Appendix 1

Level 2 variables explained

Managerial

Captures. Number of captures (all captures, including private trappers and repeat captures) made by the U.S. Fish and Wildlife Service between September 1987 and October 2015 by county. For several reasons, the capture and release of wolves is a contentious issue. Similar to releases, we posit that residents in counties experiencing more captures will produce lower legitimacy scores.

Complaints. Number of all types of U.S. Fish and Wildlife Service wolf-verified complaints received between September 1987 and October 2015. The number of landowner complaints filed has been used by critics to make the case that the USFWS ignores landowners. We suggest that fewer recorded complaints about red wolves produced higher legitimacy scores.

Releases. Number of wolves released by county that were either captive or island born between September 1987 and October 2015. Releases were on both public and private lands. A main complaint about red wolf recovery is that most red wolf releases by the USFWS were illegal. We posit that residents in counties experiencing more red wolf releases will produce lower legitimacy scores.

Ecological

Deer dnsity. Number of white-tailed deer *Odocoileus virginianus* per square mile. Based on 2015 NCWRC deer harvest data. Calculated yearly by the NCWRC deer biologist. Coding: 1 =< 15, 2 = 15–29. Deer are staple of the red wolf diet. A central contention by critics is that red wolves compete with hunters for deer. We posit that more deer on the landscape yield higher perceived legitimacy scores.

Habitat selection. Proportional probability of habitat selection and computed by Dr. Todd Steury at Auburn University and based on research he coauthored (Dellinger et al. 2013). The red wolf resource selection function (i.e. RSF, indicating the probability of red wolf habitat use) was

averaged across each county, increasing from east to west. Because red wolves increasingly select natural land-cover types when human density increases, we posit that where there is suitable more habitat there will be fewer wolf sightings by residents and higher legitimacy scores.

Wolf pairs. The number of mating red wolf pairs recorded by the U.S. Fish and Wildlife Service between January 2000 and December 2012, by county. The number of wolf pairs is used as a measure by which critics assess red wolf recovery. We suspect that more red wolf pairs in a county yielded higher perceived legitimacy scores.

Wolf deaths. Number of wolf mortalities in the wild by county recorded by the U.S. Fish and Wildlife Service between September 1987 and October 2015. Wolf mortality is a key measure of recovery success. We posit that a higher number of wolf deaths equates to mismanagement and translates to lower perceived legitimacy scores.

Political
Resolution. County officials passed or did not pass a resolution protesting red wolf recovery. Coding: 0 = no; 1 = yes. We suspect that residents in counties passing resolutions rejecting red wolf recovery would yield lower legitimacy scores.

% Protected land. Public land. Calculated from data located within county land use plans. For mainland Dare, data was supplemented with the assistance of the county GIS specialist. The 1995 rules governing red wolf recovery stated that the USFWS would maintain the red wolf population on public lands. We suspect that residents in counties with a higher percentage of protected lands will yield lower perceived legitimacy scores.

Socio-economic
Hunters per capita. Calculated by dividing the number of adult registered big game harvest report card holders in the NCWRC Automated License and Vessel Information Network database (2016) by the county adult population, then dividing by 100. Because competition between hunters and large canids, red wolves and coyotes, is a salient political argument, we posit that more hunters per capita (sans children) equate to lower legitimacy scores.

Population density. County level and derived from 2010 U.S. census data. Ocracoke Island and the Outer Banks were excluded. We suspect that fewer wolves seen near areas with high human density will yield higher legitimacy scores.

Social vulnerability. The Agency for Toxic Substances and Disease Registry uses U.S. census variables to calculate county social and economic vulnerability. We used 2006 scores. Higher scores equate to higher vulnerability (scale 0–2). Qualitative investigation revealed a preference for federal funds to be used for community development over red wolf recovery (despite the funds coming from different sources), we anticipate that higher social vulnerability translates to lower perceived legitimacy scores.

References

Dellinger, J. et al. 2013. Habitat selection of a large carnivore, the red wolf, in a human-altered landscape. – Biol. Conserv. 157: 324–330.

Appendix 2

Table A1. Means and standard error for model constructs and variables (n = 2577)

	Mean	SE
Legitimacy		
Appropriate	3.16	0.032
Satisfaction	2.59	0.029
Trust	3.01	0.036
Norms	3.32	0.042
Adequacy	3.07	0.018
Total legitimacy	2.96	0.017
Level 1 Psychological		
Concern	3.09	0.039
Instrumental	2.54	0.028
Ethics	2.77	0.038
Tolerance	3.32	0.035
Environmental history	3.41	0.035
Level 2		
Ecological		
Deer density	1.87	0.0066
Habitat selection	0.44	0.0010
Wolf pairs	2.34	0.0251
Wolf deaths	55.76	0.52
Political		
Resolution	0.31	0.0091
% Protected land	53.00	0.38
Managerial		
Complaints	6.67	0.21
Releases	8.78	0.25
Captures	169.74	2.57
Socio-economic		
Population density	41.95	0.40
Hunters per capita	13.35	0.03
Social vulnerability	1.17	0.03

Legitimacy: Measured with 18 statements; 1 = *strongly disagree* to 5 = *strongly agree*, except for Q130 (satisfaction), which was measured with 5-point scale of 1 = *strongly oppose* to 5 = *strongly support*, each with a *don't know* option. Total legitimacy = the average of the 18 statements.

Concern: 1 = *not concerned* and 5= *very concerned*, with a *don't know* option.

Instrumental value: 1 = *strongly disagree* to 5 = *strongly agree*; 1 = *unacceptable* and 5 = *acceptable*.

Ethical behavior (i.e. right and wrong action): 1 = *strongly disagree* to 5 = *strongly agree*.

Tolerance: 1 = *strongly disagree* to 5 = *strongly agree*; 1 = *unacceptable* and 5 = *acceptable*.

Environmental history: 1 = *strongly disagree* to 5 = *strongly agree* with a *don't know* option.