Pigeon Lake Fish Management
Results from 2013 Fish Survey

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Pigeon Lake District Meeting

February, 2014

What will I cover today?

- DNR Fish Surveys – How, When, Why
- Most Recent Fish Survey Summary

Acknowledgements

- DNR staff – Ryan Zernzach, Top Moon Lee, Elliot Hoffman
- Fox Valley Technical College Student Volunteers
- Mr. Gerald Bohlman – Pigeon Lake Property Owner

DNR Fish Surveys – Why, When and How?

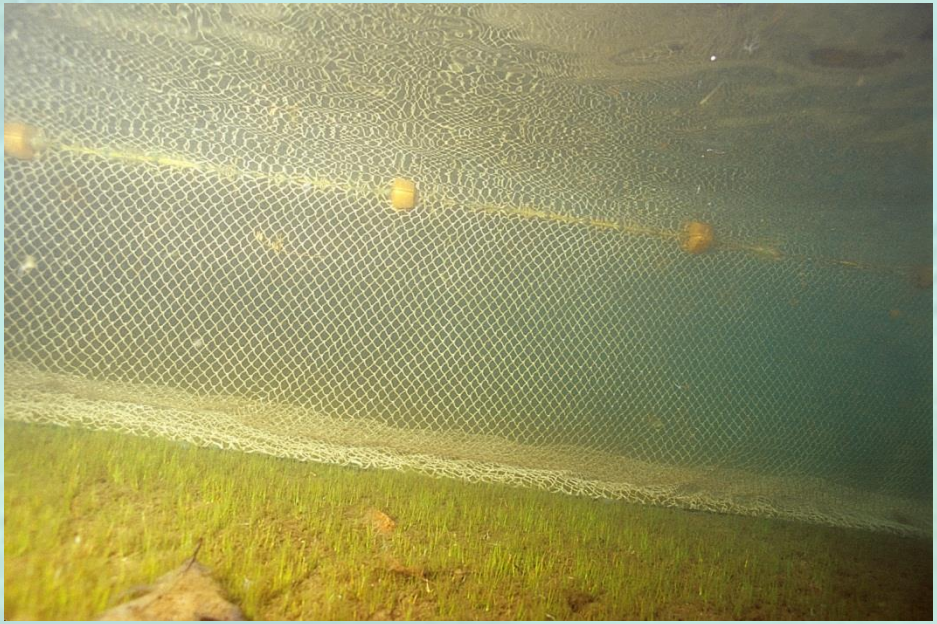
- All public lakes in Wisconsin are on a rotational survey schedule.
- Pigeon Lake is on an 8 -10 year rotation.
- Purpose is to monitor trends in abundance, size structure, and growth.
- Important for making management decisions.

How is fish information collected?

- Spring Fyke Net Survey
- Early Summer Fyke Net Survey
- Spring and Fall Night Boomshocking

