

Recovery Effort Timeline

1967	Red wolf listed as endangered under the Endangered Species Preservation Act
1969	Red wolf captive breeding initiated at Point Defiance Zoo & Aquarium in Tacoma, Washington
1973	Endangered Species Act becomes Federal law
1977	First litter of red wolf pups born in breeding program at Point Defiance Zoo & Aquarium
1978	First successful experimental release, tracking, and recapture of red wolves on Bulls Island, South Carolina, solidifies reintroduction techniques
1980	Last red wolves removed from the wild; species declared biologically extinct in the wild
1986	Publication of a final rule in the Federal Register to introduce mated pairs of red wolves into the Alligator River National Wildlife Refuge in eastern North Carolina; establishment of nonessential experimental population (NEP)
1987	Restoration effort begins with the experimental release of red wolves at Alligator River National Wildlife Refuge
1988	First litter of red wolf pups born in the wild at Alligator River National Wildlife Refuge
1991	Publication of a final rule in the Federal Register to introduce mated pairs of red wolves into the Great Smoky Mountains National Park
1992	Experimental release begins at Great Smoky Mountains National Park
1993	First red wolves born in the wild at Great Smoky Mountains National Park
1995	Publication of an amendment to the special rule in the Federal Register addressing private landowner concerns about reintroduced red wolves
1998	Red wolf project ended at Great Smoky Mountains National Park due to lack of adequate food sources
2000	Adaptive management plan implemented to address red wolf/coyote hybridization within the NC NEP area
2006	The size of the wild population in North Carolina peaked at an estimated 120-130 wolves
2013	The Service recognized steps were needed to improve management of the NC NEP, which included the need to conduct an evaluation of the Red Wolf Recovery Program Memorandum of Understanding on collaborative conservation of red wolves and other canids, including coyotes, on the Albemarle Peninsula signed by the Service and North Carolina Wildlife Resources Commission (NCWRC)
2014	Independent evaluation of the NC NEP by the Wildlife Management Institute initiated; findings of the peer-reviewed evaluation released NCWRC established rules to ban nighttime hunting and require permits for daytime hunting of coyotes in the five-county red wolf recovery area in eastern North Carolina
2015	Service expanded the evaluation to include recovery efforts beyond the program's NC NEP to identify actions necessary to guide red wolf recovery on the landscape Reintroductions of red wolf into the wild suspended while additional research into the feasibility of species' recovery is gathered; existing red wolves located in North Carolina are managed in accordance with the 1995 rule
2016	The Service announced recovery of the red wolf in the wild is possible with significant changes that must be implemented to secure the captive and wild populations
2018	The Service published a Species Status Assessment and five-year status review outlining the latest science. The recommendation was for no change in the red wolf's status as endangered under the ESA The Service published a draft Environmental Assessment and proposed a new 10(j) rule governing the NC NEP. The proposed new NC NEP management area would be Alligator River NWR and Dare County Bombing Range

For questions about the Service's red wolf recovery efforts or the review, contact:

Leo Miranda
Assistant Regional Director
Ecological Services
leopoldo_miranda@fws.gov
404/679 7085

Additional Information

More information about the Service's review of the Red Wolf Recovery Program is available at:
fws.gov/redwolf/evaluation.html

Visit fws.gov/redwolf to learn more about the red wolf and the Service's recovery



photo: Ryan Nordsven/USFWS

Red Wolf (*Canis rufus*)



The red wolf is one of the world's most endangered wolves. Once common throughout the eastern and southcentral United States, red wolf populations were decimated by the early part of the 20th Century as a result of intensive predator control programs and the degradation and alteration of the species' habitat. When the red wolf was designated endangered in 1967, the U.S. Fish and Wildlife Service initiated efforts to conserve and recover the species. Today, there are fewer than 40 red wolves living in the wild in eastern North Carolina as a non-essential, experimental population (NC NEP). More than 200 red wolves are maintained in captive breeding facilities throughout the United States.

photo: Becky Bartel/USFWS





photo: Seth Bynum, Point Defiance Zoo & Aquarium

Red Wolf Recovery Program Review

Red Wolf Recovery Program Review In 2013, the Service and North Carolina Wildlife Resources Commission (NCWRC) entered into broad agreement acknowledging growing concerns from private landowners regarding management of the non-essential, experimental population in the North Carolina Albemarle Peninsula. Both agencies recognized steps were needed to improve management of the non-essential, experimental population, which included the need to conduct an evaluation of the Red Wolf Recovery Program and the implementation of recovery actions in five counties in northeastern North Carolina.

