

Bull # 5

Personal Copy: James B. Charles

FARM FISH PONDS

PROBLEMS
AND
ANSWERS



A KENTUCKY FARM POND

KENTUCKY DIV OF GAME AND FISH
EARL WALLACE DIRECTOR
FISHERIES SECTION

FISHERIES SECTION
OF
DIVISION OF GAME AND FISH
EARL WALLACE, DIRECTOR

FARM FISH PONDS

Minor E. Clark Supt. of Fisheries
J. T. Cox Supr. of Farm Ponds
William Tompkins Chief Biologist
Bernard Carter Asst. Biologist, Eastern K
Harold Barber Asst. Biologist, Central K
Charles Eowers Asst. Biologist, Western K
Mercer Peters Chief Chemist
Elfreida Avots Pathologist
Robert L. Jones Supt., Catliff Fish Hatchery
Roy Henry Supt., Trigg Fish Hatchery
Anthony Coleman Pike County Rearing Pond
Harvey Gardner Fisheries Maintenance
John Switzer Supr., Fish Transportation
Elizabeth Sutherland Secretary

PROBLEMS

AND

ANSWERS

1. Are stock fish for farm ponds available from the Division of Game and Fish and is there a charge for such fish?

Ans. For many years the Division of Game and Fish has furnished to pond owners throughout the State fish to stock their ponds. No charge is made for this service, but certain requirements must be met.

2. What are these requirements?

Ans. The pond to be stocked must be at least 1/4 acre in size and of adequate depth to maintain sufficient water during dry periods. The owner is requested to allow his friends and neighbors to fish the pond. He, of course, may exclude whom he wishes. He must agree not to allow the use of illegal gear such as nets or seines in the harvest of fish from the pond. The owner must also agree to meet the fish truck at a definite time and place in the county to receive his fish.

3. What kind of fish does the Division furnish and how many will a pond owner get?

Ans. Largemouth or Kentucky bass and bluegill only are distributed. The number stocked is based on the amount of surface acreage present. The two species are allotted in the following ratios:

80 bass fry plus 500 bluegill fingerling
per acre of water

or

80 bass fry plus 40 adult bluegill
per acre of water



Ideally located and constructed but too small for fish pond. Waters of such size are excellent for the propagation of minnows.

4. To whom do I make application for such fish?

Ans. You may make application to your local conservation officer, direct to the Division of Game and Fish, Fisheries Section, Frankfort, Kentucky, your local Soil Conservation Service Agent or County Agent. Regardless to which agency the application is made, all are referred back to the local conservation officer for approval.

5. Is it possible to secure other species of fish from the Division such as crappie for the stocking of ponds?

Ans. Experiments conducted over a five year period have shown that the introduction of species other than bass and bluegill in small ponds and lakes were unsatisfactory. In ponds stocked with crappie it was found that the species had a tendency to over populate at the end of the second year. When this occurs, the growth and reproduction of desirable fish were reduced to a minimum. For this reason stocking of crappie was discontinued.

6. When pond contains green sunfish or pond perch, would restocking with desirable fish help?

Ans. Definitely not. When these species are present in a pond, it is necessary that they be removed before stocking. They are a constant threat to good fish ponds, and one should be cautioned not to introduce them in any body of water.

7. When can pond owner expect stock fish?

Ans. Bluegills are delivered twice a year - in early spring and late fall. There is only one delivery of bass which occurs around the first of May.

8. What type of container should be used in transporting stock fish to pond?

Ans. Any metal container free of grease and dirt, such as a milk can. A one gallon container will carry one hundred fish in the fry and fingerling stage.

9. If the pond is muddy due to carp present, will the addition of bass and bluegill correct the situation?

Ans. It is very doubtful if the introduction of desirable fish will help. The muddy condition

which prevails due to the bottom feeding habits of the carp, prevent the reproduction of the bass and bluegill. The carp should be removed before further stocking is considered.

10. How may one remove these undesirable fish from a pond?

Ans. The only feasible method of removing these fish other than draining the pond is by chemical treatment. By this method all fish within the pond are killed and the pond or lake may be stocked as new waters.

11. Most of Kentucky ponds serve as a source of water for livestock. Will the chemical used in killing the fish effect this usage in any way?

