

**Center for Biological Diversity - Tennessee Environmental Council
Sierra Club - Tennessee Scenic Rivers Association**

Via Facsimile and Certified Mail/Return Receipt Requested

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Re: Notice of Intent to Sue for Violations of the Endangered Species Act Related to the Proposed Installation of Pollution Control Equipment at the Gallatin Fossil Plant

This letter serves as official notice by the Center for Biological Diversity, Tennessee Environmental Council, Sierra Club, and the Tennessee Scenic Rivers Association of their intent to sue the Tennessee Valley Authority (“TVA”) and TVA Senior Vice President Anda Ray, in her official capacity, for violations of the Endangered Species Act, 16 U.S.C. §§ 1531-1544 (“ESA”), in connection with actions related to the installation of pollution control equipment at the Gallatin Fossil Plant (“GAF”).

TVA operations have, for decades, caused significant harm to species throughout the region, pushing many of them to the brink of extinction. To stave off these threats, TVA is required to allow a unique conservation center, the Cumberland River Aquatic Center (“CRAC”), to operate at Gallatin. The CRAC has been uniquely successful in propagating endangered mussel species, lake sturgeon and alligator gar, and has been an important center for research and public education. State and federal agencies have invested over \$780,000 in the facility. Now, TVA has unilaterally ordered CRAC to close, with almost no notice, to make way for its construction project. TVA has not, as required by law, consulted with the Fish and Wildlife Service before ordering the closure. The rush to close this vital center wastes public money, disrupts critical conservation activities, and is harming the endangered species now hurriedly being removed from the CRAC. As a result, TVA’s system wide activities are now risking the survival of endangered species throughout the region, as the CRAC is not operating to help protect them.

We are putting you on notice that these reckless and illegal activities must stop.

I. Introduction

The GAF houses the Tennessee Wildlife Resources Agency's ("TWRA") CRAC at its site on the banks of the Cumberland River. TVA is required to provide facilities for the CRAC at the GAF, in order to mitigate the adverse impacts that TVA's operations cause to endangered species throughout the Tennessee River Basin. By closing the CRAC, which is a nationally significant endangered species conservation center supported by nearly \$800,000 in public funds, TVA is imperiling species throughout Tennessee and beyond.

Over the last six years, the CRAC has successfully raised and propagated rare and endangered fish, mollusks, and other fresh water species. According to the U.S. Fish and Wildlife Service ("FWS"), the CRAC has been uniquely successful in propagating these species, and its continued operation is central to conservation, research, and education efforts throughout the region. The U.S. Army Corps of Engineers, Tennessee Wildlife Resources Agency, and other government agencies have made substantial investments in its continuing success.

Yet, in anticipation of TVA's proposal to spend over \$1 billion to prolong the life of its aging coal-fired power plant at GAF, Vice President Ray and TVA have directed TWRA to close and to relocate the CRAC in order to make way for pollution control equipment. It is far from clear that this project is either necessary or appropriate (since cleaner options exist to partially or entirely retire Gallatin while maintaining facilities for the CRAC), and TVA has certainly not publicly disclosed or analyzed its choices. Indeed, TVA issued its directive to TWRA, and has moved forward with dismantling the CRAC, without any ESA consultation. This directive violates the ESA in several different ways.

First, as a result of this directive, endangered mussel species are being harmed by their early removal from the CRAC. Because the directive to dismantle the CRAC affects endangered species – including the critically-endangered pink mucket, a mussel that has not shown significant propagation success at any location, other than the CRAC – TVA is in violation of its affirmative duty, pursuant to ESA section 7(a)(2), to insure that its actions are not likely to jeopardize listed species, through completion of consultation with the FWS. 16 U.S.C. § 1536(a)(2).¹

In addition, TVA is required by a biological opinion which governs the operation of its dams and other water control structures in the Tennessee River Basin to cooperate with TWRA

¹ ¹ This notice of intent to sue is submitted and tailored to satisfy the requirements of the ESA's citizen suit provision. 16 U.S.C. § 1540(g). The ESA violations documented in this notice also disclose violations of the National Environmental Policy Act ("NEPA"). For instance, by directing TWRA to move the CRAC facility before it has completed consideration of the environmental consequences of installing pollution control equipment at Gallatin, TVA is violating the NEPA prohibition against taking any action before completing the NEPA process and issuing a record of decision which would "[h]ave an adverse environmental impact" or "[l]imit the choice of reasonable alternatives." 40 C.F.R. §1506.1(a). Similarly, TVA should have consulted with the FWS, as required under ESA § 7(a)(2) and 50 C.F.R. § 402.16, concurrently with TVA's environmental review pursuant to NEPA. 40 C.F.R. § 1502.25 (requiring concurrent and integrated NEPA and ESA reviews). But TVA has not even initiated consultation with FWS to insure that installation of pollution control equipment at Gallatin, as well as the coal plant operations that it would facilitate beyond 2017, will not likely jeopardize listed species.

and to provide “raceways” at the GAF for the propagation of endangered mollusks. *See* Tennessee River Basin, Routine Operations and Maintenance of TVA’s Water Control Structures in the Tennessee River Basin (2006) (“O&M BiOp”) at 104. TVA has unilaterally decided not to continue providing these facilities. Because cooperation is no longer occurring as a result of TVA’s and Vice President Ray’s actions, reinitiation of consultation to consider the effects of the actions analyzed in the O&M BiOp must be completed, to insure that listed species throughout the Tennessee River Basin are not jeopardized as a result of CRAC’s relocation, which is now underway. 50 C.F.R. § 402.16.

