

**DATE:** November 4, 2020

**SUBJECT:** North Carolina Red Wolf Non-Essential Experimental Population Planned Management Activities for the Fall 2020 through Spring 2021 Field Season

## **I. INTRODUCTION**

The purpose of this memo is to describe management activities planned for Fall 2020 through Spring 2021 for the red wolf North Carolina nonessential experimental population (NC NEP) and St. Vincent National Wildlife Refuge island propagation site. The objectives of these activities are to pre-empt the predicted dispersal of sub-adult red wolves from St. Vincent Island, re-establish breeding pairs in the NC NEP, and provide genetic diversity to the wild red wolf population in eastern North Carolina.

## **II. BACKGROUND**

The current known population of wild red wolves (e.g. radio-collared) within the NC NEP is seven red wolves with an estimated total population of 17 to 20. There are currently no known breeding pairs and there have been no known litters of red wolf pups born in the NC NEP in the last two years, which represent the only two years since reintroduction in 1987 that there were no wild litters of red wolves. As part of the Red Wolf Recovery Program under the authority of the existing 10(j) rule for the management of the NC NEP, the Service has used island National Wildlife Refuges to breed red wolves. The role of these sites is to allow red wolves to survive in a somewhat controlled, but natural environment that will provide them “wild experience” as juveniles for the purpose of being strategically translocated into the NC NEP. All but one of the island propagation sites are no longer active due to various reasons (e.g., too close to the mainland, too much human activity). In 1990, the Service implemented an island propagation site on St. Vincent NWR, an island off the Gulf Coast of Florida, which remains a valuable and viable island site. There are currently five red wolves on St. Vincent NWR, one adult female, one adult male, one sub-adult female born in 2018 and two yearlings (one male and one female) born in 2019. There was no litter of pups born on St. Vincent NWR in 2020. All three of the younger red wolves are within the age range when there is a higher probability of dispersal from the island.

## **III. POSITIONS OF INTERESTED PARTIES**

- We are coordinating our planned activities with the North Carolina Wildlife Resources Commission (NCWRC). A meeting of the Albemarle Peninsula Collaborative Canid Conservation (AP3C) Team is scheduled for November 10, 2020, at which details of the planned activities will be discussed. The NCWRC did not oppose the similar activities we conducted last winter. At a June 2020 meeting of the AP3C the Service conveyed our intent to pursue activities similar to last winter during the coming field season including the translocation of red wolves from St. Vincent NWR to Alligator River NWR and conducting capture operations within the AP to potentially move red wolves around with all releases occurring on Federal lands.

- A general overview of the planned activities was relayed on the Red Wolf Partnership Coordination Call on October 15, 2020. Participants on the call included representatives from NC WRC, Red Wolf Species Survival Plan (SSP), Forest Service, Conservation Centers for Species Survival (C2S2), researchers, the contractor from Conservation Planning Specialist Group working on the Red Wolf Recovery Plan and multiple nongovernmental organizations involved in red wolf conservation. No objections were raised.
- Private landowners in the five-county NEP area have expressed a mixture of support, indifference, disapproval and hostility with regards to red wolves on their properties as evidenced by a human dimensions study completed by NC WRC in 2016. It is probable that the larger landowners adjacent to Refuge lands in the NC NEP five-county area will object to sustaining any wolves in the area.
- On October 27, 2020, the Service received a letter from 24 members of Congress urging the Service to take a number of actions to further red wolf recovery, including release of new animals into the NC NEP to re-establish breeding pairs.

#### **IV. MANAGEMENT ACTIVITIES FOR FALL 2020 THROUGH SPRING 2021**

Management activities conducted this field season would generally be similar to those that occurred last winter with respect to the construction of acclimation pens, translocation of red wolves from St. Vincent NWR to Alligator River NWR, potential movement of red wolves within the NC NEP, and their subsequent release after a period of acclimation onto Federal lands with the objective of attempting to create breeding pairs of red wolves on Federal lands within the NC NEP.

Outlined below are the key NC NEP management activities planned for the Fall 2020 through Spring 2021 field season to achieve these objectives.

- Continue to monitor the population through weekly or biweekly aerial telemetry (as possible taking into account the proper COVID-19 safety precautions) and ground telemetry as needed to adequately inform the survival and location of each individual animal.
- Translocate animals within the NC NEP on Federal Lands for genetic purposes. With the goal of restoring breeding red wolves to the NC NEP, this winter the Service plans to translocate one adult male (three years old) and two sub-adult red wolves (a two year old female and a 19 month old male) from St. Vincent NWR in Florida (island propagation site) to Alligator River NWR, and if possible to translocate one adult male red wolf to the eastern portion of Pocosin Lakes NWR.
- The adult male and sub-adult female from St. Vincent NWR would be translocated and released together under the rationale that it would be the movement of multiple animals that are already used to being together as pack mates and hunting together in the wild, thus increasing the likelihood they will continue to stay together long term, and hopefully form a breeding pair in the NC NEP. This would greatly increase the chance of success in having a red wolf litter within the NC NEP in Spring 2021. Additionally, it would be two animals that

are genetically distinct from any current animals within the NC NEP so they themselves would increase the genetic diversity, and the production of pups as a result would even further substantially increase the genetic diversity of the NC NEP over the long term.

- All animals translocated from St. Vincent NWR to Alligator River NWR will be fitted with orange GPS collars before their release.
- Replace the adult male red wolf on St. Vincent NWR that would be translocated to Alligator River NWR with an appropriate male from the captive population once identified by the SSP Coordinator with the goal of restoring the Service's last remaining island propagation site with one breeding pair. The SSP coordinator has been consulted and confirmed that the SSP has several good candidate red wolf males for release into the wild without it being detrimental to the SSP. And it would in fact be beneficial to the SSP because it would free up one spot of space.
- Continue to coordinate closely with NC WRC through the interagency AP3C Team on a suite of issues not limited to but including landowner and hunter education, canid monitoring techniques, and management alternatives.
- Continue to identify private landowners in the NC NEP five-county area that are interested in enhancing habitat on their property that would also benefit red wolves using the Service's Partners for Fish and Wildlife program project Prey for the Pack (P4P). P4P is a collaboration between the Service and the North Carolina Wildlife Federation (NCWF), and is available to private landowners who are voluntarily interested in and committed to improving wildlife habitats on their property. The Service and NCWF have begun the process of contacting potentially interested private landowners and discussing the P4P program. The intention is that after signing up the initial participants that word of mouth on the benefits of the program to the landowner will spread and additional landowners will be interested.
- Expand and enhance red wolf education and outreach activities at the Service's Red Wolf Center in Columbia, NC in partnership with NCWF and National Wildlife Refuge Association. An example being the upcoming installation of web cameras showing the entire enclosure and den of the captive pair of red wolves housed at the Red Wolf Center.
- Continue to work with SSP partners to place the two red wolves remaining at the Sandy Ridge Facility on Alligator River NWR into alternate facilities designed for long-term holding.

## **V. POTENTIAL ISSUES**

If for any reason the planned translocation of the sub-adult red wolves from St. Vincent NWR does not occur this fall, the Service will be faced with potential outcomes; none of which are positive:

- If they are not removed from the island this fall and relocated to the NC NEP, these red wolves may disperse off the island on their own and either drown trying to swim to the mainland or have to be located and recaptured from the mainland.
- If not translocated to the NC NEP, at some point they would likely need to be captured and placed in captivity, which is outside of the intent of this island site. Additionally, the SSP does not want to introduce wild red wolves into the captive population.
- Further, despite immediate funding and efforts to expand captive housing both within and outside of the SSP, they are currently well above capacity. This will leave only the Sandy Ridge Facility as an option and that facility is not designed for long term holding of wild canids.

## **VI. TIMELINE/NEXT STEPS**

- Continue to coordinate field season activities with Refuge Management and with NC WRC staff and leadership. Begin trapping red wolves to place in temporary holding pens for a minimum of 30 days. Late fall/early winter is the targeted period for translocating red wolves with the goal of pair establishment before the early spring mating season.
- Potentially conduct targeted stakeholder outreach in November/early December. Most likely to be held virtually following the format used by Pocosin Lakes NWR for the Water Management Plan public meeting due to COVID-19 concerns.
- Meet with the NC Commissioners and NC WRC Executive Director in mid-November to describe the proposed activities and answer any questions they may have. This meeting is scheduled for November 10.
- Explore an informal briefing with congressional staff to provide an update on planned management activities.

## After Action Report – Collaring and Release of Sterilized Coyotes onto Alligator River NWR

### **Tuesday, March 3**

Andrea Shipley (WRC) emailed a spreadsheet of the available five GPS collars and their specifications to the AP3C group. The collars include three 585 gram collars and two 615 gram collars with changeable settings all originally intended for red wolves.

