

Life Atop the Food Chain: A Red Wolf Story

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I. Introduction

There was a time when mankind was not the most influential predator to shape the world's ecosystems. But as mankind's dominance has become increasingly prevalent, impacting even the most remote corners of the globe, it is clear that time has passed. Many studies have documented the effects people have had on their environment and nature in general; this paper seeks to illuminate a less frequently explored topic.

There are three separate but related topics this paper will discuss. Using a wealth of scientific research, the first goal of this paper is to demonstrate briefly the importance of Apex predators to an ecosystem. Apex predators long have been hunted across the United States, as well as around the world. Only relatively recently have scientists begun to determine the effects their absence has had on each ecosystem. The second topic explores a theoretical situation: the potential reintroduction of cougars to the Great Smoky Mountains National Park ("GSMNP") by the US Fish and Wildlife Service ("FWS") and the National Park Service ("NPS"). To do this the agencies must consider many factors such as effective breeding population, human interaction, and restriction of movement outside of public property. The third topic this paper will incorporate includes recent developments and relevant history of the red wolf in Eastern North Carolina. The FWS has been evaluating whether to continue the Red Wolf Recovery Program ("RWRP"), releasing a report from The Wildlife Management Institute ("WMI") in November 2014 which suggested many changes to the current management of the program.¹ Final

¹ WILDLIFE MGMT. INST., A COMPREHENSIVE REVIEW AND EVALUATION OF THE RED WOLF (CANIS RUFUS) RECOVERY PROGRAM (2014) [hereinafter WILDLIFE MGMT. INST.].

determinations have been postponed until summer 2016.² With a theoretical eye towards cougar reintroduction, much can be gleaned from how North Carolina has proceeded with the legal issues that have arisen during its' 28 years' experience with the RWRP.

II. Apex Predators and Trophic Cascades

To understand the importance of a top predator to the health of an ecosystem, it is first necessary to establish how to catalogue the effects of either their presence or absence. Apex predators come in all shapes and sizes but there is one characteristic that they all share, making prey nervous.³ Conservation biologists have determined that a predator's impact goes far beyond keeping prey numbers down; their absence also changes the way prey acts.⁴ This change can have debilitating effects on other plant and animal species in the ecosystem.⁵ The term scientists use to describe these continuing effects is 'trophic cascade'.⁶ Many studies have documented the effects of trophic cascades and the absence of keystone species or apex predators. However, around most of the eastern United States they have been missing since before scientists began observing the environment at an ecosystem level.⁷ Recent reintroduction efforts, such as gray wolves into Yellowstone National Park, have provided scientists the perfect way to evaluate their impacts despite broad publicity.⁸

As mentioned above, a predator's presence can impact both flora and fauna. In the case of the wolf reintroduction in Yellowstone, there have been measurable impacts on both plants

² U.S. FISH & WILDLIFE SERV., *Red Wolf Program Review*, <http://www.fws.gov/redwolf/evaluation.html> (last updated October 27, 2015) [hereinafter U.S. FISH & WILDLIFE SERV.].

³ JOHN TERBORGH & JAMES A. ESTES, *TROPHIC CASCADES* 1-3 (John Terborgh et al. eds., 1st ed. 2010).

⁴ *Id.* at 1-4.

⁵ *Id.* at 2-3.

⁶ *Id.* at 1.

⁷ WILLIAM STOLZENBURG, *WHERE THE WILD THINGS WERE* 104-10 (1st ed. 2008).

⁸ William J. Ripple & Robert L. Beschta, *Trophic cascades in Yellowstone: The first 15 years after wolf reintroduction*, 145 *BIOLOGICAL CONSERVATION* 205, 205, (2011).

and animals.⁹ The primary effect was declining elk numbers, from over 15,000 at their peak in the early 1990's to an estimated 6,100 in 2010.¹⁰ This has had a drastic effect on plant life: young aspen groves and aspen leaders (newly sprouting trees) saw dramatic declines in browsing and an increase in average plant height.¹¹ The change in plant size and availability led to a rise in numbers for both beaver and bison.¹² Another study noted that wolf-driven declines in coyote populations led to a fourfold increase in the survival of juvenile pronghorn antelope.¹³ Even a fifteen year survey cannot measure all of the elements of an ecosystem, but it is capable of providing some meaningful results.¹⁴

