

**DECISION
AND
FINDING OF NO SIGNIFICANT IMPACT
FOR
REDUCING AQUATIC RODENT DAMAGE
THROUGH AN
INTEGRATED WILDLIFE DAMAGE MANAGEMENT PROGRAM
IN THE STATE OF MISSISSIPPI**

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA APHIS), Wildlife Services (WS) program responds to requests for assistance from individuals, organizations and agencies experiencing damage caused by wildlife. Ordinarily, according to APHIS procedures implementing the National Environmental Policy Act (NEPA), individual wildlife damage management actions may be categorically excluded (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). To evaluate and determine if any potentially significant impacts to the human environment from WS' planned and proposed program would occur, an environmental assessment (EA) was prepared. The EA documents the need for aquatic rodent damage management in Mississippi and assessed potential impacts of various alternatives for responding to damage problems. The EA analyzes the potential environmental and social effects for resolving beaver, nutria and muskrat damage related to the protection of resources, and health and safety on private and public lands in Mississippi. WS' proposed action is to implement an Integrated Wildlife Damage Management (IWDM) program on public and private lands in Mississippi. Comments from the public involvement process were reviewed for substantive issues and alternatives which were considered in developing this decision.

WS is the Federal program authorized by law to reduce damage caused by wildlife (Act of 1931, as amended (46 Stat. 1486; 7 U.S.C. 426-426c) and the Rural Development, Agriculture, and Related Agencies Appropriations Act of 1988, Public Law 100-102, Dec. 27, 1987. Stat. 1329-1331 (7 U.S.C. 426c), and the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act of 2001, Public Law 106-387, October 28, 2000. Stat. 1549 (Sec 767). Wildlife damage management is the alleviation of damage or other problems caused by or related to the presence of wildlife, and is recognized as an integral part of wildlife management (The Wildlife Society 1992). WS uses an IWDM approach, commonly known as Integrated Pest Management (WS Directive 2.105) in which a combination of methods may be used or recommended to reduce damage. WS wildlife damage management is not based on punishing offending animals but as one means of reducing damage and is used as part of the WS Decision Model (Slate et al. 1992, USDA 1997, WS Directive 2.201). Resource management agencies, organizations, associations, groups, and individuals have requested WS to conduct aquatic rodent damage management to protect resources and human health and safety in Mississippi. All WS wildlife damage management activities are in compliance with relevant laws, regulations, policies, orders and procedures, including the Endangered Species Act of 1973.

Consistency

The analyses in the EA demonstrate that Alternative 3: 1) best addresses the issues identified in the EA, 2) provides safeguards for public health and safety, 3) provides WS the best opportunity

to reduce damage while providing low impacts on non-target species, 4) balances the economic effects to agricultural and natural resources, and property, and 5) allows WS to meet its obligations to government agencies or other entities.

Monitoring

The Mississippi WS program will annually provide to the Mississippi Department of Wildlife, Fisheries and Parks (MDWF&P) the WS lethal take of target and non-target animals to help ensure the total statewide take (WS and other take) does not impact the viability of target and non target wildlife species. In addition, the EA will be reviewed each year to ensure that it and the analysis are sufficient.

Public Involvement

The pre-decisional EA was prepared and released to the public for a 34-day comment period (April 28 - May 31, 2003) by a legal notice in the *The Clarion Ledger*. The Legal Notice was placed in the newspaper for three consecutive days (April 28, 29, and 30, 2003). A copy of the pre-decisional EA and/or a letter of availability for the pre-decisional EA was also mailed directly to a total of 28 agencies, organizations, and individuals with probable interest in the proposed program. A total of three comment documents in support of the proposed program were received from the public after review of the pre-decisional EA. All comments were analyzed to identify substantial new issues, alternatives, or to re-direct the program. All letters are maintained in the administrative file located at the Wildlife Services State Office, Mississippi State, Mississippi.

Major Issues

The EA describes the alternatives considered and evaluated using the identified issues. The following issues were identified as important to the scope of the analysis (40 CFR 1508.25).

