

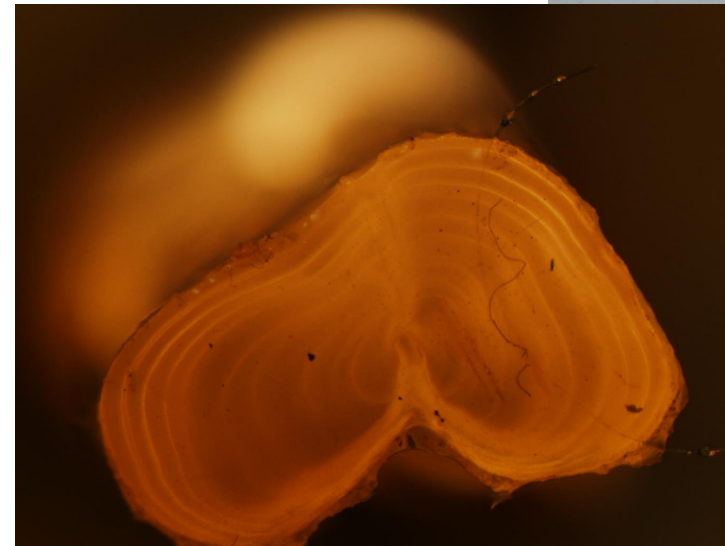
Results from Comprehensive Fisheries Surveys of Long Lake and Cedar Lake



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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



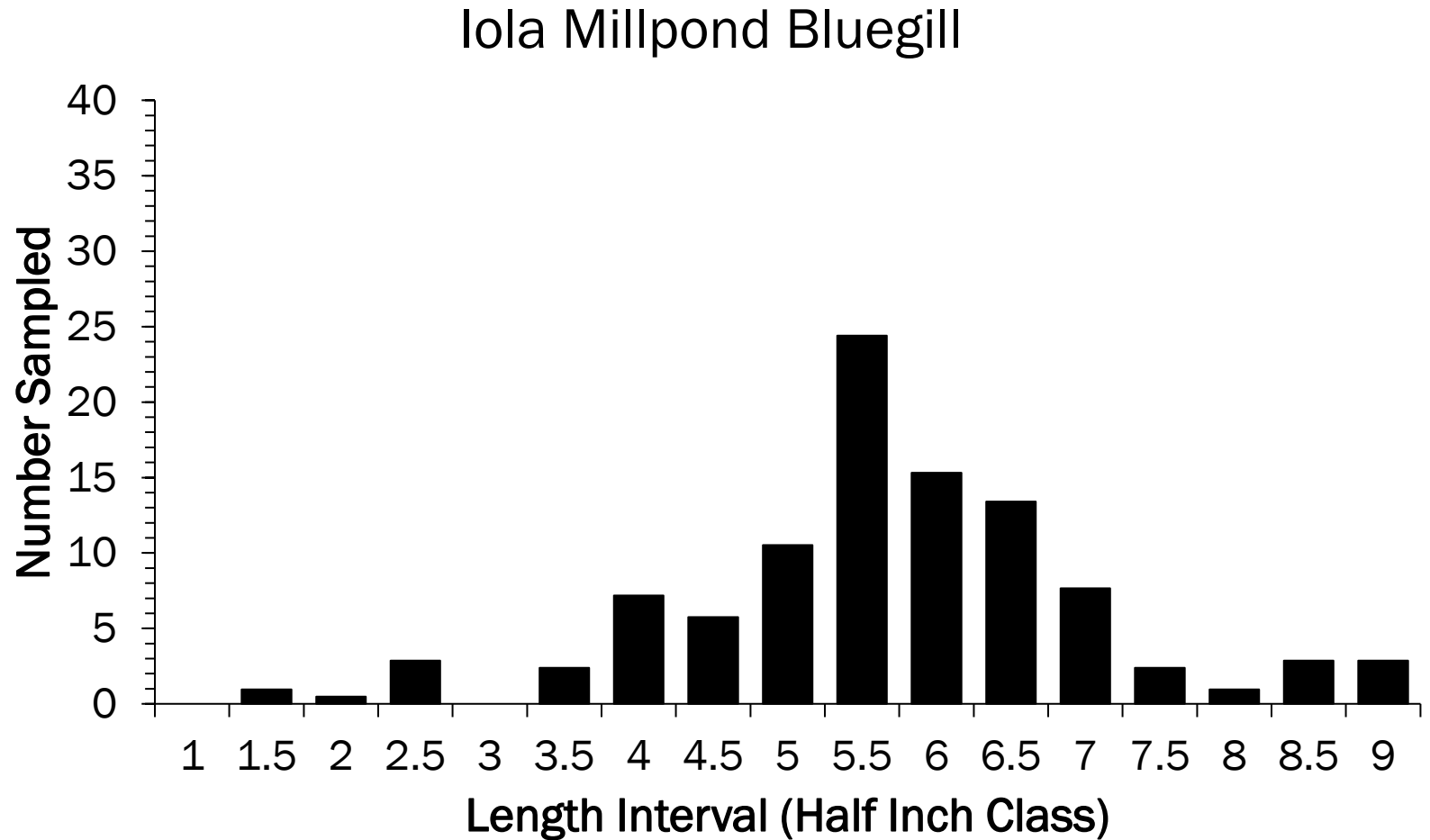
Standard Fisheries Metrics

- 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



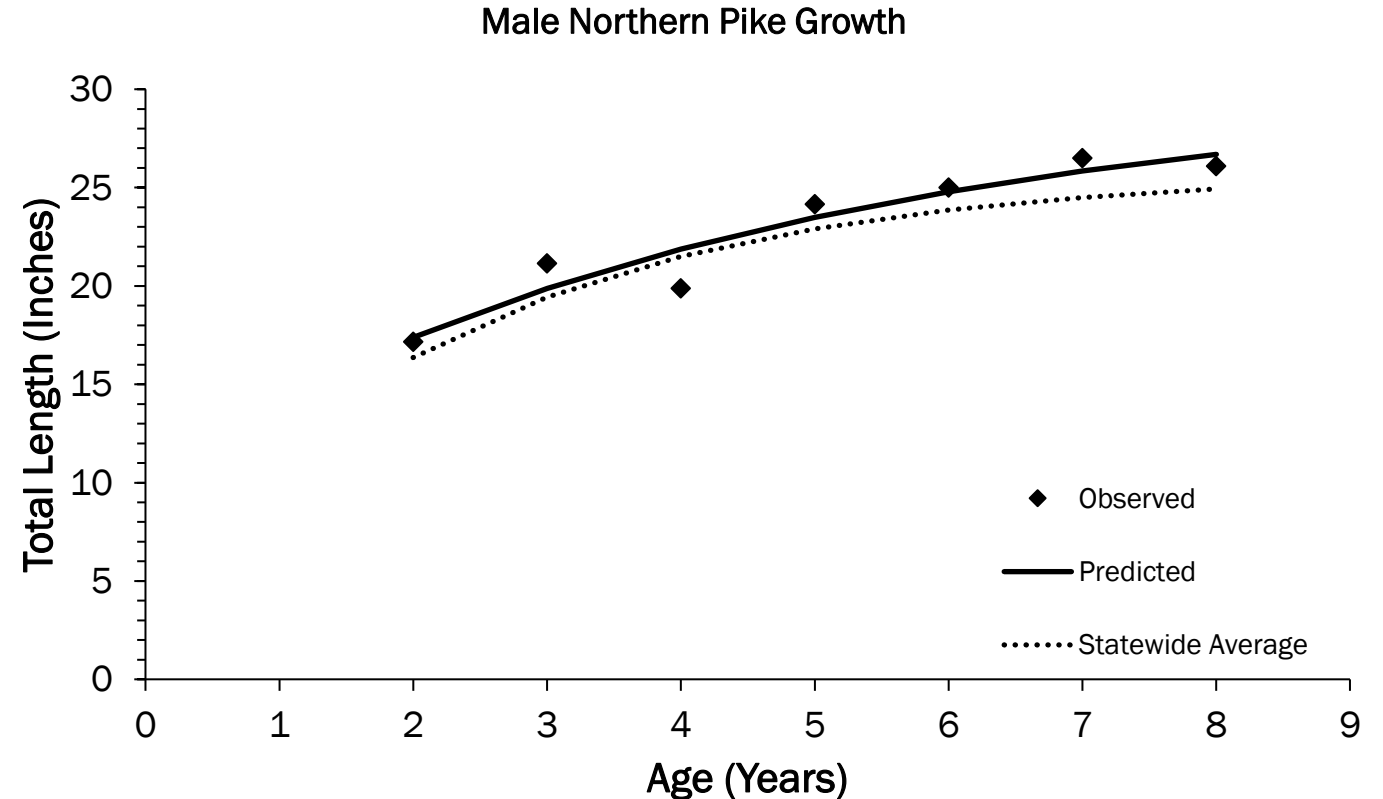
Standard Fish Metrics

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



Standard Fisheries Metrics

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



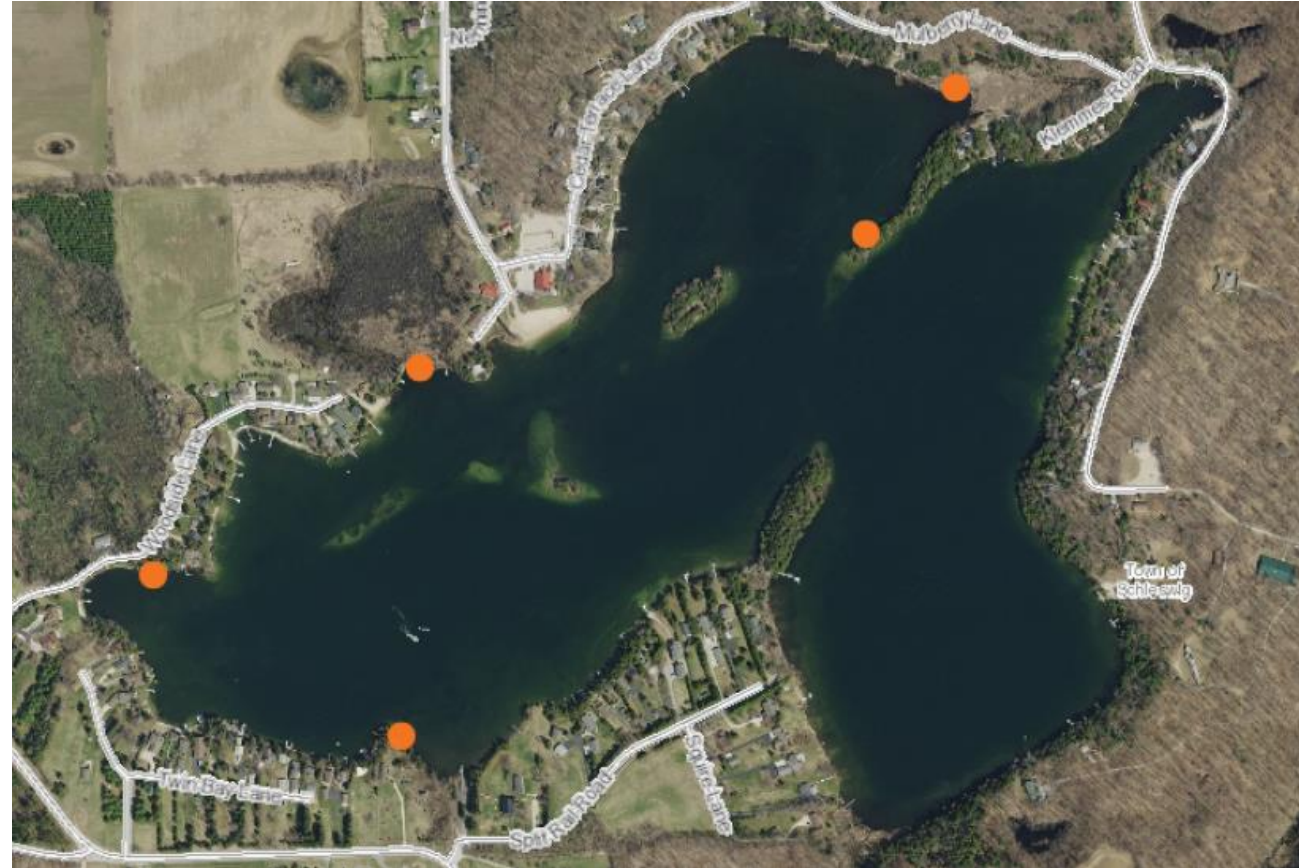
Fisheries Management Goal

- 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 7th
 - 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 18th
 - 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

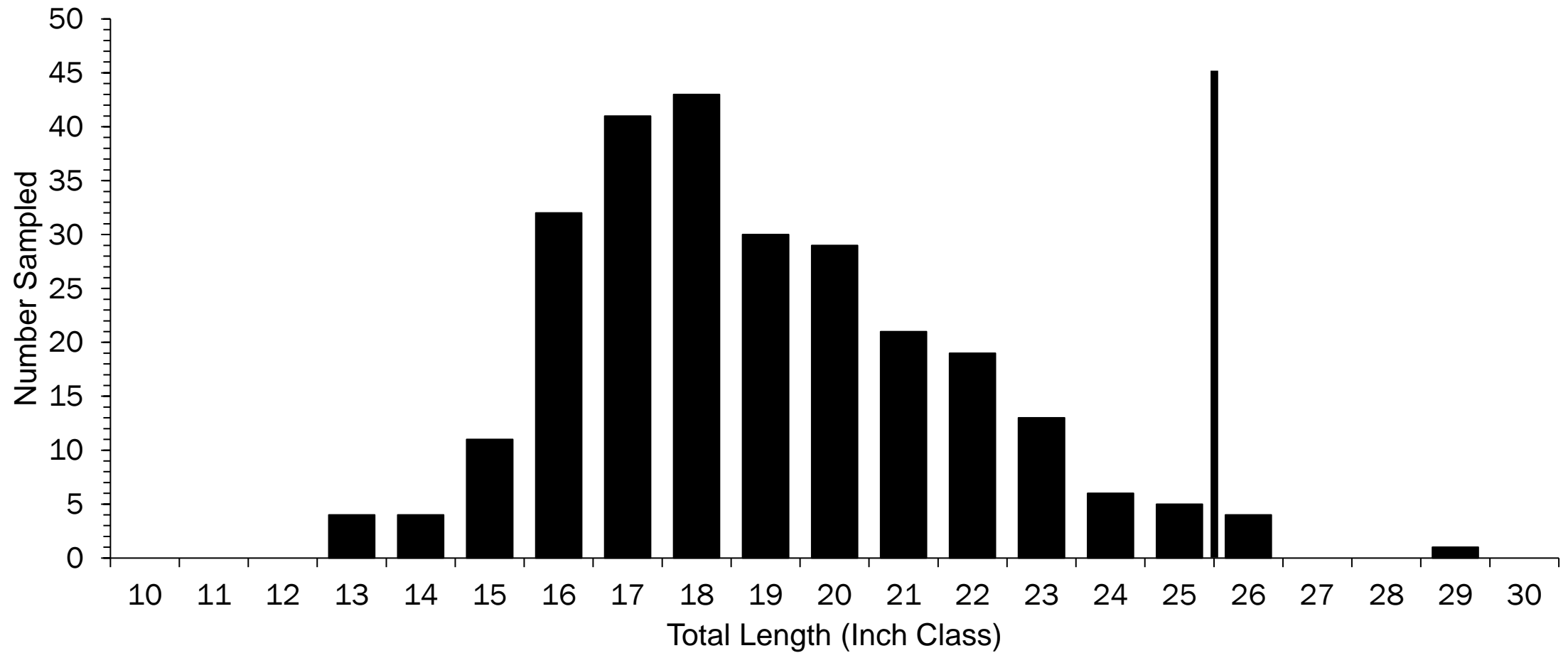
- Fyke netting results:
- Northern pike:
 - Captured 338
 - CPUE = 16.9 per net night!
 - 95th percentile
 - Mean size = 19.4 inches
 - Range = 13.4 – 29.6 inches



Photo Credit: Scott Otterson!