Further, TVA has failed its affirmative and nondiscretionary duty to utilize its authority to further the conservation of listed species. 16 U.S.C. § 1536(a)(1). TVA is also in violation of ESA section 7(d) since it has, before completing consultation, irretrievably and irreversibly committed resources in a manner that forecloses possible reasonable and prudent measures that may be the outcome of consultation. 16 U.S.C. § 1536(d).

Finally, TVA’s actions are resulting in the unlawful “take” – that is, the harm, harassment, and killing – of species that are protected as endangered under the ESA, without authorization for that take, as required by the ESA section 9. 16 U.S.C. § 1638(a)(1)(A); 16 U.S.C. § 1532(19). This take is occurring due both to the hasty transfer of mussels from the CRAC and because operation of the CRAC is a condition of TVA’s Incidental Take Statement for its river system operations. With the CRAC no longer fully operational, TVA’s Incidental Take Statement no longer insulates TVA from a violation of section 9 through take of these species elsewhere in its system.

Thus, by this letter the undersigned put TVA and Vice President Ray on official notice that their actions relating to the proposed installation of pollution control equipment at the GAF are in violation of ESA section 7 consultation requirements and are resulting in unlawful take under ESA section 9. 16 U.S.C. §§ 1536 and 1538. This letter is provided pursuant to the 60-day notice requirement of the citizen suit provision of the ESA to the extent such notice is deemed necessary by a court. *See* 16 U.S.C. § 1540(g).

To prevent legal action, TVA must reinitiate and complete consultation on the TVA’s Tennessee River Basin operations and maintenance biological opinion. It must also immediately and clearly inform TWRA that the Cumberland River Aquatic Center will be allowed to continue operations at the Gallatin Fossil Plant indefinitely or take all necessary measures (after a full and public consultation) to ensure that the CRAC’s conservation efforts can continue, without interruption, at a new facility. Such measures include, but are not limited to, providing TWRA with the funding necessary to build and operate a new facility with the same capabilities, providing time to ensure that no endangered species are transferred from the CRAC until it is safe to do so, including providing time for juvenile mussels to mature to the point at which transfer is safe. In short, TVA must ensure that CRAC remains fully operational unless and until a fully functional replacement facility is available. TVA must also provide full compensation for any take or other adverse effects which its illegal activities have caused.

II. Legal and Factual Background

A. The Endangered Species Act

Congress enacted the Endangered Species Act in 1973 to provide for the conservation of endangered and threatened fish, wildlife, plants and their natural habitats. 16 U.S.C. §§ 1531, 1532. The ESA requires the Secretaries of the Interior and Commerce (for terrestrial and marine species, respectively) to add species to the lists of endangered and threatened species. *Id.* § 1533(a). The ESA imposes substantive and procedural obligations on all federal agencies and persons with regard to listed species and their critical habitats. *See id.* §§ 1536(a)(1), (a)(2) & 1538(a); 50 C.F.R. § 402.10.

1. The Section 7(a)(1) Mandate to Further Species Protection and Recovery

The ESA includes a broad mandate on all federal agencies to protect and recover listed species. “All [] Federal agencies shall, in consultation with and with the assistance of the Secretary [of the Interior], utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 1533 of this title.” 16 U.S.C. § 1536(a)(1). This requirement is affirmative and non-discretionary.

2. The Section 7(a)(2) Duty to Insure No Jeopardy or Destruction or Adverse Modification of Critical Habitat

Each federal agency has a duty to consult, for non-marine species, with the Secretary of the Interior, through FWS, to insure that “any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species” 16 U.S.C. § 1536(a)(2). The definition of agency “action” is broad and includes “all activities or programs of any kind authorized, funded, or carried out, in whole or in part” including “the granting of licenses, contracts, leases, easements, rights-of-way, [or] permits” and any “actions directly or indirectly causing modifications to the land, water, or air.” 50 C.F.R. § 402.02. To “jeopardize” means to “engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of . . . the survival [or] recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” *Id.* The prohibition against jeopardy is one of the ESA’s clearest cornerstones for the conservation of listed species and their habitat.

The ESA’s implementing regulations set forth a specific process, fulfillment of which is the only means by which an action agency fulfills its affirmative duty to insure no jeopardy. 50 C.F.R. § 402.14(a). Pursuant to this process, each federal agency must review its actions at “the earliest possible time” to determine whether any action “may affect” listed species or their critical habitat in the “action area.” 50 C.F.R. § 402.14(a). The “action area” encompasses all areas that would be “affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” 50 C.F.R. § 402.02. The term “may affect” is broadly construed to include “[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character,” and thus is easily triggered. *Interagency Cooperation – Endangered*

Species Act of 1973, As Amended, 51 Fed. Reg. 19,926 (June 3, 1986). If a “may affect” determination is made, “consultation” is required.

Consultation is a process involving the federal agency proposing to take an action, labeled the “action agency,” and, for activities affecting terrestrial species, FWS. During consultation agencies must “use the best scientific and commercial data available.” 16 U.S.C. § 1536(a)(2).

“Formal consultation” commences with the action agency’s written request for consultation and concludes with FWS’s issuance of a “biological opinion.” 50 C.F.R. § 402.02. In the biological opinion, FWS considers the “effects of the action” and sets forth its opinion as to whether the federal action is “likely to jeopardize the continued existence of listed species.” 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12(c). The “effects of the action” include all direct and indirect effects of the proposed action, the effects of actions that are interrelated or interdependent, and existing environmental conditions, *i.e.*, the “environmental baseline.” *Id.* § 402.02. The effects of the action must be considered together with “cumulative effects,” which are “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” *Id.*

If FWS concludes in a biological opinion that the activities are not likely to jeopardize a listed species but that the action will nevertheless result in some “take” of the species, it must provide an “incidental take statement” with the biological opinion that specifies the amount or extent of such incidental take, the “reasonable and prudent measures” FWS considers necessary or appropriate to minimize such take, the “terms and conditions” that must be complied with by the action agency and/or any applicant to implement any reasonable and prudent measures, and other details. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i). Thus, a biological opinion with a no-jeopardy finding effectively green-lights a proposed action under the ESA, subject to the incidental take statement’s terms and conditions.

