

MISSISSIPPI'S BEAVER CONTROL ASSISTANCE PROGRAM, 1989-1994

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ABSTRACT: Responding to landowner requests, the 1989 Mississippi Legislature created the Beaver Control Advisory Board and mandated it to develop a program which would ensure the control of beaver damage throughout Mississippi. The Advisory Board is comprised of the administrative heads of five state agencies: the Department of Wildlife, Fisheries, and Parks (chairperson), the Department of Transportation, the Cooperative Extension Service, the Forestry Commission, and the Department of Agriculture and Commerce. In cooperation with the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Animal Damage Control (ADC) program, the Advisory Board developed the Beaver Control Assistance Program (BCAP). BCAP is designed to provide assistance with the management of beaver damage on private, county, and state-owned lands and is funded through a combination of federal, state, county, and landowner funds. Actual administrative authority of BCAP rests with the Department of Wildlife, Fisheries, and Parks, however, the enabling state legislation allows the program administration to be transferred to a federal agency. As a result, ADC administers BCAP under the guidance of the Advisory Board. Through a combination of technical assistance and direct control, ADC works in cooperation with the BCAP Advisory Board to alleviate beaver-caused damages throughout Mississippi. County enrollment in BCAP has grown from 22 participants in 1989 to 50 in 1994 and cooperative funding has increased by 44%. With increasing beaver populations and predicted decreases in the commercial fur harvest, the demand for BCAP services is likely to increase.

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Since the reintroduction of beaver by state wildlife agencies in the 1930's through the 1950's, beaver populations throughout the southeastern United States have dramatically increased (Woodward 1983). Contributing to this increase is the continual decline in the commercial fur harvest since the late-1980's. A review of trapping harvest records from the Mississippi Department of Wildlife, Fisheries, and Parks (Hamrick et al 1986, Lipe et al 1990) shows that declines in annual beaver harvest closely mirror declines in beaver pelt prices (Fig. 1). These declines are also consistent with reductions in trapping license sales during the same period (Fig. 2). The loss of the fur market in Mississippi and its resulting decline in pelt harvest is similar to declines nationwide (Linscomb 1994).

Coupled with rising populations are the negative impacts associated with damage caused by beaver throughout the nation (Southwick Associates 1993). Similar impacts are evident in Mississippi. As early as 1962, the increase in beaver damage prompted the Mississippi Legislature to pass a law declaring the beaver as a predatory animal, meaning it could be destroyed at any time of the year. At the

same time, a \$5 bounty on beaver was established in an attempt to control damage.

Land inundated in Mississippi as a result of dam building by beaver was estimated at 72,000 acres (Arner and Dubose 1978). Annual timber losses due to flooding have been estimated at \$2.2 million (Arner and Dubose 1979). Bullock and Arner (1985) estimated that over a ten-year period, beaver damage to non-impounded timber in Mississippi could be as high as \$215 million.

As a result of the negative impacts to the natural resources, personnel property, and economy of Mississippians by beaver, the Mississippi Department of Conservation and the Mississippi Forestry Commission presented a report to the 1982 Mississippi State Legislature. While this report (Anon. 1981) did detail the benefits of beaver activity (water and soil conservation, silt control, water sources for irrigation and livestock, habitat for wildlife), its main emphasis was on developing strategies for managing beaver damage. The report summarized various control techniques deemed inappropriate because of their ineffectiveness

(poisons, chemosterilants, alligators for biological control, and a bounty system). It also stated that hunting was an inappropriate control technique because it "often encourages the illegal taking of other furbearers and game animals" and therefore should be "limited to professional agency personnel or rigidly controlled by an enforceable permit system." In addition, the report addressed trapping as a viable control option and mentioned a recently formed Beaver Cooperative Association which was established to provide trappers and landowners an economic incentive to trap beaver.¹ Another option discussed was the use of state wildlife agency personnel to conduct trapping programs. However, this proposal was determined to be inappropriate because of the cost to implement it. The use of an extension program involving a combination of trapper training and public education was identified as the most cost efficient option for resolving the beaver problem.

