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FINDING OF NO SIGNIFICANT IMPACT (FONSI) AND ADOPTION OF USDA, ANIMAL AND PLANT HEALTH INSPECTION SERVICE, WILDLIFE SERVICES (WS) BIRD DAMAGE MANAGEMENT IN THE TENNESSEE ENVIRONMENTAL ASSESSMENT (EA)

REDUCING BIRD DAMAGE ON TVA LAND AND AT TVA FACILITIES IN TENNESSEE

Purpose and Need

Tennessee Valley Authority (TVA) contracts with WS to provide nuisance wildlife damage management on its land and at its facilities in Tennessee River drainage basin and elsewhere across its power service area. Several TVA organizations have contracted with WS for at least two decades to address instances of wildlife damage. In December 2002, 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 addition to contracting, TVA occasionally conducts bird damage management (BDM) on its own lands, properties where it has land rights (e.g., easements) and at its facilities using the same methods as WS.

TVA believes that the environmental impacts of its BDM activities in Tennessee, whether conducted by TVA or by WS, are adequately addressed by the WS bird damage management EA, which TVA hereby adopts and incorporates by reference (see attached). TVA supports methods and outcomes associated with the adoption of Alternative 1, Continue the Current Federal BDM Program (or the No Action/Proposed Action Alternative).

Background

TVA operates 21 hydroelectric dams, seven coal-fired power plants, two nuclear power plants, and four combustion turbine sites in Tennessee. TVA also owns or maintains 259 substations and switching stations and more than 10,000 miles of transmission line and rights-of-way easements in Tennessee. As a part of its renewable energy program, TVA operates 9 solar and 3 wind turbine facilities and generates methane gas from a Memphis wastewater treatment facility, which is then provided to Allen Fossil Plant. In addition, TVA manages 21 reservoir systems in Tennessee with more than 7,500 miles of shoreline. Along and over most of these Tennessee River and tributary streams, TVA owns 175,000 acres of shoreland and manages various other land rights.

Nature of the Problem

Because of changing land uses and agricultural practices; international, federal and state protection; regulated game species harvests; and various ecosystem changes that have increased suitable habitat, various native and non-native birds have increased their populations substantially in recent decades. For example, European starling and blackbird summer populations (i.e., the blackbird group) in the United States (US) have

been estimated in the past to exceed one billion birds, of which 74 percent generally occupy the eastern half of the country. Tennessee supports one of the largest wintering concentrations of starling in the US. As of 2001, Tennessee's resident Canada goose population was estimated to be approaching 70,000 birds. Subsequently, increased use of TVA land and facilities by these and other species for roosting, foraging, nesting and loafing has occurred. Several species of birds, particularly pigeons, European starlings and various species of blackbirds (e.g., grackles, cowbirds, red-winged blackbirds, etc.), American crows, house or English sparrows, house finch, woodpeckers, swallows, black and turkey vultures, osprey, great blue herons, egrets, gulls, resident Canada geese, mourning doves, non-migrant mallards (and other domestic ducks), coots and double-crested cormorants have caused localized land and facilities operations and maintenance problems for TVA.

Facilities and structures used or affected by these birds include hydropower plants, dams, switchyards, and bridges and walkways; microwave and other types of communication towers, transmission substations, transmission lines, transmission towers (poles and laced-metal structures) and insulators; office buildings and equipment and storage and other out-buildings. Habitats and resources (trees) on small islands and other areas of TVA land are occasionally damaged by heavy nesting and loafing use by waterfowl and some species of water birds such as double-crested cormorants. This includes areas where droppings (feces) cause damage to trees and surrounding vegetation, sometimes altering the appearance of the area. Some shorelines and grassy areas (turf) in dam reservations, campgrounds, picnic areas; recreation day-use areas, swimming beaches, public marinas, boat launching areas and even building grounds are being used by increasing numbers of foraging resident Canada geese. At some TVA recreation area swimming beaches goose droppings have been known to contribute to high fecal coliform bacteria counts during low precipitation and stream inflow periods. This has resulted in temporary beach closures.

