

# Eastern North Carolina Red Wolf Population: Release Plan



Photo courtesy of Mark Shields

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## **Executive Summary**

The Eastern North Carolina Red Wolf Population (ENC RWP) Release Strategy (2023-2024 release strategy) is being issued by the U.S. Fish and Wildlife Service's (Service) Red Wolf Recovery Program to disclose efforts being undertaken from October 2023 through June 2024 in support of Red Wolf recovery in eastern North Carolina specific to the pairing and release strategies during that time frame.

Since 2020, the Service has reinitiated the release and translocation of Red Wolves into the ENC RWP to supplement the population and increase genetic diversity using various management techniques. These techniques include pup fostering (2021 and 2023), the release of Red Wolves from the Red Wolf Saving Animals From Extinction (SAFE<sup>1</sup>) population (2021, 2022 and 2023) and the translocation of wild Red Wolves from St. Vincent National Wildlife Refuge (SVNWR), an island propagation site off the Gulf Coast of Florida, into the ENC RWP (2020, 2021 and 2023).

In the 2023-2024 release strategy, the priority will remain focused on taking advantage of all pup fostering opportunities, when the appropriate conditions exist, and attempting to increase the number of Red Wolf breeding pairs in the wild. Pairs will be created either by pairing existing wild Red Wolves that are currently unpaired with Red Wolves from the SAFE population or pairing two unpaired wild Red Wolves. If capture success of unpaired wild Red Wolves of breeding age is limited, the Service would consider potentially releasing a pair or family group from the SAFE population. The Service plans on attempting to release multiple Red Wolves from the SAFE population, however, the number of Red Wolves from the SAFE population that are ultimately released is dependent on a variety of on-the-ground-factors. The Service anticipates attempting to create up to 5 pairs of Red Wolves with up to 4 to 6 adults/subadults released from the SAFE population, which does not include potential pup fostering. However, the actual number of breeding pairs created and number of Red Wolves released from the SAFE population could be fewer or more than stated based on factors such as capture success and availability of territories, and the identification of an appropriate pair or family group from the SAFE population and the size of the family group. Flexibility will be maintained in order to maximize the likelihood of success of the individual Red Wolves and the release strategy as a whole. Red Wolves placed in acclimation pens in these attempts to create new breeding pairs would be expected to be released from January through June 2024.

## **Introduction**

There are currently 11 known adult/subadult Red Wolves (8 female, 3 male) and 8 known Red Wolf pups (5 female, 3 male) within the ENC RWP and a total estimated population, including those animals, of approximately 21-23 Red Wolves. There are currently two known Red Wolf family groups, one resides on Alligator River National Wildlife Refuge (ARNWR) and the other

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<sup>1</sup> The Red Wolves under human care are managed by the Association of Zoos and Aquariums (AZA) Red Wolf Saving Animals From Extinction (SAFE) program. The Red Wolf SAFE is a program committed to the conservation efforts for the Red Wolf. These efforts include maintaining a healthy and viable population of Red Wolves under human care, growing education and awareness efforts, and aiding research vital to supporting the recovery and management of this species.

resides on Pocosin Lakes National Wildlife Refuge (PLNWR). However, the family group on ARNWR lost the breeding male to a vehicle strike mortality in September 2023. The pair on PLNWR are from recent releases in May 2023 as part of the 2022-2023 release strategy and consists of a wild female and a male born in the SAFE population. There are currently 9 known, unpaired adult and subadult wild Red Wolves on the landscape within the ENC RWP.

As has been the case over the last 3 years of releases, a key component this year's release strategy will continue to focus efforts on increasing the number of breeding pairs in the wild. While pup fostering is the preferred method for reintroductions, more established breeding pairs are needed to increase the number of pup fostering opportunities on the landscape. If efforts to establish breeding pairs are successful, it will greatly increase the likelihood that wild born and fostered Red Wolf pups will be able to find Red Wolf mates to form breeding pairs as they age. These pups potentially forming new Red Wolf pairs are the building blocks toward a viable population of Red Wolves in the ENC RWP in the future. Additionally, a healthy, larger ENC RWP is more sustainable, while also potentially having the ability to provide wild Red Wolves for translocation to future additional reintroduction sites.

