

**FINDING OF NO SIGNIFICANT IMPACT (FONSI) AND
ADOPTION OF USDA, ANIMAL AND PLANT HEALTH INSPECTION
SERVICE, WILDLIFE SERVICES (WS)
ENVIRONMENTAL ASSESSMENT (EA)**

**REDUCING AQUATIC RODENT DAMAGE ON TVA LAND AND AT TVA
FACILITIES IN ALABAMA**

Purpose and Need

Tennessee Valley Authority (TVA) contracts with WS to provide nuisance wildlife damage management on its land and at its facilities in Alabama and elsewhere across the Tennessee Valley. Various TVA organizations have contracted with WS for at least two decades to address individual instances of wildlife damage. To increase efficiency, reduce damage and control its costs as wildlife damage management needs have increased, TVA consolidated several contracts into one agency-wide WS contract in December 2002. In addition to contracting, TVA occasionally conducts aquatic rodent damage management (ARDM) on its own lands, easements, and at its facilities using the same methods as WS.

TVA believes that the environmental impacts of its ARDM activities in Alabama, whether by TVA or by WS, are adequately addressed by the WS EA, which TVA hereby adopts and incorporates by reference (see attached). TVA supports methods and means associated with the adoption of Alternative 4, the Proposed Action.

Background

TVA owns various land rights along and over several thousand miles of Tennessee River shoreland in north Alabama. TVA facilities in the Tennessee River basin and power service area across north Alabama include Widows Creek and Colbert Fossil Plants, Browns Ferry Nuclear Plant; Guntersville, Wheeler, Wilson, Cedar Creek, Little Bear Creek, Bear Creek, and Upper Bear Creek Hydro Projects (i.e., dams), as well as the visitors centers, Public Power Institute, Power Services Buildings, and other support facilities on the Guntersville, Wheeler, and Wilson Dams as well as the Muscle Shoals Reservation. TVA electric transmission line rights-of-way easements cross hundreds of miles over portions of the service area including parts of Jackson, Marshall, Lawrence, Cherokee, DeKalb, and Cullman Counties. TVA also owns and manages water treatment lagoons and ponds at its power plants.

Because of reduced furbearer harvest and predation along with good habitat conditions on reservoir properties and in and along tributaries of the Tennessee River, beaver (*Castor canadensis*) and muskrat (*Ondatra zibethica*) populations have continued to increase substantially in recent decades. These furbearers, particularly beaver, have consistently caused localized operations and maintenance problems for TVA. Because nutria (*Myocastor coypus*) is found in its highest concentrations in the southern part of the state, no damage from this species is presently known or anticipated. If such problems arise, the same methods used to control beaver and muskrats would also be used to control nutria.

High populations of beaver and muskrat contribute to animal damage largely from foraging, burrowing, and dam building. On Gunter'sville Reservoir, for example, TVA conducts beaver dam removal actions on its land to minimize timber damage, lower water in the vicinity of a state highways and public sewer system lagoons; and relieve flooding, occasionally on private land. Beaver populations have also been reduced by TVA to help prevent burrowing into constructed water control levees. Beaver impoundments occasionally flood TVA transmission line rights-of-way and towers causing line operations and maintenance problems. Beaver impoundments have also flooded dam safety monitoring weirs affecting TVA efforts to monitor minor dam leakage.

Beaver life-cycle activities often create or expand favorable habitat conditions for a variety of wading and colony nesting birds, as well as other water birds and some species of raptors. Activities of these birds, particularly perching, roosting and nesting, also cause potentially significant electric transmission reliability problems. Removal of beavers or their dams often alters habitat features that help reduce the frequency of occurrence of these problems. Beaver also dam culverts and ditches and cause flooding and water flow problems at TVA power plant treatment lagoons, the electric vehicle test track, and other facilities.

ARDM activities could have negative effects on the target species; non-target species, including federally- and state-listed threatened and endangered species; native plants; human (and pet) health and safety, and sensitive resources such as wetlands. Additionally considerations include people's perceptions of humaneness of method to be used, potential economic losses (e.g., damages, forced outages, illness, injury, etc.), as well as the effects on stakeholders (including aesthetics). Alabama WS reduces, stabilizes, or eliminates damage and associated economic losses caused by aquatic rodents and other wildlife while avoiding or minimizing these negative effects.

