SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450 601 WEST ROSEMARY STREET, SUITE 220 CHAPEL HILL, NC 27516-2356 Facsimile 919-929-9421

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***Sent Via E-Mail***

Mr. Aaron Valenta
Chief, Division of Restoration and Recovery
Southeast Regional Office
U.S. Fish and Wildlife Service
1875 Century Blvd.
Atlanta, GA 30345
*aaron_valenta@fws.gov*

**Re: Notice of Initiation of 5-Year Status Review of the Red Wolf**

Dear Mr. Valenta:

These comments are submitted by the Southern Environmental Law Center, on behalf of the Red Wolf Coalition, Defenders of Wildlife, and Animal Welfare Institute in response to the U.S. Fish and Wildlife Service's ("USFWS" or "Service") five-year status review for the critically endangered red wolf. *See* 5-Year Status Review of the Red Wolf, 81 Fed. Reg. 75,425 (Oct. 31, 2016). With the most recent status review for the red wolf being completed in 2007, this status review should have been completed in 2012 pursuant to the Endangered Species Act's ("ESA") statutory deadline, now nearly five years ago. The severe decline in the wild red wolf population that has occurred in the wake of unexamined management changes during this delay shows exactly why the periodic review of endangered species listing and conservation measures is so critical.

In conducting its five-year status review, the ESA requires the Service to base its evaluation on the listing factors and criteria contained at 16 U.S.C. § 1533(a) and (b), including the requirement that such determinations "shall" be made "solely on the basis of the best scientific and commercial data available." 16 U.S.C. § 1533(b). The best available science unequivocally shows that the red wolf must continue to be listed as endangered nationwide, and that the status of the world's only wild population in eastern North Carolina must be changed to afford it greater protection under the ESA. In particular, the wild population in North Carolina should be reclassified to "essential" and the red wolf 10(j) rule should be changed to clearly provide for the conservation and recovery of the species in the wild. 50 C.F.R. §17.84(c).

Throughout this document, we present the best available science as attachments for the Service's review. These documents include not only scientific information about the red wolf published since the 2007 status review, but also those that show the successful history of this program. This history is especially critical due to the Service's departure from its own accepted and proven management practices and the corresponding decline in the population that has resulted.

## I. Introduction and Background

Once widespread throughout the Southeastern United States, red wolves were driven to the brink of extinction by aggressive predator control practices and habitat loss. In 1967, red wolves were first designated as endangered, and by 1980, the Service removed the remaining red wolves from the wild in order to undertake an intensive captive breeding program intended to preserve the genetic viability of the species. Determination of Experimental Population Status for an Introduced Population of Red Wolves in North Carolina, 51 Fed. Reg. 41,790, 41,791 (Nov. 19, 1986) (codified at 50 C.F.R. pt. 17). According to the Service, "the decision to remove the last red wolves from the wild could only be justified through the development of a long-range objective to eventually return the species to areas of its historic range." U.S. Fish & Wildlife Serv., *Red Wolf Recovery / Species Survival Plan* (1990), Attachment 1.

In 1986, the Service initiated the Red Wolf Recovery Program with promulgation of the special red wolf rule, and in 1987, the Service released four pairs of captive red wolves into Alligator River National Wildlife Refuge in northeastern North Carolina. *See generally*, 51 Fed. Reg. 41,790-02. Since the initial reintroduction, the Red Wolf Recovery Area has expanded to include over 1.7 million acres of land, including four national wildlife refuges, a Department of Defense bombing range, state-owned lands, and private lands, and spans five counties in North Carolina.

The eastern North Carolina red wolf reintroduction has been widely regarded as one of the most successful reintroductions that the Service has ever undertaken. The most recent 5-year status review of the red wolf, completed in 2007, concluded that "efforts to restore, recover and conserve [red wolves] have been remarkably successful," stating that the species had "been transformed from nearly extinct at a count of only 14 individuals in the 1970's to a captive population of 208 and a restored wild [population] with counts up to nearly 130." U.S. Fish & Wildlife Serv., *Red Wolf (*Canis rufus*) 5-Year Status Review: Summary and Evaluation* 33 (2007) [hereinafter "2007 Status Review"], Attachment 2; *see also id.* at 34 (noting that the "Red Wolf Recovery Program is one of the oldest recovery programs for an endangered species in the USA," and "[s]ignificant amounts of red wolf recovery have been achieved"). A scientific review of the program published in 2013 explained the dynamics of this growth, observing that "[b]y the mid-1990s, red wolves in the wild formed packs, maintained territories, and successfully bred, and the reintroduction marked the first successful reintroduction of a wolf species. It also marked the first successful attempt to reintroduce a large predator that was completely extirpated from the wild." Joseph W. Hinton, et al., *Red Wolf (*Canis rufus*) Recovery: A Review with Suggestions for Future Research*, 3 Animals 722, 725 (2013), Attachment 3; *see also* Michael K. Stoskopf, et al., *From the Field: Implementing Recovery of the Red Wolf-Integrating Research Scientists and Managers*, 33 Wildlife Society Bulletin 1145, 1151 (2005), Attachment 4 (discussing the increase in the area occupied by red wolves, the increase in the total number of red wolves and red wolf social units, and the decrease in area where the status of canids is unknown as "key indicators of the successful management of wolf-coyote hybridization"). In 2001, the number of wild red wolves peaked at around 131 wolves. 2007 Status Review, Att. 2, at 12, Table 1.

