Red Wolf Misconceptions and Facts

As part of our work to protect red wolves in the eastern U.S., Wildlands Network seeks to dispel the misconception that red wolves are dangerous predators not worth saving. We assembled the following list of **common misconceptions about red wolves** and the **contrary realities**. These misconceptions represent just some of the barriers to red wolf recovery.

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1. Misconception: Red wolves and coyotes have inflicted the greatest wildlife disaster in the history of North Carolina.

Reality: The Red Wolf Recovery Area continues to support robust populations of deer, turkey and other wildlife. In fact, this region provides some of the foremost wildlife viewing opportunities in the eastern U.S.

- We've compiled years' worth of wildlife photos from one of our cameras at Alligator River National Wildlife Refuge (where the red wolves have lived for 30+ years) into a 15-minute video. The video shows steady streams of wolves, bears, deer, bobcats,

and wild turkey walking by the camera, in what has to be one of the most impressive displays of wildlife anywhere on the East Coast.

- Wildlands Network has deployed cameras in the Red Wolf Recovery Area to date (on a mix of public and private land). In the interest of full transparency, we've uploading *all* of our animal photos for the public to see (more than 180,000 photos so far).
- Deer and turkey harvests are stable across the state of North Carolina, despite the fact that coyotes have been present statewide since about 2000. Deer harvests have been increasing in the mountains of North Carolina, where coyotes have been established the longest.
- Deer harvests in the Red Wolf Recovery Area have increased since the red wolf was reintroduced in 1987.
- Deer are still considered abundant enough to be serious crop pests in the Red Wolf Recovery Area, and farmers continue to receive permits to shoot deer out of season to reduce their numbers.
- Alligator River and Pocosin Lakes National Wildlife Refuges are famous for hosting tremendous wildlife spectacles, including those of black bears, snow geese and tundra swans. People come from across the country to see the wildlife at these refuges!

2. Misconception: Red wolves are not native to North Carolina.

Reality: We know wolves historically inhabited North Carolina, and the available evidence strongly suggests these wolves were a subspecies of red wolf.

- There are colonial records of wolf bounties paid from North Carolina, plus early naturalist observations from around the Southeast confirming the presence of wolves (e.g., William Bartram, John James Audubon).
- Researchers have confirmed skeletal evidence of red wolf-sized animals in adjacent states (Nowak 2002, *Southeastern Naturalist*). At the same time, they have found no modern gray wolf-sized skeletal remains in the red wolf range.

3. Misconception: Red wolves are only gray wolf/coyote hybrids.

Reality: Recent genetic research has confirmed the red wolf appears to be a unique species.

- In March 2019, an independent taxonomy panel convened by the National Academies of Science, Engineering, and Medicine released their final report, which concluded that the red wolf should continue to be treated as a distinct species, *Canis rufus*. The panel was convened by the USFWS by direct order from Congress.

- In 2016, a group of scientists convened by the USFWS to discuss red wolf genetics reached the consensus conclusion that, whatever the origin of the red wolf, the animal as it exists now is definitely unique and distinct enough to be a listable entity under the Endangered Species Act (Waples et al. 2018, *Journal of Heredity*).
- Ancient DNA samples from the eastern U.S. were not of gray wolf origin (Brzeski et al. 2016, *Journal of Heredity*).
- There is a lack of evidence of gray wolves breeding with coyotes in the West (Rutledge et al. 2012, *Biological Conservation*).
- Biologists have difficulty cross-breeding gray wolves and coyotes even in captivity (Mech et al. 2014, *PLOS One*).
- Available genetic data continue to fit a three-species model (Rutledge et al. 2015, *Biology Letters*).
- Genetic tests have been able to distinguish red wolves from coyotes since ~2000 (Adams et al. 2003, *Molecular Ecology*).
- A controversial "one true wolf" paper from vonHoldt et al. in 2016 fails to distinguish between evidence for common ancestry versus evidence for hybridization with respect to red wolves, eastern wolves, and coyotes, and contains other serious errors (Hohenlohe et al. 2017, *Science Advances*).

4. Misconception: Red wolves are 78% coyote.

Reality: This erroneous claim is based on misrepresentations of a 2011 paper by vonHoldt et al. that has since been rebutted by several other publications.

- The vonHoldt et al. (2011) paper did not allow for common ancestry (Rutledge et al. 2012, *Biological Conservation*; Wilson et al. 2012, *Ecology and Evolution*).
- vonHoldt simply assigned the red wolf's genes to coyote or gray wolf origin; there was no third species option for the red wolf's genes to be assigned to a "red wolf" origin. In other words, there was no way under that test for the red wolf to look like anything other than a hybrid!

5. Misconception: Preserving the red wolf in the wild is a hopeless case now that the coyote has taken over its former range.

Reality: The coyote management program put in place by USFWS was actually working surprisingly well at limiting hybridization between the two species.

- Hybrids continue to be rare on the landscape (<4%), as revealed by genetic surveys (Bohling et al. 2016, *Evolutionary Applications*).
- Hybridization events were most often the result of wolves being shot immediately before breeding season (Hinton et al. 2015, *Oryx*).

