

NORTH CAROLINA BEAVER MANAGEMENT ASSISTANCE PROGRAM (BMAP)

Twenty-Fourth Annual Report

FY 2016 - October 1, 2015 through September 30, 2016



WS Wildlife
Services

Protecting People
Protecting Agriculture
Protecting Wildlife



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. The program primarily focuses on public health and safety and on assistance to landholders experiencing beaver damage problems. Because of practical and ecological considerations, the program is designed to address specific beaver damage problems rather than to eliminate beaver. It seeks to assist the North Carolina Department of Transportation (DOT), local governments, private landholders, and others. The BMAP has grown from four counties in FY 1993 to 45 counties in FY 2016. At the same time, BMAP services specifically delivered to the DOT cover all 100 counties.



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Front Cover and Above: Examples of beaver impacts—beaver dams removed using explosives protected a soybean field in Robeson County. Photo credits: Bo Benton, USDA Wildlife Services.

Background Information

The BMAP is a cooperative endeavor funded by the North Carolina Wildlife Resources Commission (NCWRC), DOT, USDA Wildlife Services, participating counties, and cost-share collections from private landholders, businesses, municipalities, and others. (See BMAP Funding Sources and Expenditures on page 7). The BMAP is administered by USDA Wildlife Services through cooperative service agreements with the NCWRC and the DOT.

Participating Counties

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

In FY 2016, BMAP services were available in all 100 counties for the DOT, as well as local governments, landholders, and others in 45 participating counties, each opting to contribute \$4,000 to the program.



Above: Example of beaver impacts—Pender County private road and timber protected prior to the threat of Hurricane Matthew. Photo credit: Michael Vickery.

BMAP Advisory Board

- Ann May /Jessie Birckhead (Chair), NC Wildlife Resources Commission
- Tim Sherrill, NC Department of Transportation
- James Jeuck, NC Cooperative Extension Service
- 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

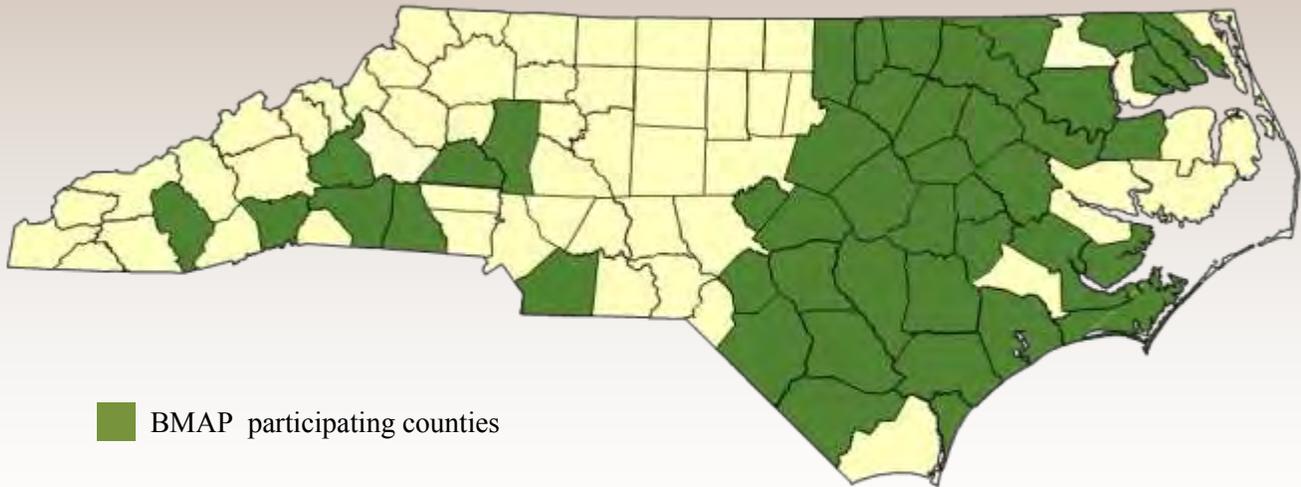
The BMAP is overseen by the NCWRC and advised by a nine-member Advisory Board with current members and respective affiliations listed above. In FY 2016, the BMAP Advisory Board met on February 11, 2016 to review program accomplishments and to make recommendations on future activities to the Executive Director of the NCWRC.