If FWS concludes that the proposed action will result in jeopardy of a listed species, it must “suggest those reasonable and prudent alternatives which [it] believes would not violate ... [the prohibition against jeopardy] and can be taken by the Federal agency ... in implementing the agency action.” *Id.* “Reasonable and prudent alternatives” are “alternative actions identified during formal consultation (1) that can be implemented in a manner consistent with the intended purpose of the action, (2) that can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction, (3) that are economically and technologically feasible, and (4) that [FWS] believes would avoid the likelihood of jeopardizing the continued existence of listed species” *Id.* § 402.02. When FWS concludes that an action will jeopardize a species and suggests a reasonable and prudent alternative, the action agency must either terminate the action, implement the proposed alternative, or seek an exemption from its duties under 16 U.S.C. § 1536(a)(2) from the Cabinet-level Endangered Species Committee, pursuant to 16 U.S.C. § 1536(e).

Prior to commencing formal consultation, the federal agency may engage in “informal consultation,” in which it prepares a “biological assessment” (“BA”) to “evaluate the potential effects of the action on listed and proposed species” and to “determine whether any such species ... are likely to be adversely affected by the action.” 50 C.F.R. § 402.12(a). If a BA concludes that the action is “not likely to adversely affect” listed species, and FWS concurs in writing, then consultation is complete. *Id.* § 402.13(a). If an action agency concludes that the action is “likely to adversely affect” listed species or critical habitat, it must go forward with formal consultation

with FWS. *Id.* §§ 402.12(k), 402.14(a). The threshold for triggering the formal consultation requirement is “very low,” as “any possible effect ... triggers formal consultation requirements.” 51 Fed. Reg. 19,926.

If the action agency concludes that the proposed action is “not likely to adversely affect” the species, then FWS must concur in writing with this determination in order to avoid formal consultation. 50 C.F.R. §§ 402.13(a) & 402.14(b). If FWS concurs in this determination, then consultation is complete. *Id.* § 402.13(a). If FWS’s concurrence in a “not likely to adversely affect” finding is inconsistent with the best available science, however, FWS’s concurrence must be set aside. *See* 5 U.S.C. § 706(2).

3. The Section 7 Duty to Reinitiate Consultation

Reinitiation of formal consultation is required by certain triggering events. As set forth in the ESA’s implementing regulations, reinitiation of formal consultation is “required” and “shall be requested” by the action agency or by FWS whenever the action agency has “discretionary ... involvement or control over the action” and, among other circumstances:

- (a) If the amount or extent of taking specified in the incidental take statement is exceeded;
- (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
- (c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or
- (d) If a new species is listed or critical habitat designated that may be affected by the identified action.

50 C.F.R. §§ 402.16. Failure to reinitiate consultation is subject to judicial review pursuant to the ESA’s citizen suit provision. 16 U.S.C. § 1540(g).

4. The Section 7 Prohibition Against an Irretrievable or Irreversible Commitment of Resources

Where formal consultation is required, the action agency is prohibited from making “any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section.” 16 U.S.C. § 1536(d). Thus, Section 7(d) prohibits “any governmental action” from going forward “unless and until consultation has been initiated.” *Pacific Rivers Council v. Thomas*, 30 F.3d 1050, 1056 (9th Cir. 1994); *see also Kentucky Heartwood v. Worthington*, 20 F. Supp. 2d 1076, 1095 (E.D. Ky. 1998) (citing same). In this way, Section 7(d) “ensur[es] that the status quo will be maintained during the consultation process.” *Pacific Rivers* at n. 14.

5. The Section 9 Prohibition Against the Take of Listed Species

Section 9 of the ESA specifically prohibits the “take” of endangered or threatened species, 16 U.S.C. § 1538(a)(1)(B), a term broadly defined to mean “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” 16 U.S.C. § 1532(19). The term “harm” includes “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.” 50 C.F.R. § 17.3. The term “harass” means “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.” *Id.* The ESA’s legislative history supports “the broadest possible” reading of “take.” *Babbitt v. Sweet Home Chapter of Cmty. for a Great Or.*, 515 U.S. 687, 704-05 (1995). “Take” includes direct as well as indirect harm and need not be purposeful. *Id.* at 704.

Any person who knowingly commits these acts is liable for take and subject to substantial civil and criminal penalties, including imprisonment. 16 U.S.C. §§ 1540(a), (b); *Bennett v. Spear*, 520 U.S. 154, 170 (1997) (citing 16 U.S.C. §§ 1540(a), (b) (authorizing civil fines of up to \$25,000 per violation and criminal penalties of up to \$50,000 and imprisonment for one year)). “Person” is defined in the ESA to include “any officer, employee, agent, department, or instrumentality of the Federal Government” 16 U.S.C. § 1532(13).

In addition, courts have repeatedly held that government actions authorizing third parties to engage in harmful activities can constitute illegal take under ESA section 9. For example, a state agency committed take of endangered right whale when it licensed commercial fishing operations in a manner that was likely to result in harm to those whales. *Strahan v. Coxe*, 127 F.3d 155, 164 (1st Cir. 1997), *cert. denied*, 525 U.S. 830 (1998). A federal agency caused take of endangered black-footed ferret when it registered pesticides even though other persons actually distributed or used the pesticides. *Defenders of Wildlife v. Admin’r, Env’tl. Prot. Agency*, 882 F.2d 1294, 1301 (8th Cir. 1989). A state agency was liable for take for its licensing and regulation of trapping that resulted in third-party incidental take of Canada lynx. *Animal Prot. Inst. v. Holsten*, 541 F. Supp. 2d 1073, 1080 (D. Minn. 2008). And a county’s inadequate regulation of beachfront artificial light sources was held to constitute take of listed turtles in violation of ESA section 9. *Loggerhead Turtle v. City Council of Volusia County*, 148 F.3d 1231, 1253 (11th Cir. 1998).

