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**ILLINOIS  
DEPARTMENT OF  
NATURAL RESOURCES**

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July 31, 2007

Gene Campbell  
2811 Woodhaven Dr  
Champaign, IL 61822

Mr. Campbell,

The lake in the Cherry Hills subdivision known as Twin Lakes was sampled on 26 July 2007 using 20 minutes of AC electrofishing. We collected largemouth bass, bluegill, green sunfish, hybrid sunfish, channel catfish, white crappie, and grass carp. A brief description of each fishery is given below.

**Largemouth Bass**

We obtained a catch rate of 462 bass per hour of electrofishing and this represents a high catch rate. The majority of the fish collected were below 5 inches and suggests there was a strong year class produced this year. We did not collect any bass over 15 inches. The body condition of the bigger bass were on the light side and indicates the bass are growing slow and not reaching larger sizes. The high number of bass less than 15 inches will control the number of bluegill in the lake and produce large bluegill.

**Bluegill**

We obtained a catch rate of 81 bluegill per hour of electrofishing and this represents a very low catch rate. The high number of bass is keeping bluegill numbers low, but angling pressure must be lowering bluegill numbers as well. We did collect bluegill less than 3 inches and this suggests the bluegill are reproducing in the lake. Even though there were few bluegill in the sample, there was a good distribution of sizes. The body condition of the bluegill was exceptional and forage is not lacking. The bluegill need some protection from angling. I would make a regulation that allowed each lot only 10 bluegill regardless of how many anglers were fishing from that home. Protection of the large bluegill is critical. Catch and release is not needed, but people need to throw back some of the big ones.

**Channel Catfish**

We collected only one channel catfish, but we do not collect catfish in proportion to their density. Angler catch is more useful than our catch rates. In order to maintain a catfish fishery you need to stock 8-inch fingerlings. Angler harvest will dictate how often you need to do this. If angler harvest is low, it might be every 5 years. Stocking 50 per acre is a safe amount.



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**White Crappie**

We obtained a catch rate of 18 crappie per hour and represents a good catch rate for July. We did collect two crappie less than 3 inches and this indicates the crappie did produce a year class this year. The high number of bass in the lake should keep the crappie numbers low. The body condition of the crappie was good and this indicates density is fine and forage is not an issue.

**Regulations**

Current fishing regulations are adequate to manage your fishery. The only suggested change is a bluegill regulation. Limiting the bluegill harvest to 10 per lot should help protect the great bluegill fishery.

If you have any questions or concerns, please contact me.

Sincerely,

A handwritten signature in black ink that reads "Mike Garthaus". The signature is written in a cursive, flowing style.

Mike Garthaus

# Relative Weight: An Easy to Measure Index of Fish Condition

**F**isheries biologists use many different tools and techniques to determine the proper management of fish populations in our lakes, streams, and ponds. Some of these techniques are fairly simple and can be used by pond owners to help manage their own populations of largemouth bass and bream.

Fisheries managers often need to know if fish are growing poorly or even losing weight. Lack of food, poor water quality, poor water temperatures (too hot or too cold), or disease can cause stress that results in poor growth. While growth may be difficult to measure, condition or plumpness of the fish is easy to measure and indicates if the fish are under stress.

One measure of the condition of a fish is its **relative weight**. Relative weight is the ratio of the actual weight of a fish to what a rapidly growing healthy fish of the same length should weigh, called **standard weight**. Fish with high relative weights are fat while those with low relative weights are thin. Of course ponds should be managed to produce healthy, fast-growing fish.

To calculate the relative weight for a fish, one simply divides the weight of the fish in pounds by the standard weight for a fish of the same length. Standard weights can be found in Table 1 for largemouth bass, bluegill, and redear sunfish (also called shellcrackers). Fish should be measured from the tip of the nose with the mouth closed to the end of the tail. Scales for weighing fish can be purchased at most sporting goods stores. Fish that have a relative weight less than 0.80 or 80 percent of the standard are considered severely thin, indicating a lack of food for that animal. Relative weights between .8 and 1, while not ideal, are well within the range found in healthy populations.

