

# Results from 2022 Comprehensive Fisheries Survey of Cedar Lake



Jason Breeggemann

Senior Fisheries Biologist – Wisconsin Department of Natural Resources

Green Bay, WI

# Background

- University of MN
  - BS in fisheries management
  - December, 2007
- January, 2008 – June, 2009
  - Fisheries technician at U of M
  - Age and growth of fish
- July, 2009 – May, 2011
  - University of Wisconsin – Stevens Point
  - MS in fisheries management
  - Age and growth of yellow perch in Green Bay



# Background

- May, 2011 – May, 2016
  - South Dakota State University
  - Ph.D. in fisheries management
  - Factors affecting growth potential of largemouth bass in lake in TX.
- May, 2016 – August, 2016
  - Columbia, MO
  - Biologist with USFWS
  - Different gears for capturing Bighead and Silver Carp in Illinois River
- August, 2016 – March, 2017
  - Green Bay, WI
  - Biologist with USFWS
  - Native fish on Lake Michigan



# Background

- March 2017 – January 2022
  - Fisheries Biologist with WDNR
    - Shawano, WI
    - Shawano, Waupaca, Menominee
- January 2022
  - Fisheries Biologist with WDNR
    - Green Bay, WI
    - Brown, Manitowoc
    - Walleye and musky management Green Bay and Fox River



# Comprehensive Fish Surveys

- Fyke netting surveys
  - Ice out
  - Northern pike and walleyes
  - Panfish
    - Crappies
    - Bluegills?



# Comprehensive Fish Surveys

- Boat electrofishing
  - May (60 – 70 °F)
  - Largemouth bass and panfish



# What Information We Collect

- Length
- Weight
- Gender
- Calcified structures for estimating ages
- Number of each species
- Fin clips
  - Stocking origin
  - Recaptures



# Standard Fisheries Metrics





# Standard Fisheries Metrics

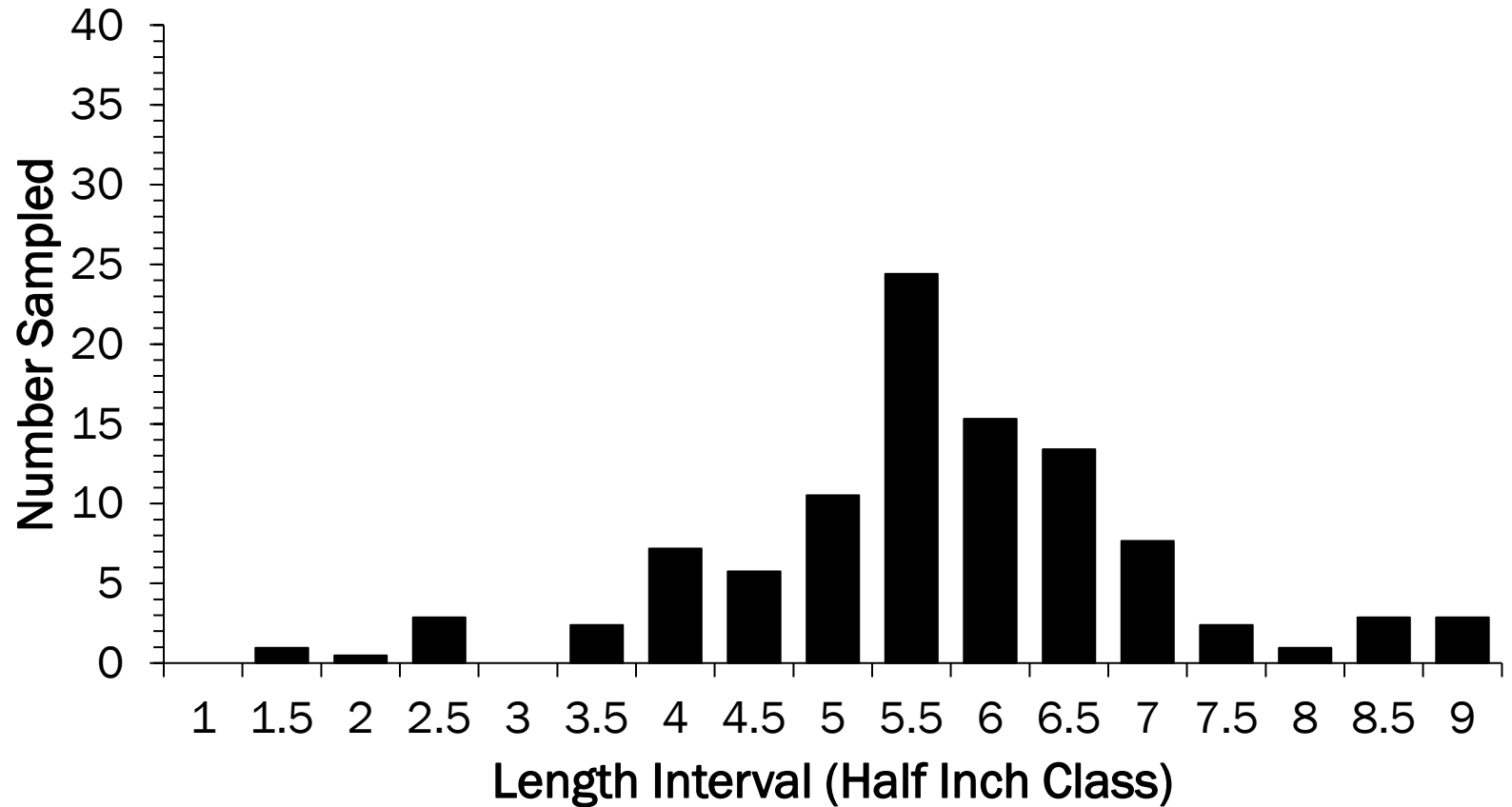
- Catch Per Unit Effort:
  - Relative abundance
  - Number of fish caught per unit of effort
    - Netting effort = net night
    - Electrofishing effort = mile of electrofishing
  - Compare within waterbody through time
  - Compare to other waterbodies in WI
    - Percentile



# Standard Fish Metrics

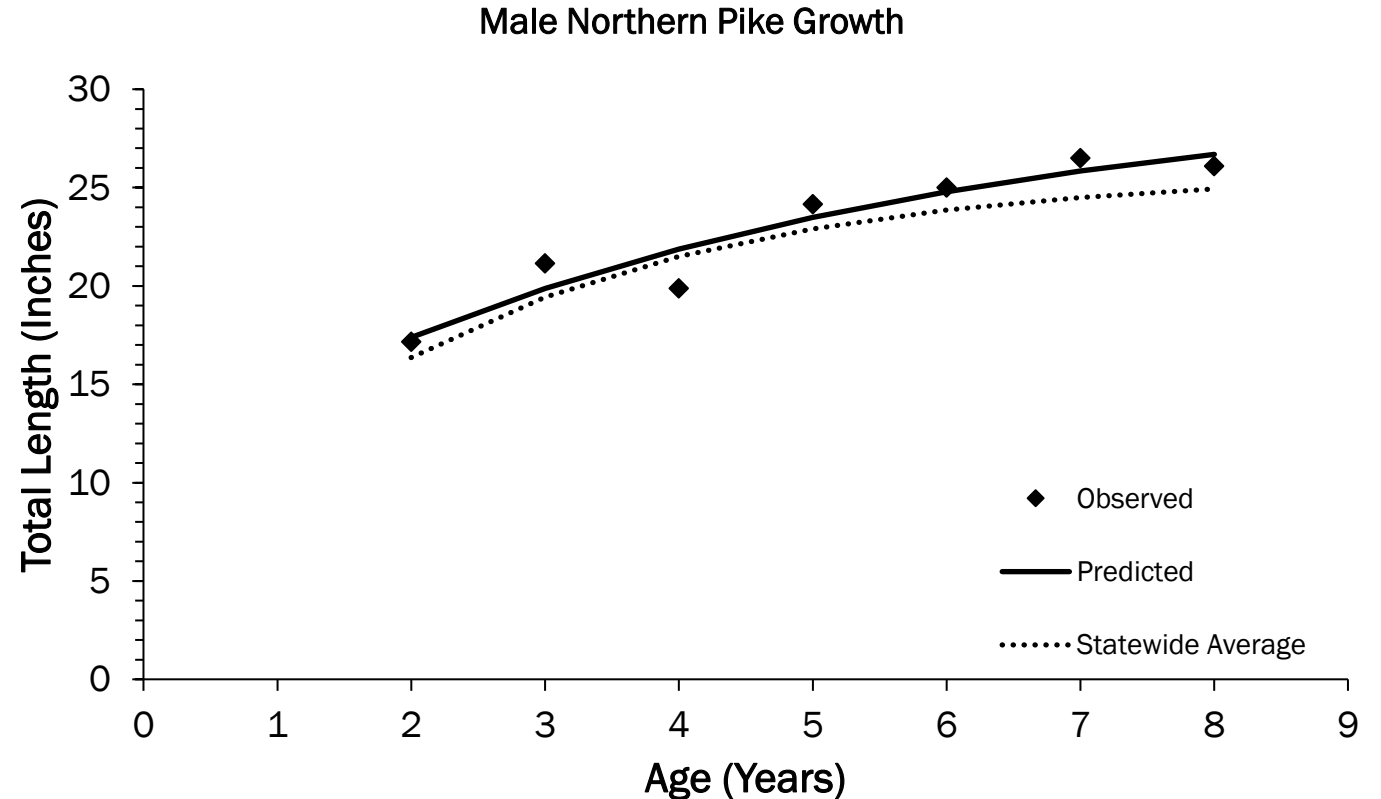
- Length Frequency Distribution
  - Size structure
  - Graphical representation of the number or percentage of fish captured by half inch or one inch size intervals

