Managing a Bass/Bluegill Pond

If you want to catch more bass from your pond what would you do?

Here is a problem to help answer the question:

- Count the marks on the fish board shown at the bottom of the page.
- Put the results in the table below.
- Do the arithmetic (see example on back of this page)
- Plot the result on the attached chart.

Size	# of Bluegill	
3 – 6 inches long		
Over 6 inches long		**A**
Total		**B**

Size	# of Bass	
8 - 12 inches long		
Over 12 inches long		**C**
Total		**D**

Arithmetic:

PSD Bluegill = **A**÷**B** x 100

PSD Bluegill = _____

PSD Bass = **C**÷**D** x 100

PSD Bass = _____

This pond is

___ bluegill crowded
___ bass crowded
___ just right

How should bass fishing change?

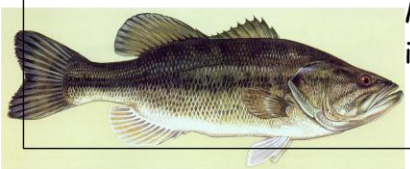
___ Catch more bass
___ Catch fewer bass
___ No change.

*To find out what **PSD** means look on the back of this page*

3” **6”**

Make a mark for each bluegill caught that is bigger than 3 inches. Show it as 3 to 6 inches or over 6 inches.

Fishing Summary 2011 Season



Make a mark for each bass caught that is bigger than 8 inches. Show it as 8 to 12 inches or over 12 inches.

8” **12”**

Answers:
PSD Bluegill = 15
PSD Bass = 75

Guide to Calculating the PSD values

Suppose that during a summer of fishing a record is made of the lengths of all the bass and bluegill caught in a pond. The result is shown in the tables below:

Kind	Size	# Fish
Bass	8 – 12 inches long	19
	Over 12 inches long	13
Total		**32**

Kind	Size	# Fish
Bluegill	3 - 6 inches long	105
	Over 6 inches long	39
Total		**144**

How many total bass were caught that were 8 or more inches long? **32**
How many of those bass were 12 or more inches long? **13**

The PSD formula for bass is: $\mathbf{PSD\ Bass} = \frac{\mathbf{No.over\ 12''}}{\mathbf{No.over\ 8''}}\ \mathbf{X\ 100}$

So the $\mathbf{PSD\ Bass} = \frac{\mathbf{13}}{\mathbf{32}}\ \mathbf{x\ 100}$

PSD Bass = 41

How many total bluegills were caught that were 3 or more inches long? **144**
How many of these were 6 or more inches long? **39**