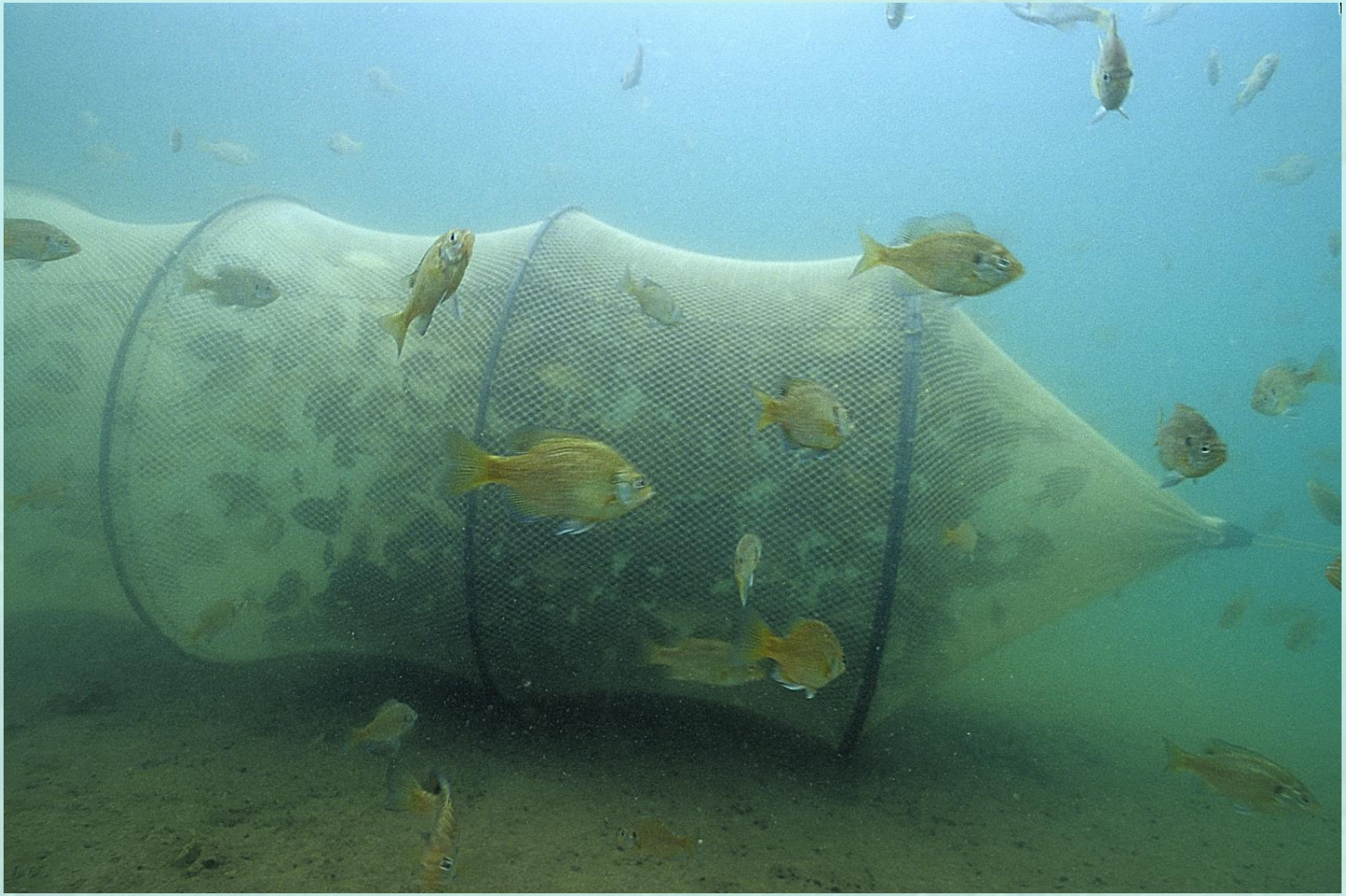
Spring Fyke-Netting

- Target Species – northern pike, yellow perch, and sunfish species



FISHERIES MANAGEMENT..... we make fishing better

WISCONSIN
DEPT. OF NATURAL RESOURCES



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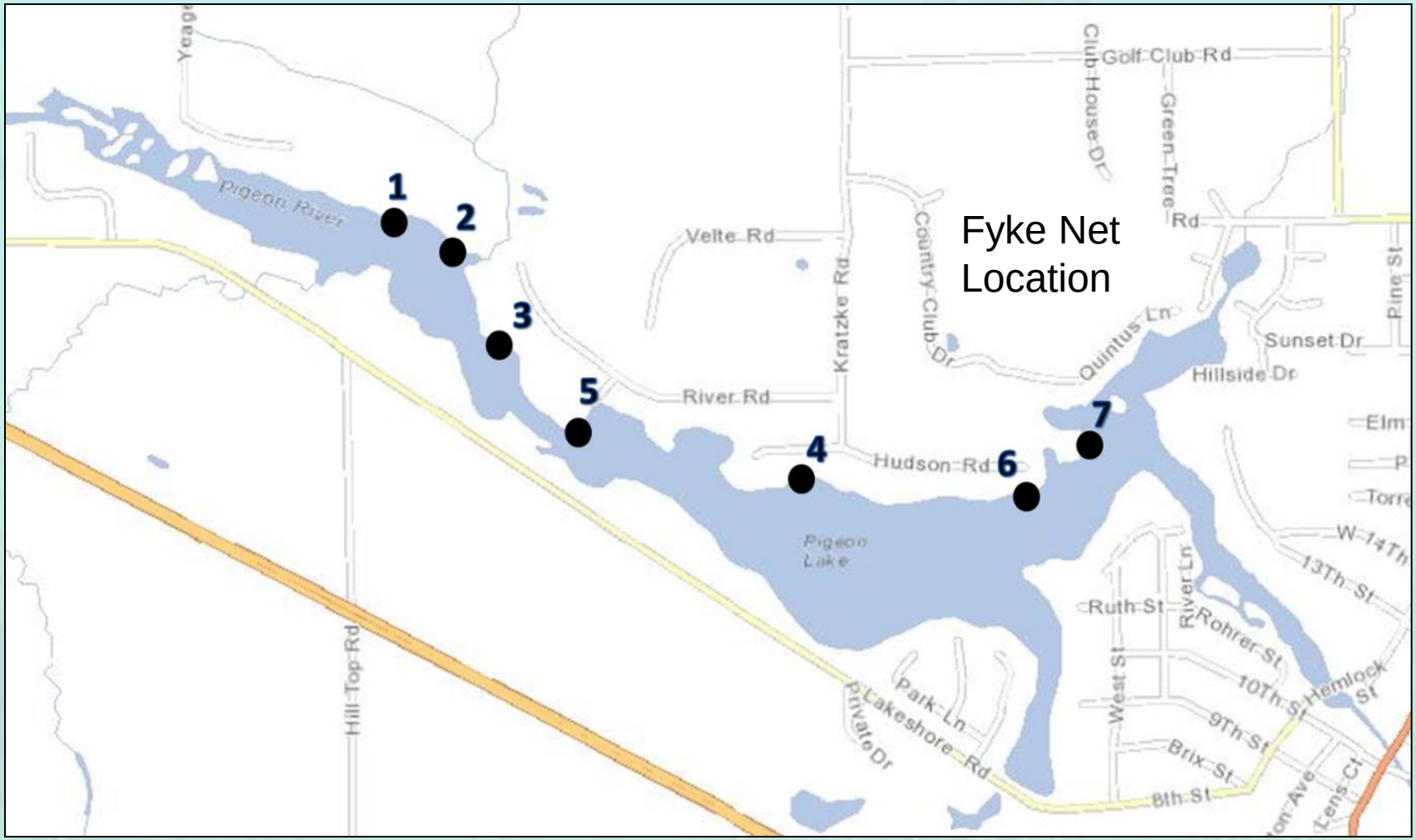