Iola Millpond Bluegill



# Standard Fisheries Metrics

- Growth
  - Mean lengths at age from calcified structure
  - Growth curve
  - Compare to statewide averages



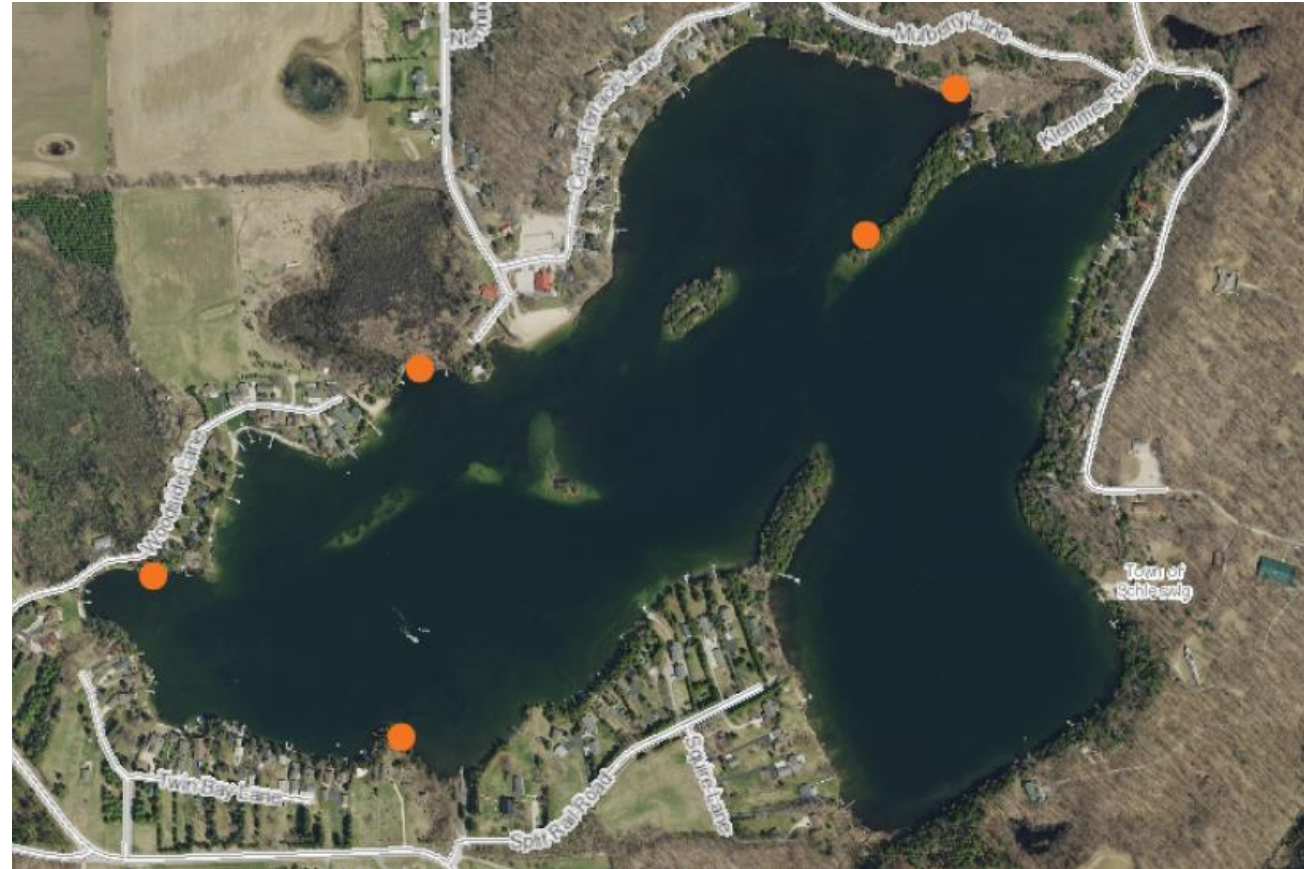
# Fisheries Management Goal

- Balanced fish populations!
  - Even mix of small and large fish
  - Provides opportunities for anglers to catch fish as well as ensures small fish to grow into large fish in coming years



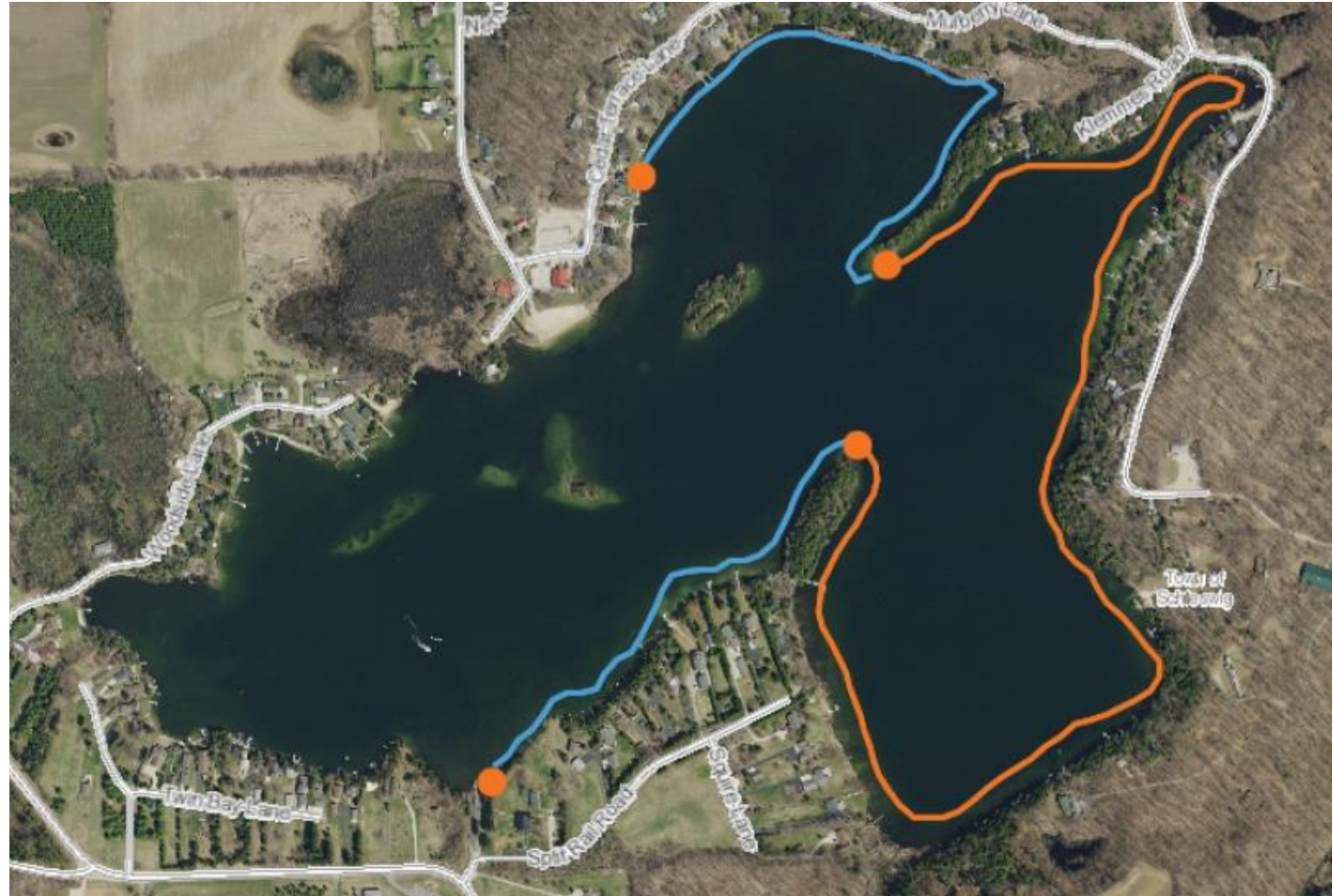
# Cedar Lake

- Fyke netting survey
  - Set 5 nets April 7<sup>th</sup>
  - 20 net nights of effort
- 686 individual fish
  - 12 species
  - 2 hybrid sunfish species
  - Northern pike, yellow bullhead, black crappie



# Cedar Lake

- Electrofishing survey
  - May 18<sup>th</sup>
  - 2.5 miles of shoreline
    - 1 mile dip all
    - 1.5 miles gamefish only
- 189 Individual fish
  - 8 species
  - 1 hybrid sunfish species
  - Bluegill, largemouth bass, pumpkinseed