Indeed, other small-scale studies drew similar conclusions to those taken from the Yellowstone reintroduction, with many focused on the impacts of excessive white-tailed deer populations. Heart's Content National Forest Scenic Area is a 120-acre grove of hemlock and white pine in Pennsylvania.¹⁵ H.J. Lutz conducted a comprehensive survey of the plant life within Heart's Content in 1929.¹⁶ Using that study, scientists found that half of the tree species were missing by the mid 1980's and over 80% of wildflower species were missing by the mid 1990's.¹⁷ This decline tracks with the boom in deer population that occurred through the mid and late 20th century.¹⁸ Studies undertaken by William McShea in the Shenandoah Mountains saw populations of gray squirrels, flying squirrels, chipmunks, and many other small mammals

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

¹³ Euan G. Ritchie & Cristopher N. Johnson, *Predator interactions, mesopredator release and biodiversity conservation*, 12 *ECOLOGY LETTERS* 982 (2009).

¹⁴ Ripple *supra* note 8.

¹⁵ STOLZENBURG *supra* note 7, at 107.

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.* at 103-05.

increase substantially when deer were fenced out.¹⁹ Similarly, both McShea and other researchers established a close connection between the forest's understory and the amount of songbirds, finding that where deer populations were greater than twenty per square mile, bird diversity dropped by nearly a third.²⁰ Finally, Cades Cove in GSMNP was once renowned for its abundance of wildflowers. However between 1970 and 2004, 46 species could no longer be found there.²¹ All of these studies support one conclusion: too many deer can have drastic ecological implications. Yet, their over-abundance does not hurt all species.

Some species flourish with deer around. In the Heart's Content Forest, the decline of the wildflower led to the rise of the hay-scented fern.²² Another beneficiary was Japanese Stilt Grass, an invasive grass species found nearly everywhere south of New Jersey.²³ But it is an animal whose proliferation is more concerning: the tick.²⁴ It is not the ticks themselves that are of concern, but the Lyme disease they often carry with them.²⁵ Since its emergence in 1975, Lyme disease has become the fastest-growing infectious disease in the United States.²⁶ Ticks often target deer for food, so the increase in deer population led to an increase in the amount of ticks.²⁷ But deer are only part of this story. The ticks actually get infected by preying on certain small mammals (such as mice, chipmunks, etc.).²⁸ The lack of wolves in the east has allowed the proliferation of coyotes from a lack of competition and an abundance of food.²⁹ Subsequently,

¹⁹ *Id.* at 111.

²⁰ *Id.*

²¹ *Id.* at 111-12.

²² *Id.* at 107.

²³ *Id.* at 115.

²⁴ *Id.* at 116-18.

²⁵ *Id.* at 116.

²⁶ *Id.*

²⁷ *Id.* at 115-16.

²⁸ *The Ecological Role of Wolves*, DEFENDERS OF WILDLIFE (2015), <http://www.defenders.org/places-for-wolves/ecological-role-wolves>.

²⁹ *Id.*

coyotes decreased the numbers of both turkeys and small predators, such as foxes.³⁰ This led to more small mammals of the sort that infect the ticks, prey usually targeted by foxes and not coyotes.³¹ In this way, the lack of an apex predator throughout the eastern and mid-western United States has contributed to the rise of Lyme disease through two different trophic cascades.³²

The economic implications from a deer population unchecked by apex predators go far beyond the ecological or medical implications previously discussed. When herds grow too large, they increasingly turn to orchards, nurseries, crops, and other landscaping.³³ Deer have been shown to prefer these agricultural crops over other wild food sources.³⁴ When concentrated, such browsing can cause severe economic loss.³⁵ What's more, deer are damaging not only crops but also cars and their drivers.³⁶ Insurance companies have tracked this data, recording approximately 1.23 million deer related car accidents between July 1, 2011, and June 30, 2012.³⁷ These accidents accounted for around \$4 billion in damages and 200 lost lives.³⁸ While excess deer populations exacerbated or created these adverse economic effects, the restoration of an apex predator is unlikely to resolve them entirely.³⁹

The previous discussions on Lyme disease and the pronghorn antelope in Yellowstone underscore the other major effect from the absence of apex predators in an ecosystem: the

³⁰ *Id.*

³¹ *Id.*

³² STOLZENBURG *supra* note 7, at 116.