WS is a cooperatively funded, service-oriented program from which other governmental agencies and entities may request assistance. In May 2002, WS completed an EA which analyzed the potential effects of continuing its damage management program in Alabama to control beaver, nutria, and muskrat. WS objective is to achieve a balance between the biological carrying capacity and cultural carrying capacity (i.e., maximum number of a given species that can coexist compatibly with local human populations). The scope and purpose of the EA was to evaluate the potential impacts of WS integrated wildlife damage management (IWDM) program while protecting agricultural and natural resources, property, and public health and safety on 32.5 million acres in Alabama. IWDM is the implementation and application of safe and practical methods for the prevention and reduction of damage caused by wildlife based on local problem analyses and the informed judgment of trained WS personnel. IWDM draws from the largest possible array of options to create a combination of techniques for specific situations and may incorporate cultural practices, habitat modification, animal behavior modification, removal of individual offending animals, local population reduction, or any combination of these or other effective methods. In Alabama, WS presently anticipates that no more than 1000 beaver, 100 nutria, and 100 muskrats would be removed annually by its personnel. WS ARDM EA tiers to its 1997 WS Animal Damage Control Final Environmental Impact Statement (ADC FEIS).

Before any operational nuisance wildlife damage management is conducted, an *Agreement for Control of Animal Damage on Non-private Property or Cooperative Agreement* or other formal agreement is completed between WS and the landowner or responsible administrator. This is typically followed by the development of mutually agreeable *WS Work Plan*. Other federal agencies, including the USDI, Fish and Wildlife Service (FWS), recognize the expertise of WS to address wildlife damage issues.

TVA proposes to continue to contract with WS for ARDM services on its own lands, easements, and at its facilities in Alabama. On occasions when it may benefit TVA to perform this work independently, contingent on site specific reviews, TVA staff will use the same method as WS. These methods are in Section 3.3 and further described in Appendix D of the attached WS EA and are summarized below. TVA believes that the environmental impacts of its ARDM activities in Alabama are adequately addressed in the WS EA, which TVA hereby adopts and incorporates by reference. The environmental effects of TVA's ARDM activities, as described and evaluated in the WS EA, are insignificant. TVA, therefore, supports methods and means associated with the adoption of Alternative 4, the Proposed Action.

ARDM Methods Authorized for Use or Recommended by WS

Currently used or recommended methods of IWDM include the following:

Non-lethal means including habitat modification are used, where practical, to attract or repel certain wildlife. For aquatic rodents, this most often means removal of vegetation which attracts them and provides preferred forage. Where beaver ponds are not otherwise undesirable, additional flooding can be reduced or limited by use of water-level control devices, e.g., beaver pond levelers. Exclusion devices such as tree wraps, fences, tubes, and grit paint can be applied to keep aquatic rodents from gaining access and causing damage to trees and shrubs. Beaver dams can be breached by hand, explosives, or mechanized equipment.

Lethal methods involve killing specific animals in an effort to reduce the local population to a level that reduces, stabilizes, or eliminates damage. When such methods are appropriate, strategies are developed to kill or capture animals using shooting, body-grip or foot-hold traps, snares, colony traps, or suitcase/basket type traps. Typically, live-caught animals are humanely euthanized. Zinc phosphide, registered by the Environmental Protection Agency (EPA), is the only chemical used in Alabama for nutria and muskrat management. No chemicals are used on public or private land in Alabama without authorization from the land manager or landowner.

Alternatives Considered and Analyzed in Detail

WS completed an EA in May 2002 (and signed a FONSI on May 16, 2002) on its program to continue its ARDM program in Alabama. The WS EA evaluates in detail the environmental consequences of five alternatives. These include Alternative 1, No Federal WS Beaver, Nutria, and Muskrat Damage Management in Alabama; Alternative 2, Technical Assistance Only; Alternative 3, Non-lethal Beaver, Nutria, and Muskrat Damage Management Only; Alternative 4, Integrated Beaver, Nutria, and Muskrat Damage Management for all Public and Private Land (Proposed Action); and Alternative 5, Lethal Beaver, Nutria, and Muskrat Damage Management Only.