The initial success of the recovery effort is evident from the population's growth to 130 animals within a 20-year period. Unfortunately, the last decade has resulted in a dramatic population decline to as few as 28 known red wolves. Memorandum from Assistant Regional Director for Ecological Services, U.S. Fish & Wildlife Serv., to Cynthia Dohner, Regional Director, U.S. Fish & Wildlife Serv. 6 (Sept. 12, 2016) [hereinafter "USFWS Sept. 2016 Memorandum"], Attachment 5. The decline was slow at first, and largely attributed to a trend in increasing gunshot mortality. By 2007, gunshot mortality had grown to be the leading cause of death for the species. 2007 Status Review, Att. 2, at 18, 28-29. In 2012, the Service reiterated its concerns about gunshot mortality in a letter to the North Carolina Wildlife Resources Commission ("WRC" or "Commission") asking the Commission to rescind new regulations allowing coyote hunting at night, noting that nighttime coyote-hunting would exacerbate the already serious problem of gunshot mortality because the difficulty in distinguishing red wolves and coyotes would become all but impossible in the dark. Letter from Cynthia Dohner, Regional Director, U.S. Fish & Wildlife Serv., to Gordon Myers, Executive Director, N.C. Wildlife Res. Comm'n (Apr. 16, 2012), Attachment 6. Between 2004 and 2012, gunshot accounted for around 7 red wolf deaths per year—compared to an average of less than two gunshot deaths per year between 1987 and 2003. 2007. *Id.* at 2. From 2012 to June 30, 2015, gunshot accounted for twenty-three out of a total of fifty-eight red wolf deaths. U.S. Fish & Wildlife Serv., Causes of Mortality in Wild Red Wolves (*Canis rufus*) 2012-2015 (June 30, 2015) [hereinafter "Causes of Mortality 2012-2015"], Attachment 7.

Following the gunshot deaths of six red wolves over a four-week period in the fall of 2013, and a corresponding finding that irreparable harm was likely to result if coyote hunting was allowed to continue, the U.S. District Court for the Eastern District of North Carolina enjoined coyote hunting in the Red Wolf Recovery Area in May 2014. *Red Wolf Coal. v. N.C. Wildlife Res. Comm'n*, 2014 WL 1922234 (E.D.N.C. May 13, 2014), Attachment 8. The number of deaths fell significantly following the injunction, from eight suspected or confirmed gunshot deaths in 2012 and nine in 2013, to four in 2014—including only two following the Court's injunction—and four in 2015. Causes of Mortality 2012-2015; U.S. Fish & Wildlife Serv., Causes of Mortality in Wild Red Wolves (*Canis rufus*) 2013-2016 (June 13, 2016) [hereinafter "Causes of Mortality 2013-2016"], Attachment 9.

Yet the successful curbing of red wolf gunshot deaths has not stopped the decline in the red wolf population, with numbers plummeting from more than 100 in 2014 to less than half that number today. Causes of Mortality 2013-2016, Att. 9; USFWS Sept. 2016 Memorandum, Att. 5, at 6. According to the Service, as of September 2016, there were only 28 known wild red wolves being monitored, and an estimated population of 45 animals. USFWS Sept. 2016 Memorandum, Att. 5, at 6. "Such rapid population decline has been described as a catastrophic indicator that the wild red wolf population is in extreme danger of extinction." *Red Wolf Coal. v. United States Fish & Wildlife Serv.*, No. 2:15-CV-42-BO, 2016 WL 5720660, at *6 (E.D.N.C. Sept. 29, 2016), ECF No. 32-17, Attachment 10.

This most recent population decline was also addressed by a preliminary injunction from the U.S. District Court for the Eastern District of North Carolina, blocking the USFWS from removing any red wolves from private property unless they are shown to be a threat to human

safety, life, or property. *Id*. An injunction against these activities of the USFWS was necessary to address the agency's expansion of lethal and non-lethal removals from private property, which experts testified was likely to result in increased mortalities from human interactions such as vehicle strikes or gunshot, as well as a decline in reproduction due to disruption of pack dynamics. *Id*. The court found that USFWS's shift in interpretation of the red wolf 10(j) rule – addressed further below – is "detrimental to the recovery of the species and in violation of the ESA." *Id*.

## II. Red Wolves Must Remain Listed Under the Endangered Species Act.

As an initial matter, it is important to note that the red wolf should remain protected as a species under the ESA. Although an examination regarding the definition of a species is not usually a part of the 5-year status review, there has been significant controversy over the past year about a new scientific paper evaluating red wolf genetics. The Service has thus far addressed this science and these claims appropriately, considering them but determining that they do not change the listing status of this endangered species.

