



North Carolina Wildlife Resources Commission

Gordon Myers, Executive Director

March 14, 2018

Dear Honorable Members, Executive Staff and Fiscal Research Division,

An annual report on the Beaver Management Assistance Program's (BMAP) accomplishments in FY 2017 is attached as required by General Statute 113-291.10. The Cooperative Service Agreements for operation of the BMAP program between USDA Wildlife Services and the NC Department of Transportation and NC Wildlife Resources Commission were recently converted from a Federal to a State fiscal year to better administer the program. This switch in timetable caused FY2017 to only span three quarters, resulting in a pro-rated funding structure and this report which covers activities from October 1, 2016 through June 30, 2017. The next BMAP annual report (FY 2018) will cover a full state fiscal year, with data from July 1, 2017 through June 30, 2018.

Over the past 25 years, the BMAP has been cooperatively funded through state, county, federal and private cost-share contributions. In FY 2017, BMAP services prevented the impending loss or repair expenditures of an estimated \$8.58 million in roads and bridges, timber and other agricultural resources, railroad trestles, dams and ditches, city and county sewer systems and water treatment facilities, landscape plantings, and other resources such as homes, airport runways, and golf courses. Comparing BMAP expenditures to savings, the estimated cost benefit ratio was 1 to 7.21. In other words, for every \$1.00 spent, \$7.21 in resources were saved.

The annual report is being submitted in electronic format. Please contact me if you would like a printed copy, and let me know if you have any questions regarding this annual report.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jessie L. Birckhead'.

Jessie L. Birckhead
Chairperson, Beaver Damage Control Advisory Board
NCWRC Extension Wildlife Biologist
919-219-0716, jessie.birckhead@ncwildlife.org

North Carolina Beaver Management Assistance Program

Twenty-Fifth Summary Report to NC General Assembly

October 1, 2016 through June 30, 2017



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Beaver Management Assistance Program

Background

The North Carolina Beaver Management Assistance Program (BMAP) was created by state legislative action in 1992 with the express purpose of helping manage ever-increasing problems caused by beaver on private and public lands. Because of practical and ecological considerations, the program's goal is to address specific beaver damage problems rather than to eliminate beaver from the State. The program prioritizes activities first on public health and safety, and secondly on assistance to landholders experiencing beaver damage.

The BMAP is implemented by USDA Wildlife Services (WS) through Cooperative Service Agreements with the NC Department of Transportation (DOT), NC Wildlife Resources Commission (WRC), participating Counties, and private landholders through a cost-share system.

The Cooperative Service Agreements between WS and the DOT and WRC were converted from a Federal to a State fiscal year. This switch in timetable caused FY2017 to only span three quarters, resulting in a pro-rated funding structure and this report which covers activities from October 1, 2016 through June 30, 2017.

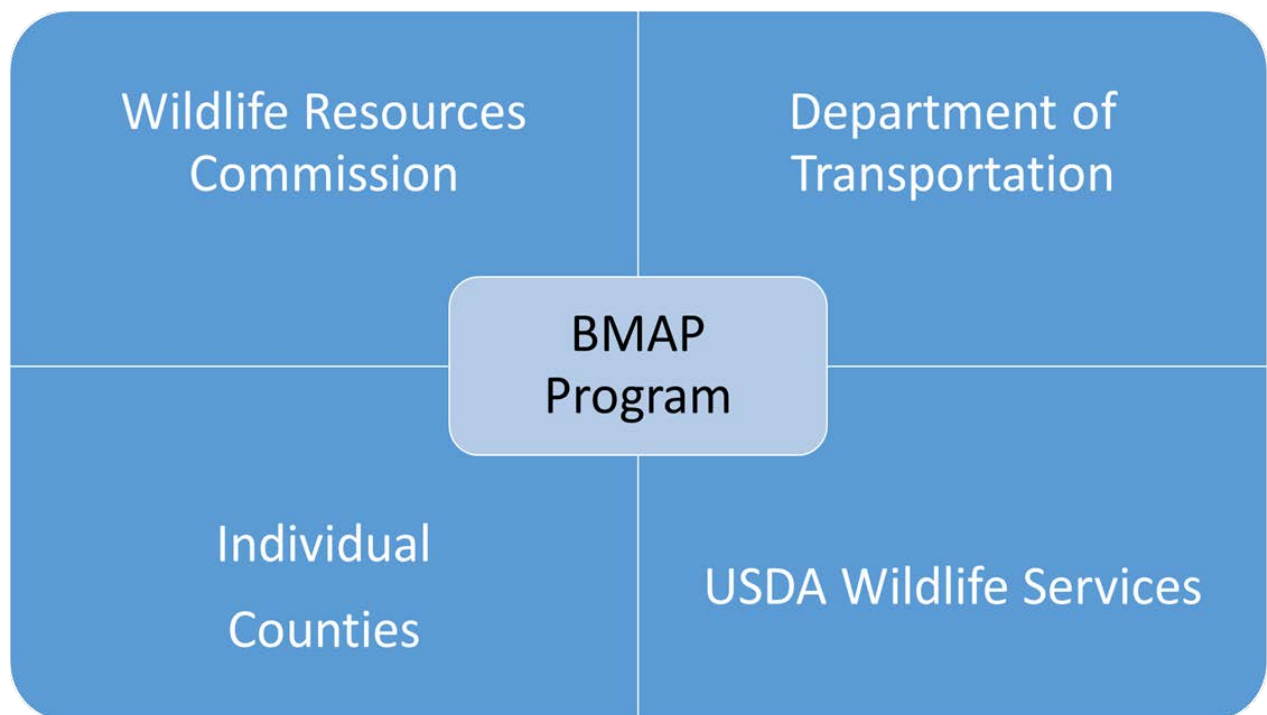
Beaver Management Assistance Program Advisory Board

