The lake management consultant's objective is to assess the lake habitat, fish population and user group in order to formulate sound management decisions for the enhancement of the sportfishery. Assessment of the fish population is usually conducted using gill-nets, seines and electrofishing gear to sample various species present. A valuable addition to data collected by these survey techniques is angler catch records.

To be meaningful, anglers must cooperate by accurately recording size structure and species composition of their catch. Catch record data becomes even more reflective of fish populations present if anglers fish with a variety of lures and baits to catch as many species present as possible or consistently with similar gear from year to year to identify changes in species length and abundance.

The size structure of a largemouth bass population can often be estimated by analyzing annual catch records. An index commonly utilized to estimate size structure of bass is proportional stock density (PSD), although the term percentage size distribution is normally used when interpreting catch records. Research has indicated that the PSD for largemouth bass based on annual catch data approximates the PSD determined by spring electrofishing samples.

Unfortunately, bluegill PSD values based on catch records seldom correspond to the PSD determined by electrofishing, unless only very small or very large bluegill are present. However, bluegill catches do help to identify trends in their population over time and assist with making harvest recommendations.

Remember that assessment is not management. Data collected from angler catch records (or by another assessment technique) is useless unless interpreted into sound and feasible management decisions. In too many instances sampling is over-emphasized while interpretation of the data is neglected.

Several indices are used to interpret data collected from catch records. Angling PSD has already been mentioned as an index to determine the size structure of bass and bluegill populations. To calculate angling PSD for bass, the following formula is used:

\[
\text{Angling PSD (bass)} = \frac{\text{number of quality bass caught (12 inches or larger)}}{\text{total number of all bass caught}} \times 100\%
\]

Example: Catch records for Pineburr Lake indicate 100 bass were caught in 1984, 33 of which were 12 inches or longer.

\[
\frac{33 \times 100}{100} = 33\%
\]

A PSD (bass) of 33% means that of all bass caught, one-third were at least 12 inches long.

Similar formulas are used to calculate angling PSD bluegill.

\[
\text{Angling PSD (bluegill)} = \frac{\text{number of quality bluegill caught (6" or longer)}}{\text{total number of all bluegill caught}} \times 100\%
\]

Example: Catch records for Pineburr Lake indicate 40 bluegill were caught in 1982, 20 of which were at least six inches long.

\[
\frac{20 \times 100}{40} = 50\%
\]

A PSD (bluegill) of 50%, means that of all bluegill caught, one-half were at least six inches long.

The following table can be used to analyze the size distribution of bass and bluegill caught in Pineburr Lake based on angling PSD values.

<table>
<thead>
<tr>
<th>Catch Composition</th>
<th>Angling PSD (%)</th>
<th>Harvest Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bass</td>
<td>Bluegill</td>
<td></td>
</tr>
<tr>
<td>Bass average 12&quot;-15&quot;, Bluegill average range from 3&quot;-4&quot; or larger</td>
<td>20-40</td>
<td>50-80</td>
</tr>
<tr>
<td>Bass average 12&quot;-15&quot;, Bluegill caught are less than 5&quot;.</td>
<td>20-40</td>
<td>less than 50</td>
</tr>
<tr>
<td>Most bass caught are greater than 12&quot; or larger, Bluegill 60</td>
<td>50</td>
<td>Bluegill overcrowded - Harvest more bass release all bass</td>
</tr>
<tr>
<td>Bass are easy to catch and most are less than 12&quot;. Bluegill range from 3&quot;-4&quot; or larger</td>
<td>20-40</td>
<td>50-60</td>
</tr>
<tr>
<td>Bluegill caught are less than 12&quot; or larger, Bluegill range from 3&quot;-4&quot; or larger</td>
<td>20-40</td>
<td>50-60</td>
</tr>
<tr>
<td>Bass are easy to catch and most are less than 12&quot; long, Bluegill (6&quot; plus) frequent</td>
<td>20-40</td>
<td>50-80</td>
</tr>
</tbody>
</table>

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According to the catch record analyses provided, the bass and bluegill populations in Pineburr are balanced, and the management recommendation (if catch records are the only source of size distribution data) would be to release 12" to 15" bass caught by initiating a slot limit.

Catch record data will also provide pertinent information regarding channel and/or blue catfish populations. Harvest records can be used to verify the presence or absence of these species. If catfish were historically stocked, records can assist the consultant with decisions on which species to restock if natural reproduction is limited.

The best use of angler catch records is to supplement fish population data collected from electrofishing, gill-netting and seining samples. Once management recommendations are formulated and initiated, catch record data may provide enough information to fine tune future management plans.

Owners of small ponds may not want to invest in a lake survey. For them, catch records maintained over time should provide enough information, particularly in the area of harvest, to maintain a satisfactory fishery.