



THE WILDLIFE SOCIETY

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14 May 2010

Sharon Seim
Planning Team Leader
Arctic National Wildlife Refuge
101 12th Ave., Rm. 236
Fairbanks, AK 99701
email: ArcticRefugeCCP@fws.gov

Dear Ms. Seim:

The Wildlife Society would like to thank you for the opportunity to submit comments on the revision of the Comprehensive Conservation Plan (CCP) for the Arctic National Wildlife Refuge (ANWR). We are writing to you to provide suggestions for the CCP, and also to endorse the comments already made by the Alaska Chapter of The Wildlife Society.

The Wildlife Society (TWS) was founded in 1937 and is a non-profit scientific and educational association of over 9,100 professional wildlife biologists and managers, dedicated to excellence in wildlife stewardship through science and education. Our mission is to represent and serve wildlife professionals—the scientists, technicians, and practitioners actively working to study, manage, and conserve native and desired non-native wildlife and their habitats worldwide.

The Alaska National Interest Lands Conservation Act of 1980 (ANILCA), established the following purposes for the Arctic Refuge:

1. To conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, the Porcupine caribou herd, polar bears, grizzly bears, muskoxen, Dall sheep, wolves, wolverines, snow geese, peregrine falcons and other migratory birds, Dolly Varden, trout, grayling, whitefish, and burbot.
2. To fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats.
3. To provide, in a manner consistent with the purposes set forth in subparagraphs i and ii, the opportunity for continued subsistence uses by local residents.
4. To ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph i, water quality and necessary water quantity within the Refuge.

TWS urges that as the CCP is revised, these principles continue to guide the refuge plan. ANWR fulfills a unique role in providing habitat for North America's arctic and subarctic wildlife, and also serves as an important summering ground for many important and threatened migratory bird species. The CCP must be revised to reflect the latest science to protect this habitat for this and future generations.

A revision of the CCP is long overdue. Since its last revision 22 years ago, there have been significant changes in the social, climate, habitat, and land use patterns of ANWR, and these changes must be addressed to successfully steward the refuge. Primary among those changes are the effects climate change is having upon wildlife habitat within the refuge. This habitat includes the shrinking glaciers, melting permafrost, and moving treelines that are being reported throughout the arctic region. Many experts are suggesting that climate change additionally may be allowing the spread of invasive species throughout the arctic. The arctic is particularly susceptible to invasions because of the open spaces, disturbed soil¹, and high connectivity of water systems prevalent in arctic habitats and favored by invasive species. As the CCP revision moves forward, it would be wise to include provisions for monitoring of and response to invasive species within ANWR. With sufficient knowledge and the appropriate prevention measures in place, the spread of invasive species into ANWR may be controlled or at least slowed substantially.

Another consequence of a warming climate is the spread of wildlife diseases into more northern regions. Many recent scientific studies have shown that climate is and will continue to have effects on the health of humans, domestic animals, and wildlife. It is thought that in the Northern Hemisphere climate change has likely played a role in the northern shifts of several animal diseases and disease vectors. One of these is the lung parasite of caribou (*Rangifer tarandus caribou*), *Parelaphostrongylus odocoilei*, that has shifted northwards since 1995 and has now expanded its range to include Alaska and the Yukon². Another example is the nematode *Parelaphostrongylus tenuis*, which causes neurological disease in moose (*Alces alces*). Moose heat-stressed due to climate change³, may be more susceptible to such parasites and other infectious diseases⁴. The revised CCP should have provisions to prepare refuge managers to confront, prevent, and mitigate the spread of such diseases. Wildlife health professionals and other stakeholders within the wildlife, veterinary, and conservation communities need to play an active role in developing wildlife health plans within the CCP.

Adaptive management also should be incorporated in the revised CCP. Climate change is a process never before witnessed by modern humanity, and the outcome of environmental change and warming is unknown. Climate change is occurring at an unpredictable pace, defying accurate prediction by scientists and climate modelers. All of this unpredictability means that natural resource managers may be left with management plans for the refuge that quickly become maladaptive, intractable, or simply unusable. The CCP must take this unpredictability into account and allow for flexibility within the Plan; this flexibility should allow refuge managers freedom to adapt on-the-ground policies as needed, and with minimal bureaucracy, in order to adapt rapidly to changing environmental conditions.

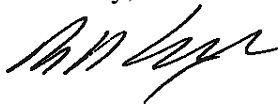
ANWR also should continue to be maintained as an undeveloped site. A 2003 National Research Council (NRC) report noted that "...Continued expansion is certain to exacerbate some existing effects and to generate new ones..." Expansion of development will bring an increased human population into the region, and with it will come increased petrochemical toxins, vehicular and maritime traffic, noise, air and water pollution, soil disturbance, and species introductions. What the effects of all of these factors might be are unknown because a great deal of uncertainty exists about the potential repercussions of development; however, they will be significant. Because of the uncertainty, it will be difficult to develop an environmental mitigation plan that can effectively address potential changes. Further, the habitat fragmentation that will come from increasing roads and infrastructure is known to play a significant role in blocking

gene flow and disrupting migration patterns of many species, including some of the species such as the Porcupine caribou herd and peregrine falcons designated for protection in the ANICLA. To successfully conserve these and other species as they are now, as well as prepare for eventual range shifts due to climate change in the future, large, intact ecosystems must be maintained.

Finally, we believe it important that ANWR continue to be used as a natural laboratory for monitoring and science. ANWR provides a particularly pristine, undeveloped resource for performing long-term studies of the effects of climate change on wildlife resources and ecosystem processes. Long-term data is often hard to come by as human populations in lower latitudes grow and continue to encroach upon existing wildlife habitat. However, because of the monitoring efforts that have proceeded over the past several decades in the 1002 area, ANWR has baseline biological data unlike any other region in the arctic. To fully use the decades of research invested into ANWR, it must continue to be conserved for research purposes. Research in ANWR will provide important data on climate, habitat change, and wildlife, and its continued use as a site for research will allow scientists to build predictive models that could help mitigate effects of climate change throughout the entire region.

Thank you for considering the views of wildlife professionals. We have attached the revised 2009 TWS position statement on ANWR, and we look forward to seeing the U.S. Fish and Wildlife Service draft an effective, science-based CCP that acts to preserve and restore arctic wildlife and their habitats. If we can be of further assistance, please contact Jenna Jadin, Assistant Director of Government Affairs at 301-897-9770 x309 or jenna@wildlife.org.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce Leopold", written in a cursive style.

Bruce Leopold, Ph.D.
President

Appendix: References

1. Chang, E.R., Jefferies, R.L., T.J. Carleton. 2001. Relationship between vegetation and soil seed banks in an arctic coastal marsh. *J. of Ecology* 89: 376-384.
2. Hoberg, E.P., Polley, L., Jenkins, E.J., Kutz, S.J., Veitch, A.M., and Elkin, B.T. 2008. Integrated approaches and empirical models for investigation of parasitic diseases in northern wildlife. *Emerging Infectious Diseases* 14(1): 10-17.
3. Lenarz, M.S., Nelson, M.E., Schrage, M.W., and Edwards, A.J. 2009. Temperature mediated moose survival in northeastern Minnesota. *Journal of Wildlife Management* 73(4): 503–510.
4. Murray, D.L., Cox, E.W., Ballard, W.B., Whitlaw, H.A., Lenarz, M.S., Custer, T.W., Barnett, T., Fuller, T.K. 2009. Pathogens, nutritional deficiency, and climate influences on a declining moose population. *Wildlife Monographs* 166: 1–30.