

# Red Wolf Recovery Program

Canis rufus

Apr 4, 2022

- **Taxon:** Mammal
- **Range:** Eastern North Carolina
- **Status:** First listed as “threatened with extinction” under the Endangered Species Preservation Act of 1966 in 1967. Currently listed as an endangered species under the Endangered Species Act of 1973.
- **Population estimate as of May 2022:**
  - Known/collared (wild): 12
  - Total estimate (wild): 20-23
  - Species Survival Plan (captive): 241

## Red wolf recovery program updates



[Image Details](#)

In 2016, the Service made increasing the size of the Species Survival Plan (SSP) population (the captive population) a priority. The Service stated it would provide resources to the SSP and work with the SSP

and other partners to expand space capacity. To date, the Service has provided \$771,000 through FY18, FY19, and FY20 Recovery Challenge Grants for the construction of additional red wolf enclosures.

In 2018, the Service proposed a revised 10(j) rule to replace the existing regulations, published in 1995, governing the nonessential experimental population in eastern North Carolina (NC NEP). In 2021, the Service withdrew this proposal. Thus, red wolves in the NC NEP will continue to be managed under existing regulations, as clarified by relevant court orders. Management under the 1995 rule recognizes the Service's authority to release additional wolves and conduct adaptive management. The NC NEP will continue to encompass the five counties of the Albemarle Peninsula (Beaufort, Dare, Hyde, Tyrrell, and Washington counties). A summary of management activities can be found below under Management.

In July 2021, the Service assembled a new Red Wolf Recovery Team to update the current Red Wolf Recovery Plan, last revised in 1990. The Recovery Team will follow the Service's Recovery Planning and Implementation Process, a three-document approach consisting of:

1. A Species Status Assessment (SSA) – Completed in 2018, this document evaluates red wolf viability and provides the foundational biological information to develop and support a recovery plan.
2. A Recovery Plan – A concise, visionary document that contains the elements required under section 4(f)(1)(B) of the ESA: recovery criteria, recovery actions, and time and cost estimates.
3. A Recovery Implementation Strategy – An itemization of the prioritized on-the-ground activities needed to implement the actions identified in the recovery plan.

The final Recovery Plan will be completed by February 28, 2023. Development of the Recovery Implementation Strategy will follow.

Studies are underway to identify the possibility of red wolf ancestry still remaining in the wild in southwestern Louisiana and southeastern Texas. These studies follow-up on previous studies (Murphy *et al.* 2018 and Heppenheimer *et al.* 2018) that suggest red wolf ancestry may still exist on the landscape in Louisiana and Texas.

## Program history



### [Image Details](#)

The recovery of the red wolf began as a remarkable conservation success story. By 1972, the species was reduced to a small coastal area in southeast Texas and southwest Louisiana (see map above). From 1973-1980, the Service began trapping wild canids in the area to prevent extinction of the species and establish a captive breeding program with the intention of reintroducing the species in the wild. In the early 1970's, Point Defiance Zoo and Aquarium, in association with the Service, established a captive-breeding program using 14 red

wolves. After numbers continued to decline due to human persecution and habitat loss, the red wolf was subsequently declared extinct in the wild in 1980.

In 1984, the captive breeding program was approved by the Association of Zoos and Aquariums (AZA) as the Red Wolf Species Survival Plan (SSP) program, which provides oversight for maintaining a healthy and genetically diverse stock under human care. By this time, there were approximately 63 individuals in the SSP population and the program was actively growing the population through the coordinated efforts of the SSP partner facilities, making reintroduction efforts possible.

Recovery efforts in the wild began in northeastern North Carolina with the establishment of the NC NEP under section 10(j) of the ESA and release of red wolves from the SSP population, on Alligator River National Wildlife Refuge (NWR) in 1987. Between 1987 and 1994, over 60 adult red wolves from the SSP population were released into the NC NEP. By the mid-1990s, red wolves in the wild maintained territories, formed packs, and successfully bred. By 2011, this reintroduction effort culminated in a known population (e.g. radio-collared) of 89 red wolves and in 2012 an estimated population as high as 120 red wolves within the five-county NC NEP area. This was the first time a large carnivore had been declared extinct in the wild and then reintroduced in the United States. It set the stage for several subsequent reintroduction efforts that were modeled after the Red Wolf Recovery Program, such as gray wolves in Yellowstone and central Idaho, Mexican wolves in the southwestern U.S., California condors, and black-footed ferrets. Several innovative recovery tactics were first attempted by this program, with a great deal of success, including pup fostering and

coyote sterilizations.

