

Status of Iowa's Turtle Populations

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Why are turtles in decline?

- 1. Habitat Loss & Degradation**
- 2. Exotic/Invasive Species**
- 3. Environmental Pollution**
- 4. Disease**
- 5. Global Climate Change**
- 6. Unsustainable Use Without Proper Management**

Iowa's Harvestable Turtle Species



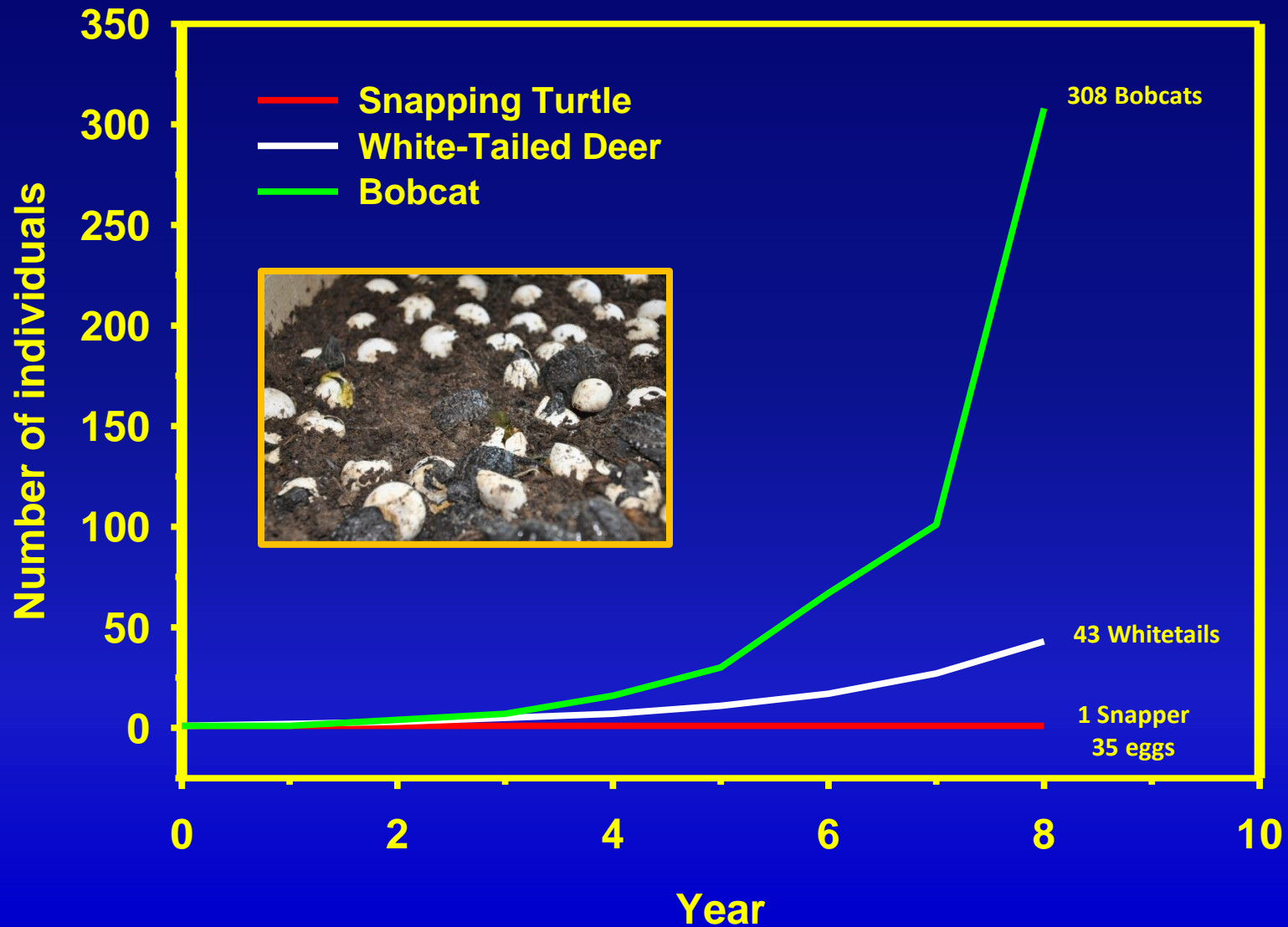
Life History Characteristics

Iowa's Harvestable Species

- **Longevity** (Ersnt & Lovich 2009)
 - 20-60 years (varies by spp.)
- **Age at Maturity** (Ersnt & Lovich 2009; LeClere 2013)
 - 4-5 years for males, 7-10 years for females
- **Clutch Sizes** (Ersnt & Lovich 2009; LeClere 2013)
 - 9-35 eggs /clutch , 1-2 clutches per year (varies by spp.)
- **Annual Predation Rates** (Ernst & Lovich 2009)
 - 55%-100% in some years (varies by spp.)
 - Recently laid nests more susceptible than older ones
 - Rainfall or use of preferred nesting areas can reduce predation
 - Can result in low recruitment
- **Exploitation Rates** (Zimmer-Shaffer et al. 2014)
 - **Snappers:** $\leq 2.3\%$ to maintain a stable population
 - **Softshells:** no harvest can be sustained



Reproductive Potential: A Comparison of Iowa Species



Turtle Diet



- **Omnivores** - eat a variety of food items
- **Game Fish** - it is doubtful that snappers make a dent in game fish populations
- **Carrion** - they are too slow to chase down game fish so those they eat are probably sick or dead
- **Feeding Method** - young turtles (and smaller bodied species) may actively forage, large turtles such as snappers lie in ambush
- **Michigan study** - found that nearly 37% of snapper diets was plant material



