

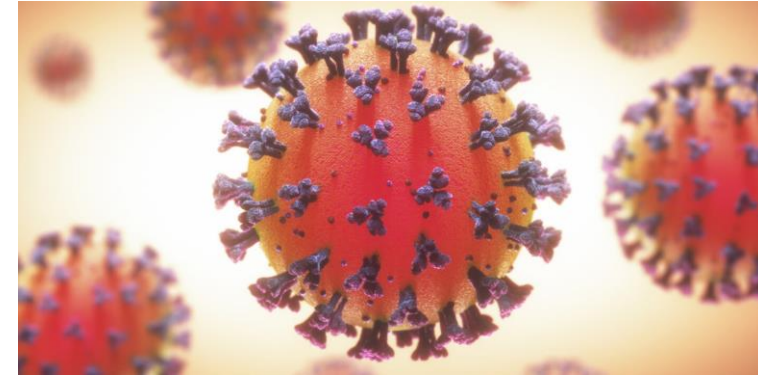
# Outline

## Population Status Updates

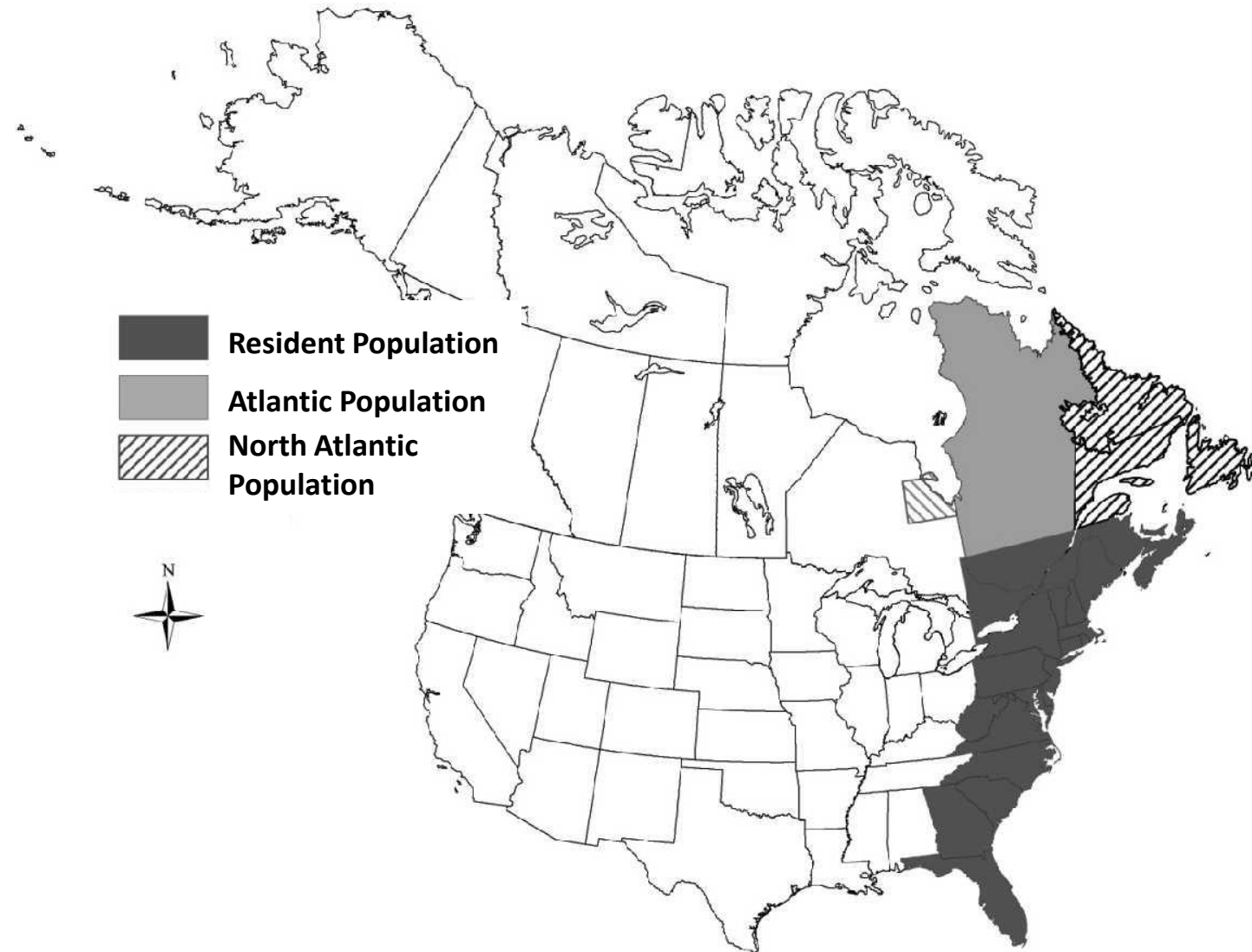
- Ducks
- Geese
- Upcoming issues
  - Sea duck status
  - How late in winter to hold duck seasons

# 2020 Duck Population Status

- 2020: No or limited surveys
- USFWS and partners used model predictions of population size and habitat conditions
- No changes to 2021 duck seasons in Atlantic Flyway 60/6 with same species restrictions



# Canada Goose Breeding Populations: Atlantic Flyway



# ATLANTIC FLYWAY CANADA GOOSE HUNTING ZONES

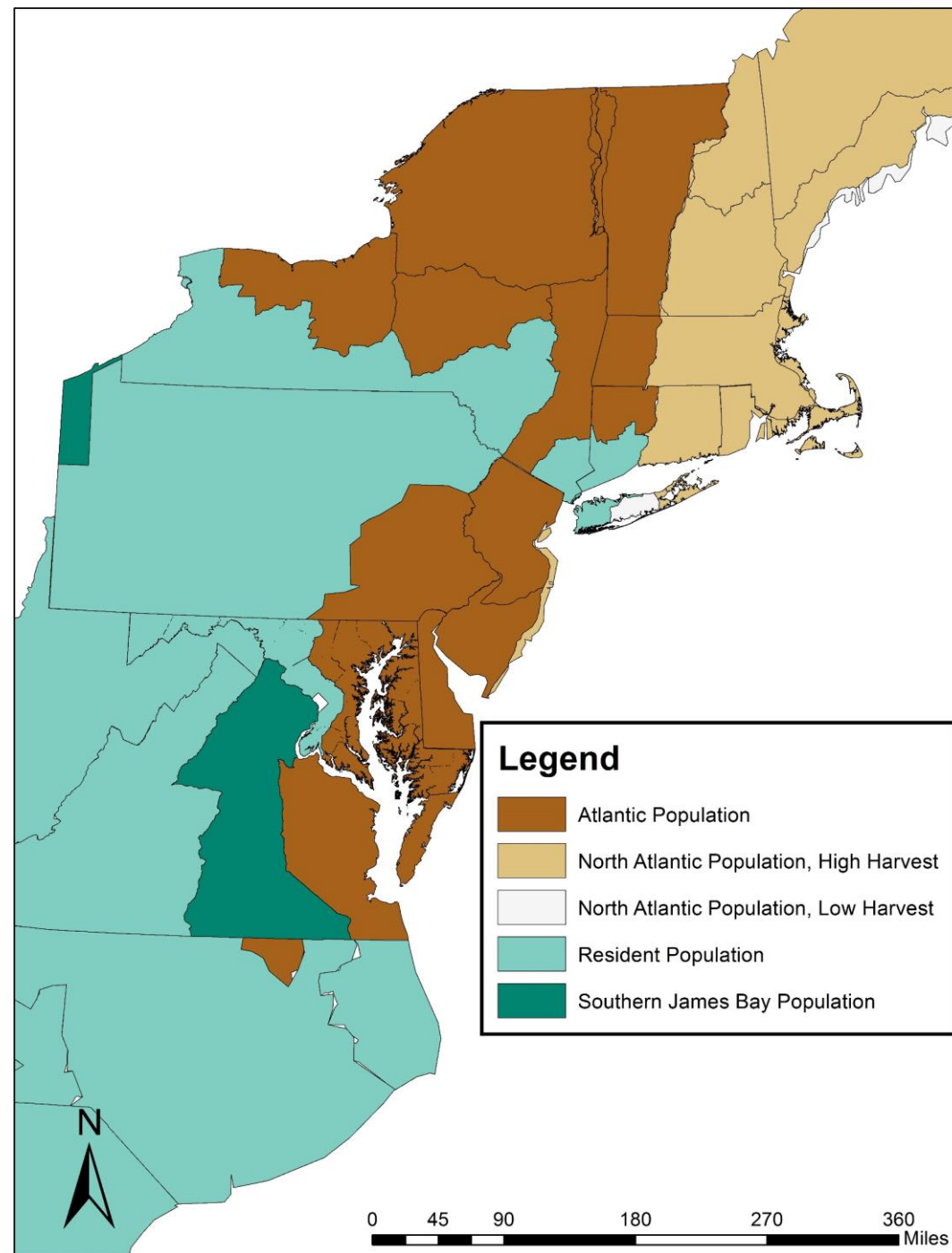
**Atlantic Flyway:** Zones based on preponderant  
wintering population

