

Red Wolves Thrive at Gulf Islands

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The red wolf (*Canis rufus*) is the native wolf of the Southeast (Nowak 1979). Originally, it inhabited forests and swamps from central Texas to the Atlantic and from the Gulf Coast to the Ohio Valley and Pennsylvania. Unlike larger grey wolves (*Canis lupus*) which form packs of eight or more individuals, red wolves live in small family groups.

The red wolf is an opportunistic predator that preys primarily on small mammals. Studies in east Texas and Louisiana indicated the wolves feed almost exclusively on rabbits (*Sylvilagus aquaticus* and *S. floridanus*), nutria (*Myocastor coypus*) and cotton rats (*Sigmodon hispidus*) (Shaw 1975; Carley 1975).

The red wolf was extirpated from most of its range by the 1930s, although it survived in isolated pockets in the lower Mississippi Valley until much later (Wolfe 1972; Paradiso and Nowak 1972). The last wild wolves inhabited coastal prairies and salt marshes in east Texas and Louisiana. All the red wolves alive today are descendants of 15 individuals trapped in east Texas in the late 70s to form the nucleus of a captive breeding program (Parker et al. 1989).

Extinct in the world for almost 15 years, red wolves were returned to a portion of their former habitat in 1987, when eight wolves were released at Alligator River National Wildlife Refuge – the first step in an ambitious restoration program directed by the USFWS. By that time all the remaining wolves were second or third generation captive reared animals. Clearly the transition to independence in the wild would be difficult.

In 1988, the red wolf recovery team approached the NPS about using Horn Island, a 1300 ha wilderness area within Gulf Islands National Seashore, as a site to propagate wild red wolves (Parker 1987, 1988). Objectives of the proposed 5-year project would be to release a pair of wolves on the island, study their biology and their effects on the ecosystem, and use any wild offspring produced in restoration projects at Alligator River or other mainland sites. The hope was that wild reared wolves would have a higher survival rate than animals born and raised in captivity.

A recently completed 3-year baseline study on the island's small mammal populations (Esher et al. 1988) had raised concerns about the effects on island vegetation of introduced rabbits and nutria, and this fact, together with the hope of contributing to the recovery of the wolves, caused Supt. Jerry Eubanks to approve the wolf recovery project in the fall of 1988.

Two adult red wolves were flown to Mississippi from Alligator River NWR, NC, on Jan. 10, 1989. The male had been raised at Audubon Zoo in New Orleans, the female at the captive breeding program run by the Point Defiance Zoo in Tacoma, Wash. When they were brought to Horn Island, the male was five years old, the female, six. They were released into a 15 x 15 holding pen on Horn Island and fed fresh meat (deer, beaver, nutria, and rabbits) daily.

They quickly acclimated to their new surroundings and, while still in the pen, the female became pregnant and gave birth to seven healthy pups (4 males and 3 females) on May 6. On July 12, the pups were transported to Ocean Springs, where transmitters were surgically implanted. Their weights ranged from 4.4 to 4.8 kg. On July 28, the wolves were captured, given their final worming and vaccinations, and weighed. The female weighed 25 kg, the male 33.7 kg, and the pups

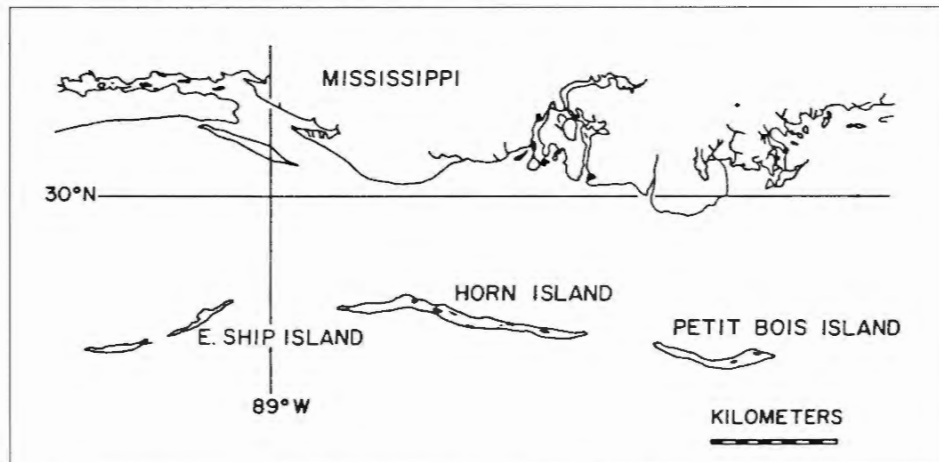


Figure 1. Horn Island is a 1300 ha wilderness area located 10 km off the Mississippi coast.

averaged 6.3 kg (5.7-6.5 kg). All nine were released into the wild on July 31, 1989.

An on-going research project has provided information on the biology of the wolves and their effect on the island ecosystem over the past year.

Radio telemetry studies of the wolves' movements revealed that within a month of their release the adult wolves were hunting successfully and regularly traversing the entire 22 km length of the island. By the time the pups were five months old they were accompanying the adults on extended nightly hunting trips.

Monitoring of the small mammal populations has continued on a bi-annual basis, using a combination of live trapping grids, baited tracking stations, and unbaited cross-island tracking transects. These studies have documented changes in populations of several species. Wolves are excluding rabbits, nutria, and raccoons from open habitats. Nutria, which once foraged extensively on sea oats in the primary dunes, now are restricted to marsh habitats and their numbers probably have been reduced as well. Raccoons now are found almost exclusively in forested habitats and their numbers also may have been reduced. Rabbit

numbers appear stable, although wolf predation apparently is causing a shift in the population age structure toward younger animals.