Watershed Influences

- **Help to keep aquatic environment clean (break down dead material)**
- **Control of aquatic vegetation**
- **Environmental Health Indicator**
 - **Bioaccumulation of heavy metals**
 - **Habitat Loss**
 - **Fish populations**
 - **Aquatic Vegetation**
- **A watershed with sparse turtle populations would be indicative of severe degradation**





Historical Regulations

Sport Harvesters

- Annual Fishing License - \$19 (R), \$41 (NR)
- Nonresidents – Restricted to MO, MS, & BSX Rivers
- Maximum of 100 lbs. live or 50 lbs. dressed turtles
- No Reporting Required
- Can't Be Sold

Commercial Harvesters

- Commercial Turtle License - \$100 (R), \$400 (NR)
- Commercial Fishing License - \$200 (R), \$400 (NR)
- Reporting Required
- Can sell to licensed buyers - \$200 (R), \$400 (NR)



Methods of Take

Hand, turtle hook, turtle trap, hook-and-line



Nets

No more than one throat or funneling device

Must have a functional escape hole with a minimum diameter of 7.5 inches which must be located in the last hoop to the tail line

Must have a metal tag bearing the owner's name and address

Must be lifted & emptied at least once every 72 hrs.

Market Demands

- It's believed that Iowa's demand is greatly influenced by a **strong Asian market**
- Turtles utilized for **food, medicinal additives, & pet trade**
- 2016 Iowa wholesale value:
\$2 - \$10 per hatchling
\$1.00 per pound (live weight)
\$3.50 per pound (dressed)
- Current retail value:
\$20 - \$30 per turtle



Iowa's Commercial Turtle Harvest Receives Attention



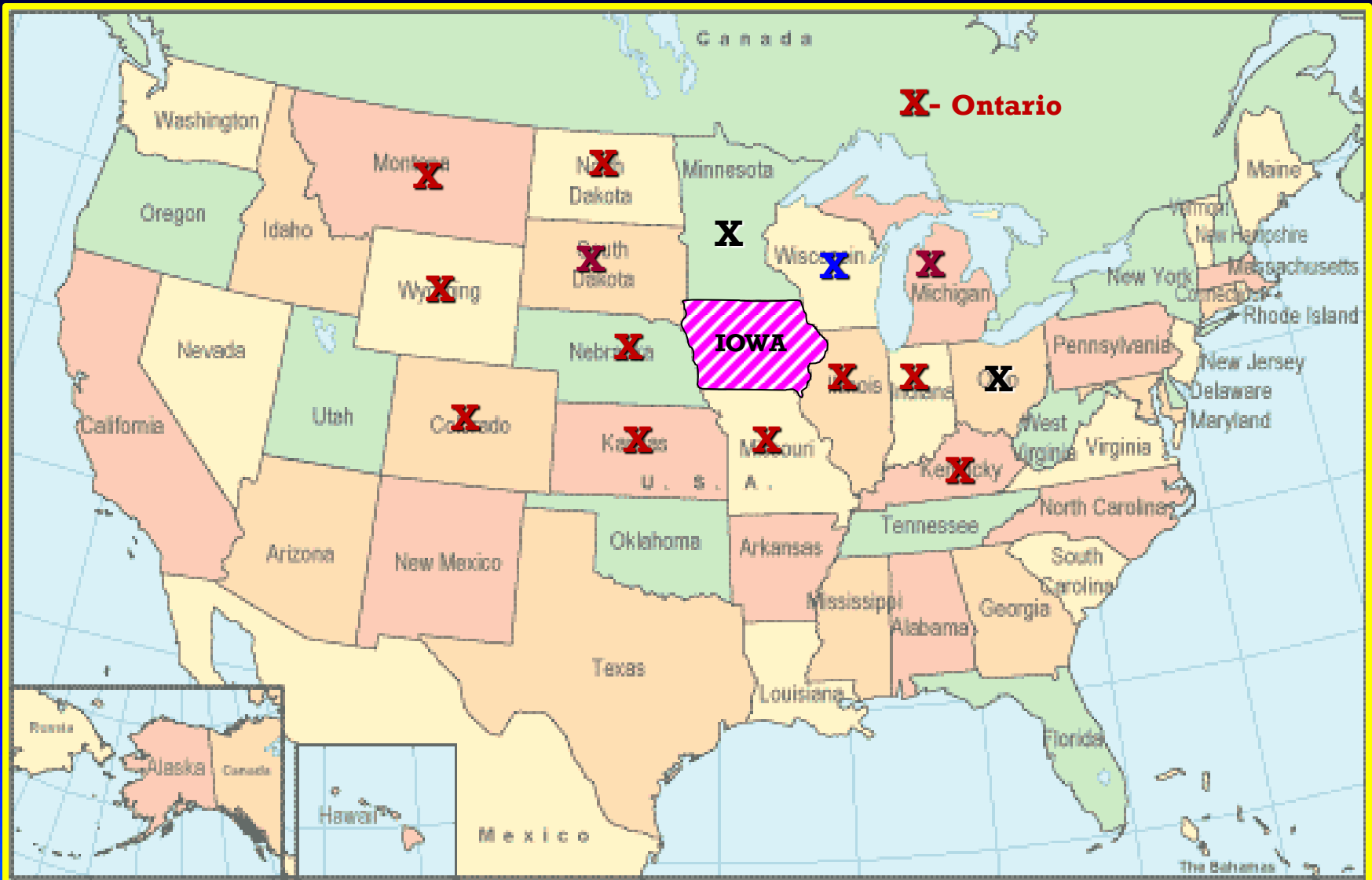
- **March 11, 2009** – The Center for Biological Diversity et al. petitioned the State of Iowa requesting immediate repeal of commercial turtle harvest
- **April 2009** – The Fishing & Aquaculture Association submitted a rebuttal paper to CBD petition
- **May 2009** – The DNR Natural Resources Commission voted to deny CBD petition and instructed the DNR Fisheries Bureau to review status of Iowa turtle populations.
- **Thereafter** – The Iowa DNR formed Joint Committee on Turtle Harvest to review turtle program from an unbiased scientific standpoint & recommend regulations & program changes if necessary. A final report termed “The White Paper” was drafted.