## 2021 Regulations

**RP Zones:** liberal (80/5) seasons

**NAP Zones:** moderate (60/2 or 70/3)  
seasons

**AP Zones:** very restrictive (30 day/1-bird bag)  
seasons



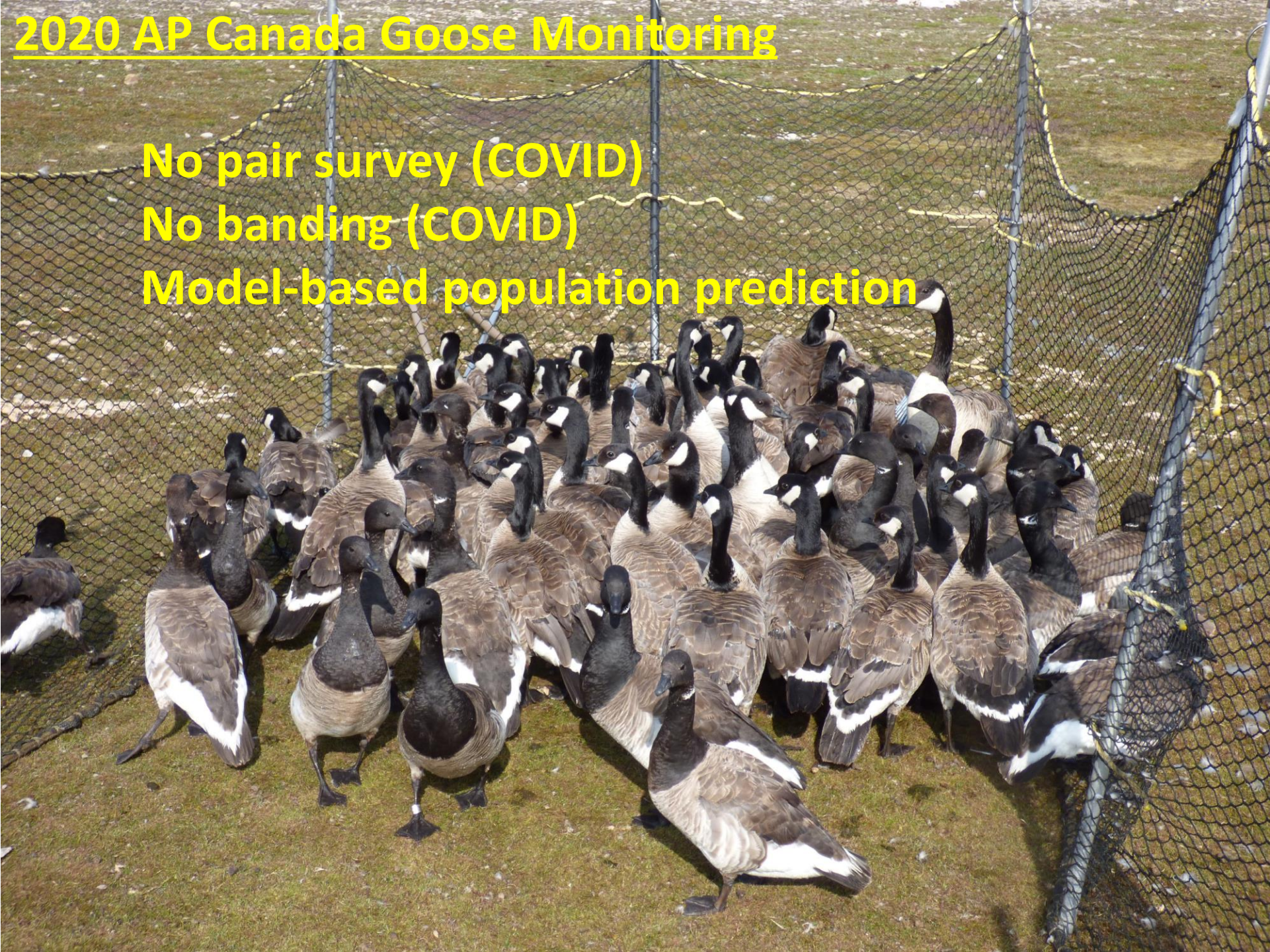


# 2020 AP Canada Goose Monitoring

No pair survey (COVID)

No banding (COVID)