We hope to monitor the secondary effects of these changes (e.g. the response of the vegetation to reduced grazing by nutria and rabbits or the response of sea turtle, alligator, and osprey populations to reduced predation by raccoons) in the years ahead. Food habits studies indicate that the wolves are feeding primarily on rabbits (70% of diet), raccoons (15%), and nutria (10%). The remainder of their diet includes vegetation, insects, fish, crustaceans, and birds.

The original plan for the Horn Island Project called for maintaining a single pair of adult wolves on the island and removing any pups produced each winter for eventual release at Alligator River or mainland sites. That plan was modified last winter due to the large number of pups produced and the death of the adult female.

The adult male and two male pups were trapped in January 1990 and sent to Alligator River. The remaining five pups were left on the island where they have thrived over the past nine months. These five wolves, now full grown, were to be trapped in November 1990, and one female selected to remain on the island. She will be paired with a new adult male this winter in the hope that they will produce another litter of pups next spring.

One female will be sent to Great Smoky Mountains NP as part of a new project set to begin there in January 1991. Plans are underway to release red wolves into the Cades Cove area of the park as part of a research project to assess the suitability of the park as a restoration site. The remaining female and two male wolves from Horn Island will be sent to Alligator River for eventual release on the refuge there. It is hoped that the skills and wild instincts developed by these animals on Horn Island will improve their chances of survival at mainland sites.

Horn Island, Miss., appears to be an excellent place to rear and study red wolves. The wolves removed from the island in January were in superb condition and the transition from captivity to the wild in these animals appears complete. In spite of the fact that there are 20-30,000 visitors to Horn Island each year, no encounters or sightings of red wolves have been reported.



Figure 2. Resources Management Specialist Gary Hopkins assists Biological Technician Robin Tillman in vaccinating a 10-week-old red wolf pup.

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RABBIT AGE STRUCTURE BEFORE AND AFTER WOLF RELEASE

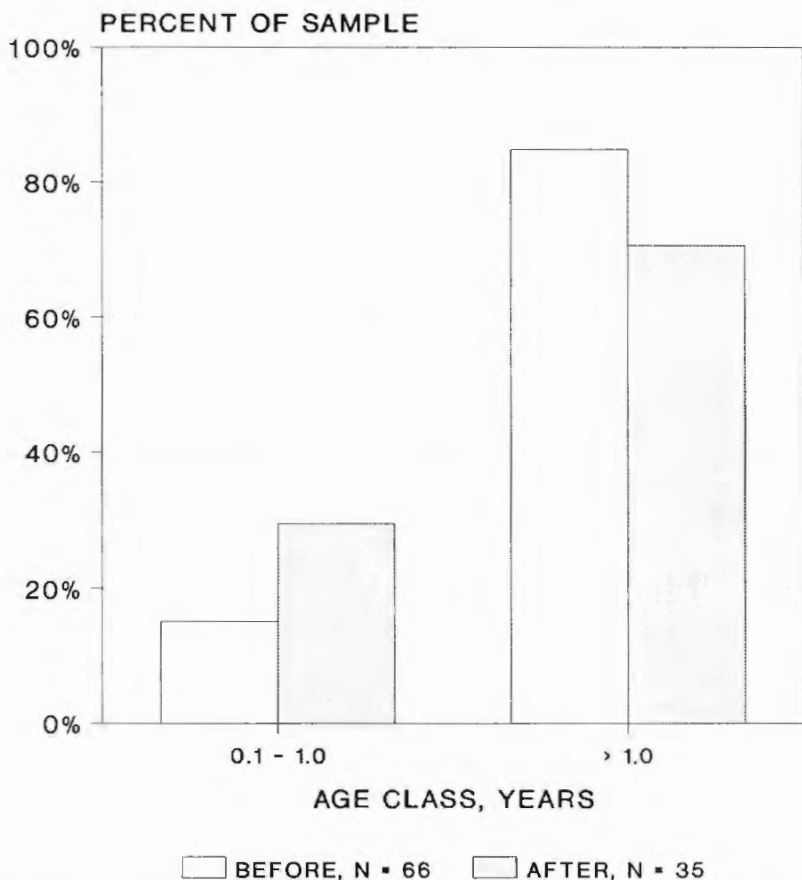


Figure 3. Comparison of age of cottontail rabbits on Horn Island before and after red wolf release.

Red Wolf Diet Horn Island

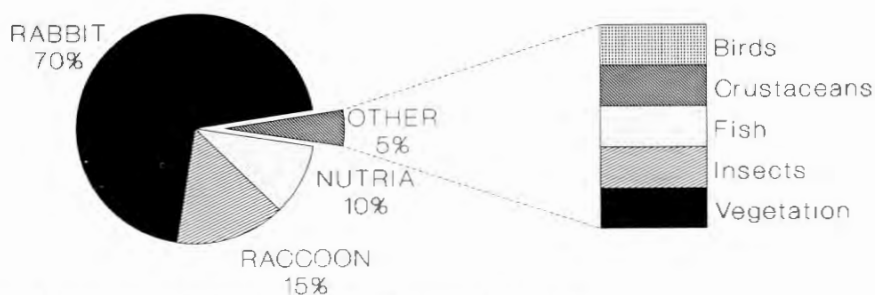


Figure 4. Composition of red wolf diet August 1989 - August 1990, n=91.

Research on the prey populations is providing new insights into the role of predators in ecosystems and the effects of exotic herbivores on barrier islands. We believe that, as more data become available from this and other projects, biologists will be able to make better decisions on the management of this and other large carnivores.

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