Red Wolf Recovery Program

Photo credit: Ryan Nordsven

3rd Quarter Report

April - June 2010

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www.fws.gov/redwolf

trackthepack.blogspot.com

The Red Wolf Recovery Program

The red wolf (*Canis rufus*) is one of the most endangered canids in the world. Once occurring throughout the eastern and south-central United States, red wolves were decimated by predator-control programs and the loss and alteration of habitats. By the 1970s, these activities had reduced the red wolf population to a small area along the Gulf coast of Texas and Louisiana. To protect the species from extinction, the U.S. Fish and Wildlife Service initiated efforts to locate and capture as many red wolves as possible for the purposes of establishing a program to breed the species in captivity and one day reintroduce the species into a portion of its former range. More than 400 canids were captured in coastal areas of Texas and Louisiana, but only 17 were identified as pure red wolves. Fourteen of these wolves would become the founding members of the captive-breeding program and the ancestors of all red wolves existing today.

The first litter of red wolves born in captivity occurred in 1977. Within a few years red wolves were successfully reproducing in captivity, allowing the U.S. Fish and Wildlife Service to consider reintroducing the species in the wild. In 1987, four male-female pairs of red wolves were released in Alligator River National Wildlife Refuge (ARNWR) in northeastern North Carolina and designated as an experimental population. Since then, the experimental population has grown and the recovery area expanded to include four national wildlife refuges, a Department of Defense bombing range, state-owned lands, and private lands, encompassing about 1.7 million acres. However, interbreeding with the coyote (a species not native to North Carolina) has been recognized as a threat affecting the restoration of red wolves. Currently, adaptive management efforts are making progress in reducing the threat of coyotes to the red wolf population in northeastern North Carolina. Other threats, such as habitat fragmentation, disease, and premature mortality, are of concern in the restoration of red wolves. Efforts to reduce the threats are presently being explored.

Program Objectives

The current recovery plan (U.S. Fish and Wildlife Service, 1990) specifies the following objectives:

1) Establish and maintain at least three red wolf populations via restoration projects within the historic range of the red wolf. Each population should be numerically large enough to have the potential for allowing natural evolutionary processes to work within the species. This must be paralleled by the cooperation and assistance of at least 30 captive-breeding facilities in the United States.
2) Preserve 80% to 90% of red wolf genetic diversity for 150 years.
3) Remove threats of extinction by achieving a wild population of approximately 220 wolves and a captive population of approximately 330 wolves.
4) Maintain the red wolf into perpetuity through embryo banking and cryogenic preservation of sperm.

The Red Wolf Population

For the purposes of this report, all population figures are comprised only of known canids (i.e., wolves, coyotes, and/or hybrids that are actively monitored through either a functioning radio-collar or surgically implanted abdominal radio transmitter). Additional wolves, coyotes, and/or hybrids may be present, but have not been captured or their presence otherwise confirmed.

Population and Territory Status

A total of 74 known red wolves occupied the Red Wolf Recovery Area (i.e., 1.7 million acres in five counties in northeastern North Carolina) at the end of the third quarter of our fiscal year 2010 (FY 10). The population includes 26 packs (totaling 62 wolves) with 13 breeding pairs. An additional 12 wolves are not known to be associated with a pack (as defined in the Pack Summaries section).

The Red Wolf Recovery Program documented nine litters (totaling 42 pups) born in the Red Wolf Recovery Area during the 2010 whelping season. Additional pups and/or litters could be present, but

have not been confirmed. Two pups born in captivity at Lincoln Park Zoo (Chicago, IL) were fostered into a wild litter (see Pack Summaries section below). Pups born during the 2010 whelping season are not included in the reported population numbers.

Wolf Pairings

One breeding pair (Ventures pack) was lost and one breeding pair (Beech Ridge pack) was formed during the quarter. One additional breeding pair (Northern pack) appears to have been lost, but the status of the breeding female is unresolved (see Pack Summaries section).

Wolf Captures and Radio Telemetry Marking

During this quarter, Red Wolf Recovery Program staff logged approximately 3,632 trap-nights. For that effort, four wolves were captured, two of which were first time captures. All wolves were fitted or re-fitted with radio-collars (either VHF or GPS) and released. Captured wolves consisted of two adults (1 male and 1 female) and two yearlings (1 male and 1 female).