³³ IND. DEP'T. OF RES., *Managing Deer Damage*, <http://www.in.gov/dnr/fishwild/2718.htm> (last visited Oct. 16, 2015).

³⁴ *Id.*

³⁵ *Id.*

³⁶ STOLZENBURG *supra* note 7, at 117-118.

³⁷ *Car and Deer Collisions Cause 200 Deaths, Cost \$4 Billion a Year*, INS. JOURNAL (Oct. 24, 2012) <http://www.insurancejournal.com/news/national/2012/10/24/267786.htm>.

³⁸ *Id.*

³⁹ *See* STOLZENBURG *supra* note 7, at 115-119.

proliferation of the mesopredator.⁴⁰ In North America the most common example is the coyote, though others like the raccoon have benefited as well.⁴¹ The interactions between apex predators and mesopredators vary between case studies, but in most situations apex predators have exerted pressure on mesopredator populations in ways shown to be beneficial to the ecosystem.⁴² This particularly has been the case when the mesopredator traditionally did not inhabit the region, like the coyote in the eastern United States.⁴³

The incredibly complex and dynamic interactions of apex predator-based trophic cascades coupled with the economic and medical harm raised by the proliferation of mesopredator and prey species can be used to demonstrate both the ecological and monetary damage that results from the absence of top predators. No issue previously discussed can be fixed with uniform policy prescriptions because the primary issues and interactions will differ in every ecosystem. Despite the many variables and complex nature of these problems, the absence or presence of apex predators have demonstrably important effects on ecosystems.

III. The Cougar Comes Back to GSMNP

The *puma concolour*, also known as the cougar, historically had a range almost ubiquitous throughout the United States.⁴⁴ While recorded sightings of cougars never completely ceased in the eastern United States, the eastern cougar was listed on the initial Endangered Species Act of 1973 (“ESA”),⁴⁵ there has been no evidence of a sustainable, breeding population of cougars east of the Mississippi River outside of Florida.⁴⁶ Whether the recorded sightings are

⁴⁰ Richie *supra* note 13, at 982.

⁴¹ *Id.* at 993.

⁴² *Id.* at 991-92.

⁴³ *Id.* at 992.

⁴⁴ *About Cougars East of the Rocky Mountains*, COUGAR REWILDING FOUND., <http://www.cougarrewilding.org/pages/abouteasterncougars.htm> (last updated Jan. 1, 2013) [hereinafter COUGAR REWILDING FOUND.].

⁴⁵ *Id.*

⁴⁶ Corey Anco, *Habitat Suitability and Reintroduction Potential for Puma Concolour in the State of Georgia* (May 2011) (unpublished Masters thesis, Duke University) (on file with Duke University).

truly evidence of a substantial population is in dispute. Scientists, however, believe these are merely western cougars that have migrated.⁴⁷

There is even more controversy concerning the taxonomy of the different cougar sub-species around the United States.⁴⁸ The FWS lists five different sub-species of cougar: (1) the Florida Panther; (2) the eastern North American cougar; (3) the Wisconsin cougar; (4) the lower Colorado River cougar or Yuma Puma; and (5) the southernmost population in Central America.⁴⁹ While the FWS still recognizes these sub-species within *puma concolour*, evidence suggests that these distinctions were based on early and incomplete scientific data.⁵⁰ For all intents and purposes, there is only one sub-species of cougar across North America.⁵¹ Furthermore, the reintroduction of Texan cougars to the nearly extinct wild Florida Panther population demonstrates the closeness and adaptability of the supposedly distinct sub-species.⁵²

Changing the recognized taxonomy could work for or against the preservation or establishment of cougar subpopulations.⁵³ Some data finding the Yuma puma and Florida panther genetically indistinct,⁵⁴ suggests that the endangered panther population is expendable given the thousands of animals in other areas of the country.⁵⁵ However, the FWS has acted to protect subpopulations in the past, listing the eastern bald eagle and elk despite healthy western populations.⁵⁶ As far as reintroduction goes, this classification change could help by allowing the

⁴⁷ COUGAR REWILDING FOUND., *supra* note 44.