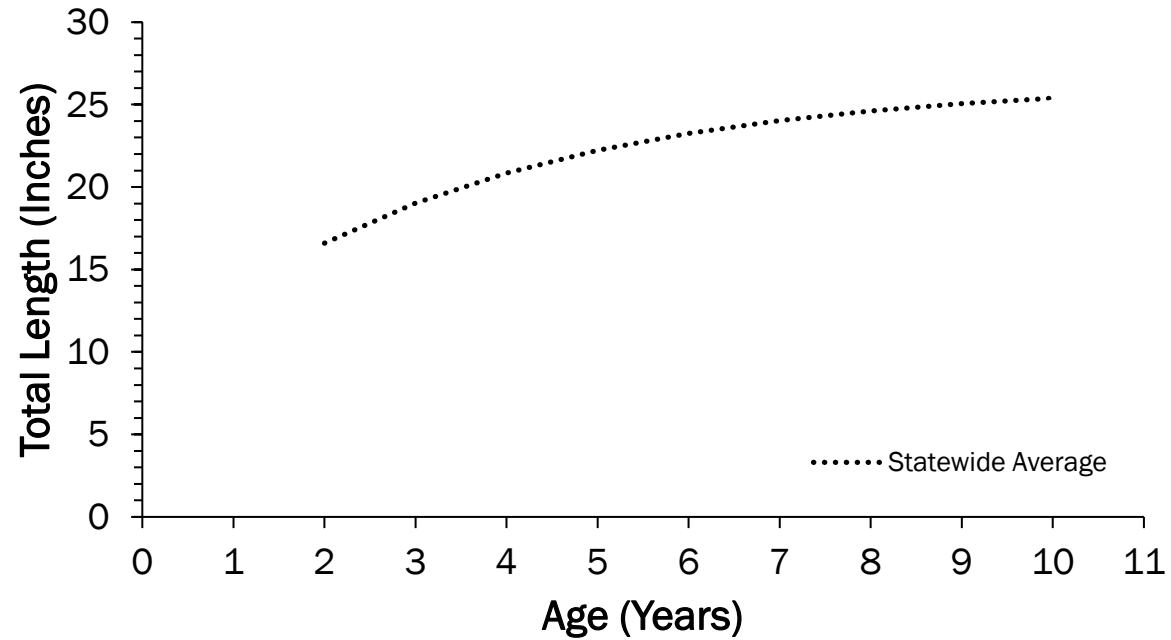
Cedar Lake

Northern Pike Length Frequency Distribution



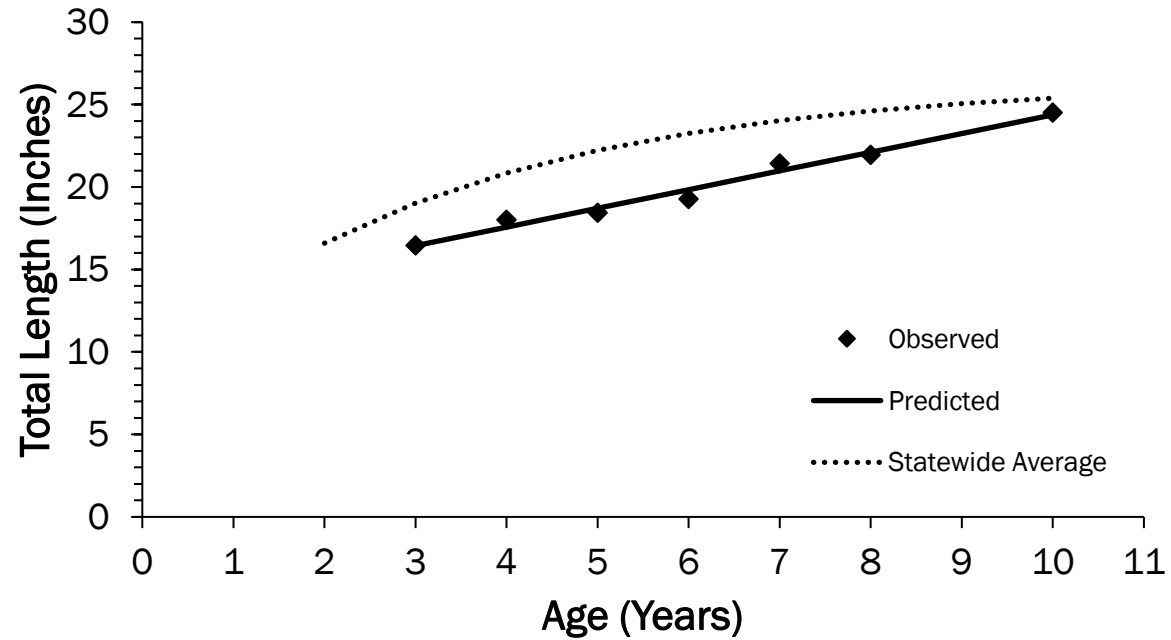
Cedar Lake

Male Northern Pike



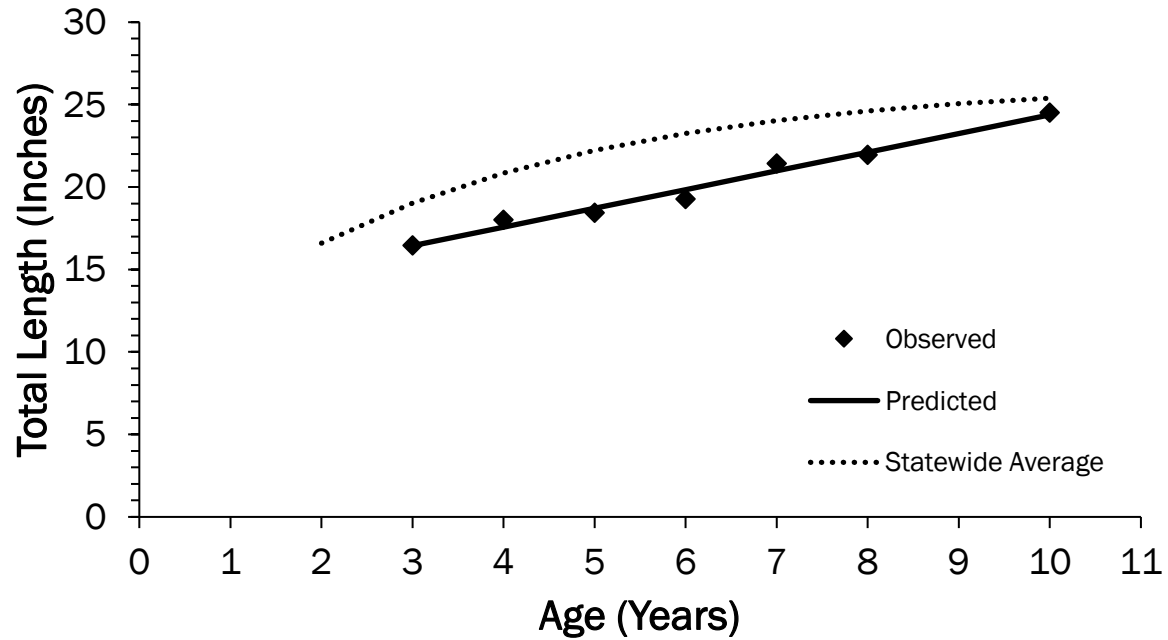
Cedar Lake

Male Northern Pike

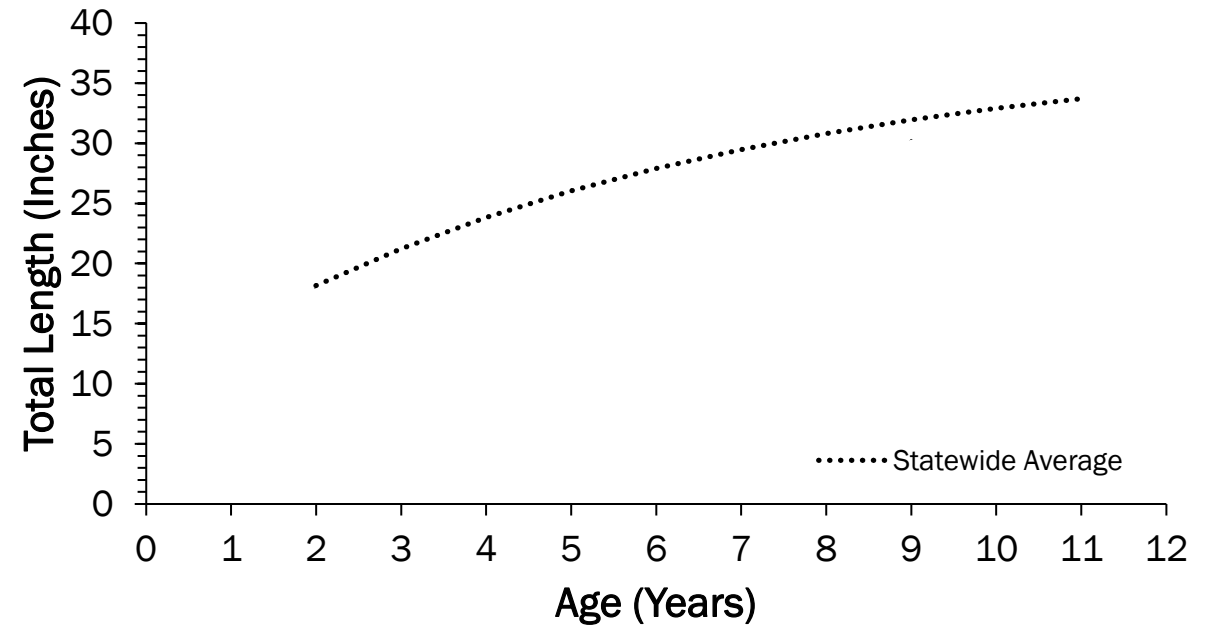


Cedar Lake

Male Northern Pike

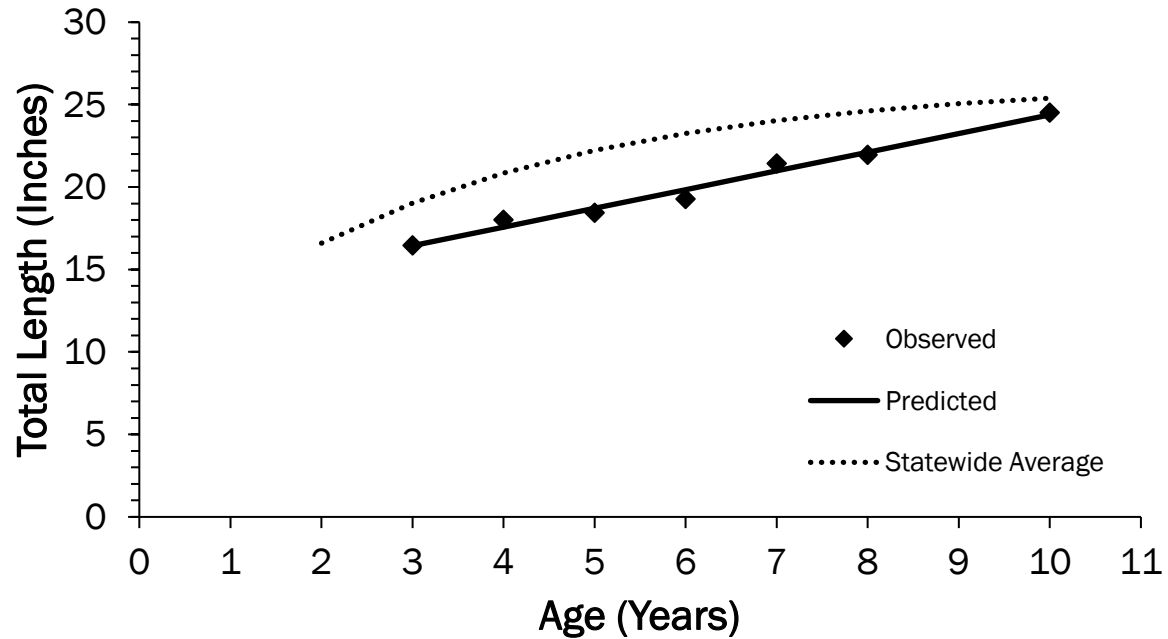


Female Northern Pike

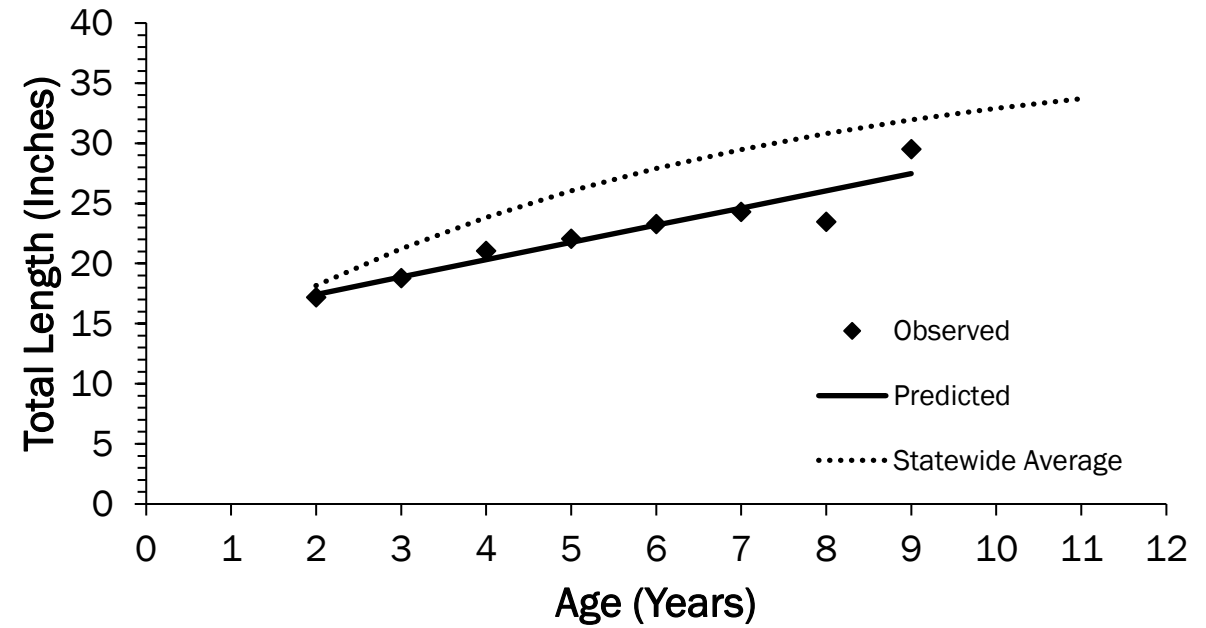


Cedar Lake

Male Northern Pike



Female Northern Pike



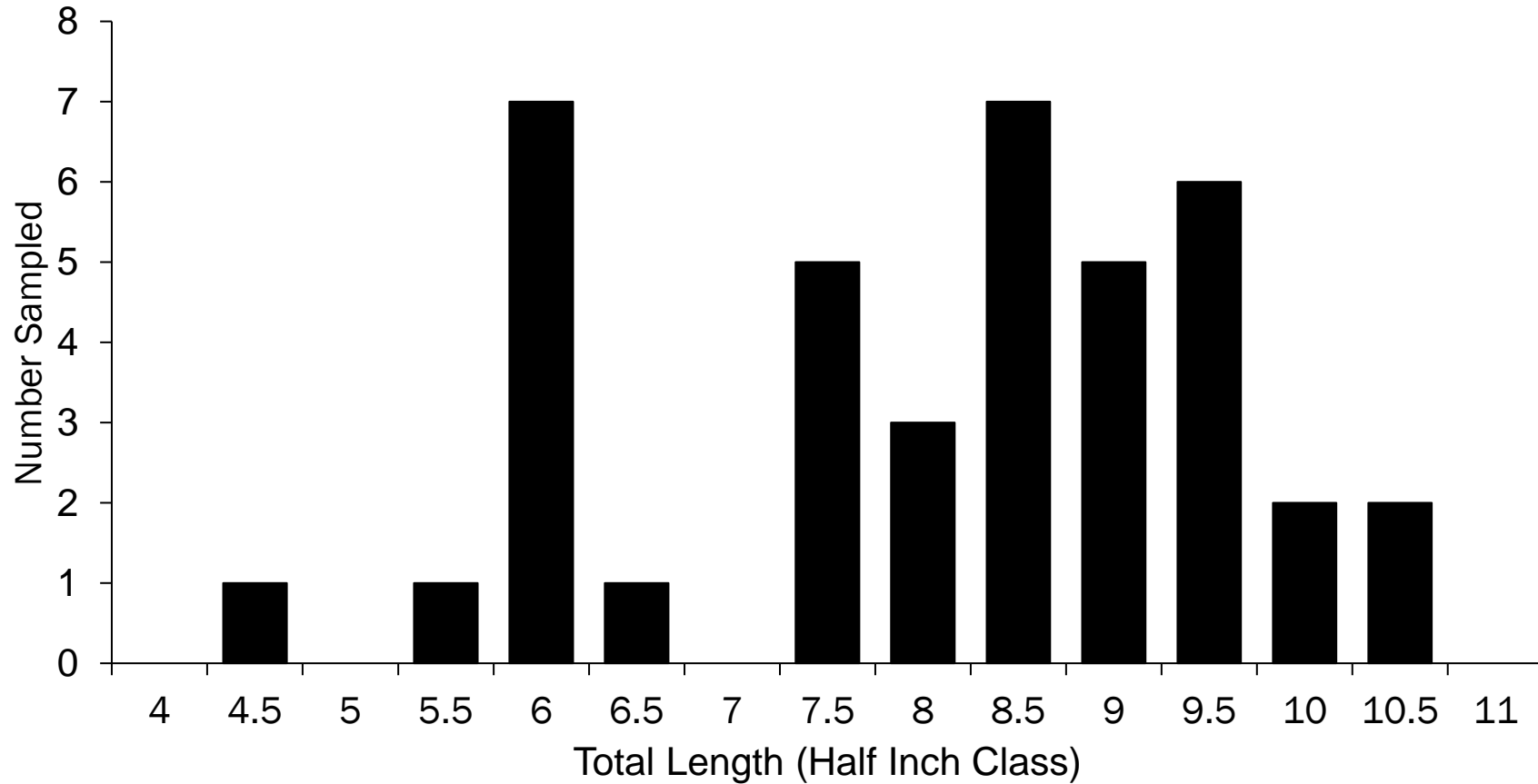
Cedar Lake

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