In 1990, the Service established an island propagation site for the red wolf at St. Vincent NWR, an isolated island off the Gulf Coast of Florida. The role of this site is to propagate red wolf pups in a somewhat controlled, but natural environment that will provide them “wild experience” as juveniles for the purpose of being strategically translocated into the NC NEP.

## **SSP population**

Captive breeding saved the red wolf from extinction and is an essential component of red wolf recovery. Past releases of red wolves from the SSP population into the NC NEP helped the wild red wolf population reach a peak of 120 animals in 2012. Although captive red wolves are located throughout the country at different SSP facilities, they are managed as a single population. They are routinely transferred among the facilities to breed according to genetic management objectives to help maintain the health and diversity of an increasing population.

Human contact with captive red wolves is minimized to promote avoidance behavior and to support pair bonding, breeding, pup rearing, and healthy pack structure . They are evaluated and selected for release to the wild based on their genetic makeup, reproductive performance, behavior, and physical suitability.

As of August 2021, there are approximately 241 red wolves in 45 SSP facilities across the country. In the 2020-2021 breeding season, 30 breeding pairs were established and 23 pups in 6 litters were born. Four adults were released into the wild in the NC NEP and 4 pups were fostered to a wild red wolf, leaving 19 pups added to the SSP

population. With additional space capacity, and to increase the population, the number of breeding pairs for the 2021-2022 breeding season increased to 38 pairs.

## Wild population



### [Image Details](#)

Under Section 10(j) of the ESA, the Service can designate reintroduced populations established outside of the species' current range, but within its historical range, as "experimental." This designation allows the Service to reestablish self-sustaining populations when doing so fosters its conservation and recovery.

Currently, there is only one wild population of red wolves, the NC NEP in eastern North Carolina, which encompasses five counties of the Albemarle Peninsula (Beaufort, Dare, Hyde, Tyrrell, and Washington counties). Management of the NC NEP red wolves is conducted in accordance with the [10\(j\) rule published in 1995](#), as clarified by relevant court orders. Notably, this includes a permanent injunction prohibiting take of red wolves either directly or by landowner

authorization, without first demonstrating that the red wolf is a threat to human safety or the safety of livestock or pets. Additionally, the 1995 rule recognizes the Service's authority to release additional red wolves and conduct adaptive management within the NC NEP.

Past reintroductions into the NC NEP helped support a wild red wolf population as high as 120 animals (89 radio collared) in 2012. After peaking, the population declined dramatically. Human-caused mortality (e.g., gunshots, vehicle strikes) has been the leading cause of this decline. Hybridization with coyotes, which is exacerbated by human-caused mortality, particularly in breeding pairs, and low red wolf population numbers also played a key role in this decline.

Today, the total population is estimated to be between 15 and 17, with 8 known via active radio-collars. The total population is an estimate based on known radio-collared red wolves, adult red wolves with radio collars that quit functioning relatively recently that are likely still on the landscape, and an additional few un-collared adult red wolves that are thought to be on the landscape based on reported sightings and remote sensing cameras, as well as pups that have not reached a year of age and cannot be radio-collared. Additionally, due to declining population size and the mortality of one or both red wolves in established breeding pairs, there were no known red wolf pups born in the wild in 2019, 2020 or 2021, which is the first time that has occurred in over 30 years.

The Service is committed to seeing red wolf numbers increased within the NC NEP. The Service is working towards collaring all red wolves with bright orange collars to help the public distinguish them from coyotes. Currently, all but one known, collared adult red wolves have orange collars. The Service is also continuing releases of red wolves

from the SSP population into the NC NEP and conducting adaptive management. See below for management activities implemented to attempt to create red wolf breeding pairs in eastern North Carolina.

## Management

### 2020-2021 Management Activities



[Image Details](#)

In December 2020, two male red wolves were translocated from an island propagation site on St. Vincent NWR to Alligator River NWR in the NC NEP and placed in acclimation pens with older, resident female red wolves.