B. The Tennessee and Cumberland Rivers and Endangered Species

TVA’s actions implicate endangered species in at least two river systems. The Biological Opinion and Incidental Take Statement that led to the creation of the CRAC concern TVA’s operations in the Tennessee River Basin, while the GAF itself sits within the Cumberland River Basin.

The Tennessee River flows over 650 miles from the Appalachian highlands to the Ohio River, and was home to over 101 federally-listed species before TVA began to alter the river’s flow and other dynamics. FWS, *Routine Operations and Maintenance of TVA’s Water Control Structures in the Tennessee River Basin* (2006) (“O&M BiOp”) at 5. Sixty-five listed and candidate species remain in the river, including many mussel species. These include the fanshell, dromedary pearl mussel, Cumberlandian combshell, oyster mussel, shiny pigtoe, fine-rayed

pigtoe, cracking pearly, pink mucket, ring pink, white wartyback, orangefoot pimpleback, rough pigtoe, and Cumberland monkeyface pearly mussels. *Id.* at 44-75. FWS determined that TVA's dams and other river operations have significantly affected habitat for these species, *id.* at 86-87, and has imposed various mitigation commitments on TVA to ensure that these species are not jeopardized or taken by TVA activities. *See id.* at 94-95.

The Cumberland River flows nearly 800 miles from uplands near Harlan, Kentucky, south through Tennessee, including Nashville, and back into Kentucky, where it joins the Ohio River near Paducah. Like many rivers in the southeastern U.S., the Cumberland is home to a wide range of biodiversity, much of it threatened. The Cumberland is especially rich with a diversity of freshwater mussels. As many as a dozen mussel species listed as threatened or endangered on the federal ESA list might be found in the Cumberland River near and downstream from the Gallatin Fossil Plant. These species include Cumberlandian combshell, dromedary pearly mussel, fanshell, little-wing pearly mussel, orangefoot pimpleback, oyster mussel, pink mucket, ring pink, spectaclecase, snuffbox, tan riffleshell, and white wartyback.

Freshwater mussels are beautiful animals with colorful shells, a diversity of shapes, and interesting shell adornments such as ridges, knobs and spines. They are culturally significant because they were harvested by Native Americans and early pioneers for use as food, to make jewelry, ornaments and tools from their shells, and for pearls. Before the development of plastic, mussel shells were widely harvested to make buttons. Williams at 1.

Mussels are an important indicator species of water quality because of their feeding habits and long life spans, and play an important functional role in aquatic ecosystems. Strayer at 1. They filter water constantly as they breathe and feed, and they turn over a substantial portion of the water column even at low densities. They have an important influence on ecosystem processes including community respiration, algal clearance rates, and concentrations of nutrients and pollutants such as nitrates, ammonia, and phosphorus. Williams at 60. Mussels improve water quality by filtering out bacteria, algae, and phytoplankton. Stokstad at 878. Mussels play a very important role in the food web because they feed by filtering tiny particles from the water, and convert this otherwise inaccessible energy source into food for a variety of animals that prey upon them including fish, crayfish, amphibians, reptiles, birds, and mammals. Williams at 64.

Mussels are the longest-lived invertebrates, sometimes exceeding 100 years of age. Williams at 1. They reproduce by making a lure that mimics a juvenile fish, worm, or insect, and then using the lure to attract fish that will serve as hosts for their parasitic larvae. Mussels and their fish hosts have evolved together over time, and are ecologically important because of the complexity of the co-evolutionary relationships that have developed around the lure mimicry. Freshwater mussels are the most endangered group of organisms in the United States – at least 35 species gone extinct, and more than 70 species are on the brink. Stokstad at 876.

C. The Gallatin Fossil Plant and its Environmental Impacts

The Gallatin Fossil Plant is a 53-year-old, 1255 MW coal-fired power plant, located on the Cumberland River, near Gallatin, TN, and operated by TVA. *Draft Environmental Assessment for Installation of Emission Control Equipment and Associated Facilities – Gallatin Fossil Plant* (Oct. 2012) (“DEA”) at 2. The GAF is water-cooled, utilizing nearly one-third of the volume of the Cumberland River at the plant's location. *See TVA, Gallatin Fossil Plant – NPDES No. TN0005428- – Application for Renewal, Intake and Effluent Characteristics Form, Outfall 002* (May 21, 2009) at V-1. The plant produces tremendous amounts of air and water

pollution and is also the nation's ninth biggest producer of coal combustion waste ("CCW"). See U.S. EPA Toxic Release Inventory ("TRI"): *On-site and Off-site Reported Disposed of or Otherwise Released (in pounds), Top 100 Facilities (of 618) for Facilities in NAICS 2211 - Electric Utilities, for All Chemicals, U.S.* (2011).

Under a 2011 Federal Facilities Compliance Agreement with the Environmental Protection Agency and others, the GAF is required, by the end of 2017, to either shut down or to install pollution control equipment to reduce drastically its airborne emissions of mercury and other toxic and criterion air pollutants. DEA at 1. Installation is expected to cost ratepayers \$1.2 billion. DEA at 16. If TVA does not install control equipment, current operational plans would require TVA to retire all GAF coal-burning units by the end of 2017. Thus, installation of pollution controls at GAF effectively green-lights plant operations past 2017, with consequences for the environment, including listed species. This is particularly so because TVA's proposed life extension project itself has significant and lasting environmental impacts – both by extending the life of the plant and by causing new environmental impacts.