CREATION OF BCAP

From 1982 until 1989 no further action was taken by the Mississippi Legislature. In 1989 the Legislature created the Mississippi Beaver Control Advisory Board which is comprised of the administrative heads of the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP), the Mississippi Forestry Commission (MFC), the Mississippi Department of Transportation (MDOT), the Mississippi Department of Agriculture and Commerce (MDAC), and the Mississippi Cooperative Extension Service (MCES). The Advisory Board was mandated to develop a program for the control of beaver damage on private and state-owned lands. To comply with its mandate, the Board developed the Beaver

Control Assistance Program (BCAP). BCAP incorporates many of the same recommendations originally made in the report to the 1982 Legislature: BCAP relies on trapping, snaring, and hunting as damage abatement methods; an extensive public education program is used to teach interested landowners trapping methods; and BCAP is administered by a "professional agency." Language in the enabling state legislation has allowed the Advisory Board to enter into a cooperative agreement with the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Animal Damage Control (ADC). Through this cooperative agreement, ADC administers BCAP under the guidance of the members of the Advisory Board (Fig. 3).

BCAP FUNDING

BCAP operates through a combination of federal, state, county, and landowner funding. Federal funding has remained at \$100,000 since 1989 (Fig. 4). In 1994, state funding consisted of \$264,000 in general funds appropriated to the MDWFP (\$164,00) and the MDOT (\$100,000). Currently, non-federal dollars represent 80% of the BCAP budget while the remaining 20% consists of federal funds.

County participation in BCAP has steadily increased in the past six years (Fig. 5). Current funding allows 50 of Mississippi's 82 counties to participate in BCAP. Invitations to enroll in BCAP are sent to all counties annually. Member counties receive priority for renewing their contracts. Any available BCAP memberships are awarded on a first-come, first-served basis. The annual participation fee is \$2,000 per county and is usually paid by the County Board of Supervisors.

Landowner fees provide another source of funding for BCAP. If work conducted on their property reduces beaver damage to county or state roads, landowners are not assessed a fee. However, work conducted for the sole benefit of private property is charged to the respective landowner. Landowners are charged \$40 per visit (with a visit defined as 4 hours), excluding the initial visit. An

¹The Beaver Cooperative Association (BCA) was established in 1977 by representatives of the Mississippi Association of Conservation Districts. The goal of the BCA was to control the beaver population in Mississippi by developing economic markets for beaver pelts in order to stimulate trapping. The BCA eventually failed for a number of reasons, primarily which was the low value of southern furs (Woodward 1983)

additional fee of \$25 is charged for each dam that is removed with explosives. In the past six years, 550 private landowner projects have been conducted. Landowner fees have ranged from \$5 to \$1,400 with an average of \$83.

Additional funds for BCAP are generated through the sale of beaver castor. The scent glands are sold to an American buyer who eventually resells them to European markets for use in the perfume industry. Since 1990, total sales have yielded \$20,000 which has been deposited into the BCAP account.

BCAP PROCEDURES

Participation in BCAP provides counties with up to 40 days of service by ADC personnel per year. County Supervisors prioritize where these 40 days of work will be spent: addressing beaver damages to private lands, county road systems, or other non-private lands, or any combination of the three. All work conducted on these three land classes is charged to the county's allotted 40 days of service.

Assistance is also provided state-wide to the MDOT to assist with beaver impacts to state highways. All work conducted on private property for the benefit of state roads is conducted at no cost to landowners. Work conducted in BCAP member counties for the protection of state highways is not charged to the county's 40 days of allotted service.

ADC Specialists are assigned to work in 3-4 BCAP member counties and also in 1-3 non-member counties where they work solely on resolving beaver damage to state maintained property. Throughout the year, the Specialists alternate their work schedules between each of their assigned counties.

BCAP'S TECHNICAL ASSISTANCE PROGRAM

The extent of beaver damage in Mississippi is so great that BCAP cannot possibly address all

problems. As a result, technical assistance is provided to groups or individuals for their use in resolving wildlife damage conflicts. Technical assistance includes training workshops, demonstrations, verbal or written instruction, or may include the loaning of damage abatement equipment.