## **Strategy Development**

The 2023-2024 release strategy is intended to be in effect from October 2023 through June 2024, the end of the 2024 breeding season, which includes the whelping (e.g., birthing) and initial pup rearing period. The success of any Red Wolf release is highly dependent on a number of exceedingly dynamic factors including the time of year, capture success, prey abundance, human-caused and natural mortality risk, breeding status, availability of territories, unpaired potential mates, individual Red Wolf behavior, and coyote demographics. The Service's 2023-2024 release strategy and the options discussed were developed in consultation with our scientists and experts in the field to assess the likelihood of success of various techniques, and potential paths forward. This approach is based heavily on (1) lessons learned on the ground over the course of the 36 years of the program in North Carolina; (2) a thorough review of relevant literature (van Manen et al 1998, Henry and Lucash 2000); (3) professional experience of Red Wolf Recovery Program staff, (4) lessons learned, research and information regarding other canid species and (5) the results of previous releases over the last 3 years.

The 2023-2024 release strategy has been developed given the existing condition of the wild population within the ENC RWP and the SAFE population. This strategy will also adapt to any circumstances, including any changes in either the wild or captive population. The success of the options identified in this release strategy will depend on the ability to maintain maximum adaptability and flexibility. This allows for modifications to the release strategies through the planning and implementation phases based on changing conditions on the ground including mortalities, Red Wolf movements, and capture success, as well as new information. The Service will continue to closely monitor the population of Red Wolves in the ENC RWP and continue to coordinate with the SAFE management team. Any changes in conditions within the wild or SAFE populations will be taken into account with respect to impacts to the release strategy, including any pup fostering opportunities.

As of October 2023, there are a total of 9 unpaired adult and subadult wild Red Wolves within the ENC RWP that are of breeding age and will be considered for attempted pairings under this year's release strategy. Five of the 9 are yearling siblings of the family group on ARNWR. With the recent mortality of this family group's breeding male, we anticipate that a few of these yearlings, if they do not disperse on their own from the family group territory, may be left in the area so they can continue to help raise the pups born in Spring 2023. Natural dispersal typically starts when they are about a year and a half old, which for the yearlings in question would be October 2023.

It is also important to recognize that the ability to execute many of the releases is highly dependent on numerous on-the-ground factors. These factors include, but are not limited to, the ability to successfully capture specific wild Red Wolves, the correct timing of birth and size of wild and captive litters to allow for pup fostering, and the survival of individual wild Red Wolves included in the scenarios.

Given the myriad of factors that influence the different scenarios, the Service's actions described in this strategy require real-time flexibility and the ability to adapt to changing factors on the ground and situations; thus, they require management discretion in the field to maximize the chances of success.

### **Strategy to Pair and Release Red Wolves in the ENC RWP**

The 2023-2024 release strategy largely focuses on implementing pup fostering when possible and attempting to create new Red Wolf breeding pairs within the ENC RWP. The number of pairs created and the number of Red Wolves to be released from the SAFE population is highly dependent on a variety of on-the-ground-factors and, therefore, cannot be stated definitively. However, it is the Service's intention to attempt to create as many breeding pairs as is possible given the current conditions of the wild population, as described above. Pairs may be created either by:

- Pairing unpaired wild Red Wolves with Red Wolves from the SAFE population, or
- Pairing unpaired wild Red Wolves with other unpaired wild Red Wolves

If on-the-ground factors, such as limited capture success of unpaired wild Red Wolves of breeding age, limits the number of pairs created with wild Red Wolves, the Service may consider release of a pair or family group from the SAFE population, if an appropriate pair or family group can be identified.

The Service anticipates attempting to create up to 5 pairs of Red Wolves. Based on the pairing scenarios, the number of Red Wolves released from the SAFE population could be up to 4 to 6 adults/subadults, which does not include potential pup fostering. The actual number of breeding pairs created and number of Red Wolves released from the SAFE population could be fewer or more than stated depending on the on-the-ground factors (i.e., capture success, availability of territories, the potential identification and release of an appropriate pair or family group from the SAFE population and the size of the family group).