Indeed, continued operation of the GAF past 2017 would adversely affect species that are listed as threatened or endangered under the ESA, in many ways. For example, upon installation of control equipment to reduce air pollution, TVA plans to begin burning a dirtier form of coal. The result would be two huge landfills, each about 200 feet tall, right on the banks of the Cumberland River, filled with CCW. DEA at 22. The waste in these landfills would be rife with toxic metals and other harmful pollutants and would result in somewhere between a doubling to quadrupling of the plant's current solid waste stream. Run-off from these landfills would enter the Cumberland River. The new landfills would also destroy several acres of jurisdictional wetlands and would eliminate more than 1000 acres of Tennessee Wildlife Management Areas. DEA at 101. Apart from direct run-off from the waste dumps, the karst geology underlying the dumpsites suggests a connection with surface waters through groundwater infiltration. DEA at 63.

In addition to effects from CCW run-off, surface water habitat will also be directly impacted. The GAF already withdraws 930 million gallons a day of water from the Cumberland River. See DEA at 86-95. Although not yet quantified, TVA has admitted that the installation of control equipment will result in even greater daily withdrawals. See DEA at 83-98. The GAF also discharges almost 100 million gallons of wastewater into the Cumberland River on an average day. And TVA admits that pollution levels in wastewater streams could worsen significantly after installation of control equipment. See DEA at 86-89. Metals discharged by the GAF include, at minimum, aluminum, arsenic, barium, chromium, copper, iron, lead, manganese, selenium, silver, vanadium, and zinc. Cadmium has been found at elevated levels in a groundwater monitoring well located between an ash pond and the Cumberland River. See TVA, *Gallatin Fossil Plant – Abandoned Ash Disposal Area – Groundwater Assessment Monitoring Report, April 2012* (May 29, 2012). Ammonia would constitute a new pollutant discharged into the River as a result of operation of the new pollution control systems. DEA at 88-93. Impacts from wastewater discharge could result from both regular and catastrophic events, the worst probably being the failure of a coal ash impoundment, similar to the release of more than one billion gallons of coal ash slurry from TVA's Kingston Fossil Plant in Tennessee just four years ago. Continued operation of the GAF also means continued impacts to surface water from thermal pollution. Most of these impacts to surface waters would be eliminated if, instead of installing pollution control equipment, the GAF were simply retired.

Mussels are sedentary, generally long-lived, filter-feeders. They are sensitive to water temperature and water pollutants, especially heavy metals. Effectively stable in one location for all of their adult lives, mussels bio-accumulate toxins in their flesh from the surrounding waters, leading to reproductive and organ failures, and death. Research has shown cadmium to be the pollutant most lethal to mussels. FWS, *Recovery Plan for Cumberland Elktoe, Oyster Mussel, Cumberlandian Combshell, Purple Bean, and Rough Rabbitsfoot* (2007) at 37. Chromium, copper, mercury, and zinc also are known to have negative impacts on mussels, especially juveniles. *Id.* at 37, 38. Impacts can happen at even low levels when exposure is chronic. *Id.* at 37. Operation of the GAF would result in the continued release of most, if not all, of these metals, and possibly other toxins that are likely to adversely affect listed mussels. Mussels are also susceptible to ammonia. *Id.* at 38. Its release under the new pollution control regime may also adversely impact mussels. Releases of aluminum, arsenic, or manganese may also adversely affect freshwater mussels. *See* O&M Biop at 100-02.

Mussels also have a limited range of water temperatures in which they can effectively function, or even survive. In late summers, when river water temperatures are elevated to their maximum, the addition of thermal pollution could take river temperatures out of the range necessary for proper mussel functioning, again adversely affecting the species.

Finally, it must be noted that continued operation of the GAF will still result in the emissions of millions of tons of carbon dioxide pollution every year. This pollution will worsen the climate crisis, which is already having a devastating impact on listed species through changing temperature and precipitation regimes, and by acidification of waterways.²

D. The Cumberland River Aquatic Center

The Cumberland River Aquatic Center is a six-year-old freshwater mussel propagation facility, located on the GAF site and operated by the Tennessee Wildlife Resources Agency. The TWRA operates the facility under the terms of a license agreement with TVA and has been funded by the U.S. Army Corps of Engineers in the amount of \$780,000. TVA provides the CRAC with 1) a location for operations, 2) ten 50-foot concrete channels, or raceways, for propagating endangered and other mussels and fish, 3) free, three-phase electricity for operating pumps and for other uses, 4) free, nutrient-rich waters from deep in the mainstem of the Cumberland River, and 5) the ability to mix warmed waters into the raceways to improve growth during colder months. According to the FWS, the CRAC has been “a critical component of the Cooperative Mollusk Management Memorandum of Understanding (MOU) signed in 2011 by TVA, the Corps of Engineers, TWRA [and others] for the purposes of management and recovery of aquatic species.” FWS letter at 1.

The CRAC has assisted in the survival and recovery of more than 30 endangered mussel species, including several found in the Cumberland River. This last year alone, the CRAC has

² Despite the ESA implementing regulations’ admonition to begin consultation “at the earliest possible time,” 50 C.F.R. § 402.14(a), and despite the NEPA implementing regulations’ requirement that ESA consultation occur concurrently with NEPA review, 40 C.F.R. § 1502.25, and despite a request by FWS to initiate consultation, Letter from Mary Jennings, Field Supervisor, USFWS, to Cynthia Wren, NEPA Interface, TVA (November 27, 2012) (“FWS letter”) at 2, TVA has not yet begun ESA consultation on the installation of pollution control equipment at the GAF.

produced approximately 18,000 listed mussels. The facility's survival rates are far in excess of most mussel hatcheries. And no other facility has shown such success with endangered pink muckets.

