



# Red Wolf News

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## Estimating the Size of the Red Wolf Population

*Contributed by Brian Kelly, Coordinator of Red Wolf Field Projects.* It is difficult for wildlife managers to accurately determine how many of a species live in an area. An animal's behavior, the frequency and extent of its movements, and the habitat it uses all influence our ability to do this. Counting reintroduced red wolves is different than most other species because we started the reintroduction with no wolves in the wild. When we released the first captive born wolves a collar that transmits a radio signal was attached to each wolf. When wild born wolves are captured they too receive a radio collar. Collaring all wolves allowed us to know exactly how many wolves were living in the wild. However, as the original wolves began to have puppies, we could not be certain we were capturing all of the red wolves in the wild. As a result, there is a portion of the red wolf population that we don't know about.



Pair of red wolves photo by Barron Crawford

collars that we have operating. Currently this is 65 wolves. Since the beginning of the reintroduction we have lost contact with 41 radio collared wolves and have tagged 19 puppies that were too small to attach a radio collar.

If these 60 wolves are still alive, the maximum population of wolves that we know about is 125. However, it is also possible that none of the 60 wolves are still alive. Using a minimum of 65 and a maximum of 125 and making some statistical assumptions we estimate the size of the current red wolf population to be 95 wolves. However, we need to better understand the unknown segment of the red wolf population and the survival rates of those wolves we have lost contact with to refine this estimate.

Efforts to obtain this information are underway via our research partnerships. For example, we now have estimates of red wolf survival rates and are working to refine our estimate of red wolf population size.

The minimum red wolf population is the number of radio

### **Wild wolf population in Northeastern North Carolina**

- Wolf population is estimated at 95, 65 of which are radio collared. Six sterilized hybrids are also radio collared in the recovery area.
- Wolves range over about one million acres of public and private land.
- Known changes to the wolf population this quarter were: 31 new wolves being monitored and six deaths.

## The Captive Breeding Program

*Contributed by Will Waddell, Red Wolf Captive Breeding Coordinator.* Establishing a captive-breeding program in the 1970's was the only option to save the red wolf from extinction. Increasing red wolf numbers as quickly as possible was essential to secure the population and provide wolves for the future reintroduction that was planned.

At the end of 1999 there were 160 red wolves being managed in the captive program. At the Red Wolf Species Survival Plan (RWSSP) mid-year meeting held at the North Carolina Zoo, breeding recommendations were made for the upcoming season

Wolves generally breed well in captivity; however some individuals may be more prolific than others,

causing certain founder lines to become more represented in the population than others. This disparity can impact genetic diversity in the population and require prevention of breeding from individuals whose founder lines are well represented in the population. Breeding efforts must then focus more intensely on wolves that are under-represented in

# RED WOLF MORTALITY

Mortality factors, or why wolves die, are important for us to understand if we hope to recover the red wolf. Each quarter, changes to the population are reported in *Red Wolf News* and they usually involve at least one death in the red wolf population.

Since the program first began in September of 1987, 112 of the wolves we've known about have died. Of those 112, 37 died of natural causes such as old age, uterine infections, being killed by other wolves, and disease. Another 28 were hit by vehicles, which

represents a common mortality factor in many wildlife species. Twenty wolves died from unknown causes, which is often the case when the carcass is severely decomposed before it can be collected. Eighteen red wolves have died under suspicious conditions or taken illegally. Legal take, such as during depredation events or trapping related accidents, has been responsible for the deaths of seven wolves.

When a red wolf dies of a suspected illegal cause, a report is sent to law enforcement officials who may open an

investigation. During an investigation, confidentiality about the specifics of the case is critical. Therefore, reporting individual wolf deaths and suspected causes will not always be detailed in the *Red Wolf News*.

Although 112 wolves have died, more than 191 have been born in the wild. Each birth brings the red wolf closer to recovery by increasing the odds that wolves will have access to other wolves as mates. This addresses the hybridization issue and insures future births to help offset mortalities.

## Island Propagation Status Report

A female wolf that was born in the Great Smoky Mountains National Park was transferred from the northeastern North Carolina captive breeding facility to Bull's Island off the coast of South Carolina to be paired with a male that was born on the island. They are in an enclosure and will be released after the breeding season.

Two genetically valuable yearling females born on St. Vincent Island off the panhandle of Florida are scheduled to come to northeastern North Carolina for release. A male wolf will be sent to pair with the breeding female on the island, since it is likely that her mate died.

Both of the above strategies are designed to maximize the chances for breeding on the islands. The island wolves, having had experience in the wild, can be released in northeastern North Carolina to help increase numbers of wolves. This will give the wolves a better opportunity to find another wolf as a mate and address hybridization with coyotes.

## The Captive Breeding Program, continued

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the population.

The RWSSP is cooperating with researchers to examine safe, effective and reversible birth control in red wolves. Collaboration between the RWSSP and the Toronto Zoo continues to assess sperm cooling/freezing techniques for genome resource banking in addition to evaluating in-vitro samples to measure sperm fertilizing ability. Fecal steroid techniques have also been

developed to monitor female reproductive status and to determine pregnancy. This technique has special significance for successful artificial breeding. Participation in these important research programs will affect long-term red wolf management and are examples of the RWSSP's commitment to red wolf recovery.

While the preferred method to prevent reproduction is to separate wolves throughout the breeding season, many



facilities may not have the space to accomplish this. The application of these studies could provide the RWSSP greater flexibility when making decisions about pairings.



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