X No commercial turtle harvest

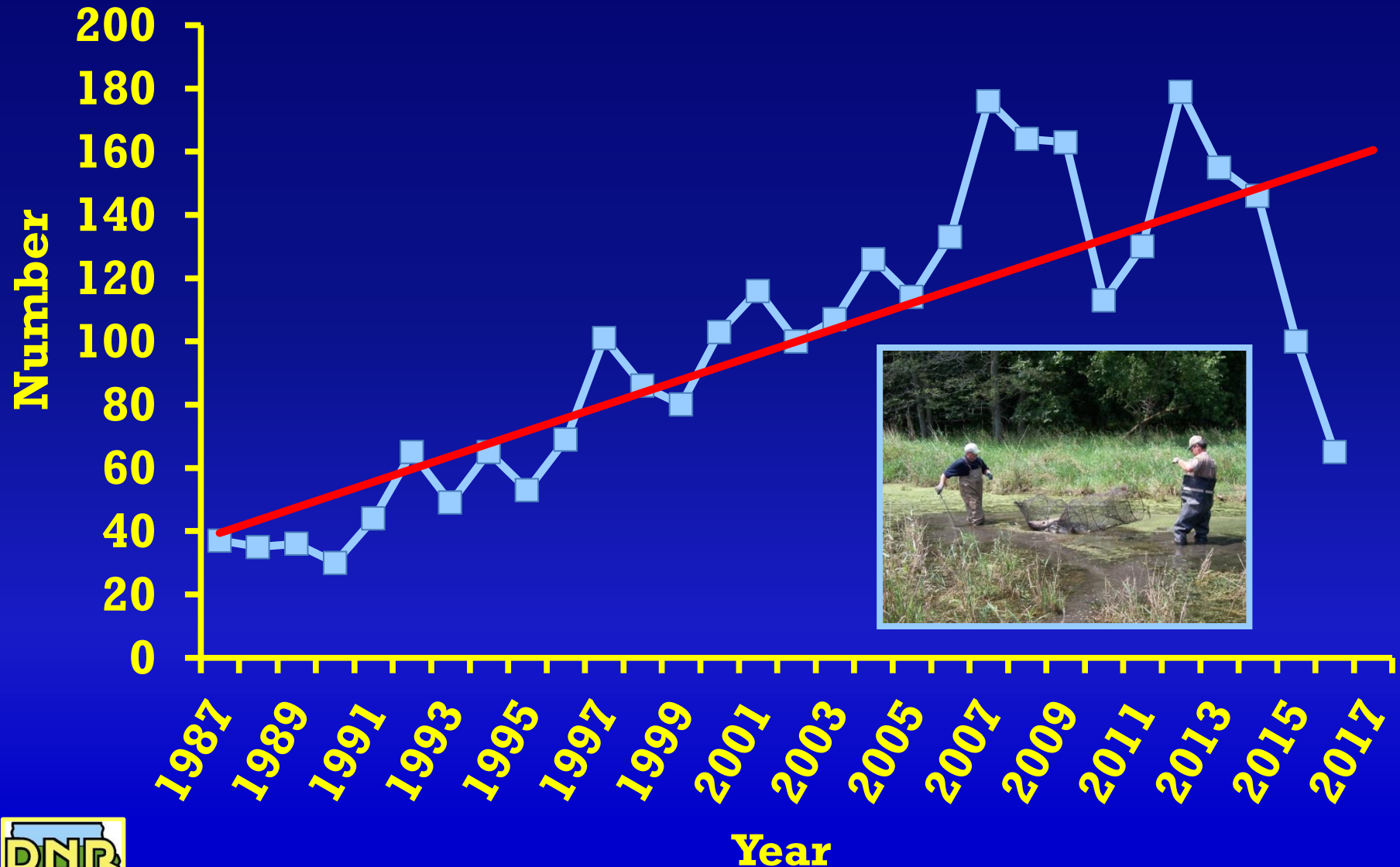
X Limited waters

X Season, size limits, other rules



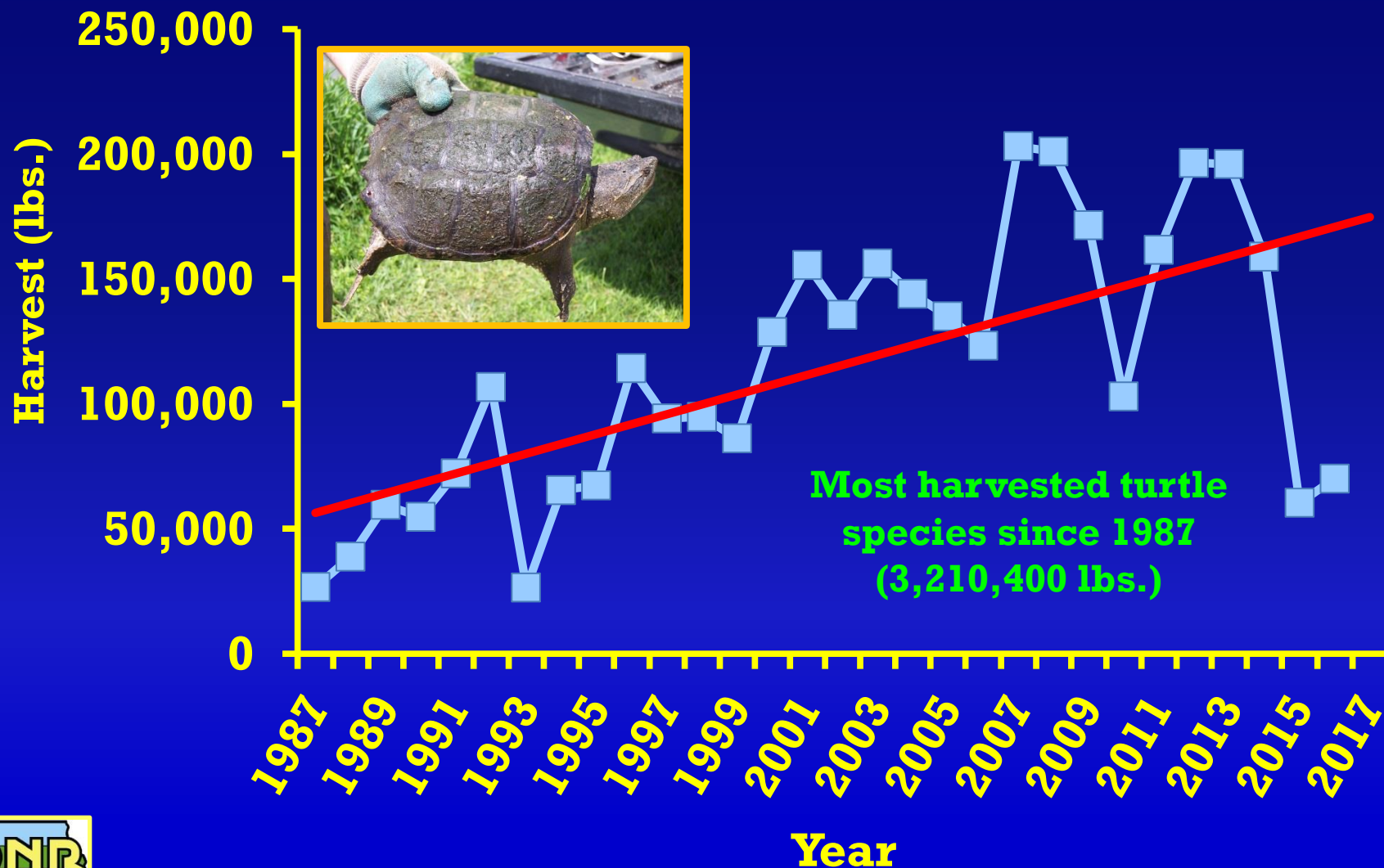
Iowa Commercial Turtle Harvesters by Year