Above: Example of beaver impacts—beaver dam removed under Highway 710 in Robeson County. Photo credit: Bo Benton, USDA Wildlife Services.

Program Activities and Accomplishments

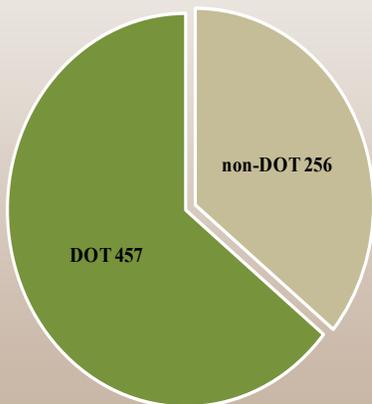
BMAP Statistics



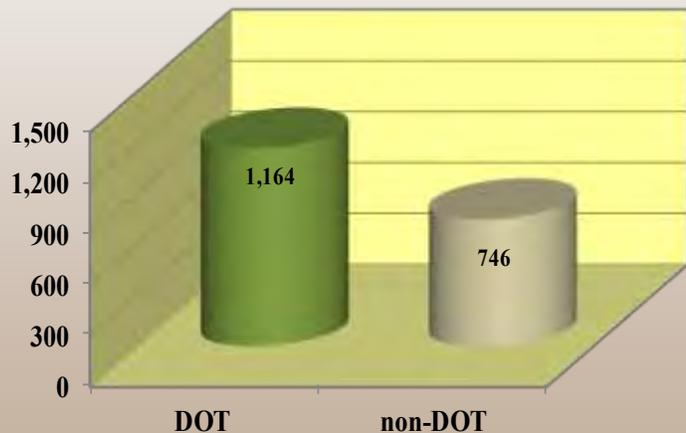
■ BMAP participating counties

Beaver damage control activities were conducted in 80 counties under 713 agreements with 1,910 beavers being removed (see charts below). These were agreements with both the DOT and non-DOT including private landholders, businesses, local governments, soil/water conservation districts, and others. This work also benefited an additional 542 adjacent landholders where USDA Wildlife Services specialists worked on private properties adjoining DOT rights-of-way and other private property to resolve beaver damage. Agreements with private landholders may include several noncontiguous areas, all of which are identified as one agreement. Agreements with local governments and soil/water conservation districts sometimes involve numerous landholders; however, all are identified as just one agreement.