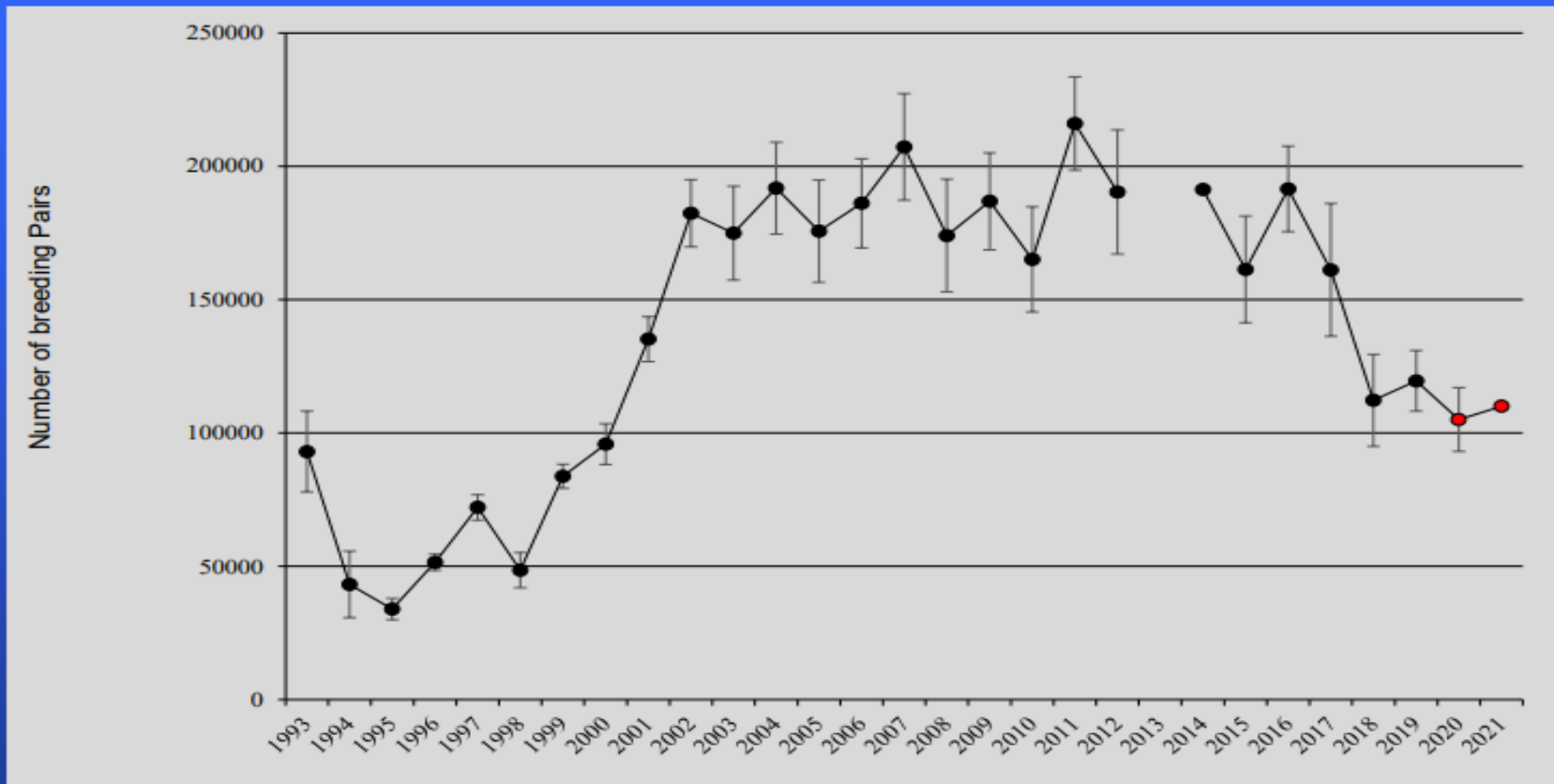
Model-based population prediction





# Status of Atlantic Population Canada Geese

## AP Breeding Pairs



- = integrated population model prediction

Age Ratio:  
AP Canada Geese

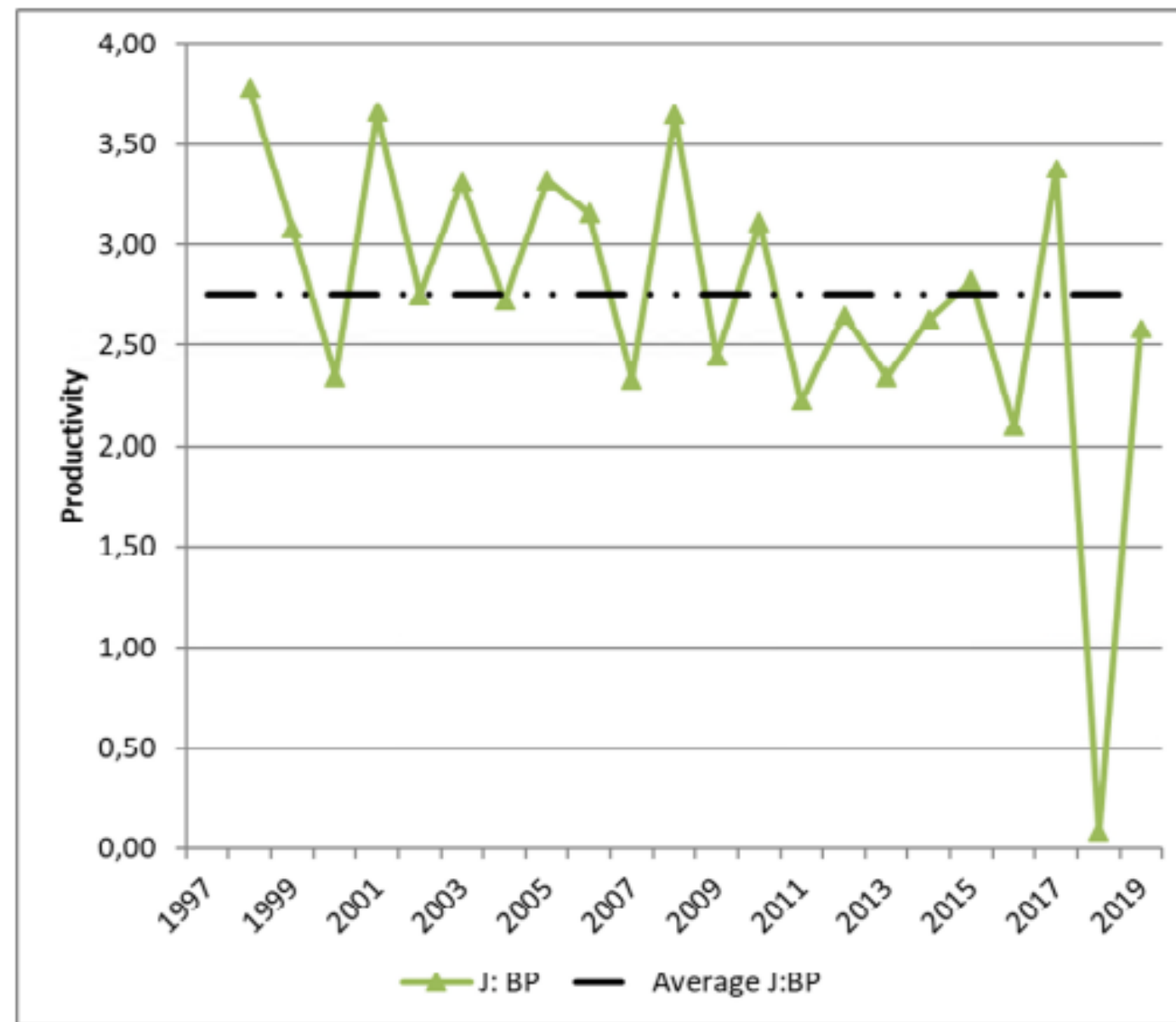
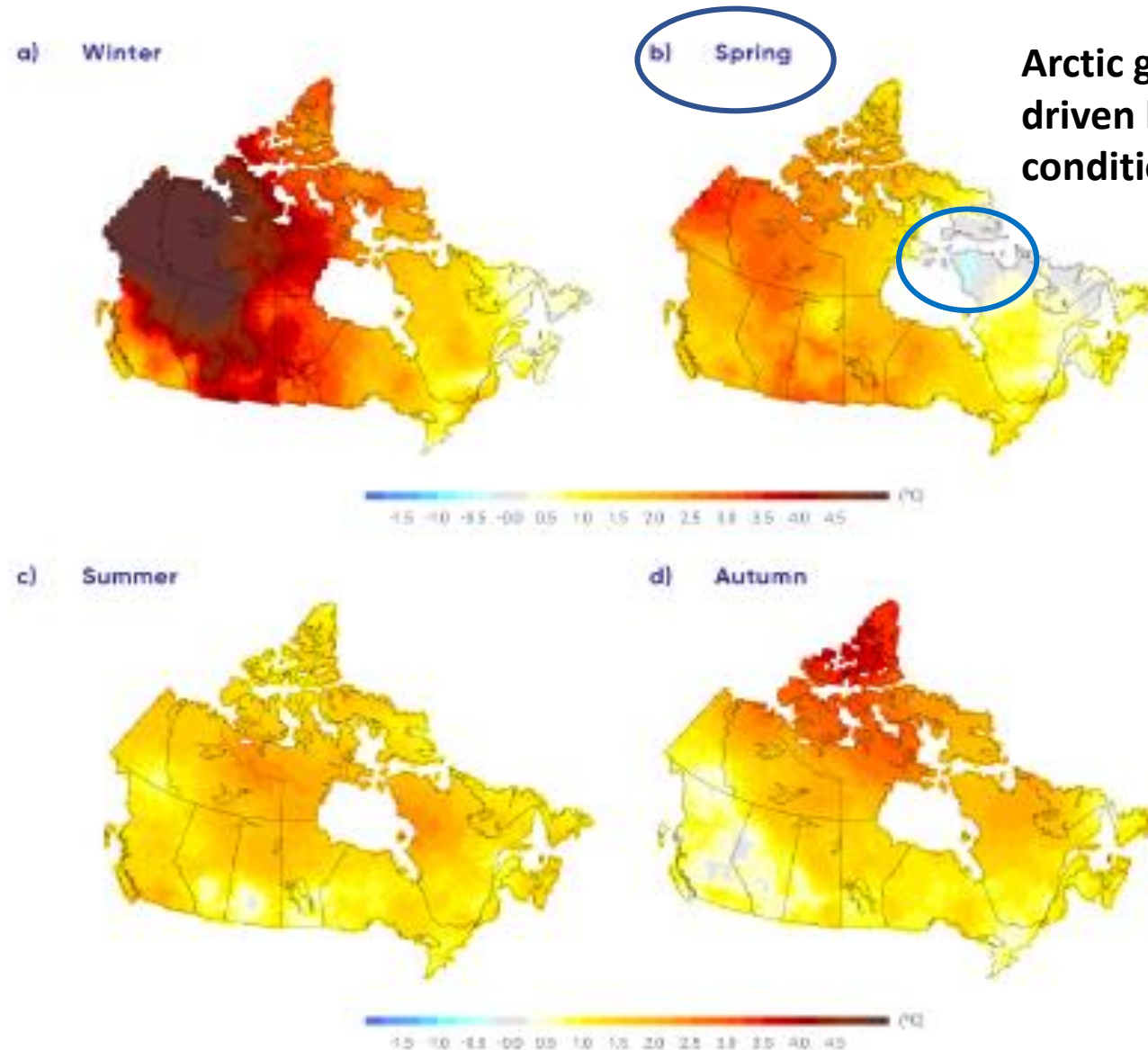


Figure 7. Productivity of Atlantic Population Canada Geese banded in Nunavik, 1997-2019. The ratio J:BP represents the ratio of juveniles to number of females with a brood patch (recaptured females included).

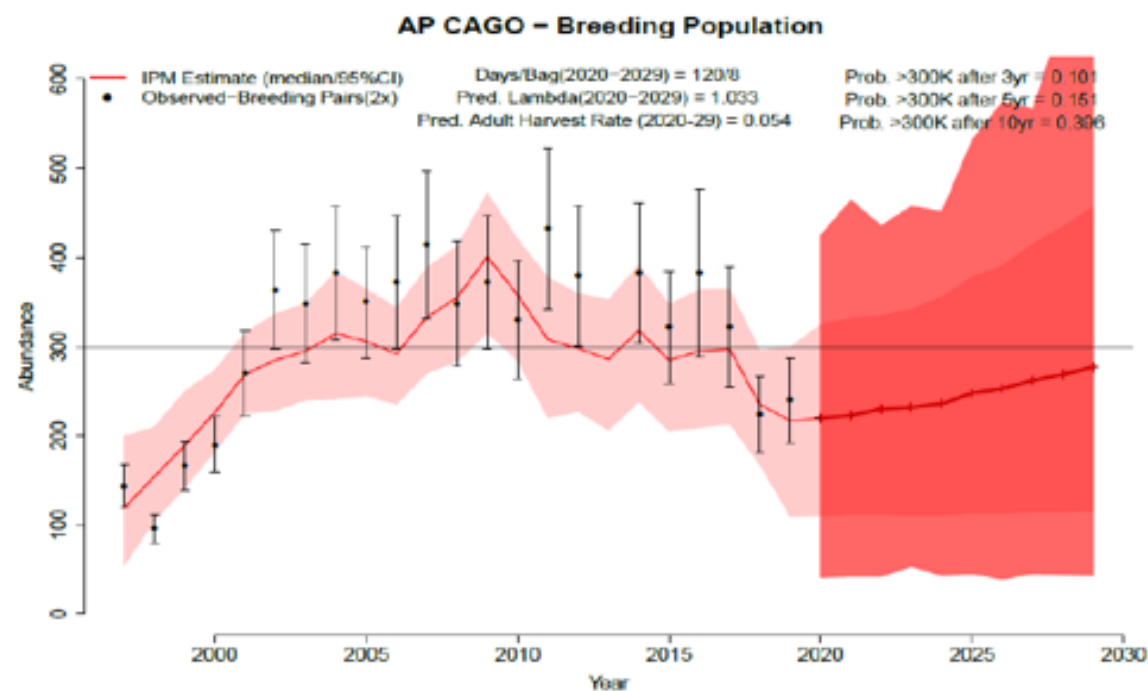
## What about global warming, especially in Arctic?



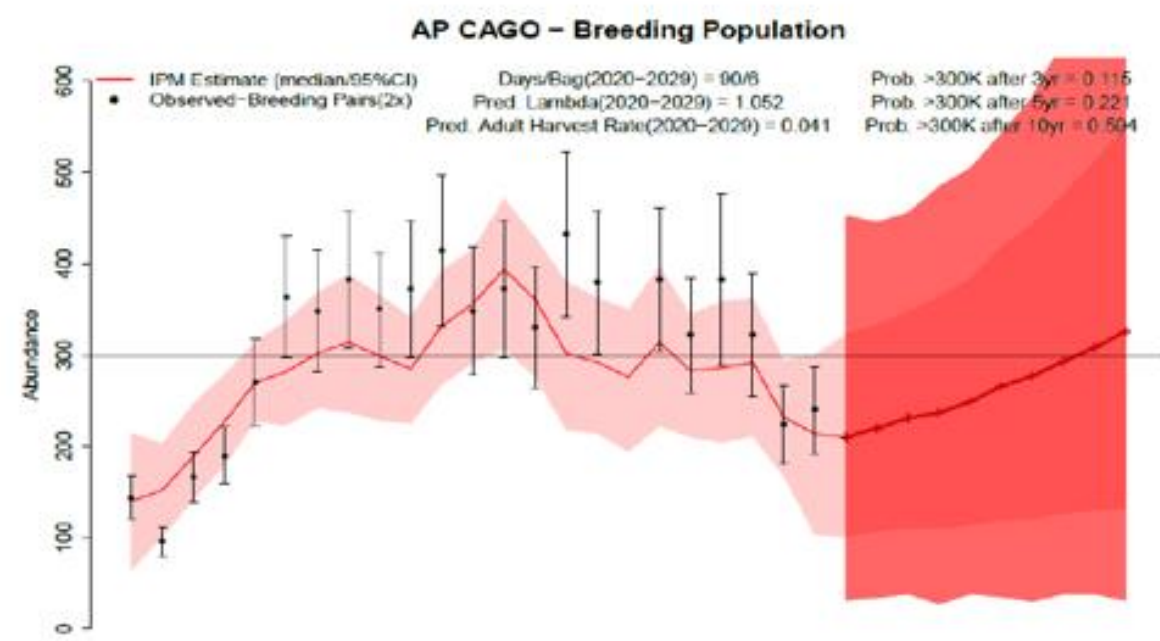


# Integrated Population Model Population Growth Trajectories: AP Canada Geese

Using 2020 Regulations



What if use more more restrictive regulations?