Maximum = 179 in 2012



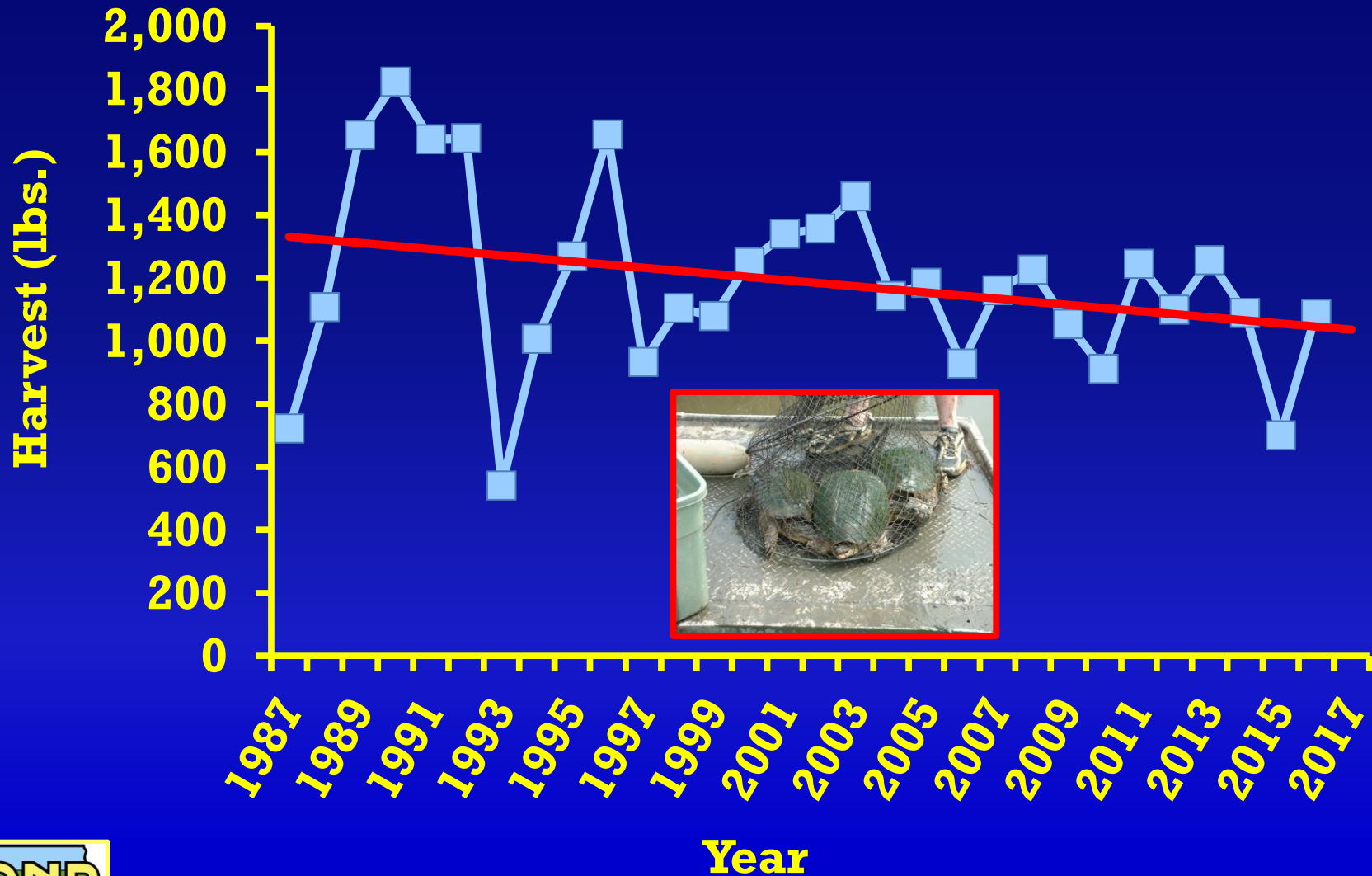
Snapper Total Annual Harvest

Maximum = 203,156 lbs. in 2007



Snapper Average Harvest Per Licensee

Slight decrease of ~ 10 lbs. per harvester per year



DNR Rulesmaking Process

- DNR Fisheries
- Stakeholders
 - Consumptive
 - Non-Consumptive Users
- Natural Resources Commission
- Governor's Office
- State Legislature
- Administrative Rules & Review Committee



Stakeholder Comments

Oppose



“There is no compromise; we (some) turtle harvesters will contact the Governor’s Office to oppose the season and if necessary oppose it throughout the formal rule making process.”

“The DNR has not demonstrated that wild turtle populations are on the decline.”

“The reason for no turtles in Asia is bad water quality not overharvest.”

“Why don’t you ask for input from stakeholders?”

Support



“...in the interest of keeping a sustainable turtle harvest industry in the long-term future, Iowa must drastically reduce turtle harvest now.”

“It is important to implement a closed harvest season during the egg-laying period. Every state around Iowa has more restrictive regulations.”

“Existing regulations are a short-term job solution. There is a need for the season to protect wild turtle population so that commercial harvest can be sustained.”

