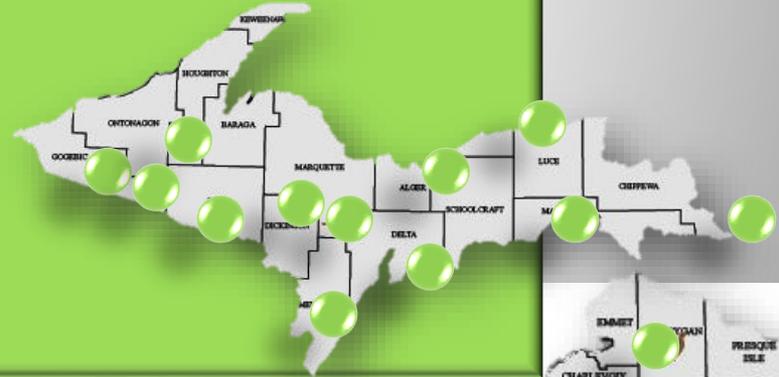
- ✓ 14 state land
- ✓ 1 private land
- ✓ 1 federal forest
- ✓ 1 county forest
- ✓ 30+ businesses



# The result

## 18 GEMS for 2017

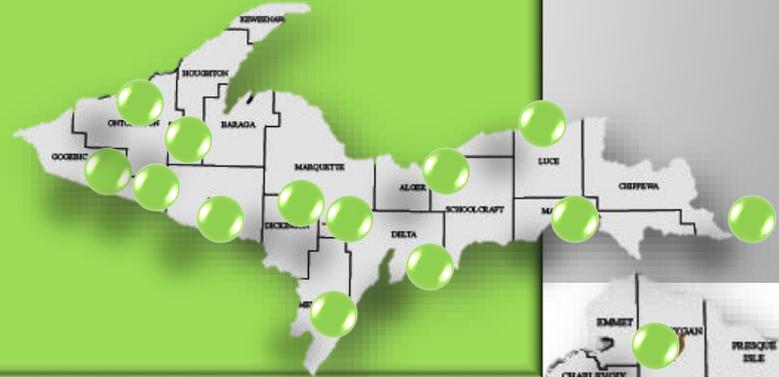
- ✓ 15 state land
- ✓ 1 private land
- ✓ 1 federal forest
- ✓ 1 county forest
- ✓ 30+ businesses

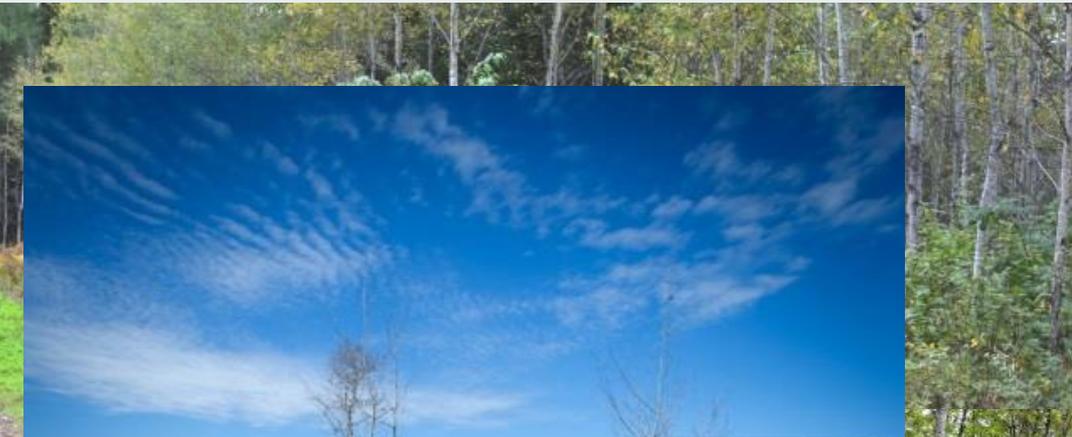


# The result

## 19 GEMS for 2018

- ✓ 15 state land
- ✓ 1 private land
- ✓ 2 federal forest
- ✓ 1 county forest
- ✓ 30+ businesses





**Thank You**

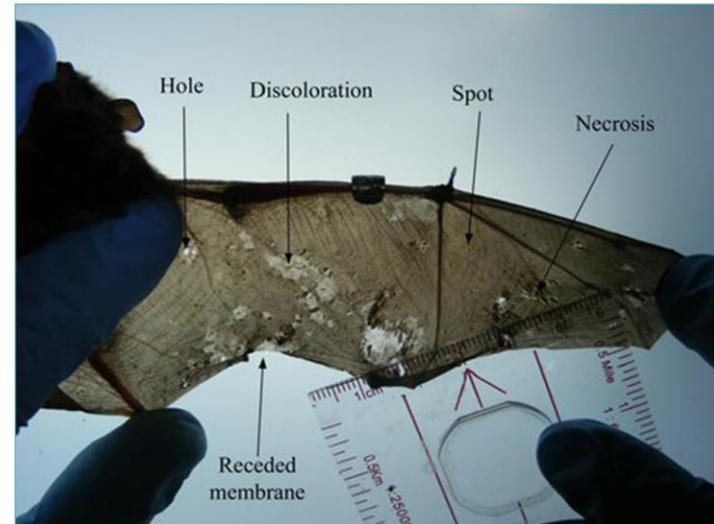
# White-Nose Syndrome Update



John DePue  
Wildlife Biologist

# What is WNS?

- Disease caused by fungus
- *Pseudogymnoascus destructans* (*Pd*)
- Causes energy depletion
- Impacts whole suite of cave bat species; little brown, northern long-eared, tri-colored, and big brown bats



