# Lake Trout Recreational Harvest Regulation Review for MM-5 (tip of GTB – Arcadia)

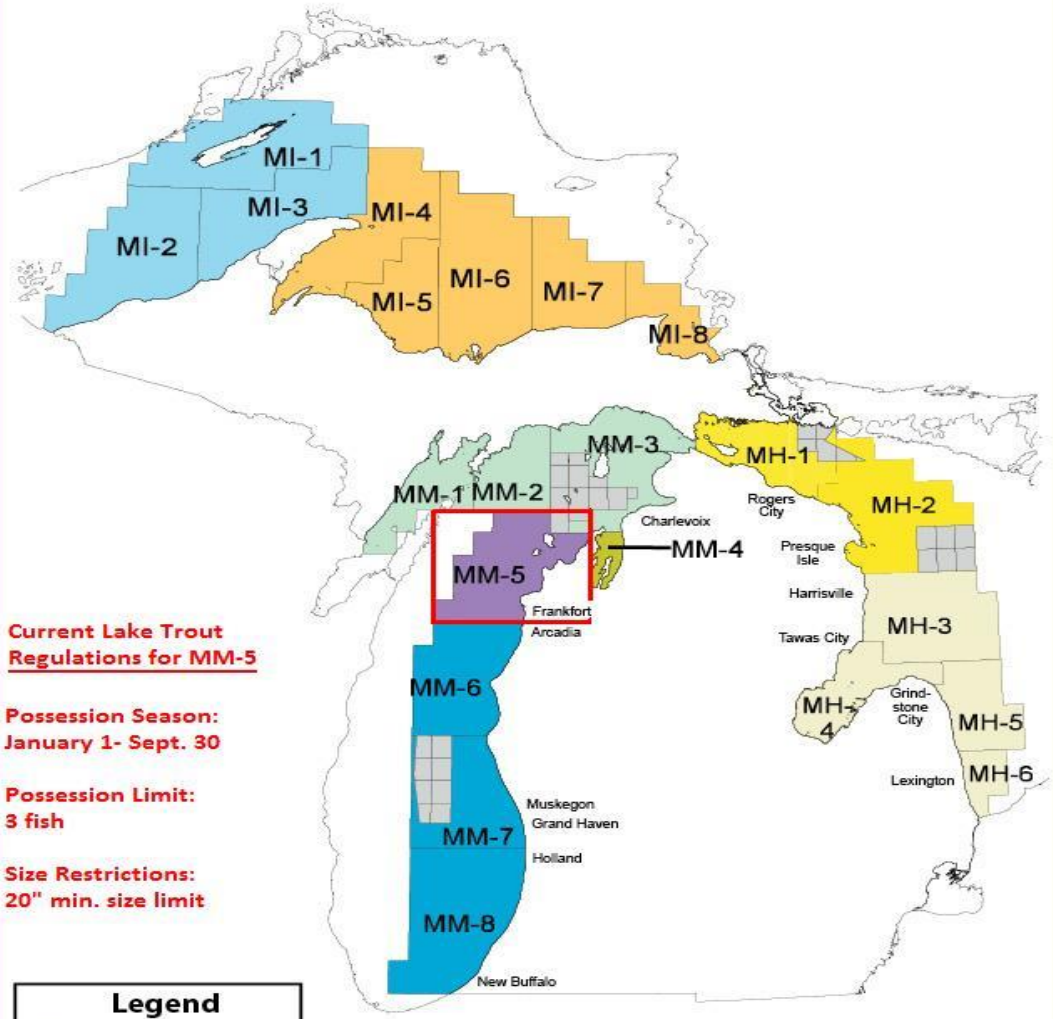
**April 9, 2014 - Leland**

Department of Natural Resources

# Why are we holding these public meetings?

- Five year review process: 2010-2015
- Earlier review prudent
  - Changes to fisheries order process/fishing guide publication
  - Recent harvest patterns
- MM 123: 50,000 lb limit
  - harvested 29,412 lb
- MM4: 77,200 lb limit
  - harvested 77,849 lb
- MM5: 58,800 lb limit
  - harvested 57,718 lb

# Lake Trout Management Units and Refuges




**Current Lake Trout Regulations for MM-5**

**Possession Season:**
**January 1- Sept. 30**

**Possession Limit:**
**3 fish**

**Size Restrictions:**
**20" min. size limit**

**Legend**

Lake Trout Refuge
Note: All refuges are closed to lake trout harvest.

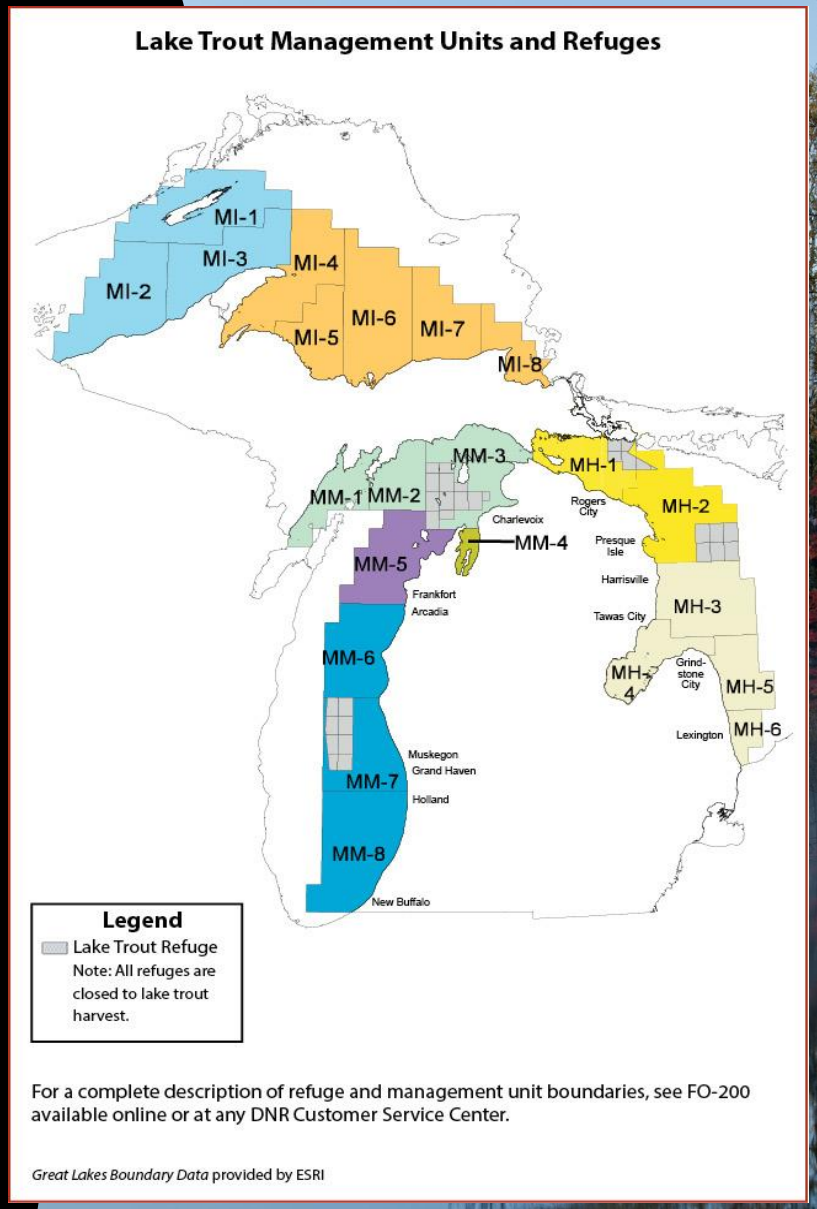
For a complete description of refuge and management unit boundaries, see FO-200 available online or at any DNR Customer Service Center.

*Great Lakes Boundary Data* provided by ESRI

# Additional Lake Trout Management Units

MM 6, 7, and 8

- Managers are proposing changing from the current regulation of a ***20" MSL*** to a new regulation of a ***15" MSL*** the possession season and bag limit under both regulations would be unchanged.
- This will align the MSL for southern Lake Michigan with the MSL's on Lakes Huron and Superior and increase opportunity for anglers.
- Only possible due to the large harvest limit (>325,000 lb) in this area.



# Lake Trout Management Objectives:

- Assure the weight of lake trout harvested is below the TAC
- Reduce the age and biomass of harvested fish
- Maximize age structure and biomass of spawning lake trout to meet rehabilitation goals
- Increase number of fish harvested

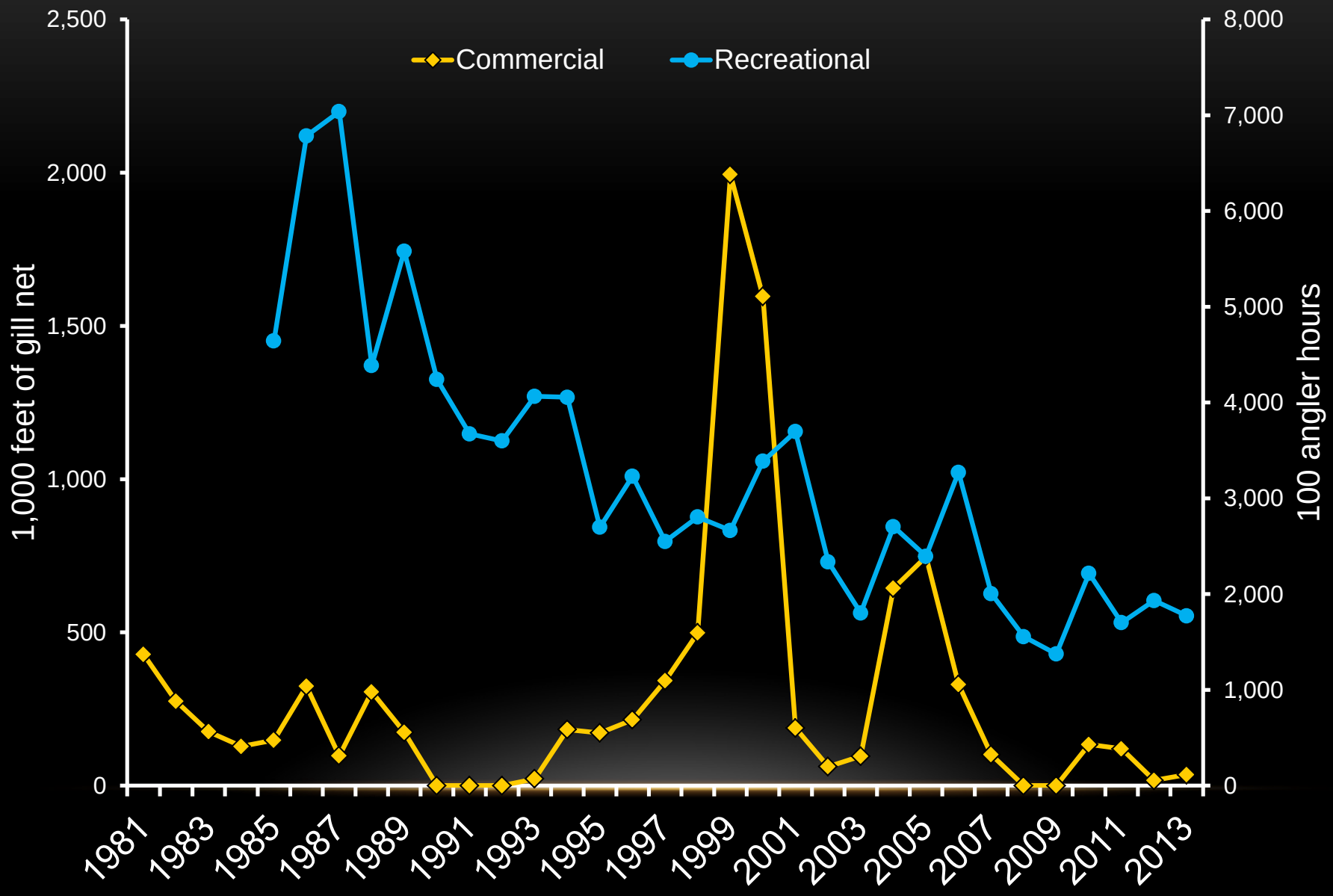
# 2000 Consent Decree

- Management framework
- Harvest is restricted by total harvest limits
  - Requiring recreational fishery limitations
- State allowed 60% of the total limit in MM-5
- Provisions of the Decree not fully implemented –Stipulation