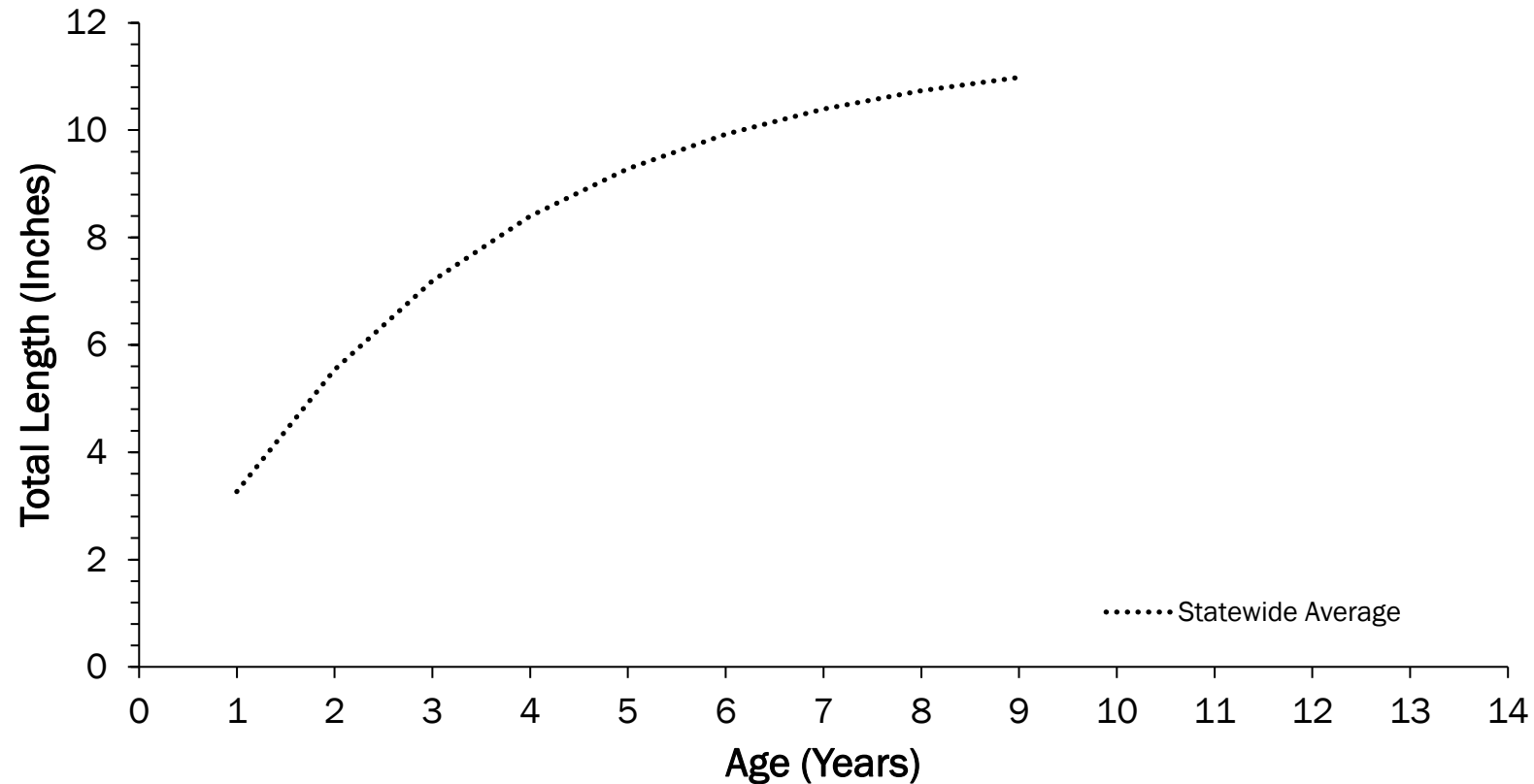
Cedar Lake

Black Crappie Length Frequency Distribution



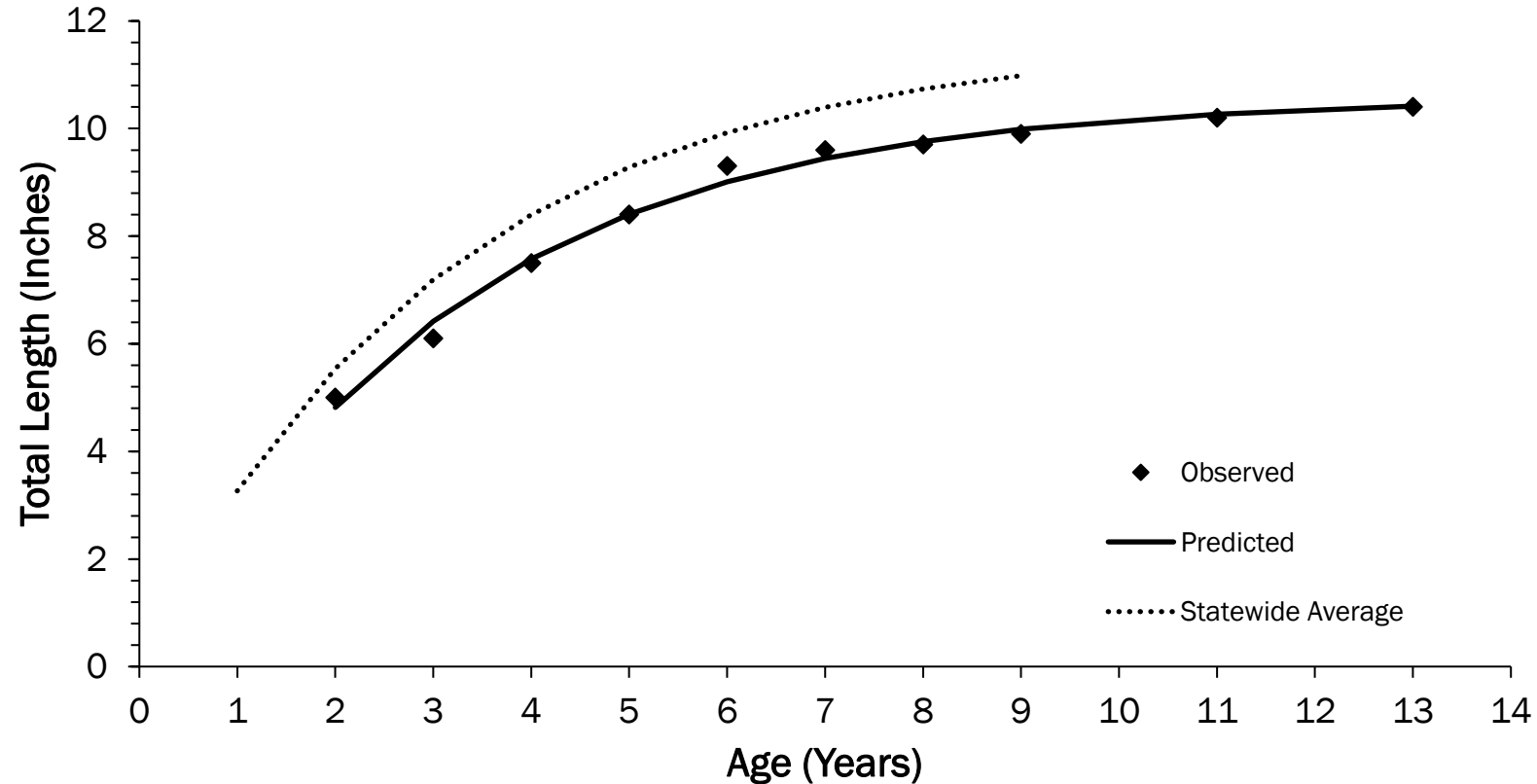
Cedar Lake

Black Crappie Growth



Cedar Lake

Black Crappie Growth



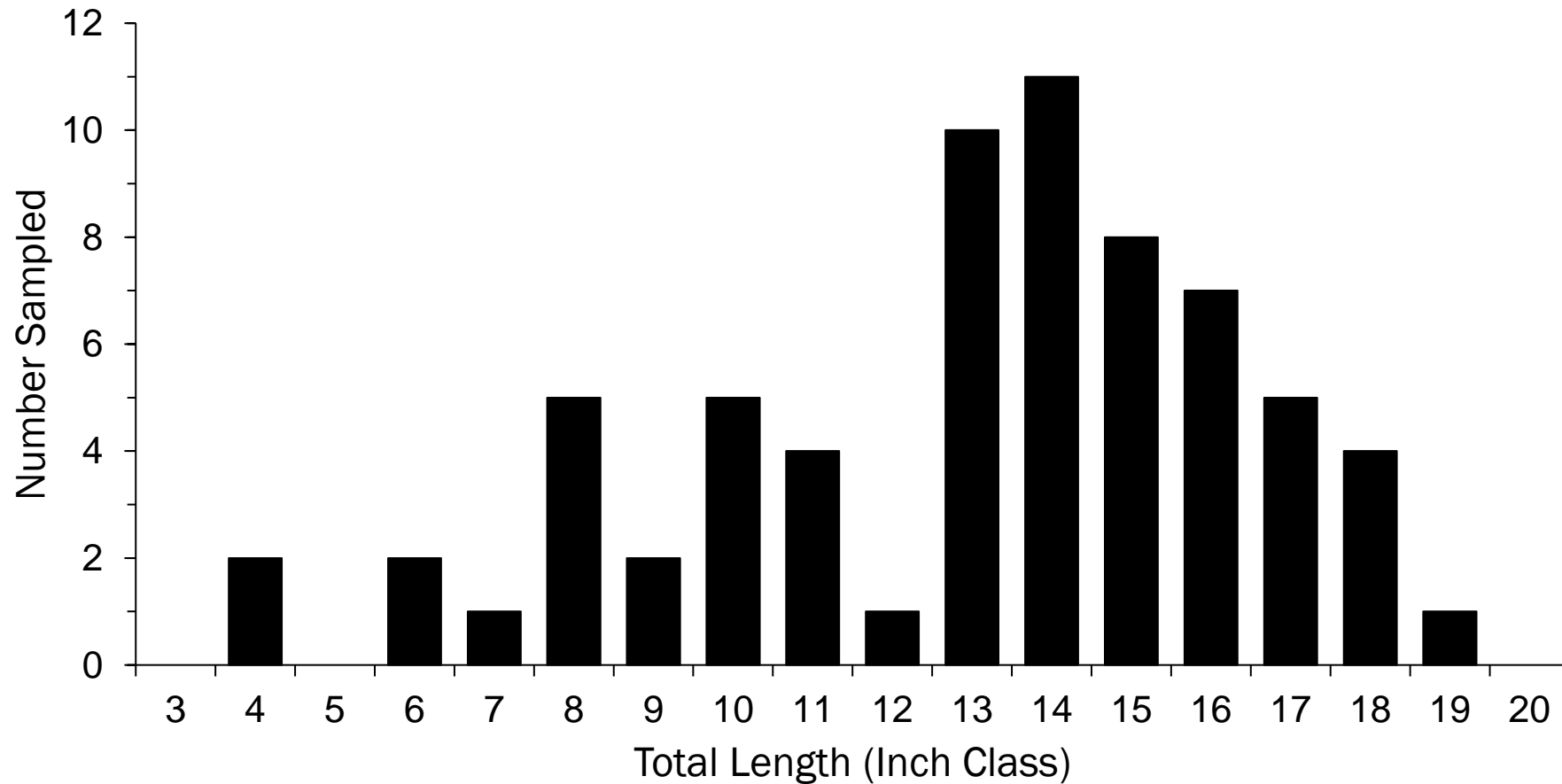
Cedar Lake

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



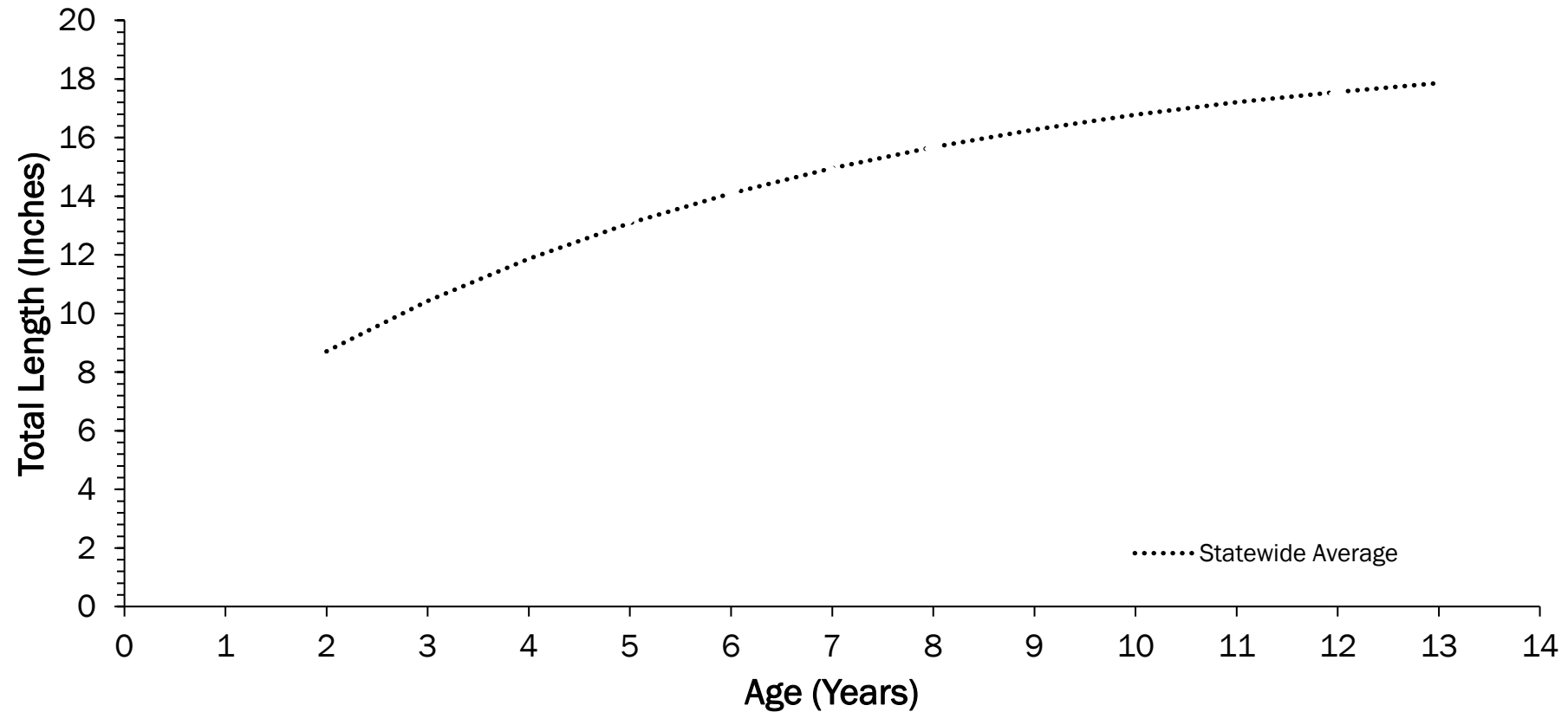
Cedar Lake

Largemouth Bass Length Frequency



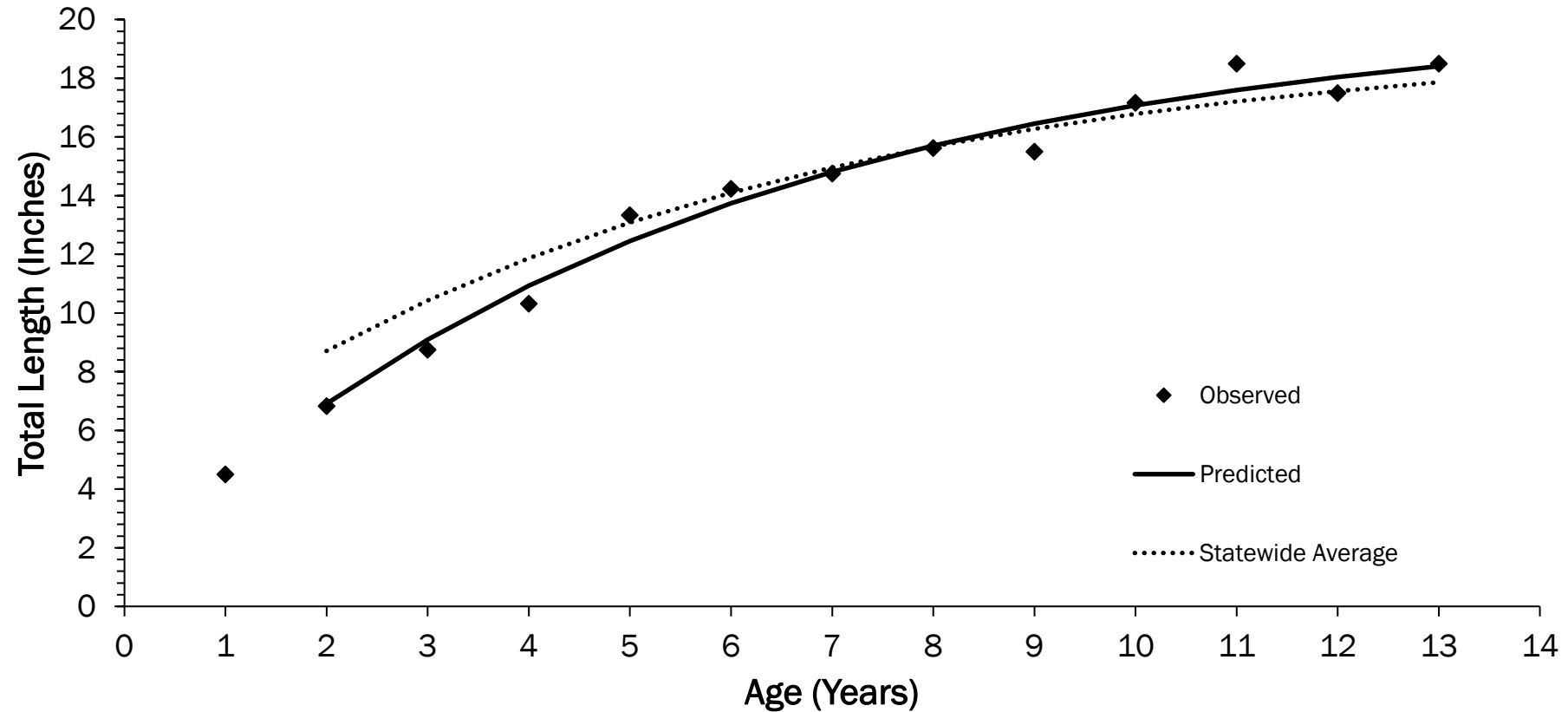
Cedar Lake

Largemouth Bass Growth



Cedar Lake

Largemouth Bass Growth



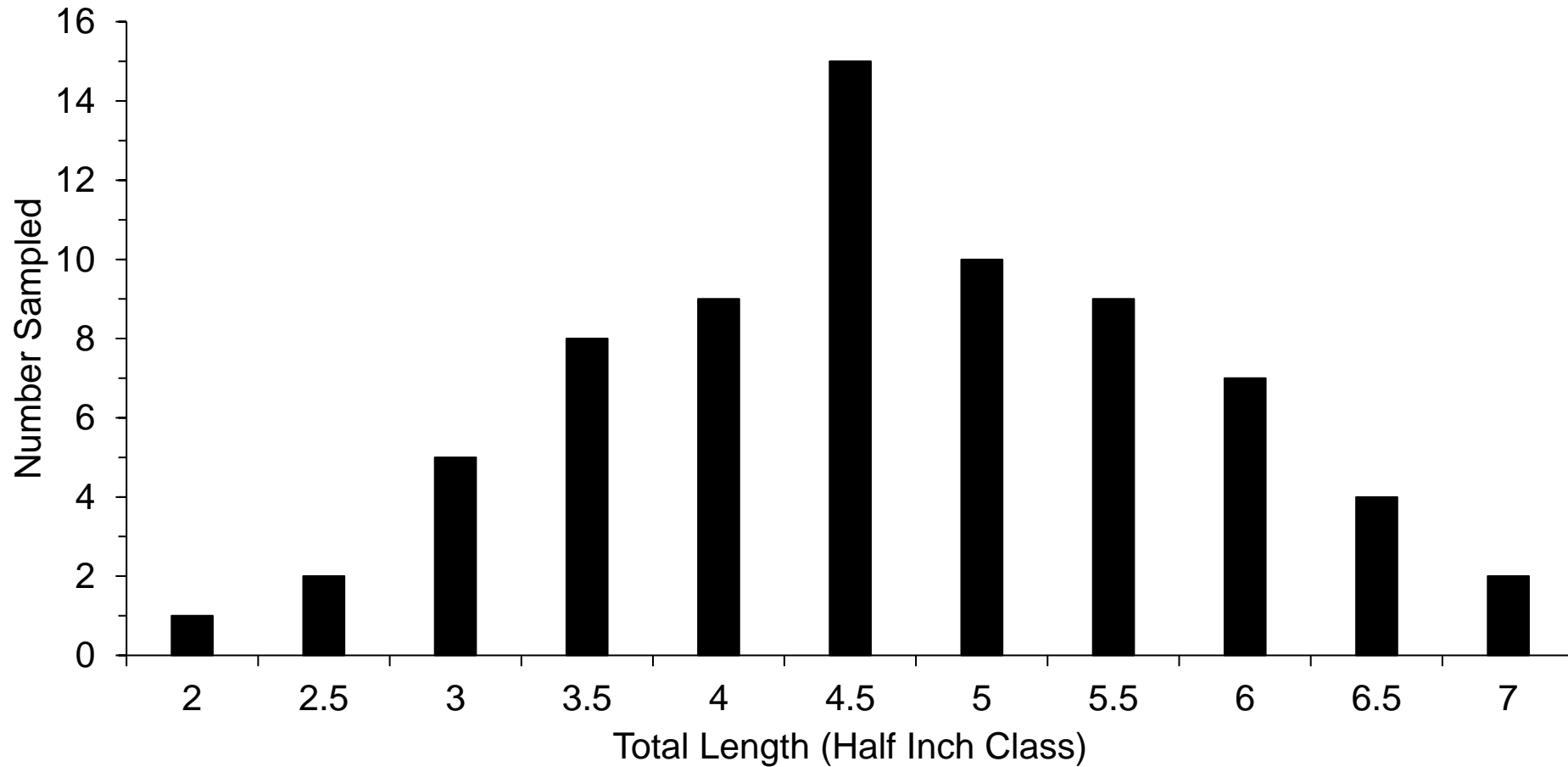
Cedar Lake