### **Wednesday, March 4**

AP3C Meeting in Raleigh. Discussion on the appropriate collars to use on the six coyotes remaining in captivity at Sandy Ridge. WRC expressed the preference that FWS use the GPS collars that WRC had in hand for five of the coyotes in captivity as long as the weight of the GPS collar did not exceed 5% of the animal's body weight. If it exceeded 5% of the body weight a FWS VHF collar would be used. FWS said the WRC preference for using the GPS collars would be discussed up the chain and we would get back to them, but FWS assured them no releases would occur in the meantime. Andrea Shipley mentioned during the meeting that these GPS collars were originally purchased for use on red wolves.

### **Wednesday, March 5**

FWS Staff briefed Catherine Phillips (ARD for Ecological Services) and the Brett Hunter (Deputy Regional Chief of Refuges) regarding the outcome of the AP3C meeting. There was concern expressed about the use of State GPS collars on the Refuge lands. As a result the ARDs (ES and Refuges) agreed to raise the issue to Leo Miranda (RD) to see if there was interest in revisiting the issue of when it was appropriate to use GPS collars.

### **Friday, March 13**

Pete Benjamin directed Joe Madison to start going through the necessary steps to be prepared to deploy the GPS collars.

### **Monday, March 16**

Joe Madison (FWS) emailed Andrea Shipley requesting her availability to come and assist with attaching the GPS collars, such as WRC wanted, in an attempt to be prepared if the decision is made to use the GPS collars. She responded that she would not be available due to health concerns.

### **Wednesday, March 18**

Catherine Phillips relayed to Michelle Eversen that the RD was not inclined to revisit the issue of using GPS collars.

Joe Madison emailed Andrea Shipley to clarify her availability. She responded that either she could come with Worth McAlister (WRC) while maintaining proper social distancing or he could come without her. She also said she had asked Worth to start playing with the GPS collar settings to try and get 3 to 4

years of battery life and that we should have the options to choose from by the end of business on Friday, March 20.

### **Friday, March 20**

On Friday evening, Andrea Shipley emailed Joe Madison and Pete Benjamin (FWS) several spreadsheets illustrating the different potential settings for the GPS collars and data showing what the resulting projected battery life would be and indicating that some of the setting changes could be made locally, but some would require remote programming by Vectronics in Germany.

### **Monday, March 23**

First thing Monday morning the email with the potential GPS settings was forwarded by Joe Madison to Ryan Nordsven (WRC) so they could both evaluate which would work best.

### **Monday, March 23 – Friday, March 27**

Throughout the week, Joe Madison, Ryan Nordsven and Worth McAlister worked together on the different scenarios and options to maximize batter life while still obtaining an appropriate number of locations per day and transmissions per week.

### **Wednesday, March 25**

Ryan Nordsven spoke with Worth McAlister regarding the battery life scenarios and based on discussions with Joe Madison, requested that Worth run a few additional scenarios with a fix rate every 13 hours to see the resulting battery life.

### **Thursday, March 26**

Worth McAlister sent an email to Joe Madison, Ryan Nordsven and Andrea Shipley conveying all of the different setting configurations he had run and the results to that point and a potential additional scenario to consider, noting that he would be programming the collars as soon as a decision was made on the settings. Some he could do locally and some would have to be done by Vectronics. Ryan responded saying that it would be good to see the results of his suggested scenarios for comparison before a decision on the settings was made.

### **Friday, March 27**

During discussions on how the collars would be transferred to FWS when they were ready, Worth McAlister conveyed that their agency director had passed down direction that WRC employees were to

cease all travel of any kind for the time being and Andrea Shipley informed Joe Madison that because of restrictions on WRC personnel due to COVID-19 that the collars would have to be shipped.

Joe Madison conveyed to Andrea Shipley and Worth McAlister that given the different scenarios for the GPS collars that the most appropriate settings seemed to be a location taken every 13 hours with a transmission every 4.35 days. Based on that information Worth was going to be programming the GPS collars.

Joe Madison also expressed his preference that given the COVID-19 restrictions for both agencies and the increased risk to FWS personnel by the daily need to go out to Sandy Ridge for the care and feeding of the sterilized coyotes along with the increase in risk obtaining the GPS collars from WRC would entail, that the best course of action would be to release the coyotes that day with the VHF collars they were currently wearing. Andrea responded that she would let the committee know of the decision to release the coyotes. Joe responded back that although the release that day was his preference for the purpose of lower the risk to FWS personnel and for the good of the coyotes in captivity, no action regarding the release of the coyotes would be made until Michelle Eversen (FWS) and Gordon Myers had discussed it and an official decision was made and passed down.

#### **Thursday, April 2**

Joe Madison emailed Worth McAlister requesting an update on the status of programming the GPS collars so they could be transferred to FWS and placed on the coyotes as soon as possible since their release was still pending. Worth responded that he had begun the programming, but was having a call with Vectronics that day to make sure everything was properly programmed.

#### **Friday, April 3**

Worth McAlister conveyed that all the fix rate and transmission settings were completed for the five GPS collars and that the only decision remaining was how long to program the collars for their automatic drop off and that would take a few days to program.

#### **Saturday, April 4**

Joe Madison emailed Worth McAlister saying that based on the information Worth provided on battery life that the appropriate date for the automatic drop off feature would be five years from deployment.

#### **Tuesday, April 7**

Worth McAlister emailed Joe Madison to say that he was working on programming the drop off timing and that the collars should be ready to mail the next day and that he could overnight them. Joe

requested Worth overnight them to his house due to teleworking and Worth responded that he could and would send confirmation when they had been shipped.

### **Tuesday, April 7**

Joe Madison emailed Pete Benjamin letting him know that he expected to have the GPS collars in hand on Thursday, April 9 and stating that the desire would be to deploy them as quickly as possible after receiving them. Joe also conveyed that based on the agreement with WRC to not exceed 5% body weight with any collar that coyotes over about 27 pounds would be released with a GPS collar and coyotes between about 17 pounds and 27 pounds would be released with a VHF collar.

Pete Benjamin sent an email to Michelle Eversen, Rebekah Martin (FWS) and Joe Madison asking if Michelle had spoken to Gordon Myers and if Rebekah had heard anything from David Viker (FWS) regarding the collar deployment. Pete suggested that once Joe had the collars in hand that Pete would send an email to the AP3C team, along with the FWS RO leadership, to let them know the coyotes were being released with a follow up email specifying which coyotes were released with a GPS collar and which were released with a VHF collar.

### **Wednesday, April 8**

Worth McAlister emailed Joe Madison to convey that due to programming issues with the drop off feature on the collars that he was having to work directly with Vectronics so he would be unable to ship the collars that day. He also conveyed that once the collars had been received the magnet on the GPS portion of the collar would need to be removed and the collars placed outside for at least 4.5 days to allow them to turn on and transmit data so it could be verified they were working properly before deployment. He also said he would include VHF equipment in the shipment so that FWS would be able to track the coyotes using the VHF feature on the GPS collars. He also asked if there had been any further direction or decision by Gordon Myers and Michelle Eversen regarding the release of the sterilized coyotes being held at Sandy Ridge.

Joe Madison responded to Worth's email letting him know that Michelle had spoken directly to Gordon that morning and that he understood the desire to release the coyotes without GPS collars in an effort to reduce the risk posed by FWS personnel's daily trips to Sandy Ridge and he would consider it. However, FWS would need to do a risk assessment of the different scenarios regarding the COVID-19 risk and the coyote release (e.g. status quo, releasing the coyotes with VHF collars, releasing the coyotes with GPS collars). Additionally, Gordon requested a letter stating FWS intentions on the coyote release and the rationale as to why. Joe conveyed that Pete had finished the draft letter and Joe had completed the draft risk assessment. Worth responded that he would continue to get the GPS collars programmed and ship them as quickly as possible.

Pete emailed the draft risk assessment and letter to Michelle Eversen.

## Thursday, April 9

Worth McAlister transferred the WRC GPS collars to Joe Madison. Upon opening the container with the GPS collars, Joe was surprised to see that the three smaller weight collars were bright yellow, which immediately raised concerns regarding the mixed message it would send to the public if coyotes were collared with yellow collars since the FWS had begun collaring red wolves with orange collars and telling the public that only red wolves would have orange collars to help them distinguish between them.

Joe Madison removed the magnets off of the GPS portion of the collars so that it could be verified in approximately 4.5 days that they were functioning and transmitting properly.



## Friday, April 10

Joe Madison sent an email to Pete Benjamin expressing frustration and concern over using the yellow collars and not knowing until receiving them that they were yellow.

Pete Benjamin sent an email to Michelle Eversen conveying the information regarding the bright yellow collars and the concern of deploying them on coyotes because of the difficulty of the public to discern

between bright yellow and bright orange on a canid at a distance and the FWS push to let the public know that only red wolves would be wearing orange collars.

Michelle responded and requested that Joe Madison send an email to Andrea Shipley expressing concern regarding the yellow collar color. Joe sent an email to Andrea Shipley and Worth McAlister expressing concern over the color of the collar and it not being conveyed during previous discussions.