## Calculating Relative Weight

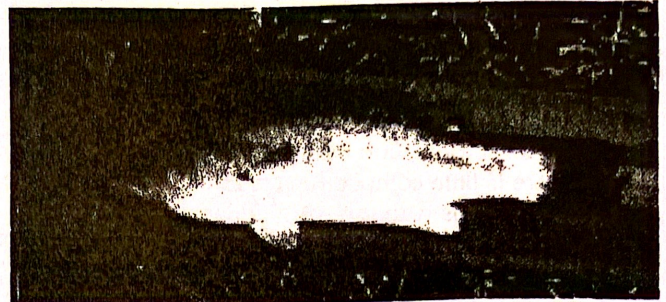
Suppose you caught a largemouth bass that was 15 inches long and weighed 1.5 lbs. What would be the relative weight of that bass?

- 1) Look up the standard weight of a 15-inch largemouth bass from Table 1.  
standard weight for a 15" bass = 1.8 lbs

- 2) Divide the weight of your fish by standard weight.

$$\text{relative weight} = 1.5 / 1.8 = 0.83$$

This bass weighs 83 percent of the standard weight of a bass the same length.



Measuring a fish properly



Incorrect



Correct

Pond owners can use the relative weight of the fish they catch from the pond to keep track of the success of their pond-management strategies. Owners should measure the relative weight of bass and sunfish for as many sizes as possible throughout the season. Relative weight can change throughout the season, so individual fish may be thin or fat at different times. By measuring relative weight for many fish over the course of the year, the pond owner should be able to see the overall condition of fish in the population.

If a pond is in balance (containing the proper number and sizes of bass and bream to produce good growth and fishing), there should be adequate food for all sizes of both bass and bream. In balanced ponds, the relative weights for most fish will be greater than 0.9. Low relative weight due to lack of food can be caused by poor fertility, excess weeds, competing undesirable fish (for example crappie, golden shiners, gizzard shad, or bullheads) or too many bass or bream in a pond. Sudden changes in management, such as inconsistent fertilization, can result in poor fish condition. In ponds with too many bass (bass-crowded ponds), the bass will have low relative weights with bass between 10 and 14 inches typically being very thin. In bass-crowded ponds, there is simply not enough small- to medium-sized bream to feed all those hungry bass. Adult bluegill

## Bass Relative Weight

|                       |      |  |
|-----------------------|------|--|
|                       | High | Low  |
| Bream Relative Weight | High | <ul style="list-style-type: none"> <li>• pond is well managed</li> <li>• bass-crowded</li> <li>• competing predators (large catfish, striper hybrids, etc.)</li> <li>• hybrid bream present</li> </ul>   |
|                       | Low  | <ul style="list-style-type: none"> <li>• bream-crowded</li> <li>• competing forage (shad, shiners, bullheads)</li> <li>• poor fertility</li> <li>• inconsistent management</li> <li>• competing species (crappie, catfish, common carp)</li> <li>• excess weeds</li> </ul> |

in these bass-crowded ponds will usually be in excellent shape with high relative weight. Since few bluegill survive the intense predation by bass to become large adults, there is little competition for food among bluegills. In ponds with too many bluegills (bluegill-crowded), the bass will usually have high relative weight

with bluegill in poor condition. Ponds with competing species, poor fertility, or overabundant weeds will generally produce bass and bream with low relative weight. Hybrid bluegill (bluegill X green sunfish) create a special problem. Because they are not completely sterile, these hybrids can mate with bluegill. The resulting fish typically produces so few young that there simply is not enough food produced to support the bass population.

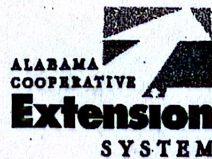
Records of relative weight and harvest can be provided to fisheries biologists or Extension personnel when these professionals check ponds to help diagnose management problems. While relative weight by itself cannot provide full diagnoses of problems in ponds, it does give the pond owner an ongoing measure of the vitality of the fish and an early warning of potential management problems.

### References

Anderson, R.O. and R.M. Neumann. 1996. Length, weight, and associated structural indices. pp. 447-482. In B.R. Murphy and D.W. Willis (eds.). Fisheries Techniques. American Fisheries Society, Bethesda Maryland

