TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE Boise, Idaho SOIL CONSERVATION SERVICE

TN - BIOLOGY NO. 11 June 22, 1976

APPRAISAL OF BASS-BLUEGILL PONDS BY FISHING RESULTS

District Conservationists frequently are asked by pond owners to advise them whether something needs to be done to alter or replace the fishpond population. Field offices do not normally have seines; nor do they usually have sufficient experience and time to make a dependable analysis of existing conditions by the seining methods.

The inquiry method -- ANALYSIS OF FISHING RESULTS -- is one way for field office personnel to appraise the fishpond population, and then suggest remedies and management.

1. If fishing is good for both bass and bluegills, fish population is no problem. The only analysis needed is to determine whether water fertility should be increased for higher fish production per acre. This can be done by the white-disc test as outlined in USDA Farmer's Bulletin No. 2250, "Warm Water Ponds for Fishing."

2. Fishing is fair, poor, or uncertain:

   a. If bass one-half pound or less can be caught, and larger bass are also present, the bass population is satisfactory. (A pond, two or more years after stocking, should have several or many small bass at all times. This indicates that there are plenty of bass for the food supply; therefore, there is no need to stock more bass.)

      Two problems may exist: (1) when many of these small bass can be caught easily, the pond has too many bass; and those caught should be removed. The remainder then grow rapidly. (2) The bluegills can be stimulated to spawn more, feeding the bass better, by adequate fertilization of the water.

   b. If no bass one-half pound or less can be caught, the bass population is absent or insufficient. This unsatisfactory condition is caused by (1) an excess of bluegills (more than 6 pounds of bluegills per pound of bass), or (2) heavy competition by another species such as crappie, or (3) loss or depletion of bass the first year after stocking. If there are no large bass either, it is obvious that bass must be stocked somehow. However, if large bass, but no small bass are present, the correction must come by adjusting the bluegill population (additional stocking of bass usually is not successful). See the next section (2 c.).

c. If most of the bluegills caught are of "intermediate-size" (3 to 5 inches long or one-half to two ounces each), the problem is an overpopulation of bluegills.

When these small bluegills are so numerous, bluegill fishing is no pleasure. In such a situation, a few large bluegills may be caught occasionally but the success is not sufficient to make fishing satisfactory; and you can assume that there are more pounds of intermediate-size than there are of the catchable size (2 ounces or larger).

Bluegill population may be adjusted by one of the following methods:

(1) Seining - If the pond is seinable, large numbers of the intermediate bluegills can be removed with a suitable seine -- one with a 1/2 or 3/4 inch bar mesh, 6 to 8 feet in depth, and 50 or more feet in length. When this type of seine is used, the intermediate-size bluegills should be taken out, as long as the persons seining have patience to remove them. A seine with this size mesh does not remove the little bluegills (2 inches and smaller) which are needed to feed the bass. Since the object is to increase the weight-ratio of useable-size bluegills over the intermediates do not remove any bluegills above the 2 ounce size (5" plus) during the operation. This removal of intermediate-size bluegills usually improves situation 2 b., as it (1) permits successful hatching of the bass in the spring, and (2) stimulates bluegill spawning to provide food for the fingerling bass.

(2) Fertilization - A further measure to increase the size of intermediate bluegills, is to fertilize adequately during the important growing season for bluegills -- February to June.

(3) Rotenone - If the intermediate bluegills cannot be controlled by either of the above methods, the pond should be rotenoned completely, and then restocked as for a new pond.

(4) Summer draw-down - Flood-retarding reservoirs, lakes and large ponds on flowing streams usually cannot be rotenoned satisfactorily. Fish populations, particularly bluegills and crappie, can be managed favorably by (1) lowering the water level for about 3 months in the late summer and (2) refilling it in the fall (after the spawning season of bluegills).

(5) An overpopulation of intermediate-size bluegills cannot be corrected by fishing.

d. Competition from other species of fish

(1) When the owner knows that the pond contains shad, shiners, or a population of intermediate-size crappie, the pond must be corrected by killing all the fish with rotenone, and then restocking as for a new pond.

(2) When the competition is only warmouth, green sunfish, or top minnows, the problem is usually negligible.

(3) When the competition is bullhead catfish, eliminate submersed waterweeds. This allows the small bass to catch all of the little catfish that will hatch each summer. The catfish that are too large for the small bass to eat will die in 3 or 4 years. Removing the "cats" with hook and line or traps will bring the pond more quickly into a satisfactory condition for bluegills.

(4) When the owner does not know what undesirable species are present, a small area of the pond should be rotenoned, and the fish-kill examined. The owner, district conservationist, or a biologist will likely see whether or not serious competition is occurring.

e. Other factors that affect the success of a fishpond.

(1) When pond water is muddy, erosion control is needed; or water might be diverted around or away from the pond.

(2) When the water supply is excessive: (1) divert water around the pond, (2) install a double-sleeve or similar device to route the flow from the bottom, or (3) establish better vegetative cover on the land above the pond.

(3) When an owner doesn't understand warm-water management for fish, he should have a copy of USDA Farmers' Bulletin No. 2250.