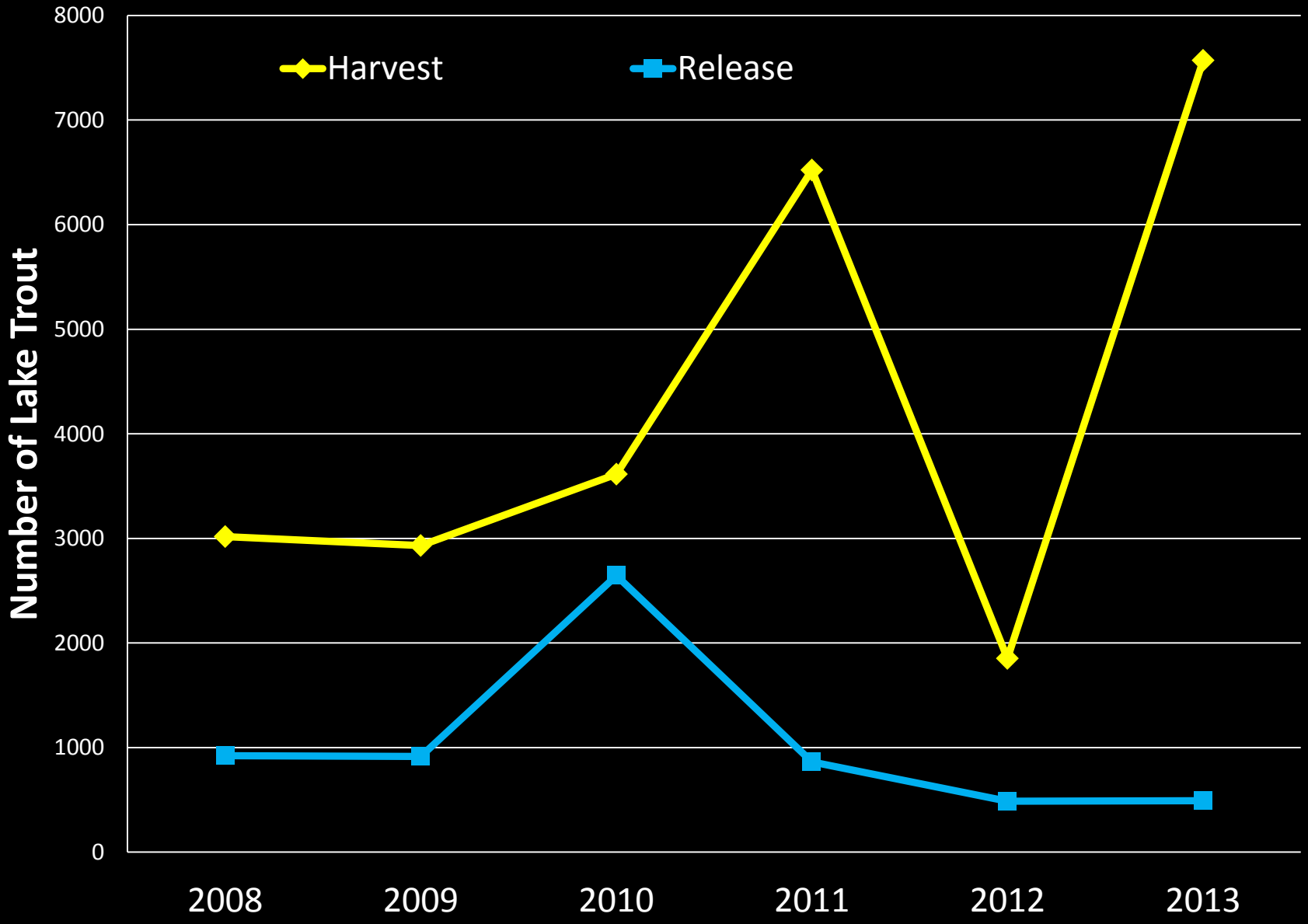
# Harvest Patterns

| Year | CORA Harvest | CORA HL | State Harvest | State HL |
|---|---|---|---|---|
| 2007 | 14,580 | 54,100 | 18,621 | 81,300 |
| 2008 | 300 | 53,800 | 13,704 | 81,000 |
| 2009 | 0 | 61,611 | 16,149 | 92,417 |
| 2010 | 20,521 | 68,627 | 23,619 | 103,016 |
| 2011 | 33,276 | 47,658 | 47,490 | 71,511 |
| 2012 | 15,009 | 40,740 | 12,852 | 64,054 |
| 2013 | 19,695 | 39,200 | **57,718** | **58,800** |