Ans. No, the chemicals used have no harmful effects on livestock. However, fish killed from the treatment should be removed to make the water more palatable to the livestock using it.

12. Is the chemical treating of ponds a free service to the owner?



The above photo shows the results obtained from test seining a green sunfish pond. Bass and bluegill had been stocked, but no survival of the two species were found.

Ans. The pond owner is requested to pay for the

amount of chemicals used. This charge amounts to approximately 75¢ per foot acre of water treated. For example, a one acre pond with an average depth of four feet would cost the owner \$3.00.

13. How long will the water remain poisonous to fish and will it kill turtles, frogs and snakes?

Ans. The length of time which the water remains toxic to fish life depends upon the time of year the treating is done - during the warm months from a week to ten days - in the cooler months from eight to ten weeks. The chemical used will not kill turtles, frogs or snakes as it only affects gill breathing organisms.

14. After a pond is stocked or renovated, how long will it be before fishing can be started?

Ans. Normally 12 to 14 months or after you have positive proof that the bass and bluegill have reproduced. At the end of one year after stocking, the bass should weigh up to one and one-half pounds with the bluegill going as high as eight ounces.

15. Is there a method whereby you can determine if the bass and bluegill have reproduced?

Ans. By using a minnow seine in the shallow vegetated areas of a pond, it is possible to pick up the reproduction of the two species if they have spawned. The test for bass reproduction should be made between the middle of June and the latter part of August. However, checks made in late summer often fail to show bass reproduction as by this time they have reached a size where they seek deeper water or can outrun the test net. It is often necessary to make several drags to secure a representative sample. Kentucky conservation officers have had

training in this type work and should be contacted to assist in testing pond.



Test seining method used in determining population of fish present in pond.

16. What should be used in feeding the fish? Will commercial fertilizer such as used on the farm make the fish grow?

Ans. Most of Kentucky's ponds are supplied by water from fertile watersheds. These ponds require no further food additions. Commercial fertilizer will increase the food supply in some ponds, but generally speaking, it is a hit and miss proposition.

17. What is the main disadvantage of using inorganic fertilizer to increase food supply?

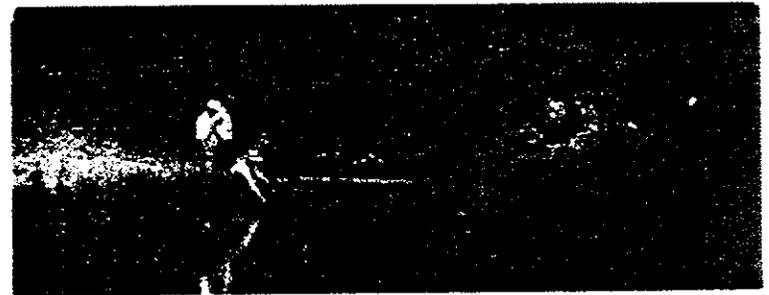
Ans. The main disadvantage is that many ponds fail to react to fertilization. This may be from many causes but the failure of the pond owner to make application when needed is the main reason. When partial fertilization occurs, the pond is taken over by pond scum or algae.

This prevents the pond from being fished as well as making the water unfit for livestock consumption. Naturally time and money involved are lost.

18. If a pond owner wants to fertilize his pond, what method would he follow and how much fertilizer would be used?

Ans. When fertilizing your pond, use 100 pounds of 6-8-6 or 6-8-4 commercial fertilizer plus ten pounds of nitrate of soda per application per surface acre of water. If it is impossible to secure the nitrate, use 6-8-6 alone.

Applications should begin after the spring rains are over, and continue throughout the summer and warm fall months. Upon making the first application the water should turn green in color in about six to eight days which indicates the presence of plankton. At the end of ten days if the water is still clear, a second application should be made. Oftime it is necessary to make a third application before a color can be noticed. The time of other applications will vary from three to six weeks, however, it is advisable to use a simple test weekly to determine the need for more fertili-



Conservation Officer showing pond owner how to make hand test for determining fertility of water.

ser. The test consists of placing the hand to a depth of approximately 16 inches in the water. If the hand is visible, then more fertilizer is needed. If not, no fertilizer is needed for a few days.