“I would like to be able to show my kids turtles when they get a bit older, and the thought that turtles may not be here seems wrong.”



New Turtle Regulations

- **Harvest Season:**
 - July 16 - May 14
 - Season doesn't apply to sport harvest of snappers
- **Daily Bag Limits:**
 - 4 snappers per day
 - 1 softshell of either species per day
 - 1 painted turtle per day
- **Possession Limits**
 - Commercial – 5 times daily bag limit
 - Sport – 100 lbs. live, 50 lbs. dressed



Turtle Survey Methods – Southeast Iowa Study

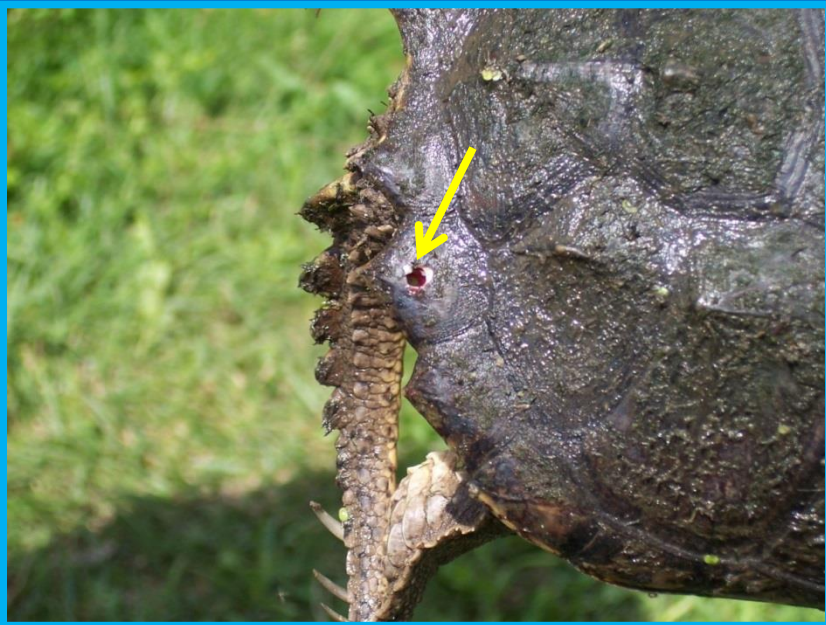


- **Turtle Trap**
 - 2.5' hoops, 1" bar mesh, slit throat
 - No escape hole
- **Bait**
 - Two large, dead rough fish
 - Can of smoked sardines in oil
- **Duration**
 - Set traps overnight
- **Habitats**
 - Lakes-Ponds, Rivers-Streams, Marsh-Wetland
- **Locations**
 - Near basking logs, sandbars
 - Wind or current carries scent





Turtle Trap: 2.5' Hoops, 1" bar mesh, finger throat (single)



Marking Individuals

Common Turtle Measures

1. Straight-line carapace length (SCL)
2. Shell height
3. Shell width
4. Plastron length (PL)
5. Curvilinear carapace length
6. Weight
7. Sex
8. Age - plastral or carapacial annuli count