# Cedar Lake

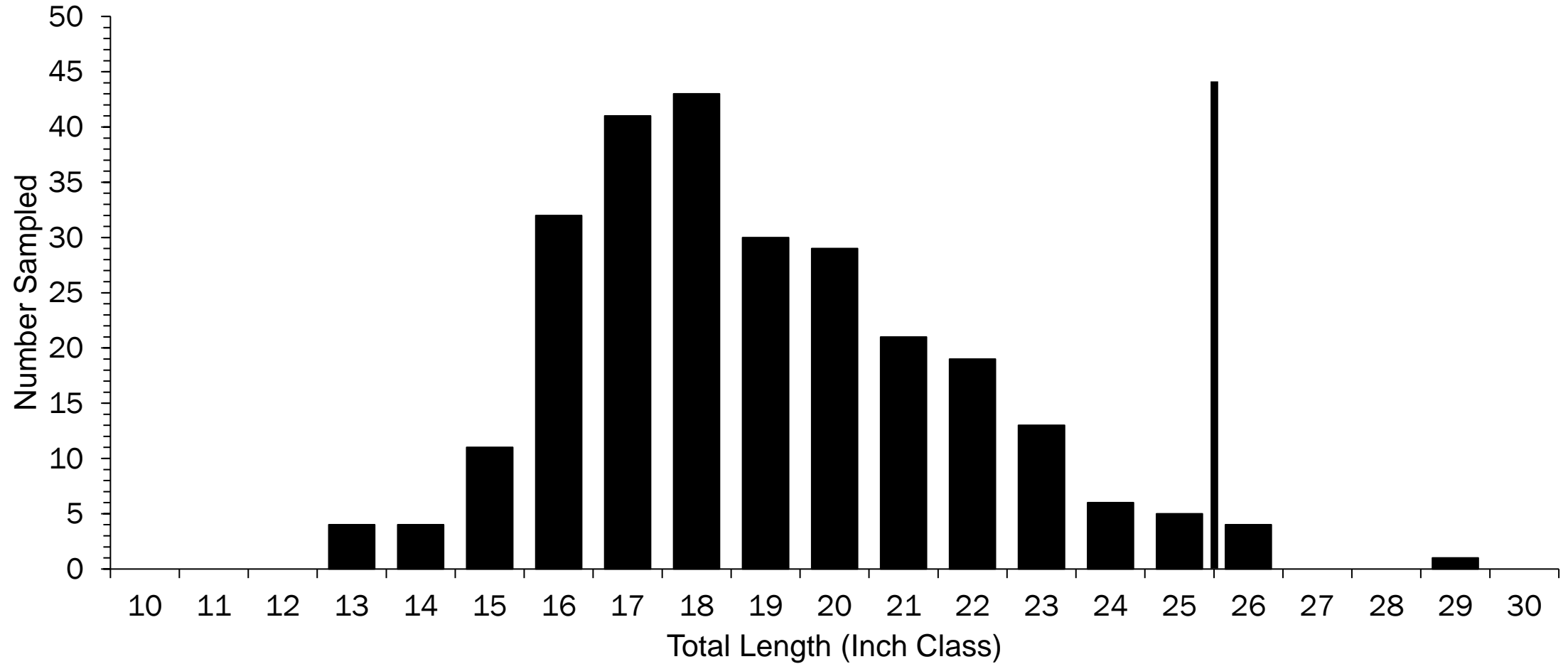
- Fyke netting results:
- Northern pike:
  - Captured 338
  - CPUE = 16.9 per net night!
    - 95<sup>th</sup> percentile
  - Mean size = 19.4 inches
    - Range = 13.4 - 29.6 inches



Photo Credit: Scott Otterson!

# Cedar Lake

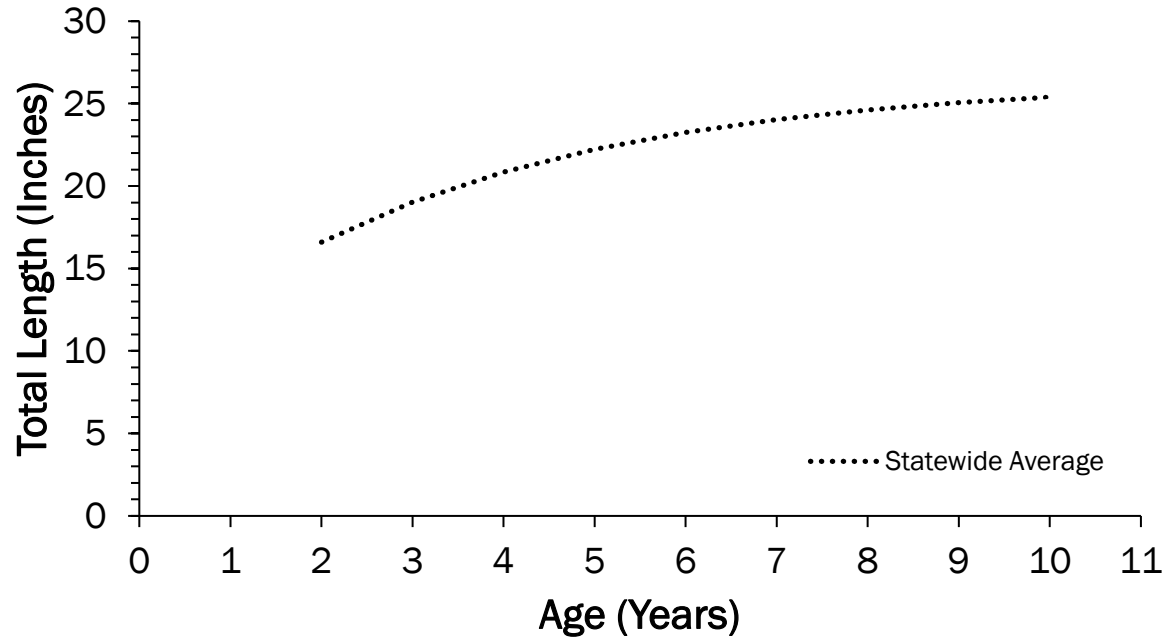
## Northern Pike Length Frequency Distribution