**Table 1.** Standard weight for largemouth bass, bluegill, and redear sunfish of selected lengths.

| Largemouth Bass |                       | Bluegill        |                       | Redear Sunfish (shellcrackers) |                       |
|-----------------|-----------------------|-----------------|-----------------------|--------------------------------|-----------------------|
| Length (inches) | Standard Weight (lbs) | Length (inches) | Standard Weight (lbs) | Length (inches)                | Standard Weight (lbs) |
| 10              | 0.5                   | 6               | 0.2                   | 6                              | 0.1                   |
| 10.5            | 0.6                   | 6.5             | 0.2                   | 6.5                            | 0.2                   |
| 11              | 0.7                   | 7               | 0.2                   | 7                              | 0.3                   |
| 11.5            | 0.8                   | 7.5             | 0.3                   | 7.5                            | 0.3                   |
| 12              | 0.9                   | 8               | 0.4                   | 8                              | 0.4                   |
| 12.5            | 1.0                   | 8.5             | 0.4                   | 8.5                            | 0.5                   |
| 13              | 1.1                   | 9               | 0.6                   | 9                              | 0.5                   |
| 13.5            | 1.3                   | 9.5             | 0.7                   | 9.5                            | 0.6                   |
| 14              | 1.5                   | 10              | 0.9                   | 10                             | 0.7                   |
| 14.5            | 1.6                   | 10.5            | 1.0                   | 10.5                           | 0.8                   |
| 15              | 1.8                   | 11              | 1.2                   | 11                             | 1.0                   |
| 15.5            | 2.0                   | 11.5            | 1.4                   | 11.5                           | 1.1                   |
| 16              | 2.2                   | 12              | 1.6                   | 12                             | 1.3                   |
| 16.5            | 2.5                   | 12.5            | 1.8                   | 12.5                           | 1.4                   |
| 17              | 2.7                   | 13              | 2.1                   | 13                             | 1.6                   |
| 17.5            | 3.0                   | 13.5            | 2.4                   | 13.5                           | 1.8                   |
| 18              | 3.2                   | 14              | 2.7                   | 14                             | 2.1                   |
| 18.5            | 3.5                   | 14.5            | 3.0                   | 14.5                           | 2.3                   |
| 19              | 3.9                   | 15              | 3.4                   | 15                             | 2.5                   |
| 19.5            | 4.2                   |                 |                       |                                |                       |
| 20              | 4.5                   |                 |                       |                                |                       |
| 20.5            | 4.9                   |                 |                       |                                |                       |
| 21              | 5.3                   |                 |                       |                                |                       |
| 21.5            | 5.7                   |                 |                       |                                |                       |
| 22              | 6.2                   |                 |                       |                                |                       |
| 22.5            | 6.6                   |                 |                       |                                |                       |
| 23              | 7.1                   |                 |                       |                                |                       |
| 23.5            | 7.6                   |                 |                       |                                |                       |
| 24              | 8.1                   |                 |                       |                                |                       |
| 24.5            | 8.7                   |                 |                       |                                |                       |
| 25              | 9.3                   |                 |                       |                                |                       |
| 25.5            | 9.9                   |                 |                       |                                |                       |



ANR-1193

**Russell A. Wright**, *Extension Specialist*, Fisheries and Allied Aquaculture, Auburn University

**For more information**, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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Revised July 2, 2007

## Gene Campbell

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**From:** Gene Campbell [genecampbell@insightbb.com]  
**Sent:** Thursday, July 26, 2007 1:59 PM  
**To:** Mike Garthaus (mike.garthaus@illinois.gov)  
**Subject:** Fishing Rules

Mike,

Thank you again for your work today in assessing our fish populations. Here (below) is what the Cherry Hills Lake Association rules say about fishing in our lake; looks like there are no restrictions on removing bluegill. I sent an email to all homeowners this morning to ask that they not remove large bluegill, but to return them (unharmd) to the lake and to not let outsiders (i.e., non-guests) fish.

I look forward to your full report.

Gene

### FISHING REGULATIONS

The following rules were formulated to keep a balanced population of fish in the lake. The available literature and advice from professionals indicate that the most common cause of poor fishing in a small lake is due to an overpopulation of bluegills. This usually results from preferential fishing for bass. To keep a healthy population balance they recommend that any number of bluegills be caught and removed from the lake, but that we limit the number of bass caught and kept.

- 1 The minimum size limit for a "keeper" bass is 12 inches.
2. Bass smaller than 12 inches should be returned to the lake carefully and immediately. They should not be placed on a stringer and released later.
3. The daily limit of "keeper" bass is four bass per lot owner family, regardless of the number of the family and guests fishing.
4. Only artificial lures and natural non-fish bait, such as worms and insects may be used for bait. Specifically, minnows and goldfish (and leeches) are prohibited because of the danger of introducing undesirable species into the lake. No fish from other sources shall be put into the lake without prior approval of the Board of Directors.
5. Fishing guests are permitted only when a Lake Association member is present.

7/26/2007