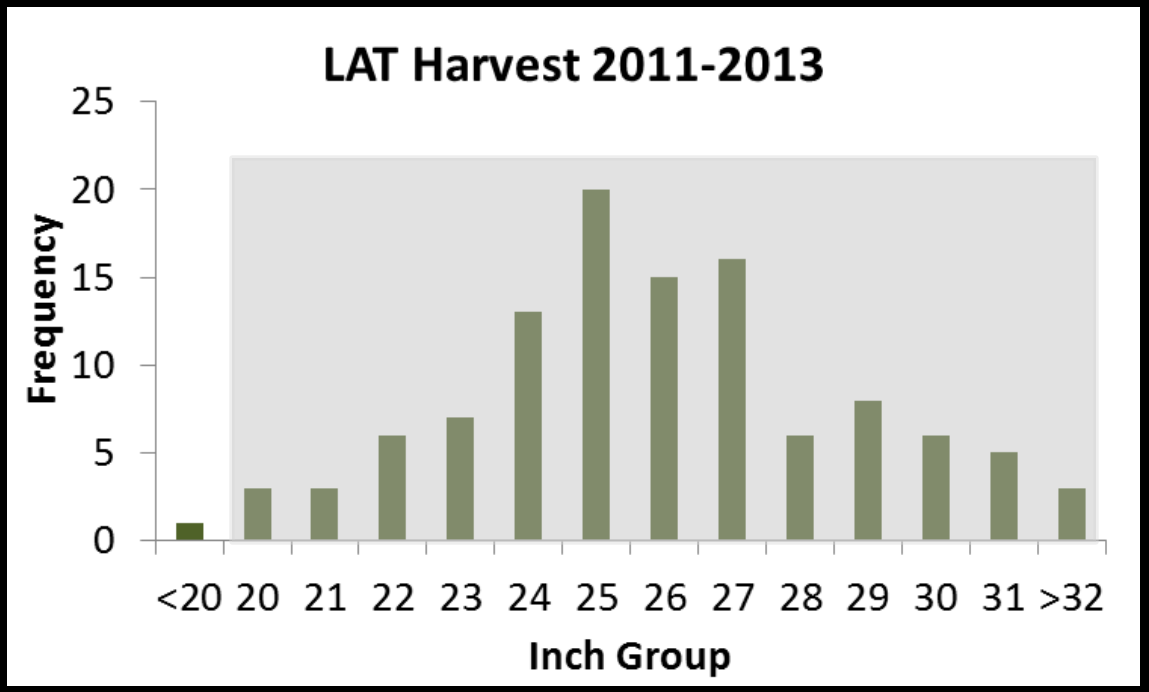
# FISHING EFFORT IN MM-5

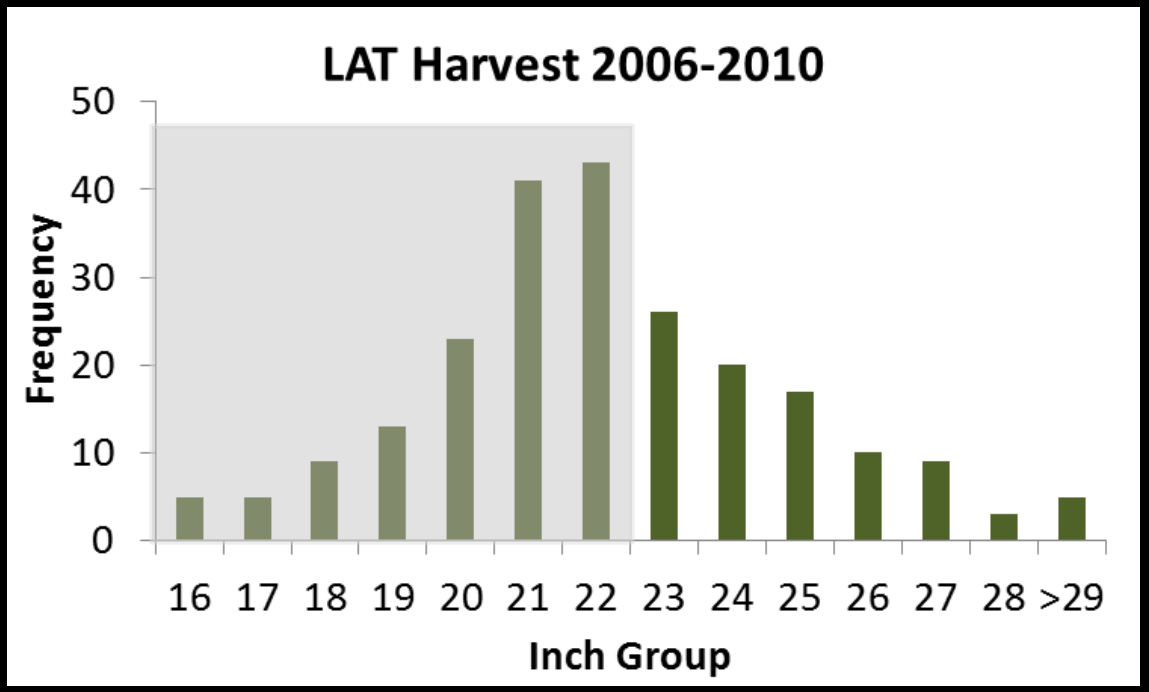


# Recreational Harvest (Creel + Charter)



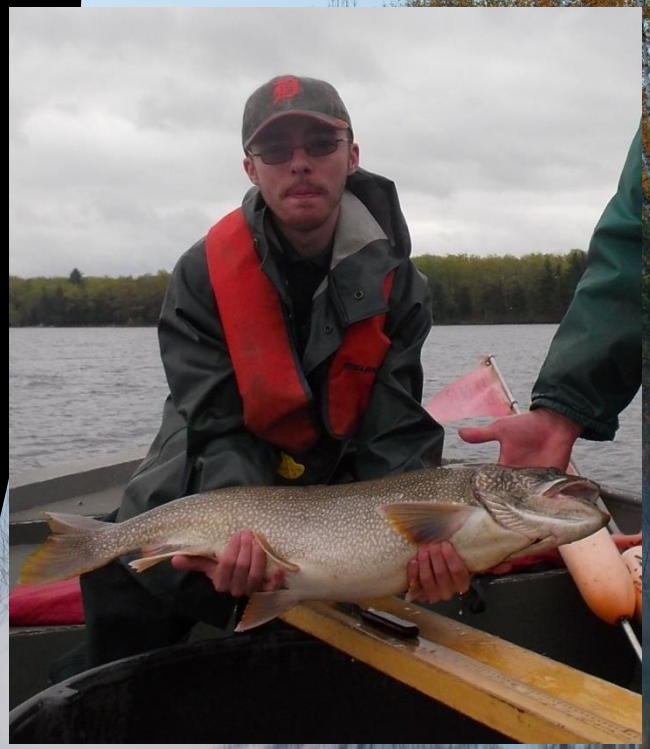
= inch groups legal to harvest



# Compliance

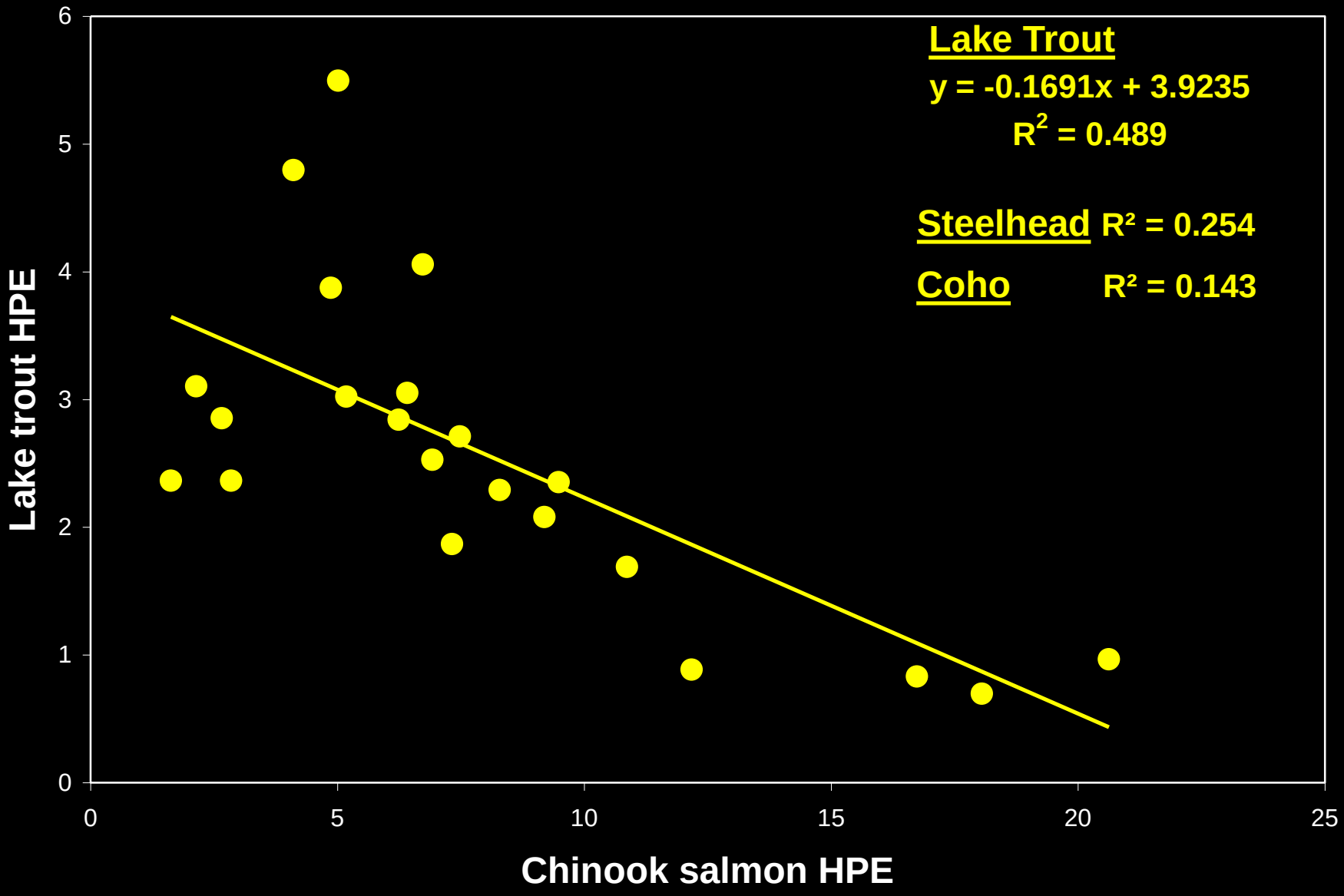
- Projections are based on legal harvest
- Statewide illegal LAT harvest
  - Under minimum size limits, 5%
  - Under slot limits, 18%
- MM-5 specifically
  - Under current minimum <1%
  - Under 23” max 49%
- Illegal harvest counts against harvest limit



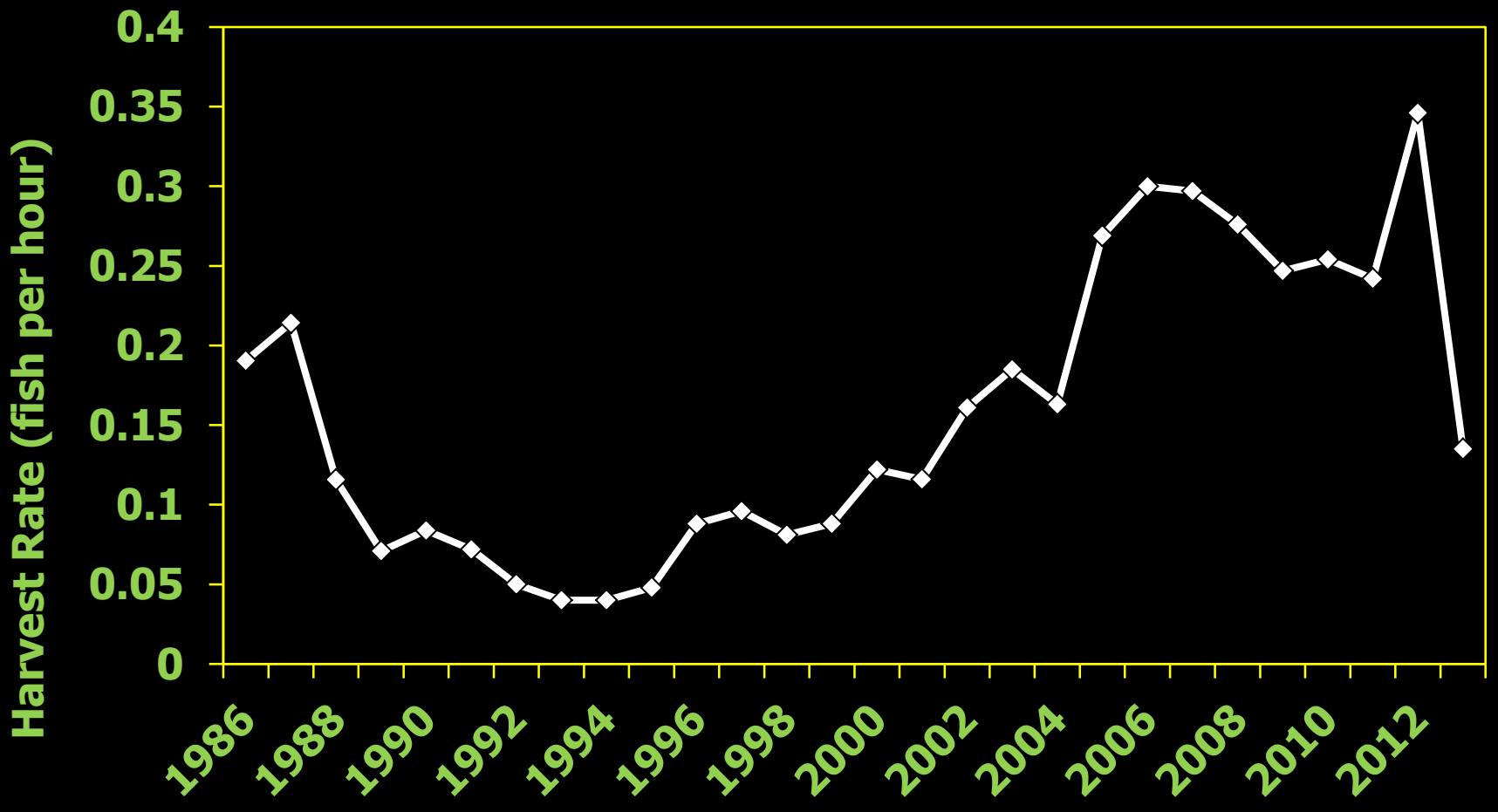
# Hooking Mortality

- Current Estimate = 15% of released fish, regardless of season or method of fishing
  - 1980s Lake Superior Study
- Ongoing research to be completed in winter 2016 to reassess
  - Gear and seasonal component?
  - Preliminary estimates higher than 15%
- Release mortality counts against harvest limit