Great blue herons, egrets, osprey, and vultures frequently perch, loaf, roost or nest on transmission line towers. Individual birds, their nesting material and associated nesting activity (rearing of young) can cause substantial and costly electrical short-circuits and forced outages and potentially significant electric transmission reliability problems. Some of these species, as well as some smaller songbirds, pigeons and dove can be rather common at TVA and distributor power switchyard and substation sites and can cause similar problems there.

Droppings from pigeons, blackbirds, vultures, doves, herons, gulls, English sparrows, ducks and geese can deface buildings, structures and grounds; create unsafe walking conditions on walkways, decks, and other outdoor surfaces; and cause employee accident and public health concerns. Barn and cliff swallows nest under bridges and elevated walkways at hydroelectric plants and create problems by defacing these structures and walkways below. Areas of accumulated droppings and other waste from pigeons, starlings (and other blackbirds); sparrows, swallows and herons at fossil and hydroelectric plants also can create safety and health problems. There have also been instances of birds, i.e., resident Canada geese and great blue herons, harassing people in defense of their nesting territories and foraging sites, respectively.

and domestic ducks. These sparrows, starlings and pigeons are non-native species. No permits are required to manage these non-native species and reduce or eliminate associated damage they cause. In order to implement BDM strategies for protected birds in Tennessee, including migrants, raptors (including vultures); and game species, WS obtains fish and wildlife depredation permits from the USDI, Fish and Wildlife Service (FWS) (see Appendix C in the attached EA). Records are maintained of activities pursuant to this permit in accordance with 50 CFR 13.46 and reporting requirements must be met. TVA will obtain appropriate federal or state permits when it conducts BDM work independently.

TVA proposes to continue to contract with WS for BDM services on its own lands, easements, and at its facilities in Tennessee. 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 described in Section 4.2 and Appendix B of the attached WS EA and are summarized below. TVA believes that the environmental impacts of its BDM activities in Tennessee are adequately addressed in the WS EA, which TVA hereby adopts and incorporates by reference. The environmental effects of TVA's BDM activities, as described and evaluated in the WS EA, are insignificant. TVA, therefore, supports methods and means associated with the adoption of Alternative 1, the Proposed Action, as described in the attached EA.

BDM Methods Authorized for Use or Recommended by WS

The WS EA emphasizes issues that are pertinent to the varied species of birds and the damage they cause wherever it occurs in Tennessee. A standard WS decision model and WS Directive 2.105 dictate the routine procedure for determining the method and strategy to be used to address individual actions across the state. BDM methods available for use in WS IWDM strategy include the following:

Non-chemical, non-lethal methods including cultural methods and habitat modification are used, where practical, to attract or repel certain wildlife. Cultural methods involve modification of the management of resources to reduce their vulnerability to damage, e.g., screens or netting barriers over fish ponds, tree pruning or thinning, etc. For birds, behavioral modifications can be used to reduce damage. This includes using a variety of tactics from propane exploders, scarecrows, predator images or silhouettes, distress calls and pyrotechnics to scare birds to visual and chemical repellents. Examples of other cultural methods include live trapping, hand capture, netting, wire barriers and deterrents, and relocation and habitat modifications to discourage use of a particular site or lure crops and alternative food sources to entice birds to an alternative location. Chemicals used include avitrol, alpha-chloralose, methyl anthranilate and di-methyl anthranilate and other repellents such as anthraquinone and charcoal particles. These chemicals work by either causing distress behavior, which tends to frightens some birds from the roost; immobilization, so the birds can then be captured; or repelled from a site where damage is being caused.

Mechanical or lethal methods involve killing specific birds or their nests and eggs 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 capture or kill birds by egg addling, oiling, or destroying, decoy and nest box trapping, snap trapping (i.e., modified mouse trap) shooting and sport hunting birds such as doves and

geese. There are two primary means of lethal chemical damage control. These include the use of DRC-1339, a toxicant, which is the primary chemical used to kill pigeons, starlings and other blackbirds; and carbon dioxide gas, approved by the American Veterinary Medical Association (AVMA) for use to quickly and humanely kill other species of captured birds. No chemicals are used on public or private land in Tennessee without authorization from the land manager or landowner.

See Appendix B of the attached EA for a detailed description of these methods.