Under Alternative 1, no assistance from WS would be provided. Technical assistance and operational damage management services would cease. All requests for assistance would be referred to the Alabama Department of Conservation and Natural Resources (ADCNR), local animal control agencies, or private business. Under Alternative 2, only technical assistance would be provided and animals would not be removed or habitat conditions altered to disperse or repel the nuisance species. Property owners or land managers would be left to their own devices to implement their own programs or employ or request other federal, state, county, or private entities to do so. Under Alternative 3, only non-lethal operational damage management and technical assistance would be provided. Request for use of lethal means would be referred to others. WS could remove unwanted beaver dams by hand or using binary explosives. Under Alternative 4, the Proposed Action, WS would administer and continue its current ARDM program in Alabama. An integrated approach, it includes technical assistance and operational damage management services, and would be implemented to reduce beaver, nutria, and muskrat damage to property, agricultural and natural resources, and public health and safety on all lands in Alabama when requested. All IWDM work would be conducted in accordance with applicable federal, state, and local laws. WS would remove unwanted beaver dams by hand or using binary explosives under this alternative. Under Alternative 5, WS would only employ lethal means of ARDM. Similar to Alternative 3, requests for assistance using non-lethal operational damage management and technical assistance would be provided by others and WS would not remove beaver dams under this alternative. Individuals and organizations may or may not request or chose to implement WS lethal means recommendations and may chose to employ others.

Impact Assessment

Under Alternative 1, *no federal ARDM program in Alabama*, beaver, nutria, and muskrat populations would continue to increase or may decrease or stabilize depending upon local harvest pressures, shooting, or combination of natural and anthropogenic factors that contribute to their mortality. Overall effects of the state-wide population of these species would probably be similar to that expected under Alternative 4, since effected landowners would likely lethally remove some offending animals that would no longer be removed by WS. Inexperienced landowners, however, would more likely use illegal or unsafe methods that could result in negative impacts to non-target wildlife. Where populations increase, increased damage from beaver and their impoundments are expected. In such instances, some plant and animal species could flourish in newly created moist site habitats. These impoundments would beneficially affect waterfowl, some shorebirds, and water bird species, including colony-nesters and other species of semi-aquatic mammals such as mink and river otter. If ARDM is not effectively implemented, there is a potential for increased risks of negative affects on public health and safety. Roads and railroads affected by flooding or burrowing would likely become more dangerous. Intestinal parasites carried by beaver could contaminate water supplies and cause disease in humans. Inexperienced landowners or others they employ could expose themselves to increased risks of harm or injury while improperly attempting to implement ARDM activities.

Also under Alternative 1, some landowners may implement lethal and non-lethal ARDM activities felt to be less humane than those employed by experienced WS personnel. However, impacts on the perception of humaneness would depend on the experience and values of the person implementing the control methods. Beaver-related flooding and foraging damage would likely increase in areas where effective landowner ARDM is not implemented. Impacts on stakeholders would vary depending on how they value wildlife and feel compassion for others with nuisance wildlife problems. While WS would discontinue its program in Alabama, others would likely implement ARDM, resulting in impacts similar to those anticipated under Alternative 4.

Under Alternative 2, *technical assistance only*, landowners would use technical advice provided by WS or implement their own ARDM activities. Requested WS technical advice and assistance is somewhat more likely to be followed. Overall impacts on aquatic rodent populations are expected to be similar to those projected under Alternative 1 when technical advice is requested and followed. Negative effects on plant and wild animals, probably including rare species, are expected to be less under Alternative 2 compared to Alternative 1. For the same reasons, negative effects on public health and safety are expected to be less under Alternative 2 compared to Alternative 1. Under Alternative 1, landowners or land managers would assume responsibility for the damage management method implemented and the perceived level of associated humaneness; overall affects are expected to be less under Alternative 2 compared to Alternative 1 when technical advice is requested and followed. Generally, overall effects on property losses and stakeholder issues are expected to be less under Alternative 2 compared to Alternative 1 when technical advice is requested and followed.