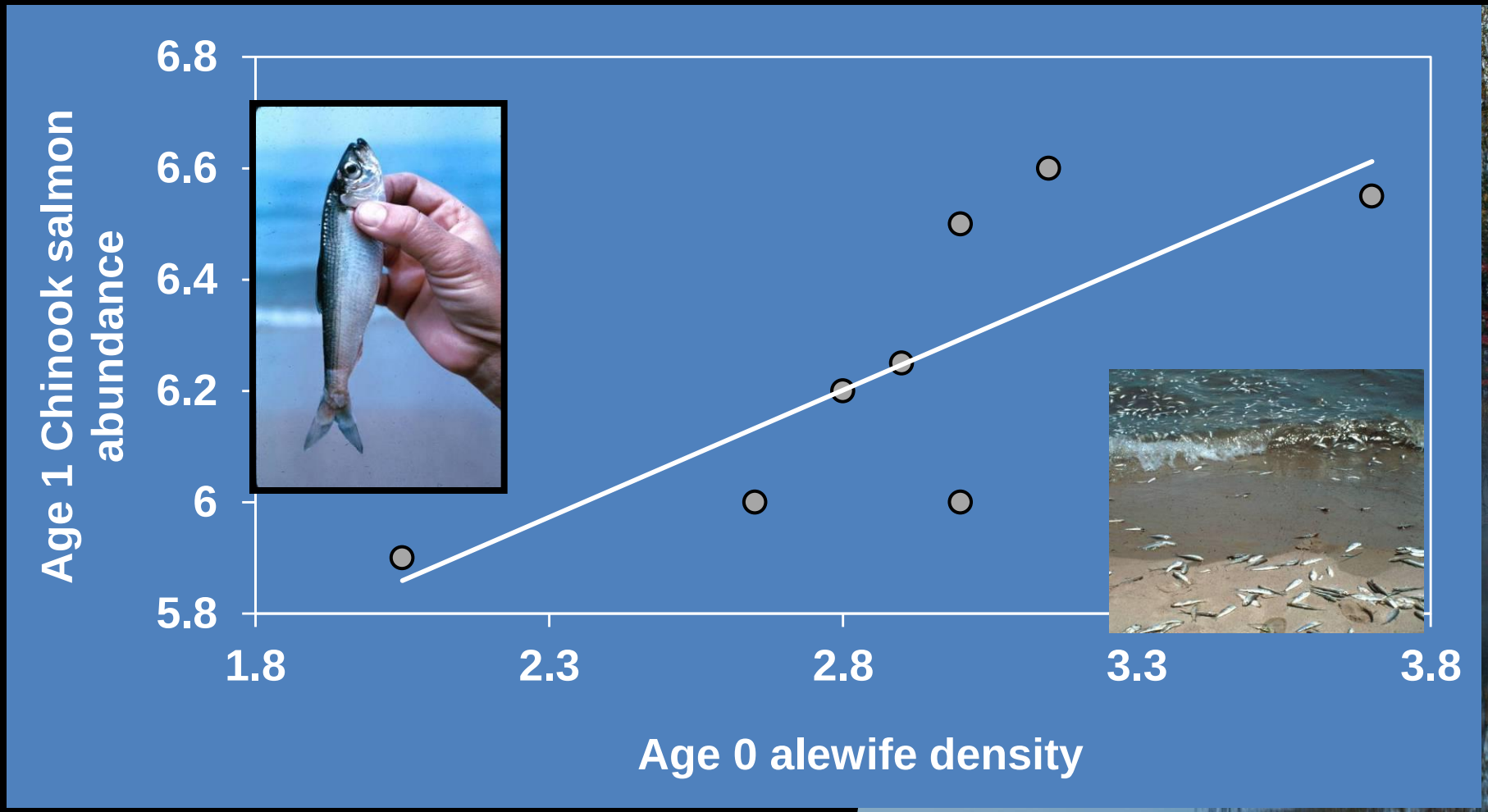
# Lake trout and Chinook Harvest Rates



# Chinook Salmon Harvest Rate in Lake Michigan, 1986-2013

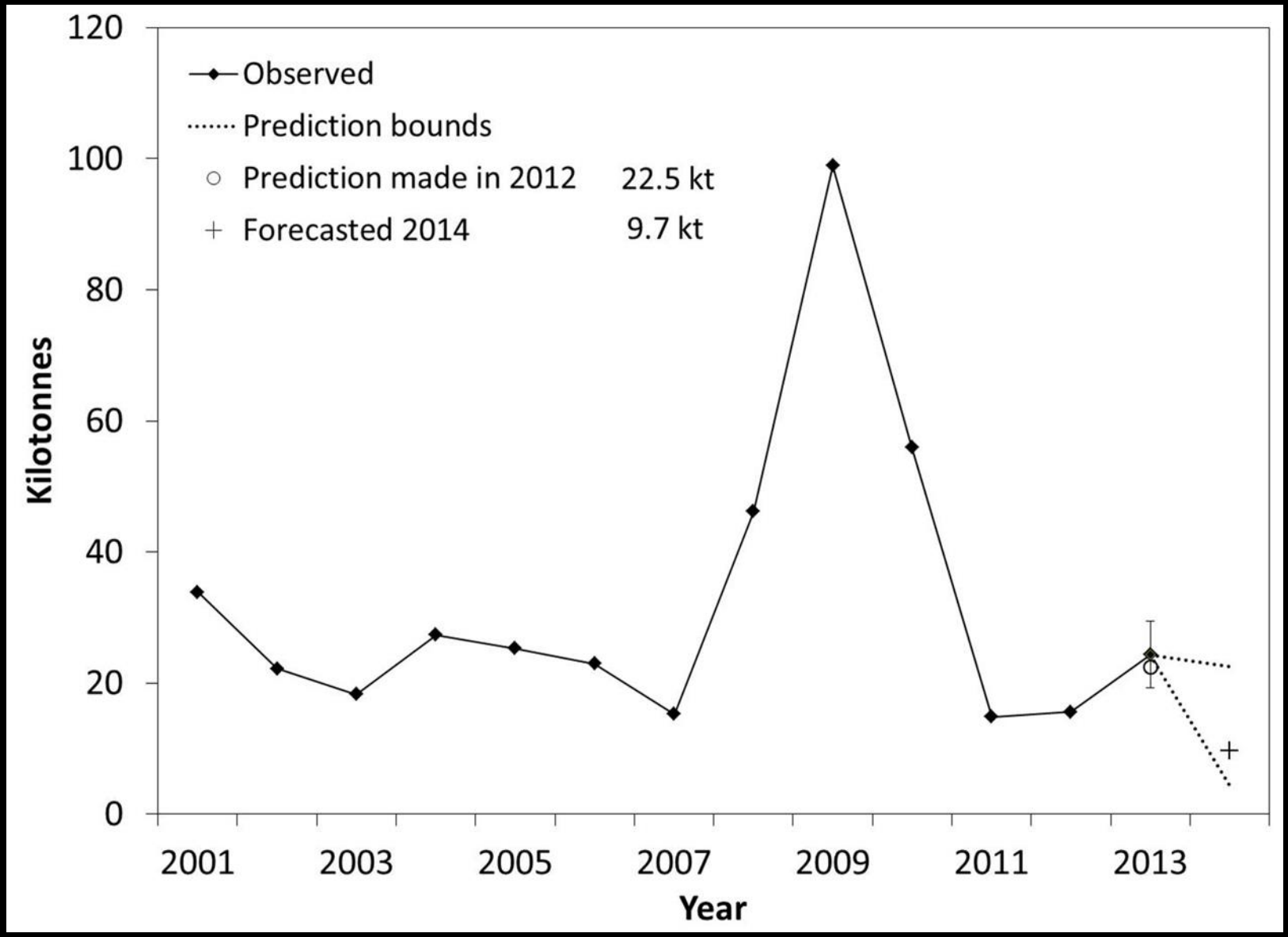


# More alewife = More Chinook salmon (Lake Michigan)

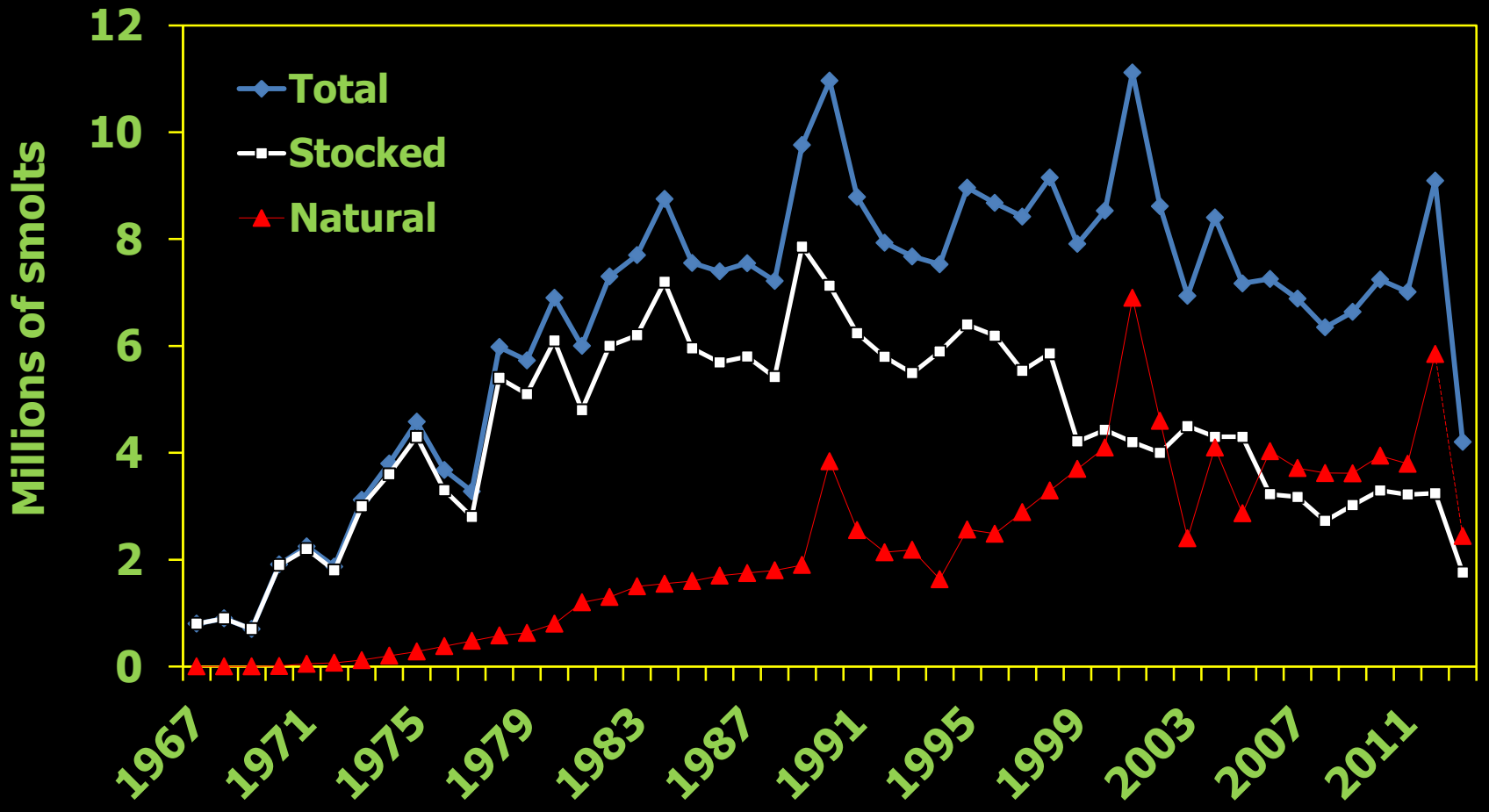



Warner, Kiley, Claramunt, and Clapp. 2008. TAFS. Vol. 137.

# Alewife Biomass with 2014 Forecast



# Estimated Chinook Salmon Recruitment in Lake Michigan, 1967-2013



# Managing Risk

HYPOTHETICAL SCENARIO:

1) higher hooking mortality implemented
2) a poor CHS fishing year
3) good weather resulting in additional effort

Consent Decree imposes penalties on overharvest:

- Exceed harvest limit by 15,000 lb
- Next years limit would be reduced by 15,000 lb, and would be 43,800 lb.
- Timing of harvest reports and fishing guide publication are problematic
- Danger of repeated overharvest given the regulation that would be in place, need for emergency order (MH-1 example)

# Managing Risk

- Given the potential for overharvest and penalties, what level of risk are you willing to accept?

- What should our target harvest number be: the actual harvest limit, 10% below, 25% below, 50% below?

# Criteria for setting harvest limits in MM-5:

- Annual mortality rate: 45%
- Spawning stock biomass targets
  – older fish have higher value
- Total Allowable Catch (TAC) Allocation:
  – 40% Tribal Commercial
  – 60% State Recreational