Alternatives Considered and Analyzed in Detail

WS completed an EA in April 2002 (and signed a FONSI on April 9, 2002) on its program to continue its BDM program in Tennessee. The WS EA evaluates in detail the environmental consequences of four alternatives. These include Alternative 1, Continue the Current Federal BDM Program (No Action/Proposed Action); Alternative 2, Non-lethal BDM Only by WS; Alternative 3, Technical Assistance Only; and Alternative 4, No Federal WS BDM.

Under Alternative 1, the Proposed Action, WS would administer and continue its current BDM program in Tennessee. An integrated approach, it includes technical assistance and operational damage management services, and would be implemented to reduce or eliminate damage from various species of birds to while taking into account human health and safety, agricultural crops, turf, feed, livestock, livestock health, property, structures, utilities, threatened and endangered species, other wildlife and natural resources; and aquaculture in Tennessee when requested. To meet WS damage management goals, WS would respond to all requests for assistance, and at a minimum, technical assistance or self-help advice, or direct management actions implemented by professional biologists would be conducted. All IWDM work would be conducted in accordance with applicable federal, state, and local laws. Under Alternative 2, only non-lethal method of BDM would be provided. Persons requesting assistance could still resort to lethal means. Currently DRC-1339 and alpha-chloralose are only available for use by WS personnel. Use of these chemicals at this time by others is illegal. Under Alternative 3, only technical assistance would be provided and birds would not be removed by lethal or non-lethal means or habitat conditions altered by WS. Property owners or land managers would otherwise be left to their own devices to implement their own BDM programs using legal and appropriate means or employ or request other federal, state, county, or private entities to do so. Under Alternative 4, no assistance from WS would be provided. Technical assistance and operational damage management services would cease. Information on BDM methods would still be available through a variety of public and private sources. All requests for assistance would be referred to the Tennessee Wildlife Resources Agency (TWRA), local animal control agencies, or private businesses.

Impact Assessment

Because of their ability to thrive in urban areas and, near or in man-altered habitats, species most often killed during WS BDM include European starling, domestic or feral pigeon and mourning dove. Generally, WS only conducts BDM on species whose population densities are high and usually only after they have caused damage. Relative to their abundance, WS reductions in overall populations of these species is low (see Table 5-1 in the attached EA).

Under Alternative 1, the Proposed Action, WS would administer and continue its current BDM program in Tennessee. From fiscal years 1999 to 2001, about 15,000 birds were killed by WS in the state of Tennessee. Its work was focused on controlling damage primarily caused by starlings, pigeons, and to a lesser extent, mourning doves. These species accounted for more than 90 percent of the total taken during its time period. Control of these species would likely continue to be the focus of WS efforts under this alternative. In the past, starling and blackbird summer populations (i.e., the blackbird group) in the US have been estimated in excess of one billion birds, of which 74 percent generally occupy the eastern half of the country. Between 1966 and 2000, along with starlings, other blackbird populations (i.e., red-winged blackbirds, brown-headed cowbirds, and common grackles) have shown a slight decline. More recently, the eastern US population of blackbird groups is estimated at roughly 372 million and is relatively stable. Of this total, 140 million are starlings. Regardless of human controls, natural mortality accounts for 50 to 65 percent of the blackbird population each year. Between fiscal years 1999 and 2001, WS took about 6000 starlings state-wide. The average annual kill in Tennessee has been far less that than 0.001 percent of the estimated annual natural mortality. It is estimated that a WS kill of 3.6 percent of the wintering population would have no effect on the breeding population the following spring. Much higher numbers would have to be killed to impact the regional breeding population.

Non-native domestic pigeons are not protected by any federal or state laws and breeding bird survey (BBS) data suggest this species population has been stable across the US from 1967 to 2000. Data from the eastern US suggest a slight rise although data from Tennessee suggest a slight decline in their populations. Between fiscal years 1999 and 2001, WS took less than 2000 pigeons state-wide. Since this species is not native, WS suggests that pigeons causing damage could be eradicated and these impacts would be considered insignificant and beneficial. Therefore, if regional or nationwide population reductions could be achieved the impacts would still not be considered adverse. Such large reductions are very unlikely and would not be caused by bird killing attributable to WS control efforts. WS BDM activities in Tennessee are expected to result in a take of pigeons consistent with past yearly averages or possibly up to 3000 birds, but the population is expected to remain relatively stable. WS expects its activities to have little effect on overall pigeon numbers in the state. Some individuals who feed or experience the aesthetic enjoyment of these birds could be negatively affected.