Under Alternative 3, *non-lethal management only*, no beaver, nutria, and muskrat would be killed by WS. Populations would continue to increase or may decrease or stabilize depending upon the actions of others. If non-lethal means of population control are unsuccessful, property owners would likely resort to use of lethal means. Where populations continue to increase, overall affects are expected to be similar to those associated with Alternative 1. Effects of adopting this alternative on plants and other wildlife species would probably be similar to those expected under Alternative 4, except the potential take of non-target species by WS use of lethal means would not occur. Again, where these species are a particular nuisance, ill-equipped and inexperienced landowners could implement their own (including lethal) controls; impacts similar to those associated with Alternative 1 are expected. ARDM using non-lethal means alone would not likely be effective in many situations. If no damage reduction occurs, effects on public health and safety similar to those associated with Alternative 1 are expected. In those situations where population reductions are successful, impacts similar to Alternative 4 are expected. Because of training and preparedness measures implemented, use of binary explosives by WS personnel for removal of beaver dams would have no effect on public safety. Under Alternative 3, when non-lethal methods are ineffective, impacts on perceived humaneness are expected to be the same as those associated with Alternative 1. Damage to property would be expected when use of non-lethal controls are ineffective. Increasing populations would likely result in increased property damage and negatively impact property values. If others use lethal

controls, the impacts on stakeholders would vary depending on the effectiveness of non-lethal controls used by WS. Most stakeholders without wildlife damage and many animal rights activists might prefer this alternative compared to Alternative 4 or 5. If landowners and resource managers reject this approach, effects on stakeholders would likely be the same as those under Alternative 1.

Under Alternative 4, *the proposed action*, IWDM would continue to be implemented by WS. WS would utilize methods described in this program on projects where TVA seeks WS assistance. TVA would use the same methods for any aquatic rodent damage management work it conducts in Alabama. Few animals relative to their state-wide populations in Alabama would be taken. Based on projected removals of animals in problem areas compared to annual recruitment (i.e., population growth), it is expected that ARDM would result in a low magnitude of change; and overall, state-wide populations are expected to continue to remain stable or increase. Although a slight reduction of local populations of beaver, nutria, and muskrat and acreage of impounded water is anticipated, total take is below the level that would cause state-wide population declines of these aquatic rodents. Non-target species are infrequently taken during implementation of ARDM activities in Alabama. WS does not expect the level of take of non-target wildlife to increase, including the incidental take of endangered or threatened species. Current levels of take of non-target species are not adversely impacting native wildlife populations in the state, including rare species. Coordination with FWS has and would continue to occur. Under Alternative 4, WS would implement all available and effective ARDM control methods to reduce the threat of adverse effects on public health and safety. This alternative would have the greatest probability of success in alleviating beaver damage.

Also under Alternative 4, experienced professional WS personnel would use ARDM methods and apply them as humanely as possible. This alternative would allow consideration of use of both lethal and non-lethal means and, therefore, would be preferable to adoption of Alternatives 3 or 5. When wetlands are involved, coordination, project review, and permitting by appropriate federal and state agencies would be conducted. Because all available IWDM methods and strategies would be available for WS consideration and use, damage to property is expected to be reduced. Impacts on stakeholders would vary depending on their values and compassion toward wild animals. Many stakeholders would prefer this alternative compared to Alternative 5; however, some consider use of any lethal means inappropriate at any time. On balance, WS believes the implementation of Alternative 4 would not significantly impact stakeholders or their ability to view aquatic rodents in Alabama.

Under Alternative 5, WS would *only implement lethal control methods* to reduce aquatic rodent damage in Alabama. Based on estimated number of animals likely to be taken, implementation of this alternative would result in localized aquatic rodent population reductions and impacts would be similar to those described in Alternative 4. Experienced WS personnel have found that beaver, nutria, and muskrat populations in some areas re-colonized site in 1 to 12 months. Impacts on non-target species would be the same as those described in Alternative 4. Because non-lethal methods would not be implemented by WS personnel, impacts on beaver removal associated with use of such methods would be similar to those associated with Alternative 1. Because lethal methods would be used, animal rights activists and some others would probably

perceive this alternative as inhumane. Under Alternative 5, individual animals would be removed from the populations; beaver dams, however, would not be removed. Property damage would be expected to decrease somewhat under this alternative; however, damage would continue or increase in some situations where non-lethal methods (e.g., dam removal) would be more effective. Impacts on stakeholders would vary depending on their values and compassion toward wild animals. Animal rights activists would likely oppose this alternative compared to Alternative 3; however, some property owners and resource managers, particularly those with aquatic rodent damage, consider use of most lethal means appropriate. Because of opportunities to view these animals in other parts of the state, WS believes the implementation of Alternative 5 would not significantly impact stakeholders' ability to view aquatic rodents in Alabama.