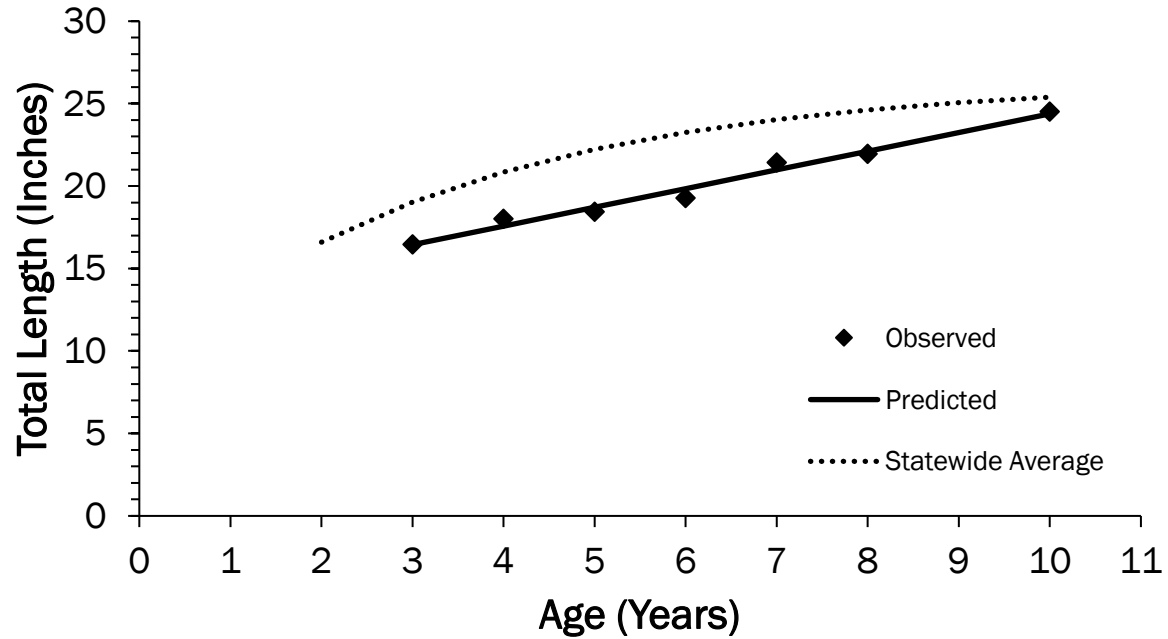
# Cedar Lake

## Male Northern Pike



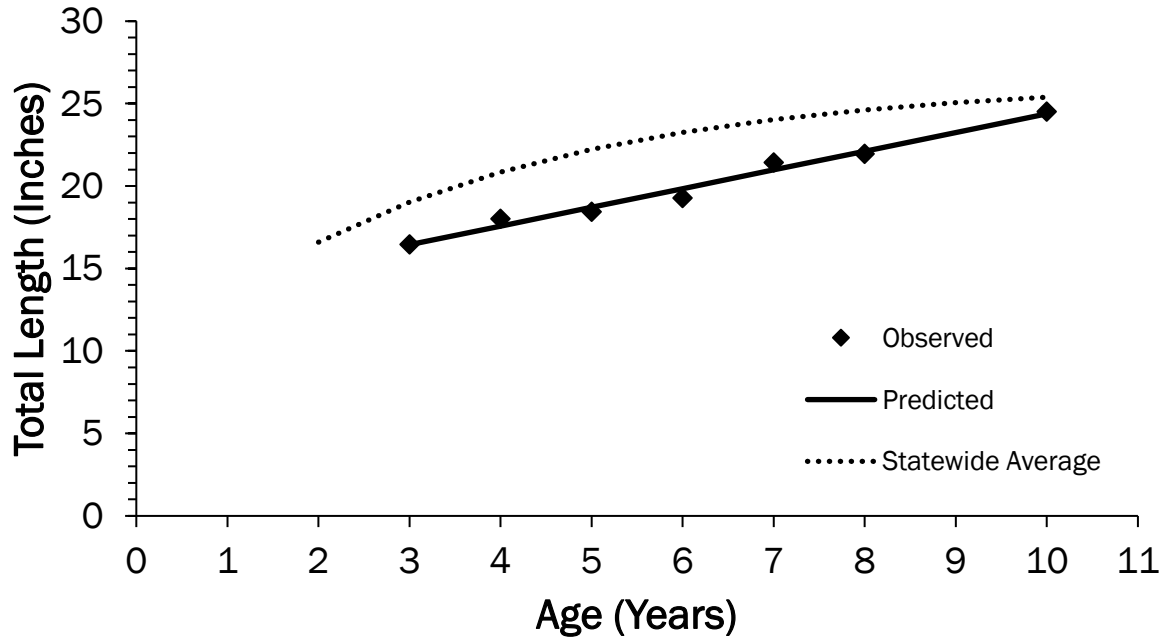
# Cedar Lake

## Male Northern Pike

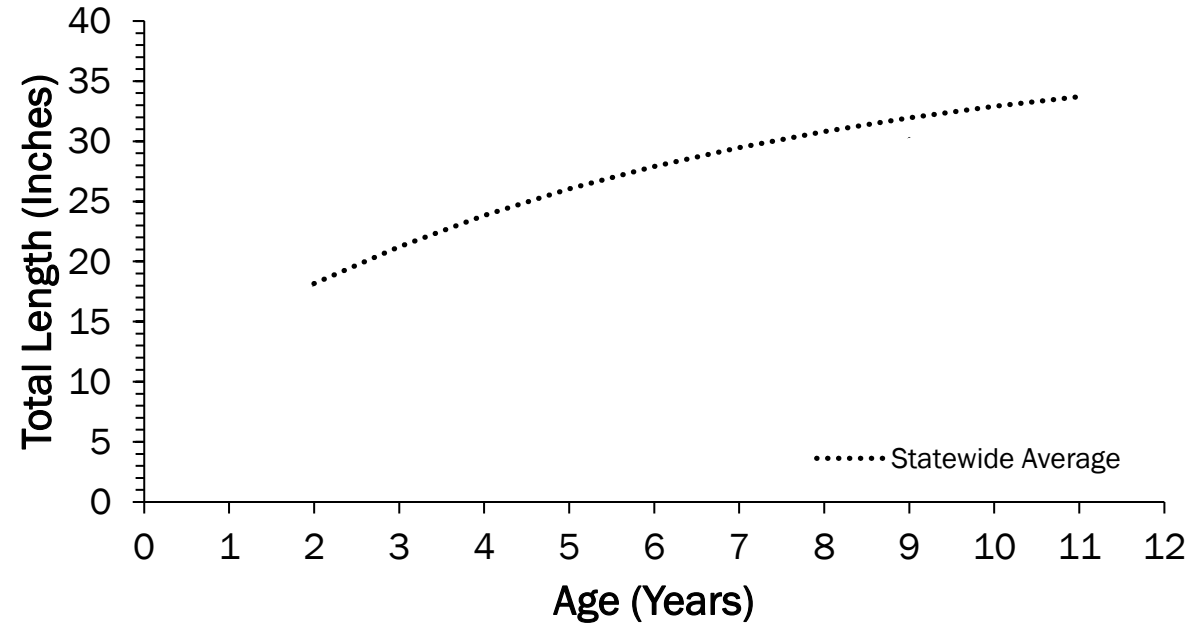


# Cedar Lake

## Male Northern Pike

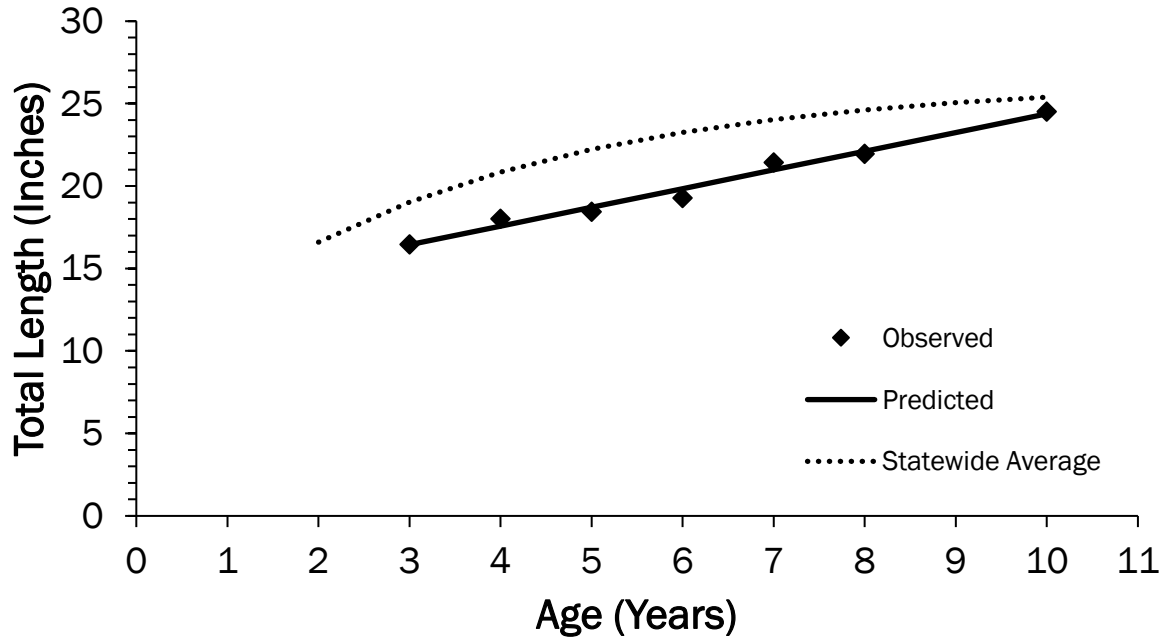


## Female Northern Pike

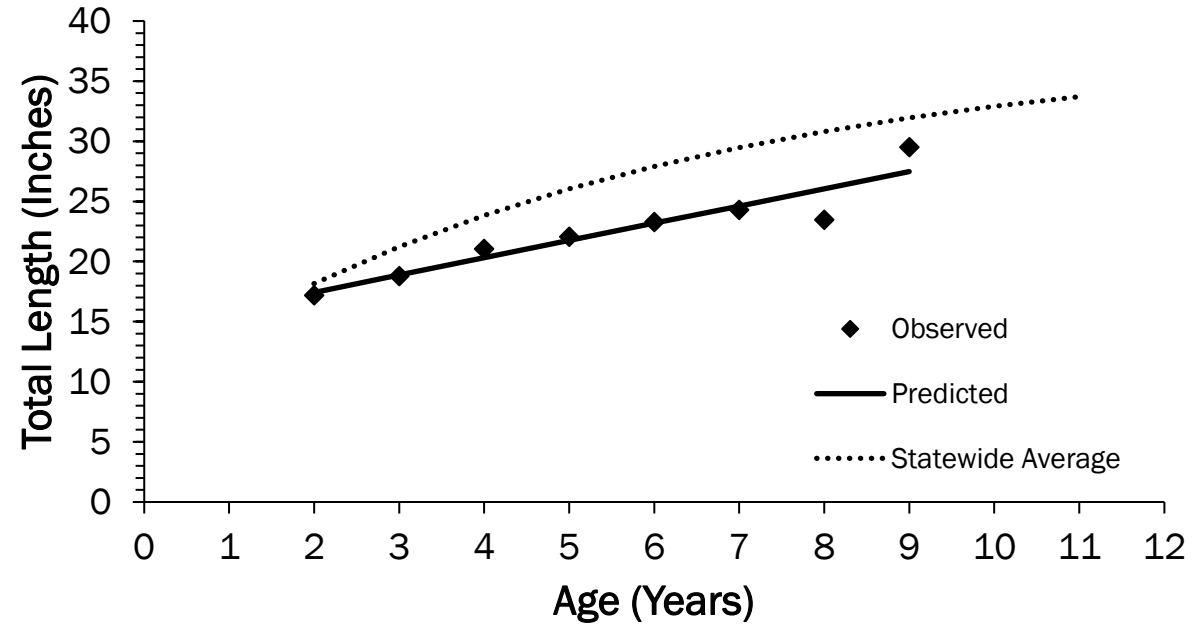


# Cedar Lake

## Male Northern Pike



## Female Northern Pike



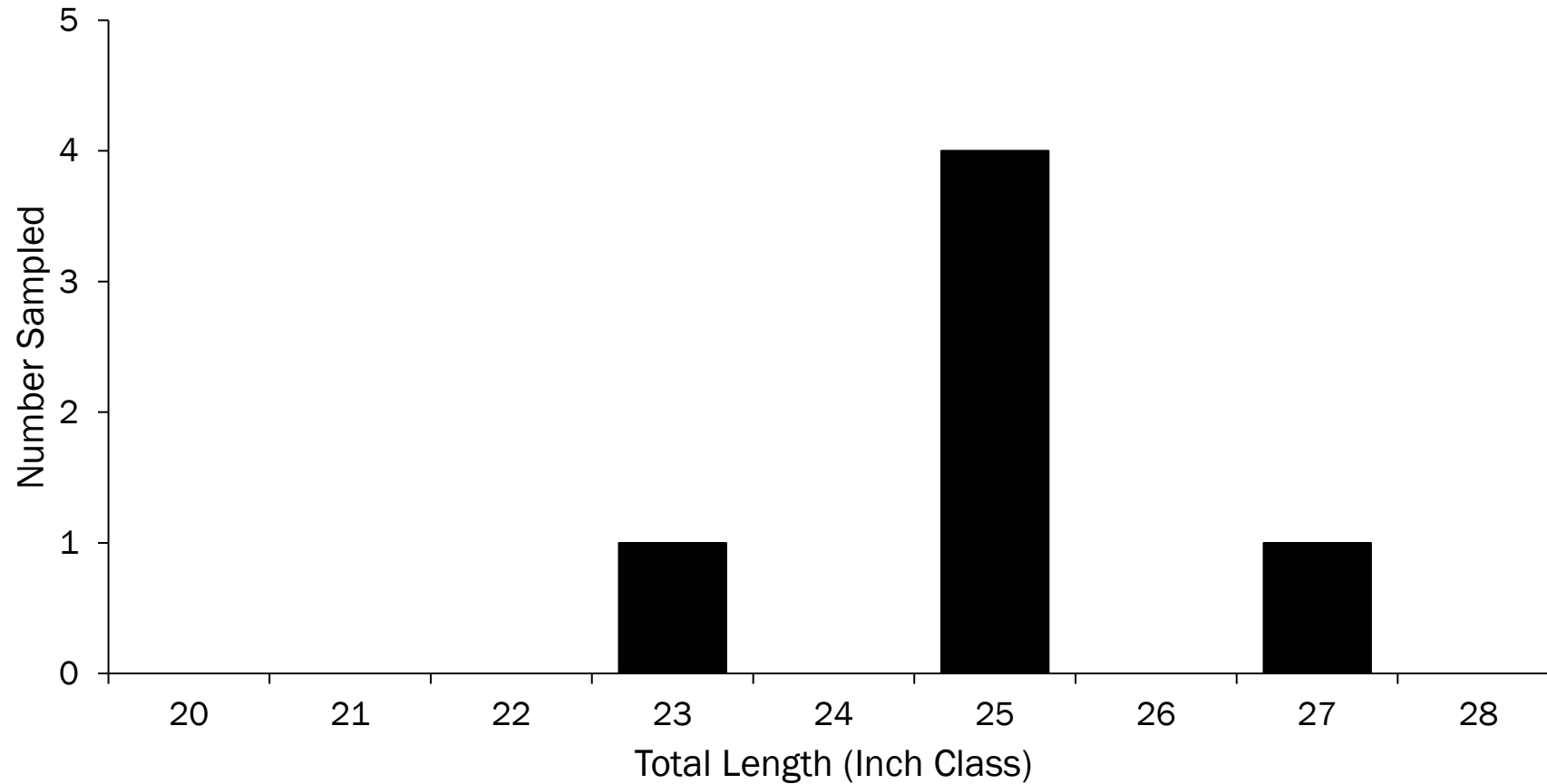
# Cedar Lake

- Fyke netting results:
- Walleye:
  - Captured 6
  - CPUE = 0.3 per net night