FISHERIES MANAGEMENT..... we make fishing better

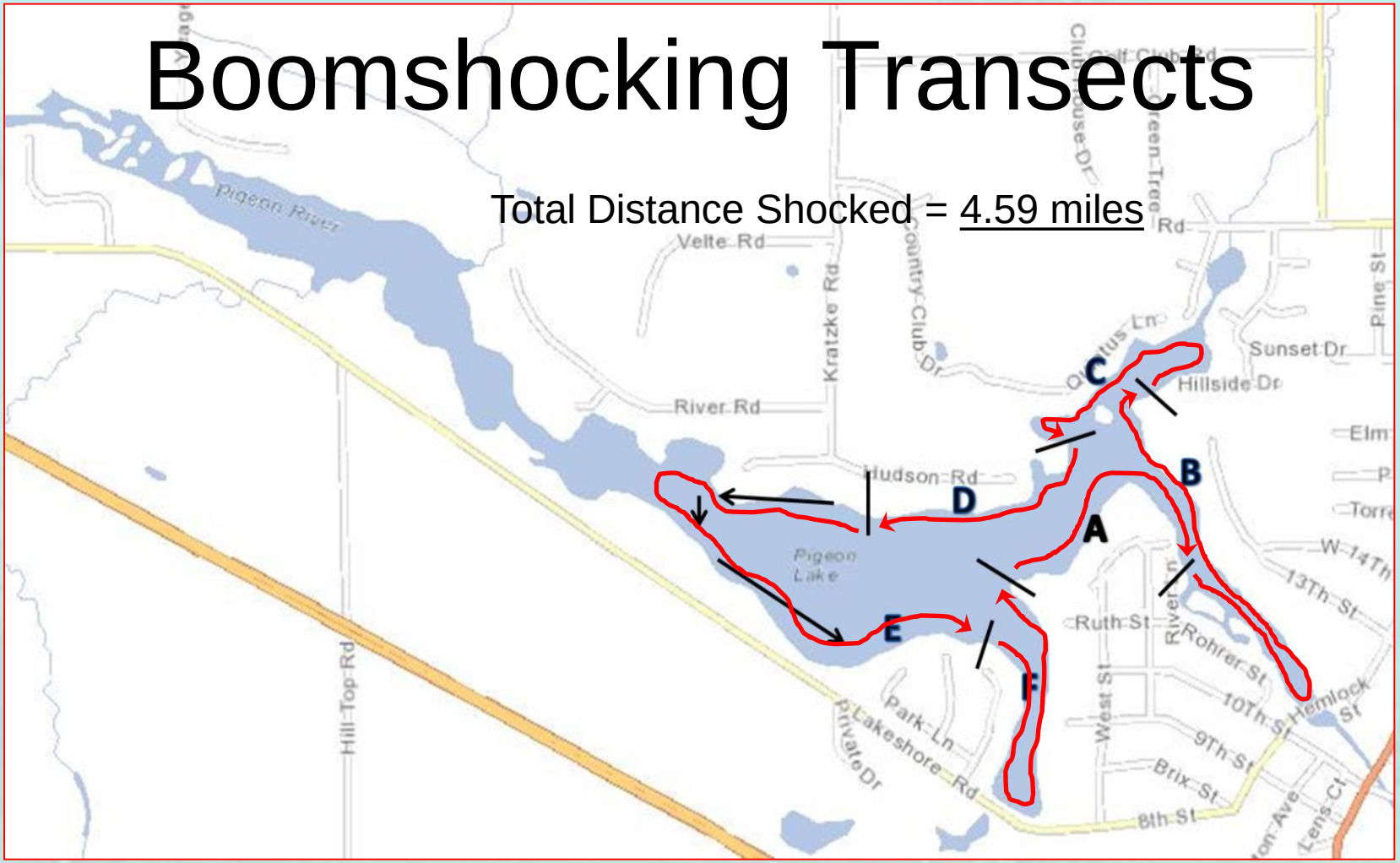
WISCONSIN DEPT. OF NATURAL RESOURCES

Electrofishing (Boomshocker)

- Target Species – Largemouth bass, bluegill and other sunfish species

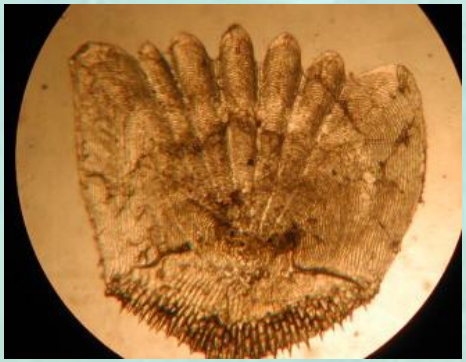
Boomshocking Transects

Total Distance Shocked = 4.59 miles



What data is collected?

- Species
- Length
- Weight
- Gender
- Age structures



Fish Population Metrics

Abundance Index

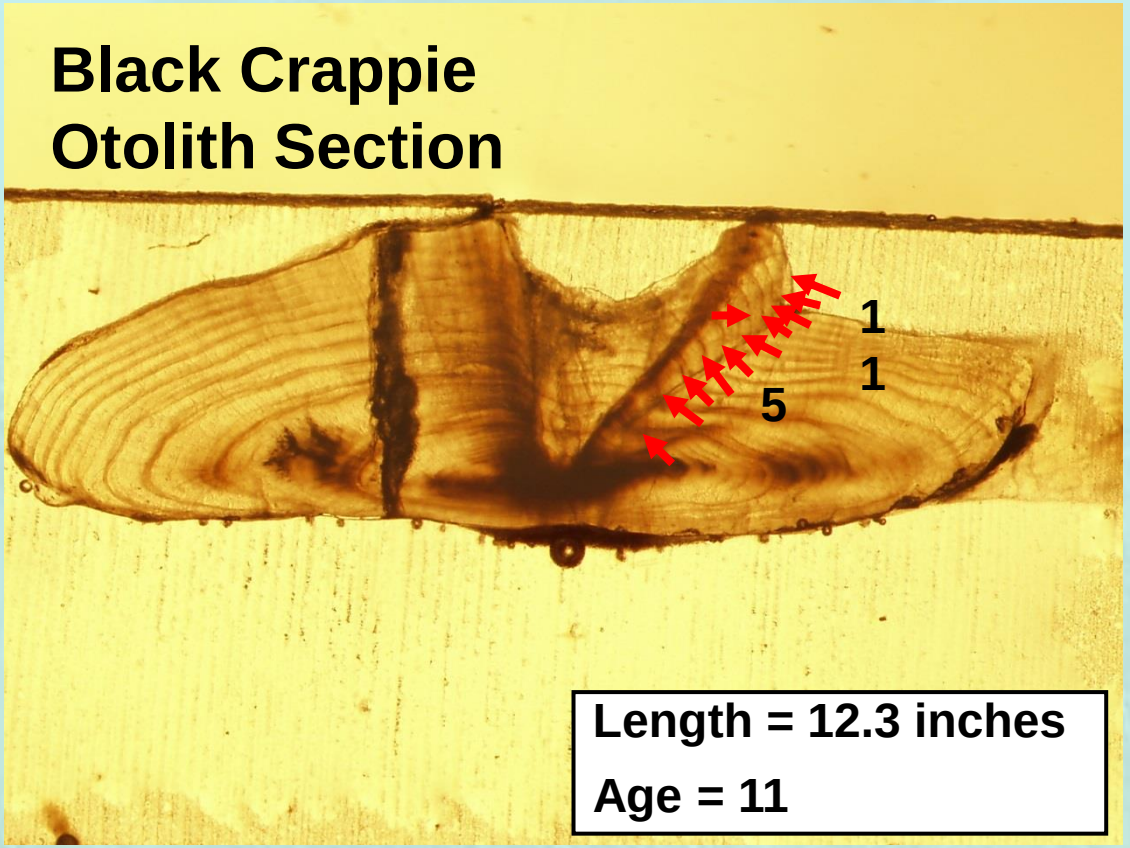
- Population Estimates
  - Mark and Recapture
- Relative Abundance Index (Catch per Effort or CPE)
  - number of bass per mile of electrofishing
  - number of bluegill per net night

