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Wildlife Research

Supplementary Material

Assessing local landowner versus non-local public support for a red wolf reintroduction using varying message treatments

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Supplementary Information

Supplementary material S1. An example of the survey instrument with the treatment for government trust. The example includes the demographic questions, government trust treatment, pre-test-post-test design, and a post-test only design.

This first set of questions will ask a little about your life in Arkansas.

Do you currently reside in Arkansas?

Yes (1)

No (2)

In which Arkansas county do you primarily reside?

County (1)

▼ Arkansas (1) ... Yell (75)

Do you/your family **own land** in any of the following zip codes near the Ozark National Forest, located in northwestern Arkansas? (Even if you do not primarily reside there.)

71753, 71861, 72030, 72031, 72080, 72567, 72628, 72645, 72650, 72655, 72666, 72679, 72683, 72686, 72718, 72721, 72727, 72752, 72760, 72776, 72823, 72830, 72837, 72839, 72843, 72846,

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72852, 72856, 72934, 72946, 72947, 72949, 72959, or 73595.

- Yes (1)
- No (2)
- I don't know (3)

How much land do you/your family own in these zip codes?

- Less than 1 acre (1)
- 1-10 acres (2)
- 11-99 acres (3)
- 100-999 acres (4)
- More than 1,000 acres (5)

How long have you/your family owned the land in these zip codes?

- 0-5 years (1)
- 6-10 years (2)
- 11-20 years (3)

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More than 21 years (4)

N/A (5)

Do you currently have any pets or animals that live outdoors (without supervision)?

No (1)

Yes, they are sometimes outdoors without supervision (2)

Yes, they are always or almost always outdoors without supervision (3)

Have you ever been an Arkansas hunting or fishing license holder (i.e., purchased an Arkansas hunting or fishing license)?

Yes (1)

No (2)

The next set of questions are related to a specific endangered species-- the red wolf.

Have you ever heard of red wolves?

Yes (1)

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- No (2)
- I don't know (3)

How much do you know about red wolves?

- Nothing at all (1)
- A little (2)
- A lot (3)

Based only on what you currently know (and/or don't know) about red wolves, how would you describe your level of support for or opposition to a red wolf reintroduction to Ozark National Forest in northwestern Arkansas?

- Strongly oppose (1)
- Somewhat oppose (2)
- Neither support nor oppose (3)
- Somewhat support (4)
- Strongly support (5)

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I don't know (6)

We'll now provide you with a bit more information about red wolves.

Red wolves were once common throughout the southeastern United States (including Arkansas), but populations were eliminated by the mid-1900s due to hunting and habitat loss. As part of an ambitious captive-breeding program, the U.S Fish & Wildlife Service captured a small group of remaining red wolves in the 1970's and has been breeding and releasing the offspring in North Carolina. Although the reintroduction efforts were initially successful, the red wolf population in North Carolina has been dwindling since 2014 due to hunting and vehicle collisions. The red wolf, which is between the size of a coyote and a gray wolf, is now one of the most endangered canines in the world.

To help protect the red wolf from extinction, certain wildlife groups are interested in working with the government to reintroduce red wolves back to some of their original habitats, potentially including the Ozark National Forest.

Such a reintroduction would exemplify the U.S Fish & Wildlife Service's mission to work with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. The Service believes it is increasingly important to communicate about how its conservation work affects and benefits the public. As such, the Service would provide a forum for regular and effective coordination on current actions and

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collaborative efforts among all partners in red wolf recovery, and provide other interested parties and the public with updates on the status of red wolf conservation efforts.

(Photo by ucumari photography)

We now have a few questions about what you just read.

Please indicate your level of agreement or disagreement with the following statements.

“The information I just read...”

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)	I don't know (6)
is positive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
makes me feel like red wolf reintroductions would be good for Arkansas ecosystems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
helps me feel at ease about red wolf reintroductions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
illustrates that U.S. Fish & Wildlife Service is trustworthy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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will persuade others to support red wolf reintroductions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
addresses my concerns about red wolf reintroductions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
makes me feel like red wolf reintroductions would be good for Arkansas communities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
makes me feel threatened by red wolf reintroductions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
provided factual evidence about the benefits of red wolves.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
makes me feel like I wanted to "argue back" to what was stated in the message.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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We now have a few questions about your thoughts about red wolves.