The CRAC works collaboratively with other mussel propagation facilities, producing beneficial synergistic effects. For example, while other facilities often excel at propagating mussels to the juvenile stage, the CRAC is often better at raising mussels from juveniles to adults. In similar fashion, when transport and transplanting of mussels into the wild is disrupted by storms, the CRAC has served as a way station that can house mussels without fear of spreading diseases, until rivers return to levels that allow for successful transplant. The CRAC has also had singular success at raising lake sturgeon and alligator gar. Plans have been put into place to begin the rearing of endangered freshwater snails and rare hellbender salamanders at the CRAC soon. Finally, the CRAC is also a highly successful education center, teaching both children and adults about the importance of endangered species and the steps necessary to protect and recover them.

E. The 2006 Biological Opinion on the Routine Maintenance of TVA's Water Control Structures in the Tennessee River Basin.

In 2006, FWS issued the O&M BiOp, a biological opinion for the Routine Operations and Maintenance of TVA's Water Control Structures in the Tennessee River Basin. The opinion considers the effects to listed species from the ongoing operations and maintenance activities of 31 dams in seven southeastern states, and their effects on dozens of listed species known to occur in the Tennessee River Basin. O&M BiOp at 5.

The O&M BiOp determined that TVA's operations and maintenance of dams and other water control structures in the Tennessee River adversely affects the Cumberlandian combshell, dromedary pearlymussel, fanshell, orangefoot pimpleback, oyster mussel, pink mucket, ring pink, and white wartyback, and other mussel and non-mussel species. *Id.* at 93. FWS determined that these activities will result in the "take" of 18 listed species, including all of the mussels listed above. As a result, FWS included an Incidental Take Statement in the O&M BiOp, requiring the implementation of non-discretionary measures to assure continuing protective coverage from liability for take under the ESA. *Id.* at 95.

Specifically, FWS included numerous terms and conditions in the ITS, which are mandatory under the ESA for TVA to continue the authorized activities without violating ESA section 9. 16 U.S.C. § 1538. Among those conditions is the requirement that:

TVA will cooperate with appropriate staff from the Tennessee Wildlife Resources Agency to make fish culture raceways at the Gallatin Steam Plant available for mollusk propagation activities. If, during routine surveys, individuals of mussel species known or considered not to be reproducing in the Tennessee River mainstem are found, those individuals will be transported to this facility or other appropriate facility, upon approval by the Service. Juveniles of those species propagated at the facility will be used to augment or reestablish populations in the Tennessee River.

O&M BiOp at 104.

The O&M BiOp also included conservation recommendations to TVA, including the recommendation that TVA "actively support ongoing freshwater mussel propagation efforts

throughout the Tennessee River Basin” and “initiate and actively participate in fish restoration efforts for listed and rare fish species in the Tennessee River Basin similar to its efforts to reestablish the lake sturgeon in the upper Tennessee River Basin.” Until recently, TVA had been meeting these recommendations, at least in part, through their cooperative arrangement with the CRAC.

F. TVA’s and Vice President Ray’s Actions Surrounding the Installation of Emission Control Equipment at the Gallatin Fossil Plant

In the summer of 2012, Anda Ray, TVA's Senior Vice President of the Office of Environment and Research, met with Ed Carter, the Executive Director of the TWRA and others from that agency. At that meeting, she made clear to TWRA that the CRAC could no longer occupy its current location as of the end of March 2013. Soon after, David Sims, a TWRA Aquatic Biologist who has been integral to the success of the CRAC, confirmed this fact with Scott Hadfield, TVA Gallatin Fossil Plant Manager. On October 31, 2012, Anda Ray spoke with Bobby Wilson, TWRA Fisheries Division Chief and again confirmed that the CRAC would not be allowed to occupy its current location for long.

In a November 14, 2012 letter from David McKinney, TWRA Environmental Services Division Chief, to Mary Jennings, FWS Field Supervisor, McKinney makes clear that TWRA is now dismantling the CRAC solely because TVA instructed it to do so. At this time, TWRA has taken numerous actions to dismantle the facility, including moving adult and two-year old endangered mussels out of the facility, putting on hold new endangered snail and hellbender salamander recovery projects, and beginning construction on a new facility located off TVA land.

TWRA is dismantling CRAC because TVA instructed TWRA to do so. After six years of highly-successful endangered species work, TVA has instructed TWRA to dismantle CRAC, solely so that TVA can locate emission control equipment on the current CRAC location. TWRA has put on hold projects that otherwise would have begun or continued to propagate or rear federally listed species, including endangered mussels and snails. Other facilities that propagate endangered mussels have stopped sending juveniles to the CRAC, where they have the best chance of surviving to an age where they can be placed in rivers. Adult and two-year old endangered pink mucklets have been released into the environment ahead of schedule and without tagging that allows for the study of recovery efforts. All of this has happened solely as a result of TVA’s premature decision on pollution control equipment at the Gallatin plant. As a result, endangered species that are being or could have been propagated at the CRAC cannot be used to augment or reestablish populations in the Tennessee River, as required by the O&M BiOp’s Incidental Take Statement.