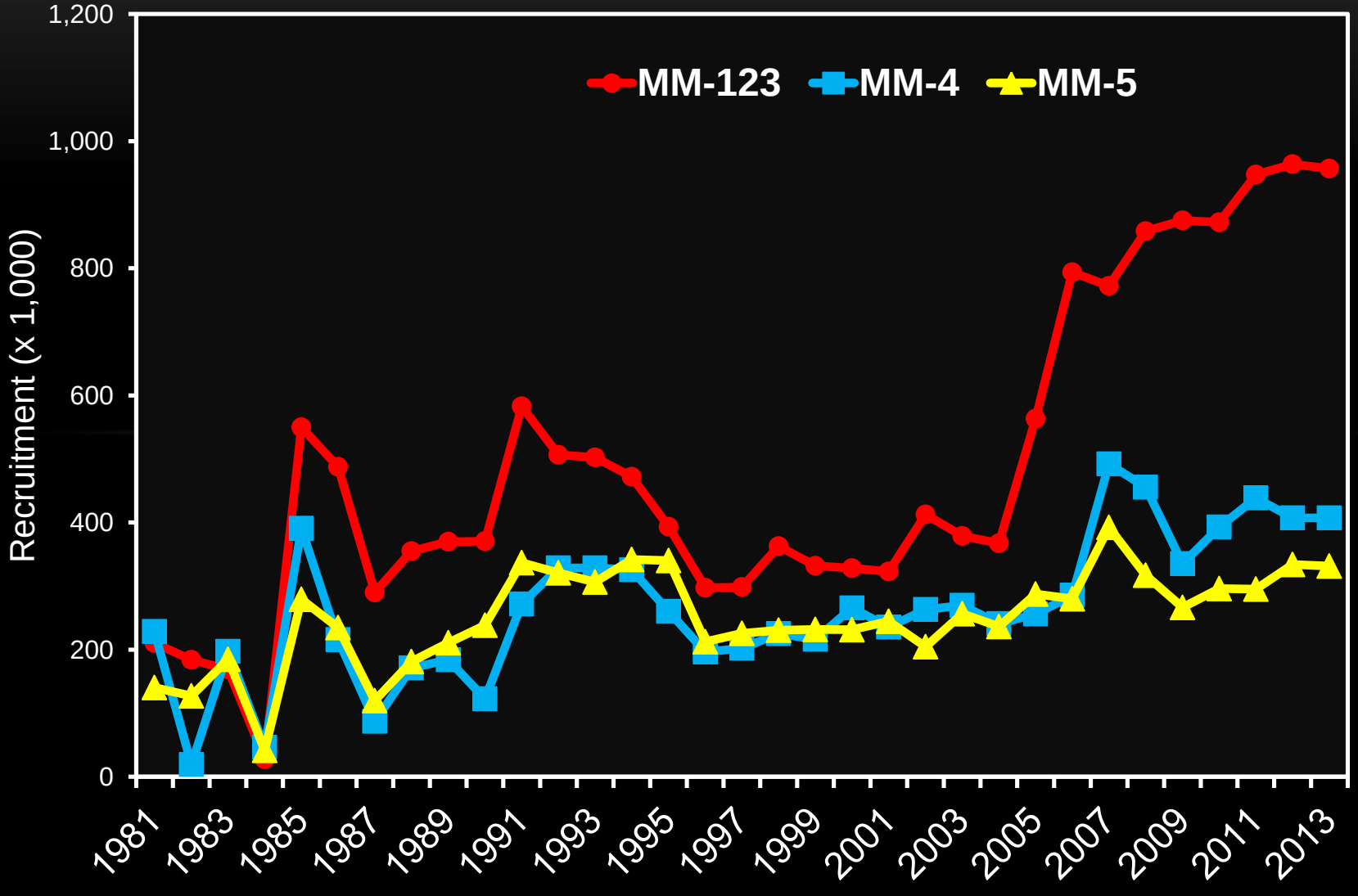
# Management Objectives for lake trout:

- Assure the weight of lake trout harvested is below the TAC
- Reduce the age and biomass of harvested fish
- Maximize age structure and biomass of spawning lake trout to meet rehabilitation goals

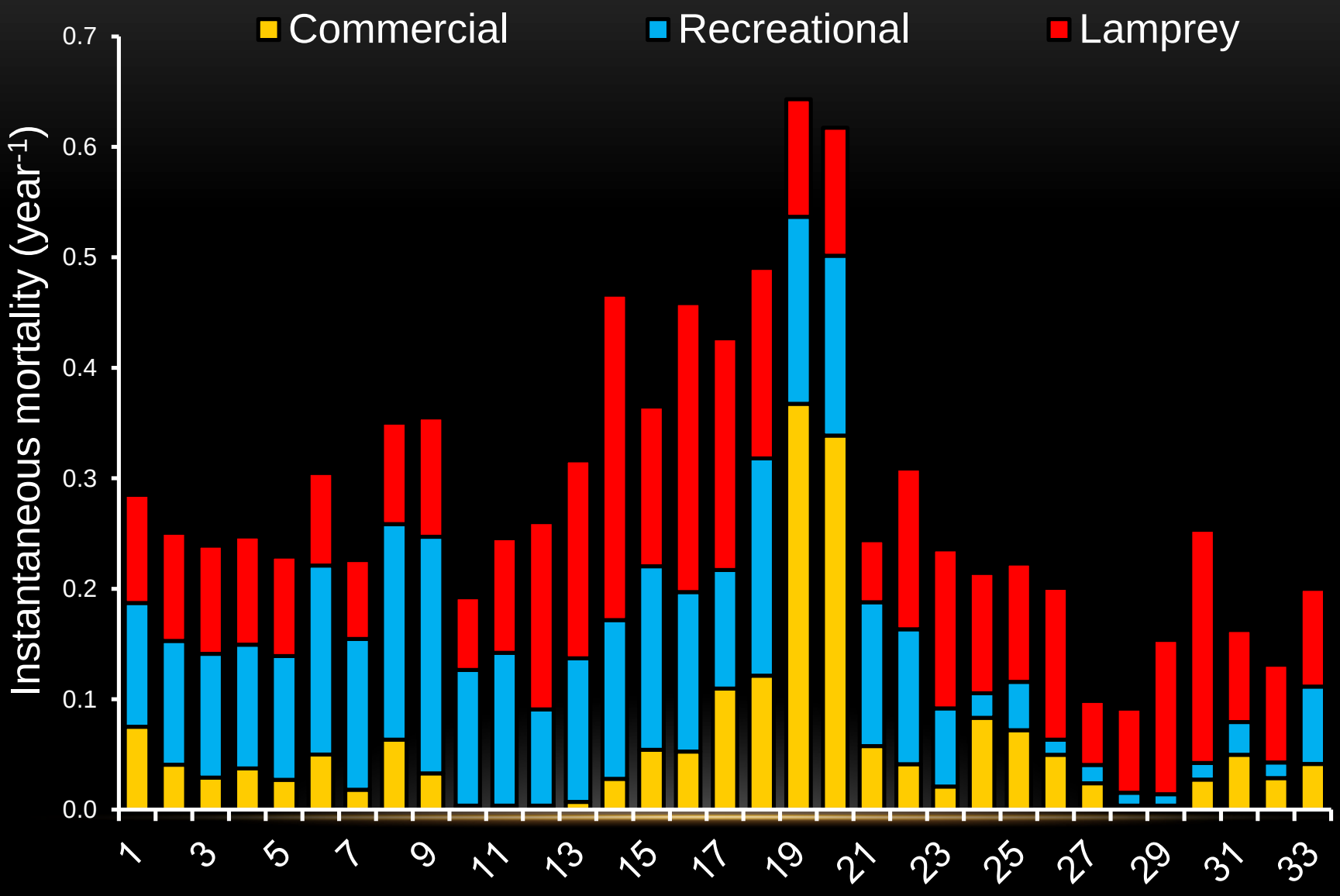
## Other concerns (sources of risk):

- Compliance with regulations
- Hooking mortality estimates likely to increase from 15%
- Unforeseen increases in the biomass of fish harvested (low CHS catch)