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



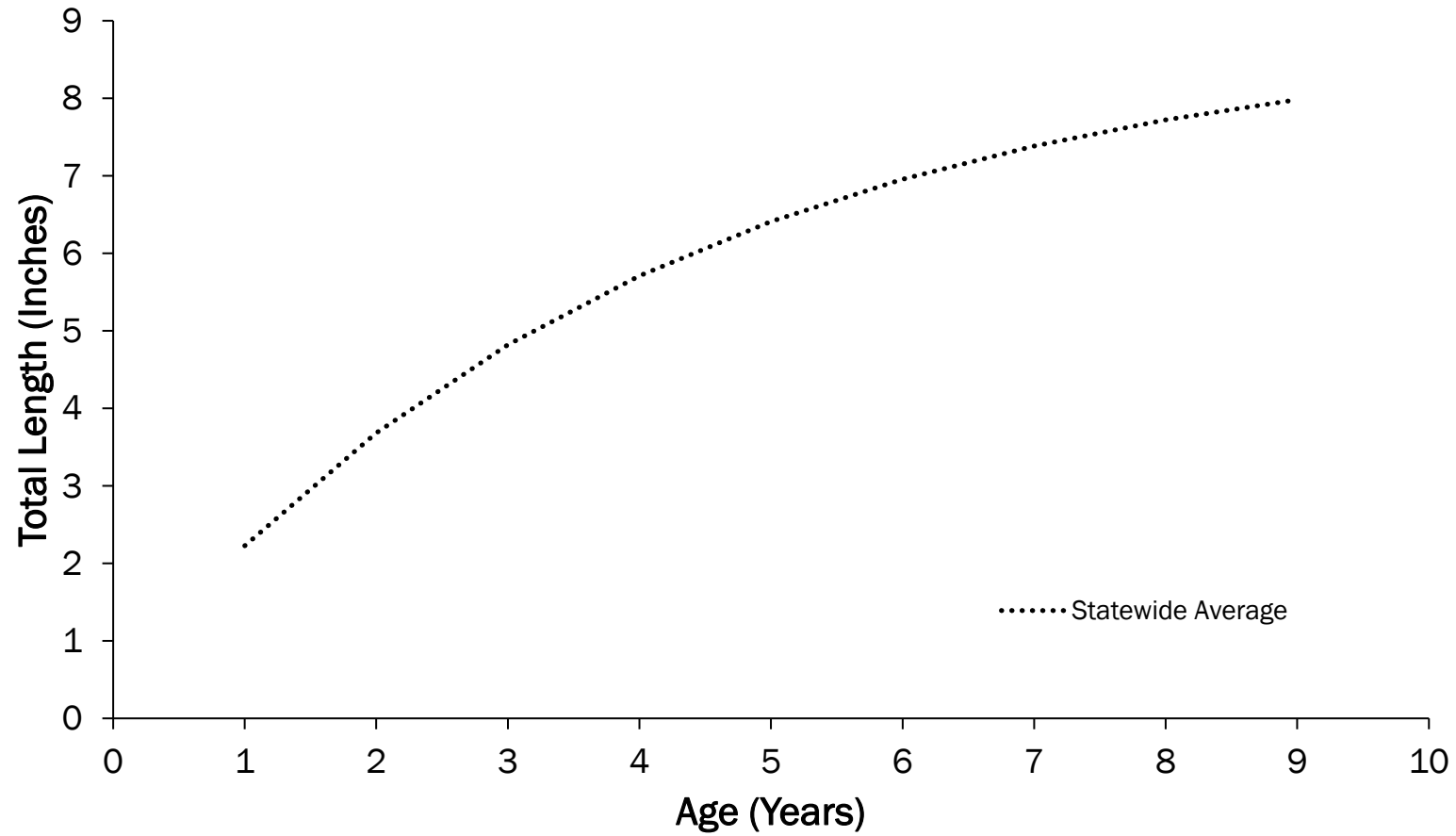
Cedar Lake

Bluegill Length Frequency Distribution



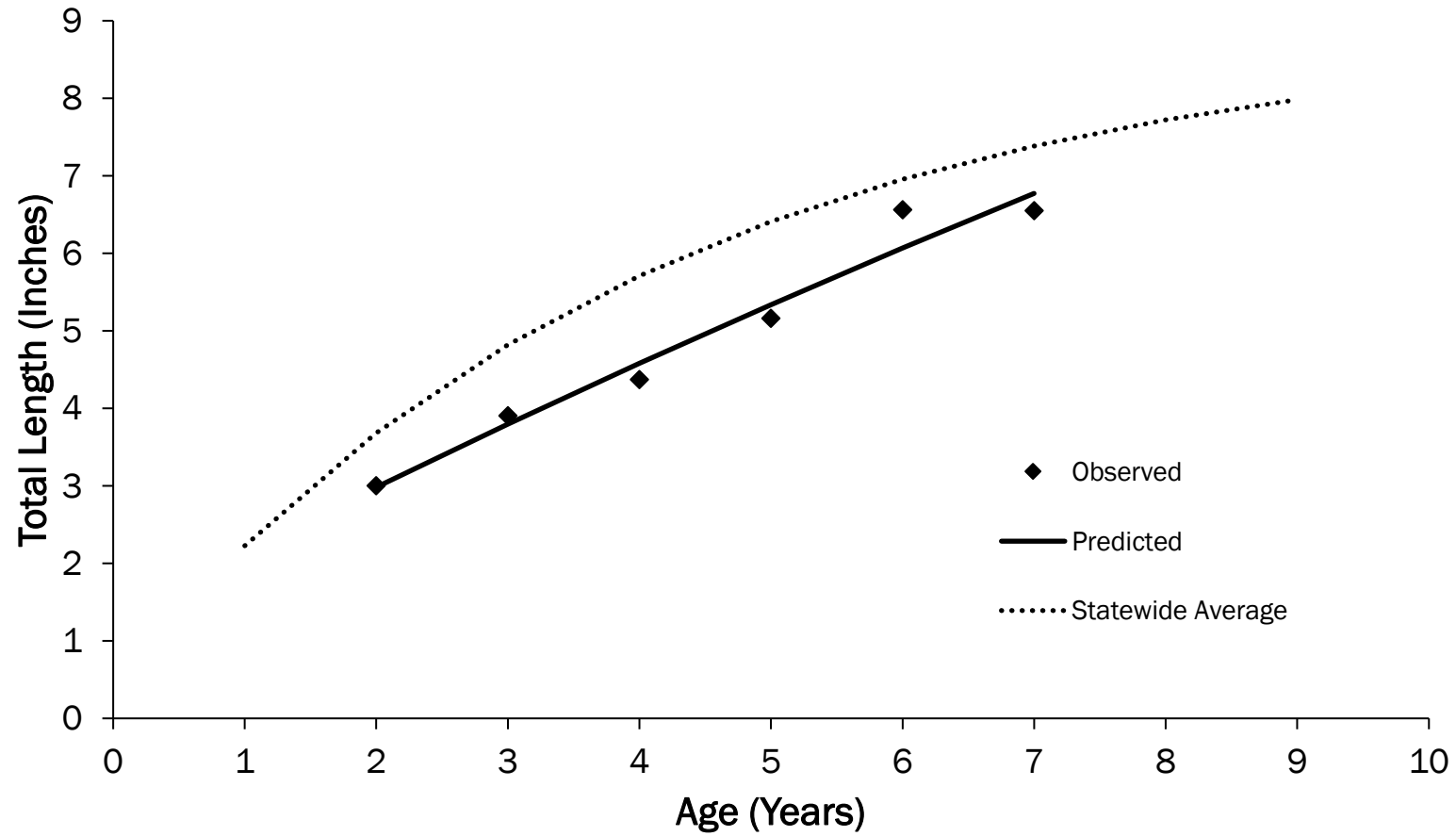
Cedar Lake

Bluegill Growth



Cedar Lake

Bluegill Growth



Cedar Lake Summary and Management Recommendations

- Captured 6 walleyes
 - All >23 inches
 - Last stocked in 2013
- Captured 18 pumpkinseed
- Captured 5 yellow perch
- 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
- Panfish:
 - Crappie and bluegill found in moderate densities
 - Moderate size structure
 - Slow growth
 - Regulation change?