III. Violations of the ESA

A. TVA Is Violating ESA Section 7 and Its Implementing Regulations.

1. TVA Has Failed to Utilize Its Authority to Further the Conservation of Listed Species.

ESA section 7(a)(1) requires TVA, in consultation with and with the assistance of the Secretary of the Interior, to utilize its authorities in furtherance of the conservation of listed species. 16 U.S.C. § 1536(a)(1). By providing assistance to the CRAC, TVA was, in part, meeting this affirmative, non-discretionary duty. TVA had the authority to allow the CRAC to continue to operate, as it had been. TVA retains the authority to invite TWRA to continue operating the CRAC, without interruption and with TVA assistance. By instead directing TWRA to dismantle the CRAC and by removing assistance to the CRAC, the conservation of listed species has been seriously impeded by TVA. TVA did this without engaging in consultation with or with the assistance of the Secretary of the Interior. TVA has failed to utilize its authorities in furtherance of the conservation of listed species and is, therefore, in violation of ESA section 7(a)(1).

2. TVA Has Failed to Insure that Activities Related to Installation of Pollution Control Equipment at the Gallatin Fossil Plant Will Not Likely Jeopardize Endangered and Threatened Species, as Required by ESA Section 7(a)(2).

TVA has a duty to insure that, by its actions, it is not likely to jeopardize the continued existence of threatened and endangered mussels and other species. Yet, TVA has directed TWRA to dismantle the CRAC and to remove thousands of endangered mussels from the facility, without initiating consultation on this directive. Nor has it initiated consultation on the ultimate effect of closing the CRAC. Thus, TVA has violated its section 7(a)(2) duties in two ways.

First, once TVA instructed it to leave, TWRA had no choice but to take actions that affect listed mussel species. Specifically, TWRA had to transfer two year-old endangered mussels from the CRAC to locations in rivers before the optimal time for transfer, thus reducing survival rates and reducing future productivity. TWRA also had to transfer adult endangered mussels from the CRAC to rivers, limiting the ability to propagate those listed species in the future. Other propagation facilities have stopped using the CRAC for propagation efforts, thereby interfering with breeding of listed species there. Juvenile endangered mussels that are too young to be transferred to rivers may be destroyed if TWRA is not able to create a replacement facility by the deadline imposed by TVA. This directive from TVA to TWRA was a federal action, within the meaning of the ESA, that is adversely affecting listed species, for which TVA has not consulted with FWS pursuant to the ESA, and which TVA continues to implement. TVA has violated section 7(a)(2) by taking this action without formal consultation.

Second, closing the CRAC will also have prospective and lasting effects on endangered species throughout the region. As discussed above, the CRAC is a vital conservation, education, and research facility for endangered mussels (among other species) and is uniquely successful at its tasks. The CRAC may not ever be reopened in its current form, and will certainly cease to

function for some time to come. The CRAC's operation was integral to protecting species from the continued operation of TVA's own dams and water control structures, and to conserving these species more generally. By effectively ending the CRAC's operations, TVA has made it less likely that species throughout the region will survive and recover. Yet, it has failed to consult upon this action, which will plainly adversely affect listed species.

We emphasize that this failure is entirely independent of TVA's failure to reinstate consultation on the Biological Opinion that led to the creation of the CRAC in the first place, discussed below. Regardless of how TVA views its duties under that Opinion, the CRAC is now in operation, and would not close except for TVA's current actions. These new actions separately violate the ESA because they are being taken without consultation.

Given that TVA has taken actions that are likely to adversely affect listed species, TVA was required to consult formally with FWS and is required to wait for the outcome of a biological opinion before further related agency actions can proceed. TVA has not formally consulted with FWS on effects to listed species as a result of agency activities at the GAF, and therefore, has violated ESA section 7(a)(2). TVA is required now to request formal consultation with FWS over impacts to listed species resulting from activities related to the installation of pollution control at the GAF and cease related actions until that consultation is complete.

3. TVA has Failed to Reinitiate Consultation over the 2006 Routine Operations and Maintenance Biological Opinion, as Required by 50 C.F.R. § 402.16.

FWS determined in the O&M BiOp that TVA's regular operations and maintenance of its 31 Tennessee River Basin dams causes the take of 18 listed species. TVA and its officers are protected from prosecution under ESA section 9 solely because FWS provided TVA with an Incidental Take Statement ("ITS") in the O&M BiOp. This protective coverage is in effect only so long as TVA meets the Terms and Conditions of that ITS. One of those terms and conditions requires TVA to cooperate with TWRA to make available the raceways at the Gallatin plant for mussel propagation activities.

As a result of Vice President Ray's conversations with TWRA, however, TVA is not currently cooperating with TWRA to make those raceways available. TWRA has been forced to take numerous actions over the last several months wholly inconsistent with the successful propagation of listed mussels at Gallatin.

An agency has a duty to reinstate consultation whenever, as here, the agency retains discretionary involvement or control over the action, and either: the amount or extent of taking specified in the incidental take statement is exceeded; new information reveals effects of the action that may affect listed species in a manner or to an extent not previously considered; or the action is modified in a manner that causes an effect to the listed species that was not considered in the biological opinion. 50 C.F.R. § 402.16. Here, the O&M BiOp estimates the amount of allowable take based on compliance with all terms and conditions of the ITS. In the absence of compliance with the protective terms and conditions of the ITS, the amount or extent of taking will be exceeded. This requires the reinitiation of consultation. The closing of the CRAC also represents new information about the effects of the action, and modifications to the action, that will undoubtedly affect listed species. For these reasons also, reinitiation of consultation is required to insure that operations and maintenance activities for the 31 Tennessee River Basin dams do not jeopardize these 18 endangered and threatened species.

4. TVA is Irretrievably and Irreversibly Committing Resources, Thereby Foreclosing Possible Reasonable and Prudent Alternative Measures That May Have Been Required Through Consultation.