From 1989-1994 ADC received over 500 written or telephone requests for information on beaver damage management. In addition, more than 200 instructional sessions on control techniques were provided to groups or individuals. Similar information has been shared through the media with over 30 newspaper articles or television newscasts. ADC personnel have conducted these technical assistance programs in cooperation with the MDWFP, the MFC, and the MCES. Information on the management of beaver damage is also provided to students through lectures presented in a wildlife damage management course which has recently been incorporated into the wildlife curriculum at Mississippi State University. This course is team taught by Mississippi ADC personnel.

Through BCAP, ADC has also conducted field trials on various designs of culvert exclusion devices and tree guards. Information on the use of these devices has been provided to road maintenance personnel, landowners, and municipalities.

Another technical assistance service available to landowners through BCAP is information on using beaver-impounded water for the benefit of other wildlife. In 1995, ADC entered into an agreement with Ducks Unlimited (DU) through which DU purchases the materials required to build beaver pond levelers similar in design to those developed at Clemson University (Wood et al 1991, Wood and Woodward 1992). For a nominal fee, ADC installs these devices for landowners who are willing to use beaver ponds for waterfowl habitat. These levelers allow for the seasonal draining of flooded areas so that foods favored by waterfowl can be planted or allowed to naturally regenerate (Nassar et al 1993). A total of 6 leveler devices have been installed on 5 properties in 5 counties. To date, approximately 120 acres of

wetland habitat have been developed at an average cost of \$12 per acre.

BCAP'S OPERATIONAL PROGRAM

The ADC program uses and recommends nonlethal control methods, where practical (U.S. Department of Agriculture 1994). There are, however, no practical nonlethal control strategies for many beaver damage problems (Hill 1982). Lethal control is utilized to reduce local populations in areas where damage has occurred. When beavers must be taken, ADC removes the minimum number necessary to prevent additional damage. A variety of capture techniques are utilized by ADC (Fig. 6). To assist ADC with its operational program, the MDWFP has permitted ADC personnel to check traps every 72 hours, instead of the normal 36 hours, when conibear traps and leghold traps (set as drown sets only) are used. ADC personnel are also allowed to trap within the 100 foot right-of-way of public roads.

In addition to the control of local beaver populations, the ADC program uses binary explosives to remove beaver dams. The use of explosives, coupled with reductions in local beaver populations, allows for more effective resolution to beaver-caused damages. In 1994, ADC used 2,876 pounds of explosives to remove 617 beaver dams.

BENEFITS OF BCAP

The benefits of BCAP can be measured in a number of ways, one being its popularity with those who receive assistance through the program. Since its creation, voluntary participation in BCAP by counties has steadily increased (Figure 5). In 1995, 6 additional counties wanted to enroll in the program but could not because current funding levels limit participation to 50 counties. Another measure of the benefit of BCAP is the increases in state funding which have been provided by the Legislature through the years (Fig. 4).

To further measure the value of BCAP, the Advisory Board conducted a customer satisfaction survey in 1993 (BCAP Advisory Board 1993). This

survey was sent to all 47 counties which were enrolled in BCAP at that time. Forty-one counties (87%) returned the survey. Three of the survey questions related directly to the services provided by BCAP.

When asked if their beaver damage problems were being addressed, a total of 26 (64% of the 41 counties which responded) counties felt BCAP was *completely* (9 counties or 22%) or *mostly* (17 counties or 42%) resolving their problems. Fourteen counties (34%) said BCAP solved *some* of their problems, with four counties noting that the extent of their problems and the limited amount of time (40 days) were insufficient to address all beaver damage problems. One county reported that BCAP was not addressing their problems.

When asked if BCAP services were worth the \$2,000 annual application fee, 38 (95%) of the 40 counties which answered the question felt that the services they received were worth the application fee. Two counties (5%) felt the services were not worth the fee.

When asked how much money their county would normally spend in one year to repair or control beaver damage if BCAP did not exist, 9 (24%) of the 38 responding counties estimated they would spend less than \$2,000; 29 (76%) estimated they would spend \$2,000 or more; and 16 (42%) said their normal costs to resolve beaver damages would exceed \$5,000 annually.

The survey results seem to indicate that counties are generally satisfied with BCAP with the exception that they wish more time could be devoted to resolving their problems.