Long Lake

- Fyke netting survey
 - Set 5 nets April 8th
 - 15 net nights of effort
- 1,454 individual fish
 - 15 species
 - Black crappie, bluegill, northern pike



Long Lake

- Electrofishing survey
 - May 26th
 - 2.5 miles of shoreline
 - 1 mile dip all
 - 1.5 miles gamefish only
- 295 individual fish
 - 11 species
 - Bluegill, largemouth bass, and black crappie



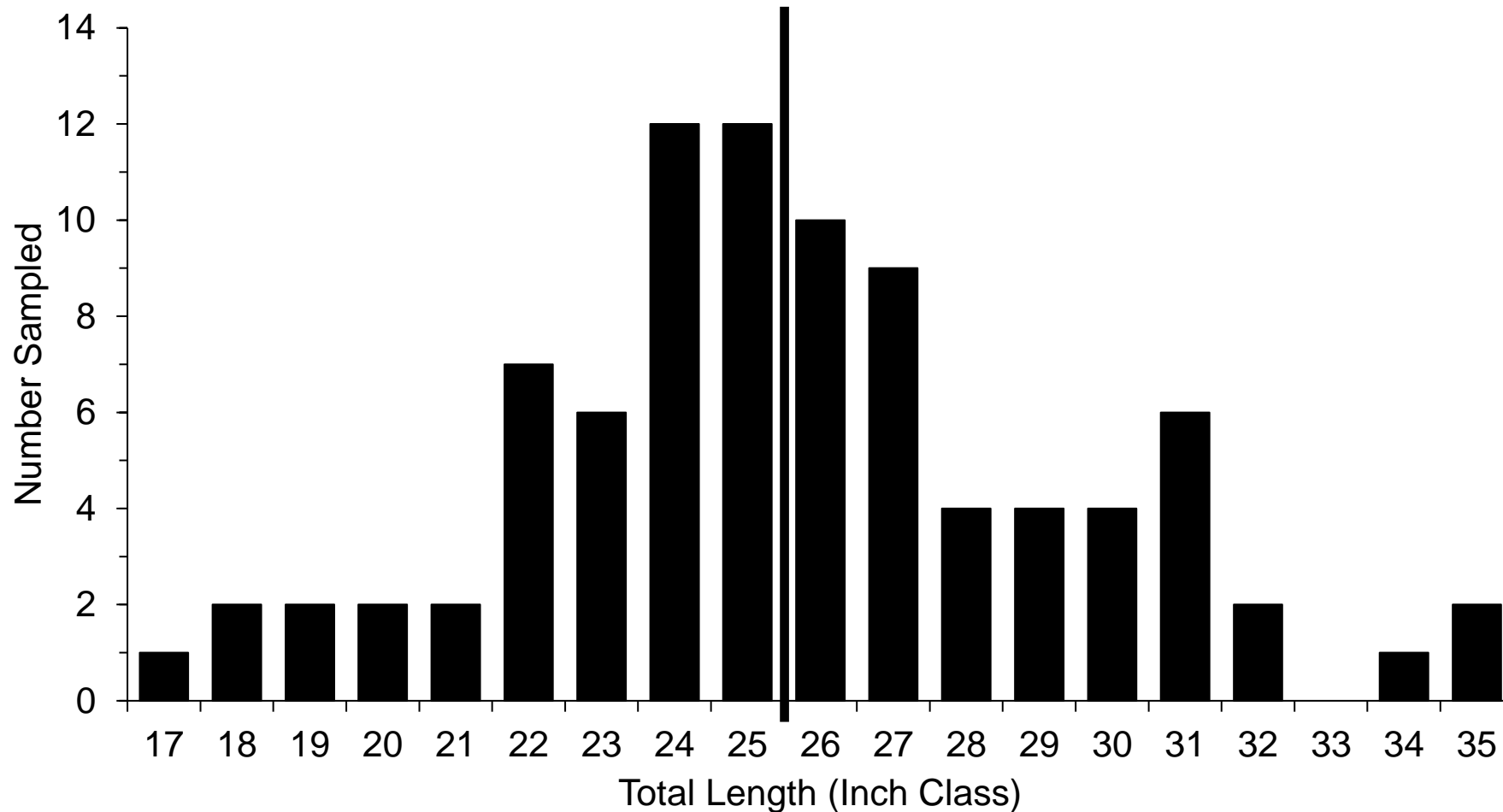
Long Lake

- Fyke netting results:
- Northern pike:
 - Captured 129
 - CPUE = 8.6 per net night
 - 88th percentile
 - Mean size = 26.1 inches
 - Range = 17.5 – 35.8 inches



