

# SPECIES PLANNING: AN APPROACH TO BLACK BEAR MANAGEMENT AND RESEARCH IN MAINE

ROY D. HUGIE, Maine Department of Inland Fisheries and Wildlife, 236 Nutting Hall, University of Maine, Orono 04473

*Abstract:* The Maine Department of Inland Fisheries and Wildlife began the active phase of comprehensive species planning in 1974 and implemented the resultant plan for black bears (*Ursus americanus*) in 1975. The black bear's past, present, and projected future status were evaluated in terms of interrelationships among population, density, distribution, habitat, use-demand, and use-opportunity. Alternate goals and objectives were formulated for presentation to wildlife professionals, administrative personnel, and selected segments of the public. The goal set for the black bear was to maintain 1970-74 levels of abundance, distribution, and use. The objective was to provide for an annual harvest of about 800-1,000 bears by 30,000 hunters statewide, with maximum allowable harvest differing according to management units. Experience thus far indicates that comprehensive species planning has greatly benefited black bear management in Maine and can be highly recommended for other areas.

This paper provides a brief background of the status of black bears in Maine and describes the comprehensive species-planning process as it involved bear management and research. Special acknowledgment and thanks go to C. Banasiak, J. Kienzler, J. Hermes, G. Lavigne, and A. Clauson for their work on the bear project.

There has not been a nationally disseminated report on bears in Maine since 1955. What has happened during the last 2 decades will serve as an introduction to the planning process. Black bears were once common throughout New England, but since the late 1700s, they have generally decreased in numbers and distribution (Cardoza 1976). At present, Maine is one of the major strongholds of black bears in the East, with about 59,000 km<sup>2</sup> (72 percent) of the state's land area still occupied. From 1770 to 1957, there was no closed season, no limit, and a bounty on black bears in Maine. From 1957 to 1965, there was no limit and no closed season. From 1966 to 1968, there was a season from June through December but no limit. During 1969-74, there was a 6- to 7-month season with a limit of 1 bear per hunter per year. The seasons of 1975 and 1976 ran from 1 May through 30 November. Legal hunting methods are very liberal; trapping with foot snares or conventional traps, baiting, using dogs to track and chase, and shooting bears incidental to other types of hunting are all legal. The average annual recorded bear kill from 1946 to 1959 was 1,569. From 1970 to 1976, the average registered bear kill was 930, ranging from 1,071 in 1973 to 744 in 1974. Other than keeping track of the legal kill through a mandatory registration system, there was virtually no research done on black bears in Maine from 1954 to 1974.

## COMPREHENSIVE SPECIES PLANNING

The Maine Department of Inland Fisheries and

Wildlife embarked on comprehensive species planning in 1968, although active planning did not begin until 1974. The effort involved all fish and wildlife species in the state and was guided and administered by the Planning Division of the Department. The program was funded by Pittman-Robertson monies.

A comprehensive planning effort requires much time and money. Ongoing projects were temporarily cut back or halted. The advantages of, and reasons for, implementing research and management policy through a comprehensive planning approach were given by Kennedy (1976), Richards (1976), and Woodgerd (1976). For the Maine program, the justifications were (1) to delineate in one document a species' past, present, and future status with regard to habitat, abundance, distribution, use, and importance; (2) to engineer a management goal and objective that would have input and support from wildlife professionals, administrative personnel, and the public (including nonsportsmen and antihunters); (3) to provide a strategy and a specific program especially designed to achieve a selected goal and objective; (4) to establish a system and a source for giving input into external (non-Department) plans, programs, projects, and other activities that might have an impact on a species; and (5) to maintain continuity in management and research. In short, the purpose was to develop a plan to avoid "management by whim or crisis."

Maine's species plan for the black bear required 18 months to develop. The first step was the assembling of all the available historical data and information regarding black bears in Maine. Most of the history came from old periodicals, journals, and Department records. Next, life history information that was pertinent to management was collected from past research (Spencer 1955), current data from Maine (Hugie

1974), and applicable findings from black bear research conducted outside Maine. A lack of data on any aspect of the species did not stop the planning process. In fact, implementation of programs to obtain basic life history data became an important part of the final plan.

Next, the present status with a specific base year for population, density, distribution, habitat, use-demands, use-opportunities, and the relationships between and among those parameters were summarized from existing data and criteria. Maine harvest data, density estimates from studies outside Maine, and the sex- and age-specific data on hand were used to make rough estimates of the population. The estimates ranged from 7,000 to 10,000 animals. A distribution map of occupied range was made, based upon registration data and questionnaires. Demand was measured in terms of harvest during 1970-74. Use-opportunity was expressed in terms of square kilometers available to the public for consumptive and nonconsumptive demands. Available information suggested that the annual harvest should be no more than 15 percent of the minimum population or 1,050 bears.

The same parameters were then evaluated in terms of the future. Trends in human population growth and shifts in land-use practices were projected for the next 15 years at 1970-73 rates. Habitat, use-opportunity, and supply were projected to decrease but demand was projected to increase. Thus, an unsatisfied demand for consumptive use of bears was estimated to occur as early as 1985.

With the past, the present, and the future in mind, several alternative goals and objectives were written by the plan author. Goals were broad — descriptions of what the distribution, abundance, and use of the bear resource should be in 1990. Objectives were more specific regarding levels of use, areas of distribution, and levels of abundance.