In its September 12, 2016 Memorandum, the Service explained:

> As in the past, we know that other researchers are analyzing the same issues and will most likely publish differing articles on this topic. At this time, given this ongoing debate regarding red wolf historical genetic origin, the red wolf remains a listed entity under the ESA and all recommendations hence forth in this memorandum are based on this fact.

USFWS Sept. 2016 Memorandum, Att. 5, at 3.

The Service's September 2016 Frequently Asked Questions echoed this conclusion, reiterating that the Service is "moving forward with the belief that the red wolf remains a listable entity." U.S. Fish & Wildlife Serv., *Frequently Asked Questions: Red Wolf Recovery Program Review* 1, 5 (Sept. 2016), Attachment 11. These recent determinations by the Service are buttressed by the conclusions of a workshop of scientists and policy experts that the ESA protects the red wolf under any of multiple competing theories about its genetic history. USFWS Sept. 2016 Memorandum, Att. 5, at 2 ("[T]he majority of the group concluded that the red wolf is a listable entity under the ESA."). The group, convened by the Service, considered different theories about the genetic history of the red wolf and "all workshop participants recognized the logical and credible path that would lead them to conclude that the red wolf is a listable entity under the ESA." *Id.*; *see also* Workshop Planning Team, *Draft Executive Summary: Workshop on Interactions of Human-Caused Mortality, Genetic Introgression, and Management among Wild Red Wolves: Developing Scientific Consensus* (workshop held May 24-26, 2016), Attachment 12 ("Under the three hypotheses that have scientific evidence . . . there was unanimous support by the participants for the red wolf to be a listable entity."). As recognized by the Service throughout the history of the Red Wolf Recovery Program, the best available science classifies the red wolf as a listable species under the ESA.

Notably, the type of evidence produced in 2016 is not significantly different from that the Service has rejected previously, e.g. 90-Day Finding for a Petition to Delist the Red Wolf, 62 Fed. Reg. 64,799 (1997); Finding on a Petition to Delist the Red Wolf (Canis rufus), 57 Fed. Reg. 1246 (1992), and there is no reason for the Service to change course now. In the 2007 status review, the Service acknowledged some disagreement among scientists as to the proper taxonomic classification of the red wolf, 2007 Status Review, Att. 2, at 9-10, but nonetheless reaffirmed that the red wolf is a unique species according to the best available science. *Id.* at 6, 9; Appendix C to 2007 Status Review ("In our discussions with lead scientists involved in wolf taxonomy, there exists consensus that the red wolf is a natural entity worth conserving under the U.S. Endangered Species Act.").

## III. The Red Wolf Should Remain Categorized as Endangered.

Just as the Service should not reverse course on considering the red wolf as a species that qualifies for listing under the ESA, it should also not reverse its endangered determination. As noted above, under Section 4 of the ESA, the Service looks to certain enumerated factors to determine, based on the best available science, whether a species should receive protection under the ESA. The two factors of "the inadequacy of existing regulatory mechanisms" and "other natural or manmade factors affecting [the species'] continued existence" clearly apply to the circumstances currently facing the red wolf and demonstrate that the red wolf continues to be endangered. 16 U.S.C. § 1533(a)(1)(D)-(E).

This is consistent with the Service's 2007 status review, which determined that the red wolf—then with a wild population of more than 100—continued to warrant endangered status under the ESA. 2007 Status Review, Att. 2, at 34 (recommending no change in endangered classification). With a wild population now estimated at less than half that number, the red wolf population is in an even more dire state than it was in 2007, cementing the appropriateness of continued endangered status for the red wolf. The best available science establishes that the red wolf remains endangered and in need of ESA protections.

### A. The Service's Own Population Study Shows the Red Wolf is in Crisis.

In June of 2016, a team of scientists commissioned by the Service released a study evaluating the viability of the captive and wild red wolf populations. Using a computer model, the scientists projected the long-term genetic and demographic future of the red wolf populations under different management scenarios, including the "baseline" or status quo. Lisa J. Faust, et al., Lincoln Park Zoo, *Red Wolf (Canis rufus) Population Viability Analysis – Report to U.S. Fish and Wildlife Service* 4 (June 10, 2016) [hereinafter "PVA"], Attachment 13. The PVA confirms the current critical state of the wild red wolf population, warning that the wild population of red wolves has a 100% probability of extinction in as few as 8 years if management is not changed. *Id.* at 15-17.[1] The analysis was based on a population of 74 wild animals, not the more recent count of 28 known wolves, USFWS Sept. 2016 Memorandum, Att. 5, at 6, and as noted by the study's authors, extinction of the wild population "will likely occur earlier than this timeframe" in light of the outdated population estimates, PVA, Att. 13, at 3. Moreover, the PVA "does not incorporate any requests to remove wolves from private land or

[1] The model analysis showed a range of 8-82 years until extinction, with a median of 37 years.

more recent trends (2015 and 2016) in mortality and reproductive rates," *id.* at 28, as discussed above.