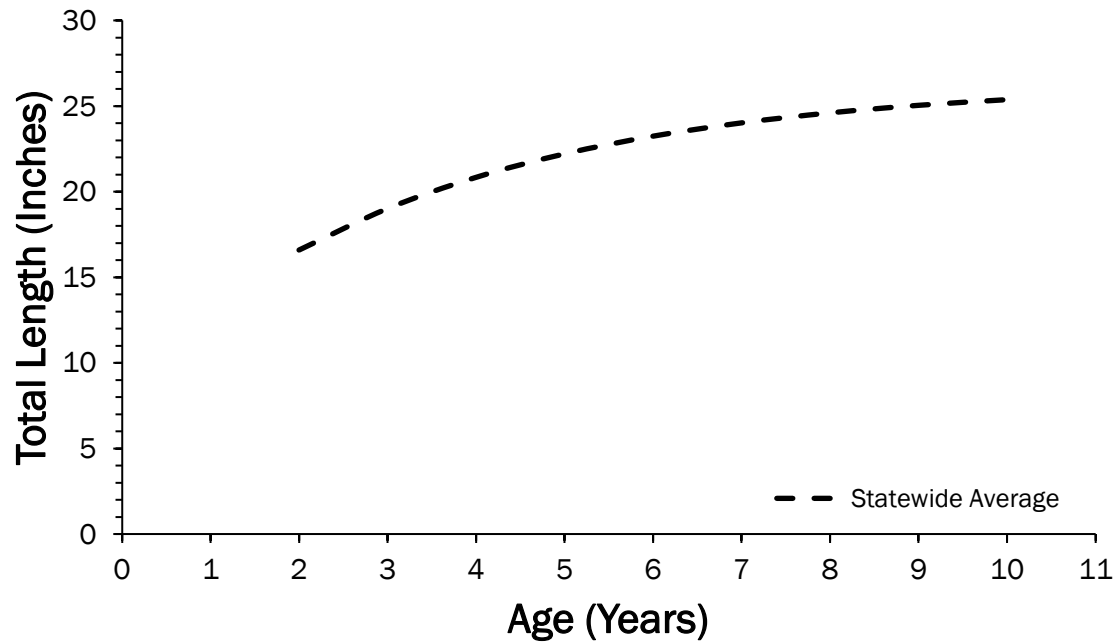
Long Lake

Northern Pike Length Frequency Distribution



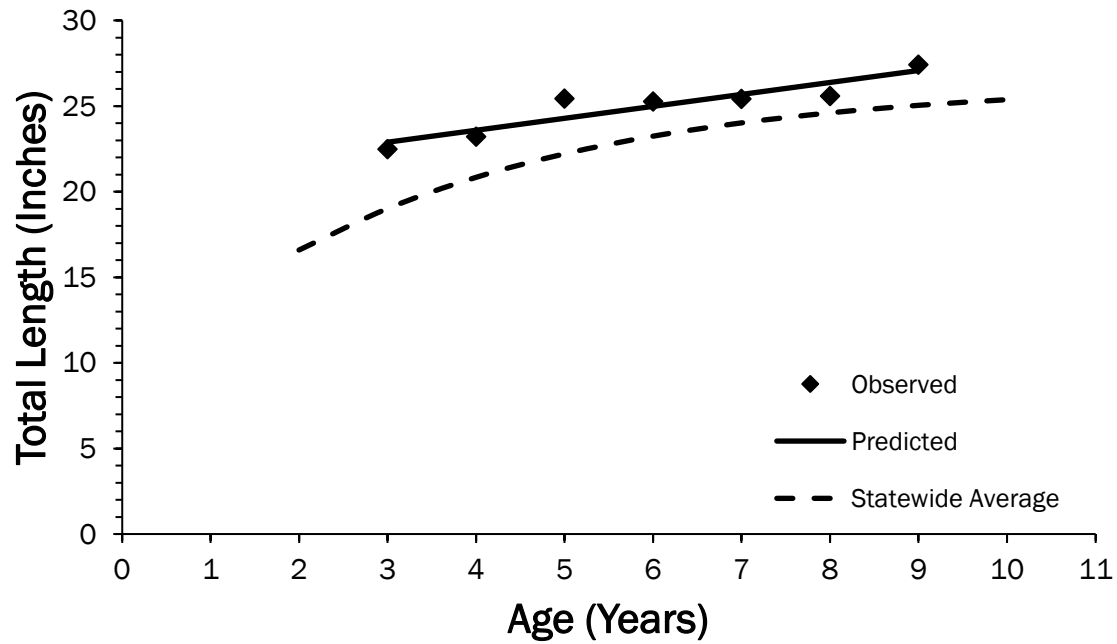
Long Lake

Male Northern Pike



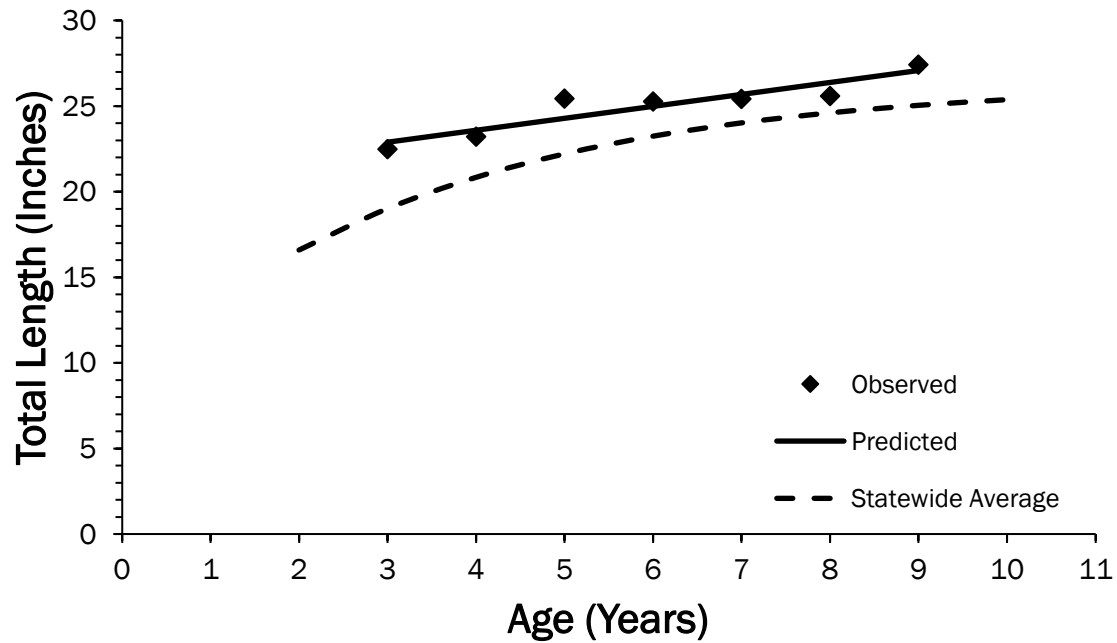
Long Lake

Male Northern Pike

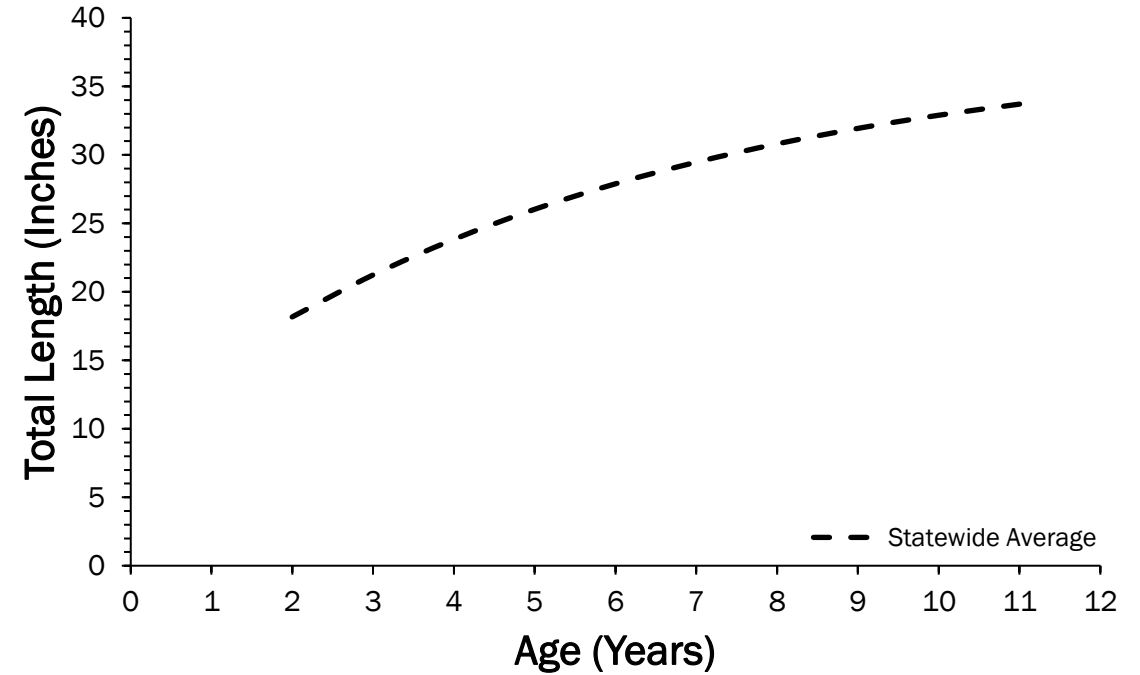


Long Lake

Male Northern Pike

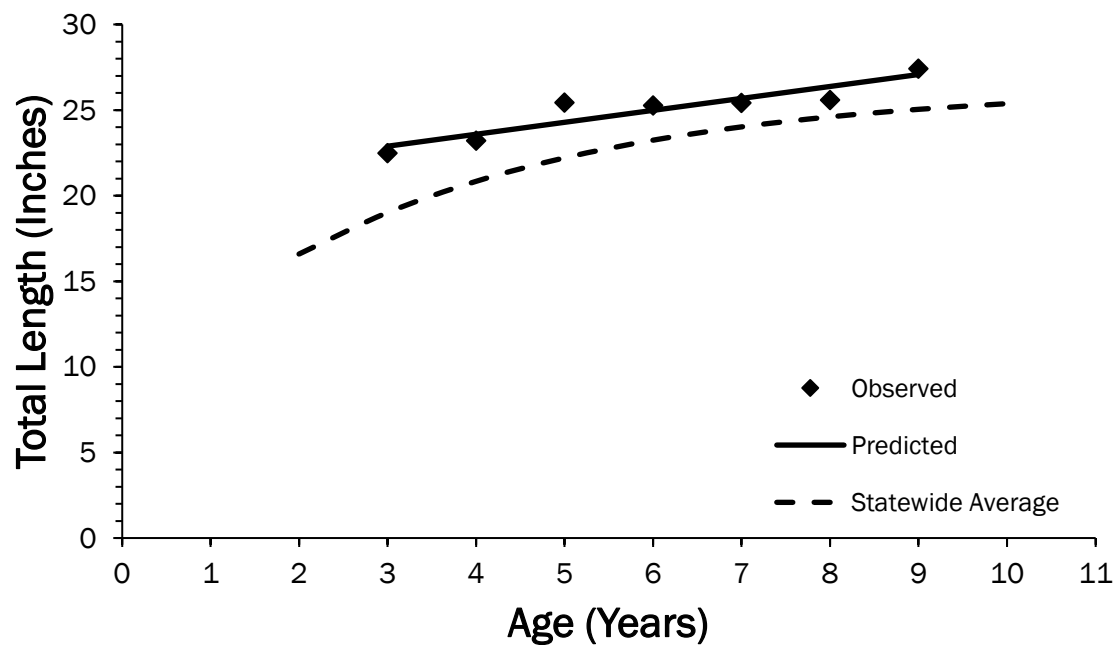


Long Lake Females

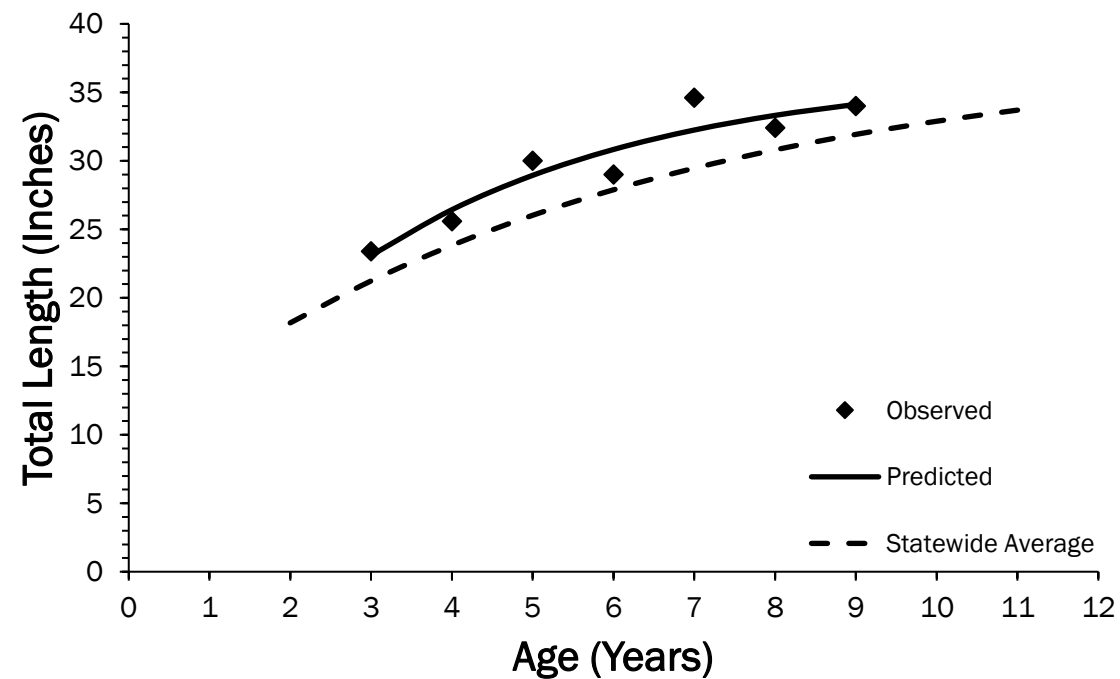


Long Lake

Male Northern Pike



Long Lake Females



Long Lake

- Fyke netting results:
- Walleye:
 - Captured 63
 - CPUE = 4.2 per net night
 - 56th percentile
 - Mean size = 21.8 inches
 - Range = 15.9 – 27.1 inches



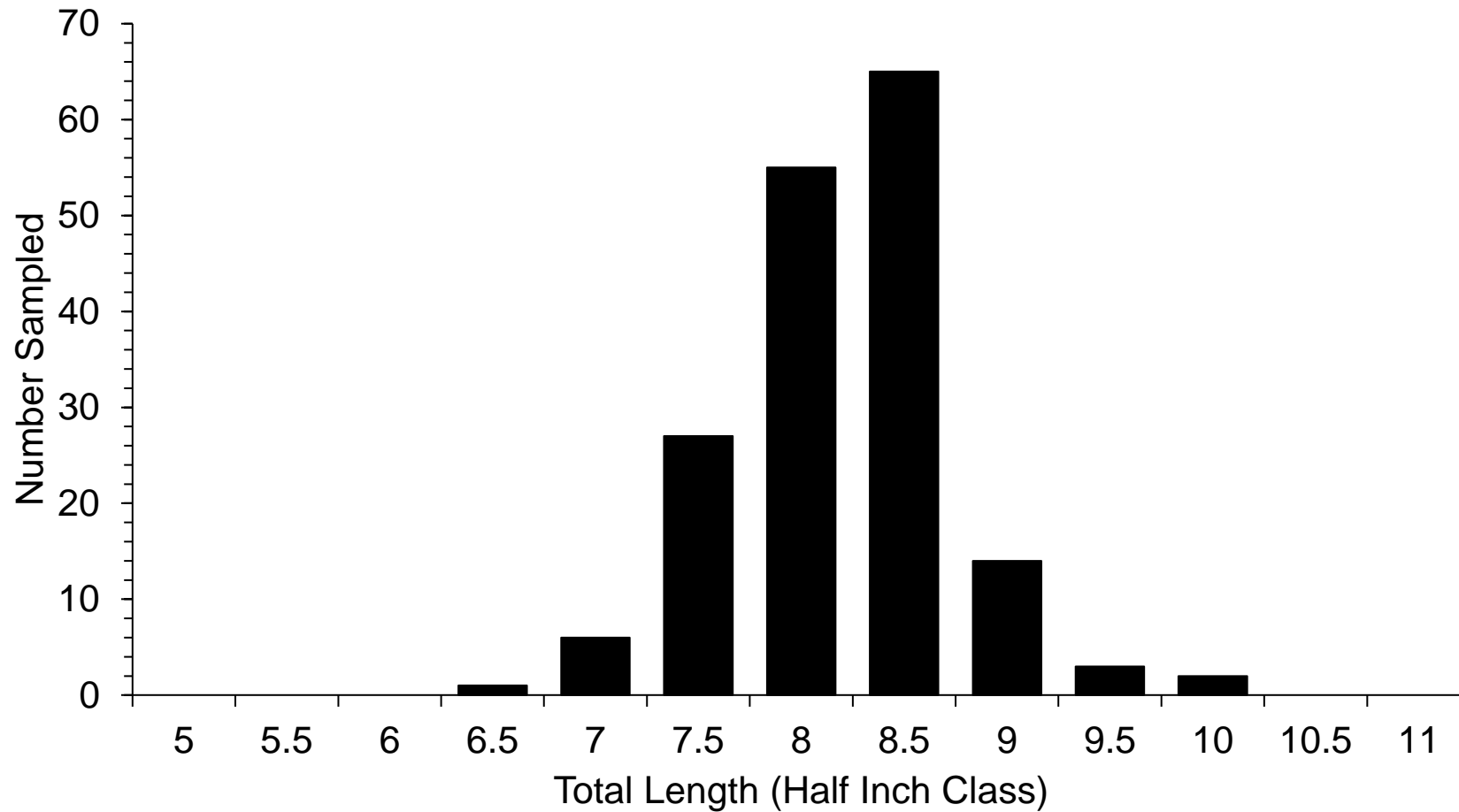
Long Lake

- Fyke netting results:
- Black crappie:
 - Captured 847
 - CPUE = 56.5 per net night!
 - 96th percentile
 - Mean size = 8.4 inches
 - Range = 6.9 – 10.0 inches