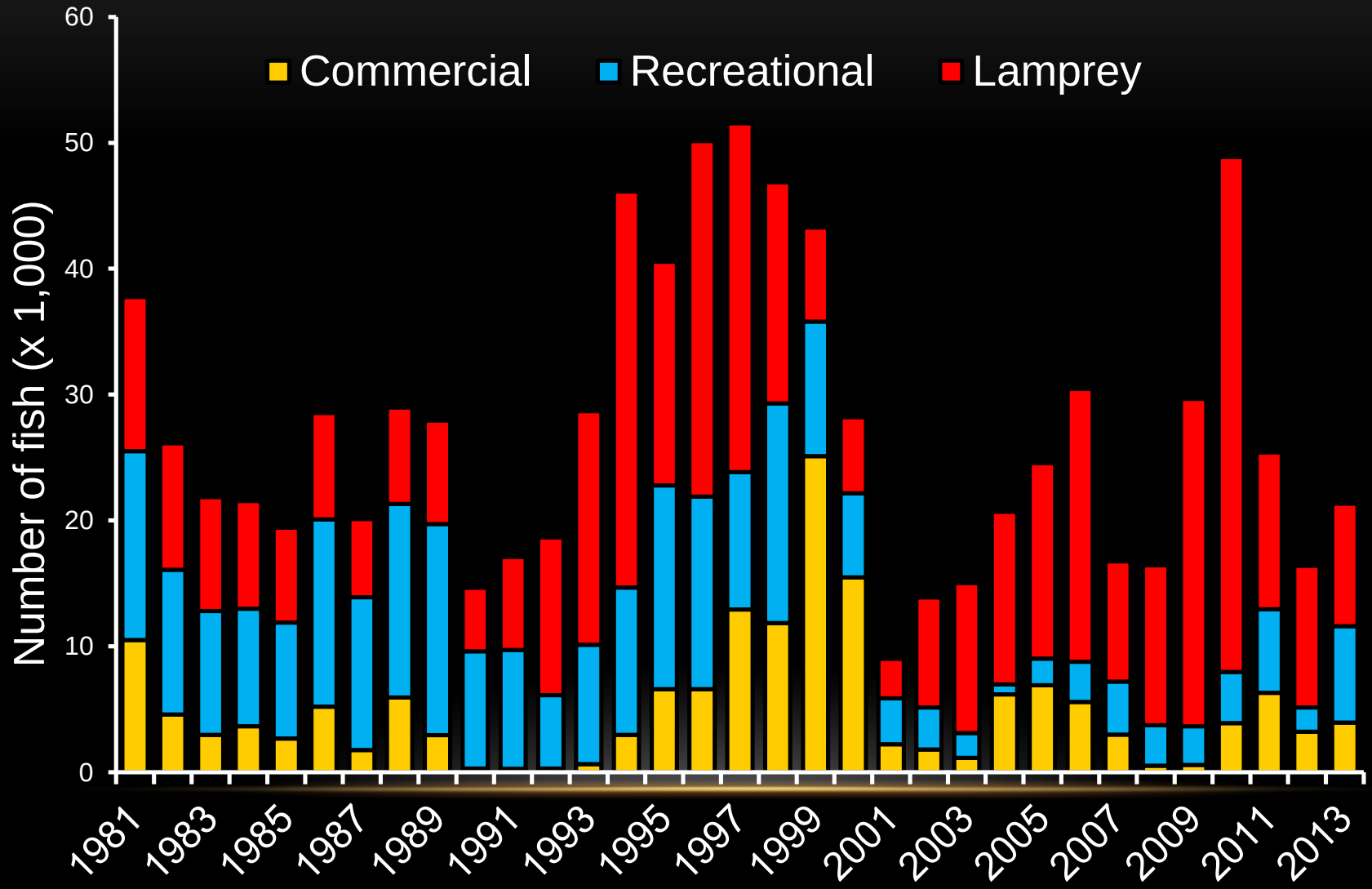
# Number of Age-1 Fish



# MORTALITY RATES IN MM-5



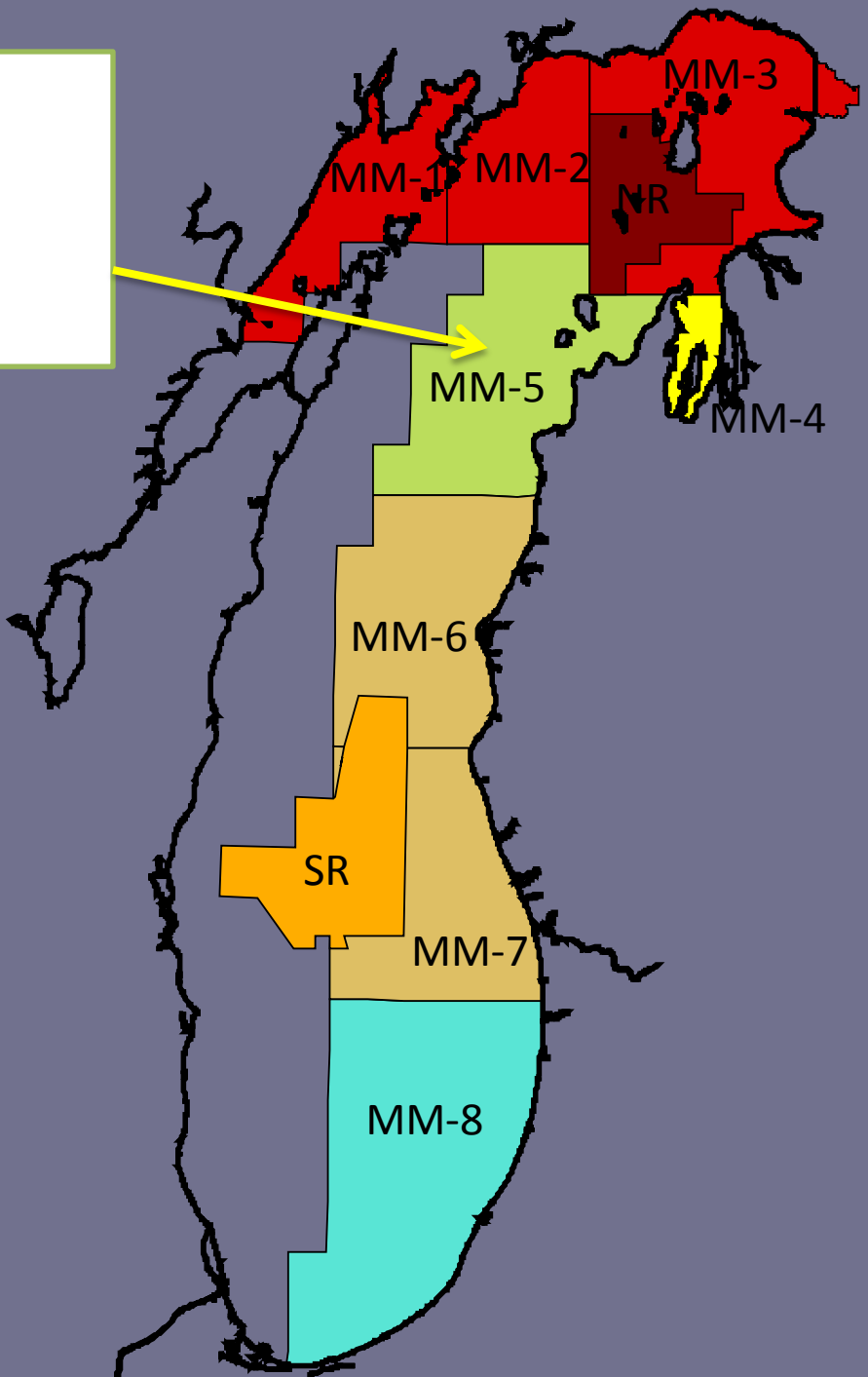
# NUMBERS OF FISH KILLED IN MM-5



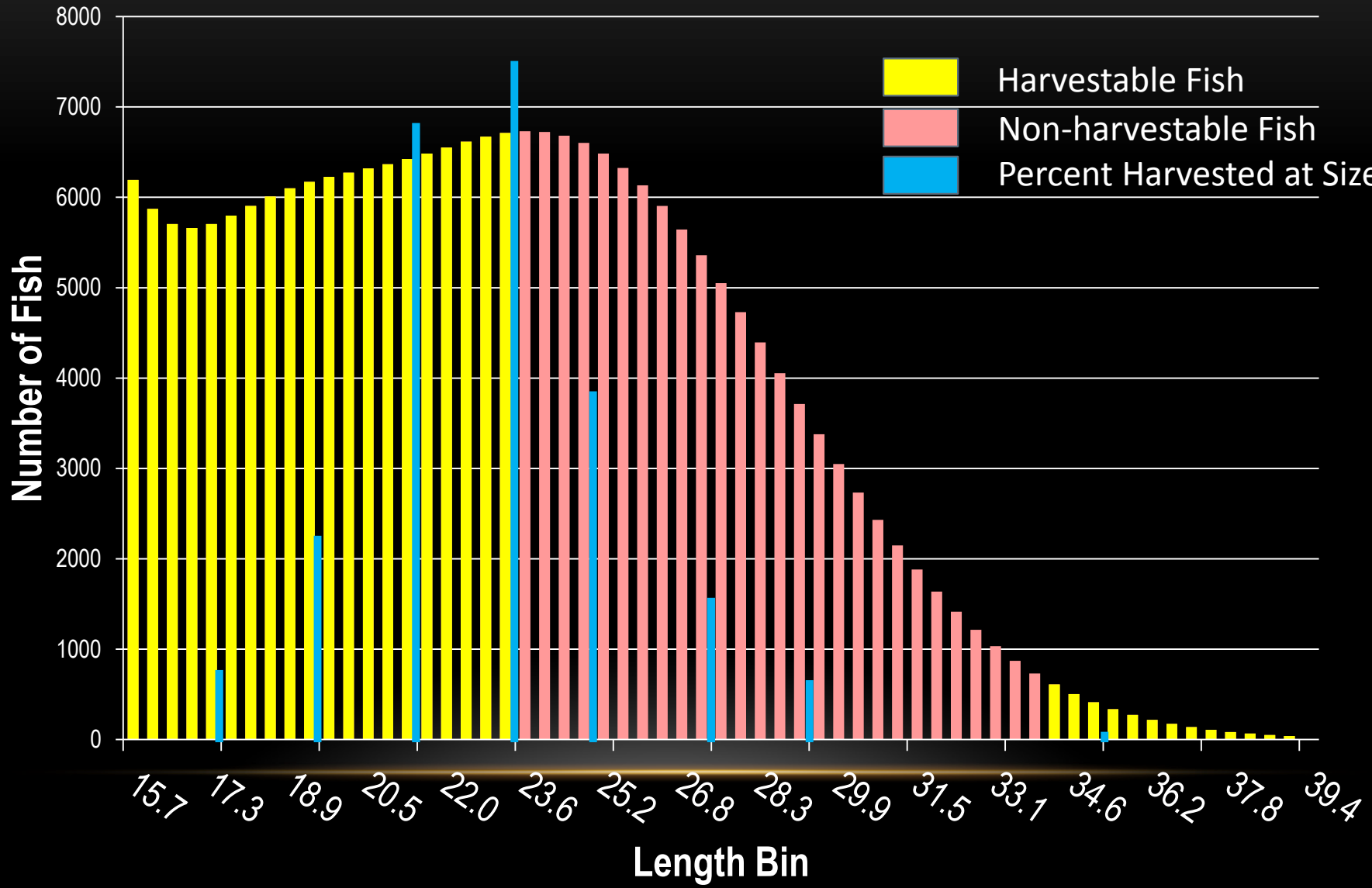
# WHAT HAS ANGLING HARVEST LOOKED LIKE?

Recent Regulation Changes:

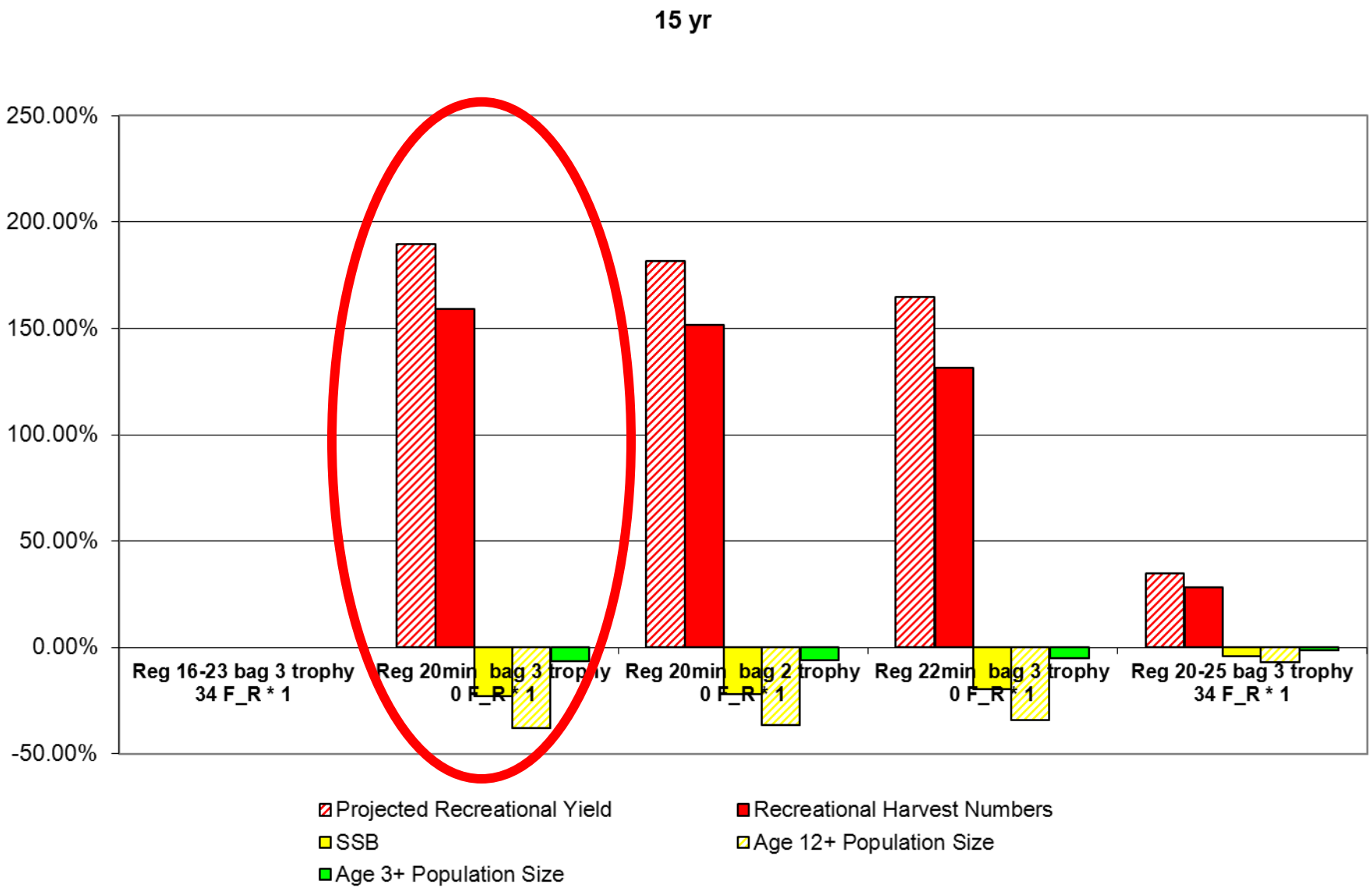
1) 2003 22” min to 24” min
2) 2006 24” min 23” max
3) 2011 23” max to 20” min