As a reminder of what you read:

To help protect the red wolf from extinction, certain wildlife groups are interested in working with the government to reintroduce red wolves back to some of their original habitats, potentially including the Ozark National Forest.

Such a reintroduction would exemplify the U.S Fish & Wildlife Service's mission to work with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. The Service believes it is increasingly important to communicate about how its conservation work affects and benefits the public. As such, the Service would provide a forum for regular and effective coordination on current actions and collaborative efforts among all partners in red wolf recovery, and provide other interested parties and the public with updates on the status of red wolf conservation efforts.

Please indicate your level of agreement or disagreement with the following statements based on your thoughts about red wolves.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)	I don't know (6)
Red wolves will cause physical harm to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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people. (1)						
Red wolves will decrease outdoor recreation and enjoyment. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ozark National Forest is not suitable for red wolves. (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The public does not want red wolves in Ozark National Forest. (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reintroduction will unfairly impact certain communities. (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government wildlife agencies only care about their own goals. (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves are necessary for a healthy ecosystem. (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Red wolves belong in Ozark National Forest. (23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolf reintroduction will increase tourism (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would enjoy seeing red wolves in Ozark National Forest. (27)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves should be reintroduced and conserved for future generations. (29)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves are beautiful. (31)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves tend to be aggressive. (32)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves could help control nuisance and/or invasive species. (34)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Here is just one more set of questions about your thoughts about red wolves.

As a reminder of what you read:

To help protect the red wolf from extinction, certain wildlife groups are interested in working with the government to reintroduce red wolves back to some of their original habitats, potentially including the Ozark National Forest.

Such a reintroduction would exemplify the U.S Fish & Wildlife Service's mission to work with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. The Service believes it is increasingly important to communicate about how its conservation work affects and benefits the public. As such, the Service would provide a forum for regular and effective coordination on current actions and collaborative efforts among all partners in red wolf recovery, and provide other interested parties and the public with updates on the status of red wolf conservation efforts.

Please indicate your level of agreement or disagreement with the following statements based on your thoughts about red wolves.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)	I don't know (6)
Red wolves are a safety threat to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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outdoor pets/animals. (10)						
Red wolves will harm Arkansans' livelihoods. (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolf reintroduction is an irresponsible use of resources. (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves will negatively impact other wildlife. (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reintroductions will not be effective. (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves are not needed in Ozark National Forest. (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolf reintroduction is everyone's moral responsibility. (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolf reintroduction will	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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generate regional pride and make Arkansas special. (24)						
People would learn to coexist with red wolves. (26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would enjoy knowing that red wolves exist in Arkansas, even if I never see one. (28)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves are scary. (30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves are intelligent. (33)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Red wolves could help control wildlife disease outbreaks (e.g., chronic wasting disease, CWD). (37)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Based on what you now know about red wolves, how would you describe your level of support for or opposition to a red wolf reintroduction to Ozark National Forest in Arkansas?

- Strongly oppose (1)
- Somewhat oppose (2)
- Neither support nor oppose (3)
- Somewhat support (4)
- Strongly support (5)
- I don't know (6)

This final section will ask you a few demographic questions that will **only be used for statistical and comparative purposes.**

In what type of setting is your main residence?

- Urban (1)
- Suburban (2)
- Semi-rural (3)
- Rural (4)

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What is your age?

Do you live with any children under 18 years of age?

Yes (1)

No (2)

What is your gender?

Man (1)

Woman (2)

Non-binary (3)

What is the highest degree or level of school you have completed?

Less than 12th grade (1)

High school graduate/GED (2)

Some college/associate or technical degree (3)

Bachelor's degree (4)

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- Graduate degree (5)

Which of these categories best describes your total household income?