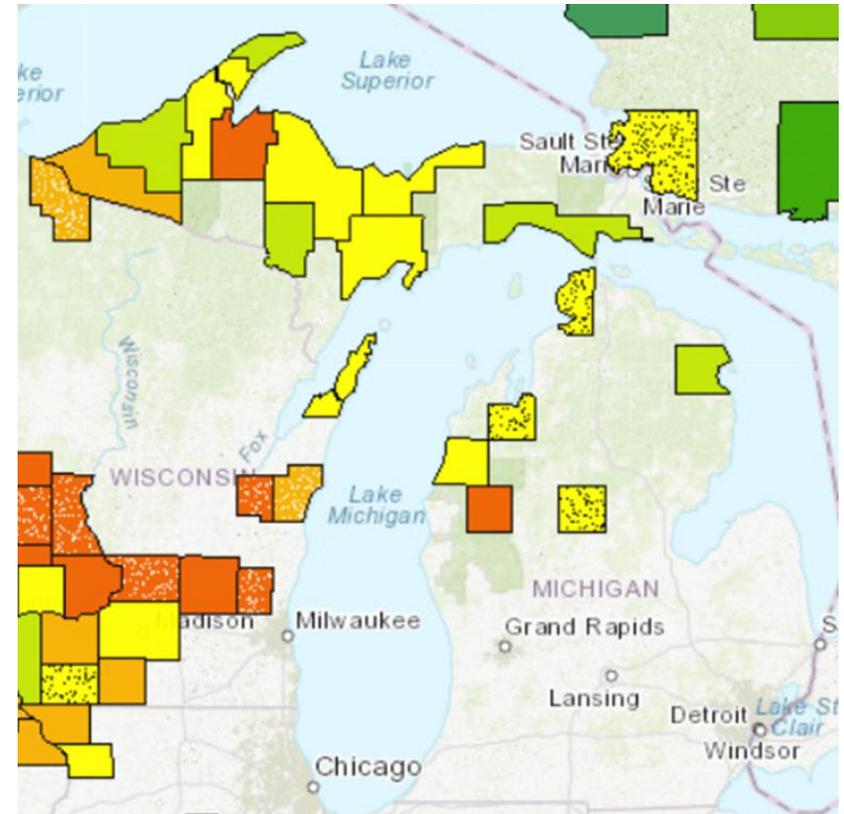
# Impacts of WNS

- 90-100% mortality
- Cause of northern long-eared bat (NLEB) declines
- U.S. Fish and Wildlife Service has listed the NLEB as a threatened species



# WNS in Michigan

- Michigan in 5<sup>th</sup> year of infection
- All hibernacula have presence of WNS
- Bats provide farmers 3.7 billion dollars of pest control services annually



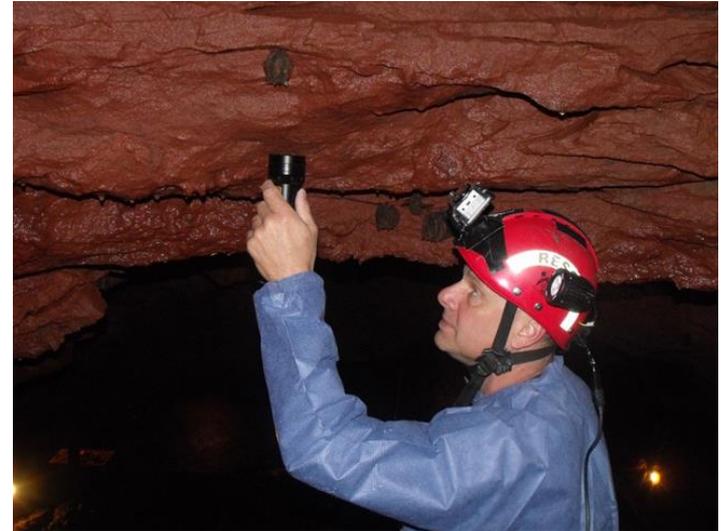
# WNS Impacts in Michigan

- 31 hibernacula surveyed in 2018
- Survey data indicate 83% decline of the 65 sites surveyed post-WNS infection
- Colder hibernacula continue to have higher survival



# What is MI DNR Doing to Combat WNS?

- Statewide bat monitoring
  - Disease
  - Acoustic
- Protect critical hibernacula
- WNS treatment trials
- Outreach/ education
- Bat Habitat Conservation Plan (HCP)



# WNS Field Treatment Trials

- Chlorine dioxide
  - Kill Pd fungus
  - Initial results encouraging
- Chitosan
  - Helps heal tissue and suppresses growth of Pd fungus



# Hibernacula Climate Manipulation

- Reduce internal temperatures to 36-40 degrees F



# Outreach/ Education

- MI Bat Festival
  - October 6 Potter Park Zoo
- Programs



# Lake States Habitat Conservation Plan

- MI, WI, MN
- Necessary to obtain incidental take permit
- Protection from litigation for forestry management practices while providing habitat conservation for federally listed species



# Lake States Habitat Conservation Plan

- **Completed Activities**
  - Drafted 5 of 8 chapters
  - Several chapters provided for stakeholder review
- **Ongoing Activities**
  - 3 of 8 chapters under development
  - NEPA document
  - MI DNR engaging FMAC and TAC

# Thank you!

[www.michigan.gov/dnr](http://www.michigan.gov/dnr)