    - 14<sup>th</sup> percentile
  - Mean size = 25.7 inches
    - Range = 23.5 - 27.8 inches
    - Remnants from last stocking in 2014



# Cedar Lake

Walleye Length Frequency Distribution



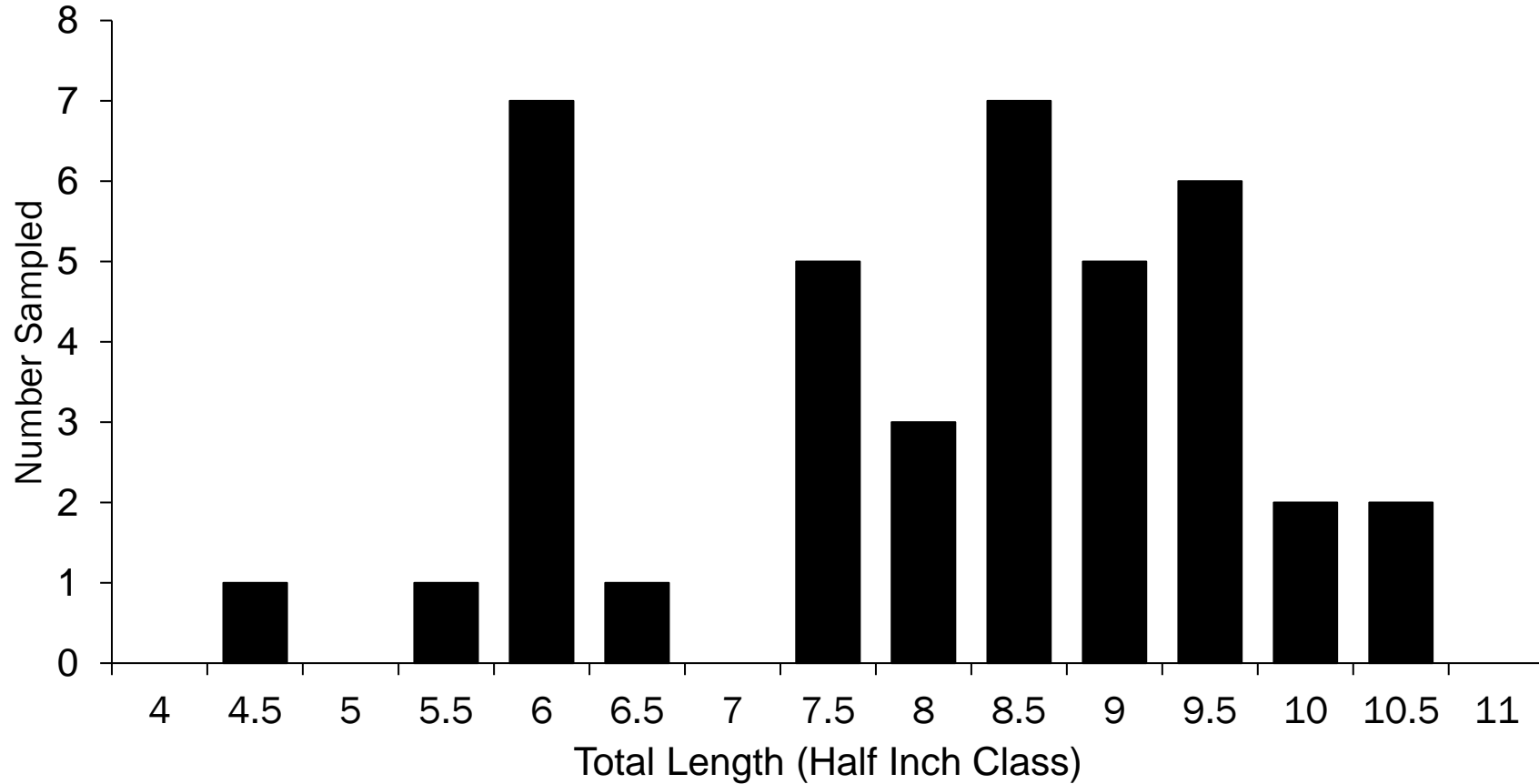
# Cedar Lake

- Fyke netting results:
- Black crappie:
  - Captured 40
  - CPUE = 2.0 per net night
    - 39<sup>th</sup> percentile
  - Mean size = 8.3 inches
    - Range = 4.9 - 10.8 inches



# Cedar Lake

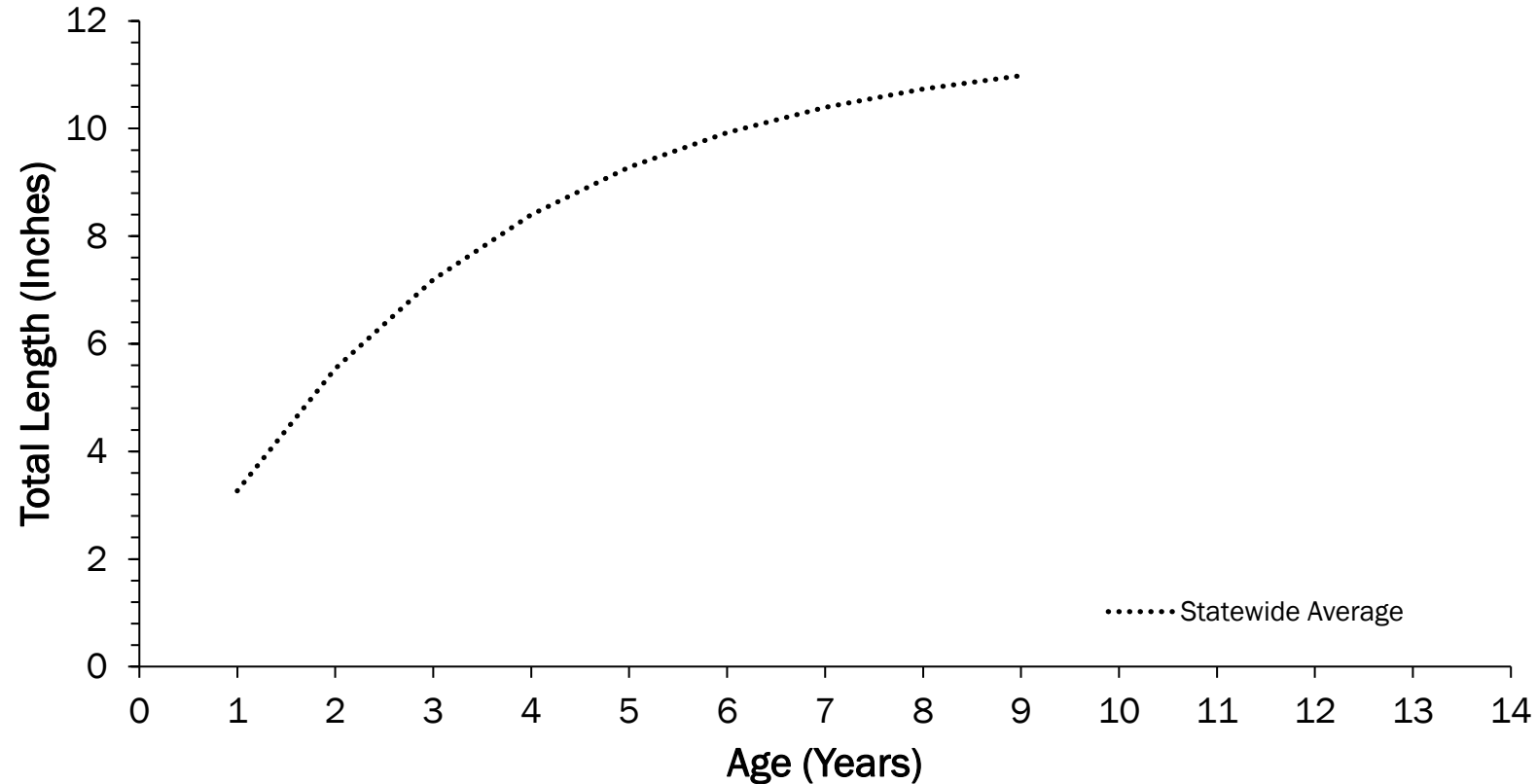
## Black Crappie Length Frequency Distribution