### **Monday, April 13**

Andrea Shipley emailed Joe Madison apologizing for not conveying the yellow color of three of the collars and that it would require shipping them to Germany to fix, expressing she understood the concerns about using them and saying that although not ideal FWS could attempt to somehow color them black before using them.

### **Tuesday, April 14**

Andrea Shipley sent data files to Joe Madison and Ryan Nordsven showing the data transmitted from the five GPS collars verifying that they were functioning properly. Andrea also sent information on how FWS could download the software and track the GPS collars directly.

Worth McAlister emailed to apologize that the yellow color of the GPS collars was not relayed when they sent the specifications on them and that he understood the concern over deploying them.

### **Wednesday, April 15**

Michelle Eversen sent an email to Pete Benjamin with a cc to Catherine Philips (FWS – ES ARD) with the direction that after conversations with Catherine and the direction from Leo Miranda (based on his discussions with Gordon Myers) that aside from her recommendation to move forward and release the coyotes with VHF collars already on the animals to limit COVID-19 risks to FWS personnel that FWS should move forward with replacing the VHF collars with GPS collars and release the coyotes as soon as we can. As part of that decision, Gordon Myers offered to send personnel to assist. That offer of assistance was declined in order to limit exposure risk for all involved. It was recognized that the yellow collars pose a concern and the direction was to cover the yellow as best as possible to limit confusion by the public. The email also directed Pete to coordinate with Joe Madison to move forward ASAP and for the staff involved in the release to claim hazard pay since it would involve working in close proximity to one another for the handling of the coyotes. Additionally, it conveyed that the risk assessment would need to be finalized showing the selection of Scenario 3 has the one chosen.

Pete Benjamin emailed Joe Madison forwarding Michelle Eversen's email and stating that it was the decision regarding the coyote release and to move forward with all due speed. The direction included language to release the coyotes of the appropriate weights with GPS collars and the smaller coyotes with VHF collars, and to do whatever was possible to reduce the yellow on the three colored GPS collars. Pete also directed that we would need to articulate to WRC that the information to be gained from these particular coyotes regarding the placeholder strategy would likely be very limited due to the

extended period of time they were held in captivity while our agency's worked to resolve the collaring issue.

Upon receipt of Pete Benjamin's email, Joe Madison immediately started assembling the red wolf staff to work towards the immediate release of the coyotes using the direction handed down regarding the use of GPS collars on the coyotes that were of sufficient weight. Joe Madison proceeded to use black Flex Seal tape to wrap the belt of the yellow GPS collars.



The red wolf staff assembled at Sandy Ridge. In an effort to reduce exposure to each other and conduct the operation safely, Shaun Olson closed the den boxes of the coyotes that immediately went into their dens. Then Joe Madison and Morgan Lewis (FWS) proceeded to capture the remaining coyotes not already in their den boxes and placed all six coyotes in kennels. All six coyotes were weighed using a portable digital scale. Based on the weights of the coyotes, it was determined that three would fitted and released with GPS collars and three would be released with VHF collars.

Body Weight (lb)	Body Weight (g)	Max Collar Weight (g) - 5%
20	9,072	452
25	11,340	567
30	13,608	680
35	15,876	793
40	18,144	907
	Key	
	Too small for either GPS Collar	
	Too small for 615g GPS Collar	

After determining which coyotes were to be fitted with GPS collars, Joe and Morgan begin that process on the first coyote. After placing the GPS collar around the animal it was determined that the manufactured holes on the belt were far too big for coyotes so Joe drilled holes to make the collar substantially smaller.

Joe Madison sent a text to Andrea Shipley verifying before any coyotes were released that other than taking the magnets off of the VHF portion of the GPS collars there was nothing else that needed to happen for the collars to function properly. Andrea responded saying nothing other than anything we wanted to do to attempt to change the yellow color and reminding us to verify that the VHF transmitter was function properly, which had already been done.

The Flex Seal tape make it both difficult to drill the additional holes and made the belt thicker so the closure screws were not quite long enough to work properly, so it was decided that the Flex Seal tape needed to be removed from that portion of the belt.

While Shaun Olson worked on removing the Flex Seal tape from that portion of that GPS collar, for the purposes of moving forward and not holding the coyotes in kennels any longer than necessary, Joe started using a second yellow collar without Flex Seal on it to collar the coyote currently being processed, with plans to wrap it after it was cut to size and to use the other yellow collar with Flex Seal already on it on the next coyote.



Joe Madison sent a text to Andrea Shipley to verify that they typically cut off the excess portions of the belt. This is done routinely for the FWS VHF collars, but Joe wanted to make absolute sure it was not an issue for these GPS collars. Andrea responded that they do cut off the excess portion of the belt.

As Joe Madison worked to get the GPS collar to fit properly by cutting the belt and measuring where the holes would need to be so that it would fit snugly and not be able to be pulled off by the coyote, it became very clear that in order for the belt to fit the way it needed to that it would have to be cut so short that the two housing units on the collar would end up being about an inch apart. This would result in them both rotating downward and resting on two sides of the coyote's throat. The result would be two-fold. The GPS housing needs to sit on the back of the animal's neck so that it is facing upward, distributes the weight properly and transmits the way it is intended. And the placement of two large housing on the throat of the animal would not allow the coyote to be able to function properly and likely endanger their ability to survive.



Upon figuring out those issues, Joe Madison immediately called Andrea Shipley and conveyed that there didn't seem to be any way possible for these GPS collars to simultaneously fit the animal properly so they would not be able to be removed and for them to sit the way they are supposed to in order to transmit data. Andrea responded that they were originally intended for red wolves and so the belts were larger. And that it would take sending them back to Germany for that to be altered. After discussing the matter for several minutes, Joe and Andrea determined that there was no way these particular GPS collars could be used on coyotes and that even if deployed and the animal survived the resulting data would likely not be accurate or usable.

Joe Madison then called Pete Benjamin to relay that after capturing and weighing all the coyotes, three of them were planned to be fitted and released with GPS collars based on their weights, but that with the issue of the belt size of the GPS collars they were not usable and that all six coyotes were currently in kennels ready to be processed and released. Joe also conveyed that he had discussed the issue with Andrea and that no alternative for using the GPS collars could be determined. After discussing it further and the possible options, it was determined that the only viable option given the COVID-19 risks and no availability of GPS collars that could properly be deployed that the coyotes should be released with VHF collars.

After that decision was made Joe Madison and Morgan Lewis finished processing the coyotes and getting them ready to be released that night in the locations on Alligator River National Wildlife Refuge where they were originally captured. After the first two were ready for release, Shaun Olson drove to their capture locations and released them while Joe and Morgan continued processing the remaining coyotes. Shortly after Shaun returned from the first releases, the remaining four coyotes were ready for release. Shaun took two coyotes and Joe and Morgan took the other two and all four were released at their capture locations.

Joe Madison sent a text to Pete Benjamin letting him know that all of the coyotes had been released.

### **Friday, March 17**

Joe Madison sent an email to Rebekah Martin and other Alligator River NWR staff to let them know that all of the coyotes had been released at their original capture locations on the refuge.



Tele: (888) 248-6834  
FAX: (919) 707-0292

# Research Permit

North Carolina Wildlife Resources Commission  
License Section  
1707 Mail Service Center  
Raleigh, NC 27699-1700

**AUTHORITY**  
STATUTES  
GS 113-261 & GS 113-272.4

RULES  
15A NCAC 10B .0119

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PERMITTEE/LICENSEE

**Pete Benjamin**  
US Fish & Wildlife Service  
551-F Pylon Drive  
Raleigh, NC 27606

PERMIT NUMBER  
**DO01052021-001**

EFFECTIVE  
**01/01/2021**

EXPIRES  
**06/30/2021**

COUNTY  
N/A

DISTRICT  
1 & 2

**CONDITIONS AND AUTHORIZATIONS:**

**This permit authorizes the above research activities for the following species (and their hybrids):**

- a. Coyote (*Canis latrans*)
- b. Red Wolf (*Canis rufus*)

The above-named permittee and individuals working under his direct supervision, carrying a copy of this permit and any other required written authorization(s), are authorized to conduct the following wildlife research activities with the species listed above, subject to the following conditions:

- 1) Authorized to capture, immobilize, surgically sterilize (using vasectomy or tubal ligation), vaccinate, release and/or euthanize.
  - a. Collection Location Authorized:
    - i. U.S. Fish and Wildlife Service refuges in Beaufort, Dare, Hyde, Tyrrell, Washington Counties; and
    - ii. Private lands only when incidental to trapping red wolves and with written permission of the landowner to engage in sterilization and release of coyotes.
  - b. Method(s) Authorized: All Legal Traps: Trapping along roads limited to #3 Soft-catch foot-hold trap, MB-550 foot-hold traps, Non-lethal snares.
  - c. Permittee(s) must check traps daily.
  - d. Non-target species must be immediately released unharmed on site. Critically injured non-target species must be euthanized.
  - e. All red wolves shall be affixed with GPS collars prior to release, unless agreed to first in writing. All coyotes or hybrids shall be affixed with GPS or VHF-radio transmitters prior to release.
  - f. NC Wildlife Resources Commission staff shall be provided with all information or web interface to allow independent monitoring of location data.
- 2) Authorized to access state-owned game lands in eastern North Carolina for research activities upon notification of WRC game lands management staff at least 48 hours prior to activities commencing.
- 3) Licensed trappers operating under a cooperative agreement with the US Fish and Wildlife Service may conduct activities authorized under this permit and must carry a copy of this permit and a signed copy of the cooperative agreement.