The BMAP Advisory Board is comprised of representatives from eight State and Federal Agencies, and non-governmental organizations. It meets at least once annually to review the previous year's accomplishments and to make recommendations for the coming year to the Executive Director of the NC Wildlife Resources Commission.

Jessie Birckhead (Chair)	NC Wildlife Resource Commission
Tim Sherrill	NC Department of Transportation
Charles Bowden	NC Division of Soil and Water Conservation
Joseph Hudyncia	NC Department of Agriculture and Consumer Services
Bill Pickens	NC Forest Service
Anne Coan	NC Farm Bureau Federation
Chris Brown	NC Forestry Association
Keith Wehner/Todd Menke	USDA Wildlife Services

Program Structure

The BMAP Program is comprised of 4 major entities, each with its own expectations and guidelines for the Program.



The NC Department of Transportation funds beaver damage management activities to provide services in all 100 Counties. Activities are conducted to reduce beaver flooding that impacts state roads, and threatens roadway infrastructure and human health and safety.

The NC Wildlife Resources Commission funds beaver damage management activities as part of a cost-share program with participating Counties and landholders within those Counties. Activities are conducted to reduce water levels that threaten private roadways, agricultural crops, and general property.

Individual Counties have the choice to participate annually in the BMAP program at various levels. Participation in the BMAP program ranges from no participation to baseline participation to funding a part-time or full-time beaver damage management specialist.

USDA Wildlife Services provides at least \$25,000 annually to the program to facilitate its implementation and staff conduct all beaver management activities.

Funding Sources and Expenditures

Program funding by source and expenditures from October 1, 2016 through June 30, 2017 are summarized below:

Expenditures	NCWRC	NCDOT	Counties*	USDA Wildlife Services	Landholder Cost-Share	Totals
Personnel Costs	\$185,869	\$231,757	\$315,887	\$0	\$38,506	\$772,019
Travel & Per Diem	\$986	\$228	\$3,591	\$0	\$0	\$4,805
Vehicle Usage (i.e. fuel, maintenance, repairs)	\$17,510	\$25,872	\$24,372	\$0	\$0	\$67,754
Other Services (i.e. communication, non-vehicle repair & maintenance, etc.)	\$728	\$146	\$7,755	\$25,000	\$0	\$33,629
Supplies (i.e. waders, tools, traps, explosives)	\$21,451	\$7,432	\$43,615	\$0	\$0	\$72,498
Equipment (i.e. laptops/printers)	\$550	\$0	\$1,303	\$0	\$0	\$1,853
Pooled Job Costs (11%):	\$24,980	\$29,197	\$26,571	\$0	\$0	\$80,748
Indirect Costs - NCWS (11%)	\$24,980	\$29,197	\$46,395	\$0	\$4,236	\$104,808
Indirect Costs - APHIS (5.15%)	\$11,696	\$13,670	\$17,643	\$0	\$1,983	\$44,992
Total spent	\$288,750	\$337,500	\$487,132	\$25,000	\$44,725	\$1,183,107
Amount Funded	\$288,750	\$337,500	\$487,132	\$25,000	\$44,725	\$1,183,107