# LENGTH DISTRIBUTION OF FISH IN MM-5 -2010 MODEL

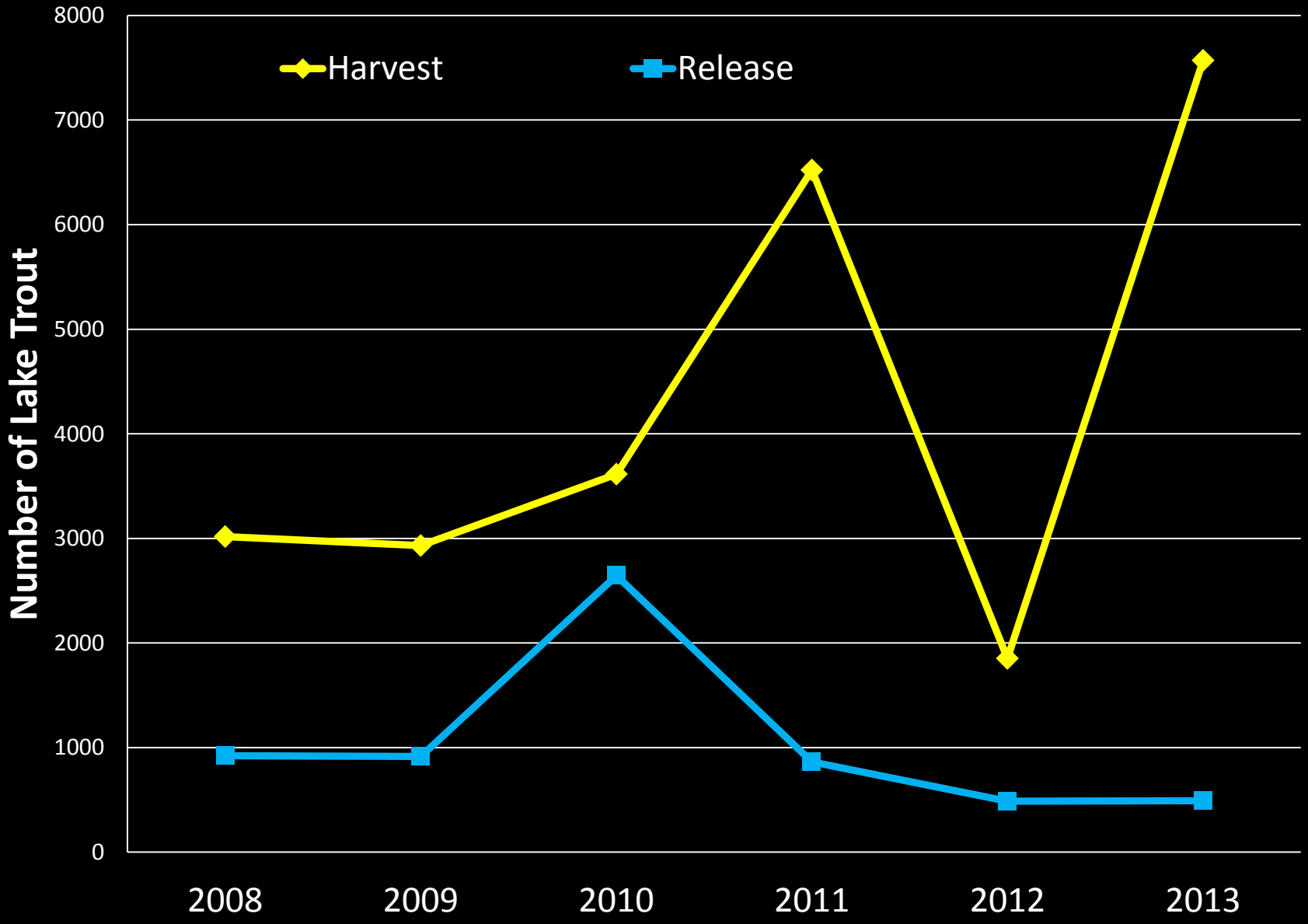


# 2010 MODEL RESULTS FOR MM-5

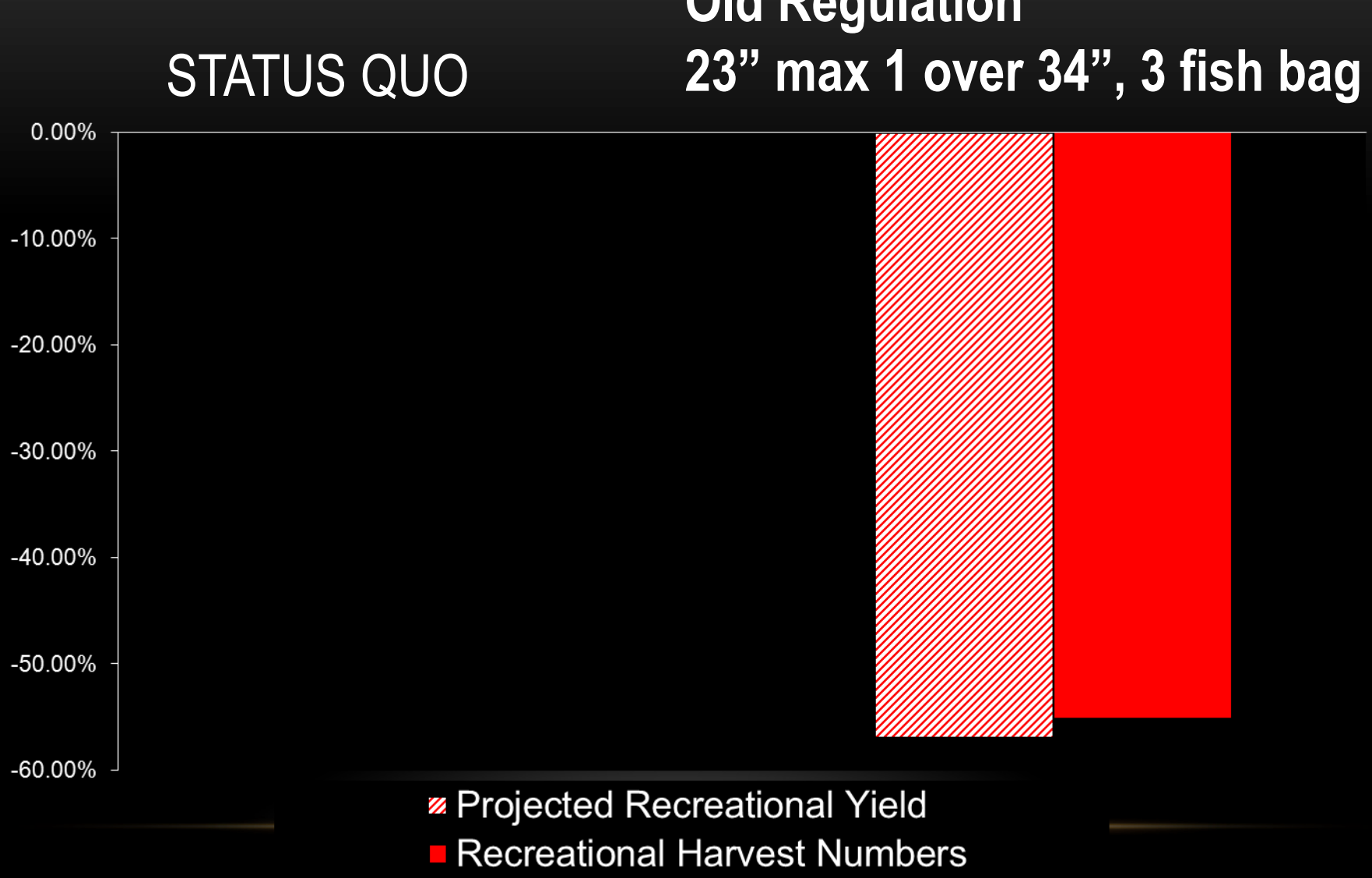


# Recreational Harvest

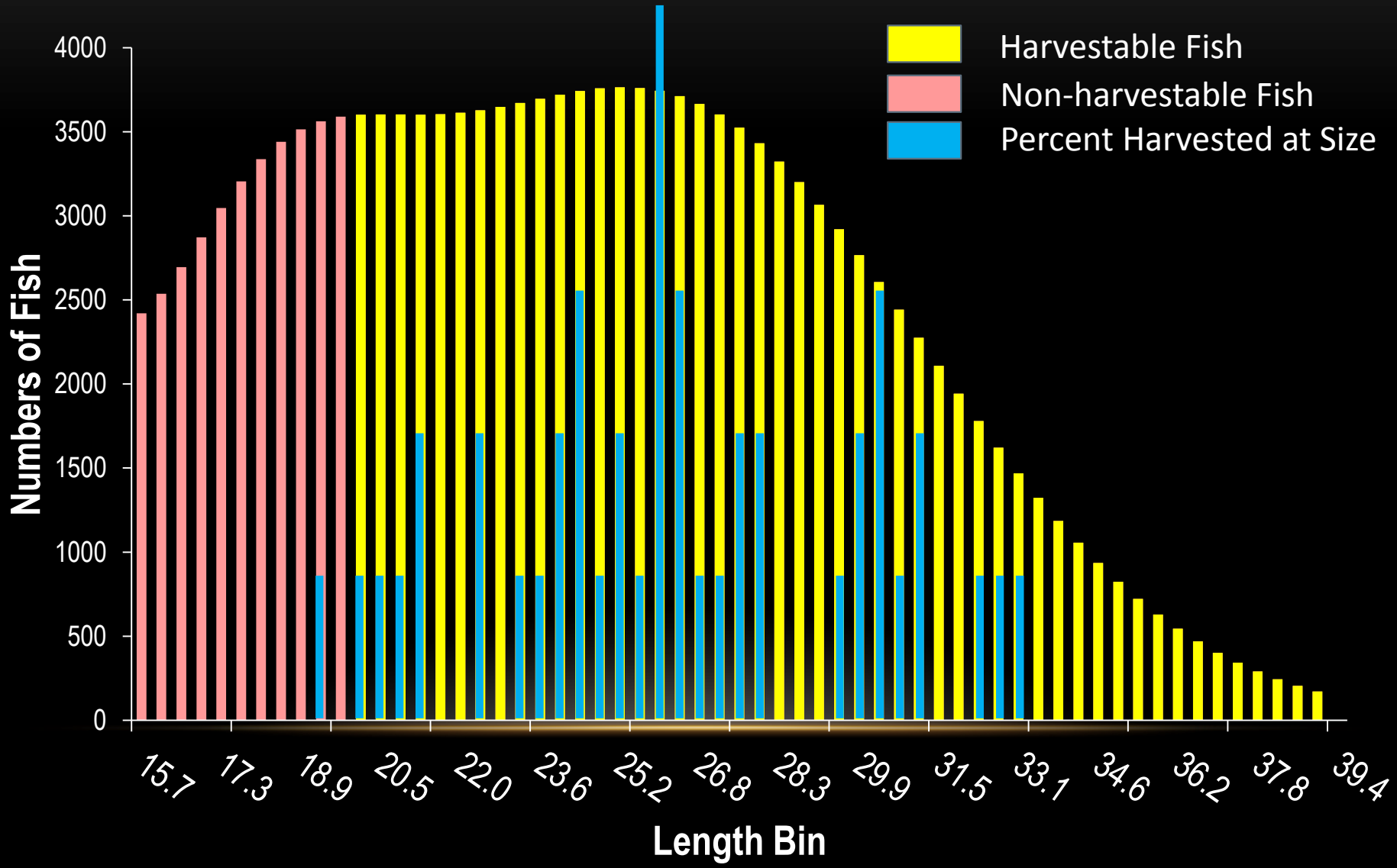
## (Creel + Charter)