**This permit/license is nontransferable and expires at midnight on the above specified expiration date.**

ISSUED BY:

TITLE:

**Executive Director**

DATE:

January 6, 2021



Tele: (888) 248-6834  
FAX: (919) 707-0292

## Research Permit

North Carolina Wildlife Resources Commission  
License Section  
1707 Mail Service Center  
Raleigh, NC 27699-1700

Permit Number

N/A

Page 2 of 2

### CONDITIONS AND AUTHORIZATIONS:

Except as indicated, issuance of this permit does not constitute permission to conduct research activities on any public or private lands; such permission must be obtained in writing from the appropriate landowner or land manager before beginning authorized research activities. This permit neither directly nor by implication grants right of trespass.

All individuals conducting trapping activities under the authority of this permit must adhere to the Association of Fish & Wildlife Agencies Trapping Best Management Practices.

All individuals conducting activities under the authority of this permit must carry a copy of this permit and a letter of authorization from the above-named permittee, and a letter of authorization from the private landowner, if applicable when conducting related activities.

#### **Authorized Sub-permittee(s): Joe Madison, Ryan Nordsven, Shaun Olson, Morgan Lewis**

The permittee is required to submit hair samples with follicles of each canid collared, quarterly reports of all research activities to the North Carolina Wildlife Resources Commission and an annual report of all research activities within 15 days of the expiration of this permit to the following address: Wildlife Management Division, 1707 Mail Service Center, Raleigh, NC 27699 or by fax 919-707-0292. Failure to submit a report will constitute grounds for denial of any request for renewal of this permit. The required report must include the following information:

- a) Number of red wolves and coyotes captured, by age (adult or juvenile) and sex.
- b) Weight, hind foot length, tail length, and zygomatic breadth of each canid captured.
- c) Capture and release location, in GPS coordinates, for each red wolf, coyote, other canid, or non-target captured or handled.
- d) Condition and disposition of any animal captured and not released.
- e) List of trappers, including name and affiliation, involved in trapping activities authorized by this permit.
- f) Reproductive status of each red wolf, coyote, or hybrid captured.
- g) Data on all tissue samples collected for genetic analysis, including type of tissue and analysis results if available.
- h) All tagging information.
- i) List of all canids trapped and released fitted with radio transmitters or GPS collars, including species, types of transmitters, an internet link to monitor locations of all GPS-collared canids, and a monthly map showing all location data for all VHF-collared canids.

**Re: Coordination Call**

Madison, Joseph (Joe) S <joseph\_madison@fws.gov>

Thu 9/3/2020 5:09 PM

To: Frisk, Dan <dan\_frisk@fws.gov>; Stark, John <john\_stark@fws.gov>

Cc: Peacock, Terry <terry\_peacock@fws.gov>; Smith, Bradley <bradley\_smith@fws.gov>

All,

Here is a synopsis of what we talked about on the call. Please let me know if there are any inaccuracies or additional information.

For clarity so we are all clear on the proposal using their studbook numbers, here is the information for the current red wolves on St. Vincent NWR:

Studbook #	Sex	Y.O.B.	Age (yrs)	Age Class	Notes
2050	F	2014	6	Adult	Breeding female in the past
2198	M	2017	3	Adult	Released from NC Zoo in Feb 2020
2283	F	2018	2	Subadult/Juvenile	Originally intended for translocation in winter 2019-20
2322	F	2019	1	Yearling	
2323	M	2019	1	Yearling	

The current preferred scenario for this coming winter would be to capture 2198M, 2283F, 2322F and 2323M. Assuming those captures occur, 2198M and 2283F would be translocated from SVNWR to ARNWR and put in an acclimation pen together in the West Milltail area. It will be decided at a later date whether 2322F would be translocated with them or left on SVNWR to assist the breeding female with a litter of pups hopefully born in 2021. The rationale for this translocation being that it would be the movement of multiple animals together that are already used to being together and hunting together, thus increasing the likelihood that they will stay together long term, and hopefully form a breeding pair, before or after their release into the NC NEP (North Carolina Nonessential Experimental Population).

Because this would leave 2050F without a potential mate on the island, we would simultaneously translocate another male red wolf from the SSP to SVNWR for release. The SSP coordinator has already been consulted and has assured me they have several good candidate red wolf males for release onto SVNWR without it being detrimental to the SSP. And it would in fact be beneficial because it would free up one spot of space. If 2050F were to be captured, it would likely be beneficial to place her in the pen with the male from the SSP to potentially increase the potential for breeding.

Upon capture, 2323M would be translocated to ARNWR and placed in an acclimation pen in the Milltail area with 2225F (a three year old resident female).

Something I forgot to mention on the call is that we will be placing GPS collars on any red wolves translocated from SVNWR to ARNWR.

Separately, depending on his location and status, we may translocate 2282M (the male translocated from SVNWR to ARNWR last year) to the east side of Pocosin Lakes NWR and into an acclimation pen with 2280F (a resident female from the Northern Pack) in that area.

One of the modifications to make for this year in order to increase our chances of success is to start the entire process earlier in order to hopefully have animals in acclimation pens earlier and keep them in the pens longer together before release. To that end we discussed the ability to start trapping at SVNWR in November. To completely avoid impacts to the hunting opportunity for the public, there is a window with no hunting from November 2 through November 17. Weather permitting, the tentative plan is for Bradley to trap during that time frame and if possible, particularly taking covid restrictions into account, at least one and potentially two people from NC would be present at SVNWR to assist with trapping. If additional trapping was needed during the next available trapping window of November 30 through January 13 (acknowledging that the Christmas holidays take place during that time), personnel from NC could potentially return to assist at SVNWR.

We discussed the possibility of starting trapping before November 2 during the bow hunt that consists of only 40 hunters and to focus trapping within areas of hunting restrictions, but based on the weather and the desire to not interfere with hunting it sounds like this option is least palatable so likely won't be done.

We also discussed perhaps going about the trapping a little differently and being a little less "heavy handed" and focusing our trapping efforts where there is fresh sign or specific spots they may travel through frequently, along with perhaps putting traps out well before they are baited to reduce human odors associated with the traps. I mentioned that in our looking back at this past trapping season, none of the captured red wolves were captured at a carcass, despite that being very successful in the past. Some of that stems from the fact that for the NC portion of the trapping we were not going after any pups. It was also noted that all of the red wolves, with the exception of 2198M, have been captured previously so will be trap savvy to some degree or another, particularly 2050F and 2283F at SVNWR.

I will be finishing up the written proposal for these planned activities and forwarding them up the chain and they will also be discussed with the Albemarle Peninsula Collaborative Canid Conservation (AP3C) group, which is made up of FWS personnel and NC Wildlife Resources Commission personnel. I will also be coordinating with Refuges here regarding these plans. I will keep you updated as we move forward.

Thanks for your time today and for everything you guys are doing for red wolf conservation.

Respectfully,

Joe Madison  
 Program Manager  
 Red Wolf Recovery Program  
 Assistant Field Supervisor - Eastern North Carolina Ecological Services Sub-Office  
 U.S. Fish and Wildlife Service  
 P.O. Box 1969  
 100 Conservation Way  
 Manteo, NC 27954  
 Office: (252) 473-1132 ext 245  
 Mobile: (252) 475-8259  
[joseph\\_madison@fws.gov](mailto:joseph_madison@fws.gov)

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**From:** Frisk, Dan <dan\_frisk@fws.gov>  
**Sent:** Monday, August 31, 2020 9:47 AM  
**To:** Stark, John <john\_stark@fws.gov>  
**Cc:** Peacock, Terry <terry\_peacock@fws.gov>; Smith, Bradley <bradley\_smith@fws.gov>; Madison, Joseph (Joe) S <joseph\_madison@fws.gov>  
**Subject:** Re: Coordination Call

John...go ahead and be prepared to give an update on the status of our wolves and anything else you feel would be helpful for the call.

Thanks,  
Dan

Daniel W. Frisk  
Project Leader  
North Florida Refuge Complex  
P.O. Box 68  
1255 Lighthouse Road  
St. Marks, FL 32355  
850-925-6121

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**From:** Stark, John <john\_stark@fws.gov>  
**Sent:** Monday, August 31, 2020 9:44 AM  
**To:** Frisk, Dan <dan\_frisk@fws.gov>; Madison, Joseph (Joe) S <joseph\_madison@fws.gov>  
**Cc:** Peacock, Terry <terry\_peacock@fws.gov>; Smith, Bradley <bradley\_smith@fws.gov>  
**Subject:** Re: Coordination Call

Dan,

Bradley and I will be there.