Size Structure Index

- Use proportions to describe size of fish
  - For example % of bluegill greater than 6.0 inches
  - % of fish greater than legal size limit

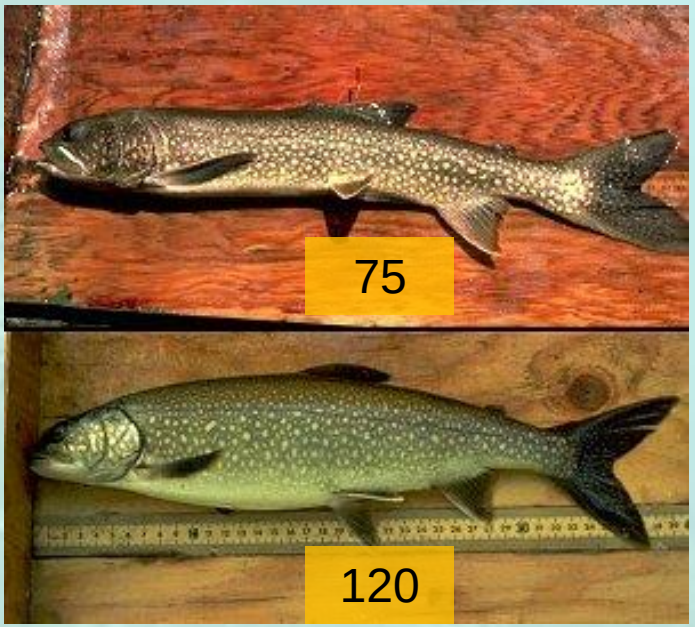
Age and Growth Indexes

- Mean Length at Age
- Growth Curve
- Age Composition



Condition Index
Relative Weight (Wr)

- Measure of Fish Condition
- Indexes of 90 to 110 indicate optimal Wr
- Indication of predator and prey balance



Metric Analysis
What does the data tell us?

- Statewide Comparison
  - metrics ranked by percentile
- Trends over time in Pigeon Lake

How is survey data used to make management decisions?

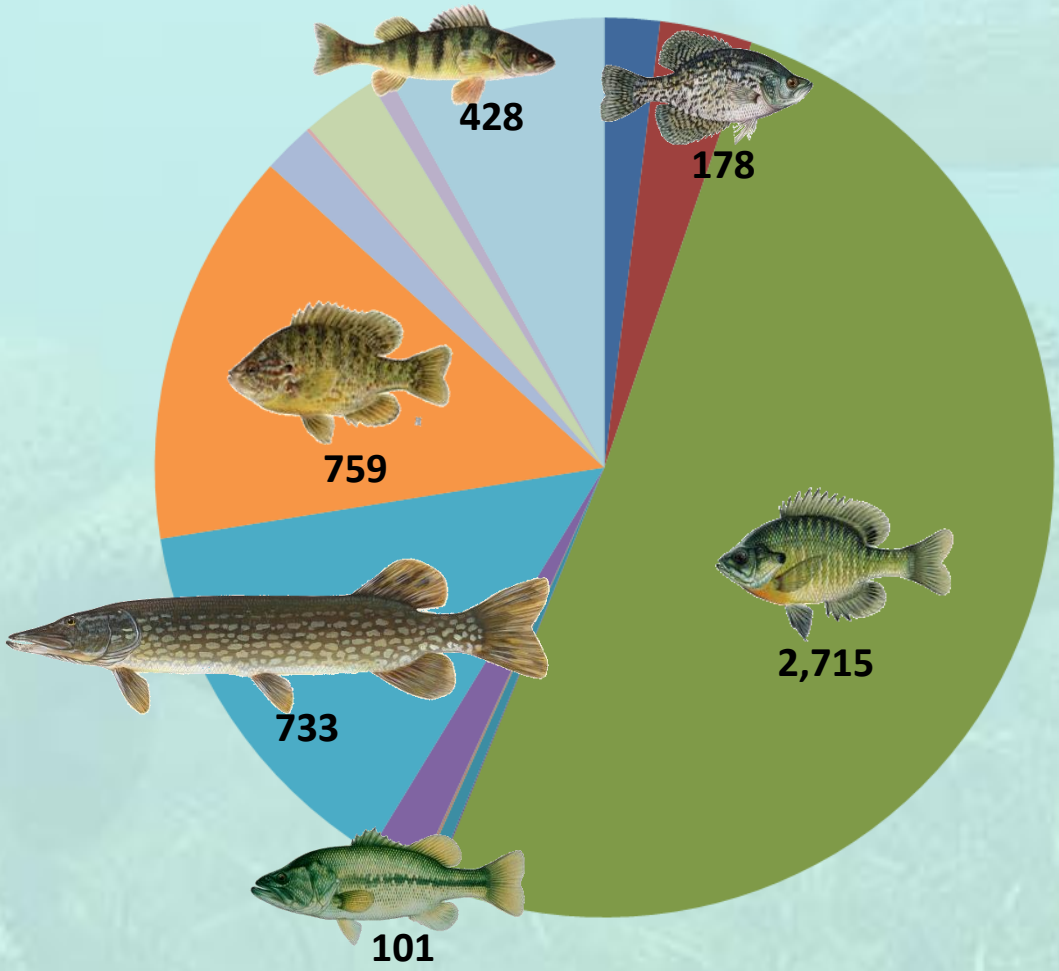
- Setting Objectives:
  - example: target for bluegill size structure of 7+ inch fish at 20-30%.