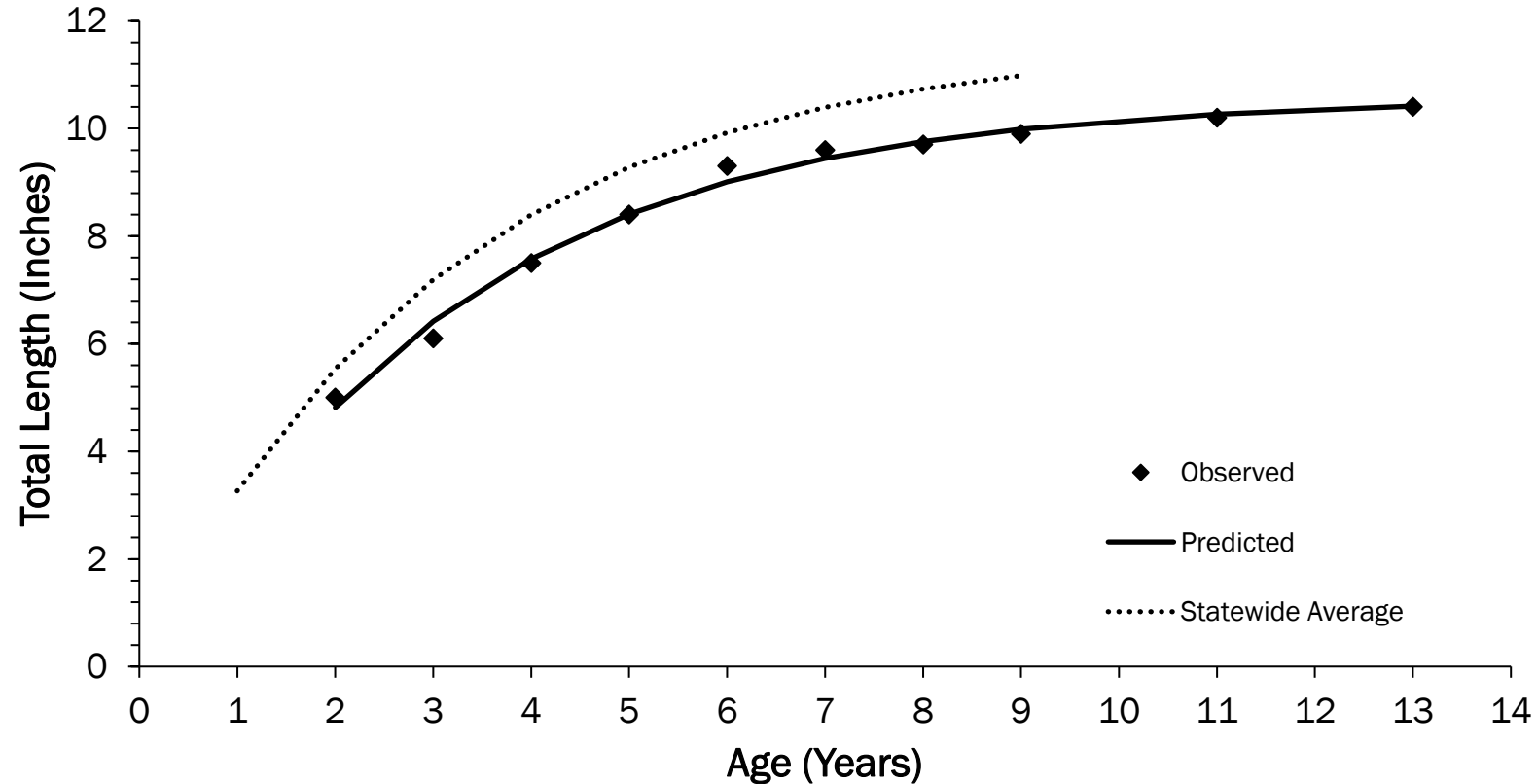
# Cedar Lake

## Black Crappie Growth



# Cedar Lake

## Black Crappie Growth



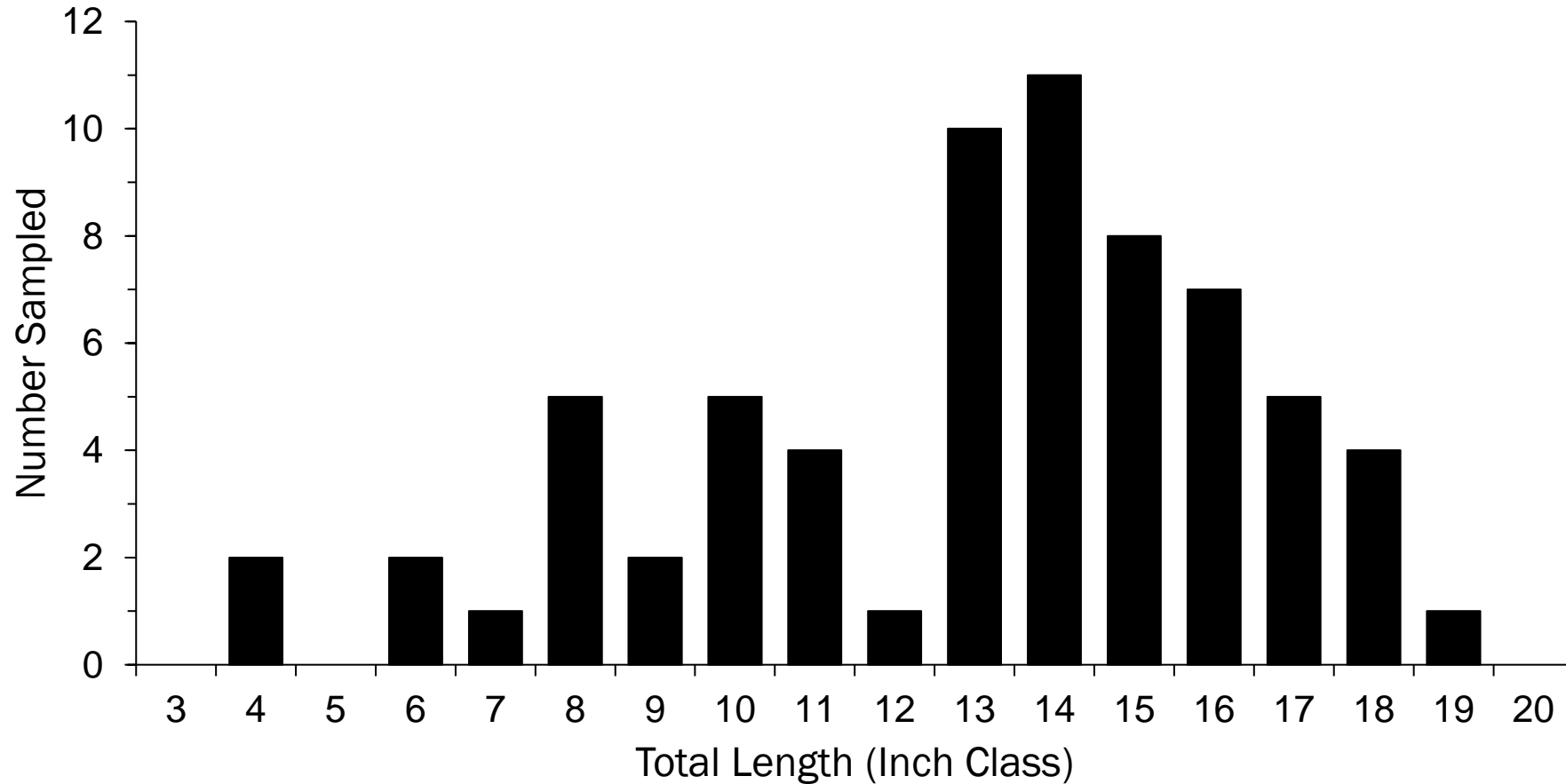
# Cedar Lake

- Electrofishing results:
- Largemouth bass:
  - Captured 68
  - CPUE = 27.2 per mile of electrofishing
    - 69<sup>th</sup> percentile
  - Mean size = 13.4 inches
    - Range = 4.3 - 19.4 inches