The next step was perhaps the most crucial of the entire process. alternative goals and objectives were presented to biologists within the Department, Department administrators, a political advisory council, a selected steering committee, the university community, several non-Department biologists, and other interested individuals. The steering committee was selected to provide balance among geographical and interest groups. If I were to go through the process again, I would seek out as many interested vocal minorities as possible for their input into the selection of goals and objectives. I firmly believe that success of a management program demands broad base support that can only be attained through honest and open communica-

tion during the stage of public involvement. In my judgment, the so-called "controlled sanction approach" common to many state, federal, and provincial agencies with regard to soliciting and using public input is not effective. The importance of widely based public involvement increase when managing a controversial species like the black bear.

The goal agreed upon by these groups was to maintain black bear abundance, distribution, and use at 1970-74 levels. The objective was to provide for an annual harvest of approximately 800-1,000 bears by 30,000 hunters statewide, with a maximum harvest for each management unit of no more than 15 percent of each unit's minimum estimated population.

Once the goal and objective were chosen, it was obvious that specific problems would hinder attainment of the objective. Major problems were an absence of reliable data on population size, hunting pressure, rates of exploitation, habitat requirements, illegal kill, and distribution status in areas of low bear density. Also, legislative and administrative guidelines and authority were needed for controlling use in specific geographical areas. These problems were defined and a strategy for resolving them was developed. The strategy section of the black bear plan included a series of comments that states what was to be done, in what order, and why. Not all of the aspects of the strategy were designed to be implemented at once. Rather, the strategy defined a series of accomplishments leading toward the attainment of the goal and objective. The strategy gave special consideration to public awareness, public involvement, and legislative programs.

Although the strategy section described what was to be done to reach the goal and objective, specific jobs and programs were needed to prepare for actual implementation of the management plan.

More programs and jobs were proposed for funding than the Department's financial resources could support. Therefore, a comparison of all the species plans and their respective strategies and jobs gave administrative personnel and the biological staff an opportunity to select for immediate funding those jobs with highest priority. Approximately two-thirds of the new jobs proposed were funded.

## CONCLUSION

The actual implementation of proposed black bear jobs was initiated in 1975. Comprehensive species planning has not solved all of our bear management problems but it has been extremely helpful. The species planning and management process now includes a con-

tinual updating procedure as new data become available. Some of the benefits of the process have been the setting of specific objectives, the formulation of clearly defined plans of actions, assured direction and continuity of purpose and effort, and, above all, the provision of a vehicle for continuous refinement of bear management in Maine. I believe that the effort was very worthwhile despite the expense, man-hours, and temporary inconvenience to existing programs that the process entailed. Once the status and importance of bears to the state and to the Department had been made clear, comparison of expenditures was easier. The budget and manpower for bear management rose from

\$2,000 per year with 1 part-time person to over \$40,000 per year and 2½ man-years of effort after the planning stage. Comprehensive planning has facilitated a giant step forward in bear management and research in Maine. I highly recommend similar efforts wherever black bear management and research objectives are unclear or strategies ill-defined. The results and findings of Maine's black bear management and research programs are found in the Pittman-Robertson reports for W-67-R-2 (Hugie 1974, 1976, 1977; Kienzler 1975). A detailed outline of the process may be obtained from the Maine Department of Inland Fisheries and Wildlife, Planning Division, 284 State Street, Augusta 04333.

#### LITERATURE CITED

- CARDOZA, J. E. 1976. The history and status of the blackbear in Massachusetts and adjacent New England states. Massachusetts Div. Fish. Wildl. Res. Bull. 18. 113p.
- HUGIE, R. D. 1974. Black bear study. Maine Dept. Inland Fish. and Wildl. Fed. Aid in Wildl. Restor. Rep., Proj. W-65-R-5. 17pp.
- . 1976. Black bear study. Main Dept. Inland Fish. and Wildl. Fed. Aid in Wildl. Restor. Rep., Proj. W-67-R-7 II. 34pp.
- . 1977. Black bear study. Maine Dept. Inland Fish. and Wildl. Fed. Aid in Wildl. Restor. Rep., Proj. W-67-8-II. 52pp.
- KENNEDY, J. 1976. Comprehensive wildlife management plans: why progress is limited in Michigan. Trans. N. Am. Wildl. Nat. Resour. Conf. 40:122-132.
- KIENZLER, J. 1975. Black bear study. Maine Dept. Inland Fish. and Wildl. Fed. Aid in Wildl. Restor. Rep., Proj. W-67-R-6 II. 16pp.
- RICHARDS, M. R. 1976. State experiences with comprehensive planning: Idaho's problems and progress. Trans. N. Am. Wildl. Nat. Resour. Conf. 40:113-116.
- SPENCER, H. E., Jr. 1955. The black bear and its status in Maine. Maine Dept. Inland Fish. and Wildl. Game Div. Bull. 4. 55pp.
- WOODGERD, W. R. 1976. Comprehensive planning for improved management of wildlife and non-wildlife outdoor recreational resources in Montana — a director's viewpoint. Trans. N. Am. Wildl. Nat. Resour. Conf. 40:103-108.