⁴⁸ Melanie Culver, *Lessons and Insights from Evolution, Taxonomy, and Conservation Genetics*, COUGAR: ECOLOGY AND CONSERVATION 27, 30 (2010).

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ E-mail from John Laundre, Carnivore Ecologist and VP, Cougar Rewilding Foundation, to author (Oct. 16, 2015) (on file with author) (hereinafter Laundre).

⁵² *Id.*

⁵³ *Id.*

⁵⁴ Culver *supra* note 48, at 27.

⁵⁵ *Id.*

⁵⁶ *Id.*

inclusion of any cougar sub-species, instead of only the presumably extinct eastern cougar, in an attempt to establish a viable wild population in GSMNP.⁵⁷

The provisions creating the NPS provide solid legal reasoning for any GSMNP cougar reintroduction program.⁵⁸ The NPS has been mandated not only to preserve current flora and fauna within national parks, but also to restore the ecosystem to the original flora and fauna from the disruptions of past human activities.⁵⁹ This rationale was the basis for reintroducing elk to GSMNP and should be equally applicable to the restoration of the cougar.⁶⁰

As mentioned in the previous section, all impacts on an ecosystem from reintroduction cannot be foreseeable, but some general effects can be inferred.⁶¹ Cougars co-evolved with deer, making them their natural prey.⁶² A cougar reintroduction would lead to changes in the browsing behavior of deer by forcing them to be more wary and browse less conspicuously.⁶³ This could lead to drastic changes in vegetation such as sapling and wildflower regeneration.⁶⁴ They also could affect the behavior of mesopredators such as coyotes, causing changes in their roaming and hunting techniques out of fear of being hunted themselves.⁶⁵ Beyond this, the impacts of the trophic cascade from cougar reintroduction in GSMNP becomes less predictable.

More research is needed to tailor a reintroduction program for GSMNP.⁶⁶ However, a general starting point likely would include only around twelve trial cougars, one male to three or four females, with the cougars initially in pens to acclimate to the area before release.⁶⁷ Isolating

⁵⁷ *Id.*

⁵⁸ E-mail from Chris Spatz, President, Cougar Rewilding Foundation, to author (Oct. 2, 2015) (on file with author).

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ E-mail from Chris Spatz, President, Cougar Rewilding Foundation, to author (Oct. 5, 2015) (on file with author).

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*; Laundre, *supra* note 51.

⁶⁵ Laundre, *supra* note 51.

⁶⁶ E-mail from Chris Spatz, President, Cougar Rewilding Foundation, to author (Oct. 2, 2015) (on file with author).

⁶⁷ *Id.*

the population to the confines of GSMNP presents an initial challenge, as previous reintroductions almost always led to some individuals entering private lands.⁶⁸ For this reason, an essential component to a successful reintroduction is effective public outreach focused on the dissemination of accurate information.⁶⁹ This issue will be discussed further in the next section.

While more research is needed, GSMNP could prove an ideal location to reestablish an eastern cougar population. There is both legal precedent and scientific support for such a reintroduction. Many obstacles remain, however, before any such project is feasible.

IV. Recent Developments with the NC Red Wolf Restoration Project

The red wolf's history in the United States has been tumultuous.⁷⁰ Wild red wolves were decimated in the early twentieth century, leading the species to be classified as endangered under the ESA.⁷¹ In 1980 the FWS deemed the red wolf extinct in the wild and began a captive breeding program.⁷² The RWRP began in 1987, reintroducing four captive-bred pairs of red wolves into the Alligator River National Wildlife Refuge in eastern North Carolina⁷³ with the goal of restoring the population to 220 animals in the wild with another 330 in captivity.⁷⁴ Red wolves currently occupy around 1.7 million acres across five counties (Dare, Tyrell, Hyde, Beaufort, and Washington) in eastern North Carolina.⁷⁵ The total wild population peaked in 2006

⁶⁸ E-mail from John Laundre, Carnivore Ecologist and VP, Cougar Rewilding Foundation, to author (Oct. 16, 2015) (on file with author)

⁶⁹ *Id.*

⁷⁰ See *Red Wolf Coal. v. N.C. Wildlife Res. Comm'n*, No. 2:13-CV-60-BO, 2014 U.S. Dist. LEXIS 65601, at *3-5 (E. D. N.C. May 13, 2014).