- Identifying Actions:
  - Regulations?
  - Stocking?
  - Habitat Management?

Pigeon Pond Survey Information

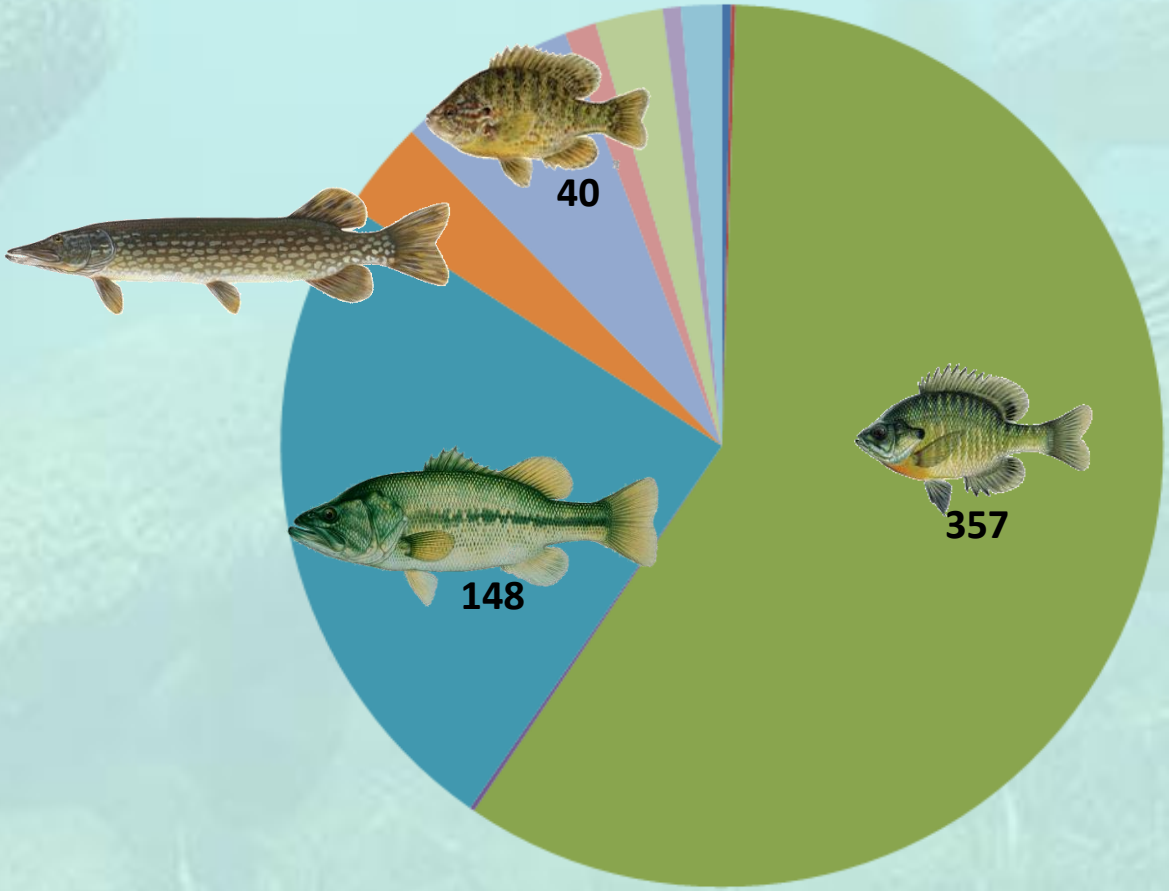
2013 and Trend Data

Fyke Net Catch - 2013



- BLACK BULLHEAD
- BLACK CRAPPIE
- BLUEGILL
- BOWFIN
- BROWN BULLHEAD
- COMMON CARP
- COMMON SHINER
- GOLDEN SHINER
- GREEN SUNFISH
- LARGEMOUTH BASS
- NORTHERN PIKE
- PUMPKINSEED
- ROCK BASS
- WARMOUTH
- WHITE SUCKER
- YELLOW BULLHEAD
- YELLOW PERCH