Service Agreements



Beavers Removed By Service Agreement

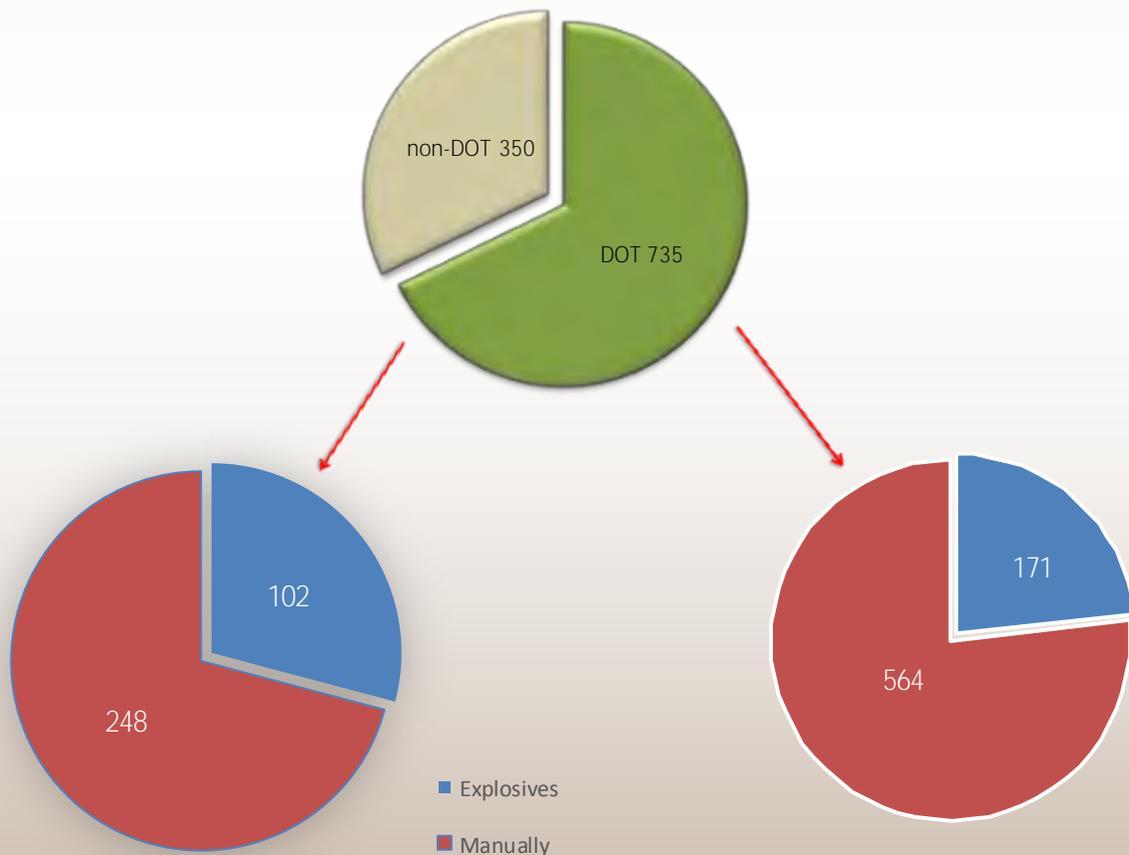


BMAP Statistics

In FY 2016, the number of agreements completed, beaver removed, and beaver dams removed decreased compared to the previous years. This decrease was due to difficult weather conditions and turn over in personnel. Entry level personnel required more training, reducing services provided and resulting in additional staff years. Demand for services on both public (DOT) and private lands continue to increase, resulting in increased service limitations for some areas. Non-emergency services to DOT sites in non-BMAP counties were assigned a lower priority rating to better maintain service equity statewide.

FY	Agreements Completed	Beaver Removed	Dams Removed	Resources Saved
2016	713	1,910	1,085	\$6,258,531

Beaver Dams Removed



BMAP specialists used explosives and hand tools to remove 1,085 beaver dams, which were backing up water and flooding public roads and highways, timber, croplands, sewer and septic systems, and other lands.

Damage Economics

FY 2016 Resources Saved = \$6.26 Million



**For every \$1 spent,
\$5.74 in resources was saved**

In FY 2016, USDA Wildlife Services specialists and their cooperators reported that BMAP services prevented the impending loss or repair expenditures of an estimated \$6.26 million. These efforts prevented damage to roads and bridges, timber, row crops, railroad trestles, water control structures, municipal sewer systems and water treatment facilities, landscape plantings, and other resources such as homes, airport runways, and golf courses. The estimated cost-benefit ratio was 1 to 5.74, or in other words, for every \$1.00 spent, \$5.74 in resources was 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 many 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.

BMAP Funding Sources and Expenditures

The table below outlines BMAP funding sources and expenditures from October 2015 through September 2016. USDA Wildlife Services personnel worked 14.59 staff years on the BMAP.

Expenditure Type	Expenditures \$\$ (a) by Funding Source			Totals
	NCWRC/DOT Counties	USDA Wildlife Services (WS)	WS Cost Share Collections	
Personnel Costs	\$677,770	\$0	\$42,904	\$720,674
Travel & Per Diem	\$13,772	\$0	\$0	\$13,772
Vehicle Usage (fuel, maintenance, repair)	\$83,629	\$0	\$0	\$83,629
Other Services (telephone, data lines, non-vehicle repairs & maintenance, etc.)	\$3,648	\$25,000	\$0	\$28,648
Supplies and Materials (waders, tools, traps, explosives)	\$29,907	\$0	\$0	\$29,907
Equipment (laptops/printers)	\$2,950	\$0	\$0	\$2,950
Pooled Job Costs(11%)	\$72,238	\$0	\$0	\$72,238
Indirect Costs to NCWS (12.15%)	\$98,619	\$0	\$5,213	\$103,832
Indirect Costs to APHIS (4%)	\$32,467	\$0	\$1,716	\$34,183
Total spent (10/1/15-9/30/16)	\$1,015,000	\$25,000	\$49,833	\$1,089,833
Amount Funded (10/1/15-9/30/16)	\$1,015,000	\$25,000	\$49,833	\$1,089,833
	(b)	(c)	(d)	
BALANCE (10/1/16)	\$0	\$0	\$0	\$0