Did you and/or Joe mention any background information that Brad and I should put together ahead of the call, such as available dates, etc.?

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**From:** Frisk, Dan <dan\_frisk@fws.gov>  
**Sent:** Monday, August 31, 2020 9:35 AM  
**To:** Madison, Joseph (Joe) S <joseph\_madison@fws.gov>  
**Cc:** Stark, John <john\_stark@fws.gov>; Peacock, Terry <terry\_peacock@fws.gov>; Smith, Bradley <bradley\_smith@fws.gov>  
**Subject:** Re: Coordination Call

Lets go with Thursday at 1:00 PM. We can use our conference call numbers: 1.866.713.7962 participate code 1618385

Daniel W. Frisk  
Project Leader  
North Florida Refuge Complex  
P.O. Box 68  
1255 Lighthouse Road  
St. Marks, FL 32355  
850-925-6121

---

**From:** Madison, Joseph (Joe) S <joseph\_madison@fws.gov>  
**Sent:** Friday, August 28, 2020 4:19 PM  
**To:** Frisk, Dan <dan\_frisk@fws.gov>  
**Subject:** Coordination Call

Dan,

As we've talked about we need to get together and discuss the potential plans for this upcoming winter and the general schedule. Mornings next week will be a little tougher for me. Is it possible for folks to meet early afternoon? What about Wednesday, September 2 at 2 pm or Thursday, September 3 at 1 pm? If it needs to be a morning, I can probably make Tuesday, September 1 at 10 am work.

Thanks,

Joe Madison  
Program Manager  
Red Wolf Recovery Program  
Assistant Field Supervisor - Eastern North Carolina Ecological Services Sub-Office  
U.S. Fish and Wildlife Service  
P.O. Box 1969  
100 Conservation Way  
Manteo, NC 27954  
Office: (252) 473-1132 ext 245

2/19/2021

Mail - Madison, Joseph (Joe) S - Outlook

Mobile: (252) 475-8259  
[joseph\\_madison@fws.gov](mailto:joseph_madison@fws.gov)

U.S. Fish and Wildlife Service

Joe Madison

Program Manager – NC NEP

Red Wolf Recovery Program

[joseph\\_madison@fws.gov](mailto:joseph_madison@fws.gov)

## Update on the North Carolina Nonessential Experimental Population (NEP)

April 16, 2020

- The management of the wild red wolf population in the NC NEP is being conducted under the 10(j) rule updated in 1995 along with the permanent injunction put in place by a Federal court in November 2018 regarding take.
- The current known population of red wolves (e.g. radio-collared individuals) in the NC NEP is 10 red wolves with the estimated total population approximately 18 - 20 red wolves.
  - o We lost the radio collar signal from a really old collar on one male red wolf in January. However, we also found tracks on the bombing range of a female whose old radio collar died over a year ago.
- There has been 1 mortality in 2020 resulting from gunshot on private property. The law enforcement case is open so no other details can be shared.
- Trapping/Translocation
  - o During this past winter's trapping and translocation efforts, 7 red wolves were captured between the NC NEP and St. Vincent NWR.
  - o After their captures, one of the Milltail males was translocated to Pocosin Lakes NWR and placed in an acclimation pen with the female red wolf from the Pungo area until February 5<sup>th</sup>.
  - o After her capture, the previous Milltail breeding female was placed in the acclimation pen in the Milltail area of Alligator River NWR with the male red wolf translocated from St. Vincent NWR. They were released together February 18<sup>th</sup>. The daughter of the Milltail breeding female had also been captured and she was released at the same time and place as the pair from the acclimation pen.
  - o All red wolves captured were released wearing bright orange VHF radio collars to help the public distinguish them.

- Tracking
  - Tracking has been very limited because of the COVID-19 measures and we have not been able to conduct any aerial telemetry for several weeks.
  - Some ground telemetry is occurring on the refuges and we have increased it this week to try and determine if any denning is occurring. No sign of denning yet.
  - Based on limited tracking, there are no red wolf pairs currently together.
  - The male translocated to Alligator River NWR from St. Vincent NWR remained with the Milltail female and/or her daughter for several weeks after release from the acclimation pen, but we have not located him in about three weeks. Both of those Milltail females remain on the refuge within the areas they are typically found.
  - The female red wolf in the Pungo area of Pocosin Lakes NWR remains in her traditional territory and the male translocated there from Alligator River NWR is usually within or immediately adjacent to that territory, but not with her.
  - We are hopeful that perhaps one or both of the pairs in acclimation pens mated before they separated, but there's no sign of that to this point.

## Update on the St. Vincent National Wildlife Refuge

- The male translocated from NC Zoo to St. Vincent NWR was released onto the island on February 14<sup>th</sup> and was soon with the other red wolves.
- All 5 radio-collared red wolves (two adults, one juvenile and 2 yearlings) are remaining together at this point, but there has been no sign of denning yet.

## Outreach

- Prey of the Pack
  - The U.S. Fish and Wildlife Service, through its Partners in Fish and Wildlife program (PFW) in partnership with the North Carolina Wildlife Federation (NCWF) and the North Carolina Wildlife Resources Commission (WRC) will be initiating a program to help incentivize interested and willing private landowners to create/improve habitat for red wolf prey species on their lands (e.g. early successional forest). In general, the FWS PFW would pay for a portion of the cost for landowner's to do habitat work on their lands in exchange for agreeing to be tolerant of red wolves on their property and potentially allowing for some level of monitoring by FWS personnel.

- We have old used radio collars that are no longer in use that we could provide to folks if they are interested in using them for educational purposes. Contact Morgan Lewis at (252) 475-8350 for more information.
- There is a map of the historic range of red wolves on the Red Wolf Recovery Program website. If anyone is wanting to print of that map at a larger size for educational purposes, we have a higher resolution version we can send to you electronically. Contact Morgan Lewis at (252) 475-8350 for more information.

U.S. Fish and Wildlife Service

Joe Madison

Program Manager

Red Wolf Recovery Program

[joseph\\_madison@fws.gov](mailto:joseph_madison@fws.gov)

## Update on the North Carolina Nonessential Experimental Population (NEP)

January 16, 2020

- The management of the wild red wolf population in the NC NEP is being conducted under the 10(j) rule that was updated in 1995 and under the permanent injunction put in place by a Federal court in November 2018 regarding take.
- The current known population of red wolves (e.g. radio-collared individuals) in the NC NEP is 12 red wolves and the estimated total population is approximately 20 red wolves.
- 2019 was the first year since the reintroduction of red wolves in North Carolina in 1987 that there were no documented red wolf pups born in the wild.
- Additionally, there are currently no breeding pairs of red wolves in the NC NEP.
- There were 5 red wolf mortalities in 2019:
  - o 2 vehicle strikes
  - o 1 gunshot
  - o 1 suspected foul play
  - o 1 unknown cause of death
- To increase the genetic diversity and sustain the wild red wolf population in the NC NEP, we are currently attempting to translocate red wolves to potentially create 3 new breeding pairs within the NC NEP. All activities associated with this action are being conducted on Federal lands. Those activities include:
  - o Building three acclimation pens (2 on Alligator River NWR and 1 on Pocosin Lakes NWR). Defenders of Wildlife paid for the majority of the materials to build the pens.
  - o Conducting capture operations on Alligator River NWR, Pocosin Lakes NWR and St. Vincent NWR (red wolf island propagation site off of the coast of Florida and key component to red wolf recovery) since the beginning of December.
  - o When the appropriate red wolves are captured they will be put in pens together for up to thirty days in pairs that include one red wolf from the territory where the pen is located and a red wolf new to that territory. The hope is that the pair will bond to each other during that time and the red wolf new to that territory will be more likely to remain there when released.
  - o Conducted a public meeting on December 10 to inform the public, particularly the local stakeholders, on what actions we were taking.

- So far we have mixed success in capturing the specific red wolves and there is currently one red wolf in each of the three acclimation pens. Decisions on who to have where once they are captured are re-evaluated as additional red wolves are captured to try and attain the best possible scenarios with regards to successful breeding pairs. Red wolves that have previously been captured are extremely trap savvy and difficult to re-capture.
- In addition, the breeding male on St. Vincent NWR was killed in June 2019 so a male red wolf has been transferred from the NC Zoo to St. Vincent NWR and will be released on the island when capture operations have concluded.
  
- We are having two screenings of the film "Red Wolf Revival" free to the public in January. There was one screening on January 10, 2020 at the Pocosin Lakes NWR Visitor Center and there will be a second screening on January 24, 2020 at the Alligator River NWR Visitor Center, which will be followed by a Q & A and panel discussion with individuals associated with red wolf recovery from FWS, NGO's, WRC and a local landowner.