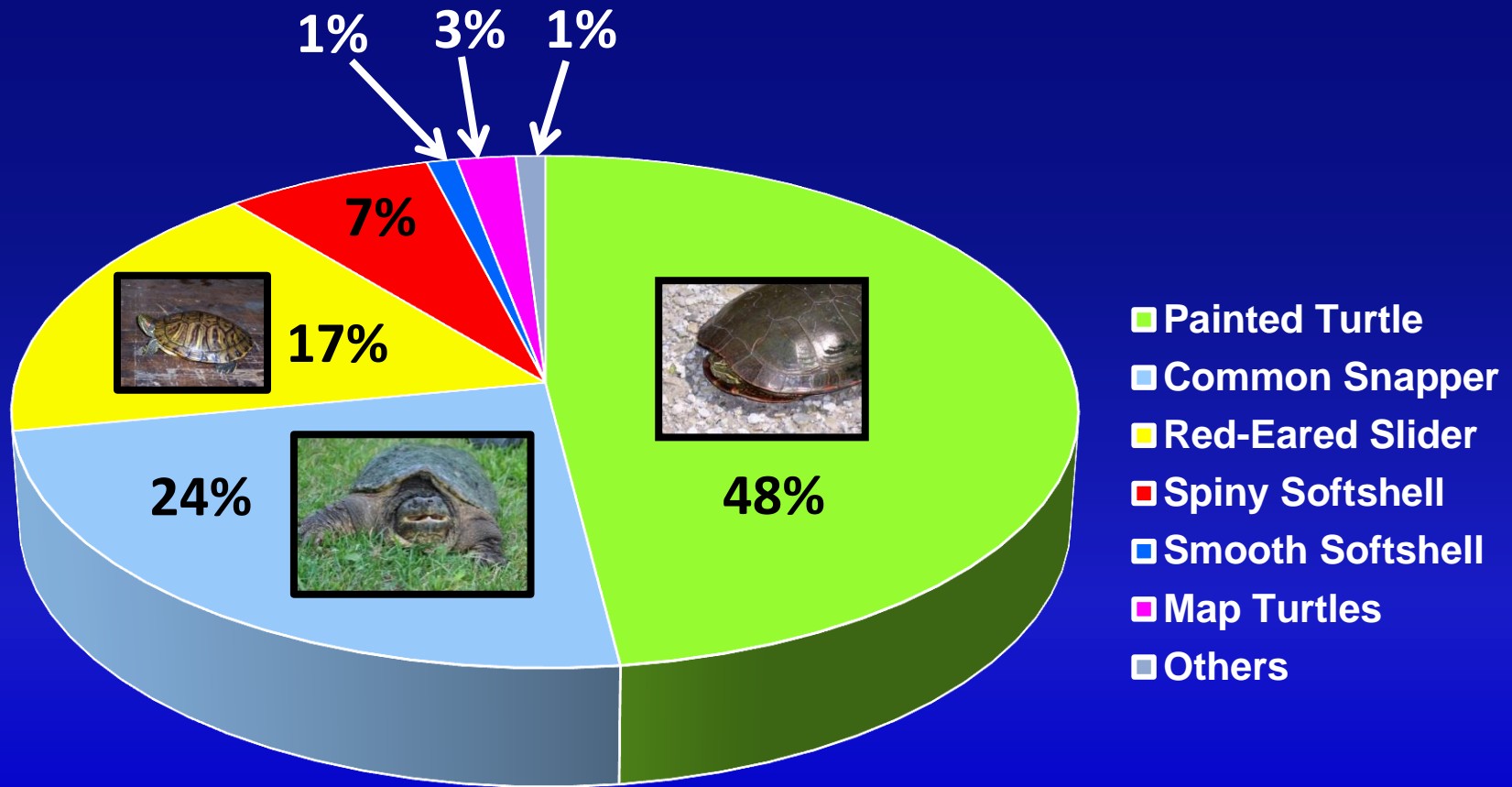


SCL



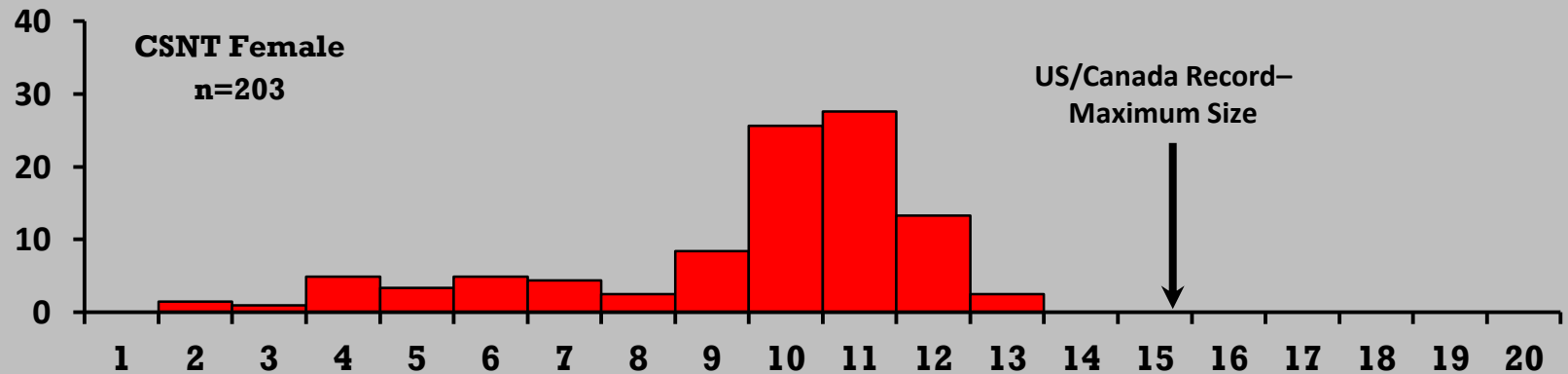
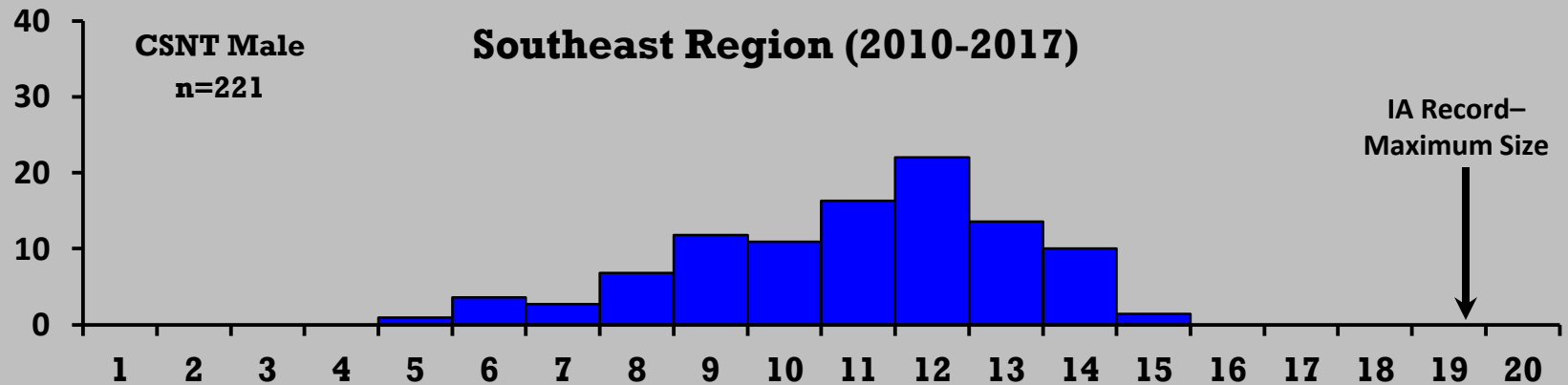
PL

