

an abundance of fry sunfish and minnows small enough for the young black bass and white bass to feed upon this year leads us to expect much greater survival of these predators.

The water cleared up and remained clear all year. Secchi's disk readings ranged from 3 to 4 feet as compared to 4 to 12 inches last year. Evidently the bottom muds solidified when they dried out and cracked open. The large cracks can still be found on the bottom of the lake even after being covered with water for several months.

During and following the drawdown period, the harvest of fish was highly successful. Not only was the harvest of commercial fish profitable to commercial fishermen but boat dock operators and sportsmen reported that off season (summer) fishing was noticeably improved over recent years, especially for small crappie.

SUMMARY AND CONCLUSION

The drawdown resulted in: (1) the harvest of 200,000 pounds of commercial food fishes and gar, (2) marked changes in the fish population as tabulated by weight, (3) higher survival of young black bass and white bass, (4) the clearing of the water, and (5) better spawning and survival conditions for sunfishes and minnows.

The faster growth of the young bass was probably due to the clearer water and abundance of young sunfish and minnows. The survival of these bass is expected to exceed anything that has taken place in the last few years.

Following the drawdown it was expected that all species of fish would spawn heavily and high survival of young would result. However, survival of young carp, drum, buffalo and channel catfish was evidently very small. The reason for this could possibly be, that, due to the clearer water, predation on these species was very effective.

In order to fully determine the value of a drawdown in the management of this lake, it will have to be continued at least two more years.

PANEL DISCUSSION—FISHERIES MANAGEMENT PROBLEMS IN LARGE IMPOUNDMENTS

Chairman: ANDREW H. HULSEY, Arkansas Game and Fish Commission; ELLIS R. CARTER, Kentucky Department of Fish and Wildlife Resources; CARLOS M. FETTEROLF, JR., Tennessee Game and Fish Commission; DAVID N. GRAVES, Corps of Engineers, U. S. Army; W. H. IRWIN, Oklahoma A. and M. College.

Mr. Graves discussed how cooperative fisheries management programs could be initiated on Corps of Engineers projects. If management proposed conflicted with the approved plan of operation, authority from Congress would have to be obtained. In the discussion it was brought out that provision for recognizing fishery management should be incorporated into the preliminary plans for impoundments and should receive recognition in the final plans that are approved by Congress.

Mr. Carter discussed the use of rotenone for selective poisoning of gizzard shad. He described the tremendous reproduction by this species that follows a reduction in the population. To date follow-up operations have been necessary to control this reproduction. The possibility of using fingerling bass to control the shad reproduction following a selective poisoning operation was brought up.

Dr. Irwin discussed the proposal that a larger harvest of both sport and commercial species is needed from large impoundments. He pointed out that in order for fishery management aspects to be considered in plans for impoundments it would have to be shown that the benefits to be derived would offset the costs. Harvesting basins, seining areas, provisions for drawdowns, etc., are all possible if it is shown that the cost will be offset by the benefits derived.

Mr. Fetterolf reviewed the experiences of Tennessee in the use of introductions in the management of large impoundments in that state. The thought

was proposed that man has created such a different aquatic environment by the construction of large dams that maybe our native fishes are not too adapted. It was suggested that other species, not as yet tried, might prove to be more suitable for these man made lakes.