(a) Expenditure figures are subject to adjustment.

(b) Funding sources: NCWRC. NCDOT 45 Counties

\$385,000 \$450,000 \$180,000

(c) USDA Wildlife Services contributed \$25,000 to fund the BMAP in FY 2016. Wildlife Services provided additional indirect support to administer the program that is not included in the \$25,000

(d) BMAP cost-share collections by Wildlife Services from landowners, municipalities, and other sources. As of October 1, 2016, \$0 in outstanding landholder cost-share invoices were over 90 days past due.

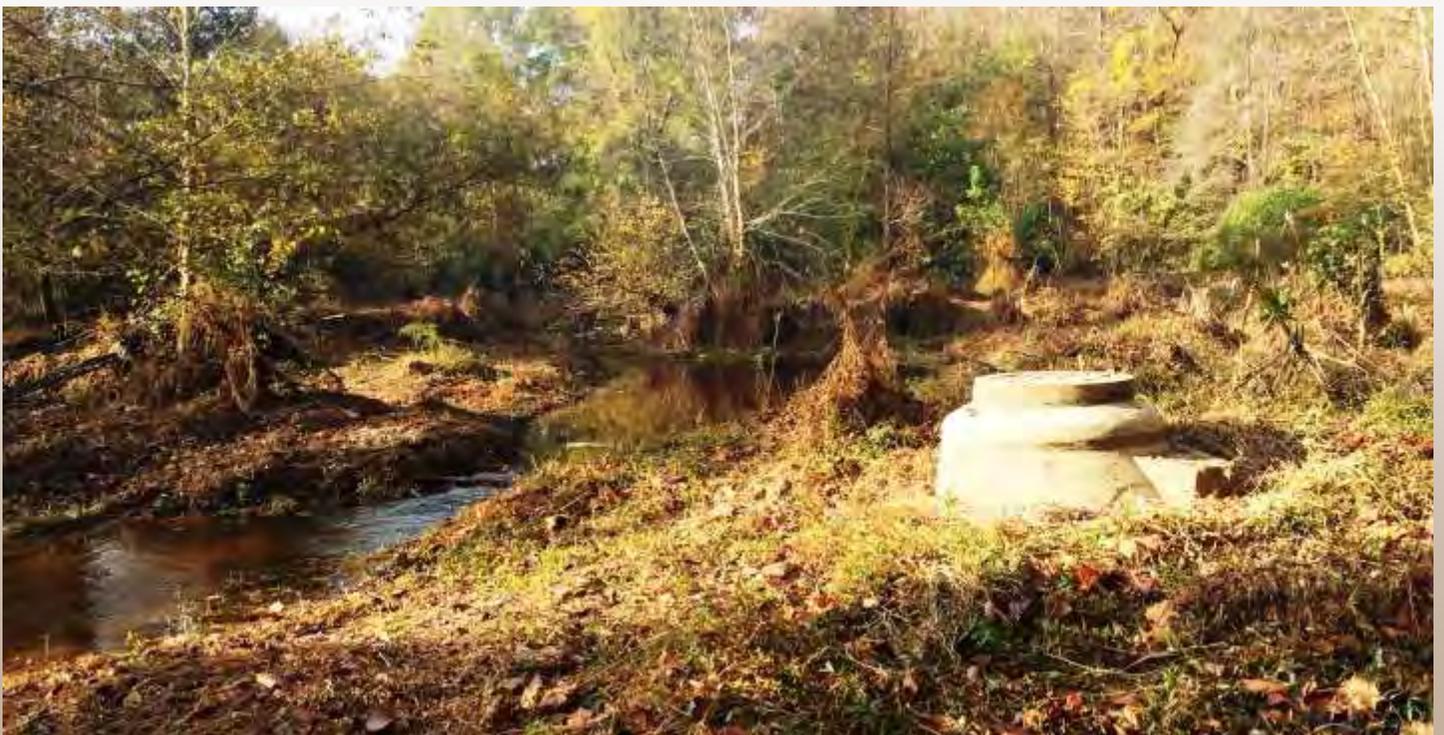
Protecting Public Health



Above: Before BMAP—Chockoyotte Creek, from its confluence with the Roanoke River west to Zoo Road in Roanoke Rapids, continued to have beaver flooding of the sanitary sewer line that runs parallel to the creek.

Below: After BMAP—The Roanoke Rapids Sanitary District no longer has to treat additional water, resulting in reduced costs and fewer community complaints from stagnant water and mosquitos.

Photo credits: Matthew Ordess, USDA Wildlife Services.



Protecting Roadways and the Traveling Public



Above: Before BMAP—Large beaver dam affecting American Thread Road in McDowell County.

Below: After BMAP—Beaver dam removed protecting public health and safety.

Photo credits: Dustyn Reece, Seth Brown, and Kyle Childers, USDA Wildlife Services.



Protecting Roadways and the Traveling Public



Above: Before BMAP—Public health and safety concerns on East Powersville Road in Robeson County.

Below: After BMAP—Protected traveling public and roadway from damages caused by beaver.

Photo credits: Bo Benton, USDA Wildlife Services.



Protecting Roadways and the Traveling Public



Above: Before BMAP—Beaver dam at Nivens Cove Road in Gaston County.

Below: After BMAP—Beaver dam removed protecting public health and safety.

Photo credits: Dustyn Reece, USDA Wildlife Services.



Protecting Roadways and the Traveling Public



Examples of beaver impacts threatening public health and safety in Robeson County.