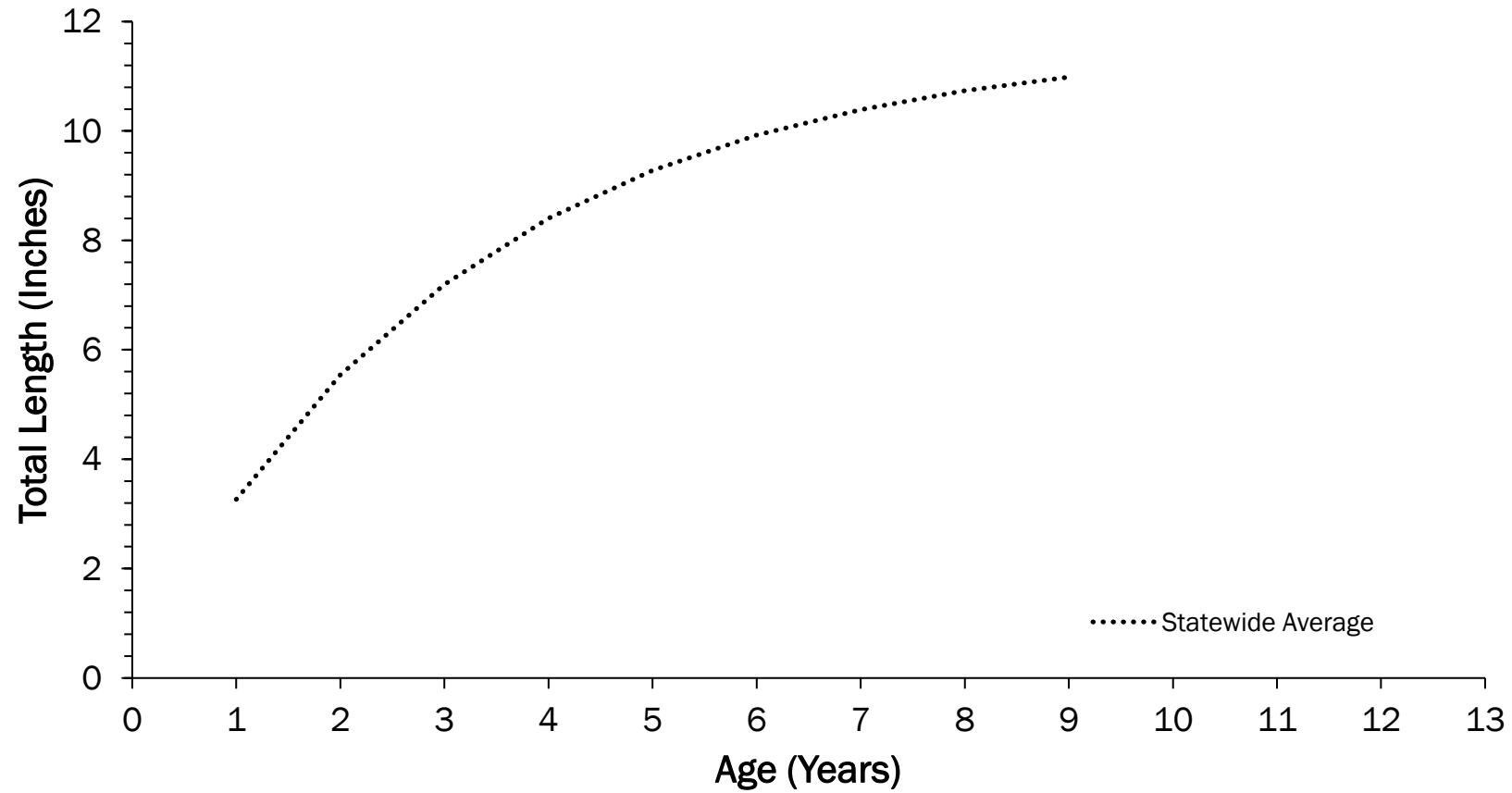
Long Lake

Black Crappie Length Frequency Distribution



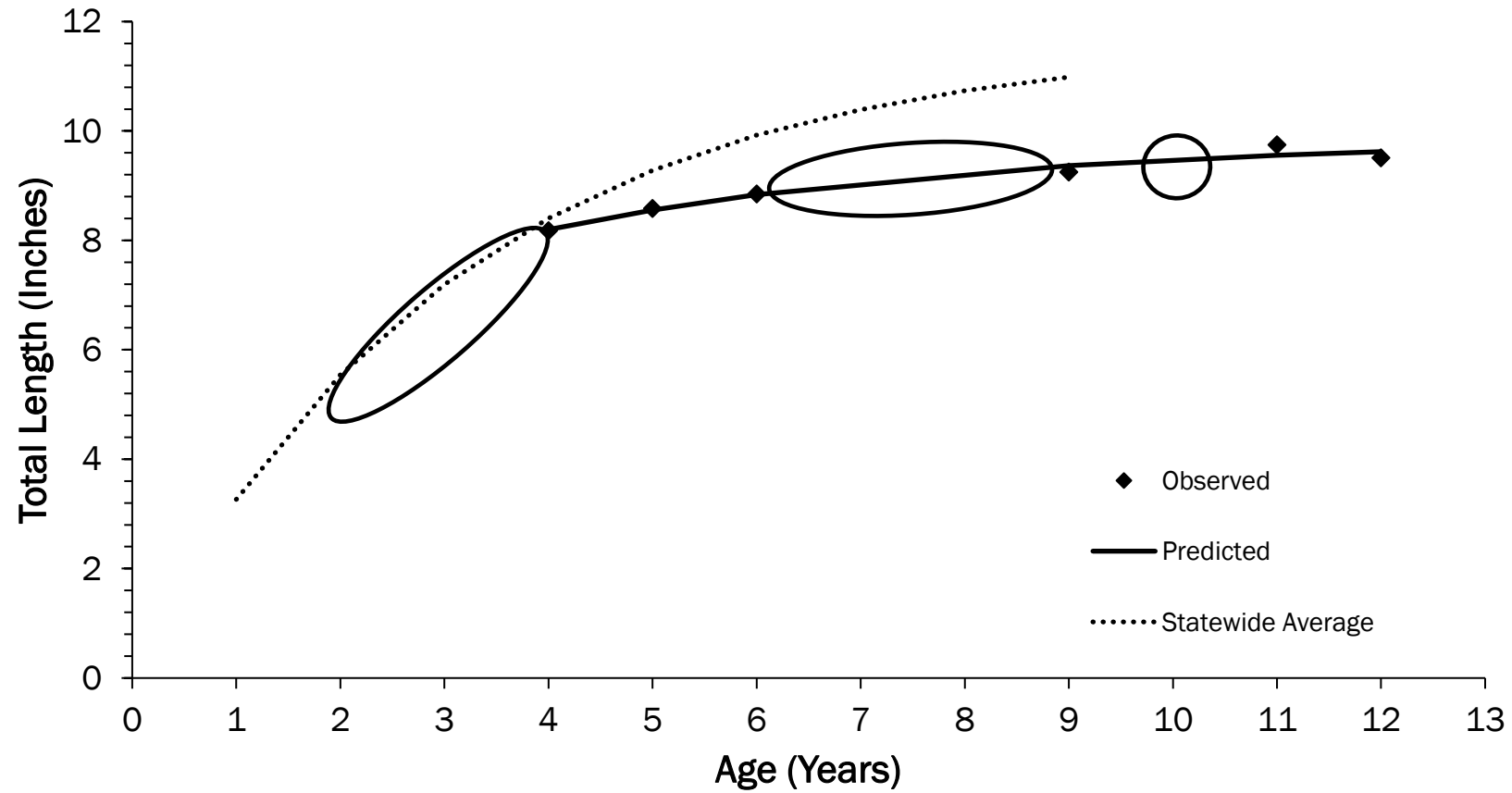
Long Lake

Black Crappie Growth



Long Lake

Black Crappie Growth



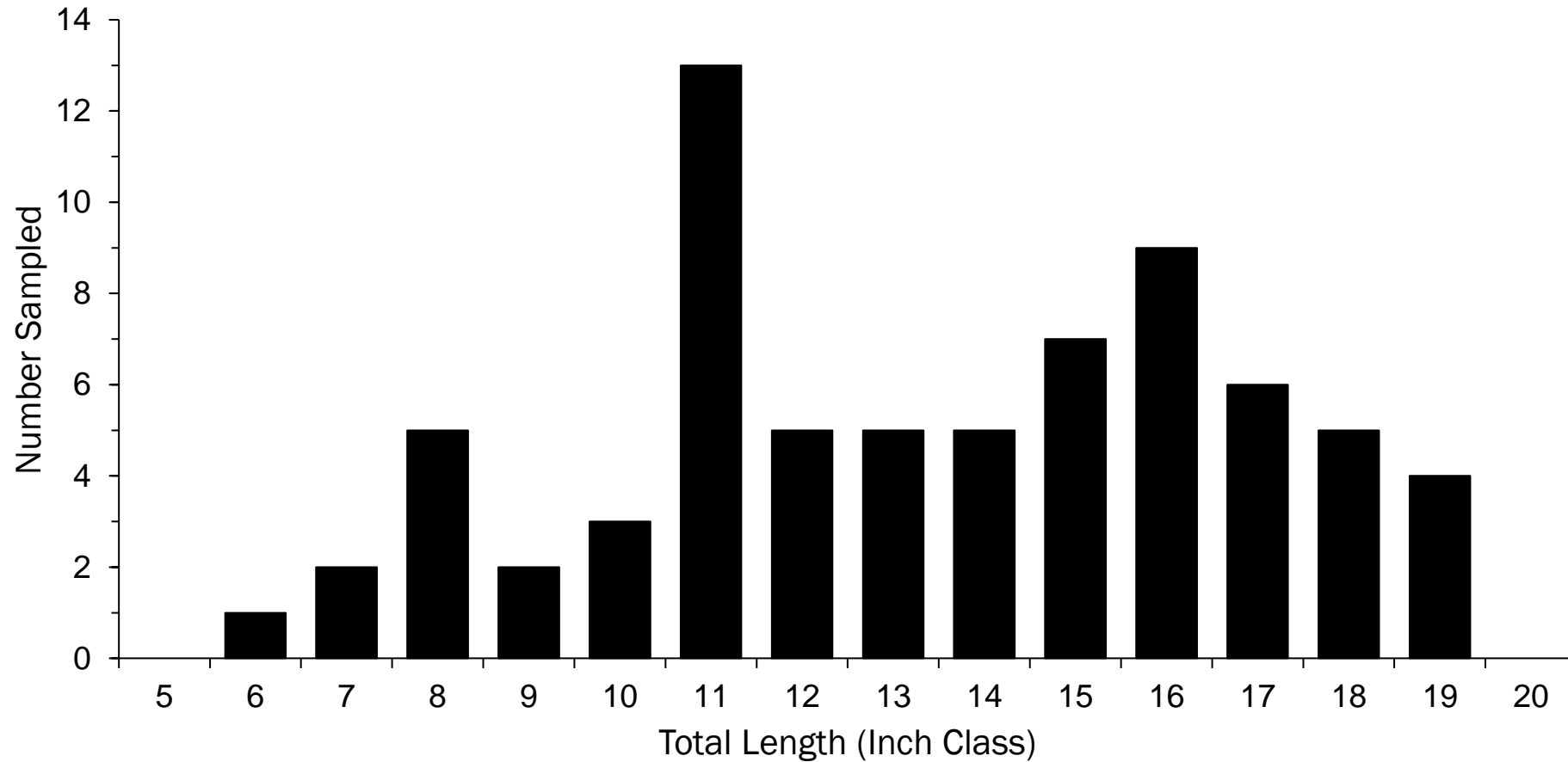
Long Lake

- Electrofishing results:
- Largemouth bass:
 - Captured 74
 - CPUE = 29.6 per mile of electrofishing
 - 72nd percentile
 - Mean size = 13.9 inches
 - Range = 6.9 – 19.4 inches