When the PVA states that extinction in the wild is expected if management is not changed, some of the measures it is referring to are red wolf reintroductions and coyote sterilizations, both forms of adaptive management that were discontinued in 2015. For years, these measures were considered essential to the conservation of the wild population. In particular, the Red Wolf Recovery Program's adaptive management program employed coyote sterilization techniques and the "placeholder theory" to successfully reduce coyote-red wolf hybridizations and to prevent further coyote intrusion into the Recovery Area. *E.g.* U.S. Fish & Wildlife Serv., *Red Wolf Recovery Program 2nd Quarter Report (January – March 2014)* at 2, Attachment 14; Eric M. Gese & Patricia A. Terletzky, *Using the "Placeholder" Concept to Reduce Genetic Introgression of an Endangered Carnivore*, Biological Conservation, Dec. 2015, at 11, 18, Attachment 15 ("Results from this experiment demonstrate the utility of the placeholder concept to limit genetic introgression into the red wolf population."); Justin H. Bohling et al., *Describing and Developing Hybrid Zone Between Red Wolves and Coyotes in Eastern North Carolina, USA*, 9 Evolutionary Applications 791, 793 (2016), Attachment 16 ("This program has been successful in limiting hybridization and preventing genetic swamping."). In 2014, the Service observed the success of this adaptive management protocol in managing coyotes, stating, "adaptive management efforts are making progress in reducing the threat of coyotes to the red wolf population in northeastern North Carolina." U.S. Fish & Wildlife Serv., *Red Wolf Recovery Program 2nd Quarter Report (January – March 2014)*, Att. 14, at 2.

Despite the findings of the PVA itself, on September 12, 2016, the Service announced its intention to curtail efforts to recover the wild red wolf population and instead focus on growing the captive breeding population of red wolves. USFWS Sept. 2016 Memorandum, Att. 5. To support that decision, the Service erroneously claimed that the PVA showed that the captive population of red wolves is not "secure" and based a proposal for the future of red wolf recovery on an unsupported theory that the captive population of red wolves is not "secure" and is "unable to sustain itself in the foreseeable future." *Id.*at 3. These contentions are entirely unsupported.

In response, the scientists who conducted the PVA wrote a letter to the Service to address the "many alarming misinterpretations of the PVA [used] as justification" for the Service's proposal to take the red wolf population off of private lands and back into captivity. Letter from Lisa Faust et al., to Cynthia K. Dohner, U.S. Fish & Wildlife Serv. 1 (Oct. 11, 2016), Attachment 17. The letter highlighted that "[t]he most conspicuous misinterpretation of these results in the USFWS decision is focused on the SSP – that 'the species is not secured in captivity' and that 'with no changes to current management, the species will likely be lost within the next decade.'" *Id.* The authors explicitly noted that the captive population is "under no risk of extinction," and that the Service's selected course of action will almost certainly result in extinction of the wild red wolf population. *Id.* at 1-2.

Properly characterizing and applying the results of the PVA is imperative to the conservation and recovery of the red wolf. This study represents some of the best available science about the captive and wild red wolf populations and shows several paths forward for

growing both populations. PVA, Att. 13, at 28-32. There are many management options available to the Service to conserve and recover the wild red wolf population, but continuing under the status quo approach—or the approach recommended by the Service in its September 2016 memorandum—will ensure extinction of the wild red wolf population.

**B. The Wild Red Wolf Population Is "Essential" Under Section 10(j).**

The PVA also focused on the need to manage the wild population and the captive population as one unit. The PVA noted that both the captive and wild populations "are small and will face rising inbreeding levels," but found that managing the two populations together as a single metapopulation can prevent inbreeding and enhance genetic diversity of the red wolf species as a whole. *Id.* at 30. The red wolf must be actively managed, and going forward, "all red wolves will need to be treated as a metapopulation, with occasional movement between the SSP and NENC, and perhaps other populations if they are established, to manage declining gene diversity given its small founding population." *Id.* at 4.

Pursuant to the PVA's recommendation that the red wolf population be managed as one unit, the Service can no longer claim that the last remaining wild red wolf population is "nonessential" to the species' continued existence. When the Service first listed the red wolf as endangered under the ESA, it chose to label the wild population as "nonessential" because the Service believed the species was "fully protected in captivity," and "all animals released into the wild can be quickly replaced through captive breeding." 51 Fed. Reg. 41,790; *see also* 2007 Status Review, Att. 2, at 26. This 30-year old understanding of the distinction between the captive and wild populations clearly conflicts with the best available science. As discussed in detail in the PVA, the best way to ensure optimal genetic diversity of the red wolf—and by extension, a healthy, viable population—is "to manage the population in the long-term as a metapopulation, with migrants [either animals or sperm] . . . in both directions [captive to wild and wild to captive] to maximize and manage gene diversity and inbreeding in both populations." PVA, Att. 13, at 30. The study also emphasizes the importance of the wild population to the red wolf species as a whole, noting that if extinction of the wild population occurred, it

> would not just be about numbers, but would also represent the loss of behaviorally competent wild wolves on the landscape; creation of future populations at NENC or elsewhere would have to start from scratch and rebuild that behavioral competence again, and would likely experience higher mortality and lower reproductive rates as it worked to re-build that competence.