Above: Turkey Branch Road. **Below:** Linhaw Road near Highway 41.

Photo credits: Bo Benton, USDA Wildlife Services.



Protecting Roadways and the Traveling Public



Examples of beaver impacts threatening roadways, traveling public, and agriculture in Robeson County.

Above: Hwy. 74 and I-95 near exit 209. **Below:** Agriculture crop losses due to beaver activities.

Photo credits: Bo Benton, USDA Wildlife Services.



Protecting Roadways and the Traveling Public



Examples of beaver impacts protecting public health and safety.

Above: Hwy. 301 near Rowland in Robeson County. **Below:** Spring Branch Road in Bladen County.

Photo credits: Bo Benton, USDA Wildlife Services.



Protecting Natural Resources



Above: Before BMAP—DEQ Division of Mitigation Services (previously Ecosystem Enhancement Program) restoration site protected in Randolph County.

Below: After BMAP—Beaver dam removed protecting natural resources.

Photo credits: Brandon Emert, USDA Wildlife Services.



Protecting Natural Resources



Above: Before BMAP—City of Raleigh near Poole Road in Wake County.

Below: After BMAP—Beaver dam removed protecting greenways, trail systems, subdivisions, and water/sewer infrastructure..

Photo credits: Shane Smith, USDA Wildlife Services.



Protecting Property



Above: Before BMAP—Long Branch Road near Colerain in Bertie County.

Below: After BMAP—Beaver dam removed protecting property.

Photo credits: Dan Hesseling, USDA Wildlife Services.



Protecting Property



Examples of beaver impacts threatening homes, septic systems, and personal properties in Robeson County. **Above:** Mobile home off Applewood Rd near St. Paul. **Below:** Carthage Community near Lumberton. Photo credits: Bo Benton, USDA Wildlife Services.



Protecting Agriculture



Above: Before BMAP—Farm access road between two ponds and cotton field flooded by beaver activities.

Below: After BMAP—Beaver dam removed from drain pipe in pond dam in Harnett County.

Photo credits: Jordan Armel, USDA Wildlife Services.



