

THE ROLE OF ANGLER CATCH RECORDS IN MANAGEMENT DECISIONS FOR PRIVATE WATERS

A1004

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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. The value of catch records should be obvious; in many cases reliable management recommendations can be made based on trends of catch records kept over a period of time.

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:

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

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.

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

Example: Catch records for Pineburr Lake indicate 40 bluegills 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.

Catch Composition	Angling PSD (%)		Harvest Recommendations
	Bass	Bluegill	
Bass average 12"-15". Bluegill average range from 3"-6" or larger.	20-60	50-80	Balanced pond-release 12"-15" bass
Bass average 12"-15". Bluegill caught are less than 5".	20-60	less than 50	Bluegill reaching over-crowded condition - Harvest more bluegill release 12"-15" bass
Most bass caught are 12" or larger. Bluegill caught are less than 5".	greater than 60	less than 50	Bluegill overcrowded - Harvest more bluegill release all bass
Bass are easy to catch and most are less than 12". Bluegill range from 3"-6" or larger.	less than 20	50-80	Bass reaching over-crowded condition - Harvest more bass less than 12"; release 12"-15" bass
Bass are easy to catch and most less than 12" long. Bluegill (6" plus) frequent.	less than 20	greater than 80	Bass overcrowded - Harvest more bass less than 12" and over 15" release 12"-15" bass and all bluegill
Undesirable species			Consider renovation

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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.

REPRINTED FROM THE PROCEEDINGS OF THE
1985 TEXAS FISH FARMING CONFERENCE
HELD IN COLLEGE STATION, TEXAS
JANUARY 23-24, 1985