U.S. Fish and Wildlife Service

Joe Madison

Program Manager – NC NEP

Red Wolf Recovery Program

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## Update on the North Carolina Nonessential Experimental Population (NEP)

January 21, 2021

- The current known population of red wolves (e.g. radio-collared individuals) in the NC NEP is 8 red wolves with the estimated total population approximately 17 - 20 red wolves. That doesn't include the two males translocated from St. Vincent NWR in December. More on that below.
- There have been no known red wolf mortalities since our last call in October. There were 2 mortalities in 2020, both as a result of gunshot.
- Tracking
  - o Tracking continues to be limited from the air due to COVID-19 safety measures. Monitoring flights will resume as soon as it is feasible to do so.
  - o Ground telemetry occurs multiple days a week throughout the NEP and we are able to locate all collared red wolves every week and all of them have remained within their respective territories.
- Management
  - o We are continuing to work with the NC Wildlife Resources Commission through the Albemarle Peninsula Collaborative Canid Conservation (AP3C) team on general canid management on the AP, including a virtual meeting in November to discuss the translocation plans for this winter. The WRC permit that covers our coyote work for this year includes not only the sterilization of any captured coyotes on Federal lands, but also on private land with landowner permission.
  - o We began capture operations at Alligator River NWR and St. Vincent NWR at the beginning of November and except for a brief break over Thanksgiving we have continued trapping every day since, including beginning trapping on Pocosin Lakes NWR last week.
    - In St. Vincent NWR, to date we have captured the two male red wolves and the breeding female. The two male red wolves were translocated from Florida to Alligator River NWR in December and they are currently in two different acclimation pens on the refuge. It's important to note that one of the males is the male that was transferred from the NC Zoo to St. Vincent NWR last winter, so after a year in the wild there, he will be released into the NC NEP. Both of the males translocated from Florida have been fitted with orange GPS collars.

The breeding female captured at St. Vincent NWR is currently in an acclimation pen there. A male red wolf was transferred from the NC Zoo to St. Vincent at the beginning of December and is currently in the acclimation pen with the breeding female. We are still attempting to capture the now almost three year old female red wolf at St. Vincent in hopes of translocating her to Alligator River NWR.

- In Alligator River NWR, to date we have captured two red wolves, the previous Milltail Pack breeding female that is now just shy of 11 years old and a female that was born into the Milltail Pack many years ago who spent the majority of her adult life on the bombing range located in the middle of the refuge. She is just shy of 12 years old. We had lost track of her when the battery on her radio collar died over a year ago after functioning for over 7 years. These females are in the two acclimation pens on the refuge, one with each of the males translocated from St. Vincent. Although it is not the red wolf pairs we set out to create, we are continuing to attempt to capture the female red wolves intended to be part of the pairs, including the female red wolf in the Milltail area that is almost four years old. In the meantime, these older females that are likely past their breeding years provide a connection to the territories in which they will be released and a red wolf from this area to hopefully help them be successful once released and may make it more likely they will remain on the refuge.
- In addition, we have captured three coyotes on Alligator River NWR, including two uncollared, young male coyotes. One of them was sterilized last week and the other is scheduled to be sterilized next week, before both are released back onto the refuge. The cost of the sterilization for these coyotes was covered by the Red Wolf Coalition, which is greatly appreciated.

## Outreach

- Prey for the Pack (P4P)
  - After a slower rollout than anticipated due to COVID-19 restrictions, particularly with meeting with landowners, just this week we completed the agreement for the first participant in Prey for the Pack, which we hope will be the first of many. We are currently having conversations with several other landowners. Thanks to our partner, the North Carolina Wildlife Federation, for their participation in this program.
  - We are continuing to work with North Carolina Wildlife Federation and Pocosin Lakes NWR on placing web cameras showing the enclosure and the den at the Red Wolf Center. NCWF is providing the majority of the funding and installation work. The live feed will be on their website and linked to from the Red Wolf Center webpage as well.
- Media
  - The Red Wolf Recovery Program has participated in several media pieces since the last call including The Guardian, the Washington Post, the BBC, PBS and others.

U.S. Fish and Wildlife Service

Joe Madison

Program Manager – NC NEP

Red Wolf Recovery Program

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## Update on the North Carolina Nonessential Experimental Population (NEP)

July 16, 2020

- The management of the wild red wolf population in the NC NEP is being conducted under the 10(j) rule updated in 1995 along with the permanent injunction put in place by a Federal court in November 2018 regarding take.
- The current known population of red wolves (e.g. radio-collared individuals) in the NC NEP is 9 red wolves with the estimated total population approximately 18 - 20 red wolves.
  - o In June, we lost the signal from a radio collar on a male red wolf that had been functioning for over 7 years so we suspect that animal is still on the landscape and the batteries on the collar just finally died.
- There has been 1 mortality in 2020 resulting from gunshot on private property. It is still an open case.
- Tracking
  - o Tracking has been limited at times because of the COVID-19 measures, particularly from the air, though we were able to conduct a few flights in May and June.
  - o Ground telemetry is occurring on a set schedule multiple days a week throughout the NEP and we have been pretty successful at locating almost all radio collared red wolves at least once a week.
  - o It does not appear based on our monitoring that there were any red wolf pairs or litters this breeding season.
  - o The male translocated from St. Vincent NWR to Alligator River NWR has moved southwest from his original release site.
  - o The male translocated from Alligator River NWR to Pocosin Lakes NWR remains in and around that refuge.

- Population Dynamics
  - Although we definitely were not as successful as we hoped with regards to creating new red wolf pairs through the translocations and acclimation pens, we have been successful to this point in having introduced a new red wolf male into the NEP from St. Vincent NWR and we've introduced a new red wolf male onto Pocosin Lakes NWR, and we are hopeful both of those developments could be beneficial moving forward.
  - There are 5 radio collared red wolves (two adults, one juvenile and 2 yearlings) remaining on St. Vincent NWR, and the general plan for this coming winter is to translocate the 3 younger red wolves into the NC NEP in additional attempts to create red wolf breeding pairs.
  
- Management
  - We are continuing to work closely with the NC Wildlife Resources Commission through the Albemarle Peninsula Collaborative Canid Conservation (AP3C) team. We currently are working on the near term objectives for both agencies for canid management on the AP, as well as separate working groups discussing the radio collaring of canids (e.g. VHF vs. GPS) and the sterilization of coyotes.
  - We've hired Morgan Lewis on as a Wildlife Technician through CWRS for at least the next year with the hope that she'll be converted to a permanent USFWS employee at some point. We've also just completed the selection process for a biologist position that will largely be responsible for administering the Prey for the Pack program and working with private landowners, as well as working on other Partners for Fish and Wildlife projects and assisting on other aspects of the Red Wolf Recovery Program.

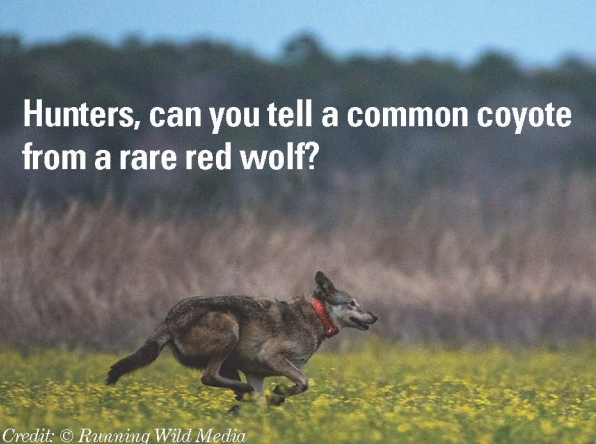
## Outreach

- Prey of the Pack (P4P)
  - The U.S. Fish and Wildlife Service, through its Partners for Fish and Wildlife (PFW) program in close partnership with the North Carolina Wildlife Federation (NCWF) has initiated a program to help incentivize interested and willing private landowners to create/improve habitat for red wolf prey species on their lands (e.g. early successional forest). In general, P4P would provide technical assistance and pay for a portion of the cost for landowner's to do habitat work on their lands, in exchange for landowners agreeing to be tolerant of red wolves on their property and allowing monitoring by FWS personnel. The press release initiating the program went out statewide on Monday, July 13<sup>th</sup>.

- Hunter ID Cards

- We have revamped the hunter ID cards to make them a lot more up to date and visually more appealing and accurate, particularly the species comparison pictures. These cards are sent out with hunter licenses through WRC, as well as provided at visitor centers and public gatherings. If you would like an electronic version contact Morgan Lewis at (252) 475-8350.

**U.S. Fish and Wildlife Service**




**Hunters, can you tell a common coyote from a rare red wolf?**

*Credit: © Running Wild Media*

Coyotes are fair game; red wolves, an endangered species restored to North Carolina, are not. Unfortunately, it can sometimes be tough to tell the two species apart—especially young animals—and red wolves are shot by mistake.

The U.S. Fish and Wildlife Service is working toward collaring all red wolves with bright **orange** collars to help the public distinguish them. Currently fewer than half of the red wolves have orange collars.