Boomshocking Catch - 2013



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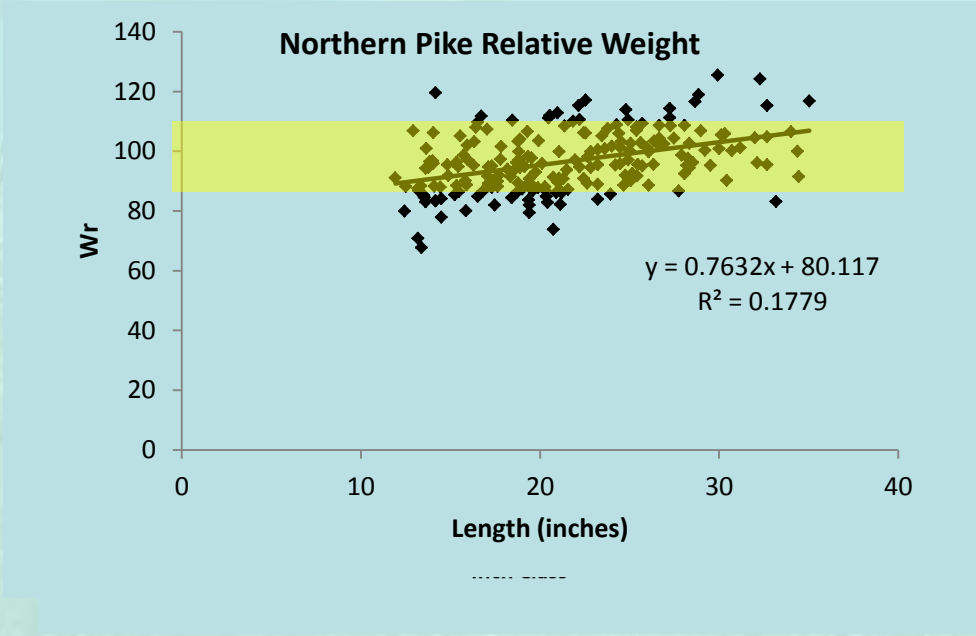
Gamefish Information

Northern Pike

Pigeon Pond– 2013 Survey

- Abundance: <u>High</u>
  - Total Catch = 733
  - Pop. Est. = 2,540 (11.7/acre)
  - Electrofishing CPE (No per mile)
    - <u>All sizes</u>: 5.9 (80th percentile)
    - <u>21+ inches</u>: 2.2 (91st percentile)
    - <u>28+ inches</u>: 0.3 (85th percentile)



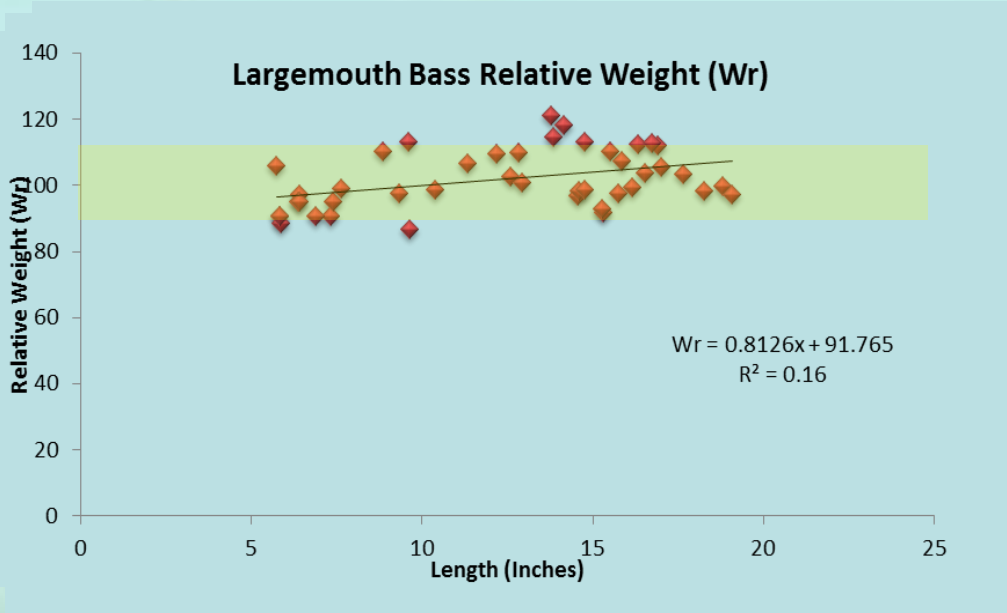
- Size Structure: <u>Moderate</u>
  - 42% > 21.0 inches
  - 8% > 28.0 inches

- Growth and Condition: <u>Moderate</u>

Largemouth Bass

Pigeon Pond– 2013 Survey

- Abundance: Very High
  - Total Catch = 249
  - Electrofishing CPE (no per mile)
    - All Sizes: 41 (94th percentile)
    - 14+ inches: 19 (99th percentile)
    - 18+ inches: 2.5 (99th percentile)
- Size Structure: Very High
  - 66% > 14 inches
  - 7% > 18 inches
- Growth: Fast
  - 14 inches in 5 years



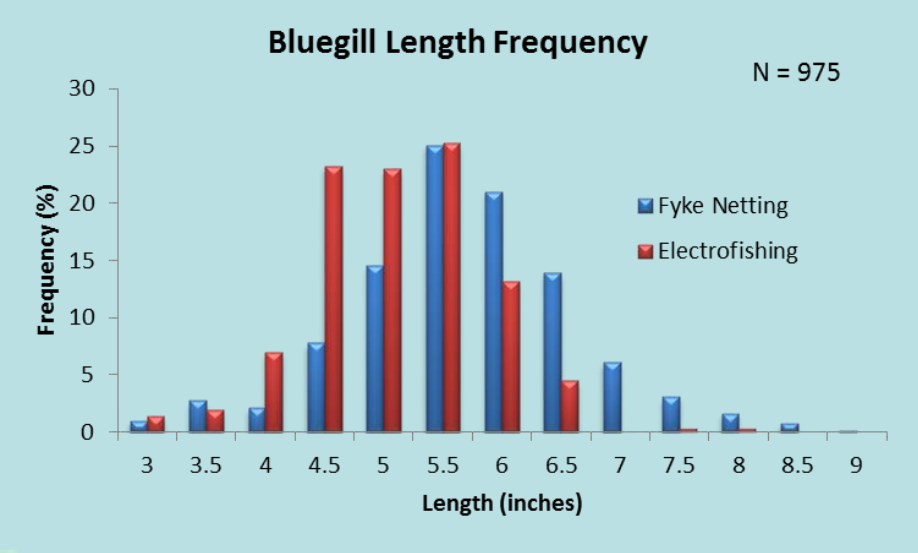
Panfish Data

Bluegill
Pigeon Pond – 2013 Survey

- Abundance: <u>High</u> (for small fish)