A migratory game bird, mourning dove populations continue to remain substantial throughout much of North America. From 1997 through 1999, dove harvest in Tennessee ranged from 2.1 to 3.4 million birds with an average harvest of 2.6 million birds per season. By comparison, between fiscal years 1999 and 2001, WS lethally removed only about 600 doves state-wide. Most of these birds were taken to protect human safety at airports. Mourning doves are common inhabitants of urban environments in Tennessee and frequently nest in man-made structures. WS BDM activities in Tennessee are expected to result in a take of mourning doves consistent with past yearly averages or possibly up to 800 birds. However, based on population trends and harvest data, WS BDM activities would have an insignificant impact on this species.

Similarly, other species of birds that cause damage necessitating BDM are generally at relatively moderate to high populations with densities varying seasonally or by habitat and specific location. Species included in WS analysis include waterfowl (ducks and geese), English sparrow, vultures, and fish-eating, colony nesting birds such as cormorants, herons, egrets, and gulls. Regulated by FWS and TWRA, sport hunters kill a controlled number of ducks and geese annually. Populations of resident Canada geese are stable or increasing while migrant waterfowl populations vary with continental habitat and water conditions. From 1966 through 2000, non-native English sparrow populations have been declining. They are not protected by federal or state laws, but populations in Tennessee are somewhat higher than the national average and are considered relatively abundant. Turkey and black vulture populations in Tennessee are on the increase. Fish-eating, water bird and wading bird populations in Tennessee such as great blue, black-crowned, and yellow-crowned night herons, great and cattle egrets, herring and ring-billed gulls and double-crested cormorants, are all considered stable, increasing, or high. Black-crowned night herons are only taken by WS by non-lethal means. Because WS annual take of these or other target species is low compared to their relative abundance, WS continued BDM activities in Tennessee are not expected to have significant impacts on the populations of any of these species. These other target species are identified in Table 5-1 in the attached EA.

WS take of non-target species during BDM work in Tennessee has been extremely low. Some slight benefits to non-target birds could arise from local reductions in starling populations and slightly reduce interspecific nest competition. WS does not expect the level of take of non-target wildlife to increase, including the incidental take of endangered or threatened species. The WS EA lists 3 bird and 4 mammal species as federally endangered in Tennessee. Current low level of take of non-target species, including rare birds, is not adversely impacting their populations in the state (see Section 5.1.2.1 in the attached EA). Consistent with direction provided in FWS July, 28 1992 biological opinion on the WS national animal damage control program, as applicable, reasonable and prudent measures would be implemented, regular reporting and annual coordination meetings with WS would continue to assure that any incidental take of federally listed species is reported and steps are taken to correct the circumstances that caused it to occur. Because experienced WS professionals would apply them, there would be no human health risks from the use of DRC-1339 or Avitrol under Alternative 1. Under this alternative, WS concludes its use of other highly selective chemicals in accordance with label direction would have negligible impacts on the environment and not increase human health and safety risks. Implementation of other nonchemical BDM methods would have similar impacts.

When requested, under its current program (Alternative 1), WS provides lethal and non-lethal control of injurious birds which can carry or be involved in the cycle of disease transmission to humans. These birds include European starlings and blackbirds, pigeons, and English sparrows. Because of cost, effectiveness, and bird dispersal sometimes caused by use of non-lethal methods, lethal methods are somewhat preferred. Under this alternative, because health risks would be reduced, impacts to health and safety are expected to be locally insignificantly beneficial. Bird species subjected to lethal control actions would remain common and abundant and, therefore, would continue to remain available for viewing by interested persons and provide important ecosystem functions. Unsightly messes from bird droppings on building,

walkways, and other structures would decrease under this alternative and aesthetic values of these properties would increase. People who might value the reduction in populations of these nuisance bird species may have their aesthetic enjoyment improved. Also, under this Alternative 1, WS work with dispersed or relocated bird populations is improved through coordination with other entities and desired sites aesthetically benefit. Under this alternative, some birds would continue to be killed or harmed using physical, chemical and non-chemical means. Since most people would view AVMA approved euthanization methods as humane, WS concludes that impacts on perceptions of humaneness would be minor and insignificant.