- Effects on beaver, nutria, and muskrat populations
- Effects on plants and other wildlife species, including T&E species
- Effects on public and pet health and safety
- Humaneness of methods to be used
- Effects on wetlands
- Economic losses to property
- Impacts to stakeholders, including aesthetics

Affected Environment

The proposed action could be conducted on private, federal, state, tribal, county, and municipal lands in Mississippi to protect agricultural and natural resources, property, roads, bridges, railroads, and public health and safety from beaver, nutria, and muskrat related damage and conflicts. Areas of the proposed action could include, but are not necessarily limited to state and interstate highways and roads; railroads and their right-of-ways; property in or adjacent to subdivisions, businesses, and industrial parks; timberlands; croplands; pastures; dikes; ditches; ponds; levees; and where feeding causes agricultural crop losses and negatively impacts wildlife, including T&E species.

Objectives

- Resolve as many beaver, nutria, and muskrat damage problems that time and labor will allow.
- Respond to individual damage complaints within a two week time period.
- Prioritize work on state and county road problems before private complaints are worked.
- Maintain the take of non-target otters (*Lutra canadensis*) below 5% of the total take during beaver, nutria, and muskrat damage management operations.

Alternatives That Were Fully Evaluated

The following five alternatives were developed to respond to the issues. Six additional alternatives were considered but not analyzed in detail. A detailed discussion of the effects of the Alternatives on the issues is described in the EA; below is a summary of the Alternatives.

Alternative 1. No WS Beaver, Nutria, or Muskrat Damage Management in Mississippi.

This alternative would result in no assistance from WS in reducing beaver, nutria, or muskrat damage in Mississippi. WS would not provide technical assistance or operational damage management services. All requests for beaver, nutria, or muskrat damage management assistance would be referred to the MDWF&P, local animal control agencies, or private businesses or organizations. Assistance may or may not be available from any of these entities.

Alternative 2. Only Lethal Beaver, Nutria, and Muskrat Damage Management.

Under this alternative, only lethal operational beaver, nutria, and muskrat damage management and technical assistance would be provided by WS. Non-lethal methods, such as snares, leghold traps, and cage traps could be used under this alternative. However, all aquatic rodents captured in these non-lethal devices would subsequently be euthanized. Requests for information regarding non-lethal management approaches would be referred to MDWF&P, local animal control agencies, or private businesses or organizations. WS would not remove or breach beaver dams under this alternative. Individuals or agencies might choose to implement WS lethal recommendations, implement non-lethal methods or other methods not recommended by WS, contract for WS damage management services, use contractual services of private businesses, use volunteer services, or take no action.

Alternative 3. Fully Integrated Beaver, Nutria, and Muskrat Damage Management for all Public and Private Land (No Action/Proposed Action).

WS proposes to administer and continue the current beaver, nutria, and muskrat damage management program in the state of Mississippi. An IWDM approach, including technical assistance and operational damage management services, would be implemented to reduce damage associated with beaver, nutria, and muskrat activities to property, roads, bridges, railroads, agricultural and natural resources, and public health and safety on all lands in Mississippi where a need exists and requests are received. An IWDM strategy encompasses use of practical and effective methods of preventing or reducing damage while minimizing harmful effects of damage management measures on humans, target and non-target species, and the environment. Non-lethal methods, such as physical exclusion or habitat modification, would be given first consideration in the formulation of each damage management strategy and would be recommended or implemented when practical and effective before recommending or implementing lethal and non-lethal methods, such as body-grip traps, snares, leg-hold traps, cage

type traps, colony traps, snap traps, shooting, and zinc phosphide bait. Aquatic rodents captured in non-lethal devices (leg-hold traps, snares, cage traps, etc.) would subsequently be euthanized. However, non-lethal methods would not always be applied as a first response to each damage problem. The most appropriate response would often be a combination of non-lethal and lethal methods, or there could be instances where application of lethal methods alone would be the most appropriate strategy. Beaver damage management would be conducted in the state, when requested, on private or public property after an *Agreement for Control* or other comparable document has been completed and cooperator funding has been secured. All beaver, nutria, and muskrat damage management would be consistent with other uses of the area and would comply with appropriate federal, state, and local laws. Unwanted beaver dams could be removed or breached by hand or with binary explosives under this alternative.