*Includes \$4,000 participation fees and funding provided by individual counties in addition to the participation fee

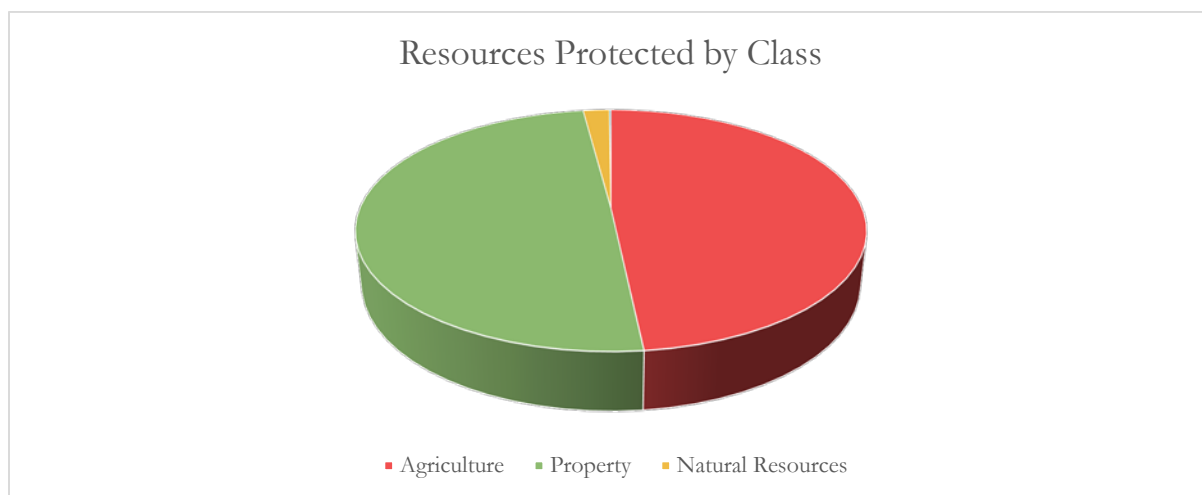
Program Statistics in Summary

The Cooperative Service Agreements between WS and the DOT and WRC were converted from a Federal to a State fiscal year. This switch in timetable caused FY2017 to only span three quarters, resulting in a pro-rated funding structure and this report which covers activities from October 1, 2016 through June 30, 2017. In total 803 projects were worked during this timeframe.

Projects Worked	Dams Removed w/Explosives	Dams Removed Manually	Beaver Removed
803	475	884	2,496

Damage Economics in Summary

USDA Wildlife Services staff and cooperators reported that BMAP services prevented the impending loss or repair expenditures of an estimated \$8.58 million in roads and bridges, timber and other agricultural resources, railroad trestles, dams and ditches, city and county sewer systems and water treatment facilities, landscape plantings, and other resources such as homes, airport runways, and golf courses. Comparing BMAP expenditures to savings, the estimated cost benefit ratio was 1 to 7.21. In other words, for every \$1.00 spent, \$7.21 in resources were saved. Also, the benefits of BMAP services reported by the DOT does not include projected future savings estimates, which can be significant. Furthermore, the cost-benefit ratio does not include the benefits of educational activities such as training individuals to address their own beaver damage problems. It also does not include any state revenue generated from taxes on timber sales that otherwise would have been lost had beaver destroyed the timber.



Beaver Flooding Examples

Beaver damage takes many forms but a typical situation is depicted below. In this example, beaver have flooded a culvert under a State highway. The flooded water has saturated the road bed, drowned timber, saturated ground and limited accessibility to transmission lines and threatens to flood nearby buildings and the road surface.

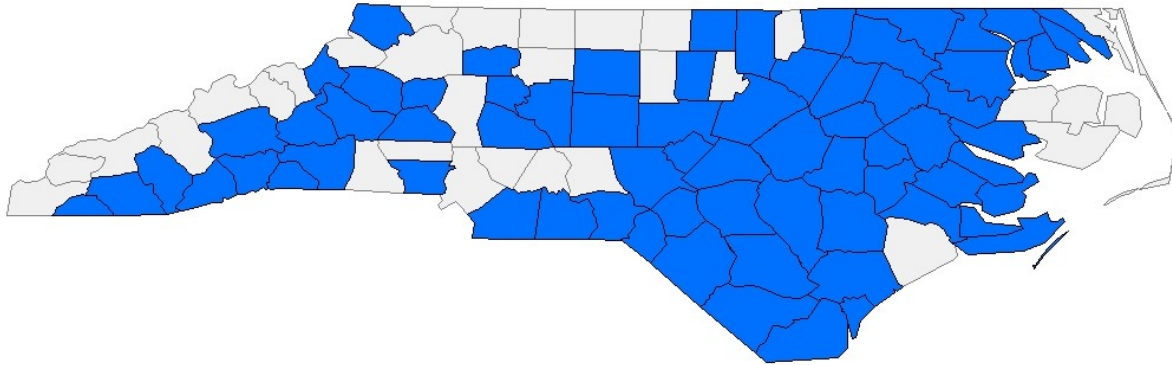


After Wildlife Services have conducted beaver damage management activities, all of these problems were corrected and threats had been removed.