TVA's directive to TWRA to dismantle the CRAC, has resulted in actions that irretrievably and irreversibly commit resources and that have foreclosed possible reasonable and prudent measures. For example:

1. TWRA has transferred two year-old listed mussels from the CRAC to locations in rivers before the optimal time for transfer, thus reducing survival rates and reducing future productivity.
2. TWRA has transferred adult listed mussels from the CRAC to rivers, limiting the ability to propagate those listed species in the future.
3. Other propagation facilities have stopped using the CRAC for propagation efforts, thereby interfering with breeding of listed species.
4. TWRA may have or may be about to transfer juvenile mussels from the CRAC to locations in rivers before they may safely be transferred, thus reducing survival rates and reducing further productivity.
5. TWRA has begun, or will shortly begin, to dismantle the CRAC's physical facilities.

The listed mussels that have been released into rivers cannot all be retrieved. The failure of other propagation facilities to take advantage of the CRAC's unique resources is an action that cannot be undone. Reduced survival rates have permanent effect. These actions are irreversible, at least in part. By its action, TVA has foreclosed the preservation of the status quo pending consultation. This is a violation of ESA section 7(d).

B. TVA is Liable for Take Under ESA Section 9

TVA, Vice President Anda Ray, and possibly other TVA employees, are in violation of ESA section 9 for the unauthorized take of listed mussel species. As discussed above, both harm and harassment constitute "take" within the meaning of ESA section 9. TVA has engaged in acts – specifically, repeatedly ordering TWRA to close the CRAC by the end of March 2013 – that are harming and harassing listed mussels. TVA lacks any lawful authorization for this take pursuant to the ESA.

There are two distinct ways in which TVA has violated ESA section 9. First, TVA has ceased complying with the terms and conditions of the O&M BiOp that constitutes the agency's only protective coverage for ESA section 9 violations. The O&M BiOp ITS notes that take of listed species is only allowed under special exemptions of the ESA. O&M BiOp at 95. In this case, incidental take is allowed as long as TVA is in compliance with the terms and conditions of the ITS. *Id.* Hence, if TVA fails to implement the terms and conditions, it loses the protective coverage from prosecution for take that is otherwise exempted. *Id.*

The O&M BiOp finds that TVA, through the ongoing operation and maintenance of 31 dams in the Tennessee River Basin, is taking 18 species, including several species of threatened and endangered mussels.

In order to be exempt from the prohibitions of section 9 of the Act, TVA must comply with the following terms and conditions which carry out the reasonable and prudent measures described above 3. TVA will cooperate with appropriate staff from the Tennessee Wildlife Resources Agency to make fish culture raceways at the Gallatin Steam Plant available for mollusk propagation activities.

Id. at 103-04. TVA, through Vice President Anda Ray, has given TWRA orders, on several occasions and to several different TWRA officers, to move the TWRA facility such that the raceways of Gallatin will soon no longer be available for mollusk propagation activities. The requirement to cooperate with TWRA is no longer being met. As such the terms and conditions of the ITS are no longer being met and the protective coverage from violation of ESA section 9 is no longer effective. The incidental take of listed species that result from the operations and maintenance of the 31 dams of the Tennessee River Basin is no longer exempt from ESA section 9. Therefore, since the time that TVA informed TWRA of the end to its cooperation on mollusk propagation efforts at Gallatin, TVA has been, and it continues to be, in violation of ESA section 9, including every day that it operates its system of dams in the Tennessee River Basin.

Second, TVA and Vice President Ray are directly in violation of ESA section 9 as a result of Vice President Ray's orders to TWRA to dismantle the CRAC by the end of March 2103. Since those orders were given, TWRA has been forced to take numerous actions that have resulted in harm to listed mussel species. Examples, repeated from above, include the following:

1. TWRA has transferred two year-old listed mussels from the CRAC to locations in rivers before the optimal time for transfer, thus reducing survival rates and reducing future productivity.
2. TWRA has transferred adult listed mussels from the CRAC to rivers, limiting the ability to propagate that listed species in the future.
3. Other propagation facilities have stopped using the CRAC for propagation efforts, thereby interfering with breeding of listed species.
4. TWRA may have or may soon transfer juvenile mussels from the CRAC to locations in rivers before they may safely be transferred, thus reducing survival rates and reducing further productivity.
5. TWRA has begun, or will shortly begin, to dismantle the CRAC's physical facilities.

By these actions, TVA has taken and continues to take listed mussel species in violation of ESA section 9.

IV. Conclusion

TVA is violating ESA sections 7 and 9, and Vice President Ray is violating ESA section 9, as a result of actions related to the installation of pollution control equipment at the Gallatin Fossil Plant. While we hope to avoid litigation on this issue, if TVA and Vice President Ray do not act to correct the violations described in this letter, the undersigned will pursue litigation against them on this issue in U.S. District Court in 60 days from receipt of this notice. The undersigned will seek injunctive and declaratory relief, and legal fees and costs regarding these violations. Nothing in this letter should be understood to mean that the signees will not pursue other, related litigation, not requiring notice under the ESA, sooner.

To prevent litigation on the claims made above, TVA must 1) immediately reinitiate and complete consultation to consider the effects of TVA's operation and maintenance of facilities in the Tennessee River Basin, to insure that these activities are not likely to jeopardize 18 listed species, in light of the fact that TVA is no longer cooperating to make the raceways at the Gallatin plant available for mussel propagation activities, and species propagated at CRAC are not currently being used to augment or reestablish populations in the Tennessee River; and 2) either immediately and clearly convey to TWRA that the Cumberland River Aquatic Center must continue to operate at the Gallatin Fossil Plant and take all measures necessary to facilitate continued operations, or provide TWRA with adequate funding to build an alternative mussel propagation facility with similar capabilities, and no loss of functionality in the interim.

If you have any questions, wish to discuss this matter, or feel this notice is in error; please contact Tim Ream at (415) 632-5315.

Sincerely,

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