To report a dead or injured red wolf, call the U.S. Fish and Wildlife Service at 1-855-4-WOLVES. For additional information on red wolves, please visit: <https://www.fws.gov/southeast/wildlife/mammals/red-wolf/>



**Before you shoot... know the difference**  
Harming a red wolf is against the law\*



**Coyote**  
3 feet long  
22 inches tall  
20-35 pounds



**Red wolf**  
4 feet long  
26 inches tall  
45-80 pounds



Not all red wolves wear radio collars and, despite their name, they come in many of the same colors as coyotes: brown, buff, tan, gray, reddish brown and a variety of combinations. Adult red wolves are taller, longer, and heavier than coyotes, but in the summer and fall, their pups are similar in size to coyotes.

\*Red wolves are federally protected under the Endangered Species Act. Killing or harming a red wolf can result in civil and/or criminal penalties that may include fines and forfeiture of any property used in the crime.

*Credit: coyote: © Michael Klutz, red wolf: © Robert Ondrlish*

- USFWS Red Wolf Recovery Program Website
  - o We have revamped and updated the USFWS Red Wolf Recovery Website to include the most recent information and add in links to more updated information, such as these notes. The updated version has not gone live quite yet, but it should be very soon.

## Questions Asked

1. What is going to set off a red light or is there a trigger (e.g. population level) that indicates just how dire the situation is within the NC NEP that would allow for the release of adult red wolves from the SSP?

The red light has gone off long ago for us regarding concern for the red wolf population level in eastern NC and we are attempting to do as much as we as can be done under the current 10(j) rule (e.g. management plan) to sustain the population and increase the genetic diversity. There is no specific trigger that will allow for the release of adult red wolves from the SSP. USFWS is not currently authorized to release additional red wolves into the NC NEP from the SSP under the existing 10(j) rule.

2. Can you describe the limitations that have been placed on monitoring due to COVID-19 restrictions?

During the initial stages of the COVID-19 stay at home restrictions, we were unable to conduct monitoring flights or ground monitoring. Once a USFWS risk assessment was completed we were able to conduct ground monitoring only. After Governor Cooper placed NC in Phase 2 of reopening, we were able to start conducting monitoring flights under specific sterilization and PPE protocols. However, once Dare County reopened to visitors, the pilot began to conduct several tourist flights a day and began getting more and more complacent regarding sterilization protocols. Consequently, for the health and safety of USFWS personnel we determined that unfortunately monitoring flights needed to be suspended once again. Ground monitoring has continued throughout, but without flights we are conducted more extensive ground monitoring both spatially and temporally on a set schedule.

U.S. Fish and Wildlife Service

Joe Madison

Program Manager – NC NEP

Red Wolf Recovery Program

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## Update on the North Carolina Nonessential Experimental Population (NEP)

October 15, 2020

- The management of the wild red wolf population in the NC NEP is being conducted under the 10(j) rule updated in 1995 along with the permanent injunction put in place by a Federal court in November 2018 regarding take.
- The current known population of red wolves (e.g. radio-collared individuals) in the NC NEP is 7 red wolves with the estimated total population approximately 17 - 20 red wolves.
- There have been 2 mortalities in 2020, both as a result of gunshot on private lands. The most recent occurred in August and was a 3 year old female red wolf that had dispersed from Alligator River NWR to the south about a year ago. Law enforcement was involved with both cases.
- Tracking
  - o Tracking continues to be limited from the air due to COVID-19 measures. We are hopeful that as tourist season slows down that we can implement protective measures that will allow us to safely resume routine monitoring flights with the local pilot.
  - o Ground telemetry is occurring multiple days a week throughout the NEP and we have been successful at locating all radio collared red wolves at least once a week, with one exception.
  - o The male red wolf translocated from St. Vincent NWR to Alligator River NWR this past winter has not been located since the end of June. In September we brought in a FWS pilot and plane and over a two week period he flew grids throughout the NEP, then west to Greenville and south through the Croatan NF. However, no signal was located.

- Population Dynamics
  - There are 5 radio collared red wolves (two adults, one juvenile and 2 yearlings) remaining on St. Vincent NWR, and the general plan for this coming winter is to translocate up to three of those red wolves into the NC NEP in additional attempts to create new red wolf breeding pairs. Weather permitting we are starting capture operations in the NC NEP and St. Vincent earlier this year by about a month and hope to have the potential new pairs in acclimation pens on Alligator River NWR earlier and potentially longer than was possible last year. All translocated red wolves will be fitted with orange GPS collars before release onto Federal lands.
  
- Management
  - We are continuing to work with the NC Wildlife Resources Commission through the Albemarle Peninsula Collaborative Canid Conservation (AP3C) team on general canid management on the AP, the radio collaring of canids and the sterilization of coyotes.
  - In September, FWS brought on Luke Lokies as a Fish and Wildlife Biologist who will work largely as the liaison with private landowners regarding habitat improvement/restoration through the Partners for Fish and Wildlife Program, and particularly on the Prey for the Pack Program for the benefit of red wolf conservation. He will also be assisting with red wolf field work. Luke comes to us from the NC Wildlife Resources Commission where he did similar work regarding habitat improvement on private lands in eastern North Carolina, so we are excited to have him and his local habitat knowledge on our team.
  - Just this week the FWS was also able to bring on Morgan Lewis as a Biological Technician through the Pathways Program, which is a program designed for hiring students working on their post-graduate coursework with the intent of potentially transition them into permanent positions with FWS upon completion of their coursework. Morgan has been working with us in various capacities for over a year now so we know what she is capable of and very glad to be able to continue to have her on our team in a more long term capacity.

## Outreach

- Prey of the Pack (P4P)
  - In early October we started contacting individual landowners that we believe may be interested in the P4P program. Discussions are ongoing and we hope to create some word of mouth opportunities and also potentially mail informative postcards through our NCWF partner regarding the program to landowners in areas where red wolves are currently located or previously located to generate more interest and sign up landowners.

- North Carolina Wildlife Federation
  - NCWF has hired Katerina Ramos as the new Program and Volunteer Coordinator locating at Pocosin Lakes NWR, replacing Sarah Leoffler in that position. Among other things Katerina will oversee the day to day operations of the educational and outreach side of the Red Wolf Center in Columbia and will be actively involved in the Prey for the Pack Program, as well as many other education and outreach programs regarding red wolves and other local species.
  - We are also working with NCWF and Pocosin Lakes NWR on placing web cameras showing the enclosure and the den at the Red Wolf Center. NCWF is providing the majority of the funding and installation work. The live feed will be on their website and linked to from the Red Wolf Center webpage as well. The hope is to have it up and running by mid-November. Thanks to the partners on this call that have provided useful information regarding their web cameras.
  - FWS is also partnering with NCWF on a habitat enhancement project on Pocosin Lakes NWR. The project will enhance and sustain management of early successional habitat along established fire breaks on Pocosin Lakes NWR. This will result in an improved prey base for red wolves (deer and small mammals) and improved year-round habitat for priority grassland migratory birds. Funds would be used for site preparation, plantings and annual maintenance of site-appropriate early successional vegetation along the fire-breaks.
- Media
  - FWS has provided information and interviews for several articles over the last quarter regarding red wolves, including but not limited to, National Wildlife Federation, Sierra Magazine, North Carolina Wildlife Federation, local media outlets, etc.
- Other Partners
  - Met with folks from the Museum of Life and Science in Durham to discuss red wolf life history and management as they work on updating their interpretation displays.
  - Provided video footage of FWS personnel answering red wolf questions to the Fresno Zoo for an online science lesson they created.

#### Questions Asked:

1. What is the age structure of remaining wild red wolves and their average life span in the wild?

During the call I indicated that there are two somewhat distinct groups of age classes of the remaining wild red wolves with about half in the 3-4 year old range and about half in the 9-10 year range. In looking at the numbers afterwards, that is largely true, but we do also have a few in the 7 year old range so it is a bit more evenly distributed than I originally suggested.

Based on previous research, the average life span of a wild red wolf that dies of natural causes is around 9-10 years old, but when human-caused mortality is factored in the average life span is less than 4 years old.

2. Is FWS going to use GPS collars on red wolves released into the NC NEP from Florida and are red wolves from Florida more likely to disperse?

All red wolves translocated from St. Vincent NWR into the NC NEP will be fitted with orange GPS collars before release.

All red wolves, and wolves in general, that are moved from one geographic area to another are likely to make exploratory movements once they are released in a new location. Some more than others depending on the individual nature of that red wolf. Placing an animal in an acclimation pen can reduce the extent to which they move after release, particularly if they are in an acclimation pen with a red wolf from that area. The red wolves from Florida are no more likely to leave the area they are moved to than any other red wolf moved to a different area, even those that are moved to different locations within the NC NEP.

3. Was the female that got shot in August the Milltail daughter?

Yes and no. It was not the three year old female we typically refer to as the "Milltail daughter". She is still alive and living in the Milltail territory with her mother. However, the three year old female that was shot was her sister and litter mate and had dispersed from the Milltail territory and Alligator River National Wildlife Refuge over a year ago.