On February 9, 2021, the older female red wolf from the Milltail Pack and one of the translocated males were released from the acclimation pen. The male quickly incorporated with the resident red wolves of the Milltail Pack. Over the first three weeks after release, the male permanently displaced a sterilized coyote that had been hanging close



to the younger female red wolf from the Milltail Pack. Since that time, the two red wolves have been paired, giving biologists hope that they will produce young in the spring of 2022

On February 10, 2021, the older female red wolf that spent the majority of her life on the Dare County Bombing Range and the other translocated male were released from their acclimation pen. Even though there was evidence of bonding while they were in the acclimation pen together, they did not stay together after release. The female traveled back and forth between the southern end of the Milltail territory and the bombing range since her release. Unfortunately, the male began traveling areas of the refuge not typically utilized by red wolves – including areas in close proximity to highways running through the refuge. Ultimately, he was hit and killed by a vehicle shortly after his release.

In February 2021, a private trapper captured a seven-year-old male red wolf on private land that was microchipped as a pup, but was never captured and collared as an adult. He was fitted with an orange radio collar and re-released where he was captured.

On February 7, 2021, a new male transferred from the North Carolina Zoo to St. Vincent NWR was released onto the island with the resident breeding female. He remained largely in an area of the island used less frequently by the other red wolves, but integrated with the other red wolves when they came together. The breeding female was found dead on the refuge on April 16, 2021. A cause of death has not been determined but foul play is not suspected. Shortly after that, the new male swam off St. Vincent NWR onto mainland Florida. After a highly coordinated community effort to locate the red wolf, he was safely recaptured five miles northeast of Mexico Beach, FL. He was

transferred back to one of the captive facilities within the Red Wolf SSP program. There are now two red wolves remaining on St. Vincent NWR – a three-year-old female and a two-year-old female – sisters from different litters. Both females were born and raised in the wild on the refuge.

In March 2021, the Service developed a release plan to resume reintroductions of captive red wolves in North Carolina. This plan was amended in April 2021. The goal of the plan is to reestablish successful red wolf breeding within the NC NEP. Highlights from the amended plan included:

- Pursuing opportunities to foster captive-born red wolf pups into wild litters;
- Releasing at least one pair of captive red wolves onto NWR lands in the NC NEP; and,
- Closely monitoring the results of those efforts with a plan to conduct additional releases over the coming year, based on the results achieved.

During the winter of 2020-2021, the Service captured, sterilized, and released two coyotes on Alligator River NWR.

A vegetation management project, designed to support the prey base for red wolves, on Pocosin Lakes NWR is moving forward in the planning stages. Work on the ground began in fall 2021. This project is being done in collaboration with the North Carolina Wildlife Federation (NCWF).

In early 2021, in coordination with SSP experts, the Service identified four individual red wolves, at three separate SSP partner facilities, for

release into the NC NEP. Two of the red wolves selected came from the Endangered Wolf Center in Eureka, Missouri, one came from Wolf Haven International in Tenino, Washington, and the fourth came from the Wolf Conservation Center in South Salem, New York. All four red wolves (two males and two females) arrived in the NC NEP between April 24, 2021 and April 30, 2021. On the day the last captive red wolves arrived from the SSP, all four red wolves were fitted with GPS collars and placed in temporary acclimation pens (one pair on Alligator River NWR and one pair on Pocosin Lakes NWR). Also of note for 2021, the fostering of four red wolf pups to a wild red wolf on Pocosin Lakes NWR. The pups, born at the Akron Zoo in Akron, Ohio, were flown to North Carolina via LightHawk Conservation Flying. The pups were placed with the wild red wolf on May 1, 2021.

On June 3, 2021, the female red wolf from the acclimation pen on Pocosin Lakes NWR was found dead on the edge of a rural road within the NC NEP. Initial evidence at the mortality site was indicative of a vehicle strike.

On June 27, 2021, the male red wolf released from the acclimation pen on Alligator River NWR was found dead, and on June 30, 2021, the female red wolf released from the acclimation pen on Alligator River NWR was found dead. Again, evidence at both scenes was suggestive of a vehicle strike.

On July 6, 2021, during a routine monitoring flight, wild red wolf 2186, a 5-year old male, was detected in "mortality mode" (GPS collar emits signal indicating no movement in 8 hours) just north of Lake Mattamuskeet in a field on privately owned lands. A ground-based search crew, operating under landowner permission, was able to locate the carcass. This animal was heavily scavenged therefore a

determination of cause of death may not be possible.