Acclimation pens will be located on federally managed lands. The location of acclimation pens and the subsequent releases will be determined depending on what location is deemed most conducive

to their success in the wild and would best serve the population as a whole with respect to Red Wolf distribution within the ENC RWP. Red Wolves in acclimation pens would be expected to be released from January through June 2024 based on the specifics of each release and the individual Red Wolves involved, with a focus on the pairs remaining in acclimation pens through potential whelping and the initial pup rearing stage, if a litter is produced. This approach has been shown to increase their likelihood of remaining together as a pair and remaining within the general area of release.

### *Pup Fostering*

The 2023-2024 release strategy includes the implementation of pup fostering as the highest priority whenever conditions make it possible based on the birth of litters in the ENC RWP and the appropriate timing of litters born in the SAFE population. We do not know at this time whether the opportunity for pup fostering will arise. As of October 2023, there is currently one Red Wolf pair within the ENC RWP that could potentially be a candidate for pup fostering in Spring 2024. Additional opportunities could potentially be possible if there are female Red Wolf/wild coyote pairs with litters born in Spring 2024. The Service will closely monitor all wild female Red Wolves and pursue pup fostering whenever feasible if monitoring indicates there are one or more opportunities to do so. Pup fostering could occur on federally managed lands or on privately owned lands with landowner permission.

### *Creating and Releasing Pairs Formed from by a Wild Red Wolf and Mate from the SAFE Population or Pairing Wild Red Wolves*

Attempts will be made to create new breeding pairs by pairing wild Red Wolves with Red Wolf mates from the SAFE population or with other currently unpaired wild Red Wolves. We will attempt to capture some of these unpaired wild Red Wolves with efforts focused on individual females within an existing territory or that are showing dispersal behavior from the territory where they were raised. After capture, they will be placed in an acclimation pen with a captive born mate from the SAFE population or a currently unpaired wild Red Wolf. The number of unpaired Red Wolves we will attempt to capture is dependent on factors such as the availability of territories where we have the ability to place acclimation pens that also have the appropriate conditions to support newly released pairs, such as adequate prey availability and habitat security. However, the intention is to maximize our efforts to take advantage of as many possible pairings as is feasible without being detrimental to the wild or SAFE populations.

### *Release of a Captive Born Pair or Family Group from SAFE*

If on-the-ground factors, such as limited capture success of unpaired wild Red Wolves of breeding age or unforeseen mortalities, limits the number of pairs created with wild Red Wolves, the Service would potentially release a pair or family group from the SAFE population. While releasing pairs from the SAFE population is not our preferred method of bolstering the wild Red Wolf population within the ENC RWP, attempting to create additional breeding pairs in available and vacant habitat is an important piece of this strategy.

## Performance Measures

The Service will use the measures and metrics below to measure the performance of any releases within the ENC RWP or translocations to the ENC RWP:

1. Survival of individual translocated adult Red Wolves at the following time intervals<sup>2</sup>:
  - a. 3 months
  - b. 6 months
  - c. 1 year
2. Known population size: The number of known (i.e., detectable and alive) Red Wolves in the ENC RWP at the end of the calendar year.
3. Reproductive status and output (Note that the ability to provide a complete report on this measure is contingent on the ability to locate and access dens):
  - a. Number of breeding pairs in the ENC RWP (including number of pairs involving Red Wolves translocated from captivity);
    - i. Success is defined as one breeding pair
  - b. Number of litters produced and number of litters with fostered pups;
    - i. Success is defined as one litter produced
  - c. Number of pups per litter and number of fostered pups, and
    - i. This is only a reporting measure, and no success metrics are applied to this measure
  - d. Number of young surviving to one year.
    - i. Success is defined as one pup surviving to one year per litter. This is estimated from captures in traps and on cameras.

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<sup>2</sup> A component of this measure is detectability, as contact may be lost with some Red Wolves following release even if they are fitted with a transmitter (e.g., male Red Wolf translocated from St. Vincent and released in the ENC RWP in February 2020 for which contact was lost in June 2020).

## **Literature Cited**

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