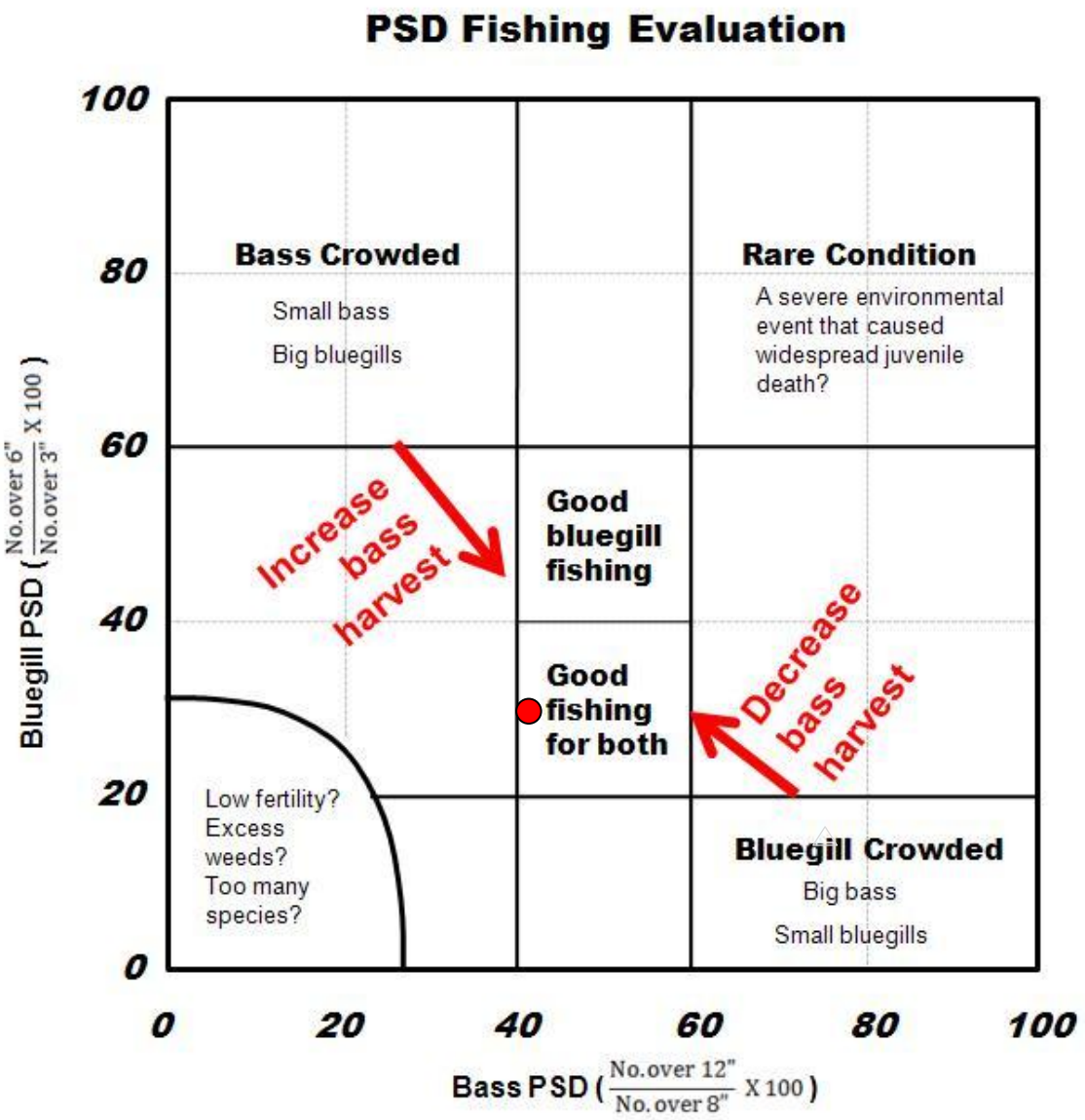
$$\mathbf{PSD\ Bluegill} = \frac{\mathbf{No.\ over\ 6''}}{\mathbf{No.\ over\ 3''}}\ \mathbf{X\ 100}$$

So the $\mathbf{PSD\ Bluegill} = \frac{\mathbf{39}}{\mathbf{144}}\ \mathbf{X\ 100}$

PSD Bluegill = 27

This point has been plotted on the chart titled "PSD Fishing Evaluation" and shows that the pond provides "**Good fishing for both.**" The PSD approach has proven to be a reliable method for determining the status of the fishery in a farm pond.

By the way, PSD stands for Proportional Stock Density. The PSD is the percentage of the reproductive population that is near the end of reproductive life. Percentages greater than 60 signal a potential problem, the juvenile population is too small. Something should be done to increase the number young in the population.



A bass – bluegill pond is managed with the bass harvest. Consider the bluegill crowded pond first. This pond has mostly large bass and mostly small bluegills. The bass are well fed but the outlook for their future is gloomy. There are too few juveniles (8-12") coming along to have kids (fish). The reason is there are too many bluegills, all hungry, and they succeed in eating the bass eggs. The remedy is to stop catching bass. Let the bass population increase until they succeed in controlling the bluegills. An additional rule for this pond would be to remove all bluegills caught – don't put any back.

Next consider the bass crowded pond. Here there are no little bluegills and no large bass (or very few). Why? The bass are hungry and there aren't enough bluegills to feed them so they never grow to trophy size. The remedy is to catch more bass. Keep everything that is caught. This reduces the feeding pressure on the bluegill allowing the bluegill population to increase. Killing all the weeds in a pond like this makes the problem worse because the bluegills would have nowhere to hide.

A good quality pond can support about 200 lbs of fish per acre. If good fishing occurs when there are 50 lbs of bass and 150 lbs of bluegills then what rule would maintain this population ratio? Research has shown that taking about 30% of bass weight is appropriate. A 12 inch bass normally weighs about 1.5 lbs. Removing ten bass 12" long (15 lbs of bass) per season would follow this rule. You can adjust the rule (keep only bass over 12") up or down according to your seasonal PSD results.

Find out more: "Management of Fish Ponds in Pennsylvania" Penn State Extension ©2000 (pp. 18-19)