On July 7, 2021, the Service was notified of an orange-collared canid, dead by the side of the road. Follow-up reconnaissance confirmed this to be red wolf 2044, an 8-year old male born in the wild that was translocated from Alligator River NWR to Pocosin Lakes NWR a few years ago. The evidence again suggests a vehicle strike.

Necropsy results are pending at this time for all of the above deaths.

Through coordination with the North Carolina Department of Transportation (NC DOT), the Service and NCWF have purchased portable electronic message boards that will be temporarily deployed when needed along roads/highways in locations throughout the NC NEP when and where red wolves, particularly recently released captive-born red wolves, are crossing roads regularly or remaining in close proximity to roads. The wording used on the signs will be in line with NC DOT policy and be based on previous research.

The GPS radio collars used on all red wolves to be released into the NC NEP will be modified to include strategically placed orange reflective material that will increase visibility of the animal along roadways at night, particularly when they are moving, and provide additional identification for hunters to potentially decrease gunshot mortality due to misidentification.

On October 3, 2021, the lone surviving red wolf released from captivity this spring, a male, was shot and killed on private land in the general area where he had established a territory over the last several months. The red wolf was killed by a private landowner who indicated the wolf was in the general vicinity of the landowner's chicken coop. The

landowner self-reported the incident to North Carolina Wildlife Resource Commission Law Enforcement as soon as it occurred. FWS Special Agents are currently investigating the incident.

Remote camera footage from late October shows what appears to be two of the red wolf pups that were fostered in the den of a wild female red wolf this past spring. This indicates that at least two of the fostered red wolf pups, and possibly more, are still alive on the landscape at this time. The status of the other pups is unknown, but their absence from video is not an indication that they haven't survived. Targeted trapping of this family group will occur this winter once the pups are large enough to be radio-collared.

## Summary of releases

<sup>1</sup> Year	<sup>1</sup> # of Adults Released	# of Subadults Released	# of Pups Released w/Adults <sup>1</sup>	# of Pups Fostered	# of Known Pups Born in the Wild	# of Known Mortalitie
1987	8-C	0	0	0	0	1
1988	0	2-C	0	0	2	4
1989	1-C	6-C	2-C, 2-I	0	0	3
1990	2-C	0	6-C	0	0	6
1991	1-C	1-C	5-C	0	13	9
1992	2-I	0	4-C	0	2	1
1993	2-C, 2-I	2-C	9-C	0	16	8
1994	3-C, 3-I	0	0	0	34	23

1995	1-C	1-S	0	0	22	12
1996	2-I	3-I	0	0	19	7
1997	1-I	1-I	0	0	19	9
1998	0	1-I	0	0	13	15
1999	1-I	2-I	0	0	44	16
2000	1-S,1-I	1-S,2-I	0	0	26	16
2001	1-S	0	0	0	35	22
2002	0	1-I	0	7-C	32	22
2003	0	1-I	0	0	35	15
2004	0	0	0	2-I	50	21
2005	0	1-I	0	0	38	19
2006	0	4-I	0	4-C	52	18
2007	0	0	0	3-C	31	21
2008	0	3-I	0	0	47	21
2009	0	5-I	0	4-C	40	28
2010	0	0	0	2-C	43	17
2011	0	0	0	2-C	40	21
2012	0	0	0	2-C	39	20
2013	0	0	0	1-C	34	15
2014	0	0	0	0	19	17
2015	0	0	0	0	10	19
2016	0	0	0	0	11	11
2017	0	0	0	0	4	7
2018	0	0	0	0	4	5
2019	0	0	0	0	0	6
2020	0	1-I	0	0	0	2
2021	2-C,1-I	2-C,1-I	0	4-C	0	7

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## <sup>1</sup>Origin of Red Wolves Released or Fostered

C = Captivity

I = Island Propagation Site

S = Great Smoky Mountains National Park

Adults are categorized as red wolves 3 years of age or older, subadults are red wolves that are greater than 6 months old and less than 3 years old, and pups are red wolves less than 6 months old.

<sup>2</sup> The methodology used to determine the population estimate of the NC NEP has varied over the course of time based on the size of the population to yield the most accurate estimates possible.