*Id.* at 28; *see also* 2007 Status Review, Att. 2, at 17 ("Wild born red wolves showed higher survival than captive born or island born red wolves.").

The Service's treatment of the wild red wolf population as non-essential also conflicts with the ESA and legislative intent. Section 10(j) of the ESA governs the reintroduction of threatened or endangered species into portions of their historic ranges. 16 U.S.C. § 1539(j)(2)(A); 50 C.F.R. § 17.81(a). Under Section 10(j) of the ESA, a reintroduced population of a threatened or endangered species must be designated as essential or nonessential

experimental, according to whether the population is necessary "to the continued existence" of the species. 16 U.S.C. § 1539(j)(3); 50 C.F.R. § 17.81(c)(2). The protections of the ESA vary according to the essential or nonessential designation, with essential populations receiving the full ESA protections given to species listed as threatened under the Act. 16 U.S.C. § 1539(j)(2)(C). Members of an experimental nonessential population are "treated as threatened species" under the ESA, except that critical habitat may not be designated, and the typical ESA Section 7 consultation requirements apply only when the population "occurs in an area within the National Wildlife Refuge System or the National Park System." 16 U.S.C. § 1539(j)(2)(C). While Section 10(j) provides the Service with flexibility in its management of experimental populations, such populations must still be managed so as to "further the conservation of [the] species." 16 U.S.C. §§ 1533(d); 1539(j)(2)(A); 50 C.F.R. § 17.81(b).

Contrary to the Service's refrain that the wild population is nonessential because of the existence of the captive population of red wolves, legislative history makes clear that the question is whether the reintroduced population is essential to the continued existence of the species *in the wild*. The Joint Explanatory Statement between the House and Senate regarding the addition of Section 10(j) to the ESA is explicit on this point: "In making the [essential/nonessential] determination, the Secretary shall consider whether the loss of the experimental population would be likely to appreciably reduce the likelihood of survival of that species *in the wild.*" H.R. Conf. Rep. 97-835 (1982) *reprinted in* 1982 U.S.C.C.A.N. 2860, 2875 1982 WL 25084.

Under this standard, the loss of the only wild population of red wolves in the world would undoubtedly "appreciably reduce the likelihood of survival" of the red wolf in the wild. As the wild population shrinks, the remaining wild red wolves become even more essential to the continued existence of the red wolf in the wild. The concern about the difficulty of "starting from scratch" is more true now than when the red wolf was first reintroduced in 1987, as coyote populations have expanded across the eastern United States, and as more land has been developed and inhabited by human populations. As the Service considers future reintroduction sites, having "behaviorally competent" wild red wolves will prove essential to the success of such reintroductions.

Recovery of the red wolf may eventually be possible through management of red wolves in the wild, but it will never be possible if the species is allowed to survive only in captivity. Thus, to terminate the only known wild red wolf population would be to terminate any chance of recovering this species. This decision could have significant precedential impact for species reintroductions and general species recovery efforts nationwide. As the Service completes the five-year status review for the red wolf, we urge the Service to reevaluate the status of the wild red wolf population and reclassify the wild population as essential.

## IV. The Red Wolf 10(j) Rule Must be Changed to Provide for the Conservation of the Species.

As described above, the red wolf is critically endangered and the Service must provide for its conservation. In order to do so, the Service must resume the successful management protocols it employed in the past, and must revise the special red wolf rule to better protect and

grow the wild red wolf population. In conducting its five-year status review, the Service must evaluate "the inadequacy of existing regulatory mechanisms"—which includes the current red wolf rule—and how a new rule can better conserve the red wolf, including protecting the red wolf against "other natural or manmade factors affecting [the wolf's] continued existence." *See* 16 U.S.C. § 1533(a)(1)(D)-(E). As discussed below, the red wolf rule must be significantly revised in order to address current threats to the species.