# What does this mean for 2021?

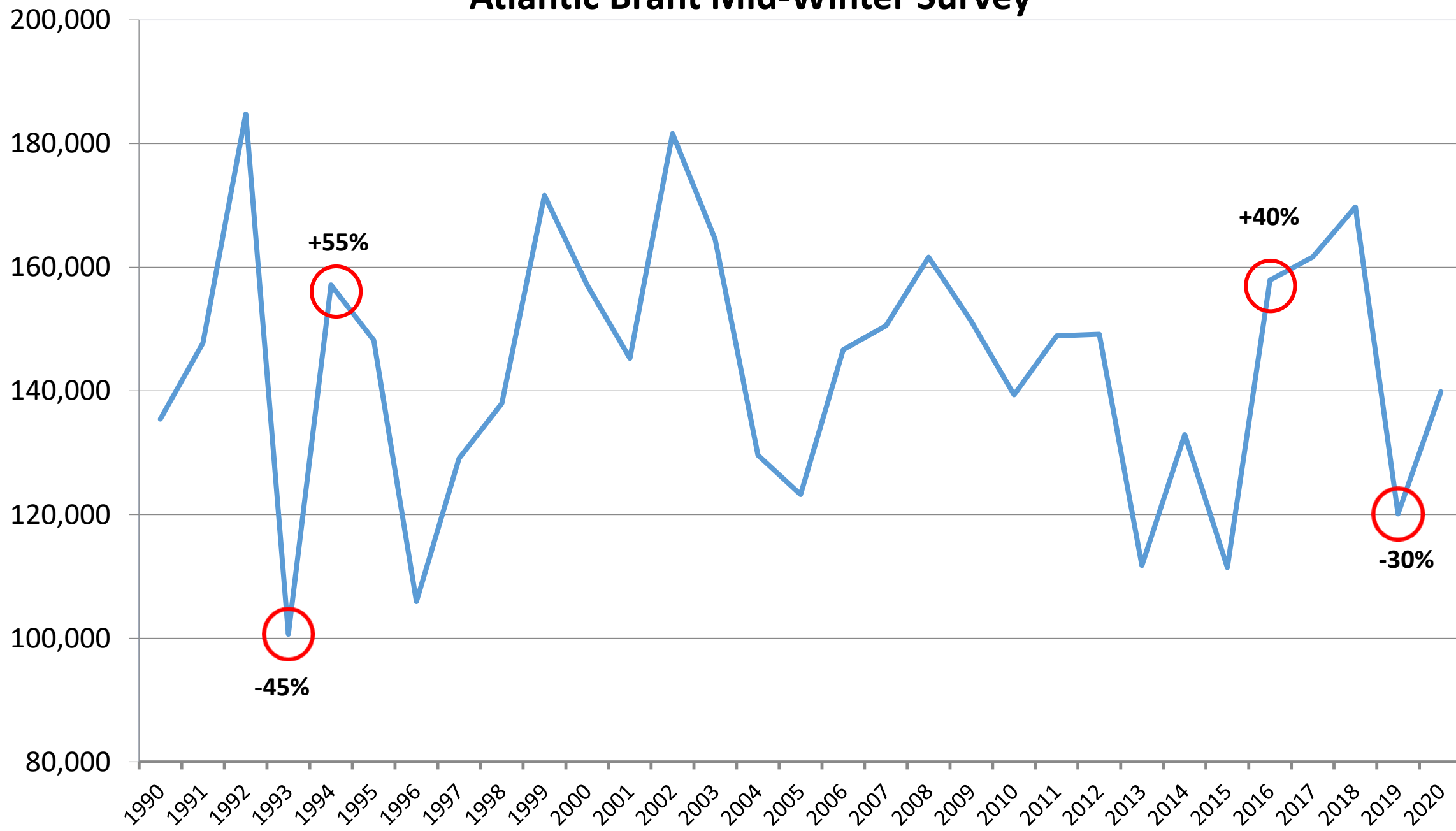
- Mid-Atlantic & New England AP Zones (PA, NY, NJ): reduced to 30/1
- New Jersey
  - Regular Season AP Areas (North and South Zones): reduced from 30/2 to 30/1
  - Regular Season NAP Areas (Coastal Zone): 60/2 concurrent with duck season
  - September and “Special Winter” seasons: no change
- Chesapeake states (MD, DE, VA): also 30/1
- AP Zones in Quebec and Ontario reduced bag limit
- **EVERYONE “SHARES” IN THE PAIN**

# Fundamental change to Atlantic brant harvest management

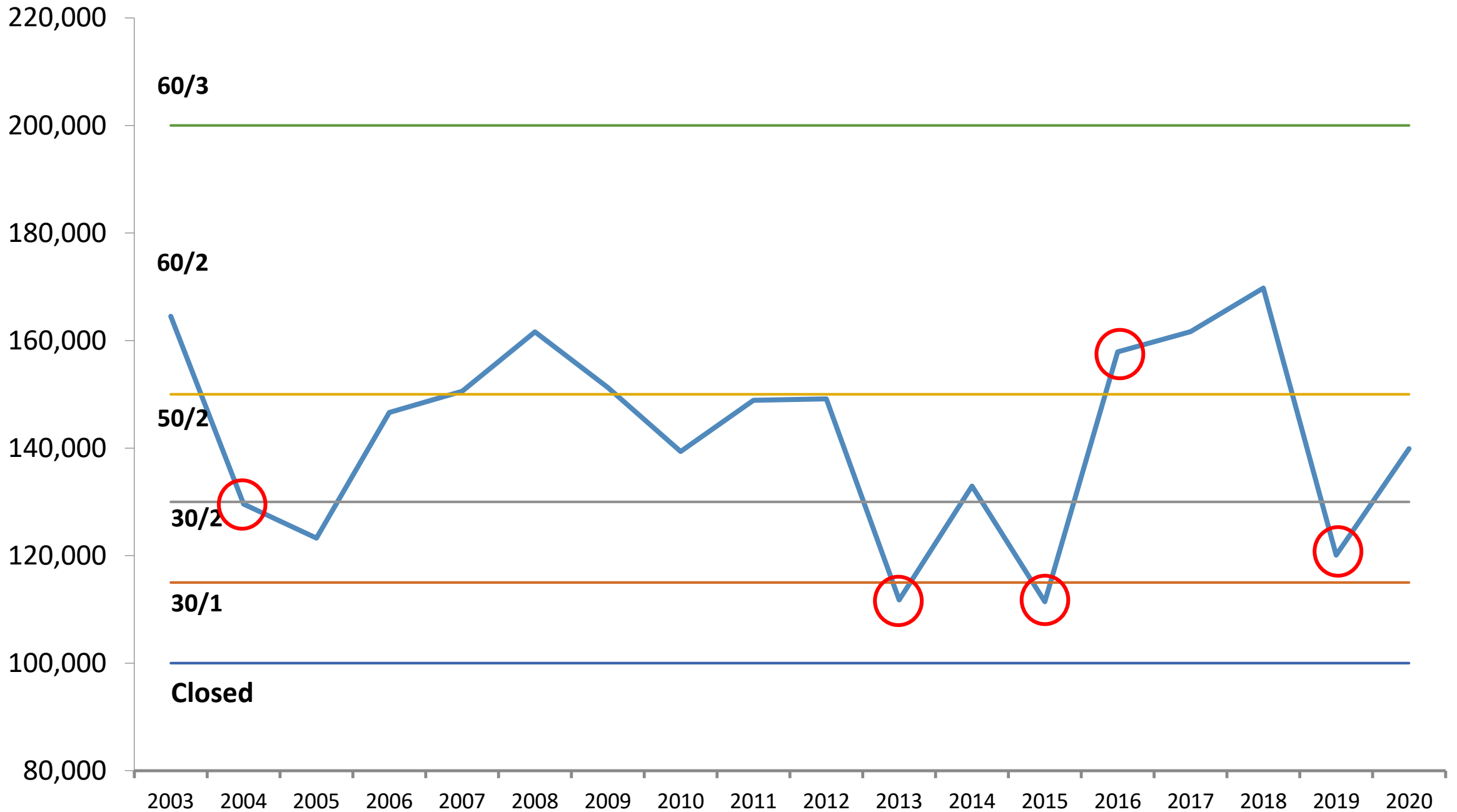




## Atlantic Brant Mid-Winter Survey



# Atlantic Brant Harvest Strategy **Pre-2021**



# 2020: Atlantic Brant Integrated Population Model Adopted

**IPM:** Link survey data and demographic parameters into joint-likelihood estimator rather than use data sets independently

- Parameter estimates inform each other
- Can deal with “holes” in data
- Incorporates uncertainty
- IPMs can predict *future* population size

