

Red Wolf Recovery: Regulations and Private Lands in Northeastern North Carolina

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Introduction

The red wolf (*Canis rufus*) was once found throughout the eastern United States from the Atlantic Coast west to central Texas and from the Gulf Coast north to the Ohio River Valley and central New York (Nowak and Federoff 1996). Fear and misunderstanding resulted in indiscriminate killing and extensive predator control operations. The animal was also affected by landscape alterations that encroached on its habitat and favored the closely related coyote (*Canis latrans*), and by declines in prey populations caused by indiscriminate hunting (U.S. Fish and Wildlife Service 1990). McCarley (1962) first informed the scientific community that the red wolf was in serious trouble. The final, naturally occurring population of red wolves was found in a small coastal area of southeastern Texas and southwestern Louisiana (Riley and McBride 1972), where hybridization with coyotes and heavy parasite infestations edged the species toward extinction. The red wolf was listed as an Endangered Species in 1967 under provisions of the Endangered Species Preservation Act of 1966. In 1968, the U.S. Fish and Wildlife Service (Service) assigned a biologist to gather information on the status of and threats to the species. In anticipation of passage of the Endangered Species Act of 1973 (ESA), which was effective in December of that year, the Service completed a draft Red Wolf Recovery Plan and established a program to implement the plan in late 1973 (Carley 1975). The Plan's strategy was to preserve the species in its native habitat.

Field work demonstrating the extensive hybridization with coyotes resulted in redirection of the recovery program from one of local preservation to one of planned extirpation of the species in the wild, captive breeding, and reintroduction back into its historic range. Captive breeding actually informally began in 1969 when the first red wolf was placed in captivity at the Point Defiance Zoo and Aquarium (PDZA) in Tacoma, Washington. A cooperative agreement formalizing a captive-breeding program was consummated by the Service with PDZA in October 1973. PDZA constructed an off-site facility for red wolf

captive breeding in 1976 at Graham, Washington, and the first captive litter was born in 1977. From the fall of 1973 through July 1980, more than 400 wild *Canis* from the coastal area of Texas and Louisiana were captured and examined. Only 43 met morphological standards established for the species. Breeding experiments with these animals culminated in 14 founder animals that were the genesis of the current population (Carley 1975, Service 1990).

The first area proposed for reintroduction, in 1979, was Land Between the Lakes (LBL) in western Kentucky and Tennessee. Organized opposition from environmental, agricultural and hunting interests doomed the proposal, and brought to the Service's attention the need for extensive outreach efforts and a program that would minimize potential impacts to landowners. The lessons learned at LBL were used to our advantage beginning in 1984 during the consideration of the next reintroduction area in northeastern North Carolina. Since then, reintroductions have been designed to minimize impacts to landowners.

Study Area

Red wolves range over approximately 360,000 acres (146,000 ha) of publicly owned forests, swamps, marshes and pocosins in northeastern North Carolina. The public land is Alligator River, Pocosin Lakes, Mattamuskeet National Wildlife Refuges and some other public-owned property. There is regular visitation to these public lands that includes non-consumptive and consumptive activities. Hunting and trapping are legal on most of the public lands; in fact, Alligator River National Wildlife Refuge (ARNWR) is the only wildlife refuge in the nation that allows hunting deer with dogs.

Additionally, red wolves range over approximately 197,000 acres (79,000 ha) of private land. These properties are managed for various uses such as forestry, agriculture, wildlife conservation/hunt retreats and livestock production. Large outdoor livestock operations are not common practices in northeastern North Carolina; most livestock are in confinements.

Regulations

Prohibitions in the ESA against taking endangered species, except in defense of human life or as permitted for scientific or propagation purposes, or incidental to otherwise lawful activities under approved habitat conservation plans, led to difficulty in obtaining public approval and government agency cooperation in reintroductions of endangered species. The direction in the ESA

to establish critical habitat for such species and for federal agencies to not adversely modify such habitat also comes into play on private lands if an activity requires federal agency approval through a permitting process. Private landowners fear potential land use restrictions as a result of these prohibitions.

These concerns were addressed by amending the ESA in 1982 (P.L. 97-304) to provide for designating reintroduced populations as experimental. Under this designation, the reintroduced animals are treated as threatened species, for which prohibitions are established through regulations. This provides the flexibility to relax regulations to accommodate local situations. For example, regulations can allow the taking of an animal that is depredating livestock. Under the experimental designation, the Service must determine if the population is essential to the continued existence of the species. If the population is nonessential, critical habitat cannot be established, and only activities that may affect the species on National Wildlife Refuge and National Park System lands require consultation.

The regulations established in 1986 (50 CFR Part 17) for the experimental/nonessential population in northeastern North Carolina relaxed the standard prohibitions by allowing the taking of a wolf that constituted a threat to human safety or depredated domestic animals or personal property. In addition, although not addressed by regulation, the Service also implemented a policy to allow incidental taking resulting from otherwise lawful activities. Investigations of takings resulted in a realization that the term "incidental takings" was subject to different interpretations. In response to this realization, regulations were revised in 1995 (50 CFR Part 17) for private lands to allow harassment of wolves and take of wolves: 1) that are not intentional or willful; 2) that are in the act of killing livestock or pets; and 3) after efforts by project personnel to capture unwanted animals have been abandoned, provided that the Service has approved such actions in writing.