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 landholders 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.



Educational event with Robeson County Public Schools. Photo credit: Bo Benton, USDA Wildlife Services.

FY 2017

The BMAP continues to be a popular program among landholders, counties, municipalities, businesses, and the DOT. Landholders requesting BMAP services are 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 specialists will, however, continue to make concerted efforts to encourage individuals to solve their own problems through on-site training and damage management workshops.

The WRC conservatively estimates state beaver populations to be near 500,000 and increasing. With increased beaver populations comes increased beaver damage problems for private landholders, businesses, county and local governments, and the DOT. In 2015-2016, the WRC reported both recreational trappers and wildlife damage control agents trapped and removed approximately 9,644 beaver. This is a minimum figure because, as a “furbearer species,” reporting take is not required of private trappers or landholders. Even if the combined recreational and nuisance beaver take was as much as 20,000 (4% of the estimated statewide population), this low take percentage will have little effect on keeping beaver numbers and damage in check, and populations are expected to continue to increase into the future. Recreational beaver harvest continues to decline due to low fur/pelt prices. Average prices decreased from a high of \$24.22 per pelt in 2012-2013 to \$8.71 in 2015-2016.

Estimated BMAP Funding Sources for FY 2017

NCWRC	\$385,000
DOT	\$450,000
Federal	\$25,000
Counties	\$180,000
Private Cost-Share (a)	\$50,000
Total	\$1,090,000

(a) estimate based on FY 2016 collections

Obtaining BMAP Services in FY 2017

How to Participate

All counties are eligible to participate in BMAP through an annual cost share assessment of \$4,000 per county. In FY 2017, 45 counties are in the program. Individuals residing in these counties may obtain assistance with beaver damage by contacting their county Cooperative Extension or Soil and Water Conservation District office (see below). 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 Wildlife Specialist discusses with the landholder the positive and negative impacts of beaver and recommends the best course of action. If damage management activities are recommended, time and costs are estimated and the Wildlife Specialist begins work. 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 Specialists 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 the USDA Wildlife Services at 6213-E Angus Drive, Raleigh, NC 27617, telephone: 1-866-487-3297, or the NC Wildlife Resources Commission, Division of Wildlife Management at 1751 Varsity Drive, Raleigh, NC 27606, telephone: 919-707-0050.

Bertie	252-794-5317	Harnett	910-893-7530	Pamlico	252-745-4121
Bladen	910-862-4591	Henderson	828-694-6557	Pasquotank	252-338-3954
Carteret	252-222-6352 (Todd)	Hertford	252-358-7822	Pender	910-259-1235
Catawba	828-465-8240	Hoke	910-875-3461	Perquimans	252-426-5545
Cleveland	704-482-4365	Iredell	704-873-6761 Ext. 3	Pitt	252-902-3250
Columbus	910-642-2196 ext. 3	Jackson	828-586-4009	Robeson	910-671-3022
Craven	252-633-1477	Johnston	919-989-5100	Rutherford	828-287-4220 ext. 3
Cumberland	910-321-6860	Lee	919-775-5624	Sampson	910-592-7161
Duplin	910-296-2120 ext. 3	Lenoir	252-527-2191	Union	704-283-3720
Edgecombe	252-823-8187	Martin	252-789-4300	Vance	252-438-8188
Franklin	919-496-3183	McDowell	828-652-7121 ext. 374	Wake	919-250-1053
Gates	252-357-1400	Nash	252-459-9810	Warren	252-257-3640
Granville	919-603-1350	New Hanover	910-798-7660	Washington	252-791-0108 ext. 3
Greene	252-747-3705 ext 3	Northampton	252-534-2711	Wayne	919-731-1521
Halifax	252-583-3481	Onslow	910-455-0181	Wilson	252-237-5147 ext. 3



Above: Example of beaver impacts—Highway 41 near Lumberton in Robeson County.
Photo credit: Bo Benton, USDA Wildlife Services.

For more information contact:

USDA Wildlife Services
866-487-3297



Protecting People | Protecting Agriculture | Protecting Wildlife

-or-

North Carolina Wildlife
Resources Commission
919-707-0050



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