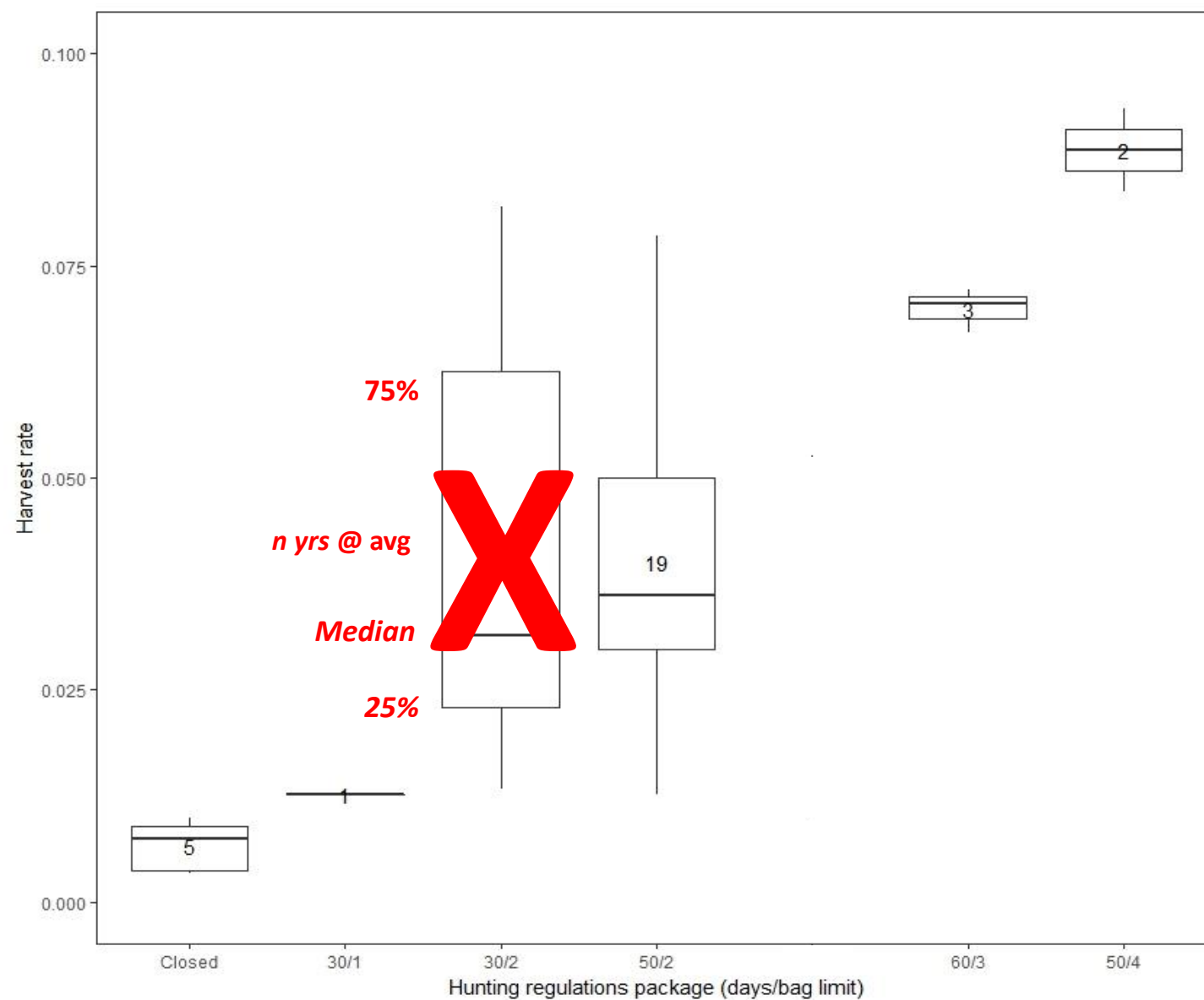
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## Data sources in IPM

- MWS (serves as IPM ‘verification’ following previous year prediction)
- Adult survival (banding data)
- Adult harvest rate (banding data)
- North Atlantic Oscillation (to predict fall age ratio)
- Fall age-ratio survey (serves as IPM ‘verification’ following NAO)

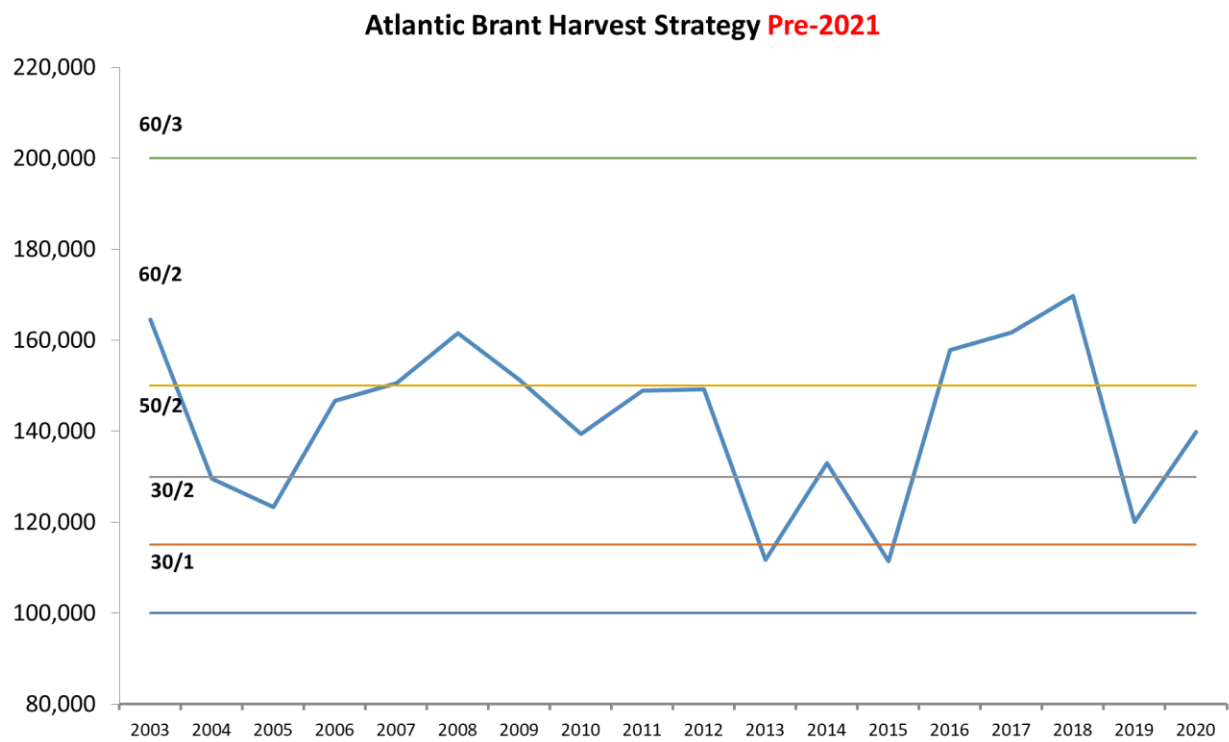


# Impact of Harvest Packages on Harvest Rate, 1976-2018

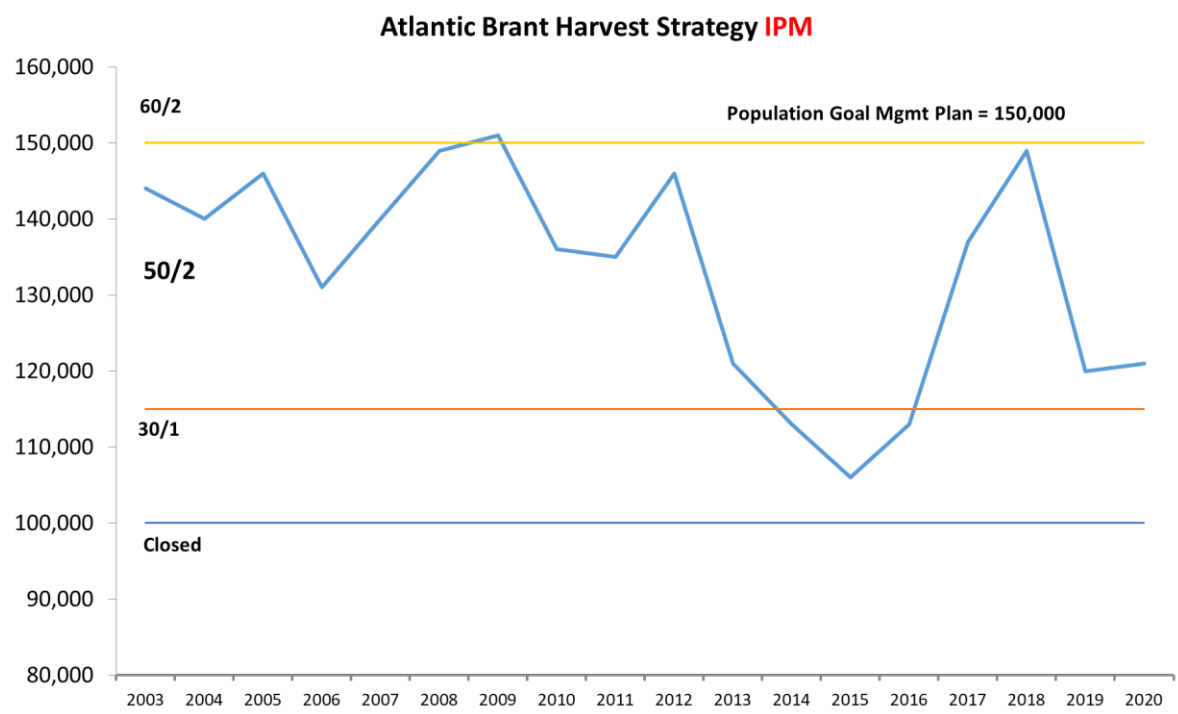


# BRANT HARVEST STRATEGIES

## Old, prescribed strategy



## New, derived strategy (IPM)



Attribute	Old	IPM
Avg Days	48.3	47.4
# 30-day seasons	5	3
# 60-day seasons	7	1
# Reg changes	10	4
# "Jumps"	17	4

# What does this mean for 2021?

- Atlantic Flyway adopts new harvest Atlantic brant harvest strategy
- IPM prediction: 126,000 brant during winter 2021 (no MWS verification)
- 50 days, 2 bird bag; no change





# Looming Issues



# STATUS OF SEA DUCKS

Sea Duck: surf, black, white-winged scoters, long-tailed duck, common & king eiders



- 1960s: Start of “Special Sea Ducks Seasons” perceived as “underutilized”
  - Liberal seasons (107 days) and bag limits (7 birds)
- ~2000s: concern about population status
  - Not well measured in any breeding or wintering survey but general perception all species declining
  - Long-lived, high annual survival
  - Low recruitment: small clutch sizes, delayed sexual maturation
  - Increased harvest pressure: guiding; equip advances
- 2015: Sea Duck JV Report and subsequent research article on HARVEST

# Harvest management implications

## RESEARCH ARTICLE

## Evaluation of harvest and information needs for North American sea ducks

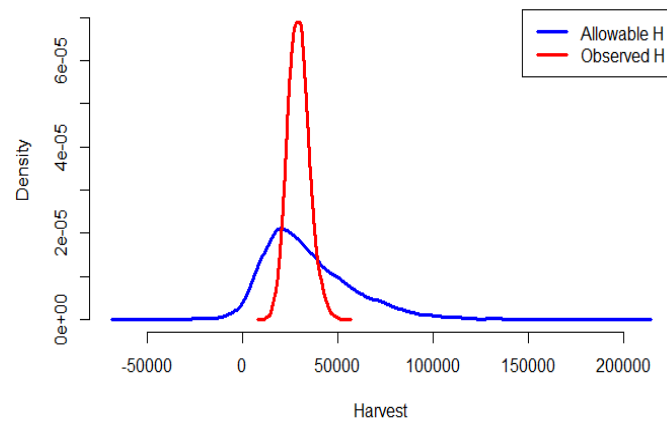
Mark D. Koneff<sup>1,2,3,4</sup>, Guthrie S. Zimmerman<sup>2,3</sup>, Chris P. Dwyer<sup>3</sup>, Kathleen K. Fleming<sup>4</sup>, Paul I. Padding<sup>4</sup>, Patrick K. Devers<sup>4</sup>, Fred A. Johnson<sup>5</sup>, Michael C. Runge<sup>6</sup>, Anthony J. Roberts<sup>4</sup>

**1** Division of Migratory Bird Management, U.S. Fish and Wildlife Service, Orono, Maine, United States of America, **2** Division of Migratory Bird Management, U.S. Fish and Wildlife Service, Sacramento, California, United States of America, **3** Division of Migratory Birds, U.S. Fish and Wildlife Service, Hadley, Massachusetts, United States of America, **4** Division of Migratory Bird Management, U.S. Fish and Wildlife Service, Laurel, Maryland, United States of America, **5** Wetland and Aquatic Research Center, U.S. Geological Survey, Gainesville, Florida, United States of America, **6** Patuxent Wildlife Research Center, U.S. Geological Survey, Laurel, Maryland, United States of America

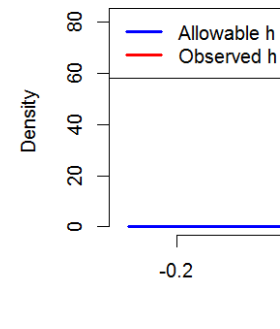
These authors contributed equally to this work.