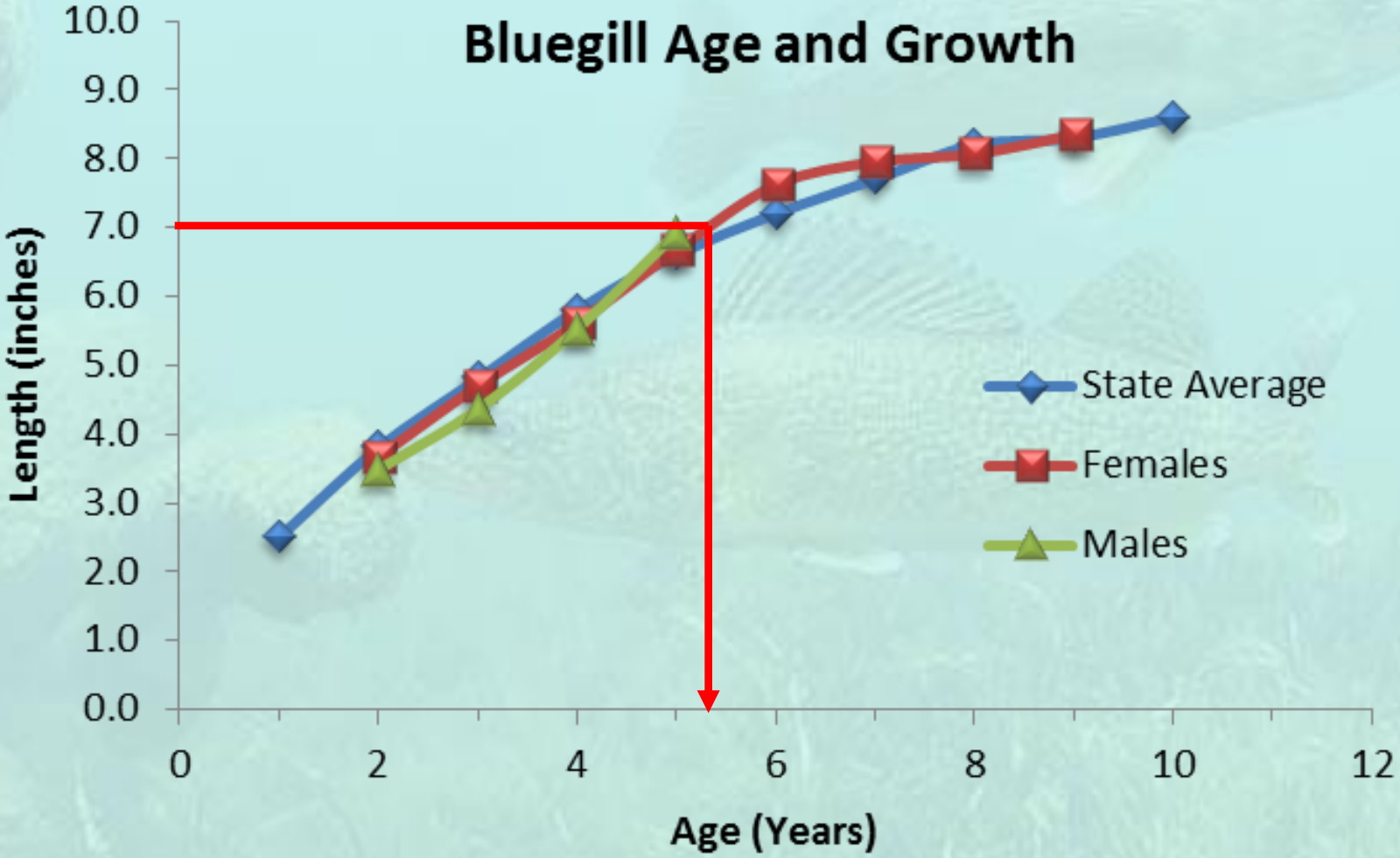
  Electrofishing CPE

  - All sizes: 357/mile (98th percentile)
  - 6+ inches: 65/mile (86th percentile)
  - 7+ inches: 2/mile (40th percentile)