Dispersals

Two known wolves dispersed from their natal territories during the quarter, including a yearling male (1756M) from Waupaupin pack and a yearling male (1777M) from Ventures pack.

Mortalities

Four known wolves (2 adult males, 2 yearling males) from the Red Wolf Recovery Area died during the quarter, including two adult males (1726M and 1185M) that are being investigated by the U.S. Fish and Wildlife Service's Office of Law Enforcement for suspected illegal take (see Announcements section below), one yearling male (1745M) that died from a vehicle collision after dispersing from his natal range (Milltail pack) during the last quarter, and a yearling male (1756M) that died of unknown causes after dispersing from his natal range (Waupaupin pack) during the current quarter.

Disappearances

The Red Wolf Recovery Program lost radio contact with two wolves (1 adult, 1 yearling) during the quarter, including a breeding female wolf (1470F) from Northern pack that disappeared just before whelping season and a yearling male (1777M) from Ventures pack that disappeared after dispersing from his natal territory.

Pack Summaries

For the purposes of this report, the criteria used to define a pack include a known wolf maintaining an established territory and is either associating with or has historically associated with another wild canid inhabiting the same territory. Packs identified in the following summaries include a minimum of one known wolf within the quarter being reported.

Milltail Pack (4 collared wolves)

The Milltail pack consists of the radio-collared breeding pair (1544M male, 1357F female), one radio-collared adult offspring born in 2008 (1660F), and one radio-collared yearling born in 2009 (1743F). A litter of seven pups was born to the breeding pair in April.

Gator Pack (2 collared wolves)

The Gator pack consists of a radio-collared breeding pair (1661M, 1085F).

Lux Pack (0 collared canids)

The radio-collared female wolf (904F) moved out of the territory. No other canid has been captured at Lux pack.

Hester Pack (1 collared wolf, 1 collared coyote)

The Hester pack consists of one radio-collared male wolf (1333M) and one radio-collared sterile female coyote.

Waupaupin Pack (2 collared wolves)

The Waupaupin pack consists of a radio-collared breeding pair (1657M, 1471F). The female was captured, her radio-collar replaced, and released in April. A yearling male (1756M) born in 2009 also was captured, radio-collared, and released in April, but subsequently dispersed from the pack in May. He was found dead of unknown causes in June.

Ventures Pack (4 collared wolves)

The Ventures pack consists of the radio-collared breeding female (1207F), two radio-collared adult offspring (1705M and 1706F) born in 2008, and one radio-collared yearling (1778F) born in 2009. A yearling male (1777M) began to disperse from the pack in March, but was lost to contact in April. The breeding male (1185M) was found dead in April of suspected illegal take. His death is under investigation by the U.S. Fish and Wildlife Service's Office of Law Enforcement. A litter of seven pups was born to the breeding pair in April.

Carmur Pack (1 collared wolf, 1 collared coyote)

The Carmur Pack consists of one radio-collared male wolf (1672M) and one radio-collared sterile female coyote. The radio-collared male wolf (1313M) previously occupying Carmur pack moved out of the territory in April. The current male (1672M) was initially captured, radio-collared, and released in June; he was originally from the Rich pack. The female coyote was captured, radio-collared, sterilized, and released in June.

Swindell Pack (4 collared wolves)

The Swindell pack consists of the radio-collared breeding pair (1540M, 1419F) and two radio-collared yearlings (1749M, 1750M) born in 2009. A litter of four pups was born in April.

Weyerhaeuser Pack (2 collared wolf)

The Weyerhaeuser pack consists of a radio-collared breeding pair (1684M, 1440F). A litter of five pups was born to the breeding pair in April.

Cameron Pack (1 collared coyote)

The Cameron pack consists of a radio-collared sterile female coyote. The male wolf (1726M) was found dead in April of suspected illegal take. His death is under investigation by the U.S. Fish and Wildlife Service's Office of Law Enforcement.