\* [mark\\_koneff@fws.gov](mailto:mark_koneff@fws.gov)

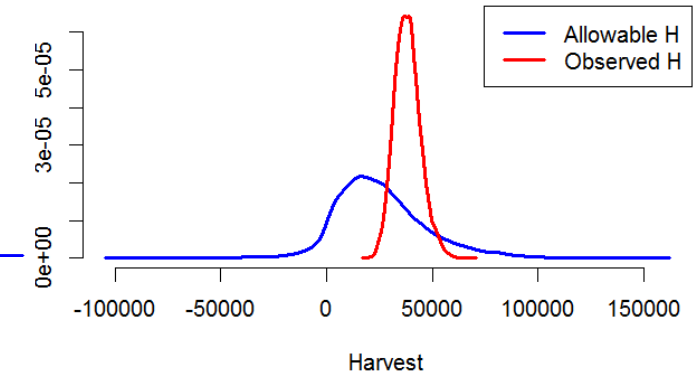
### Black Scoter



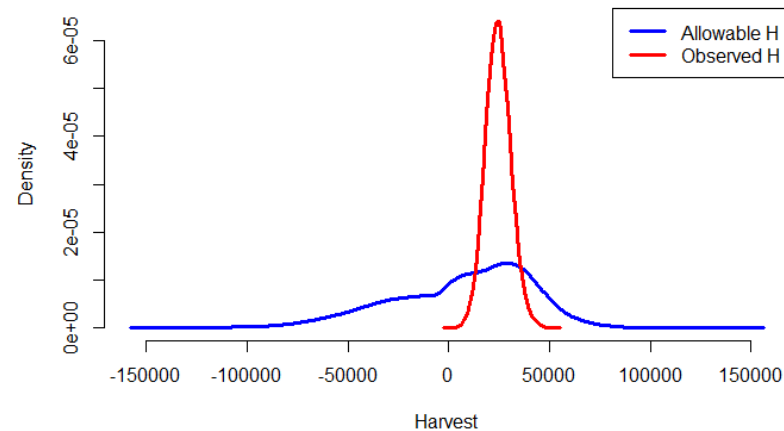
### Common Eider



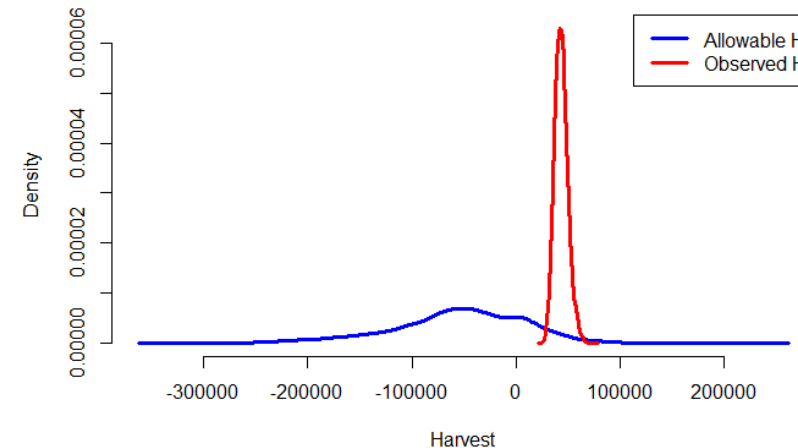
### Surf Scoter



### White-winged Scoter



### Long-tailed duck





# Response: AFC and USFWS Reduce Sea Duck Season 2016

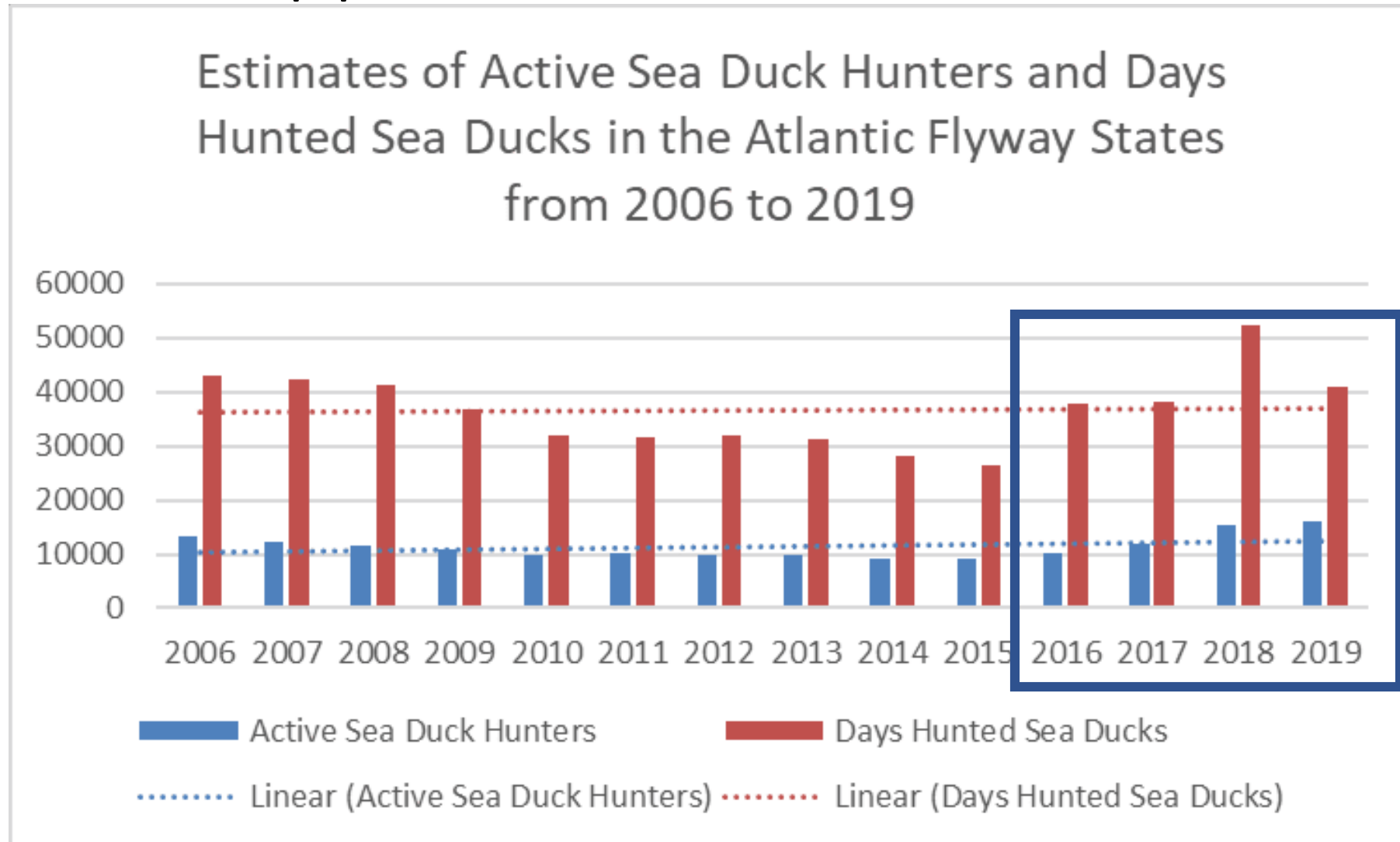
Season length: 107 to 60 days in Special Sea duck season;  
no season splits