⁷¹ *Id.* at *3-4.

⁷² *Id.* at *4.

⁷³ *Id.* at *4.

⁷⁴ Mary Frances Patrick, *Destroying the Myth of the Big, Bad Wolf: Red Wolf Protection in Gibbs v. Babbitt*, 9 S.C. ENVTL. L.J. 253, 254 (2002).

⁷⁵ *Red Wolf Coalition*, 2014 U.S. Dist. LEXIS 65601, at 4.

with around 130 wolves.⁷⁶ However, the current population is estimated to be between 50 and 75 wolves, tracking increased mortality rates, largely by gunshot, and declining birth rates.⁷⁷

In order to reintroduce non-essential experimental populations of endangered species, the FWS establishes regulations unique to each program known as the 10(j) status, derived from section 10(j) of the ESA.⁷⁸ For the red wolves, this status helped ensure initial public support for the program while maintaining necessary protections.⁷⁹ Briefly in summation, it is illegal to take a red wolf except with a permit and a valid scientific purpose or under the following circumstances: (i) on private property, not intentionally or willfully, and when either that person's life or lives of others are threatened; (ii) on public property, incidental to lawful activities, and in defense of a person's own life or that of others; (iii) on private property when a wolf is in the act of killing livestock or pets; (iv) on private property, harassment of red wolves is allowed such that it is not physically injurious to the red wolf; and finally (v) on private property a take is allowed upon abandonment of project personnel efforts to capture the animal and subject to FWS project leader approval.⁸⁰ All of these exceptions require that the take be reported within 24 hours.⁸¹

The 10(j) designation and Congress' right to enforce it on private lands came under challenge in the case of *Gibbs v. Babbitt*.⁸² The court used the Commerce Clause in rejecting the plaintiff landowners' claims, thus affirming the federal government's right to regulate takings of 10(j) species on private lands.⁸³ The court found four sources of interstate economic activity

⁷⁶ Notice Letter from Sierra Weaver, Senior Attorney, Southern Environmental Law Center, to Sally Jewell, Sec'y, U.S. Dep't of Interior (Sept. 1, 2015) (on file with author).

⁷⁷ *Id.* at 4-5.

⁷⁸ Red Wolf Coal., 2014 U.S. Dist. LEXIS 65601, at *15-16.

⁷⁹ *Id.* at *17-18.

⁸⁰ *Id.* at *16-17.

⁸¹ *Id.*

⁸² Patrick *supra* note 74, at 257-58.

⁸³ *Id.* at 258.

regarding red wolves including a \$29.2 billion wildlife-related recreational industry, expansive scientific research, benefits to farmers for crops otherwise destroyed, and the potential for a renewed fur industry.⁸⁴ Further, the court held that wildlife within a state's borders is not owned by the state, "state control over wildlife is circumscribed and preempted by federal regulatory power,"⁸⁵ thereby falling into the overall federal scheme of protection under the ESA.⁸⁶ By using this reasoning, the *Gibbs* court upheld the right of the federal government to impose and enforce the 10(j) status on both state and privately owned lands.⁸⁷

A more recent development concerning red wolf takings was a preliminary injunction issued in the 2014 case of the *Red Wolf Coalition v. N.C. Wildlife Resources Commission*.⁸⁸ Unlike *Gibbs*, conservation groups, not private landowners, brought this suit after an increase in red wolf gunshot mortality and the introduction of nighttime coyote hunting in North Carolina, alleging that the Commission's actions propagated the illegal take of red wolves under the ESA.⁸⁹ Upon finding that a preliminary injunction was proper, the court enjoined coyote hunting within the five counties containing red wolves to the extent the 10(j) status allows.⁹⁰

The lawsuit then settled in an agreement containing a modified injunction.⁹¹ Coyote hunting on private land is allowed during the day and with a permit; also there is no closed season.⁹² On public land, coyote hunting is allowed during the day with a specific special hunt opportunity designation.⁹³ If two or more red wolves are shot within one year, coyote hunting on

⁸⁴ *Id.* at 258-59.