Alternative 4. Technical Assistance Only.

This alternative would only allow Mississippi WS to provide technical assistance to individuals or agencies requesting beaver, nutria, or muskrat damage management in Mississippi. WS would not remove or breach beaver dams under this alternative. Property owners and land managers could implement their own aquatic rodent damage management program, use contractual services of private businesses, use volunteer services, or take no action. This alternative would place the immediate burden of operational damage management work on the property owners and other federal, state, or county agencies.

Alternative 5. Non-lethal Beaver, Nutria, and Muskrat Damage Management.

Under this alternative, only non-lethal operational damage management and technical assistance would be provided by WS. Request for information regarding lethal management approaches would be referred to MDWF&P, local animal control agencies, or private businesses or organizations. Individuals or agencies might choose to implement WS non-lethal recommendations, implement lethal methods or other methods not recommended by WS, contract for WS non-lethal damage management services, use contractual services or private businesses, use volunteer services, or take no action. Unwanted beaver dams could be removed or breached by hand or with binary explosives under this alternative.

Alternative Considered but not Analyzed in Detail:

Eradication and Suppression

An eradication and suppression alternative would direct all Mississippi WS beaver, nutria, and muskrat damage management efforts toward planned, total elimination or suppression of these species.

Eradication of beaver, nutria or muskrats in Mississippi is not supported by Mississippi WS or MDWF&P. This alternative was not considered in detail because:

- Mississippi WS opposes eradication of any native wildlife species,
- MDWF&P opposes eradication of any native Mississippi wildlife species,
- Eradication of a native species would be extremely difficult if not impossible to accomplish, and cost prohibitive, and
- Eradication of native species is not acceptable to most members of the public.

Suppression would direct Mississippi WS program efforts and resources toward managed reduction of certain problem wildlife populations or groups. To consider large-scale population suppression as a goal of the Mississippi WS program is not realistic, practical, or allowable under present WS policy.

Population Stabilization through Birth Control

Under this alternative, beaver, nutria, and muskrat populations would be managed through use of contraceptives. Beaver, nutria, or muskrats would be sterilized or administered contraceptives to limit reproduction. However, chemical or biological contraceptive agents for beaver, nutria or muskrats do not exist. Beaver, nutria, or muskrat contraceptives, chemosterilants, or immunocontraceptives, if delivered to a sufficient number of individuals, could temporarily suppress local breeding populations by inhibiting reproduction. Reduction of local populations would result from natural mortality combined with reduced fecundity. No beaver, nutria, or muskrats would be killed directly with this method; however, treated beaver, nutria, and muskrats would continue to cause damage. Dispersing beaver, nutria, and muskrat populations would probably be unaffected.

Contraceptive measures for mammals can be grouped into four categories: surgical sterilization, oral contraception, hormone implantation, and immunocontraception (the use of contraceptive vaccines). These measures would require beaver, nutria, or muskrats to receive either single, multiple, or possibly daily treatment to successfully prevent conception. Use of this method would be subject to approval by federal and state agencies. This alternative was not considered in detail because:

- Number of years of implementation before beaver, nutria, or muskrat populations would decline would be large; therefore, damage would continue at the present unacceptable levels for a number of years,
- Surgical sterilization would have to be conducted by licensed veterinarians; therefore, costs would be extremely expensive,
- Live-trapping and chemically treating an effective number of beaver, nutria, or muskrats would be extremely difficult in order to produce an eventual decline in the population, and
- No chemical or biological agents for beaver, nutria, or muskrat contraception have been approved for use by state and federal regulatory authorities.

Since no effective or legal methods of delivering contraceptives to beaver, nutria, or muskrats exist at this time, use of contraceptives is not a realistic alternative.

