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FOURTH ANNUAL MIDWEST WILDLIFE CONFERENCE

Informality was the keynote of the Midwest Wildlife Conference which was held December 8 to 10 at Columbus, Ohio. This was the fourth annual meeting of fish and game technicians--an organization without constitution, by-laws or officers. First called by Dr. T. H. Frison, Director of the Illinois State Natural History Survey, the purpose was to bring together all those interested in wildlife research and management for free discussion of methods and results. The Conference includes the eight North Central States: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin. Visitors from other states and from the federal offices in Washington are welcome.

Nine states and the District of Columbia sent 154 delegates to the Columbus meetings. After registration the conference broke up into the following sections with discussion leaders chosen by the conference: Farm Game - Dr. Lawrence Hicks, Ohio; Forest Game - Mr. R. R. Hill of Wisconsin, and Fish - Dr. Albert S. Hazzard of Michigan. At the banquet Friday evening the discussion leaders summarized the papers presented in the three sections for the benefit of the conference and visitors. The principal address was given by Ohio's Commissioner of Conservation Larry Wooddell on "The application of the Results of Research in a Conservation Program." Saturday was devoted to field trips to points of interest in Ohio.

The Fish Management section was well attended (we moved to a larger room after the first session). As is customary, the work of the state where the conference was held received greatest emphasis. Dr. Langlois opened the program by outlining the organization and progress of fish management work in Ohio. Each of the eleven fish management agents talked briefly on the problems of greatest importance in his district. As Ohio has few natural lakes and only one trout stream of importance, fishing is mainly confined to warmwater streams and reservoirs. Checking soil erosion and silting by better watershed control and maintaining water levels by the use of small dams were considered fundamental to improved fishing. Control of pollution was also shown to be essential in certain areas. Extensive drainage apparently has been an adverse factor in maintaining fish supplies at least in the northern half of the state. Creation of fishing lakes by damming headwater streams offers promise in some districts.

Ohio's fish planting program was discussed by Harold Wasceq in charge of the state fish farms. This was of especial interest in that each fish management agent (primarily a regional biologist) prepares the stocking plan for his district based upon his surveys and observations and takes an active part in the program of distribution. He must also pass upon the desirability of local stream improvement work and may initiate such programs.

In common with many other states, Ohio is faced with the problem of insuring public access to fishing waters. The approach to this difficult problem was discussed by Mr. William E. Owens, engineer for the Division. The approach is unique in that the improvement of the property to be leased by the state is considered at the time negotiations are undertaken for the easement. Proposed fencing, construction of stiles, posting, bank erosion control and installation of small dams all in exchange for public access to the stream help to make the program successful. Some 2100 easements have

been secured to date, 57 small dams have been built and other improvements to leased property were accomplished by 5 stream improvement units.

Sportsmen's organizations and civic groups have helped by supplying materials but most of the labor has been hired by the Division. The dams constructed are low (none exceed 42 inches), are carefully designed and solidly built. Their purpose is not to impound a large area but simply to keep the old channel filled. This work is exceedingly popular among fishermen and the demand for such service greatly exceeds the present capacity of the units. Any who are interested in further details of this program are referred to recent issues of the Ohio Conservation Bulletin, official publication of the Division of Conservation.

The operation of test net crews by the Ohio Division as described by Mr. George Messerly was also of considerable interest. These crews engage in fish rescue and transfer work but when not needed for such work set trap nets and seine public waters in various localities. Frequently this helps to convince sportsmen that fish are present in their local waters even though they may not be able to catch them. The crews cooperate with the local fish management agents in supplying fish for tagging, distribution studies and life history investigations.

Results of fish tagging in Ohio were discussed by Mr. E. L. Wickliff of the Division's Research Bureau. Apparently the movement of fish planted in Ohio streams is almost entirely downstream. The suggestion was made by Dr. Thompson of Illinois that according to his experience wild fish would not exhibit such a marked tendency.

Ohio is fortunate in having an able fish parasitologist located at one of its colleges in the person of Dr. Ralph V. Bangham, who spoke on the ecological distribution of fish parasites. In general his findings showed that most parasites were of greatest abundance in western Ohio and were less numerous in streams than in lakes.

A striking illustration of the effects of deforestation and drainage was given in a paper by Mr. Milton Trautman, formerly of the Ohio Division. Change from conditions favorable to the production of game fish to conditions intolerable by such species was shown by his survey of fish populations in the same streams studied by the pioneer ichthyologist Seth Meak fifty years ago.

Relatively little discussion of hatchery problems occurred during the conference. However, the analysis of labor expenditure in six Indiana fish hatcheries by Mr. John Gottshalk proved very interesting. This study showed that most operations were conducted as efficiently as possible considering the physical handicaps at certain stations which were improperly designed or located. An interesting conclusion was that maintenance of grounds and buildings cost on the average a little more than did the actual production and distribution of the fish. This is something for fisheries agencies to keep in mind when planning additions to their hatchery systems. It was also found that size of the hatchery is important in considering its efficiency; a 2 to 5 acre plant costs as much to operate and produces many fewer fish than one of 15 or 20 acres. Propagation of pond fishes by the extensive method only was considered in this analysis.

A report of trout feeding experiments in Michigan hatcheries was made by James Wilkinson. The results paralleled those of Embury, Davis, McCay and others in demonstrating that the use of dried supplements to fresh meat diet (the best combination appeared to be 30% fresh sheep liver, 20% fish meal, 20% cottonseed meal, 10% oatmeal and 20% skim milk powder) reduced the cost of rearing trout to fingerling size by approximately one third. However, in the Michigan experiments, the use of the dried meals resulted in somewhat slower growth than secured by the use of straight meat. The amount of silt present in the water supply was shown to be a factor in feeding meat and meal mixtures which tend to sink more rapidly than meat

alone and become lost to the fish if pond bottoms are heavily silted.