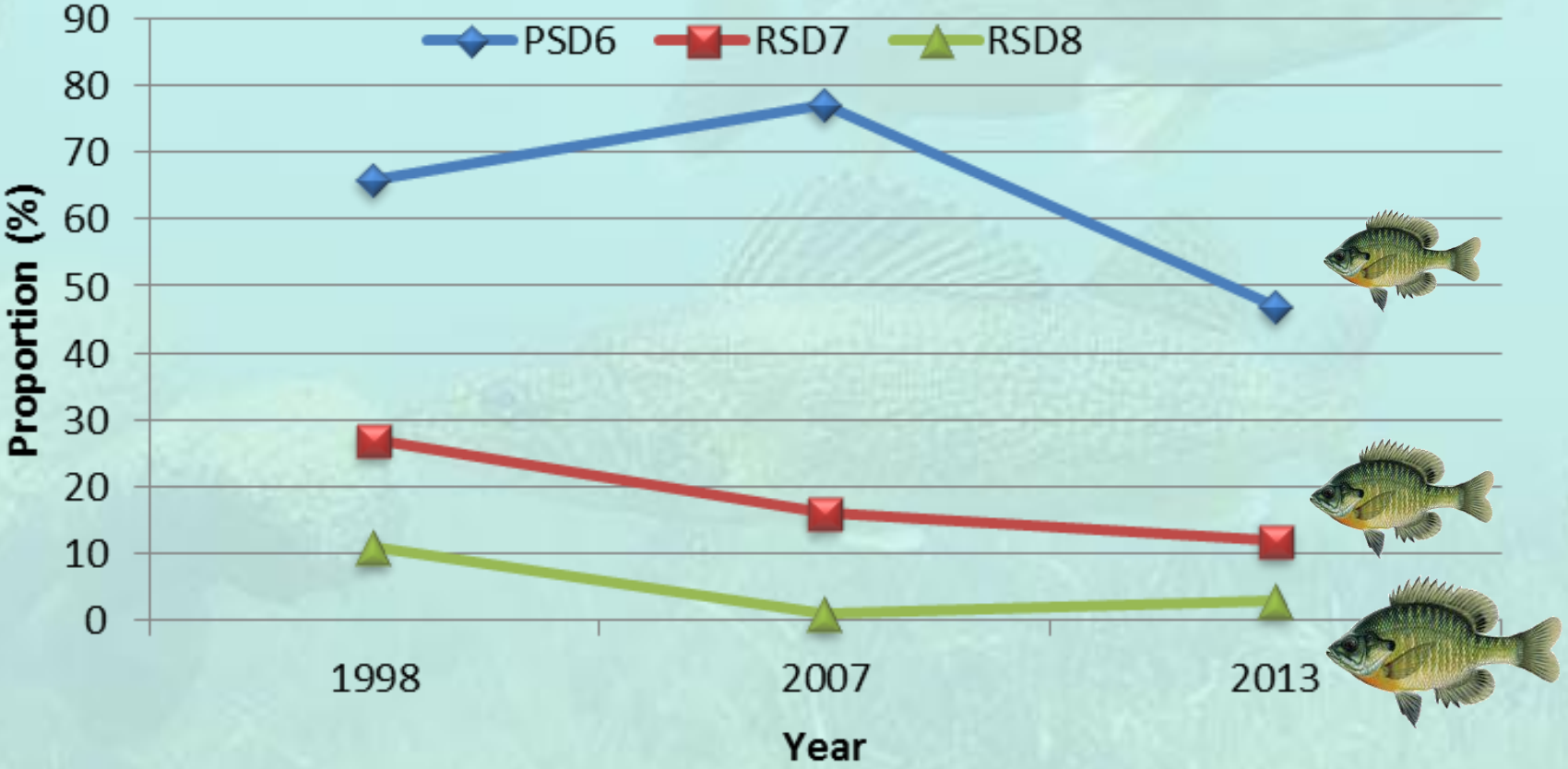


- Size Structure: <u>Very Low</u>
  - 18% > 6.0 inches
  - 1% > 7.0 inches
  - 0% > 8.0 inches

- Growth: <u>Moderate-Low</u>

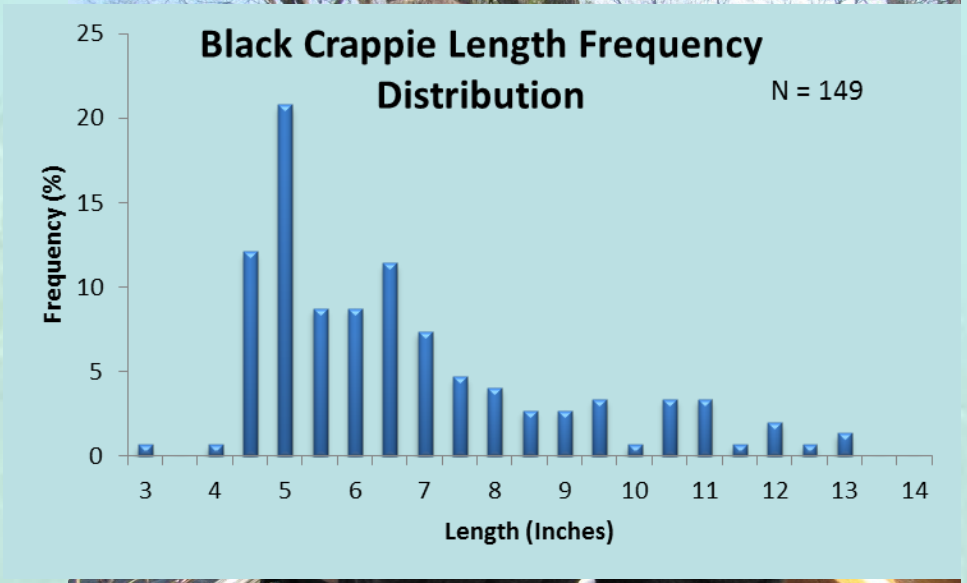

Bluegill Age and Growth
Length (inches)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0
2
4
6
8
10
12
Age (Years)
State Average
Females
Males

Size Trends -Fyke Net Catch



Black Crappie
Pigeon Pond– 2013 Survey

- Abundance: Low
  - Total Catch: 179
  - Electrofishing CPE = 1.7/mile (30th percentile)
  - Fyke Net CPUE = 4.9/net night
- Size Structure: Low-Moderate
  - 29% > 8.0 inches (24th percentile)
  - 14% > 10.0 inches (55th percentile)
- Growth: Moderate



Other Species of Interest

Summary and Conclusions

	Species	Abundance	Size	Growth	Condition
	Largemouth Bass	High	Excellent	Moderate	Good
	Northern Pike	High	Good	Moderate	Good
	Bluegill	Very High	Poor	Moderate	Poor
	Pumpkinseed	High	Poor	-	-
	Black Crappie	Low	Fair	Moderate	Good
	Yellow Perch	Moderate	Fair	-	-

Management ?

- Gamefish (bass and pike) are at quality levels:
  - No management recommended at this time
- Panfish: Bluegill and pumpkinseed have poor size structure which is likely due to dense aquatic plant habitat. However, it appears fishing harvest is also a factor. Managing for improved size will be challenging.
    - *Aquatic plant management?*
    - *Regulations to improve size structure?*
- Exotics: Carp low but stable levels
- Continue monitoring on a 6-8 year rotation

Thank You

Any Questions ?

Fish Population Metrics

- Abundance
- Size Structure
- Growth
- Condition