Bag limit: 7 to 5 sea ducks

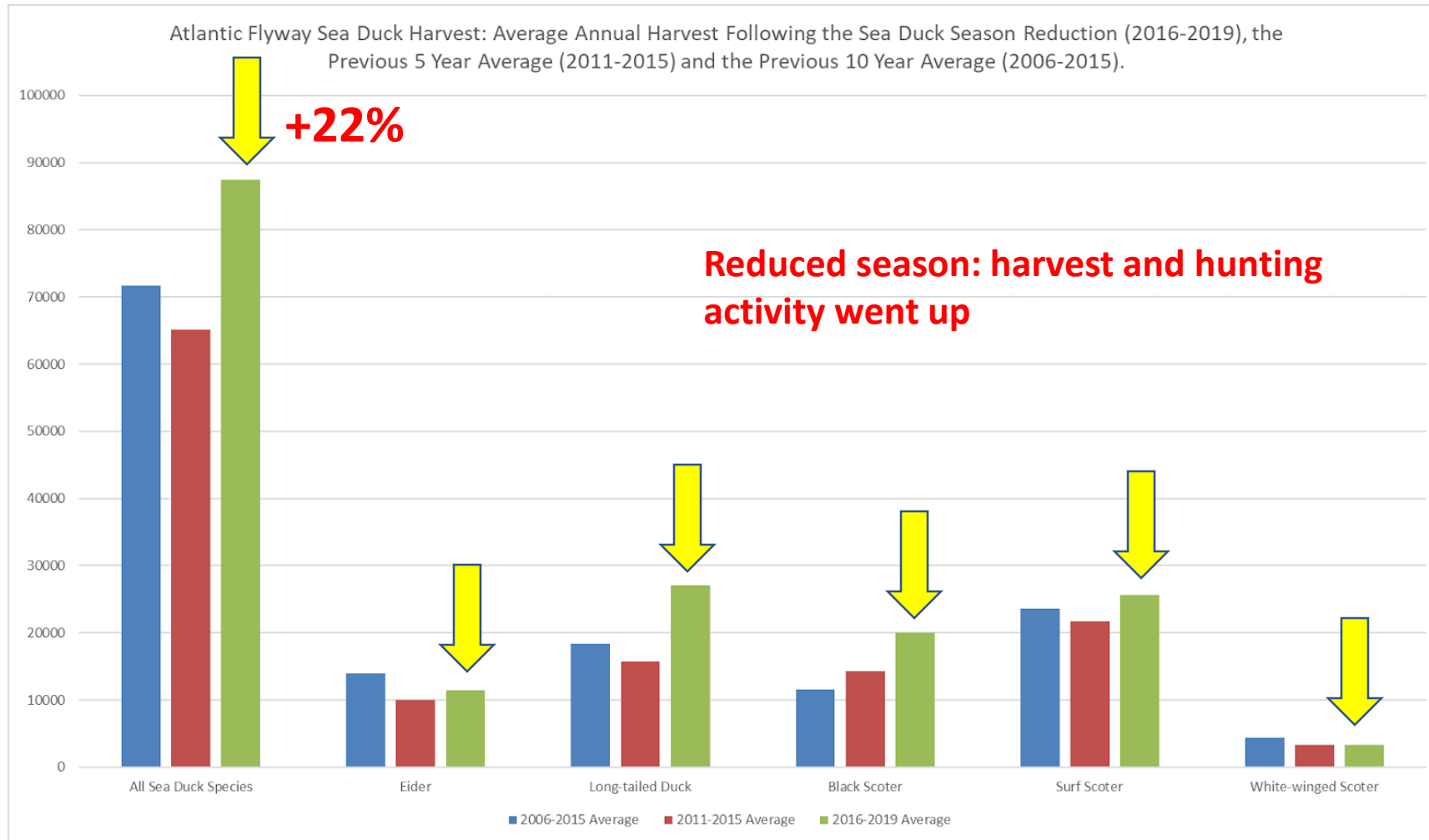
**Expectation: 25% reduction in harvest**



# So, what happened?



# Expected harvest reduction not achieved



# Where do we go from here?

## Part 1

- Eliminate Special Sea Duck Season: sea ducks no longer fit the definition of “underutilized”. **Begin 2022**
- Sea ducks become part of the “regular” duck bag of 6 ducks
- NJ duck hunters can only hunt sea ducks in the ocean when the regular Coastal Zone duck season is open
- However: retain special provision to shoot crippled waterfowl under power in existing Sea Duck Areas (NJ=ocean)

# Where do we go from here?

## Part 2

- Sea ducks become part of the “regular” 60-day duck season and bag of 6 ducks
- Reduce sea duck bag limit further from 5 to 4 total sea ducks with no more than 3 of any (3 scoters; 3 long-tails; 3 eiders)
- NJ duck hunters could only hunt sea ducks in the ocean when the regular Coastal Zone duck season is open



# Time Line and Expectation?

- Needs to pass USFWS; Would start fall **2022**
- Expect harvest reduction ~25%



# How late in winter is too late to hold duck seasons?



# Are Waterfowl Migrations Changing?

DU's chief scientist discusses the many factors that influence when waterfowl migrate

CONSERVATION : WATERFOWL RESEARCH

## Southern hunters ask where are the ducks

Mississippi State University researchers are gathering information on where duck habitats should be made available for migrating and wintering

### Fewer ducks head south for winter

MISSISSIPPI STATE –While the climate change debate rages, Mississippi State University researchers are examining recent changes in

# For Goodness Sake, Where Are All the Ducks

## Where Have the Ducks Gone?

By JONATHAN BAKER • MAR 10, 2016



Share



Tweet

Hunters on the Texas coast have been asking, where are all the ducks?



### FIELD NOTES

## Why Ducks May No Longer Fly South



*Original Article*

## Long-Term Trends in Weather Severity Indices for Dabbling Ducks in Eastern North America

MICHAEL L. SCHUMMER,<sup>1,2</sup> *Bird Studies Canada/Long Point Waterfowl, 115 Front Road, Port Rowan, ON N0E 1M0, Canada*

JOHN M. COLUCCY, *Ducks Unlimited Inc., Great Lakes/Atlantic Regional Office, 1220 Eisenhower Place, Ann Arbor, MI 48108, USA*

MICHAEL MITCHELL, *Ducks Unlimited Inc., Southern Regional Office, 193 Business Park Drive, Suite E, Ridgeland, MS 39157, USA*

LENA VAN DEN ELSEN,<sup>3</sup> *Bird Studies Canada/Long Point Waterfowl, 115 Front Street, Port Rowan, ON N0E 1M0, Canada*

- Used published weather severity indices (WSI), extended cold temp and snow cover, to predict fall migration chronology and used eBird and standard counts to measure duck abundance
- Warming trend in Atl. and Miss. Flyways during fall-winter since ~1980
- Duck migration chronology delayed since ~1980;
  - Ducks more abundant in northern and mid-latitude states
  - Decline southern states
- WSI web application developed: on hunting forums; wetland managers



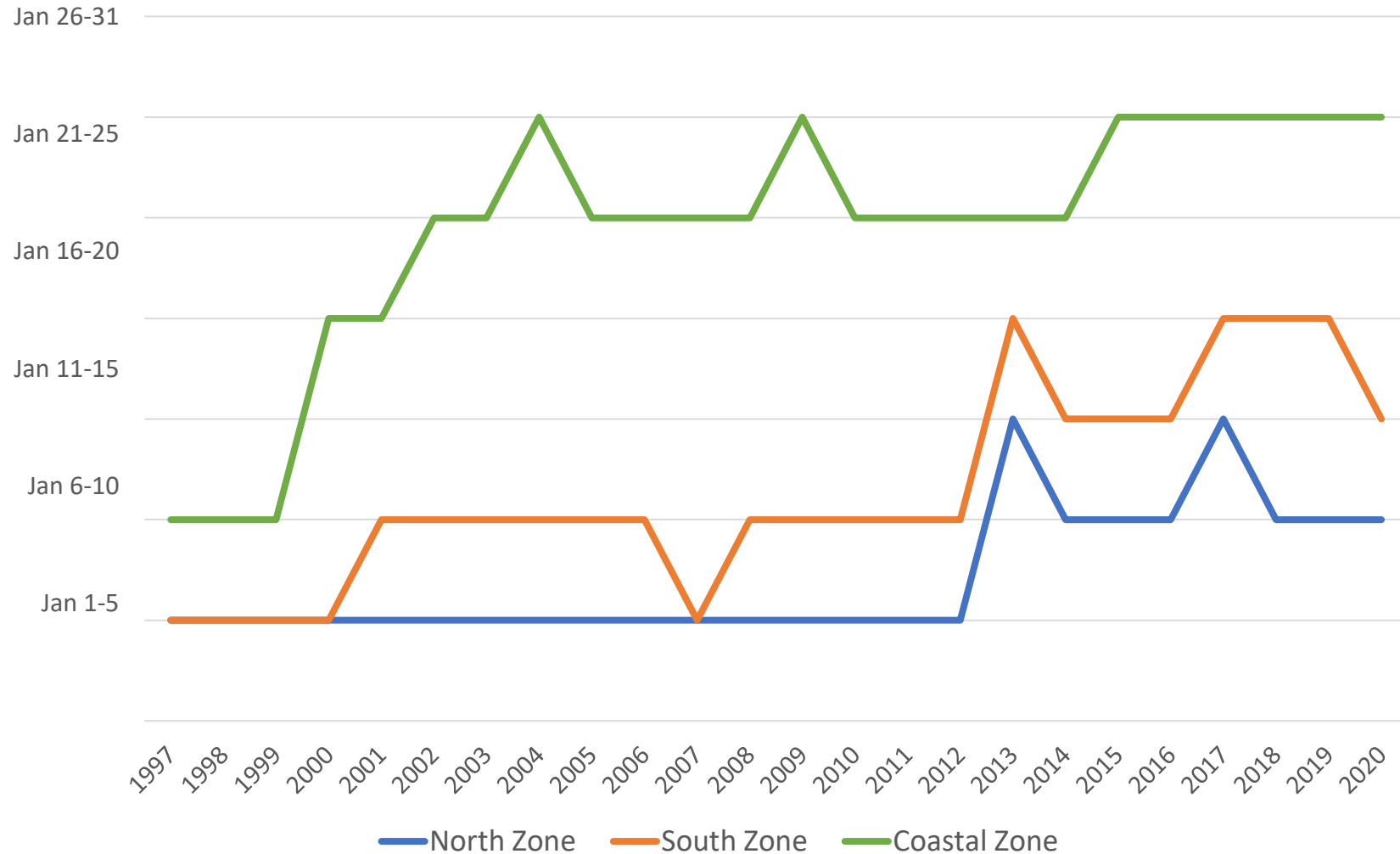
# How did we get here? Short history of duck framework extensions



- **1970-2001**: fixed duck season framework end **Jan 20**  
(handful exceptions)
- **1980s through present**: warmer falls and winters; hunters notice later migrations of ducks. Substantiated in Schummer et al. paper
- **2002**: Groundswell of pressure from Miss Flyway culminates in framework date to "**the last Sunday in January**". This change comes through Congress (Sen. Lott). **Circumvents USFWS and Flyway process**
- **2019**: Framework advances to **Jan 31**. Again through Congress tied to special 2 hunting days for Veterans/Military.