# Release of Sterilized Coyotes at Original Capture Sites





Tele: (888) 248-6834  
FAX: (919) 707-0292

# Research Permit

North Carolina Wildlife Resources Commission  
License Section  
1707 Mail Service Center  
Raleigh, NC 27699-1700

AUTHORITY  
STATUTES  
GS 113-261 & GS 113-272.4

RULES  
15A NCAC 10B .0119

Page 1 of 2

PERMITTEE/LICENSEE

**Pete Benjamin**  
US Fish & Wildlife Service  
551-F Pylon Drive  
Raleigh, NC 27606

PERMIT NUMBER  
**DO02052020-001**

EFFECTIVE  
**02/07/2020**

EXPIRES  
**04/01/2020**

COUNTY  
N/A

DISTRICT  
1 & 2

CONDITIONS AND AUTHORIZATIONS:

**This permit authorizes the above research activities for the following species (and their hybrids):**

- Coyote (*Canis latrans*)
- Red Wolf (*Canis rufus*)

The above-named permittee and individuals working under his direct supervision, carrying a copy of this permit and any other required written authorization(s), are authorized to conduct the following wildlife research activities with the species listed above, subject to the following conditions:

1. Authorized to capture, immobilize, surgically sterilize (using vasectomy or tubal ligation), vaccinate, release and/or euthanize.
  - a. Collection Location Authorized: U.S. Fish and Wildlife Service refuges in Beaufort, Dare, Hyde, Tyrrell, Washington Counties
  - b. Method(s) Authorized: All Legal Traps: Trapping along roads limited to #3 Soft-catch foot-hold trap, MB-550 foot-hold traps, Non-lethal snares.
  - c. Permittee(s) must check traps daily.
  - d. Non-target species must be immediately released unharmed on site. Critically injured non-target species must be euthanized.
  - e. Authorized to attach radio transmitters on red wolves, coyotes, and hybrids.
  - f. All red wolves, coyotes, and hybrids shall be affixed with GPS collars prior to release.
  - g. NC Wildlife Resources Commission staff shall be provided with all information or web interface to allow independent monitoring of location data.
2. Authorized to access state-owned game lands in eastern North Carolina for research activities upon notification of WRC game lands management staff at least 48 hours prior to activities commencing.
3. Licensed trappers operating under a cooperative agreement with the US Fish and Wildlife Service may conduct activities authorized under this permit and must carry a copy of this permit and a signed copy of the cooperative agreement.

**This permit/license is nontransferable and expires at midnight on the above specified expiration date.**

ISSUED BY:

TITLE:

**EXECUTIVE DIRECTOR**

DATE:

**2/13/2020**



Tele: (888) 248-6834  
FAX: (919) 707-0292

## Research Permit

North Carolina Wildlife Resources Commission  
License Section  
1707 Mail Service Center  
Raleigh, NC 27699-1700

Permit Number

N/A

Page 2 of 2

### CONDITIONS AND AUTHORIZATIONS:

Except as indicated, issuance of this permit does not constitute permission to conduct research activities on any public or private lands; such permission must be obtained in writing from the appropriate landowner or land manager before beginning authorized research activities. This permit neither directly nor by implication grants right of trespass.

All individuals conducting trapping activities under the authority of this permit must adhere to the Association of Fish & Wildlife Agencies Trapping Best Management Practices.

All individuals conducting activities under the authority of this permit must carry a copy of this permit and a letter of authorization from the above-named permittee when conducting related activities.

**Authorized Sub-permittee(s): Joe Madison, Ryan Nordsven, Shaun Olson.**

The permittee is required to submit quarterly reports of all research activities to the North Carolina Wildlife Resources Commission and an annual report of all research activities within 15 days of the expiration of this permit to the following address: Wildlife Management 1707 Mail Service Center, Raleigh, NC 27699 or by fax 919-707-0292. Failure to submit a report will constitute grounds for denial of any request for renewal of this permit. The required report must include the following information:

- a) Number of red wolves and coyotes captured, by age (adult or juvenile) and sex.
- b) Weight, hind foot length, tail length, and zygomatic breadth of each canid captured.
- c) Capture and release location, in GPS coordinates, for each red wolf, coyote, other canid, or non-target captured or handled.
- d) Condition and disposition of any animal captured and not released.
- e) List of trappers, including name and affiliation, involved in trapping activities authorized by this permit.
- f) Reproductive status of each red wolf, coyote, or hybrid captured.
- g) Data on all tissue samples collected for genetic analysis, including type of tissue and analysis results if available.
- h) All tagging information.
- i) List of all canids trapped and released fitted with radio transmitters or GPS collars, including species, types of transmitters, their frequencies and all location data since the animal was released.



# Canid Cooperators - We Need Your Help!

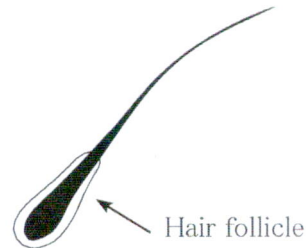
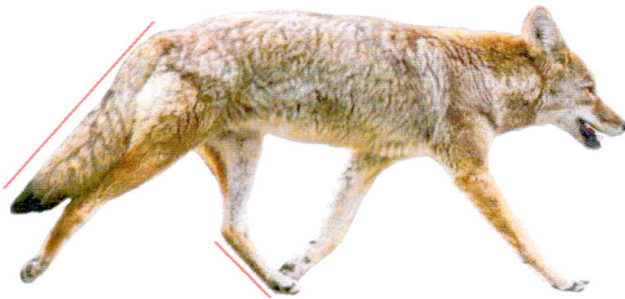
Help us monitor our canid population by submitting a tuft of hair with follicles and body measurements of your canid.

## Why submit hair with follicles and body measurements?

- Your information allows N.C. Wildlife Resources Commission biologists to better monitor canid populations and make management decisions.
- By recording age, sex, and body measurements of harvested canids over a period of years, biologists can more accurately model canid populations.
- We need information on **all canids, young and old**, (except foxes) to accurately model the canid population.\*\*
- **For your participation, you will receive a free "North Carolina Canid Cooperator" ball cap.**

## How do I submit my canid hair sample and body measurements?

- If a biologist **did not** collect the samples from your harvested canid, you can submit the hair and data sheet (see back) to the address listed on the back page.
- Instructions for collecting canid samples and measurements are below. They also can be found at [www.ncwildlife.org/coyote](http://www.ncwildlife.org/coyote) (click on "Have a Problem" link; from there click on the "Information on Coyote Hunting and Depredation Permits" link. From the list, click on "Permit Restrictions, Rules...")



Please submit hair with follicles (see photo above).

- 1) Take a hair sample from anywhere on the animal by firmly pulling on the hair, whiskers preferred. **DO NOT CUT HAIR.**
- 2) Use the picture above and the ruler on the back of this sheet to get body measurements (tail and foot).
- 3) If you have the hair envelope, put the hair **with follicles** in the envelope. Fill in the data on the envelope and data sheet. If you don't have a hair envelope, tape the hair to this data sheet and use a new envelope.

\*\*Please contact Wildlife Biologist Andrea Shipley at (cell) 919-208-9200; or email [andrea.shipley@ncwildlife.org](mailto:andrea.shipley@ncwildlife.org) for assistance, if needed.

## Canid Cooperator - Hair Submission Form

Please fill out as detailed as possible.

1) Date of Harvest: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / 2) County of Harvest: \_\_\_\_\_  
month day year

3) Weapon (check one):  Rifle  Shotgun  Pistol  Muzzleloader  Other

4) Sex (F=female, M=male, U=unknown): \_\_\_\_\_

5) Measurements (inches): Tail: \_\_\_\_\_ Foot: \_\_\_\_\_ (see pictures for guidance)

6) Cooperator name\*: \_\_\_\_\_ Hunter Permit Number: \_\_\_\_\_

Address\*: \_\_\_\_\_ Phone: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

WRC Reporting Number\* (obtained when reporting animal to WRC): \_\_\_\_\_

*\* Cooperator name, current address and WRC reporting number required to receive a free ball cap.*

7) Location of Mortality:

(provide description or attach map)

or GPS coordinates: Latitude(N) or UTM(N): \_\_\_\_\_ Longitude(W) or UTM(E): \_\_\_\_\_

8) Comments:

9) Canid Marked: Yes  No  Tattoo Number \_\_\_\_\_ Tag Number \_\_\_\_\_ Collar Present: \_\_\_\_\_

10) Hair Enclosed: Yes  No  (make sure the hair has follicles (skin) attached to it!)

Sheet completed by: \_\_\_\_\_



Please send completed sheet and hair to:  
**N.C. Wildlife Resources Commission**  
Andrea Shipley  
PO Box 209  
Castalia, NC 27816

Questions about submitting hair and  
returning collars:  
Email: [andrea.shipley@ncwildlife.org](mailto:andrea.shipley@ncwildlife.org)  
Cell: 919-208-9200  
[www.ncwildlife.org/coyote](http://www.ncwildlife.org/coyote)