Fish Population Assessment

- Sport fish
- Forage fish
- Rough fish
Question: How Do I Assess My Fish Population?

Answer: Volkswagens to Corvettes!!!
SEINE INTERPRETATION

<table>
<thead>
<tr>
<th>SEINE CONTENTS</th>
<th>STATUS</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young bass (&lt; 4 inches)</td>
<td>Population Balanced</td>
<td>Continue assessment using angler harvest records</td>
</tr>
<tr>
<td>No young bass (&lt; 4 inches)</td>
<td>Population Balanced</td>
<td>Continue assessment using angler harvest records</td>
</tr>
<tr>
<td>No young bass present but many 3-6&quot; bluegills present</td>
<td>Bluegill overcrowded</td>
<td>Stock 10-12&quot; bass or suspend bass harvest for 1 year or renovate and restock pond.</td>
</tr>
<tr>
<td>No young bass or recently hatched bluegills present. Few intermediate bluegills present. Undesirable species present</td>
<td>Undesirable species present</td>
<td>Remove 25-40 &quot;small&quot; bass per acre</td>
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</tbody>
</table>

Angler Catch Records

- Monitor progress and chart the course for harvest regulations

- 10% of the anglers provide 90% of the data

- The cost is zero!

H.S.B. Fishing Report

Name: ___________________________ Date: Month ______ Year ______

Number in Party: ________________ Total Hours Fished: _______

THE LAKE MANAGEMENT COMMITTEE ENCOURAGES KEEPING ALL FISH EXCEPT BASS 14 INCHES OR LONGER.

<table>
<thead>
<tr>
<th>Number of Fish Caught</th>
<th>Number of Fish Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bass:</td>
<td></td>
</tr>
<tr>
<td>Under 10&quot;</td>
<td>______</td>
</tr>
<tr>
<td>Between 10&quot; and 14&quot;</td>
<td>______</td>
</tr>
<tr>
<td>Over 14&quot;</td>
<td>______</td>
</tr>
</tbody>
</table>

To judge the condition of the lake's bass population, both length and weight data on fish in the 8" to 24" range is required. Please take the time to make some measurements. (L) ______ (W) ______

Are weights in ounces ______ (O) ______ (W) ______
or tenths of a pound? ______ (L) ______ (W) ______
“Scientific” Bass Angling

- Use artificial lures from each of the three categories 1”-2”, 2”-4” and 4”-8”.
- Fish each lure category for 30 minute intervals until 20 bass 8”+ are caught.

- Fish each lure category the same amount before you stop fishing.
- Fish all areas of the pond.

“Scientific” Sunfish Angling

- Use 1-2 segments of Berkley power wiggler or similar bait on a #8 hook, split shot and light line.
- Fish until you collect 100 sunfish, measuring each fish.
“Scientific” Sunfish Angling

- Fish each lure selected the same amount of time.
- Fish all areas of the pond.

**Example:** Catch records for Pineburr Lake from 1984 indicate 100 bass were caught, 45 of which were at least 12 inches long.

\[
\text{PSD (Bass)} = \frac{45}{100} \times 100 = 45\%
\]
Example: Catch records for Pineburr Lake from 1984 indicate 400 Bluegill were caught, 100 of which were at least 6 inches long.

\[
\text{PSD (Bluegill)} = \frac{100}{400} \times 100 = 25\%
\]

Percentage Size Distribution (PSD) Diagram for Bass-Bluegill Populations Based on Angler Harvest

- **Harvest more 6" + bluegill and 8"-12" bass.**
- **Release 12" - 15" bass.** Optimum situation (But temporary).
- **Release more 8" - 12" bass.** Temporary Situation
- **Increase bluegill harvest. Release 10-15" bass.**
- **Increase bluegill harvest. Release 15" + bass.**
- **Possible habitat problems.**
- **Low bass recruitment. Poor bluegill growth. Bluegill-bass competition.**
- **Harvest large bluegill. Release 12" - 15" bass.**
- **Stunted bass and large bluegill.**

BALANCED POND

14 to 15 bass > 15"

Harvest more 8" - 12" bass. Bass overcrowded
RELATIVE WEIGHT (Wr)

Compares actual weight of a fish to a standard weight at a particular length.

\[
\frac{W}{Ws} \times 100
\]

- Acceptable range for largemouth bass collected in the fall season is 95-100.
- Bluegill, catfish and crappie populations can also be analyzed using Wr.
- Accurate measurements of total length and weight are necessary to calculate Wr.
- Water quality, forage abundance and size, competition and vegetation may effect Wr. Species exhibiting Wr consistently below 95-100% may be in need of corrective management.
- Length classes within a species can also be compared (i.e. largemouth bass 8"-12", 12"-15", 15"-18", 18"-21", 21"+).
**Relative Weight (WR)**

Requires accurate measurement of fish total length and total weight to provide meaningful information.

**RELATIVE WEIGHT (WR)**

Example: A largemouth bass collected from Pineburr Lake in late summer was 14” total length and weighed 1.4 pounds.

Calculations for WR are:

The standard weight (from the table provided) for a bass 14 inches long is 1.47 pounds.

\[
\text{WR} = \frac{\text{1.40 lbs. (actual weight)}}{\text{1.47 (standard weight)}} \times 100
\]

\[
\text{WR} = 95.2
\]

The relative weight for this bass is considered to be satisfactory.
Largemouth Bass Wr

Good Forage and Habitat Conditions

Bass Over-crowding, Forage and/or Habitat Problem

Total Length (ins)

Standard Weight (lbs)

When Your Wr Is Out Of Whack:

- Water quality (visibility?, pH?, alkalinity?)
- Forage base (bluegill present? supplemental forage?)
- Adequate harvest (Low Wr’s of certain size fish?)
- Supplementation (fertilizer, feed, aeration?)
- Aquatic vegetation (too much cover for forage?)

END OF LESSON