Whitetail Pack (5 collared wolves)

The Whitetail pack consists of the radio-collared breeding female (1298F), one radio-collared adult offspring (1708F) born in 2008, and three radio-collared yearlings (1779F, 1780M, 1781M) born in 2009.

Kilkenny Pack (4 collared wolves)

The Kilkenny pack consists of a radio-collared breeding pair (1547M, 1170F) and two radio-collared yearlings (1766M, 1768M) born in 2009. A litter of two pups was born to the breeding pair in April. Two pups born in captivity at the Lincoln Park Zoo (Chicago, IL) were fostered into the litter in April.

Rich Pack (3 collared wolves)

The Rich pack consists of a radio-collared breeding pair (1703M, 1633F) and one radio-collared yearling (1741F) born in 2009. A litter of four pups was born to the breeding pair in April.

Pocosin Lakes Pack (3 collared wolves)

The Pocosin Lakes pack consists of a radio-collared breeding pair (1301M, 1358F) and one radio-collared yearling (1748M) born in 2009.

Pungo Pack (0 collared canids)

The radio-collared male wolf (1620M) moved out of the Pungo territory during the quarter. No other canid has been captured at Pungo pack.

Beech Ridge Pack (4 collared wolves)

The Beech Ridge pack consists of a radio-collared breeding pair (1105M, 1429F) and two younger adult siblings (1693F, 1698M) of the breeding female. The breeding male moved into the territory prior to this quarter. A litter of four pups was born to the breeding pair in April.

Cutler Pack (2 collared wolves)

The Cutler pack (previously the Bishop pack) consists of a radio-collared breeding pair (1621M, 1671F). This pair relocated their territory from the Bishop pack area to the Cutler pack area during the quarter.

Mannings Pack (1 collared wolf)

The Mannings pack consists of a radio-collared male (1469M). A female coyote was captured and removed from the area during the last quarter, but no other canid has been captured at the Mannings pack area since then.

L-Block Pack (1 collared wolf)

The L-Block pack consists of a radio-collared male wolf (1238M). The radio-collared female wolf (1539F), captured last quarter and held in captivity for medical treatment, was released in April at L-Block. She has remained in the vicinity, but has not established a residence in the L-Block pack territory.

F2 Pack (1 collared wolf, 1 collared coyote)

The F2 pack consists of a radio-collared female wolf (1577F) and a sterile radio-collared male coyote.

Scuppernong Pack (1 collared wolf, 1 collared coyote)

The Scuppernong pack consists of a radio-collared male wolf (1683M) and a sterile radio-collared female coyote.

Tyson Pack (5 collared wolves)

The Tyson pack consists of the radio-collared breeding pair (1519M, 1448F), one radio-collared adult offspring (1682M) born in 2008, and two radio-collared yearlings (1760M, 1761M) born in 2009. A litter of six pups (estimated to have been born in April) was discovered in June.

Northern Pack (1 collared wolf)

The Northern pack consists of a radio-collared breeding male (1628M). Contact was lost with the radio-collared breeding female (1470F) in April, just prior to the whelping season. It is unclear whether her collar malfunctioned or if she is no longer in the area. Although her presence in the area has not been confirmed, a litter of three pups (estimated to have been born in April) was discovered in June.

Gumneck Pack (2 collared wolves)

The Gumneck pack consists of a radio-collared breeding pair (1516M, 1685F).

Buck Ridge Pack (1 collared wolf, 1 collared coyote)

The Buck Ridge pack consists of a radio-collared female wolf (1678F) and a sterile radio-collared male coyote.

Frying Pan Pack (3 collared wolves)

The Frying Pan pack consists of the radio-collared breeding male (1177M) and two radio-collared offspring, including an adult female (1686F) born in 2008 and a yearling female (1772F) born in 2009.

Timberlake Pack (2 collared wolves)

The Timberlake pack consists of a radio-collared breeding pair (1452M, 1300F).

Columbia Pack (2 collared wolves)

The Columbia pack consists of a radio-collared breeding male (1458M) and his radio-collared adult female offspring (1630F) born in 2007. The radio-collared sterile female coyote was killed when struck by a vehicle after likely being displaced from Columbia pack area by the young female wolf.

