

SECTION G, CONSERVATION

New Fish and Wildlife Management and Research Opportunities in Oklahoma

BUELL O. ATKINS and FARRELL F. COPELIN'

Increased land acquisition and development activities in Oklahoma by the Federal Government have opened up new opportunities for fish and game management and research.

Major reservoirs constructed in Oklahoma prior to the 1950's were developed primarily for a single purpose — flood control, irrigation or water supply. Recently these purposes have been combined in single projects, and other allied purposes added, including recreation and fish and wildlife. This has increased the opportunities and responsibilities for game and fish planning and management projects.

Small watershed management and research projects in Oklahoma are expanding rapidly. According to a 1962 report on "Oklahoma Watershed Project Needs," 246 small watersheds comprising 34,841,693 acres need project action under PL 566, 83rd Congress, 68 Statutes 666 (as amended) and the Washita River Program. The Soil Conservation service reported in September 1962 that 24 small watershed projects in Oklahoma were complete or all contracts had been awarded, 20 watersheds were planned and easements being obtained, 39 watersheds were being planned and 36 applications were received. About one-fourth of the small watershed planning and construction in the nation is in Oklahoma. More than 700 detention reservoirs have been constructed in Oklahoma.

Amendments to small watershed projects laws in 1962 permit the USDA to share with local public bodies up to one-half the cost of land, easements, and rights-of-way for reservoir, stream, lake, shoreline or land area development in small watershed projects to be dedicated for public recreation.

The USDA also may share up to one-half of the cost of providing minimum facilities for public health and safety and for access to the new recreation areas. These facilities could include water supply, sanitation, electrical service, boat anchorage and launching sites, trails, overlook stations, cleared public use water areas, and related administrative facilities.

County, municipal, and special purpose districts created by or under provisions of state legislation are eligible as sponsoring bodies when they assume responsibility for operating and maintaining the public recreational facilities. A local sportsman club or group of conservation-minded citizens can work through the local soil conservation service district or city government to develop hunting and fishing facilities.

Only one recreational development is permitted for each 75,000 acres of watershed, with a maximum of three per small watershed.

Where flood detention reservoirs are developed for recreation, additional water must be stored specifically for this purpose in order to qualify for cost-sharing on land. The public must be guaranteed access to the entire permanent pool shoreline.

¹Coordinator, Federal Aid and Game Management Division, and Planning and Liaison Officer, Oklahoma Department of Wildlife Conservation, Oklahoma City, Oklahoma.

A need for the recreational development must be demonstrated before the Federal Government will provide assistance.

In conjunction with the Federal cost-sharing program for public recreation the Oklahoma Wildlife Conservation Department offers technical assistance for planning, fish stock, trees, shrubs, legumes, and waterfowl food and cover plant stock.

These practices are especially recommended for Oklahoma:

1. *Static water level control.* In flood detention reservoirs the water-level control-structure used by the Soil Conservation Service can be modified at very little cost so static water level can be maintained at any desired level near the top of the sediment pool. This modification should be planned early in the project. Controlled water level fluctuation is useful in fish and waterfowl habitat management.

2. *Fencing.* Fencing a pond to keep cattle away from the shoreline may (1) permit aquatic plants to grow that will provide food for waterfowl, (2) provide a place for food and shelter development for quail and waterfowl, and (3) keep the water cleaner.

3. *Brush pile construction.* In some places the trees and shrubs that provide food and shelter for quail and rabbits are limited in distribution to ravines. Clearing sediment pool areas in these places may destroy most of this cover. These losses can be partially offset by moving the trees and shrubs, which are uprooted, to hillsides above the flood-pool area. Also, fish shelters may be constructed.

WATERSHED RESEARCH IN THE WASHITA RIVER BASIN

The Agricultural Research Service of the USDA is engaged in a new intensive research program on a reach of the main stem of the Washita River between Anadarko and Alex, Oklahoma. Attention is focused primarily on determining the effects of upstream watershed protection and development programs on the water regime and stability of the main stem channel of the Washita River.

Cooperative agreements with the Soil Conservation Service, U. S. Geological Survey, and Weather Bureau permit intensive study of soil and water, considering precipitation, ground water and stream flows. Past soil and water studies in that region by the Oklahoma Experimental Station are being restudied. A network of 170 recording rain gauges has been installed and is being operated on a three-mile grid. Additional water gauges will be installed where needed. Establishment of key gauging stations on the main stream of the Washita and its tributaries within the study area is proceeding. Eventually a series of unit-source-area watersheds within the main area will be established to study the impact of land-use practices on water sediment yield from the different physiographic conditions traversing the study area.

Automatic computers will be used to tabulate and analyze data. Land use and cover conditions, conservation practices, location of ponds and lakes, range cover and types and conditions of wooded areas will be photographed and mapped. Topographic maps will be prepared as needed.

On selected reservoirs, water volume, water chemistry, turbidity, ingress and egress of water, and similar detailed studies will be conducted. Fishery studies, concerning stocking and growth rates, could be included at very little additional cost.

This overall research project presents an excellent opportunity to combine fish and wildlife research with other studies, and provide a

training ground for fish and game consultants for local watershed conservancy districts.

The following problems could be studied individually and with regard to their interdependence in multiple-purpose projects.

Fisheries research: Study natural and controlled seasonal effects of water level manipulation on fish populations, their species balance, stocking needs, growth and sustained yield of desirable species, with particular emphasis on fall draw-down and summer draw-down.

Waterfowl research: Correlate the summer draw-down with duck food plantings in the conservation pool and below the dam; inventory waterfowl; survey wetlands.

Upland game research: survey watersheds already completed to ascertain changes in upland game habitat; conduct preconstruction and postconstruction upland game surveys in the Anadarko-Alex reach of the Washita River to determine effects of the project resource; develop pilot projects to demonstrate upland game management; explore fur-bearing animal resource development and use.

Presented here are only some examples of research opportunities which could be of major importance in not only managing fish and game on present developments but also aid materially in planning future projects, which in size and number are rapidly changing the land use in Oklahoma.