\*\* Specific information about mortality location is not released as it may provide sensitive species occurrence data. \*\*

## **Outreach and education**

Interested in learning how to help red wolves? Check out our fact sheet [here](#).

## **Partnership coordination calls**

Every quarter, the Service and its partners in red wolf recovery meet via a conference call to provide updates on the status of red wolf related actions. The purpose of these calls is to:

- provide a forum for regular and effective coordination on current actions and collaborative efforts among all partners in red wolf recovery, and
- provide other interested parties and the public with updates on the status of red wolf conservation efforts.

*Updates the Service provides on these calls can be found below in our Documents section.*

## **Community involvement**

On Dec.10, 2019, the Service held a joint public information session with the North Carolina Wildlife Resources Commission regarding the red wolf recovery efforts and management of canids on the Albemarle Peninsula. The goal was to inform residents living in and around the five-county NC NEP area in eastern North Carolina (Beaufort, Dare, Hyde, Tyrrell and Washington counties) about ongoing work and plans for canid management. Plans for additional sessions were interrupted by the COVID-19 pandemic.

On February 1, 2022, the Service held a virtual informational meeting and listening session on the revitalization of red wolf recovery efforts as well as the transfer and upcoming releases of nine red wolves into the wild in the NC NEP. The presentation from the meeting is posted below, along with a recording and transcript.

- [Public Meeting Presentation](#)
- [Transcript](#)
- [Video Recording](#)
- [Questions and Answers from the Public Meeting Presentation](#)

## **Prey for the Pack – Partners for Fish and Wildlife Program**

Prey for the Pack is a new habitat improvement program through the Services' Partners for Fish and Wildlife Program, in collaboration with the North Carolina Wildlife Federation, and is available to private landowners interested in and committed to improving wildlife habitats on their property. The program will help provide both technical and



financial support to private landowners to help promote and implement habitat improvement projects that benefit both the landowner and the wildlife that depend on the resource, specifically to promote habitat for red wolf prey species. In exchange for financial and technical support, landowners will allow for the presence of red wolves on their private lands, un-harassed. For more information contact Luke Lories, Wildlife Biologist/Private Lands Biologist at [luke\\_lories@fws.gov](mailto:luke_lories@fws.gov) or [\(252\) 256-3676](tel:(252)256-3676), or Joe Madison, Program Manager - NC Red Wolf Population at [joseph\\_madison@fws.gov](mailto:joseph_madison@fws.gov) or [\(252\) 475-8259](tel:(252)475-8259).

## **The Red Wolf Center – Columbia, North Carolina**

The Red Wolf Center located just outside Columbia, North Carolina, is a public education center that houses red wolf displays and a live red wolf pair in a viewing enclosure. The Red Wolf Center is a collaborative effort between the Service, the North Carolina Wildlife Federation and National Wildlife Refuge Association. The Red Wolf Center also offers red wolf educational talks to school and other groups. To learn more about the Red Wolf Center, schedule a tour or a presentation, or facilities hours, contact Pocosin Lakes NWR at [\(252\) 796-3004](tel:(252)796-3004).

## **Report North Carolina red wolf sightings**

Report suspected red wolf sightings and information to the Red Wolf Hotline at 1-855-4WOLVES ([\(496-5837\)](tel:(496)5837)) or [redwolf@fws.gov](mailto:redwolf@fws.gov).

## **Recovery Timeline**

### **1967**

- Red wolf listed as “threatened with extinction” under the Endangered Species Preservation Act

## 1969

- Red wolves first maintained in captivity at Point Defiance Zoo & Aquarium in Tacoma, Washington

## 1973

- Endangered Species Act becomes federal law
- Recovery program established; captive breeding program initiated

## 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

## 1973-1980

- Over 400 canids captured in wild

## 1980

- Red wolf declared extinct in the wild

## 1984

- AZA Species Survival Plan established

## 1985

- Early documentation of coyotes in eastern NC

## **1986**

- Nonessential experimental population (NEP) in eastern NC established (10(j) rule)

## **1987**

- First release of red wolves in NEP (Alligator River NWR)

## **1988**

- First litter of red wolf pups born in the wild at Alligator River NWR

## **1991**

- NEP in Great Smokey Mountains National Park (GSMNP) established (10(j) rule)

## **1992**

- Releases begin at GSMNP

## **1993**

- First red wolves born in the wild in GSMNP NEP

## **1995**

- Publication of an amendment to the 10(j) rule governing the NC NEP to address private landowner concerns about reintroduced red wolves

## 1998

- GSMNP NEP ended due to low pup survival and the inability of red wolves to establish home ranges within the Park (e.g., emigration of red wolves to lower elevations with greater prey availability).