If you are fertilizing more than one pond at the same time, and you make your initial application on the same date, one pond may react quicker to fertilization than the other. In other words, artificial fertilization does not react the same in all ponds. It is best to apply the fertilizer by boat, however, in small bodies of water, it may be broadcast into the water by walking around the banks.

19. Is it true that fertilizer will control underwater growth if applied at recommended rates?

Ans. Yes, abundance of small plant life colors the water to a degree where sunlight cannot penetrate to the bottom of pond where such growth starts. Without sunlight it cannot grow.

20. If the pond owner does not wish to fertilize, what other method may be used to rid the pond of scum?

Ans. Bluestone or copper sulphate works well in the control of pond scum, however, it should be used with caution, as an over dose is lethal to aquatic life.

21. How much bluestone or copper sulphate should one use?

Ans. The amount of chemical used in the control of aquatic growth is expressed in parts per million (P. P. M.). In the case of bluestone it is desirable to use 1 P. P. M. which means for every 1,000,000 pounds of water you should use one pound of chemical. The amount of copper

sulphate to be used may be determined by the following method.

$$\begin{aligned} & \text{Area of Pond} \\ & \text{Square Feet X Deepest Depth X 25 =} \\ & \text{Pounds of Water} \end{aligned}$$

For example:

$$\begin{aligned} & 43,000 \text{ sq. ft. X 15 X 25 =} \\ & 16,125,000 \text{ Pounds of Water} \end{aligned}$$

Such a pond contains a little over 16 million pounds of water, using 1 pound for every million pounds you will find the answer to be 16 pounds of chemical.

22. How does one apply the chemical to the water?

Ans. It is best applied by dissolving the crystals in water and spraying the surface. They may also be placed in a sack or bag and towed over the affected areas until the crystals have dissolved.



Removing cattails by pulling plants up by the roots.

23. When a pond is choked with cattails, what is the best method of removing this undesirable growth?

Cattails and other shoreline weeds may be removed by two methods. By pulling up by the roots as often as they appear is most practical in smaller bodies of water where the concentration is not too heavy. Weeds such as cattails have roots which are linked together. By starting work at the point farthest from the shore and working toward the bank it is a simple matter to remove the complete plant. The use of 2-4-D works well where the concentration of weeds are heavy, but as it must be sprayed on each individual plant, it is a bit more tedious and requires the use of a spray. 2-4-D may be secured at any drug store and directions for its use may be found on the package. It is desirable to use two tablespoons of powdered soap to each gallon of solution. This acts as a wetting agent and permits the 2-4-D to adhere more readily to the plant. Otherwise, it will have a tendency to run off.



Eroded watershed keeps ponds muddy, preventing reproduction of desirable fish, should be seeded.

24. What affect does livestock have on the fish population, if they are allowed access to the entire pond?

Ans. They tend to keep smaller ponds muddy as well as destroy the spawning beds of the fish. If possible, they should be fenced out to allow them only a small portion of the pond for watering purposes.

25. Should a screen be placed across spillway to prevent loss of fish?

Ans. A screen across spillway is definitely not needed provided that the width of spillway is adequate enough to allow the excess water to pour over in a shallow flow. Screens across spillway tend to hold trash and debris, causing the water to cut over at some other point on the dam.

26. If fish died in pond, what could be the cause?

Ans. During heavy rains large amounts of organic material may be washed into the pond. As such decays, oxygen is used and the supply of that vital element may be so depleted that fish cannot live.

On the other hand such organic material may result in a very heavy growth of small green organisms. As long as there is normal sunlight these organisms release oxygen. On hot cloudy days when only small amounts of oxygen are being held in the water, the plants cease to release oxygen and instead consume it to a point where fish cannot live.

27. Why do fish bite better in ponds, during early spring and late fall?

Ans. In early spring you will find an absence of

smaller fish and aquatic insects as the ones present prior to the cold months have been consumed. You might say there is a definite food shortage at this time. For this reason the fish are quick to take baits and lures presented them. In the fall the fish like other wildlife are storing up surplus fats to carry them through the winter months, and at this time they feed heavy in preparation for the semi-hibernation period.