NC Department of Transportation

Operational Statistics



Beaver damage management activities were conducted in 69 of North Carolina's 100 counties for the NC Department of Transportation. A total of 423 projects were worked for the DOT resulting in the removal of 1,225 beaver and 699 dams. In addition, WS worked with 556 adjacent landholders to conduct these activities.

Projects Worked	Dams Removed w/Explosives	Dams Removed Manually	Beaver Removed
423	148	551	1225

Damage Economics

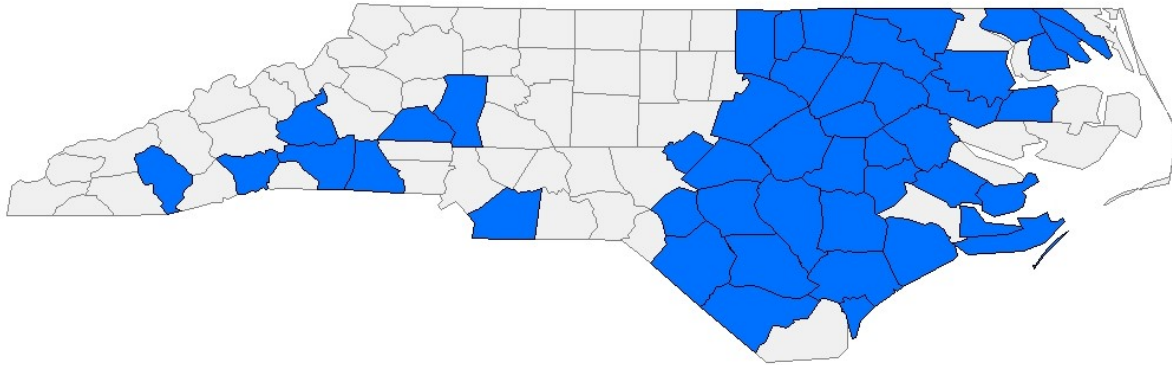
Beaver damage management activities protect numerous valuable resources which included physical property, agriculture and natural resources totalling **\$4,452,375**. The additional benefit of protecting human health and safety occurred but remains difficult to quantify.

Estimated Value of Protected Resources by Individual Category

Timber	Crops & Pasture	Roads & Bridges	Irrigation & Drainage	Utilities & Sewer	General Property	Wetlands
\$790,610	\$68,015	\$3,397,000	10,250	5,500	\$104,200	\$76,800

NC Wildlife Resources Commission

Operational Statistics



Beaver damage management activities were conducted in 45 participating counties with funding provided by the NC Wildlife Resources Commission, participating counties, and individual landholders. A total of 215 projects were worked resulting in the removal of 680 beaver and 324 dams.

Projects Worked	Dams Removed w/Explosives	Dams Removed Manually	Beaver Removed
215	129	195	680