⁸⁵ *Id.* at 260.

⁸⁶ *Id.* at 253.

⁸⁷ *Id.*

⁸⁸ *Red Wolf Coal.*, 2014 U.S. Dist. LEXIS 65601, at *1.

⁸⁹ *Id.*

⁹⁰ *Id.* at *10-11.

⁹¹ Joint Motion for Modification of Preliminary Injunction, *Red Wolf Coalition v. Cogdell*, No. 2:13-CV-60-BO (E. D. N.C. Nov. 12, 2014).

⁹² *Id.*

⁹³ *Id.*

public land will be suspended for a year.⁹⁴ This modified injunction is subject to annual renewal.⁹⁵ This is currently in effect in the five counties containing red wolves.⁹⁶

After this injunction and at the behest of the N.C. Wildlife Resources Commission, the FWS contracted the WMI to conduct a program-wide review and evaluation of the RWRP.⁹⁷ WMI identified several issues with the current program, including but not exclusive to: the level of understanding regarding wolf taxonomy and hybridization, outdated and unrealistic expectations, poor overall program management, and a lack of necessary public outreach.⁹⁸ One of the biggest threats to red wolves is the encroachment of and interbreeding with coyotes.⁹⁹ To address this problem, the FWS has used a “placeholder” strategy—where coyotes near red wolf populations are sterilized and then returned to the area.¹⁰⁰ While a valid conceptual technique, WMI was found the FWS has not completed an analysis of this procedure despite using it for many years.¹⁰¹ Yet the red wolf taxonomy remains a valuable resources that needs to be protected.¹⁰² Private lands are required in order to maintain a large enough area to sustain a viable population, contradicting one of the initial expectations of the program.¹⁰³ While this is allowed under the ESA, it places further emphasis on the need for public outreach.¹⁰⁴

The WMI has identified certain areas of the program that need more emphasis in order to progress successfully: “regional review and oversight, private landowner relations, public

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ WILDLIFE MGMT. INST., *supra* note 1, at 2.

⁹⁸ *Id.* at 2-5.

⁹⁹ *Id.* at 2-3.

¹⁰⁰ *Id.* at 2.

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.* at 3.

¹⁰⁴ Interview with Sierra Weaver, Senior Attorney, Southern Environmental Law Center, in Chapel Hill, NC (Oct. 16, 2015).

education and outreach, and congressional, state, and local government relations.”¹⁰⁵ The lack of systematic oversight has led to many local approaches that have proven detrimental to the overall goals of the program.¹⁰⁶ More detrimental still has been the lack of public outreach and the deteriorating trust between different levels of government.¹⁰⁷ The need for public outreach was illustrated in the early fall of 2014 when the FWS received 228 letters over the course of several weeks, each requesting the removal of a red wolf.¹⁰⁸ After attempts to contact the requestors, 93% of the requests were dead-ends with no follow-up required.¹⁰⁹ Historically, most negative human-red wolf interactions are simply complaints about the wolves’ mere presence.¹¹⁰ These events highlight the public’s lack of access to accurate information.¹¹¹ Demonstrating the waning trust between levels of government, the N.C. Wildlife Resources Commission passed two resolutions concerning red wolves in January 2015.¹¹² The first called for the FWS to declare the red wolf extinct in the wild and terminate the reintroduction program.¹¹³ The second called for the FWS to remove all red wolves from private lands.¹¹⁴ These resolutions exemplify the growing divide regarding red wolf management between federal and state governments.

At the time of this writing, the Southern Environmental Law Center filed suit on November 13, 2015, regarding the RWRP,¹¹⁵ on behalf of their clients, the Red Wolf Coalition,

¹⁰⁵ WILDLIFE MGMT. INST., *supra* note 1, at 5

¹⁰⁶ *Id.* at 3.

¹⁰⁷ *Id.* at 4.

¹⁰⁸ E-mail from Pete Benjamin, Field Supervisor, U.S. Fish and Wildlife Serv., to Rebecca Harrison, U.S. Fish and Wildlife Serv. (Sept. 2, 2014).

¹⁰⁹ *Id.*

¹¹⁰ DAVID L. MECH & LUIGI BOITANI, WOLVES: BEHAVIOR, ECOLOGY, AND CONSERVATION 286-87 (2003).