# NJ Duck Season Ending Dates with 60-day Seasons



# Impacts of hunting pressure on ducks

**Avoidance and disturbance:** duck responses from telemetry studies

- Use refugia sites
- Shift feeding/courting/activity from diurnal to nocturnal
- Hunting season ends: With no more gunfire, reduced boat traffic, ducks return to “normal” activity quickly

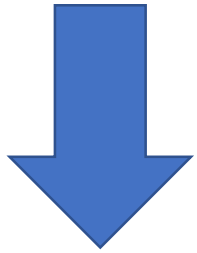


**Hunters perception 8 days after season closes:** *“The ducks just showed up from up north, a week after the season closed. The state wildlife agency is run by idiots who always close the hunting season too early.”*

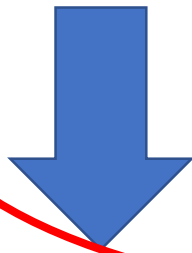
**Hunters’ desired management action:** Extend the framework and hunt later. The “grass is always greener” phenomenon.

**As winter transitions to spring:** Hens need time for nutrient and fat deposition to prepare for migration and egg laying. Need period with limited disturbance.

Fall Migration



Pairing Begins



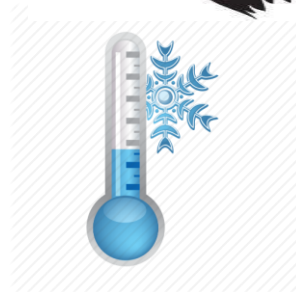
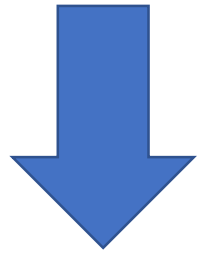
Most Ducks  
Paired



Spring  
Migration



Nesting  
Begins



Oct.

Nov.

Dec.

Jan.

Feb.

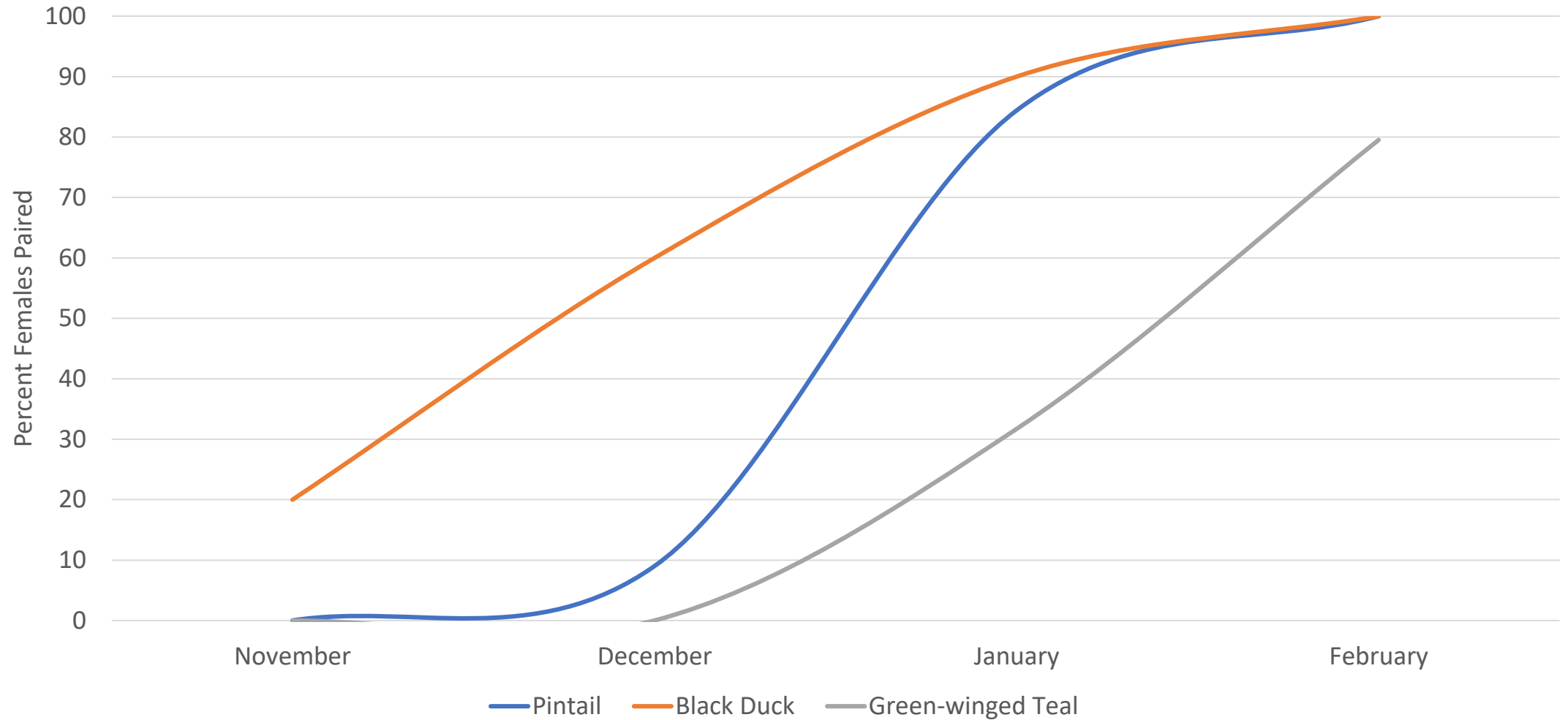
Mar.

Apr.

Fall-spring “in the life” mallard



# Chronology of Duck Pair Formation



# MATE LOSS IN WINTER AFFECTS REPRODUCTION OF MALLARDS

BARBARA A. LERCEL,<sup>1</sup> Department of Wildlife and Fisheries, Mississippi State University, Mississippi State, MS 39762, USA,  
and Delta Waterfowl and Wetlands Research Station, Rural Route 1, Portage la Prairie, MB R1N 3A1, CANADA

RICHARD M. KAMINSKI,<sup>2</sup> Department of Wildlife and Fisheries, Mississippi State University, Mississippi State, MS 39762, USA

ROBERT R. COX, JR., U.S. Geological Survey, Northern Prairie Wildlife Research Center, 8711 37th Street SE, Jamestown,  
ND 58401, USA

1999. Jour. Wildlife Manage

## Design

- Captive wild mallards, Feb. 1 experimentally removed males from ½ pairs  
Simulates a hunting mortality
- Compared reproductive performance of “widowed” hens vs “control” hens

## Results

- No difference in pairing by nesting season for ‘widowed’ vs control females
- 1<sup>st</sup> clutch: 1.9 fewer eggs for widows vs controls
- 2<sup>nd</sup> clutch: 3.8 fewer eggs for widows vs controls
- Simulations resulted in ~10-20% less recruitment for widows





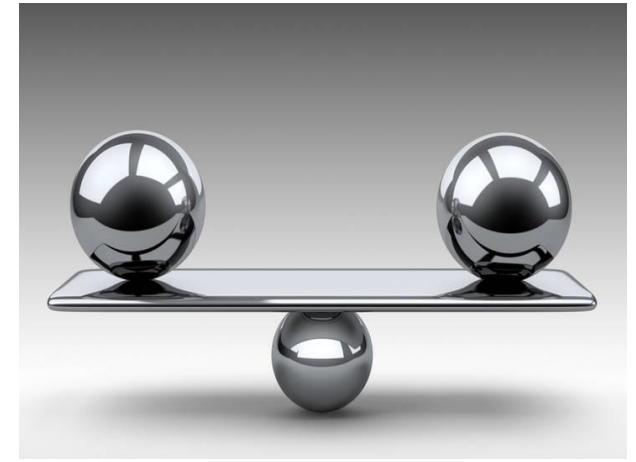
# Lercel et al. 1999. Mate loss in winter affects reproduction in mallards

## Take Home Points

- Widows expended energy selecting new males, pair bonding, compromised egg laying
- How well does this captive study translate to wild ducks? Is it worse for wild ducks that must find food, evade predators?
- Suggest caution for calendar extension of duck seasons >Jan 31
- Fatter hens were way more fecund than skinny hens (not unique to this study)

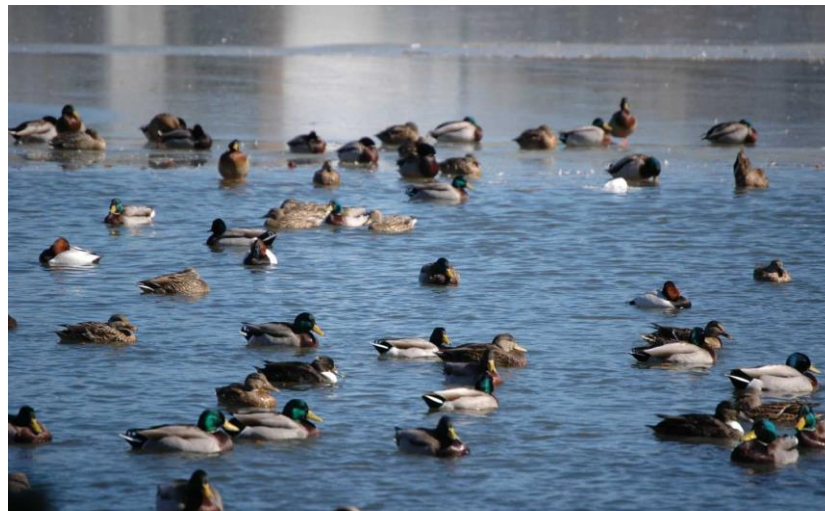
**At some point, need to leave ducks alone to maximize foraging, minimize disturbance, and let them get fat!**

# Where do we go from here?



Where's the tipping point that late hunting becomes detrimental?

Biologists and sportsman owe it to the resource to use a higher, **conclusive presumption burden of proof**, before hunting later into winter



# Draw a line in the sand? If so, where?

- Resist pleas from waterfowl hunters to hunt ducks later into winter unless future study suggest impact is minimal
- No “special days” (eg: Youth or Veterans) later than the first Saturday in Feb. (Already have Youth Days first Sat in Feb since 2014).  
Translation: Hopefully Council will agree to move the 2<sup>nd</sup> Vets/Military Day from mid-Feb to a Saturday in November beginning this year
- If continue to allow Vets to hunt in mid-Feb, might compromise resistance to allow regular hunters to hunt later into winter
- Minimize animosity from regular hunters toward Vets for giving them what some view as the best hunting opportunity



Questions?