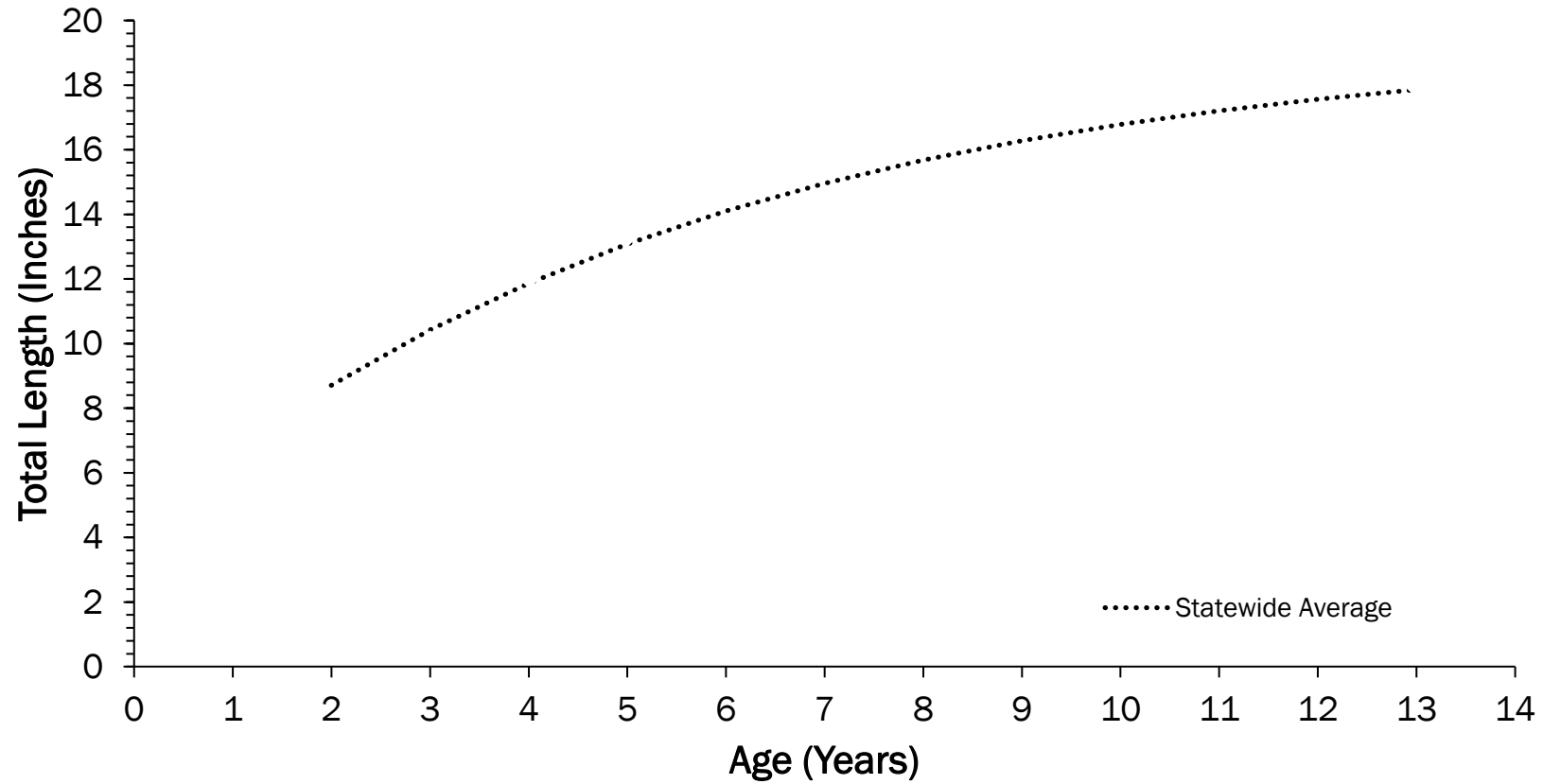
Long Lake

Largemouth Bass Length Frequency Distribution



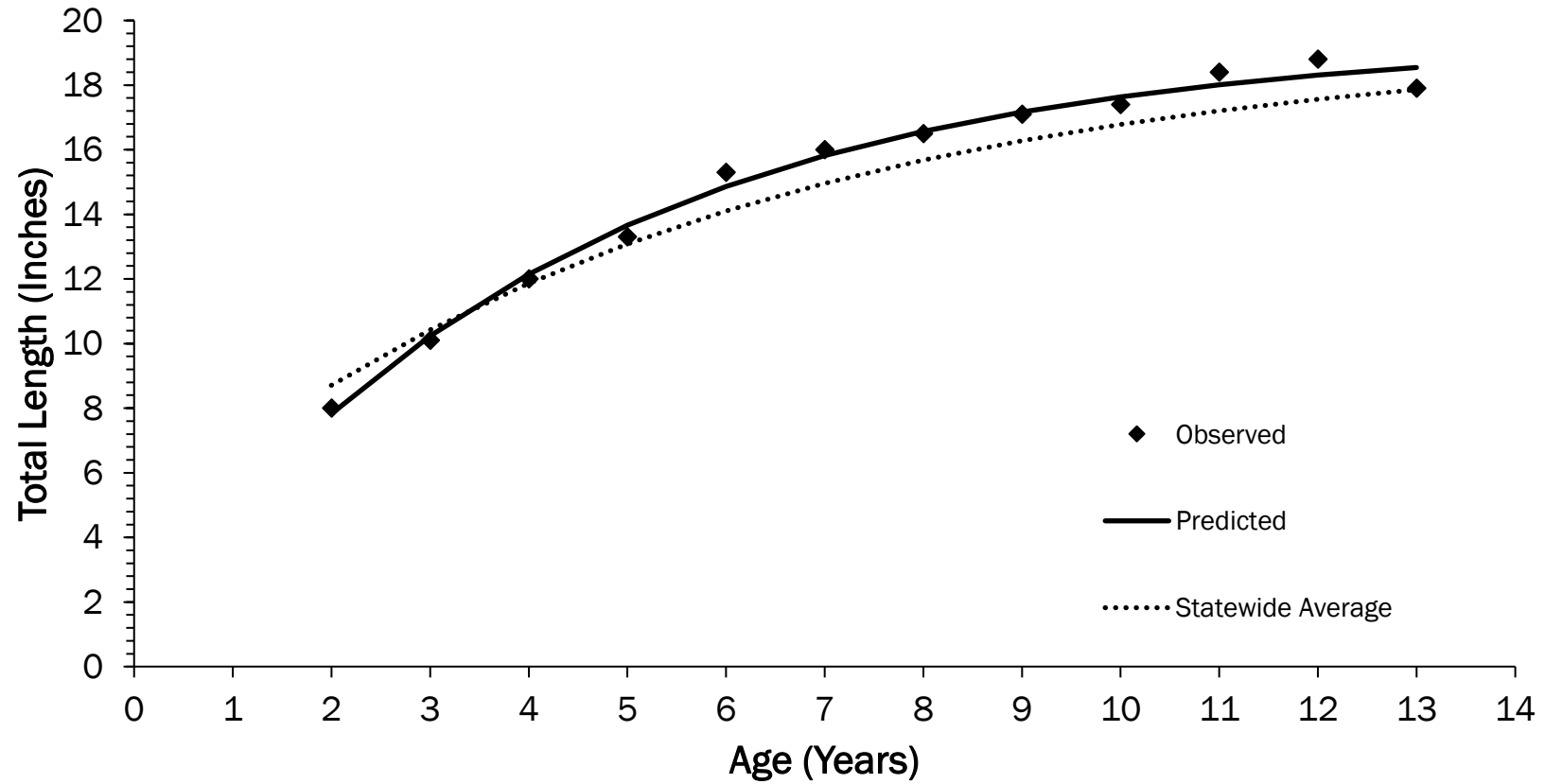
Long Lake

Largemouth Bass Growth



Long Lake

Largemouth Bass Growth



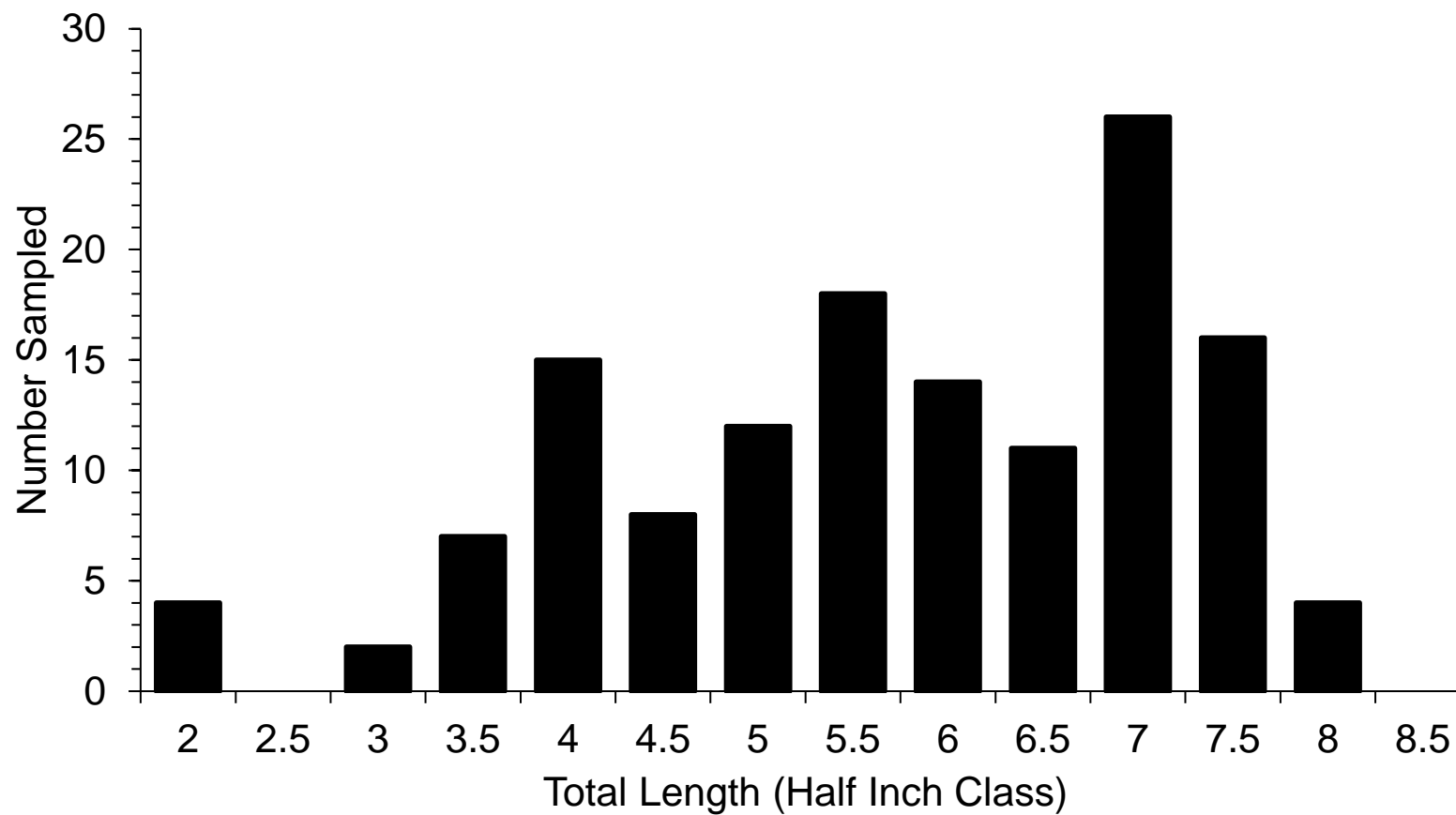
Long Lake

- Electrofishing results:
- Bluegill:
 - Captured 137
 - CPUE = 137.0 per mile of electrofishing
 - 66th percentile
 - Mean size = 6.0 inches
 - Range = 2.0 – 8.3 inches



Long Lake

Bluegill Length Frequency Distribution



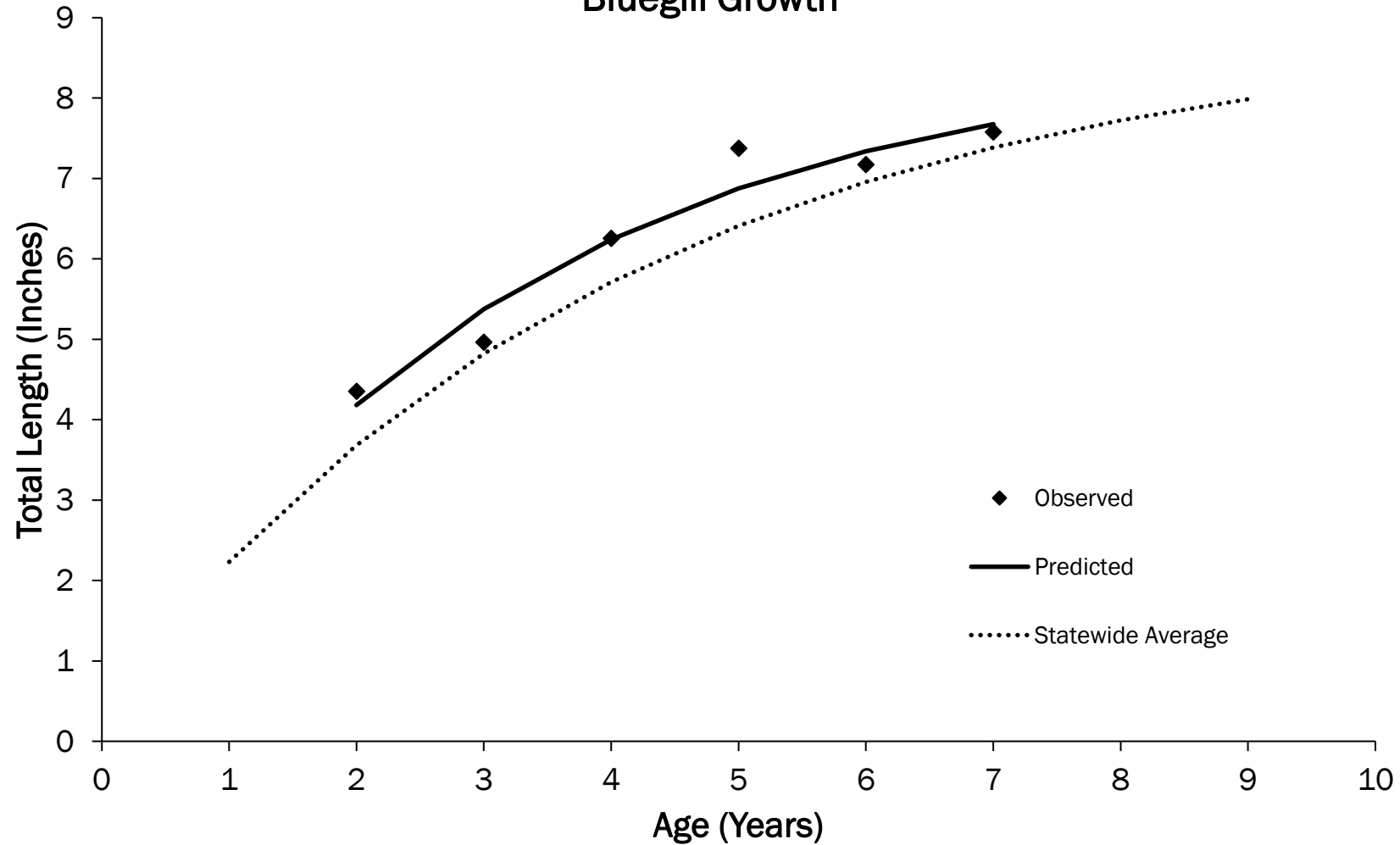
Long Lake

Bluegill Growth



Long Lake

Bluegill Growth



Long Lake Summary and Management Recommendations

- Northern pike:
 - High density, fast growing fishery with phenomenal size structure!
 - No recommended changes
- Walleye:
 - Moderate density with great size structure!
 - Continue stocking to maintain the fishery
- Largemouth Bass:
 - Moderate to high density with good size structure and average growth
 - No changes recommended
- Panfish:
 - Crappie:
 - High density with good initial growth, then growth slows
 - Bluegills:
 - Moderate density with good growth and size structure
 - Maintain predators to keep panfish abundances in check
 - Follow up on impacts of special panfish regulation



2023

- Comprehensive fish survey of Silver Lake
- Electrofishing survey of Rockville flowage
- Stocked yearling rainbow trout in Horseshoe Lake



CONNECT WITH US

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OFF THE RECORD"