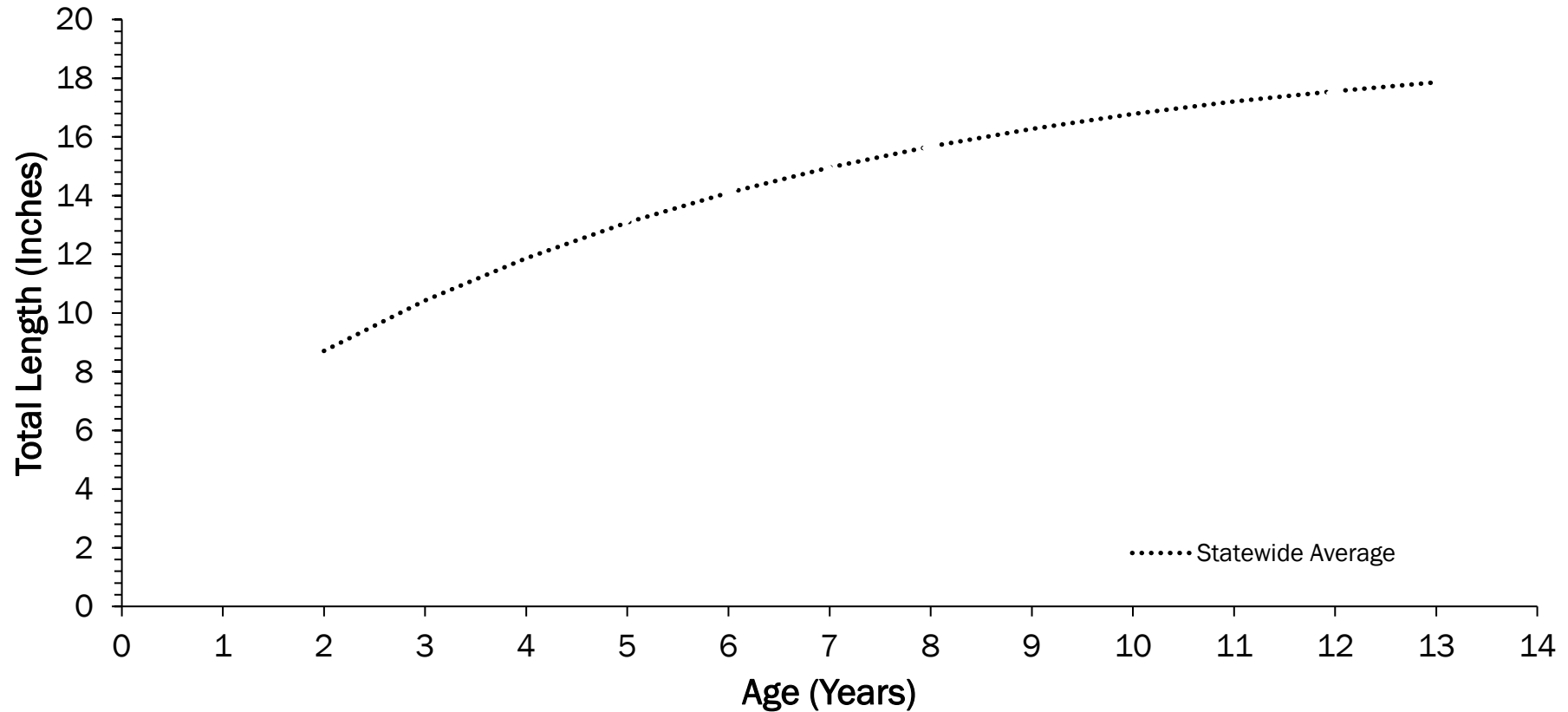
# Cedar Lake

## Largemouth Bass Length Frequency



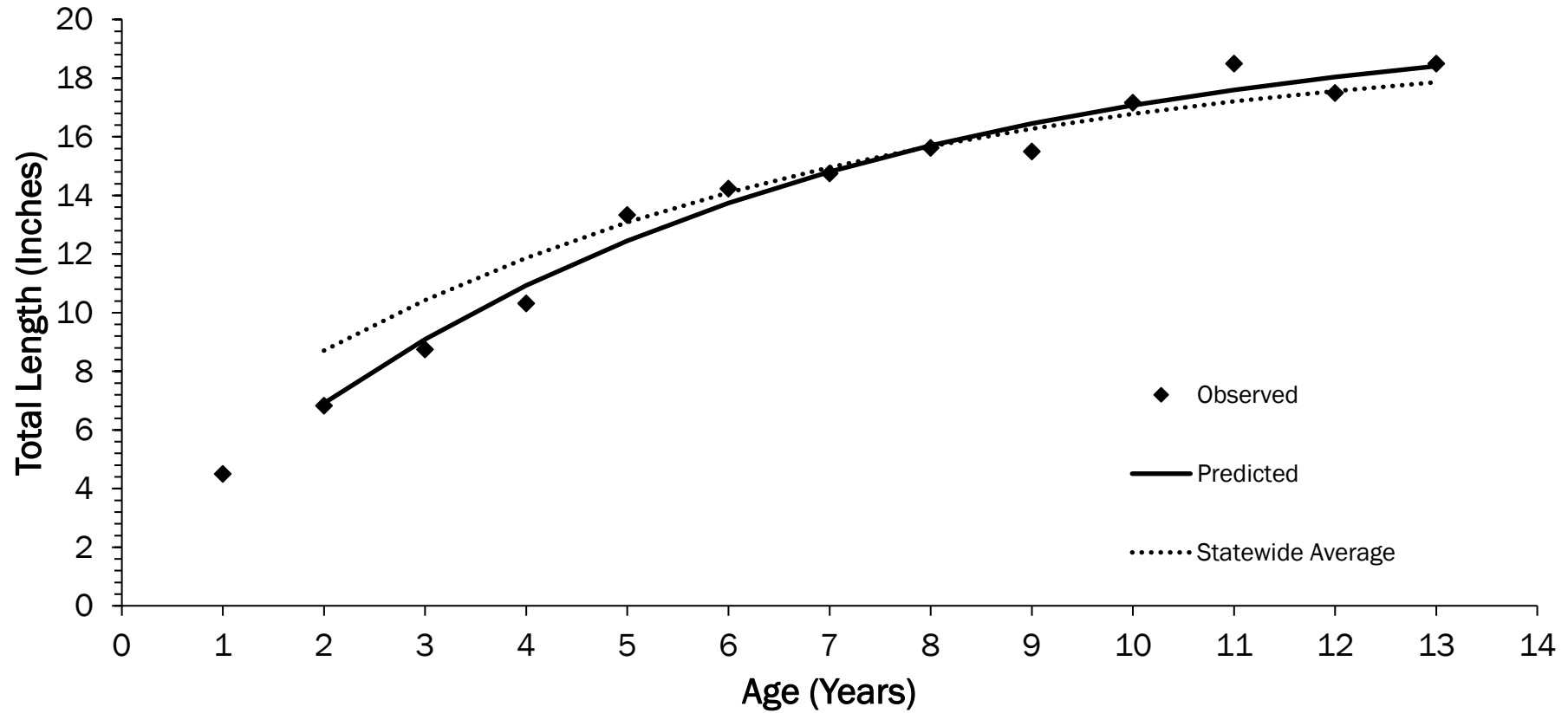
# Cedar Lake

## Largemouth Bass Growth



# Cedar Lake

## Largemouth Bass Growth



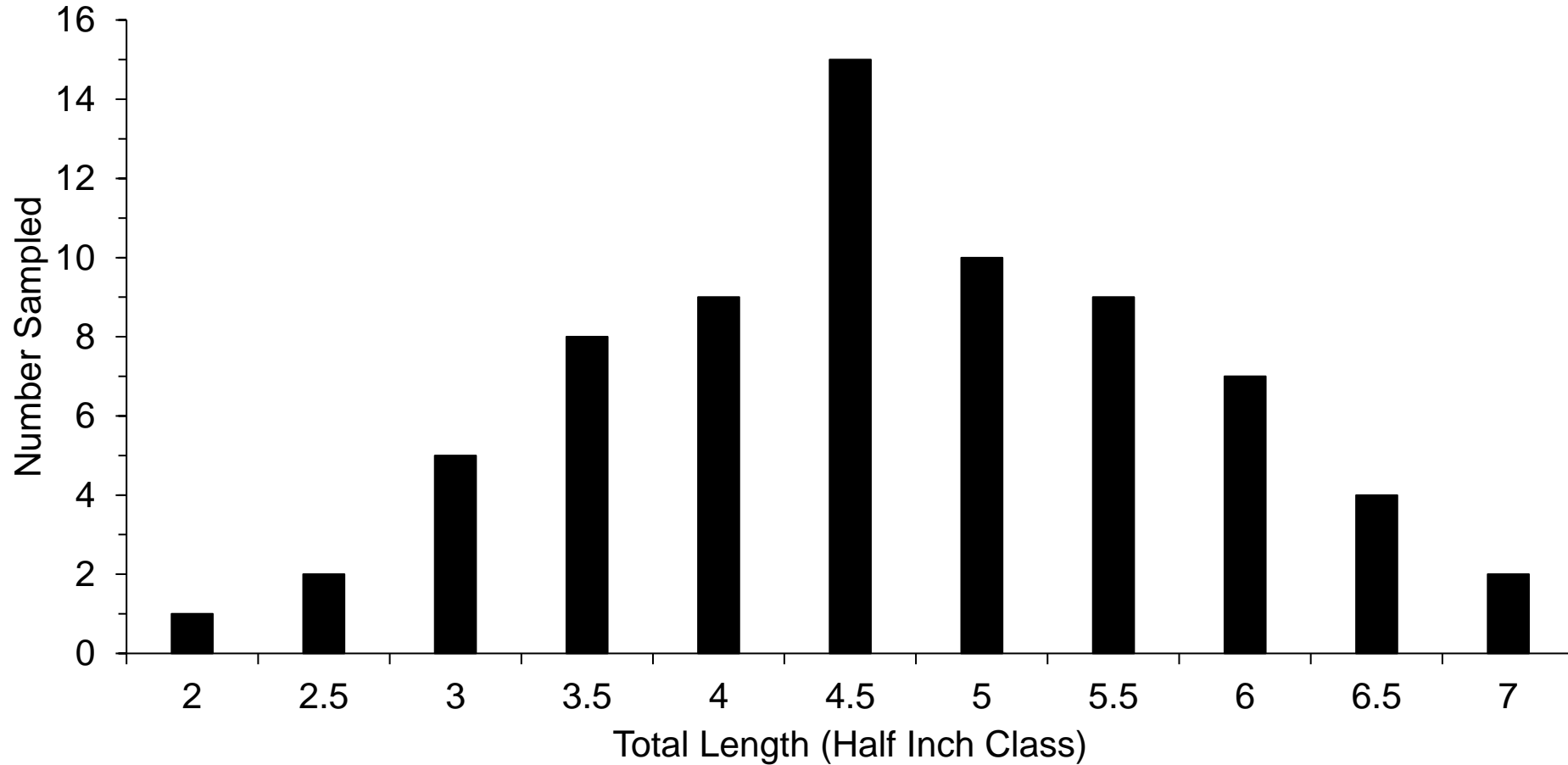
# Cedar Lake

- Electrofishing results:
- Bluegill:
  - Captured 72
  - CPUE = 72 per mile of electrofishing
    - 45<sup>th</sup> percentile
  - Mean size = 4.9 inches
    - Range = 2.7 - 7.4 inches