CONCLUSION

The cooperative relationships between all parties involved with BCAP make this a successful program. The Mississippi Legislature should be commended for initiating legislation to create a mechanism for addressing beaver problems within the state. The Advisory Board has provided ADC

with leadership and direction for administering the program, and the participating counties have prioritized the areas where BCAP services can best be utilized. With the predicted increase in beaver populations in Mississippi and throughout the southeastern United States (Southwick Associates 1994), plus a predicted decrease in commercial fur harvest within the United States as a result of the European Economic Community's Wild Fur Regulation (Bhat and White 1992, Decker and Batcheller 1993), the demand for beaver damage management programs is likely to continue.

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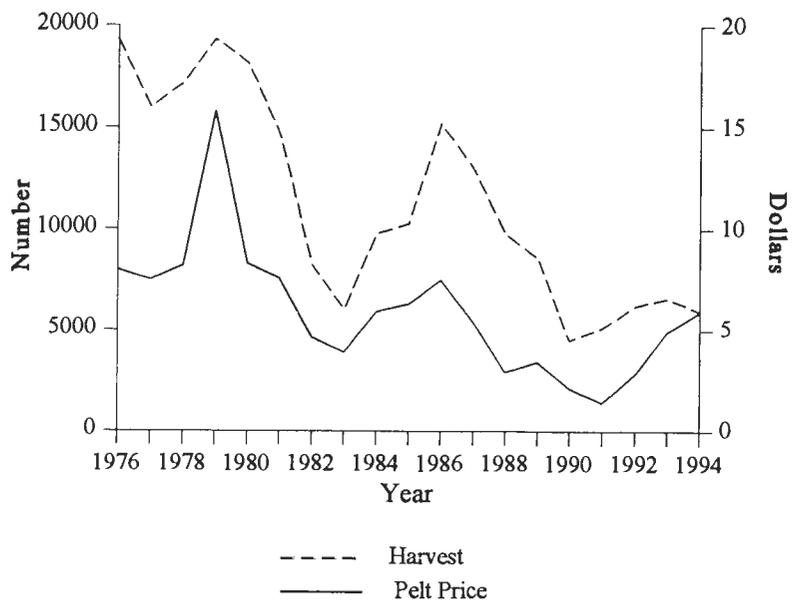


Fig. 1. Beaver harvest\pelt price, 1976 - 1994.

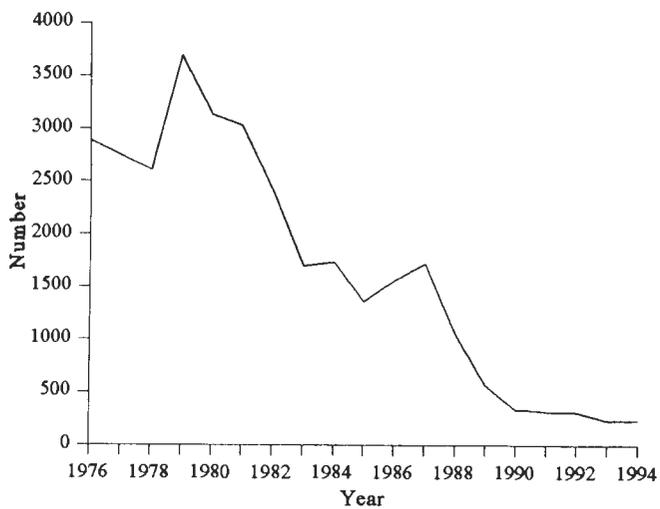


Fig. 2. Trapping license sales, 1976 - 1994.