Dr. David Shetter presented tentative conclusions from plantings of marked fingerling trout in which returns to the anglers creel varied from 0 to 1.6% of the number planted. The conference was unanimous in agreeing that experiments designed to demonstrate the actual benefit to the fishermen of planting fish of different sizes were urgent in order to make the best use of the sportsman's dollar.

Fish predator studies in Michigan were discussed by Karl F. Lagler. Stomach analyses of common fish predators collected around hatcheries and rearing stations were presented in graphic form. Although usually considered harmless, stomach studies of garter snakes were shown to contain young game fish. Results of experiments in controlling predatory birds by other means than killing were presented. It was pointed out that the cost of present control methods at trout rearing stations might pay for the installation of effective screens for raceways. The need for more investigation in developing such control methods was stressed.

Evidence continues to accumulate that year marks (annuli) should not be called "winter rings." Dr. Donald Hansen demonstrated that in Illinois waters annuli in the crappie and in the largemouth bass do not appear until early summer and that there is a marked variation in the time of formation depending on the age of the fish. This is an important consideration in growth rate studies of fishes.

A series of unusual pictures was used by Mr. W. F. Carbine to illustrate his studies of the spawning habits of centrarchid fishes in a small Michigan lake. An attempt was made to count all the nests of each important game species, to determine duration of spawning season, average production of fry per nest and various relationships between spawning and non-spawning individuals. Partially completed counts of fry indicate that enormous numbers of fry of bluegills and lesser numbers of other species are produced

in this lake. Fry from 8 bluegill nests were counted, yielding an average of 23,188 young fish. If the figure is representative of the 369 bluegill nests observed in this ten acre lake, the total production of fry would be 8,556,372.

Fish yield studies on several artificial lakes in Iowa as reported by W. W. Aitken were interpreted by him as demonstrating a correlation between stocking and yield at least in some species. Combining records for three years for Lake Wapello, the percentages of species stocked and caught were respectively: Largemouth bass 33% and 9%; crappie 12% and 10%; bluegills 45% and 45%; bullheads 8% and 36%. A ratio of 3.5 to 1 exists between the number ~~caught~~ by of fish planted and the total number caught by anglers. It would be extremely valuable if this study could be continued and if the stocking could be varied from year to year in order to determine more exactly the benefits derived.

Data on actual fish populations of five Illinois lakes were presented in graphic fashion by Dr. David Thompson and Mr. George Bennett. The figures showed that the largest number per acre of game and "fine" fish were found in lakes containing neither forage fish (such as minnows and gizzard shad) nor coarse fish (buffalo and carp). The heaviest population of bass was found where the only other fish present were bluegills. Dr. Thompson's explanation was that since a body of water can produce only a limited poundage of fish, adult forage fish and coarse fish utilized food and space which would otherwise be available to game and "fine" species (crappies, bluegills and catfish) and were too large for these fish to eat. Even the young of these fish were not fully available to the young of more desirable species as they soon outgrew them. These population studies further demonstrated a standing crop of fish in Illinois lakes varying from 250 to 1145 pounds per acre.

Presenting Dr. Frison's discussion of Fox Ridge Lake: an Illinois Natural History Survey fisheries management project, Dr. Thompson stated that it was their conclusion that improvement in fishing in Illinois depended upon increasing the number of places to fish. Their creel census studies showed that Illinois fishermen will not ordinarily travel more than 30 miles to reach fishing water in the state. Since so many of the larger streams are polluted or are otherwise unsuitable for sport fishing, the solution seems to lie in constructing many small, artificial lakes by damming streams of small or intermittent flow. Fox Ridge Lake is an experimental project of this sort recently completed and designed to demonstrate the best possibilities of this idea. Various methods of fish management will be tested on this lake under rigidly controlled conditions.

A program of winter lake sounding and mapping in Michigan was described by Dr. C. J. D. Brown. This is designed to secure maps of bottom ~~contour~~ contour and soil type in lakes which cannot be mapped through CCC cooperation. The development of a portable electric ice drill was described. The use of this drill should greatly decrease the labor necessary for rapid sounding by a small crew.

Uses of rotenone in fisheries management was discussed by Dr. J. W. Leonard. Concentrations necessary in Michigan waters and in laboratory experiments were found to vary with the species of fish, water temperature and water hardness. The values and the danger of this "tool" in management were considered by the Conference.

Dr. Samuel Eddy presented some results of a cooperative study of a number of Minnesota lakes. A fish poundage range of from 25 to 340 per acre was estimated as a result of seining some 20 acres in each lake. An important conclusion reached as a result of these surveys was that heavily fished lakes contain many more fish per acre than those which are lightly fished but contain relatively few old and large individuals. Dr. Eddy's

explanation of this phenomenon was that the larger fish had been removed by angling and since they form the natural check on the number of young, the heavily fished lakes rapidly become overpopulated with small fish because of too successful survival of the young of the year. If this be true, the common practice of stocking heavily fished lakes with fingerling bass, bluegills and other warm water species on the theory that these lakes need most planting because they are heavily fished is a serious error.

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In general the trend of discussion in the Fish Management Section seemed to question most the present methods of management. The need for experimental waters where old methods could be accurately tested and new methods devised was constantly emphasized. The importance of population studies in management was stressed repeatedly. Population control is coming to be regarded as the most promising of the new methods which has been suggested for the improvement of fishing in warm water lakes.

(Editor's Note: The brief summary of papers given was based on personal notes. Quotation is not advised without verification of the author cited.)

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