Under Alternative 2, non-lethal methods only, WS would not kill any target species because no lethal methods would be allowed. Impacts on black-crowned night heron and waterfowl, except for feral ducks and resident Canada geese, would not change from the current program because these species are only managed by non-lethal methods. Some minor accidental take of waterfowl would likely occur. Although WS take of other target species would not occur without WS involvement, it is likely that others would control nuisance levels of these bird populations by lethal means. This could lead to similar or greater impacts on target species compared to the current program. However, because of the likely numbers of birds taken compared to their relative abundance, WS would not expect effects on target species to be significant. Persons requesting assistance could still resort to lethal means such as illegal chemical toxicants that would probably have greater impacts than Alternatives 1, the same as Alternative 3, and less than Alternative 4. Under this Alternative 2, WS take of non-target species would probably be the same as or less than under Alternative 1. Problems from mishandling chemical to shooting accidents by people taking matters into their own hands could likely arise from BDM activities not resolved by non-lethal means. If WS could only use non-lethal chemical methods, excess costs and ineffective results could cause people to reject WS assistance and resort to other means. This could increase the potential for impacts on health and safety. No adverse impacts on human safety would result from WS use of other nonchemical BDM methods.

Although likely effective at individual sites, because only non-lethal methods would be used under Alternative 2, this alternative would likely create or increase human health risks at other locations. Human health risks would also likely increase if private individuals choose to implement non-lethal methods. Therefore, impacts on health and safety would be greater under this alternative than Alternative 1. Although WS would not perform any lethal services under this alternative, other entities would likely conduct BMD activities similar to those that would no longer be conducted by WS. Therefore, under Alternative 2, the effects on aesthetic values of wild birds are expected to be the greater or the same as those expected under Alternative 1. Because lethal methods would not be used, WS assistance could likely be rejected. Certain chemicals used for BDM would be unavailable to private individuals and more birds would likely be shot by frustrated land owners. Therefore, BDM would likely be perceived as less humane under this alternative and impacts would be greater than under Alternative 1.

Under Alternative 3, WS would have no direct impact on starlings and blackbirds, sparrows, pigeons, or other target species populations because the current program would be limited to providing technical assistance and advice only. Private efforts would increase which could likely lead to similar or greater impacts on target species

compared to the current program. However, as with Alternative 2, it is unlikely that target bird population would be significantly impacted by implementation of this alternative. Property owners or land managers would be left to their own devices to implement their own BDM programs. DRC-1339 and alpha-chloralose are currently only available for use by WS personnel. Some individuals could resort to lethal means such as use of illegal chemical toxicants that would probably have impacts on target bird species about the same as those expected under Alternatives 2. Under this alternative there would also be no impacts to non-target species from WS program implementation. Although technical support may lead to more selective use of methods by private individuals than that which might occur under Alternative 2, efforts to reduce bird damage could result in inexperienced people implementing methods leading to a greater take of non-target species than under Alternative 1. Under Alternative 3, if people implement chemical BDM methods incorrectly, impacts on health and safety could be the same as those expected under Alternative 2 or slightly increase. Increased use of certain nonchemical control methods by inexperienced people could probably slightly increase safety risks. Similar to Alternative 2, it is unlikely that the resulting increase human health and safety risks would be significant.

If WS were to provide technical assistance only, human health problems could increase if private individuals are unable to achieve effective BDM or unwilling to hire others to do so. Impacts would likely be the same as or greater than those expected under Alternative 2. Under this alternative, other entities would likely conduct BMD activities similar to those that would no longer be conducted by WS. Similarly, the effects on aesthetic values of wild birds are expected to be like those under Alternative 1 and 2. Lack of an operational program would mean aesthetic values of some affected properties would continue to be adversely affected, but this would not occur to as great a degree as under Alternative 4. If only technical assistance is provided by WS, there would also likely be a greater chance of adverse affects at other locations compared to Alternative 1. BDM would likely be perceived as somewhat less humane under this alternative compared to those expected under Alternative 1, but slightly more humane than under Alternative 2.