## 1999

- Coyotes/hybridization most imminent threat

## 2000

- Adaptive management plan (AMP) implemented to address red wolf/coyote hybridization

## 2004

- Increase in red wolf mortality due to gunshot

## 2012

- North Carolina Wildlife Resources Commission (NCWRC) temporary rule allows night hunting of coyotes with artificial light across state; puts red wolves at risk
- Court suspends night hunting of coyote with lights within NC NEP

## 2013

- Service recognizes need to improve management of NC NEP
- NCWRC permanent rule allows coyote hunting on private land day or night, day hunting on public lands without a permit and night hunting with a permit
- NCWRC and Service sign Canid Management Agreement

## 2014

- Independent evaluation of the NC NEP conducted by the Wildlife Management Institute
- Court ordered ban on all coyote hunting in NC NEP (preliminary injunction)
- Preliminary injunction replaced with settlement agreement (between NCWRC and Plaintiffs) that allows hunting of coyotes on private land with a permit and no hunting on public lands (with narrow exception)

## 2015

- NCWRC issues resolution calling for the NC NEP to be terminated
- Evaluation of entire recovery program, facilitated by Group Solutions, Inc. Reintroductions of red wolf into the wild and AMP voluntarily temporarily suspended while additional science and research into the feasibility of species' recovery is gathered

## 2016

- Court injunction against take/removal of red wolves Service Recommendation Memo – new path to recovery; recovery of the red wolf is possible with significant changes

## 2017

- Commitment from partners to expand captive facilities

## 2018

- A Species Status Assessment and 5-year review for the red wolf completed.

- Red wolf approved as an AZA SAFE species (Saving Animals From Extinction)
- Red Wolf Center in Columbia, NC reopens through a partnership with the North Carolina Wildlife Federation and the National Wildlife Refuge Association
- Service proposes new 10(j) rule for NC NEP
- Federal court ruling places permanent injunction against the taking of red wolves without demonstrating that the red wolf in question is a threat to human safety or the safety of livestock or pets.
- Smithsonian Conservation Biology Institute hosts Red Wolf Science Workshop

## 2019

- National Academy of Sciences (NAS) confirms the red wolf is a distinct species
- NAS contracted by the Service to 1) assist in selecting proposals for a study to determine the taxonomy of unidentified wild canids in southern Louisiana, and 2) develop a research strategy to examine evolutionary relationships between ancient and contemporary red wolves
- \$257,000 Recovery Challenge Grant awarded to Conservation Centers for Species Survival (C2S2) to build new enclosures (i.e., expand red wolf captive facilities)
- Reinitiated the Albemarle Peninsula Collaborative Canid Conservation team consisting of NCWRC and Service personnel
- Implementation of AMP resumes

## 2020

- Quarterly Red Wolf Partnership Coordination Calls begin
- \$257,000 Recovery Challenge Grant awarded to C2S2 to build new enclosures for red wolves
- Service begins process for updating the Red Wolf Recovery Plan
- Service sued by the Red Wolf Coalition, Defenders of Wildlife, the Animal Welfare Institute, and the Southern Environmental Law Center for violations of the Endangered Species Act.

## 2021

- Court orders the Service to draft a plan to release captive red wolves into the NC NEP in consultation with scientists and experts in the field.
- Releases from captivity and pup fostering resumes.
- \$257,000 Recovery Challenge Grant awarded to C2S2 to build new enclosures for red wolves
- Service submits a release plan to the court in March, followed by an amended plan in April.
- A new Red Wolf Recovery Team is assembled to update the current Red Wolf Recovery Plan
- Service withdraws 2018 proposed new 10(j) rule for NC NEP

## Federal Register notices

Relevant documents, including 10(j) rules, recovery plan, 5-year review, and the SSA can be found on the ECOS species profile page (<https://ecos.fws.gov/ecp/species/37>). You can also conduct your own search on the Federal Register website (<https://www.federalregister.gov/documents/search>).