- Prior to the recent increase in gunshot mortality, the red wolf population was growing well and pushing out coyotes (Gese et al. 2015, *Current Zoology*).
- Deer are now much more abundant than in the 1970s, so larger wolves have more food to eat and a greater competitive advantage over coyotes.
- When Eastern wolves (which may be the same species as red wolves) were protected from poaching and trapping in Canada, they rebounded and reduced their hybridization with coyotes (Rutledge et al. 2012, *Ecology and Evolution*).
- New genetic surveys of wild canid populations in coastal Texas and Louisiana have found a surprising percentage of red wolf DNA (up to 78%+ in the case of one animal from Louisiana, Murphy et al. 2018, *Conservation Letters*; Heppenheimer et al. 2018, *Genes*). These wild canids have maintained red wolf genetic signatures despite 40 years of surviving on their own with no protections from the USFWS and no attempts to manage coyote hybridization.

6. Misconception: With coyotes around, we don't need red wolves anymore. The niche has been filled.

Reality: There is no evidence at present that coyotes are adequately controlling deer or raccoon populations.

7. Misconception: USFWS needs to end the recovery program since they promised red wolves would be contained on wildlife refuges.

Reality: Red wolves have been using private land in eastern North Carolina for more than 30 years. Until recently, the agency stood by its position that it has the legal authority to allow the wolf population to expand and prosper.

- In the early 1990s, USFWS reached agreements with numerous landowners to retain wolves on their private land.
- Federal code was updated in 1995 to allow red wolves to remain on private property if the landowner didn't object (FR[60]8940-18948).
- Landowner tolerance can be increased again if FWS resumes outreach efforts and crafts a landowner incentive program.

8. Misconception: Red wolves are dangerous to people.

Reality:

- Since 1987, red wolves have roamed free in eastern North Carolina and have never hurt anyone.
- Red wolves are extremely shy and timid animals.

- Overabundant white-tailed deer actually do injure thousands of people in North Carolina annually, due to ~20,000 collisions with vehicles each year.
- Reintroducing more carnivores like red wolves and cougars could save lives and reduce property damage (Gilbert et al. 2016, *Conservation Letters*).

9. Misconception: There's no room for top carnivores in the crowded Eastern landscape anymore.

Reality: The rural landscapes of the East Coast continue to be wild enough to support populations of wide-ranging mammals, including red wolves.

- Black bears are expanding their range in North Carolina, and the NC Wildlife Resources Commission currently estimates there are between 18-20,000 bears in the state.
- Deer, wild turkeys, elk, and beavers have all recovered from the brink of extinction since 1900, so now we need to return the predators.
- 10,000+ elk live in eastern Kentucky today!

10. Misconception: We can pull the wild red wolves from North Carolina and keep the species safe in zoos.

Reality: As beneficial as zoos and wildlife centers have been for rescuing the red wolf from immediate extinction, they simply do not have the capacity to protect captive red wolves from the genetic erosion that will result from living and breeding in caged environments for too many generations.

- Each generation of captive red wolves will become more and more adapted to living in captivity, not in the wild (Frankham 2008, *Molecular Ecology*).
- USFWS promised to return the species to the wild when they captured the last few red wolves in Texas and brought them into captivity.
- The wild red wolf population in eastern North Carolina is essential to the survival of the species. Without it, there is no hope in the future for returning red wolves to the wild.

11. Misconception: The captive red wolf population is in immediate danger of extinction and therefore should take priority.

Reality: Despite claims by the USFWS at a 2016 press conference that the captive red wolf population faces a dire threat of extinction, a Population Viability Analysis (PVA) study paid for by the USFWS revealed that *captive* red wolves face only a 0.5% chance of extinction over the next 125 years.

- Some scientists asserted that even this low risk of extinction (<1%!) was an overestimate, as zoo facilities would surely respond to any decline in the captive red wolf population.
- At present, the captive red wolf population is limited by available breeding pens for the wolves.
- The **wild** red wolf population, on the other hand, faces an urgent risk of extinction, with the population dropping at a precipitous rate since 2012.

12. Misconception: People don't support red wolf recovery—particularly people who live in the Red Wolf Recovery Area in eastern North Carolina.

Reality: In July 2016, conservation groups delivered a petition, signed by half a million people from across the U.S. and around the world, calling on the USFWS to save the Red Wolf Recovery Program. In August 2016, a new poll revealed that a strong majority of people in North Carolina support red wolf recovery.

- 73% of people in North Carolina and 60% of people on the Albemarle Peninsula support red wolf recovery, according to a recent poll (Tulchin Research, 2016).
- 120,000 people emailed USFWS in 2014 in support of red wolves (Wildlife Management Institute Report, 2014).
- In 2017, FWS received 55,087 public comments concerning the future scope of the red wolf program, and 54,992 of them were in favor of doing more to save the red wolf. That's 99.8% of the comments!
- In 2018, FWS received 108,124 public comments concerning future alternatives for the management of the red wolves in eastern NC, and of those 107,988 were in favor of doing more to save the red wolf in the wild where it belongs! That works out to 99.9% of the comments! Out of the 108,124 comments, only 30 expressed the desire to end the red wolf program, which rounds to 0.0%!