¹¹¹ WILDLIFE MGMT. INST., *supra* note 1, at 4.

¹¹² Geoff Cantrell, *Wildlife Commission Passes Resolutions Regarding Red Wolves*, WILDLIFE RES. COMM’N (Jan. 30, 2015), <http://www.ncwildlife.org/Default.aspx?tabid=416&IndexId=10015>.

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ Complaint at 1, *Red Wolf Coal. v. US Fish & Wildlife Serv.*, No. 2:15-cv-00042-BO (E. Dist. NC Nov. 13, 2015).

the Defenders of Wildlife, and the Animal Welfare Institute.¹¹⁶ This claim asserts multiple allegations against the FWS and its recent actions, primarily twice authorizing the take of a non-offending red wolf on private lands after declaring efforts to capture abandoned, though only the second authorization was acted upon.¹¹⁷ The complaint first alleges that the FWS's efforts to capture the wolf were not sufficient, thus the abandonment of recovery efforts was premature and in violation of the 10(j) rules.¹¹⁸ In this case, efforts were abandoned after the FWS was denied access to the wolf by the landowner with no further substantive actions.¹¹⁹ Subsequent allegations concern how the FWS interprets regulations, such as the 10(j) rules, and not whether these actions were in violation of existing regulations.¹²⁰ Previously, a wolf could only be taken if it was deemed "offending". The FWS's actions in allowing a wolf to be taken without exhibiting "offending" behavior signals a new interpretation of the 10(j) rules.¹²¹ The complaint alleges that this new interpretation is in violation of the ESA by failing to administer the RWRP in furtherance of conservation purposes provided by the ESA and generally failing to provide for the conservation of red wolves.¹²² Furthermore, when reinterpreting regulations such as this, the FWS is required both to initiate a consultation to ensure the new interpretation is not likely to jeopardize the red wolf population, as provided under the ESA,¹²³ and file an Environmental Impact Statement ("EIS") pursuant to the National Environmental Policy Act ("NEPA"), which should examine how the new interpretation is likely to affect the red wolf population.¹²⁴ Neither of these were completed at the time suit was filed. Finally, the ESA requires the FWS to conduct

¹¹⁶ *Id.*

¹¹⁷ *Id.* at 1-3.

¹¹⁸ *Id.* at 97-101.

¹¹⁹ *Id.* at 100-01.

¹²⁰ *Id.* at 102-07, 113-30.

¹²¹ *Id.* at 103-05.

¹²² *Id.* at 102-07; *id.* at 113-18.

¹²³ *Id.* at 119-124.

¹²⁴ *Id.* at 125-30.

a five-year status review of endangered animals.¹²⁵ As the last such review of red wolves was conducted in 2007, the complaint alleges this constitutes a violation of the ESA.¹²⁶

As a culmination of the WMI report, the N.C. Wildlife Resources Commission's resolutions, and general unrest about the RWRP, the FWS is evaluating the program's efficacy and overall strategy with a final decision due in summer 2016.¹²⁷ The impact of the SELC's lawsuit on the results of this review is unclear.

V. Conclusion

While overly simplistic, here is how some of the law regarding red wolves could be applied to a potential cougar reintroduction. A central goal must be public outreach and education. These predators inevitably will venture on to private lands. How the public reacts to this depends on many factors such as: education of safety and risk issues, outreach to incorporate community goals, and legal classifications such as the 10(j) status. There is no perfect equation for any reintroduction, but an ongoing dialogue with regional communities must be an integral part of the process.

While it can be challenging to reintroduce apex predators, their benefits to trophic cascades within ecosystems can be hard to quantify. There are many reasons to pursue these options and many reasons to proceed only with the utmost caution. The RWRP is viewed as a model for reintroductions across the United States. However, recent developments reveal the importance of continued engagement with local communities, as shown by the increase in litigation regarding the RWRP. A cougar reintroduction to GSMNP could happen in the future, but only if local communities are on board every step of the way.

¹²⁵ *Id.* at 109.

¹²⁶ *Id.* at 110-12.

¹²⁷ U.S. FISH & WILDLIFE SERV., *supra* note 2.