Under Alternative 4, no federal program, no assistance from WS would be provided and no impacts on target species would be expected as a result of a WS implemented program. All requests for assistance would be referred to the TWRA, local animal control agencies, or private businesses. As under Alternative 3, property owners or land managers would be left to their own devices to implement their own BDM programs. Target species population would likely increase along with related damage. Controls implemented by private individuals could result in effects on target species which are unknown (e.g., possibly, the same, greater, or less) compared to the current program. Otherwise, impacts would likely be similar to those under Alternative 2 and 3. Under this alternative there would be no impact on non-target species, however, concerns about inexperienced people implementing needed control methods would be the same under this alternative as under Alternatives 2 and 3. Under this alternative there would be no impact on health and safety from WS implemented program in Tennessee, however, hazards to people and pets could be greater under this alternative if chemical controls are implemented by others. Hazards to human health and safety could be greater under this alternative if personnel conducting BDM activities using nonchemical methods are poorly or improperly trained.

If no WS BDM program were available, human health problems could increase if private individuals are unable to achieve effective BDM to control pigeons or other birds that cause similar types of damage problems or unwilling to hire others to do so. Impacts would likely be the same as or greater than those expected under Alternatives 2 or 3. Under this alternative, other entities would likely conduct BMD activities similar to those that would no longer be conducted by WS. Effects on aesthetic values of wild birds are expected to be insignificant and about the same as those expected under Alternatives 1, 2 and 3. Bird numbers would likely continue to increase and aesthetic values of some properties would continue to be adversely affected if owners can not achieve BDM some other way. BDM would likely be perceived as somewhat less humane under this alternative compared to Alternatives 1, 2 or 3.

Cumulative Impacts

No significant cumulative environmental impacts are expected from implementation of any of the alternatives including Alternative 1, continuation of the current program (the Proposed Action). Based on use patterns, chemical and physical characteristics of pesticides use and factors related to the environmental fate of DRC-1339 and Avitrol, no cumulative impacts are expected from the lethal chemical components use in the WS BDM programs in Tennessee. Similarly, no cumulative impact is expected from use of non-lethal chemical. Because WS actions, including those conducted for TVA, would take only a very small percentage of the annual population growth or resident and migrant species, under the proposed action, BDM would not have a significant impact on nuisance bird populations in Tennessee. Trends indicate that bird populations of potentially affected species have increased, remained stable, or decreased slightly for Tennessee and eastern North America.

Because of FWS involvement in the process, these actions would not likely adversely affect any federally-listed or state-recognized threatened or endanger bird species or critically designated habitats in Tennessee. Actions taken independently by TVA or under contract by WS involving protected migratory species would only be taken consistent with conditions included in a valid federal depredation permit. No cumulative impacts to any other sensitive resources such as wetlands are expected. No historic properties or adverse risks to human or pet health and safety are expected from BDM activities conducted by WS for TVA. No adverse aesthetic impacts are anticipated. Because of perceptions about humaneness, some minor amount opposition to the program is expected to continue. Under Alternative 1, the proposed action alternative, damage to property is expected to be reduced.

Except for Alternative 3, technical assistance only, no cumulative impacts are expected to target or non-target species of wildlife under any alternative WS included in its analysis. Under Alternative 3, in response to possible increases in urban ducks and geese, certain waterfowl diseases such as avian cholera and botulism, could increase and some regional cumulative impacts might occur. In its April 2002 final EA, WS concludes that its analysis indicates that the BDM program in Tennessee would not result in significant cumulative adverse impacts on the quality of the human environment.