Cumulative Impacts

No significant cumulative environmental impacts are expected from implementation of any of the alternatives including Alternative 4, the Proposed Action. Because WS actions, including those conducted for TVA, would take only a very small percentage of the annual population growth, under the proposed action, ARDM would not have a significant impact on overall beaver, nutria, or muskrat populations in Alabama. Because of FWS involvement in the process, these actions would not likely adversely affect any federally-listed or state-recognized threatened or endangered species or critically designated habitats in Alabama. No historic properties or adverse risks to public or pet health and safety are expected from ARDM activities conducted by WS. No adverse aesthetic impacts are anticipated. Because of perceptions about humaneness, some minor amount opposition to the program continues to be expected. Under the proposed action alternative, damage to property is expected to be reduced.

In its May 2002 final EA, WS determined that its analysis indicates that the ARDM program in Alabama would not result in significant cumulative adverse impacts on the quality of the human environment.

Public Involvement

The pre-decisional EA, *Reducing Aquatic Rodent Damage through an Integrated Wildlife Damage Management Program in the State of Alabama*, was released to the public on April 15, 2002, by legal notice in the Montgomery Advertiser for a 30-day comment period. It was also mailed directly to agencies, organizations, and individuals with probable interests in the proposed program. All comments were supportive of continuation of the program. Comments were also used to identify substantial new issues, alternatives, or to redirect the program. Issues identified are addressed in the WS final EA. Public and agency comments were retained as a part of the administrative record at Alabama WS State Office, Auburn University.

Mitigation and Standard Operating Procedures

Mitigation measures and standard operating procedures will be implemented by WS under Alternative 4, the Proposed Action. They generally include humane management practices such as release of non-target animals and approved euthanasia methods to minimize animal pain and suffering, use of a decision model to identify appropriate damage management strategies, use of EPA registered chemical(s) by trained registered WS personnel, sensitivity and minimal visibility of IWDM activities to the public, and interagency coordination. See Section 3.6 in the attached WS EA. FWS

and USACE will be involved in projects implemented by WS that could affect endangered species and wetlands. Also, where site specific reviews determine that projects TVA plans to implement could affect endangered species, wetlands, cultural, or other environmental resources, FWS, USACE, or other appropriate agencies would be consulted as needed.

Because of the experience and recognized expertise of WS staff in nuisance wildlife damage management work, as well as continuing public and interagency involvement, program implementation monitoring measures are incorporated into its standard operating procedures. These measures, included in the WS FONSI of May 16, 2002, are as follows: 1) WS will provide ADCNR annually its lethal take of target and non-target animals to help ensure that the total state-wide harvest does not impact the viability of these species populations and 2) the ARDM EA will be reviewed annually to ensure that it and the analyses in it are sufficient.

TVA Review

Because few animals relative to their state-wide populations in Alabama would be taken, state-wide populations are expected to continue to remain stable or increase. Current levels of take of non-target species are not adversely impacting native wildlife populations in the state, including endangered or threatened species. WS would implement all available and effective control methods to reduce the threat of adverse effects on public health and safety or aesthetics. Damage to property is expected to be reduced. Under Alternative 4, experienced professional WS personnel would use appropriate IWDM methods, both lethal and non-lethal means, and apply them as humanely as possible. During the process of developing its national ADC FEIS (1997), WS consulted with FWS. During development of its 2002 ARDM EA, WS reviewed FWS and ADCNR lists of threatened and endangered species for Alabama to determine whether any such species might be affected by the proposed actions. The FWS has concurred with WS conclusion that its ARDM methods would not adversely affect any federally or state-recognized threatened or endanger species or critically designated habitats in Alabama (see Section 2.2.2.2 of the attached WS EA and the April 24, 2002, FWS letter in Attachment 1 of this TVA FONSI). WS compliance with wetland protection laws and regulations assures that its activities would not adversely affect wetland habitats. The WS FONSI of May 16, 2002, concludes that continuation of the proposed undertaking would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places.

