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Summary of Dingell - Johnson
Projects,
1952

Kentucky Department of Fish and Wildlife Resources
Earl Wallace, Commissioner

1. F-1-C-1. Coordinator, William A. Tompkins

Coordination Project. The duties of the coordinator are split between Federal Aid activities and State activities on a fifty-fifty basis.

2. F-2-R. Leader, Ellis M. Carter; Asst., D.R. Boren

Kentucky Lake Investigations. Present commercial fishing regulations on Kentucky Lake, a 260,000 acre impoundment in Western Kentucky and Tennessee, allow the use of hoop nets, trotlines, and snaglines only. The major phase of the Kentucky Lake investigations has been directed toward ascertaining the amount of changes necessary in these regulations to allow the commercial fishermen to harvest more successfully the non-game species with a minimum of damage to existing game fish crops.

Experimental netting was begun in November of 1951, and will be continued for twelve months. Seven types of gear, including gill nets, trammel nets, wing nets, hoop nets, heart lead nets, fiddler nets, and fish baskets are being fished over various bottoms and at various depths in several major areas. These were selected as typical large coves, main lake shelf areas, or channel areas.

Although field records covering the work to date have not been completely analyzed, a superficial examination of the data points up certain items. In the past commercial fishing regulations in this impoundment has been based on the ability, or lack thereof, of gear to take certain types of fishes. No attention has been paid to the habitat preferences and the biology of the populations. At this point in the study it appears that these latter are as significant as the former, and that regulations must be based upon both mechanical and biological factors if commercial fishing in this type of water is to

be efficiently used as a management tool. Catches to date at the different stations show large variations in the species compositions, irrespective of season or gear.

In connection with this phase of the study a series of rotenone samples are being made on selected coves within the experimental area. Three coves with a total surface area of five acres have been poisoned and the populations examined to determine whether this type of sampling gives a true picture of the status of the fishery in a large impoundment. Although crappie usually constitute a large portion of total netting catches they appeared insignificant in the rotenone samples, and other fishes of harvestable size that rarely appear in the netting samples or in fishermen's creels formed a substantial portion of the samples. A valid interpretation of the fishery potential of this reservoir could not be drawn from the population sample recovered from these poisoned coves.

Age and growth data are being collected from the major fishes of the impoundment, and a comparative series is being done on similar fishes in the tailwaters. These studies will be used to measure future changes in the fish population of this impoundment.

3. F-3-R. Leader, William A. Smith; Asst., J.B. Kirkwood

Farm Pond Investigations. This project was originated because accepted stocking ratios and management practices, successful in other areas, have failed to produce satisfactory results in Kentucky farm ponds. Although a great deal of valuable information has been made available by workers in other areas, it is necessary that this information be supplemented by research aimed at developing policies of stocking and management better adopted to Kentucky's climatic and soil characteristics.

The first phase of the project was begun by breaking the state down into six major soils regions. In each of these soil regions a series of experimental ponds was set up and stocked. For comparative purposes, fingerling bass were stocked in combination with either fingerling or adult bluegills.

During the summer of 1952 a large number of ponds, selected from the Department's stocking records, were examined with seines to determine the relative effectiveness of various ratios used in Kentucky in the past and to gather other basic data.

A preliminary analysis of the data obtained during the summer's work indicates that a larger sample of ponds is needed to establish any definite population trends within the various ratios. However, several factors apparently affecting the balance of fish populations in Kentucky farm ponds were singled out. Notable among these apparent factors are a general lack of adequate fishing pressure and the selective harvesting of the bass.

In the second year of the study the ponds stocked during the first phase will be checked for reproductive success of the various ratios. Additional experimental ponds will be selected and stocked. The field survey of ponds stocked by the Department of Fish and Wildlife Resources prior to 1951 will be continued to obtain supplementary data. Age and growth studies will be made to supplement test seine data from these ponds.

4. F-4-R. Leader, James R. Charles; Asst., L. R. Renaker.

Warm - water Stream Investigations. There is at present not enough information on hand regarding warm-water stream populations to use as a basis for the management or renovation of small streams in Kentucky. During the last two decades erosion, pollution, and possibly fishing

pressure, have reduced the game fish populations in most of the small streams that have been under the observation of this department, while the rough fish populations have increased. What were once fine fishing streams are now, in many instances, completely devoid of game fish.

The objectives of this project are:

- (a) To ascertain the effectiveness of present stream stocking policies in Kentucky.
- (b) To determine if population manipulation can be accomplished on warm-water streams for the benefit of the game species.
- (c) To determine whether it is economically sound to attempt the reclamation of game fish populations in streams now supporting heavy rough fish populations prior to upper watershed management and stream improvement.
- (d) To determine the effects of complete watershed management upon existing stream populations.

The population phase of this project has been initiated without attempting extensive watershed and stream improvement. The first two experimental areas on North Fork Licking River and Whippoorwill Creek, respectively, have been selected. Fisheries refuge lease contracts have been entered into with land-owners whose property borders 46 miles of North Fork River and 10 miles along Whippoorwill Creek. These two areas will not be physically isolated from the rest of the stream on which they are located, and will be used to interpret the effect of management attempts in the presence of rough fish pressure.

The populations were completely eradicated in the experimental sections of these two streams using 5% powdered cube root. On North Fork River a crew of 28 men worked the better part of two weeks and used 1250 pounds of cube powder eliminating the population from the 46 mile stretch.

Eight men accomplished the eradication operation on Whippoorwill Creek in three days using 305 pounds of powder over the ~~10~~¹² mile area. Both of these areas have subsequently been restocked with game and forage fishes, which included Large-mouth bass, Small-mouth bass, Crappie, Rock bass, Warmouth bass, Bluegill, and Longear sunfish.

Two additional streams will be selected on which the experimental areas will be physically isolated from the remainder of the stream. In these areas will be tested the same practices in the absence of rough fish pressure.

If it is found that the manipulations of populations cannot produce satisfactory fishing in the majority of streams in Kentucky, a second phase dealing with environmental improvement and upper watershed management will be initiated. At the present time the biggest factor which apparently encourages rough fish dominance in Kentucky streams is the presence of extensive silted stream areas. If it is shown that these streams cannot produce a sufficient weight of game fishes even without a rough fish population being present, steps will be taken to determine the most efficient and economical methods of stream improvement, and their results measured in experimental areas.

5. F-5-D. Marion County Lake Project

The state of Kentucky intends to utilize a portion of its Dingell-Johnson funds for the construction of public fishing lakes in areas in which there is a lack of productive natural waters. The first such lake is being constructed at Lebanon, Kentucky. The impoundment will contain thirty acres of waters and when completed will be stocked with bass and bluegill.

6. F-6-L. Kingfisher Lakes Project.

At the present time the Dept. of Fish and Wildlife Resources owns

and operates a 70 acre public fishing lake near Owensboro, Kentucky. This project was set up to purchase two adjacent lakes with a combined surface area of 34 acres. These lakes, hitherto privately owned, will be opened to public fishing and will provide research areas for problems in small-lake management.

By William A. Tompkins

Title Fisheries Coordinator