Compensation for Wildlife Damage Losses

The compensation alternative would direct all Mississippi WS program efforts and resources toward the verification of losses from beaver, nutria, and muskrats, and to provide monetary compensation for the losses. Mississippi WS activities would not include any operational damage management or technical assistance.

This option is not currently available to Mississippi WS because WS is directed and authorized by law to protect American agricultural and natural resources, property, and public health and safety (Act of 1931, as amended; and the Rural Development, Agricultural and Related Agencies Appropriation Act of 1988). Analysis of this alternative in USDA (1997) shows that it has the following drawbacks:

- Compensation would not be practical for public health and safety problems,
- Larger expenditures of money to investigate and validate all losses, and determine and administer appropriate compensation would be required,
- Timely responses to all requests to assess and confirm losses would be difficult, and many losses could not be verified,
- Compensation would give little incentive to limit losses through other management strategies,
- Not all resource managers/owners would rely completely on a compensation program; therefore, unregulated lethal control would probably continue and escalate, and
- Neither Congress nor the State of Mississippi has appropriated funds for a compensation program.

Bounties

Bounties can be defined as payments of funds for killing beaver, nutria, or muskrats. Currently, no statewide bounties exist for aquatic rodents in Mississippi. However, some counties provide cash bounties, private trapper reimbursement, or trapping equipment through limited funding from the Mississippi Soil and Water Conservation Commission for the management of beaver damage. The Mississippi Soil and Water Conservation Commission provides approximately \$65,000 among 13 counties.

Payment of funds for killing beaver, nutria, or muskrats (bounties) suspected of causing economic loss is not supported by WS, and Mississippi WS does not have authority to establish a bounty program. Bounties are not considered because:

- Bounties are generally not effective in managing wildlife or reducing damage,
- Circumstances surrounding take of animals is largely unregulated, and
- No process exists to prohibit taking of animals from outside the damage management area for compensation purposes.

Live-trap and Relocate

Currently in Mississippi, there are no policies or regulations regulating the relocation of beaver, nutria, or muskrats. Permitted nuisance trappers, that are restricted to live-trapping, are required to obtain permission from landowners before any animal is relocated to their property (B. Thomason, MDWF&P, letter to T. Aderman, WS, July 30, 2001).

Relocation of problem wildlife species is a technique occasionally used to alleviate wildlife damage problems. However, success of relocation efforts depends on the potential for problem individuals to be captured efficiently and existence of an appropriate relocation site (Nielsen 1988). Relocation may be appropriate in some situations when the population is low. However,

aquatic rodents are abundant in much of the suitable habitat in Mississippi, and relocation is not necessary for the maintenance of viable populations. Because beaver are abundant in Mississippi, beaver relocated into suitable habitat are very likely to encounter other beaver with established territories. Beaver are highly territorial, and newly introduced beaver, which are disoriented and at a disadvantage, are often attacked viciously and oftentimes killed from these encounters (McNeely 1995). Survival of relocated animals is generally very poor due to stress of relocation, and in many cases released animals suffer mortality in a new environment (Craven 1992). Courcelles and Nault (1983) found that 50% (n=10) of radio-collared, relocated beaver died, probably from stress or predation resulting from the relocation.

Relocated beaver also may disperse long distances from the release site (Novak 1987). Hibbard (1958) recorded an average dispersal distance by 17 relocated beaver to be approximately 9 miles in North Dakota, and Denney (1952) reported an average dispersal of 10.4 miles and a maximum dispersal of 30 miles for 26 transplanted beaver in Colorado. Beaver relocated on streams and later recaptured (n=200) moved an average distance of 4.6 miles, and in lake and pothole relocations (n=272) moved an average of 2 miles (Knudsen and Hale 1965). Only 12% of beaver relocated on streams and 33% of beaver relocated on lake and pothole areas remained at the release site (Knudsen and Hale 1965).

Relocation of aquatic rodents causing damage could result in similar damage problems at the release site or dispersal site. In this case, the original damage problem has simply been shifted from one property to another. If Mississippi WS relocated a problem animal, Mississippi WS could possibly be held liable for any subsequent damage caused by that animal.