Statewide Turtle Catch (2010-2017)



Relative Frequency (2010-2017)

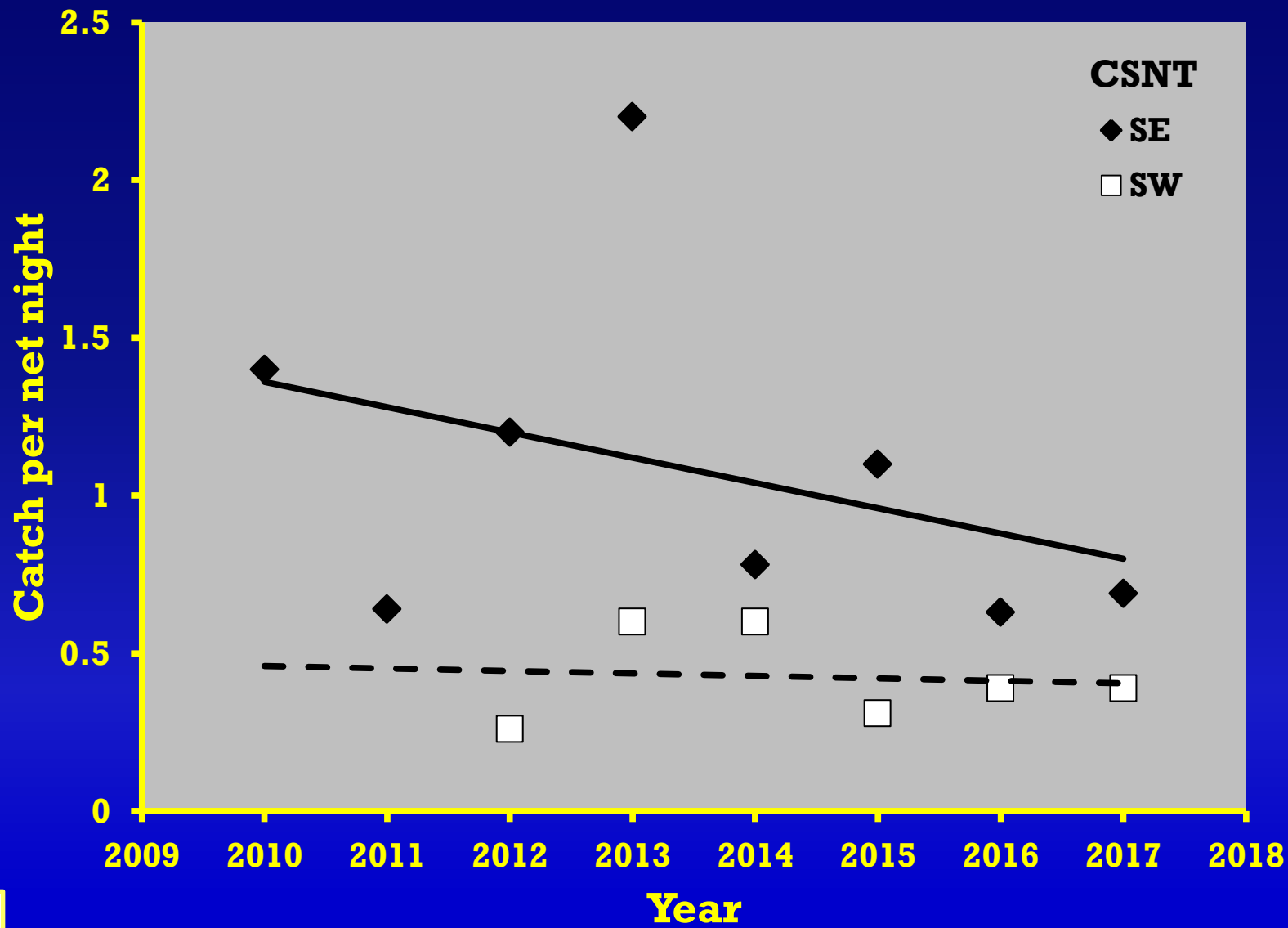
Relative Frequency (%)