Red Wolves and Private Lands

In September and October 1987, four pairs of red wolves were released in ARNWR, and within months of the inaugural release, several wolves exhibited wide-ranging movements. As the wolves wandered off of the refuge and onto private land, Service personnel contacted the landowners. Relations with different landowners grew and matured, and we learned of their concerns regarding red wolves residing on their property. Although the experimental/nonessential designation addressed the land-use restriction issue, several individuals refused to allow wolves on their land for fear of the designation changing to endangered. These individuals did not trust the government and did not

want to take the chance of a future land-use restriction on their property. Fortunately, red wolves' predatory habits can occasionally annul some landowners' reluctance toward involvement with the government. It interests some farmers to know that red wolves prey on white-tailed deer (*Odocoileus virginianus*), which can decimate some agricultural crops and create deadly road hazards (Osborne 1995). Game management is a frequent practice in the recovery area, and the eggs of upland game birds are prey items for raccoons (*Procyon lotor*) (Kaufman 1982), another important prey item for the red wolf. The territoriality of red wolf packs may have a positive affect on landowners' attitudes toward wolf presence, given that wolf packs will likely limit the presence and distribution of coyotes (*Canis latrans*) (Johnson et al. 1996).

The first private land agreement for red wolf conservation was consummated in March of 1990, and by the end of the scheduled five-year experimental phase in 1992, of the 30 free-ranging red wolves, 20 (67 percent) resided on private lands and 10 (33 percent) resided on public lands. In the absence of a means to enable the wolf population to expand and continue to use these areas, the future of the red wolf in northeastern North Carolina would be compromised. We determined that the most functional tool for enlisting the needed support from private landowners was to compensate them financially for their involvement.

We utilized several mechanisms for incorporating private lands into red wolf recovery efforts, three of which require official documentation. They are the Memorandum of Understanding (MOU), the Lease and the Partner's Agreement; the Partner's Agreement and the Lease have provisions for monetary compensation. Of the mechanisms that require documentation, the Partner's Agreement is most effective because it is flexible and is enacted at the local level (Gilbreath and Phillips 1996).

Although the Partner's Agreements have met with some success, the most frequently used mechanism to integrate private lands into the Red Wolf Recovery Program is the verbal agreement (Table 1). Many landowners are simply not willing to enter an official agreement because they distrust the government or because they are not in need of the relatively small amount of money that the Service can provide. These verbal agreements are between the landowner or land manager and field personnel and vary in content. The one common factor that all verbal agreements include is that wolves may use the property; the variation lies in the degree and terms of Service accessibility to the property. Verbal agreements have proven to be a practical tool for this program and, most importantly, it is the tool that most landowners are comfortable using in partnership with the Service and the red wolf.

Table 1. Type, number, acreage and costs of private land involved in Red Wolf Recovery as of December 31, 1997.

Type of agreement	Number of properties	Approximate acreage	Cost per year
Memorandum of Understanding	1	16,000 (6500 ha)	0
Lease	1	3,200 (1,300 ha)	\$1,000
Partner's Agreement	6	44,000 (1,400 ha)	\$8,500
Verbal	14	133,400 (54,000 ha)	0
Totals	22	196,600 (79,600 ha)	\$9,500

Discussion

If Partner's Agreements become more widely used, cost may become an issue as federal budgets grow tighter each year. Therefore, it is imperative that participants are selected carefully. It is important to note, however, that unacceptably high numbers of participants have not been an issue to date. The two most important criteria for land involvement are how large the tract of land is and how valuable the habitat is for the wolf. We currently base cost of Partner's Agreements on a per acre (\$0.20 to \$0.25) basis, although other means such as location, habitat type and prior wolf use have been used to help assign cost.

The red wolf has been subject to several political events in the last four years which have had negative impacts on the private lands program. In 1994, following the passage of the controversial North Carolina House Bill 2006 which allowed landowners to use lethal means to take red wolves on their property, several wolves were shot and killed. Specifically, from November 1994 through December 1995, four red wolves were known to be shot illegally (three on private land and one on public land), whereas during the preceding seven years, only two wolves had been shot illegally (both on private land). In 1996 and 1997, no wolves were known to be shot illegally. Although there could be several explanations for the high poaching numbers during 1994 and 1995, there is a timing correlation between the political volatility and high poaching numbers.

Another current private land issue is that for some individuals, the mere presence of a wolf on their property is a problem. The Service is legally required to address this issue by removing the wolves from the property and relocating them or placing them in captivity. If the Service's attempts to capture the wolves are not successful and they abandon the capture efforts, a permit allowing for take may be issued to the landowner. This issue is a formidable one because the wolves in this situation are not causing an identifiable problem, and relocation efforts can be difficult due to the wolves' propensity to go back to the same area.

Although private lands currently account for 35 percent of the total land base for red wolves in northeastern North Carolina, more than 58 percent of the known wolf population resides on private lands. Despite the adversities, this program has demonstrated that the Service has the ability to implement creative, flexible solutions to private lands issues as they pertain to endangered species conservation.

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