# Cedar Lake

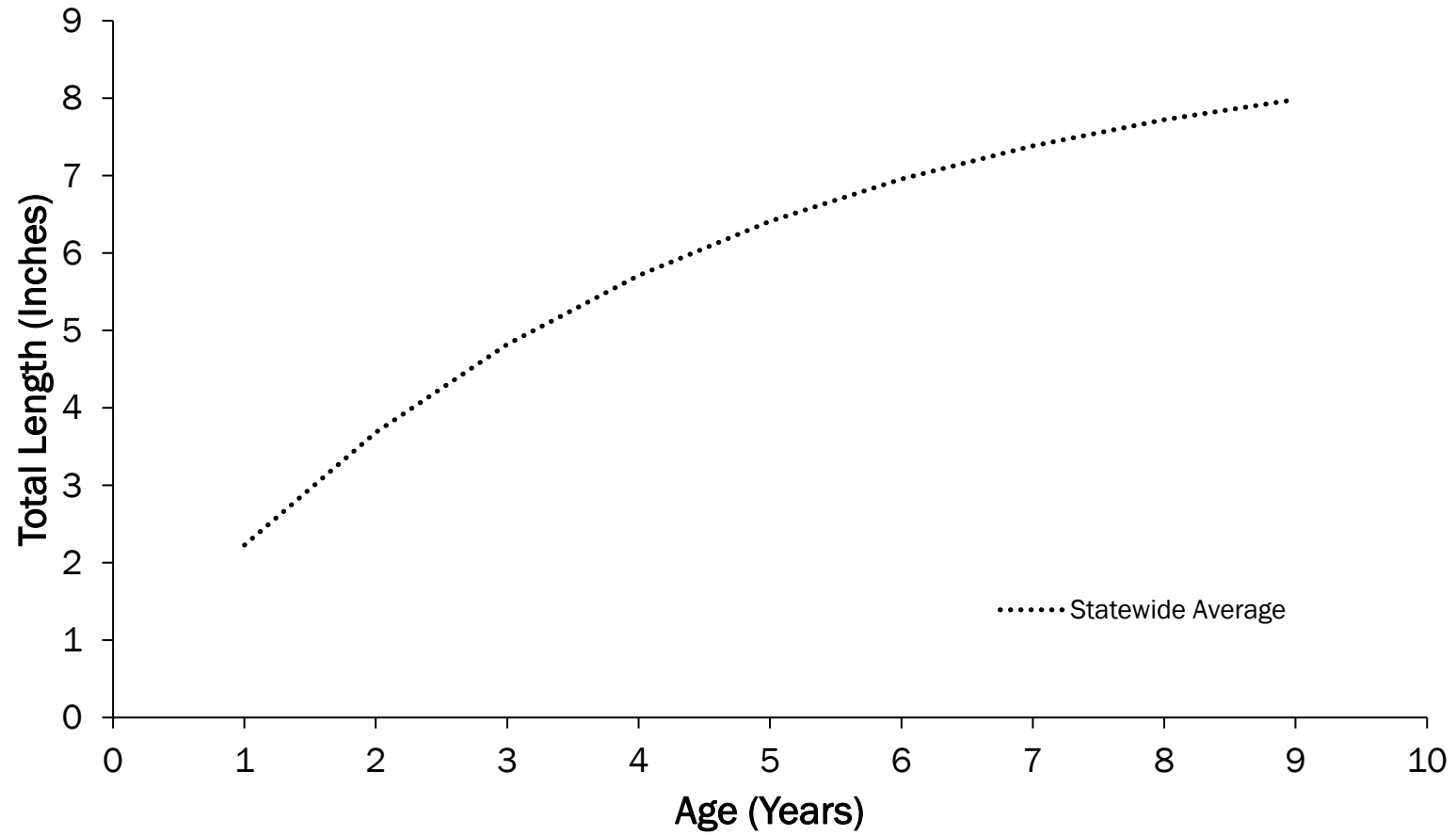
## Bluegill Length Frequency Distribution





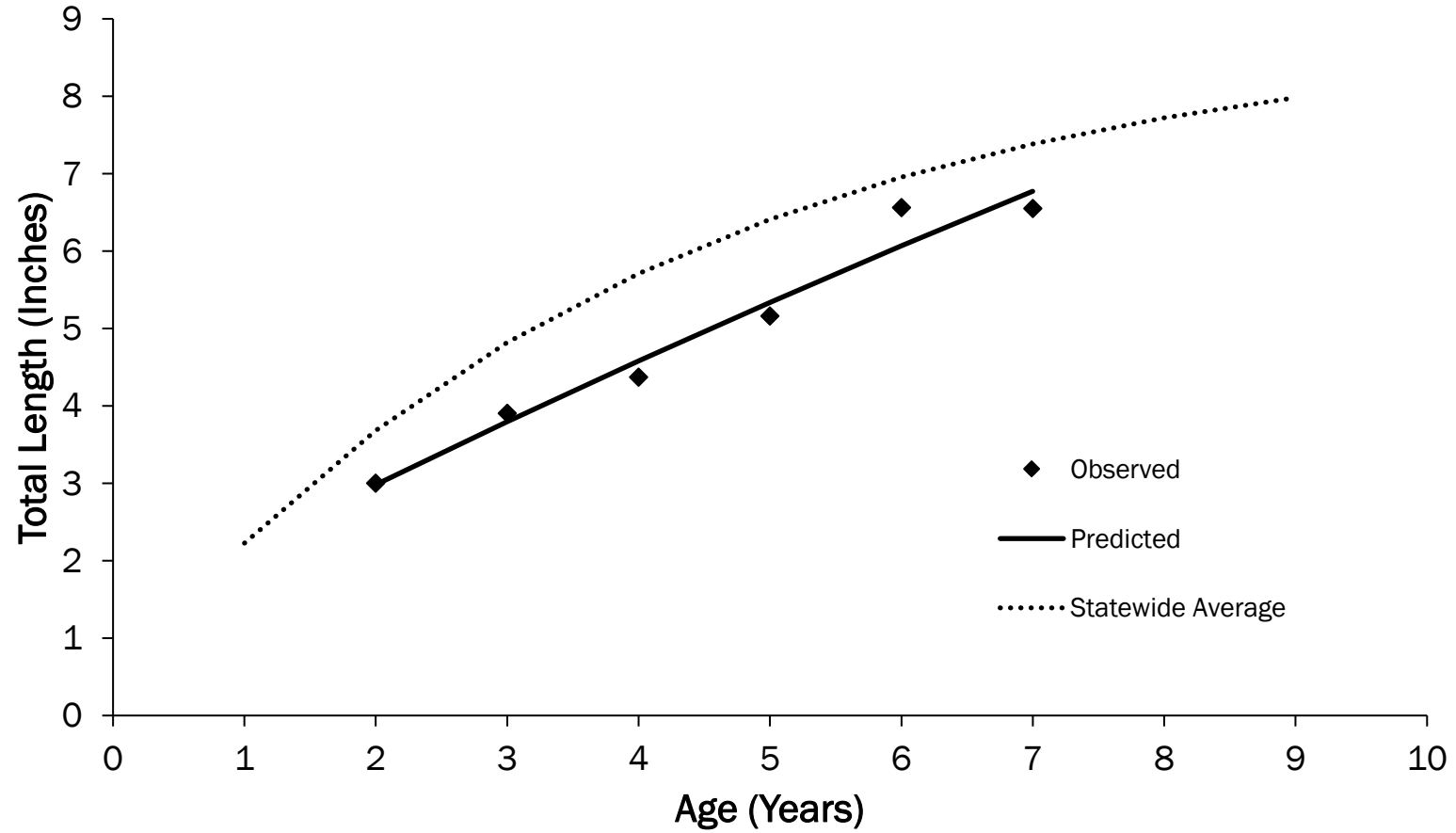
# Cedar Lake

## Bluegill Growth



# Cedar Lake

## Bluegill Growth



# Cedar Lake Summary and Management Recommendations

- Northern pike:
  - High density, slow growing fishery with few legal size fish
  - Change regulation to slot limit
- Largemouth Bass:
  - Moderate to high density with good size structure and average growth
  - No changes recommended
- Walleye
  - Captured 6 walleyes in spring netting survey
  - All >23 inches
  - Last stocked in 2014
  - Stocked 4,713 small fingerlings in June 2024
    - Continue stocking in future
- Panfish:
  - Crappie and bluegill found in moderate densities
  - Moderate size structure
  - Slow growth
  - Regulation change
    - 10 aggregate bag limit with no more than 5 bluegill
  - Captured 18 pumpkinseed
  - Captured 5 yellow perch



# CONNECT WITH US

**Jason Breeggemann**

Jason.Breeggemann@wisconsin.gov

920-662-5480

920-420-4619



/WIDNR



@WIDNR



@WI\_DNR



/WIDNRTV



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OFF THE RECORD"