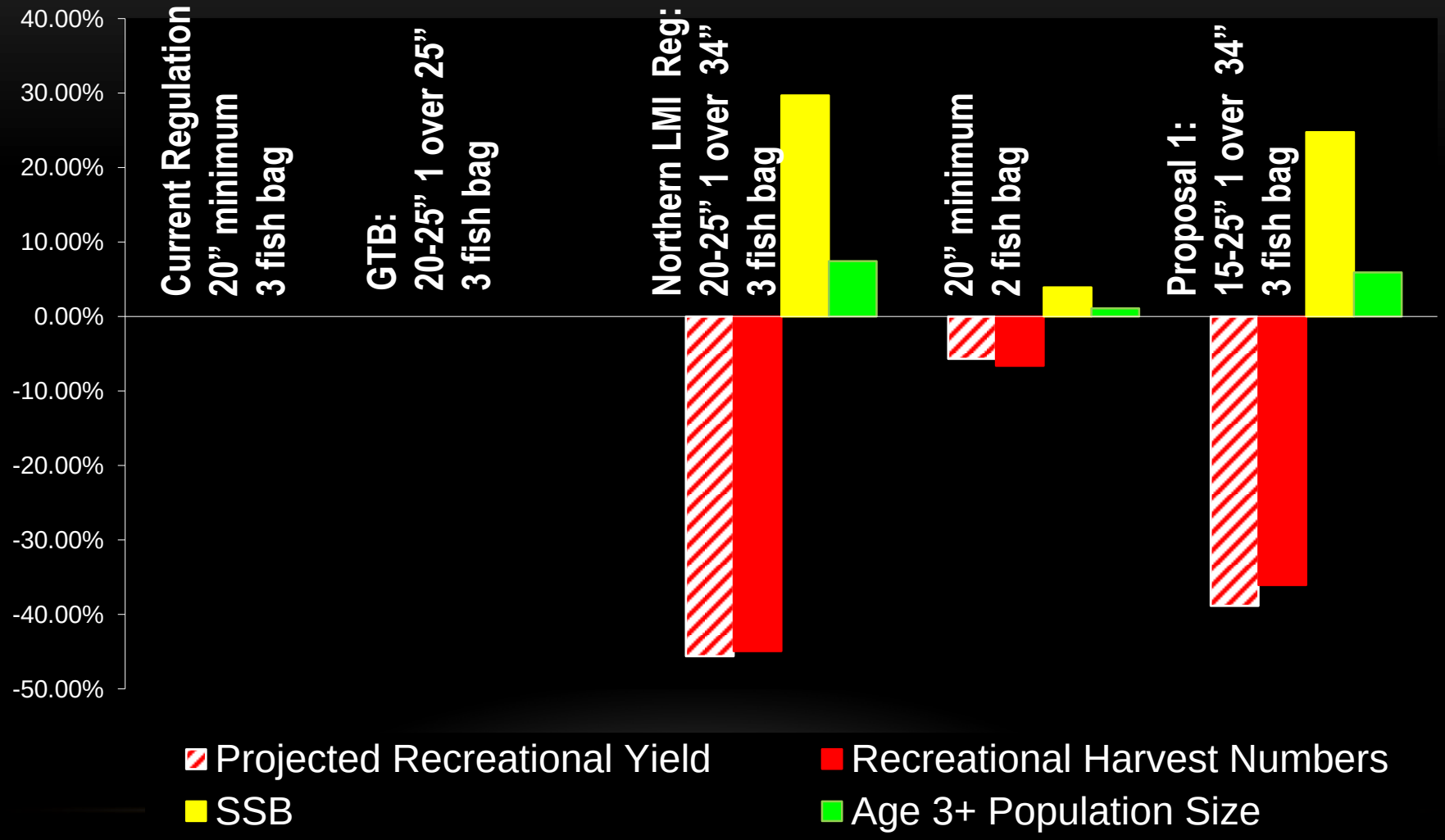
# Old verses new regulations



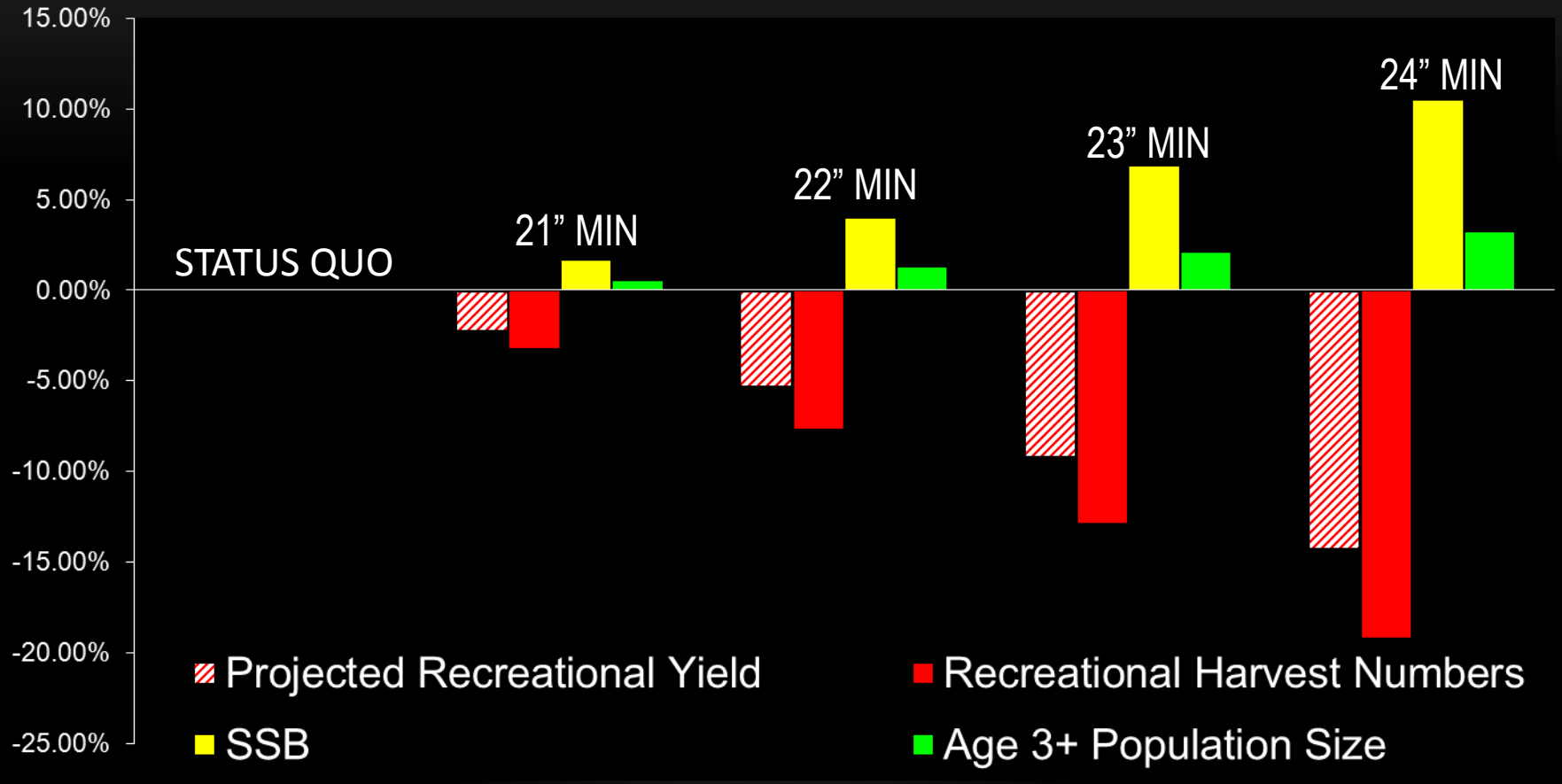
# LENGTH DISTRIBUTION OF FISH IN MM-5-RECENT MODEL



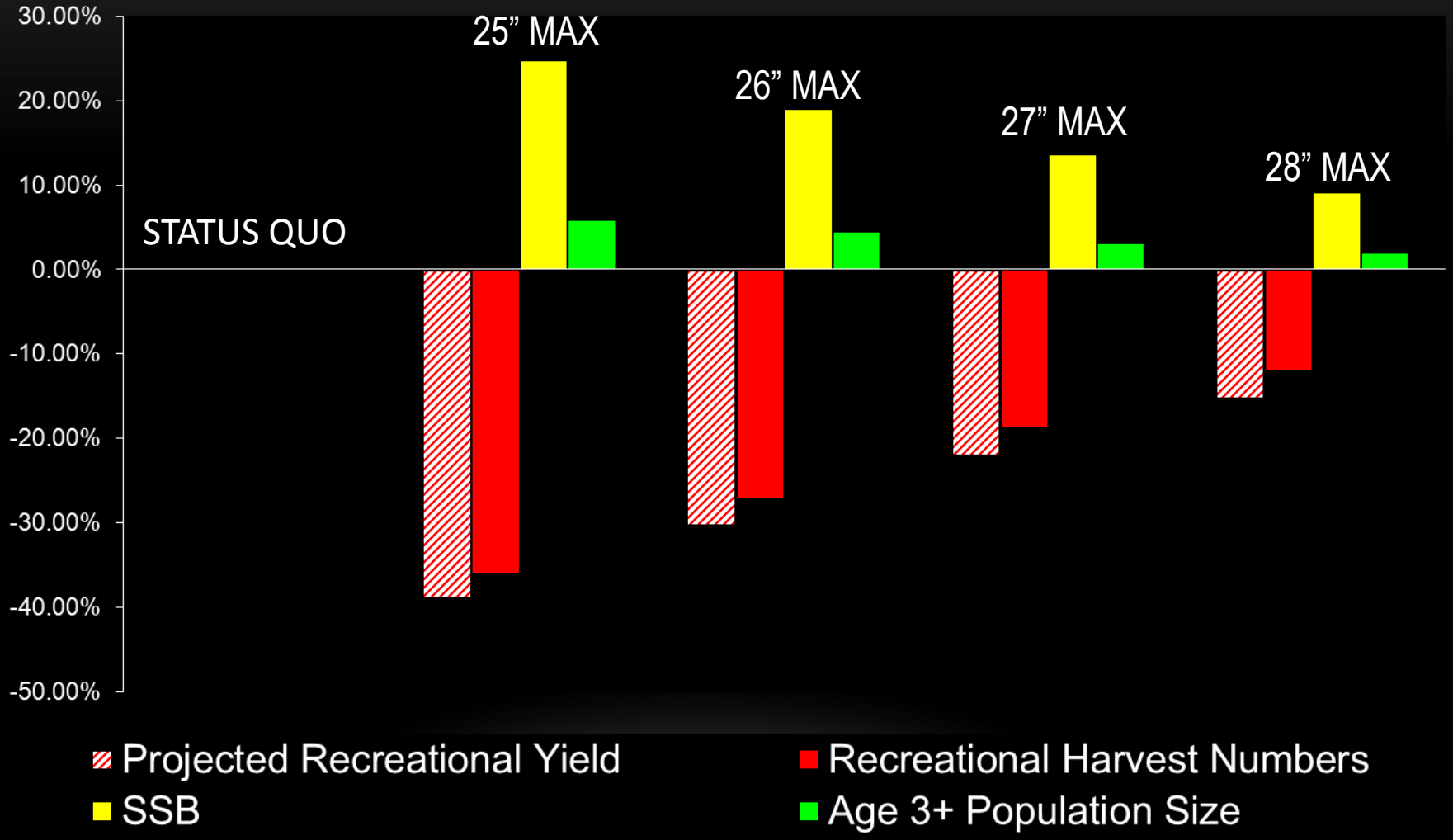
# 2014 MODEL RESULTS FOR MM-5



# Minimum Size Limit Scenarios = MM-5



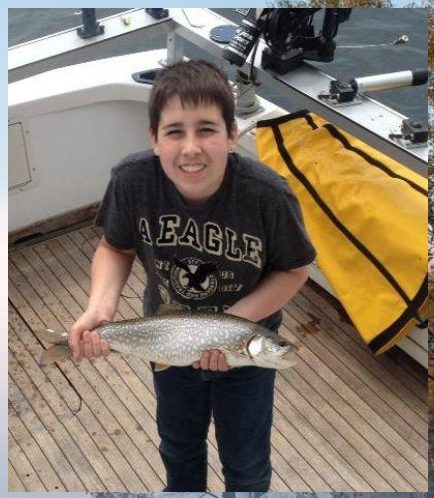
# Maximum Size Limit Scenarios = MM-5
# Scenarios allow 1 trophy over 34”



# Contact Information:


**Jory Jonas**
Research Biology Specialist
Charlevoix Research Station
231- 547-2914 ext. 229
jonasj@michigan.gov

**Dave Caroffino**
Fisheries Biologist
Tribal Coordination Unit
231-547-2914 ext.232
caroffinod@michigan.gov

**Heather Hettinger**
Fisheries Management Biologist
Traverse City Field Office
231-922-5280 ext. 6870
hettingerh@michigan.gov

**Randy Claramunt**
Research Biology Specialist
Charlevoix Research Station
231-547-2914 ext. 224
claramuntr@michigan.gov