Congress designed the ESA to ensure the conservation of listed species, including the red wolf. *See* 16 U.S.C. § 1531(c)(1) ("It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this chapter."); *id.* § 1533(d) (requiring USFWS to "provide for the conservation" of listed species); *id.* § 1536(a)(2) (requiring federal agencies to ensure their actions are "not likely to jeopardize the continued existence of any endangered species or threatened species"). "Conservation" is defined by the ESA to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary." 16 U.S.C. § 1532(3). Since experimental populations are treated as threatened species in most circumstances, 16 U.S.C. § 1539(j)(2)(C), the red wolf rule must comply with the substantive standard of ESA Section 4(d) "to provide for the conservation of" listed species. 16 U.S.C. § 1533(d), 50 C.F.R. § 17.82. Rules issued pursuant to section 10(j) are "by definition the promulgation of the protective regulations for the species pursuant to the authority of ESA section 4(d)." *Defenders of Wildlife v. Tuggle*, 607 F. Supp. 2d 1095, 1116-17 (D. Ariz. 2009) (holding that the Service has a non-discretionary duty to ensure that the final rule for reintroduction of Mexican wolves "provides for the conservation" of the species). While "USFWS has discretion to issue the regulations it deems necessary and advisable, [] the regulation *shall* provide for the conservation of such species." *Id.* (emphasis added). *See also Red Wolf Coal. v. United States Fish & Wildlife Serv.*, 2016 WL 5720660, Att. 10, at *5.

The red wolf rule and its implementation must be designed to foster, not restrict, the existing wild red wolf population[2] including resuming regular reintroductions of red wolves into the northeastern North Carolina wild population of red wolves. An updated red wolf rule must also address anthropogenic causes of red wolf mortality, including gunshot deaths and the effects of lethal and non-lethal removals of wild red wolves. Reducing "the portion of red wolf mortality attributed indirectly or directly to humans" was identified as an "immediate" need for red wolf recovery in the 2007 status review. 2007 Status Review, Att. 2, at 34. Yet, in recent years, the Service has taken actions that directly and indirectly contribute to greater harmful anthropogenic effects on wild red wolves.

[2] We note that the Service's recently announced proposed changes to the red wolf rule, *see* USFWS Sept. 2016 Memorandum, att. 5, do the direct opposite of protecting and expanding the existing wild red wolf population. We oppose this approach as being contrary to the best available science and contrary to the ESA, and we will comment as such on any future rulemaking taking this approach.

### A. Revised Red Wolf Rule Must Reduce Anthropogenic Mortality.

The results of a recent study underscore the importance of addressing anthropogenic causes of red wolf mortalities. The study examined the causes of red wolf deaths from 1987 to 2013 and found that "[a]nthropogenic causes of death accounted for 73% of red wolf mortality," and the "proportion of mortality attributable to anthropogenic causes increased over time." *E.g.* Joseph W. Hinton et al., *Survival and Population Size Estimates of the Red Wolf*, 81 J. of Wildlife Mgmt. __, at 6 (Dec. 2016) [hereinafter "Hinton et al., *Effects of Anthropogenic Mortality*"] Attachment 18. In turn, the proportion of those human-caused deaths attributable to gunshot increased over time. *Id.* Gunshot mortalities, as well as other human-caused mortalities, have a ripple effect on the red wolf population by increasing the likelihood of coyote hybridization events. Joseph W. Hinton et al., *Effects of Anthropogenic Mortality on Critically Endangered Red Wolf Canis Rufus Breeding Pairs: Implications for Red Wolf Recovery*, Oryx, Oct. 2015, at 1, 5, Attachment 19; Justin H. Bohling & Lissette P. Waits, *Factors Influencing Red Wolf-Coyote Hybridization in North Carolina, USA*, Biological Conservation, Apr. 2015, at 108, 113, Attachment 20. The Service has recognized the detrimental effects of gunshot mortalities on the red wolf population as a whole, stating "[w]hen gunshot reduces the existing or potential number of wolves, the [wild population] suffers reduced ability to hold and defend territories against coyotes, sometimes allowing interbreeding." 2007 Status Review, Att. 2, at 28-29. Despite recognizing the importance of addressing gunshot mortalities, the Service has done little to address this threat to the red wolf population. Moreover, the recent rise of Service-sanctioned lethal and nonlethal removals likely have the same fundamental population effects as gunshot mortality by tearing apart breeding pairs and reducing the number of wolves on the landscape to defend against coyotes.

Reducing gunshot and other human-caused mortalities must also be supplemented with an adaptive management program to further prevent red wolf-coyote hybridization and loss of red wolf-held territory to coyotes. In the 2007 status review, the Service lauded the effectiveness of its adaptive management program. 2007 Status Review, Att. 2, at 10-11 ("We have effectively reduced inbreeding and coyote gene introgression using the adaptive plan and associated non-invasive techniques, all with assistance from scientists on the Red Wolf Recovery Implementation Team."); *id.* at 31 ("Our adaptive management and monitoring efforts prior to 2006 effectively reduced the number of coyotes on the Albemarle Peninsula where the red wolf NEP occurs."). The Service went on to explain that coyote numbers increased in 2006 and 2007, partially as a result of losses of red wolves to gunshot. *Id.* The Service concluded that "management of eastern coyotes on the Albemarle Peninsula continues to be necessary to further reduce the threat of coyote gene introgression into the red wolf NEP." 2007 Status Review, Att. 2, at 32.