28. How may one remove turtles from a pond?

Ans. Shooting them with a 22 rifle is probably the most sure method but shooting over water is dangerous and should be done with caution. A double spring steel trap nailed to a large board, baited with raw meat and floated trap side down in the water will also take the undesirable predator.

Do not overlook the fact that turtle is an excellent food when properly prepared.

29. Why should one fish a pond as hard as possible after it has reached its carrying capacity of fish?

Ans. As a general rule, a pond has reached its carrying capacity in pounds of fish one and one-half years after stocking. If the pond has been properly stocked, this poundage will be tied up in useable size fish. The poundage will not increase if the matured fish are not removed by fishing. It is natural that as fast as you remove these fish food is released for the ones remaining.

30. How often do bass spawn?

Ans. Bass spawn only one time during the year, usually around the first to the fifteenth of May.

They seem to prefer to spawn around stumps or rock outcroppings or fan out a nest gravel.

31. Do bluegill spawn more than once a year?

Ans. It is known that bluegill do spawn all during the summer season. It is doubtful if one pair will spawn once a year, but that as the bluegill mature they spawn, accounting for the presence of bluegill reproduction all during the warm months.

32. How much should a one year bass weigh in a fertile pond?

Ans. A one year bass should weigh from one to one and one-half pounds, that is if they were stocked in the fry stage and there is ample supply of food.

33. Should one fish for bass when they are spawning?

Ans. No, the male bass guards the nest until the spawn are two to three weeks old. If the guardian is removed, eggs will spoil or the small bass may become easy prey for other fish.



A good fish pond is enjoyed by all

34. When is the best time of day to fish for bass and what is the best bait?

Ans. Early in the morning and late in the afternoon seem to be the feeding time for the bass. Top water plugs prove the best in mid summer when the water is quite warm. Spinners and underwater wigglers are better in early spring and late summer and fall. Live minnows are preferred by the bait fishermen.

35. What should one use when fishing for bluegill?

Ans. Earthworms, crickets, and small flies are equally good for the taking of bluegill. While walking around the shallow areas of the pond you are able to locate the bream beds or spawning places. These small rounded hollow nests are easily identified and produce excellent bluegill fishing.

36. Ponds should be checked for population of fish present before additional species are added. When can this work be done?

Ans. Pond work in Kentucky is carried on by districts which enables the fisheries crew to visit each county on the average of at least once a year.

Applications for test seining and the chemical treatment of ponds should be in not later than the first of May of each year.

37. There are other questions relative to pond management not covered here. To whom does one direct such inquiries?

Ans. To your local conservation officer or if he cannot supply you with needed information, write Fisheries Section, Division of Game and Fish, Frankfort, Kentucky.



An example of a poorly constructed spillway. The badly eroded sides and bottom are due to insufficient width. Had the spillway been wider, the overflow would have come over in a shallow gentle stream, which would have prevented the erosion.

Kentucky Fishing Regulations

Fish Creel and Size Limits

Species	Creel Limit	Size Limit
Black Bass, (large, smallmouth, Ky.)	10	10 in.
Rock Bass or Goggle Eye	15	None
Crappie or Newlight	30	None
Jack Salmon or Walleye Pike	10	13 in.
Sand Pike or Sauger	10	10 in.
White or Striped Bass	15	None
Muskellunge	None	24 in.
Bullfrog (Season June 1 through Dec. 31, both dates inclusive)	15	None

All types of fishing open the year round in all streams and impoundments but commercial fishing is restricted to streams under lock and dam and not above the last lock or dam upstream.

Resident landowners and leasees on their land may without a fishing license take fish from the waters therein by angling. Licenses are required by all others who are 16 years of age or older.

This booklet has been prepared in an effort to acquaint pond owners more fully with management problems. Suggestions and additions will be welcomed.

PLEASE NOTE CORRECTIONS

Formula in answer to question 21 on page 9 should be
(Area of pond in sq. ft. X deepest depth X 25 =
Pounds of Water)

Answer to question 31 on page 13 should read
"It is known that bluegill do spawn all during the
summer season. It is doubtful if one pair will
spawn more than once a year, but that as the blue-
gill mature they spawn, accounting for the presence
of bluegill reproduction all during the warm months".