Little Alligator Pack (1 collared wolf)

The Little Alligator pack consists of a radio-collared male (1727M). An un-collared coyote has been spotted with the male, but attempts to capture the coyote have been unsuccessful.

Collaborations

Research

The Red Wolf Recovery Program provided financial and in-kind support for collaborative research with scientists at other institutions, including universities, interagency divisions, and non-government research organizations. These investigations required project staff to assist outside researchers and graduate students in their efforts to better understand red wolf ecology, ecosystem function, and conservation efforts.

Project Title: Wild canid genetic sampling in Eastern North Carolina.
Graduate Student: Justin Bohling (PhD student)
Committee Chair/Principal Investigator: Lisette Waits, PhD, University of Idaho

Project Title: The effects of parenthood on red wolves (*Canis rufus*) in northeastern North Carolina.
Graduate Student: Justin Dellinger (MS student)
Committee Chair/Principal Investigator: Troy Best, PhD, Auburn University

Project Title: Identifying management procedures to reduce red wolf-coyote interactions in eastern North Carolina.
Graduate Student: Joseph Hinton (PhD student)
Committee Chair/Principal Investigator: Michael Chamberlain, PhD, Louisiana State University

Project Title: Seasonal Cycles in Red Wolf Home Range Characteristics: A GPS Collar and Multispectral Satellite Image Study.
Graduate Student: Melissa Karlin (PhD student)
Committee Chair/Principal Investigator: John Chadwick, PhD, University of North Carolina at Charlotte

Project Title: Assessment of spatial and temporal activities of red wolves using GPS and VHF telemetry data.
Graduate Student: Melissa Karlin (PhD student)
Committee Chair/Principal Investigator: John Chadwick, PhD, University of North Carolina at Charlotte

Project Title: Dietary overlap between red wolves (*Canis rufus*) and coyotes (*Canis latrans*) in Eastern North Carolina.
Graduate Student: Justin McVey (MS student)
Committee Chair/Principal Investigator: Chris Moorman, PhD, North Carolina State University

Project Title: Evaluating potential effects of widening US Highway 64 on red wolves, Washington, Tyrrell, and Dare Counties, North Carolina.
Graduate Student: Christine Proctor (PhD student)
Committee Chair/Principal Investigator: Michael R. Vaughan, PhD, Virginia Polytechnic Institute and State University (Virginia Tech)

Publications

The following publications have gone to print in this quarter. A complete list of publications related to red wolves can be found at www.fws.gov/redwolf/biblio.html.

Chadwick, J., B. Fazio, and M. Karlin. 2010. Effectiveness of GPS-based telemetry to determine temporal changes in habitat use and home-range sizes of red wolves. Southeastern Naturalist 9(2):303-316.

Presentations

No presentations related to red wolves were reported during this quarter.

Staff and Volunteers

The Red Wolf Recovery Program employs eight full-time staff, including the program coordinator, four wildlife biologists, a biological technician, an outreach coordinator, and an administrative assistant. The outreach coordinator and administrative assistant positions are currently vacant. The Red Wolf Recovery Program also benefits from an unpaid intern (Caretaker).

Outreach

Staff from the Red Wolf Recovery Program conduct presentations and attend events to inform and educate the public on the conservation needs of the red wolf and the restoration efforts of the Red Wolf Recovery Program. As part of our effort to assist educators, red wolf "discovery boxes" that include materials about the red wolf are distributed to educational facilities upon request.

The Red Wolf Recovery Program also seeks to achieve a quality visitor and participant experience in the U.S. Fish and Wildlife Service's priority recreational uses on National Wildlife Refuges. Our outreach efforts focus on four of the six program elements, including wildlife observation, wildlife photography, environmental education, and interpretation, and are conducted frequently in partnership with ARNWR and PLNWR educators and volunteers.