This need to manage coyotes continues to be true, yet the Service inexplicably halted such efforts in 2015. A review of the best available science demonstrates that coyote sterilization and utilization of the placeholder theory has and can continue to reduce coyote hybridization events. Bohling et al. (2016), Att. 16, at 801; Eric M. Gese et al., *Managing Hybridization of a Recovering Endangered Species: The Red Wolf Canis Rufus as a Case Study*, 61 Current Zoology 191, 200 (2015), Attachment 21 (discussing "success of RWAMP at limiting introgression of coyote genes" and characterizing sterilization of coyotes and hybrids as "critical components" of adaptive management). Moreover, research has also shown that hybridization

between red wolves and coyotes is not as widespread as is often thought, which suggests that the threat of coyote introgression may not be as severe as previously thought. *E.g.* Bohling et al., Att. 16 at 798 ("Based on our results, hybridization between red wolves and coyotes is infrequent relative to the proportion of the parental groups in the landscape."); Gese et al., Att. 21, at 200 (estimating an average ancestry of 96.5% for "all known, reproductively intact red wolves and introgressed individuals in the recovery zone in 2014"); Bohling & Waits (2015), Att. 20, at 112 (observing 30 hybrid litters and 126 red wolf litters from 2001 and 2013); Justin H. Bohling and Lisette P. Waits, *Assessing the Prevalence of Hybridization Between Sympatric Canis Species Surrounding the Red Wolf (Canis Rufus) Recovery Area in North Carolina*, 20 Molecular Ecology 2142, 2150 (2011), Attachment 22. (finding limited coyote-red wolf hybrids outside of the Red Wolf Recovery Area). Additional adaptive management techniques, such as selectively breeding red wolves to be larger in size and thus less likely to pair with coyotes, could be employed to further reduce coyote-red wolf hybridization. *See generally* Joseph W. Hinton & Michael J. Chamberlain, *Morphometrics of Canis taxa in Eastern North Carolina*, 95 J. of Mammalogy 855 (Aug. 2014), Attachment 23; Joseph W. Hinton, Ph.D. Dissertation, *Red Wolf (Canis Rufus) and Coyote (Canis Latrans) Ecology and Interactions in Northeastern North Carolina*, University of Georgia (2014), 162-178, 180, Attachment 24.

As the wild red wolf population grows and stabilizes, it would likely be able to better withstand the encroachment of coyotes into red wolf territories, and in turn, further reduce potential hybridization events. Joseph W. Hinton et al., *Space Use and Habitat Selection by Resident and Transient Red Wolves (Canis Rufus)*, PLoS ONE, Dec. 21, 2016, at 1, 13-14, Attachment 25 ("The findings from our study suggest that if the red wolf population increases and saturates the Recovery Area, the available space for coyotes would diminish and the number of transient wolves frequenting marginal habitats would increase. In doing so, transient red wolf would likely disrupt coyote territories in marginal habitats while biding for opportunities to acquire territories and mates.").

The wild red wolf population is at a crisis point, but it is not beyond hope. Recent science demonstrates there are multiple options for the future of the wild red wolf population. For example, the PVA identified 13 different modeled scenarios under which the wild red wolf population would have less than a 10% probability of extinction. PVA, Att. 13, at 28. These scenarios include varying levels of allowable mortality and increased breeding, highlighting that a variety of management approaches could be applied to recover and grow the wild population. *Id.*

### B. A Revised Red Wolf Rule Must Ensure USFWS Management Provides for the Conservation of the Species.

As noted above, the PVA expressed concern about shifts in management such as terminated programs for red wolf reintroductions and sterilization of coyotes, but it did not consider lethal and non-lethal removals. Lethal and non-lethal removals of red wolves have expanded dramatically in recent years and recently led to the preliminary injunction of such activities in *Red Wolf Coal. v. U.S. Fish & Wildlife Serv.*, No. 2:15-cv-00042-BO (E.D.N.C.

Sept. 29, 2016), 2016 WL 5720660, at *8, Att. 10.[3] Beginning in 2014, the Service departed from its long-standing, conservation-minded interpretation of the red wolf rule in favor of an interpretation of the rule designed to allow for unprecedented removals of wolves from private lands. Previously, the Service interpreted the take authorization and removal request provisions of the red wolf rule, 50 C.F.R. § 17.84(c)(4)(v), (c)(10), to apply only to "problem wolves." Service staff thought this interpretation was most consistent with the best available science about the impacts of removals on the red wolf population, as well as most consistent with the ESA's conservation mandate.

In the past few years, however, the Service began interpreting and applying the red wolf rule so as to facilitate broad-scale removal of red wolves from private lands. By October of 2014, the Service had received more than 400 removal requests. While not all of these requests resulted in the removal of wolves, many did, and the steady stream of removal requests continued. For example, in December of 2015, Service staff were investigating a removal request that would have resulted in the removal of up to 20 wolves—nearly half of the red wolf population at that time. Service documents demonstrate that when removed from the wild, the wolves are held in captivity for weeks or months at a time before being released back into the wild at a location far from the home territory from which the wolves were removed.