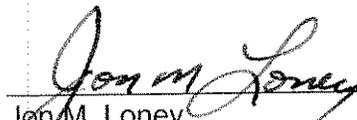
Because TVA prepares on average about a dozen or more categorical exclusion checklists (CEC) annually for beaver dam removal and other aquatic rodent damage management work and these typically do not involve site specific issues, TVA is adopting the WS EA as an efficiency measure. TVA concurs that contracting with WS in Alabama meets its needs and use of WS staff would be encouraged. The removal of target and non-target species from within the Tennessee River drainage basin and service area of north Alabama would represent a small fraction of the anticipated annual state-wide take. Alternative 4, the Proposed Action, would have the greatest probability of success in alleviating beaver and other aquatic rodent damage. Unless project methods or operating procedures change substantially from those described in this review or unless unique site specific resource issues are identified, no TVA CECs or higher-level National Environmental Policy Act reviews would need to be prepared by

TVA in the future for this type of work in Alabama. Accordingly, TVA concurs with impacts of Alternative 4, the Proposed Action as described in the attached APHIS, WS EA, and FONSI of May 16, 2002. TVA also believes that the EA adequately addresses all impacts of conducting its own or contracting with WS for ARDM services.

Conclusion and Findings

TVA has critically and independently reviewed the impacts assessed in the WS EA and confirmed its findings. The scope, alternatives considered, and contents of the EA are adequate and the impacts on the environment, including conducting its own or contracting with WS for ARDM services in the Tennessee River basin and service area in Alabama, have been adequately addressed. TVA has decided to adopt the WS EA and the associated FONSI of May 16, 2002. These documents are attached and incorporated by reference.

Based on the WS EA, we conclude that conducting its own or contracting with WS for ARDM services on TVA lands, easements, or at its facilities in Alabama would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



Jon M. Loney
Manager, NEPA Administration
Environmental Policy and Planning
Tennessee Valley Authority

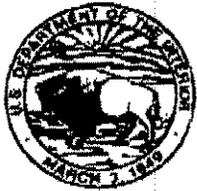


Date

Attachment 1 – April 24, 2002 Letter from U.S. Fish and Wildlife Service to WS

Ashley

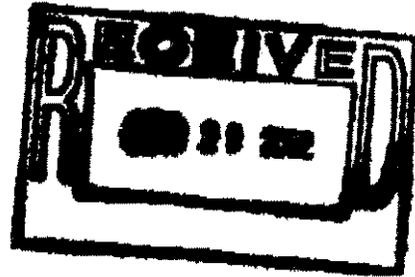
United States Department of the Interior



IN REPLY REFER TO:

02-0646b

FISH AND WILDLIFE SERVICE
P. O. Drawer 1190
Daphne, Alabama 36526



April 24, 2002

Mr. Frank Boyd
USDA-APHIS Wildlife Services
118 Extension Hall
Auburn University, AL 36849-5856

Dear Mr. Boyd:

Thank you for your letter of February 26, 2002, requesting comments on the Wildlife Services' "Reducing Aquatic Rodent Damage Through an Integrated Wildlife Damage Management Program in the State of Alabama". We have reviewed the information you enclosed and are providing the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The federally endangered wood stork (*Mycteria americana*) has been known to occur in Autauga, Baldwin, Barbour, Chilton, Choctaw, Clarke, Crenshaw, Dallas, Escambia, Hale, Lowndes, Macon, Montgomery, Sumter, Washington and Wilcox Counties, Alabama. We recommend that surveys be conducted for this species at all locations in these counties prior to any disturbance. These surveys should be conducted by qualified biologists familiar with the species and its habitat. Additionally, any local conservation officers, district fisheries biologists or wildlife biologists should be contacted about the presence of the wood stork at each specific location. If wood stork are found to inhabit a particular site, we recommend that this office be contacted for further consultation. If no wood stork are present, no further consultation is necessary.

If you have any questions or need additional information, please contact Mr. Scott Floyd at (251) 441-5181, ext. 40. Please refer to the reference number located at the top of this letter.

Sincerely,

Larry E. Goldman
Field Supervisor