Presentations

Date	Location	Audience	Length	Attendance	Presenter
April 24	Dare County	Red Wolf Coalition Bailey Wildlife Foundation	3 hrs	10	D. Rabon
April 29	Dare County	Smithsonian Magazine	6 hrs	1	RWRP Staff
May 11	Dare County	United States of Adventure	6 hrs	3	RWRP Staff
June 16	Dare County	USDA NRCS	3 hrs	15	M. Morse
June 17	Dare County	Duke Energy The Nature Conservancy Charlotte Observer	3 hrs	9	D. Rabon
June 22	Dare County	Wildlands Network	2 hrs	2	D. Rabon A. Beyer
June 29	Dare County	Wildlands Network	3 hrs	2	D. Rabon

Howlings

Date	Location	Event	Length	Attend	Presenter
April 24	ARNWR	Earth Day	2 hrs	71	K. Wheeler D.J. Sharp
June 9	ARNWR	Summer Howling	2 hrs	43	K. Wheeler D.J. Sharp
June 16	ARNWR	Summer Howling	Cancelled - Weather	0	K. Wheeler D.J. Sharp
June 23	ARNWR	Summer Howling	2 hrs	41	K. Wheeler D.J. Sharp
June 30	ARNWR	Summer Howling	Cancelled - Weather	0	K. Wheeler D.J. Sharp

Website / Social Media

The Red Wolf Recovery Program recently launched a weblog to provide a fun and creative outlet that highlights the efforts of the Red Wolf Recovery Program staff in the conservation of the red wolf. The weblog combines text, images, videos, and links to other media related to its topic. The content includes educational, informational, and general journal entries written by program staff, and allows readers to leave comments in an interactive format. The weblog can be found at trackthepack.blogspot.com.

Media Inquires

The Red Wolf Recovery Program responded to numerous media inquiries during this quarter, including Smithsonian Magazine (article entitled "Buying time" in the August 2010, 40th Anniversary Edition, available on-line at www.smithsonianmag.com/specialsections/40th-anniversary/Rising-Seas-Endanger-Wetland-Wildlife.html?c=y&page=1); Batwin & Robin Productions (media productions for The Daily Planet and the North Carolina Museum of Natural Sciences); The Charlotte Observer; and, science writer DeLene Beeland (www.delene.us), who is writing a new book about red wolves.

Partnerships

Species Survival Plan (SSP)

Species Survival Plan (SSP) captive facility coordination is based at Point Defiance Zoo & Aquarium (PDZA) in Tacoma, Washington. The SSP currently coordinates 42 captive red wolf sites at zoos and nature centers housing about 179 wolves. The following information is based on activities completed or conducted by the SSP Coordinator during the quarter reported. Additional information on the SSP can be found at www.fws.gov/redwolf or www.pdza.org.

The SSP Coordinator reported eight confirmed pregnancies in the SSP population. Two litters did not result in live-births; one required the C-section of a single pup that was dead in-utero, and one was still-born with the number and sexes of pups unknown. The remaining six litters resulted in 24 pups with 11 surviving in the SSP population to date. Two of the 24 pups were cross-fostered from a litter of nine pups born at Lincoln Park Zoo (Chicago, IL) to a wild litter of the Kilkenny pack (see Pack Summaries). Many thanks to Lincoln Park Zoo and the red wolf field crew for their efforts to make this happen.

The SSP Coordinator also noted that progress continues on construction of the new off-site facility located adjacent to Northwest Trek Wildlife Park. A very wet spring has resulted in some minor construction delays and pushed back their ability to begin moving wolves by the anticipated date as reported last quarter. In addition, a follow-up program was presented in May to the Clear Lake Homeowners Association (within howling distance of site) to keep residents informed about the relocation work and to answer questions. About 50 individuals attended. Follow-up meetings are planned to keep residents informed. [The Northwest Trek facility will replace the existing Graham facility as the flagship captive-breeding facility at PDZA. The development of Northwest Trek was made possible, in part, with funds from the Omnibus Appropriations Act 2009 (Public Law 111-8 – March 11, 2009), and the efforts of Congressman Norm Dicks (WA) and Congressman Heath Shuler (NC). An additional $179,000 was awarded to the Western North Carolina Nature Center (Asheville, NC) to upgrade their red wolf breeding and holding facilities.]