Straight-line Carapace Length (inches)

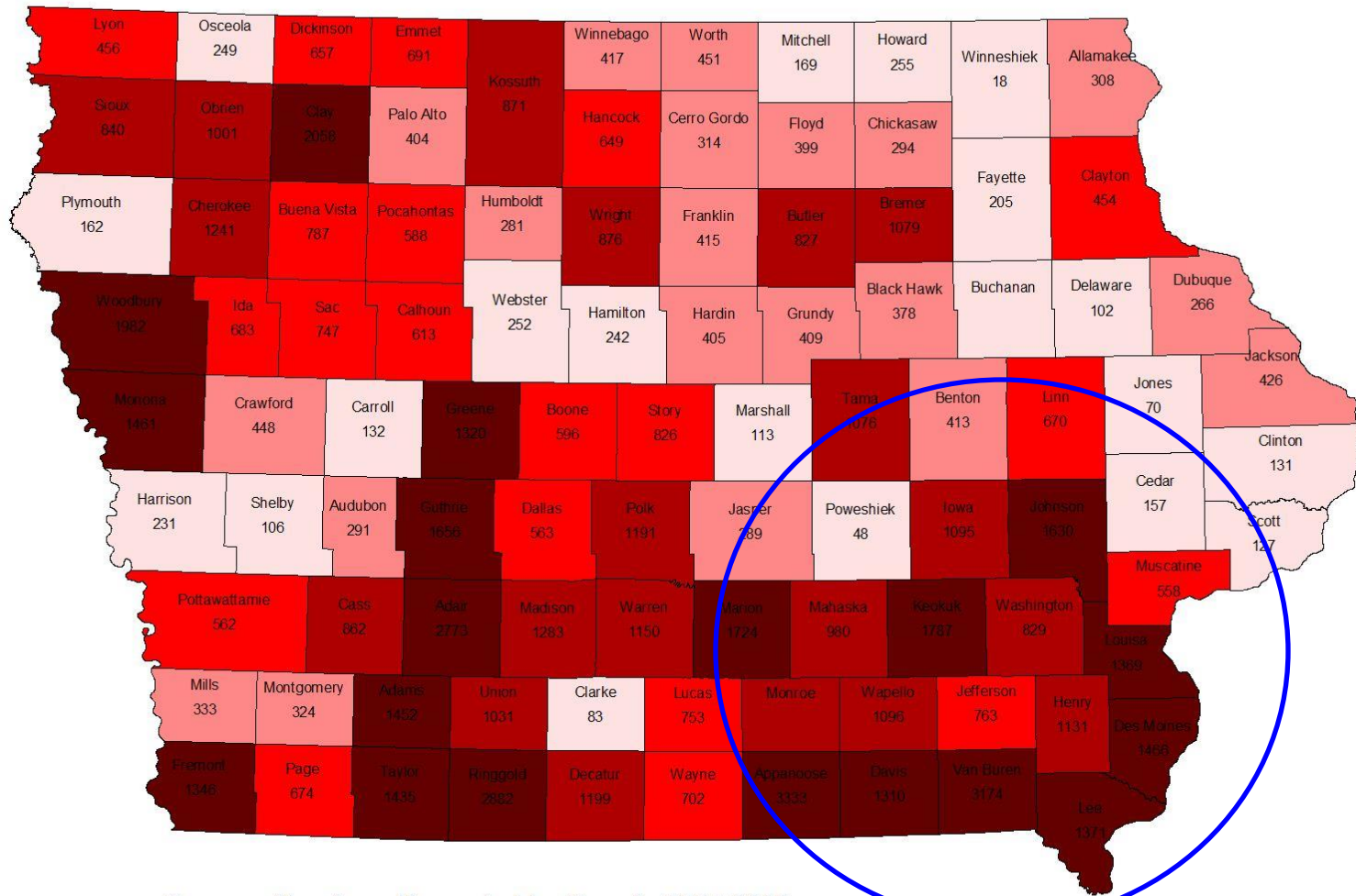


Catch Per Net Night (2010-2017)





Common Snappers Harvested by County (2008-2013)



Snapper Numbers Harvested by County 2008-2013

18 - 255 266 - 451 454 - 826 827 - 1283 1310 - 3333

Summary

- **Turtle life history characteristics (long-lived, high age at maturity, low reproductive output, high nest & hatchling predation) suggest they are vulnerable to overharvest**
- **Long-term commercial turtle harvest data indicates that annual harvest per licensee is decreasing slowly over time**
- **Iowa turtle monitoring efforts suggest that large, reproductive turtles are being removed from the population; in turn, this may be negatively affecting recruitment**
- **An annual harvest season was needed in order to limit commercial harvest and allow female turtles to nest**
- **Further regulation was aimed at sustaining turtle harvest whereas failure to regulate may eventually lead to population failure and harvest closure**





Questions???