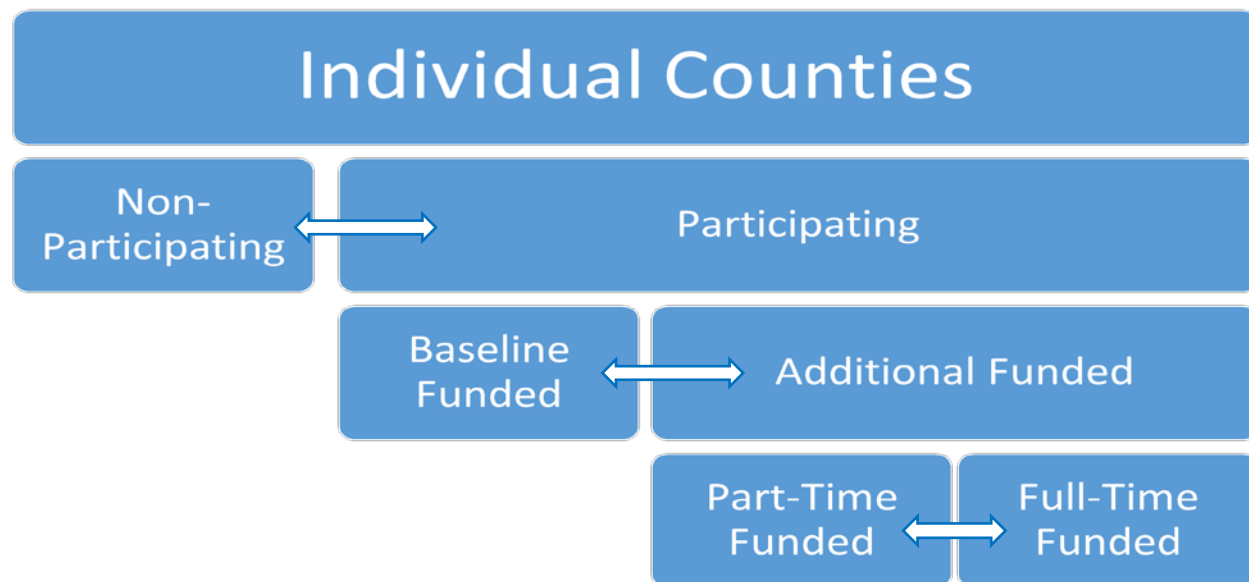
Damage Economics

Beaver damage management activities protect numerous valuable resources which included physical property, agriculture and natural resources totalling **\$2,631,302**. The additional benefit of protecting human health and safety occurred but remains difficult to quantify.

Estimated Value of Protected Resources by Individual Category

Timber	Crops & Pasture	Roads & Bridges	Dams & Dikes	Irrigation & Drainage	Utilities & Sewer	General Property	Natural Resources
\$1,711,667	\$378,005	\$110,400	\$93,000	\$35,450	\$58,100	\$219,900	\$24,780

Individual Counties



Individual North Carolina counties are invited to participate in the BMAP Program on an annual basis and have the choice to participate or opt out. If the counties choose to participate, then they have the choice of level in which to participate (see above).

Non-participating counties – Landholders in non-participating counties have access to beaver damage management activities if needed. These activities can be provided by USDA Wildlife Services at the full cost of the activities.

Participating counties at Baseline Funding – The cost to become a participating county was \$4,000. Participation in the program gives counties access to funding provided by the NC Wildlife Resources Commission and generally covers 6 to 8 private projects within the County. Individual landowners that request these services pay cost share fees of \$25 per visit and \$125 per large dam. The 39 counties listed below participated at this level during FY2017.

Bertie	Franklin	Hoke	New Hanover	Sampson
Bladen	Gates	Iredell	Northampton	Union
Carteret	Greene	Jackson	Onslow	Vance
Catawba	Granville	Johnston	Pamlico	Wake
Cleveland	Halifax	Lee	Pasquotank	Warren
Columbus	Harnett	Martin	Perquimans	Washington
Craven	Henderson	McDowell	Pitt	Wilson
Edgecombe	Hertford	Nash	Rutherford	

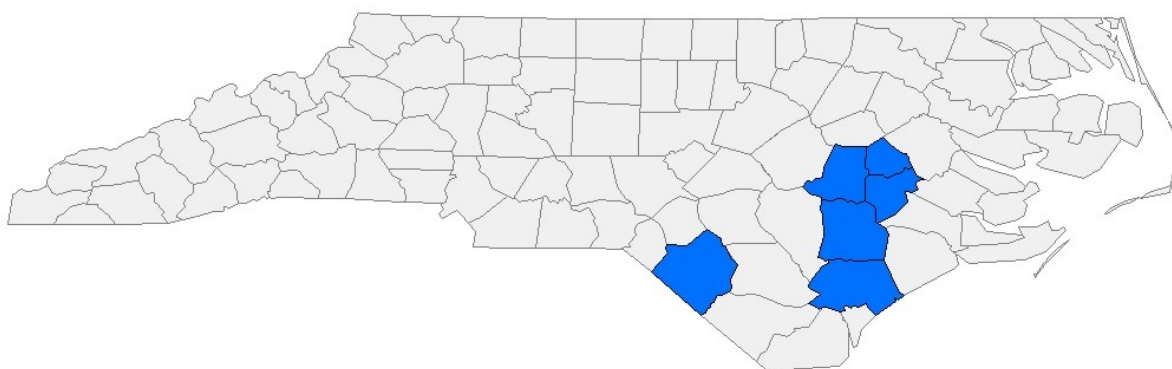
Participating counties with Additional Funding – Some counties chose to participate at an elevated level. In addition to the baseline funding, these counties provided additional funding to cover the remaining expenses of a part-time, full-time or sometimes multiple full-time beaver damage management specialists. Counties that participated at one of these levels included:

Multiple full-time personnel – Duplin County

Single full-time personnel – Pender, Robeson and Wayne Counties

Part-time personnel – City of Fayetteville, Greene and Lenoir Counties

Operational Statistics



Beaver damage management activities were conducted in 6 North Carolina participating counties that provided funding additional to baseline funding. A total of 165 projects were worked resulting in the removal of 591 beaver and 336 dams.

Projects Worked	Dams Removed w/Explosives	Dams Removed Manually	Beaver Removed
165	198	138	591

Damage Economics

Beaver damage management activities protect numerous valuable resources which included physical property, agriculture and natural resources totalling **\$1,499,845**. The additional benefit of protecting human health and safety occurred but remains difficult to quantify.

Estimated Value of Protected Resources by Individual Category

Timber	Crops & Pasture	Roads & Bridges	Dams & Dikes	Irrigation & Drainage	Utilities & Sewer	General Property	Natural Resources
\$1,122,194	\$66,451	\$18,000	\$55,500	\$102,100	\$16,500	\$27,000	\$117,100

Educational Activities

Advice and information, or “technical assistance”, was provided to landholders statewide through on-site visits, written/telephone consultations, and educational programs and exhibits. USDA Wildlife Services distributed thousands of leaflets to landholders and the general public on how best to address beaver damage on their property. BMAP strives to educate landholders and others, about both the positive and negative aspects of beaver activity on their land so that they can make informed decisions about management options. If landowners decide to use non-lethal or lethal means to address a beaver damage problem, they are always given the option to do the work themselves with direction and training provided by USDA Wildlife Services at no cost.

State Fiscal Year 2017/2018

The BMAP continues to be a popular program among landholders, counties, municipalities, businesses, and the DOT. Landholders requesting BMAP services are often faced with significant losses as a result of beaver activity. The severity is evident by the value set on BMAP services. As in previous years, BMAP participants continued to show little interest in conducting damage management activities themselves. This is most likely because of a lack of ability and/or time. USDA Wildlife Services wildlife specialists will, however, continue to make concerted efforts to encourage individuals to solve their own problems through on-site training and damage management workshops.

Estimated Funding Sources for State FY 2017/2018

NC Department of Transportation	\$931,000
NC Wildlife Resources Commission	\$385,000
45 Participating Counties	\$180,000
USDA Wildlife Services	\$25,000
Private Cost-Share (estimated)	\$50,000
Counties Providing Additional Funds	\$294,800
Total	\$1,865,800

Obtaining Services

How to Participate

All counties are eligible to participate in BMAP through an annual cost share assessment of \$4,000 per county. Individuals residing in these counties may obtain assistance with beaver damage by contacting their county Cooperative Extension or Soil and Water Conservation District office. Statewide assistance with beaver damage problems is also provided to the DOT. All requests for assistance receive an immediate response, but due to current workloads the start of direct assistance activities may vary.

Cost Share

Individuals in participating counties pay a small cost-share fee for services. There is no charge for time spent discussing the program and signing paperwork. During this assessment the USDA Wildlife Services personnel discusses both the positive and negative impacts of beaver with the landholder and recommends the best course of action. If damage management activities are recommended, time and costs are estimated before work begins. Landholders wishing to conduct their own work are provided individualized training at no cost. The cost-share fee for individuals in participating counties is \$25 for each visit to their property, with no charge for travel time. There is also a \$125 charge for dam removal. Wildlife Services personnel average about 10 visits over a 30-day period to resolve a beaver problem. After 15 visits to a landholder's property in any one year, costs increase.

Assistance Priorities

Requests for assistance are handled on a first-come, first-served basis with top priority given to addressing threats to public health and safety, particularly along highway rights-of-way and county-owned property. Work for individual landholders is next, followed by work for soil and water conservation districts, municipalities, corporate landholders, and others.

Additional Information

For additional information about the BMAP please call or write:

USDA Wildlife Services, 6213-E Angus Drive, Raleigh, NC 27617, 1-866-487-3297

- OR -

NC Wildlife Resources Commission, Division of Wildlife Management at 1751 Varsity Drive, Raleigh, NC 27606, 1-919-707-0050.