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Statement of the Animal Welfare Institute
before the NASEM Committee Assessing
the Taxonomic Status of the Red Wolf, PIN: DELS-BLS-18-06

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Good Afternoon Members of the Committee, and thank you for allowing me to comment on the taxonomic status of the red wolf on behalf of the Animal Welfare Institute (AWI). AWI, established in 1951, is one of America's oldest animal welfare organizations. The organization is dedicated to reducing animal suffering caused by people by seeking better treatment of animals in the wild, in the laboratory, on the farm, at home, and in commerce. AWI has worked extensively on saving the red wolf from extinction in the wild through legal, policy, and advocacy measures.

AWI finds that the evidence supports a determination by this Committee that red wolves are a taxonomically valid species. Numerous scientists have concluded that red wolves are a full species that is genetically and morphologically distinct from both gray wolves and coyotes. This conclusion is supported by the majority of assessments of paleontological, craniometric, and historical data, as well as molecular studies (Atkins and Dillon 1971; Bertorelle and Excoffier 1998; Cronin 1993; Dowling et al. 1992a, 1992b; Elder and Hayden 1977; Freeman 1976; Gipson et al. 1974; Hall 1981; Hedrick et al. 2002; Jackson 1951; Kurten and Anderson 1980; Mech and Federoff 2002; Nowak 1992; Nowak and Federoff 1996, 1998; Nowak et al. 1995; Paradiso 1968; Phillips and Henry 1992; Brzeski et al. 2016.; Hohenlohe et al. 2017; vonHoldt et al. 2016). A genetic analysis published earlier this year also confirmed that red wolves are a unique species (Waples et al. 2018).

Earlier this year, the U.S. Fish and Wildlife Service reviewed the latest data on the status of the red wolf and recommended that the red wolf continue to be recognized as a listable entity under the Endangered Species Act (ESA). That decision is in accordance with the conclusions of the majority of experts, who have found, time and time again, that the red wolf is a listable entity under the ESA. Although some scientists differ on whether red wolves should be considered a distinct species, subspecies, distinct population segment, or admixture, they all agreed red wolves represent a unique lineage that is worthy of conservation.

Recent genetic data have largely refuted the hypothesis that the red wolf is a hybrid of the gray wolf and coyote. The balance of evidence has tilted towards a North American assemblage composed of the eastern wolf, the red wolf, and the coyote as distinct taxa that are descended from a common ancestral canid of North American origin (Rutledge et al. 2010a, Rutledge et al.

2012, Wilson et al. 2012). The most recent arguments for a modern hybrid origin between gray wolves and coyotes (vonHoldt et al. 2011, 2016, 2017) have been challenged with genetic analyses of modern (Rutledge et al. 2015; Hohenlohe et al. 2017) and pre-Columbian (Brzeski et al. 2016) specimens. A second team of molecular authorities (Kyle et al. 2006; Wilson et al. 2000) found the red wolf represents part of a separate lineage that originated in the Pleistocene. These scientists concluded that the red wolf was closely related to the eastern wolf and that those two taxa had a common origin with coyotes rather than with gray wolves. New findings by Bohling et al. (2016) of minimal hybridization despite co-occurrence demonstrates the clear distinction between red wolves and coyotes.

Beyond the molecular studies, no historical or paleontological information gives any indication that either coyotes or gray wolves were present in the Southeast, or that there was any hybridization there between 10,000 and 100 years ago (Nowak 2002). Nowak (1979, 2002) observed no difference between modern and prehistoric red wolves. In addition, recent field work in eastern North Carolina shows the red wolf population there has maintained its unique phenotype and relatively larger external size as compared to coyotes (Hinton and Chamberlain 2014). A new genetic assessment of wild *Canis* in that area has shown that substantial numbers of both red wolves and coyotes occur sympatrically, occupying the same geographic habitat at the same time, but they have maintained their specific distinction, with only a very small proportion of individuals undergoing hybridization (Bohling et al. 2016). In addition, Chambers et al. (2012) reviewed the taxonomy of North American wolves and concluded that the red wolf is a full species that arose in prehistoric times and is distinct from the gray wolf and the coyote.

In addition to submitting this statement for the record, AWI would be happy to submit additional material to the Committee as warranted.

Lastly, AWI wishes to note its objection to the failure to include, as members of the Committee, key members of the scientific community with the greatest expertise in matters of red wolf and Mexican gray wolf taxonomy. The Committee would have greatly benefited from their knowledge and involvement in the deliberations on these issues.

Thank you for your time and for your consideration of AWI's comments.

Sincerely,

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