This detrimental practice has harmful effects on the wild red wolf population: packs are disrupted, pups and mates are left abandoned and confused by the removed wolf's absence, and the removed wolf is at a higher risk of mortality when released back into the wild. A mate left behind is more likely to hybridize with a coyote, and territory previously successfully defended by the removed wolf may be ceded to invading coyotes. Bohling & Waits (2015), Att. 20, at 113 ("Ultimately, it appears that hybridization events tend to follow the disruption of stable breeding pairs of wolves, frequently due to anthropogenic actions such as gunshot mortality."); Gese & Terletzky, Att. 15, at 17. It stands to reason that the smaller the red wolf population becomes, the greater impact these removals will have. For example, the Service currently estimates as few as three breeding pairs of wolves remain in the wild, USFWS Sept. 2016 Memorandum, Att. 5, at 6; removing one of these six key animals could reduce the number of pups in the next season by one third—and would have domino effects of leaving behind a disoriented pack and mate.

In addition to ramping up its removal efforts, in 2014 the Service issued the first ever written authorization for a private landowner to kill a red wolf with no evidence of any problem behavior by the wolf in question. This landowner refused to allow Service personnel on his property, and the Service did not attempt to capture the wolf otherwise. Instead, the Service determined that "given our other staffing commitments and lack of access to actively trap on the property . . . we are foreclosed from pursuing the animal on your property and in that sense must abandon efforts to capture and relocate the animal ourselves." The Service subsequently "renewed" this same take authorization on September 23, 2014 and again on April 27, 2015, apparently without first attempting to trap any wolves on or near the property in question.

[3] On September 29, 2016, the U.S. District Court for the Eastern District of North Carolina entered a preliminary injunction ordering the Service to stop removing or killing wild red wolves, either directly or by authorization to private landowners, without first demonstrating that such red wolves pose a threat to human safety, livestock, or pets. *Red Wolf Coal. v. U.S. Fish & Wildlife Serv.*, 2016 2016 WL 5720660, at *8.

This new interpretation of the red wolf rule's take authorization provision—allowing take authorizations for non-problem wolves—resulted in the death of at least one key member of the red wolf population in 2015. In that case, the Service issued an authorization to a landowner, who barred the Service from accessing his property, to kill a red wolf that had not exhibited any "problem" or "offending" behavior. The landowner shot and killed the wolf on June 17, 2015. The wolf was a denning mother wolf that previously had mothered a total of 16 pups through four separate litters.

Shortly after the mother wolf was killed pursuant to written authorization from the Service, the Service announced it would take further steps to abandon red wolf recovery. In June 2015, the Service declared that it was both ending the reintroduction of red wolves into the wild and ending the adaptive management plan that had been so crucial to the success of the red wolf reintroduction.

USFWS's lethal and non-lethal removals of red wolves – and permitting of landowners to trap and shoot wolves on their property – have directly contributed to the catastrophic decline of the red wolf population. Immediate and explicit amendment of the red wolf rule to clarify that lethal and non-lethal removal of "problem wolves" is what is intended and provided for by the rule – as had been interpreted for most of the history of red wolf reintroduction – is necessary to ensure that the red wolf rule provides for the conservation of the species, as required by the ESA. A revised rule must also clarify that wolf removals will only be conducted by USFWS staff allowed to enter private property. Any landowner that does not allow USFWS staff to enter their property to respond to their request, will not be allowed an exemption from the ESA to conduct their own removals.

In addition, the rule should be amended to explicitly provide for the Service's previous species recovery activities including the release of captive wolves into the wild population, coyote sterilizations, and red wolf pup fostering to fully satisfy ESA requirements. *E.g.* Hinton et al., *Effects of Anthropogenic Mortality*, Att. 18, at 10 (describing multiple management strategies necessary to "ensure long-term persistence of red wolves").

Last but not least, in undertaking these revisions, the Service must undergo comprehensive analyses provided for by the ESA and the National Environmental Policy Act to ensure that its revised rule provides for the recovery of this highly imperiled species. The science and management knowledge developed during the Service's nearly thirty years of experience with predator reintroduction efforts and the red wolf, in particular, must inform this rulemaking to ensure that the ESA's requirement to provide for the conservation of the species is fully complied with.

## V. Conclusion

The red wolf is one of the world's most endangered species, and is in danger of going extinct in the wild for a second time. The Service should use the current status review process as an opportunity to re-evaluate its recent decisions and management changes regarding the red wolf and bring its efforts back in line with the conservation mandate of the ESA. We appreciate this opportunity to provide comments and additional information on the red wolf status review.

Sincerely,

Sierra B. Weaver
Senior Attorney

Ramona H. McGee
Associate Attorney

cc (via e-mail, w/attachments):

Leo Miranda, Assistant Regional Director, USFWS
Pete Benjamin, Field Supervisor, USFWS