Live-trapping and relocating aquatic rodents is biologically unsound and not cost-efficient (Wade and Ramsey 1986). The AVMA, the National Association of State Public Health Veterinarians, and the Council of State and Territorial Epidemiologists oppose the relocation of mammals because of disease transmission risks, particularly for small mammals (Center for Disease Control 1990). Animal advocacy groups appear to be in disagreement about relocating wildlife to alleviate damage. PETA opposes relocation of problem beaver, because they believe relocation is cruel (Redmon 1999, 2000). The HSUS believes relocation is preferable to death in some circumstances, but point out that relocation could be stressful and result in suffering or death (Bridgeland et al. 1997). The HSUS openly advocates relocating muskrats to alleviate damage, but is less clear about beaver (Bridgeland et al. 1991).

For the above stated reasons, Mississippi WS does not support the relocation of aquatic rodents for damage management and will not relocate aquatic rodents within Mississippi.

Live-capture and Euthanasia Only

Live-capture and euthanasia of beaver, nutria, and muskrats may be used as part of the IWDM approach to reduce aquatic rodent damage. Snares would be used to live-capture beaver. While snares are an effective and at times an efficient tool for capturing beaver, use of additional methods (e.g. body-grip traps, shooting, leg-hold traps) could be necessary to reduce damage in a cost-effective manner. Snares are inappropriate to use in moving water because the current closes or disables the snare. Nutria and muskrats could be live-captured in floating colony traps,

but these traps are cumbersome and require more time to set than body-grip traps, leg-hold traps, and standard colony traps.

Finding of No Significant Impact

The analysis in the EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of this proposed action. I agree with this conclusion and therefore find that an EIS need not be prepared. This determination is based on the following factors:

1. Aquatic rodent damage management as conducted by WS in Mississippi is not regional or national in scope.
2. The proposed action would pose minimal risk to public health and safety. Risks to the public from WS methods were determined to be low in a formal risk assessment (USDA 1997, Appendix P).
3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected. Built-in mitigation measures that are part of WS's standard operating procedures and adherence to laws and regulations will further ensure that WS activities do not harm the environment.
4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to wildlife damage management, this action is not highly controversial in terms of size, nature, or effect.
5. Based on the analysis documented in the EA and the accompanying administrative file, the effects of the proposed damage management program on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.
6. The proposed action would not establish a precedent for any future action with significant effects.
7. No significant cumulative effects were identified through this assessment. The number of beaver, muskrats and nutria killed by WS, when added to the total known other take of these species, would fall within allowable harvest levels supported by the Mississippi Department of Wildlife, Fisheries and Parks. The EA discussed cumulative effects of WS on target and non-target species populations and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned within the State.
8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.
9. WS has determined that the proposed project would not adversely affect any Federal or Mississippi State listed threatened or endangered species.

10. The proposed action would be in compliance with all federal, state, and local laws.

Decision and Rationale

I have carefully reviewed the EA prepared for this proposal and the input from the public involvement process. I believe that the issues identified in the EA are best addressed by selecting Alternative 3 - Fully Integrated Beaver, Nutria, and Muskrat Damage Management for all Public and Private Land (No Action/Proposed Action) and applying the associated mitigation measures discussed in Chapter 3 of the EA. Alternative 1 is selected because (1) it offers the greatest chance at maximizing effectiveness and benefits to resource owners and managers while minimizing cumulative impacts on the quality of the human environment that might result from the program's effect on target and non-target species populations; (2) it presents the greatest chance of maximizing net benefits while minimizing adverse impacts to public health and safety; and, (3) it offers a balanced approach to the issues of humaneness and aesthetics when all facets of these issues are considered. The comments identified from public involvement were minor and did not change the analysis. Therefore, it is my decision to implement the proposed action as described in the EA.

Copies of the EA are available upon request from the Mississippi Wildlife Services Office, P.O. Drawer FW, Mississippi State, MS 39762.



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APHIS-WS Eastern Region

6/23/03

Date

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