The SSP Coordinator also reported that the Trevor Zoo (Millbrook, NY) is supporting the educational goals of the 2010 International Year of Biodiversity with an informative exhibit that defines biodiversity and explains its value while also describing some of the threats to biodiversity. This exhibit focuses on the great work of the SSPs for the red panda and the red wolf, and focuses especially on the success stories and progress made in securing more wildlife habitat for the red panda and in the careful management and increasing numbers of the red wolf. Kelly Fallon, a senior student in environmental science at Millbrook School, created this exhibit as an independent study project with help from Trevor

Zoo Conservation Education Director, Jane H. Meigs. The hope is that visitors to the Trevor Zoo and students at Millbrook School will understand the crucial role of zoos in conserving biodiversity both in the field and at zoo facilities.

Lastly, the SSP Coordinator reported a new cooperative effort with the American Zoo and Aquarium Association's (AZA) Wildlife Contraception Center (WCC) and the Canid Taxon Advisory Group to provide the WCC with medical/pathology reports of red wolves for analysis of reproductive health issues in canids, specifically the incidence of pyometra and endometrial hyperplasia.

Island Propagation Sites

The U.S. Fish and Wildlife Service utilizes island sites to propagate red wolves and contribute to the restoration of a wild red wolf population, primarily by inserting island-born wolves into the wild population as a means to augment the wild red wolf gene pool with "under-represented" genes from the captive population. Currently, the Red Wolf Recovery Program cooperates with St. Vincent National Wildlife Refuge in maintaining a breeding pair of red wolves on an island site.

Red Wolf Coalition (RWC)

The Red Wolf Coalition (RWC) is a non-profit organization based in northeastern North Carolina that advocates for the long term survival of red wolf populations through education and outreach. The RWC's educational program teaches students about the history, biology, and status of the red wolf recovery program, and accompanies students to ARNWR and PLNWR to learn about the habitat of the red wolf. The RWC currently employees an Executive Director, and has a membership of approximately 400 individuals and organizations. The following information is based on activities completed or conducted by the Executive Director during the quarter reported. Additional information on the RWC can be found at www.redwolves.com.

The Executive Director reported the RWC launched a capital campaign to enclose a spacious woodland lot adjacent to the U.S. Fish and Wildlife Service's Red Wolf Education and Health Care Facility in Columbia, NC. The enclosures will offer visitors an opportunity to view "ambassador" red wolves in the only captive facility open to the public located within the Red Wolf Recovery Area. Information on the capital campaign can be found at www.crowdrise.com/enclosure/fundraiser/redwolfcoalition.

The Executive Director of the RWC also reported the start of the summer howling season in June with weekly howlings on Wednesday at 7:30 pm on ARNWR (see Outreach section). Additional information on the howlings can be found at www.redwolves.com. The RWC also is cooperating with PLNWR on their summer science camp.

The Executive Director of the RWC reported that the RWC received grants from Shared Earth Foundation and the UK Wolf Conservation Trust. The RWC extends its gratitude to both organizations for their long-time support of the RWC and red wolf conservation.

Announcements

The U.S. Fish and Wildlife Service is investigating the suspected illegal take of two radio-collared red wolves that were found dead in two different locations in Hyde County, North Carolina. The first wolf was located on April 23, 2010, near Englehard. The second wolf was located on April 27, 2010, near Scranton. Contributions from the following organizations and individuals have increased the amount of a reward of up to $15,000 for information directly leading to an arrest, a criminal conviction, a civil penalty assessment, or forfeiture of property on the subject or subjects responsible for the suspected unlawful take of these red wolves:

- Red Wolf Coalition
- Defenders of Wildlife

- Humane Society of the United States and the Humane Society Wildlife Land Trust
- Cathy Kangas, Humane Society National Council member
- North Carolina Wildlife Federation

The red wolf is protected under the Endangered Species Act. The maximum criminal penalties for the unlawful taking of a red wolf are one year imprisonment and $100,000 fine per individual. Anyone with information on the deaths of these red wolves or any others, past or future, is urged to contact Special Agent Sandra Allred at (919) 856-4786, Refuge Officer Chris Smith at (252) 926-4021, or North Carolina Wildlife Resources Commission Officer Robert Wayne at (252) 216-8225.