- Under \$20,000 (1)
- \$20,000 - \$39,999 (2)
- \$40,000 - \$59,999 (3)
- \$60,000 - \$79,999 (4)
- \$80,000 - \$99,999 (5)
- \$100,000 - \$119,999 (6)
- \$120,000 or more (7)
- Do not wish to answer (8)

Supplementary material S2. Means and standard deviations for other respondents, Ozark National Forest-adjacent landowners (ONFALO) (dis)agreement with post-test only statements (1=strongly oppose to 5=strongly support) and t-statistic for comparison.

	ONFALO Post-	Other Respondent	F statistic
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	test mean (SD)	Post-test mean (SD)	
red wolves will cause physical harm to people	3.00 (1.20)	2.60 (1.13)	F(1,747) = 13.06**
red wolves will decrease outdoor recreation and enjoyment	2.94 (1.34)	2.45 (1.16)	F(1,747) = 18.42**
Ozark National Forest is not suitable for red wolves	2.53 (1.32)	2.31 (1.17)	F(1,747) = 3.76*
the public does not want red wolves in Ozark National Forest	2.92 (1.13)	2.68 (1.05)	F(1,747) = 5.41*
reintroduction will unfairly impact certain communities	2.94 (1.19)	2.63 (1.13)	F(1,747) = 7.81**
government wildlife agencies only care about their own goals	3.04 (1.16)	2.78 (1.16)	F(1,747) = 5.37*
red wolves are necessary for a healthy ecosystem	3.87 (1.03)	4.04 (0.91)	F(1,747) = 3.66
red wolves belong in Ozark National Forest	4.02 (0.96)	4.13 (0.96)	F(1,747) = 1.38

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red wolf reintroduction will increase tourism	3.47 (1.10)	3.52 (0.97)	F(1,747) = 0.22
I would enjoy seeing red wolves in Ozark National Forest	3.99 (1.19)	4.12 (1.01)	F(1,747) = 1.69
red wolves should be reintroduced and conserved for future generations	4.15 (0.92)	4.20 (0.94)	F(1,747) = 0.32
red wolves are beautiful	4.32 (0.89)	4.43 (0.86)	F(1,747) = 1.73
red wolves tend to be aggressive	3.19 (1.07)	2.82 (1.00)	F(1,747) = 14.67**
red wolves could help control nuisance and/or invasive species	3.90 (0.97)	3.96 (0.92)	F(1,747) = 0.43
red wolves are a safety threat to outdoor pets/animals	3.08 (1.19)	2.89 (1.17)	F(1,747) = 2.79
red wolves will harm Arkansans' livelihoods	2.58 (1.18)	2.28 (1.15)	F(1,747) = 7.32**
red wolf reintroduction is an irresponsible use of	2.54 (1.30)	2.23 (1.18)	F(1,747) = 7.09**

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resources			
red wolves will negatively impact other wildlife	2.66 (1.17)	2.33 (1.11)	F(1,747) = 9.39**
reintroductions will not be effective	2.69 (1.16)	2.42 (1.12)	F(1,747) = 6.22*
red wolves are not needed in Ozark National Forest	2.69 (1.30)	2.36 (1.15)	F(1,747) = 8.65**
red wolf reintroduction is everyone's moral responsibility	3.57 (1.14)	3.54 (1.05)	F(1,747) = 0.08
red wolf reintroduction will generate regional pride and make Arkansas special	3.73 (1.12)	3.85 (0.96)	F(1,747) = 1.72
People would learn to coexist with red wolves	3.73 (0.93)	3.99 (0.93)	F(1,747) = 8.20**
I would enjoy knowing that red wolves exist in Arkansas, even if I never see one	4.09 (1.05)	4.11 (1.00)	F(1,747) = 0.03
red wolves are scary	2.60 (1.24)	2.41 (1.20)	F(1,747) =

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			2.79
red wolves are intelligent	3.89 (0.96)	3.98 (0.93)	F(1,747) = 0.94
red wolves could help control wildlife disease outbreaks (e.g., chronic wasting disease, CWD)	3.59 (0.98)	3.66 (0.93)	F(1,747) = 0.68

Asterisks denote significance: (**) at the 1% level and (*) 5% level.