Public Involvement

The draft EA released by WS in March 2002 documented the need for BDM in Tennessee and assessed potential impacts of various alternatives for responding to bird damage problems. This draft EA was released to the public on March 1, 2002, by legal notice in the Tennessean (Nashville), Knoxville New-Sentinel, and Commercial Appeal (Memphis) for two days. WS provided a 30-day comment period. It was also made available for review at the Tennessee WS State Office, Madison, Tennessee and copies were made available upon request through commercial mail. The draft EA was also mailed directly to agencies, organizations, and individuals with probable interests in the proposed program. Issues deemed relevant to the scope of the review were included and evaluated in the final EA.

Via a memorandum of understanding developed in 1988 to encourage collaboration, WS consults with the University of Tennessee Agricultural Extension Service, Tennessee Department of Agriculture, Tennessee Department of Health, TWRA, and Tennessee Department of Environment and Conservation from time to time in the process of assisting Tennessee residents in resolving wildlife damage conflicts. These agencies also refer appropriate wildlife damage complaints to WS (see Appendix D in the attached EA).

Mitigation and Standard Operating Procedures

Mitigation measures and standard operating procedures will be implemented by WS under Alternative 1, continuation of the current program (the Proposed Action). They generally include use of a decision model to identify appropriate damage management strategies, use of EPA registered chemical(s) by trained registered WS personnel, presence of non-target species is monitored before use of DRC-1339 to control starlings, blackbirds and pigeons; conduct research to improve BDM methods and strategies, direct treatments toward a localized population or group of target or individual offending birds rather than attempt any generalized population suppression; and uses devices and conducts activities for which the risks to human health and safety has been determined to be low. Humane management practices such as release of non-target animals and approved euthanasia methods are practiced to minimize animal pain and suffering. WS take is monitored to compare the number of birds killed by species or groups of species with populations or trends to assure the magnitude of the take is maintained below levels that would significantly adversely impact the viability of native species populations. WS uses chemical methods in its BDM program that have undergone rigorous safety ad effectiveness research. See Section 4.4 in the attached WS EA.

Observations are conducted to see if target species are associated with non-target or endangered species to determine if they would be at risk from BDM activities. WS has consulted with the FWS regarding potential impacts of control methods on endangered species and abides by reasonable and prudent measures or alternatives established as a result of that consultation. See discussion under Alternative 1 in the Impacts Assessment Section of this FONSI.

When contracted to perform BDM work for TVA, WS obtains appropriate federal or state fish and wildlife depredation permits from FWS or the state of Tennessee and WS

complies with all permit requirements and conditions. When TVA conducts work independently, TVA will obtain appropriate federal or state permits and similarly comply with permit conditions. Where site specific reviews determine that projects TVA plans to implement could affect endangered species, wetlands, cultural, or other environmental resources, FWS, U.S. Army Corps of Engineers or other appropriate agencies would be consulted as needed.

TVA Review

Because few birds relative to their state-wide or transient populations in Tennessee would be killed, state-wide, regional and continental populations are expected to continue to increase, remain stable or decrease only slightly. Current levels of take of non-target species are not adversely impacting native wildlife populations in the state, including endangered or threatened species. The FWS has concurred with WS conclusion in its FONSI of April 9, 2002 that BDM methods assessed in the EA would not adversely affect any federally or state-recognized threatened or endanger species or critically designated habitats in Tennessee. TVA agrees with this conclusion.

Because TVA prepares several categorical exclusion checklists (CEC) annually for BDM 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 Tennessee meets its needs and use of WS staff would be encouraged. The removal of target and non-target species from TVA lands and facilities in Tennessee would represent a small fraction of the anticipated annual state-wide take. Alternative 1, the Proposed Action, would have the greatest probability of success in alleviating bird damage on TVA land and at its facilities in Tennessee. 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 contracted BDM work in Tennessee. Accordingly, TVA concurs with impacts of Alternative 1, the Proposed Action as described in the attached WS EA and FONSI of April 9, 2002. TVA also believes that the EA adequately addresses all impacts of conducting its own or contracting with WS for BDM 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 BDM services in the Tennessee River basin and service area in Tennessee, have been adequately addressed. TVA has decided to adopt the WS EA and the associated FONSI of April 9, 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 BDM services on TVA lands, easements, or at its facilities in Tennessee would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.

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Bird Damage Management in TN FONSI.doc