To that end in 2014, the Service contracted with the Wildlife Management Institute (WMI) to conduct an independent evaluation focused on questions within three primary elements: supporting science, program management, and human dimensions. WMI reviewed more than 200 documents, interviewed Service and NCWRC staff at various management levels, commissioned literature reviews of red wolf genetics and ecology, held two public meetings in the red wolf restoration area, and conducted public opinion surveys.

In light of the findings from the WMI evaluation, the Service expanded the recovery in June 2015 to include the review efforts beyond the Program's non-essential, experimental population in North Carolina. The objective of expanding the scope was to identify actions necessary to guide red wolf recovery on the landscape. The review is part of the Service's continuing commitment to ensure the science is right and foster trust with stakeholders as issues regarding the recovery of the red wolf are addressed and implemented.

The Service took steps to involve state partners and key stakeholders in the on-going review. A multi-faceted recovery team was reconvened in October 2015 to address current and future needs to restore red wolves in the wild. The team—comprised of representatives from federal and state agencies, university scientists, species experts, representatives from non-governmental organizations, county officials, and private landowners—reviewed the implementation of recovery actions and the science of red wolf conservation related to species taxonomy and historical range, population viability, and human dimensions.

On September 12, 2016, the Service announced significant changes for red wolf recovery after completing the two-year, two-step review. The Service is committed to recovering the species.

One of the most surprising findings of the Service's review was that genetic diversity of the captive population will decline. Higher success in maintaining genetic diversity is needed to ensure a secure captive population and persistence of the red wolf species. Additionally, more animals are needed in captivity to secure the species' survival and to support any wild population, including the current non-essential, experimental population in North Carolina.

In September 2016, the Service promised to complete a peer-reviewed Species Status Assessment and a five-year review of the red wolf, to gather the best science to guide the Service's recovery planning. Those reports were completed and released in April 2018.

In June 2018, the Service proposed a new 10(j) rule that would change the boundaries of the North Carolina non-essential, experimental population (NC NEP) from all lands in five counties to the Alligator River National Wildlife Refuge and Dare County Bombing Range. The primary objective of the NC NEP would change from establishing a self-sustaining population to a propagation population providing a source of wild red wolves that are raised in and adapted to natural conditions for the purpose of facilitating future reintroductions. The Service continues to explore possible reintroduction sites for another red wolf population, and remains committed to recovering the red wolf under the Endangered Species Act.



photo: Becky Bartel/USFWS

Red Wolf Facts

Status: Endangered

Description: The red wolf (*Canis rufus*) is a native North American canid intermediate in size between the coyote (*Canis latrans*) and gray wolf (*Canis lupus*). Red wolves are mostly brown and buff colored with some black along their backs, often with a reddish color on their ears, head and legs. Adult red wolves range in weight from about 45 to 80 pounds. Red wolves have wide heads with broad muzzles, tall pointed ears and long, slender legs with large feet. Red wolves stand about 26 inches at their shoulder and are about 4 feet long from the tip of the nose to the tip of the tail.

Habitat: The last red wolves were found in coastal prairie and marsh habitat because this was the last area in which the animals were allowed to remain. Any habitat area in the southeastern United States of sufficient size, which provides adequate food, water, and the basic cover requirement of heavy vegetation, should be suitable habitat for the red wolf. Telemetry studies indicate that red wolf home range requirements vary from about 25 to 50 square miles.

Diet: Although the exact diet of red wolves varies depending on available prey, it usually consists of a combination of white-tailed deer, raccoons and smaller mammals such as rabbits, rodents and nutria. The red wolf is an opportunistic feeder and can travel up to 20 miles a day or more to find food, which can be consumed at a rate of two to five pounds daily.

Behavior: Red wolves are social animals that live in close-knit packs. Typical packs consist of 5-8 animals including a breeding adult pair and their offspring of different years. Older offspring will often assist the breeding pair in pup rearing. Almost all offspring between one and two years of age will leave the pack or "disperse" to form their own pack.

Red wolves tend to form pair-bonds for life and mate once a year in February. Pups are typically born in April or May in well-hidden dens that may be located in hollow trees, stream banks and sand knolls. Dens have also been found in holes dug in the ground near downed logs or forest debris piles.

Wolf packs have specific territories that they actively defend against other canids, including other wolves. Most active at dusk and dawn, red wolves are elusive and generally avoid humans and human activity.

Threats: Human-caused mortality (e.g., vehicle strikes, gunshots) can remove breeders from the wild wolf population. These threats, combined with habitat fragmentation from increasing development, allow coyotes to expand into the NC NEP area. Coyotes may directly compete with wolves for resources, as well as introduce diseases, and dilute wolf genetic lines through hybridization. This is particularly true when a pack has lost one of the adults from the breeding pair close to mating season.