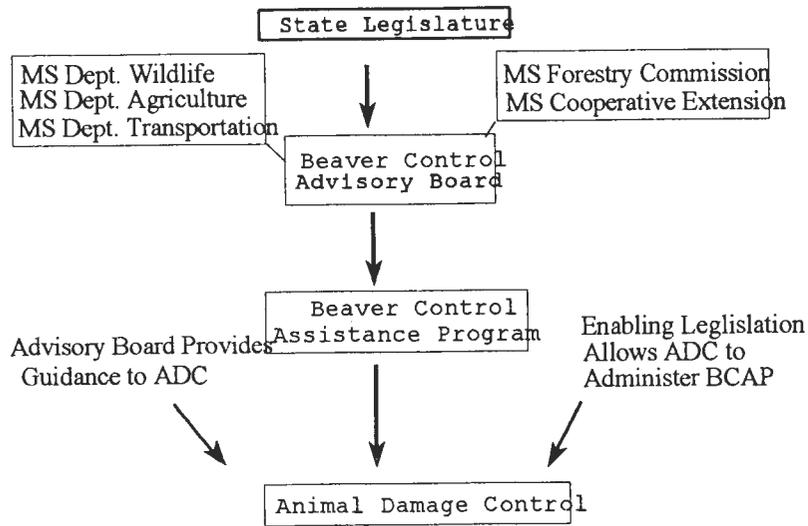


Fig. 3. Creation of BCAP.

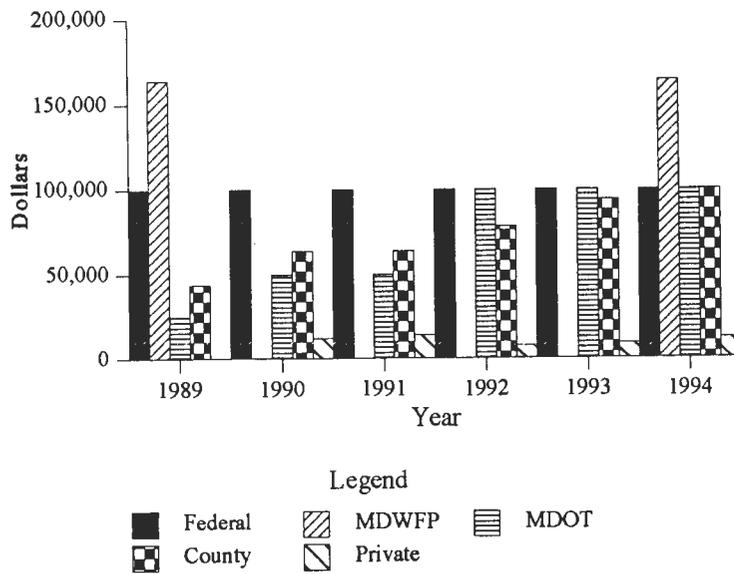


Fig. 4. Funding for BCAP.

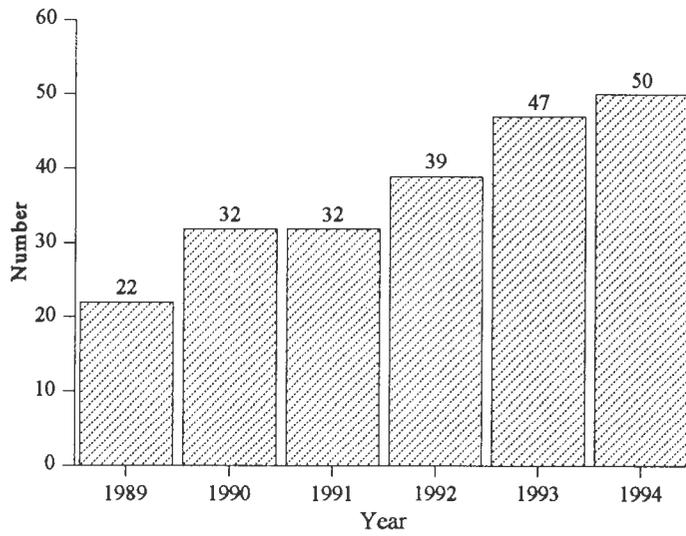


Fig. 5. County participation in BCAP, 1989 - 1994.

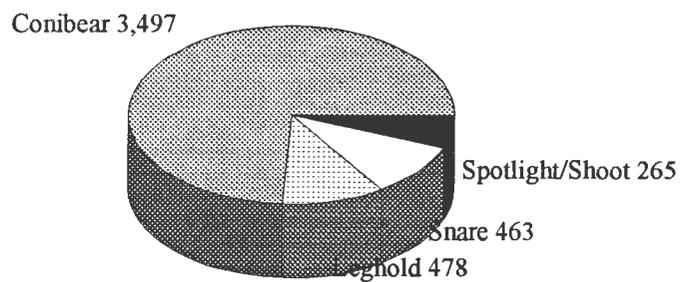


Fig. 6. Beaver captured - 1994.