

May 5, 2016

Sally Jewell, Secretary U.S. Department of the Interior
Daniel Ashe, Director, U.S. Fish and Wildlife Service
Public Comments Processing
Division of Policy, Performance, and Management Programs
U.S. Fish and Wildlife Service
MS: BPHC
5275 Leesburg Pike
Falls Church, VA 22041-3803

Re: FWS-R6-ES-2016-0042; Greater Yellowstone Ecosystem Grizzly Bears

Dear Secretary Jewell and Director Ashe:

We, the undersigned scientific experts, are writing to express our strong opposition to the proposal by the U.S. Fish and Wildlife Service (FWS) to remove the grizzly bears (*Ursus arctos horribilis*) living in the Greater Yellowstone Ecosystem (GYE) from protection as a threatened species under the Endangered Species Act (ESA),¹ leading to Northern Rockies states' commencement of an unsustainable trophy-hunting² season on GYE grizzly bears, which continue to be imperiled by resource declines, including habitat and dietary staple losses.

GYE grizzly bears are not recovered. Before 1800, approximately 50,000 grizzly bears roamed the lower 48 states between Canada and Mexico.³ After European settlement, humans heavily persecuted grizzly bears to near eradication.⁴ Today, wild grizzly bears number fewer than 1,700 individuals in the lower 48 states⁵ - while FWS claims that there are 700 grizzly bears in the GYE,⁶ this is a contested figure.⁷ Grizzly bears have not recovered across a significant portion of their range, and thus they are not recovered and should not be delisted.

Trophy hunting grizzly bears would further jeopardize their persistence. Pursuant to a tri-state memo, Northern Rockies states have allocated bears for the purposes of "discretionary mortality available for regulated harvest" within the Demographic Monitoring Area (DMA)⁸ as follows: Wyoming would authorize hunting for 58% of the bear quota, Montana 34% and Idaho 8%.⁹ The number of grizzly bears states will permit for trophy hunting is unknown. While Wyoming has issued a draft grizzly bear management plan, it would inadequately protect GYE grizzly bears in the absence of a federal ESA listing because it gives broad discretion to the Wyoming Game Commission to set the manner of take (e.g., baiting, hounding, trapping, stalking), bag limits, seasons, sex ratios and age limits for grizzly bear hunting.¹⁰ How Idaho or Montana will permit grizzly bear hunting is also currently unknown. Under this veil of uncertainty, the FWS is rushing to close the public comment period (ignoring reasonable requests for a deadline extension justified by the voluminous documents released by FWS) in order to rapidly delist grizzly bears for what appear to be more political than scientific reasons. Such action conflicts with the ESA requirement to make listing decisions solely on the basis of the best scientific evidence available and to seek meaningful public comment on listing decisions.

Grizzly bears face multiple threats to persistence including the loss of their primary food resources. Currently, whitebark pine seeds, native cutthroat trout, huckleberries, army cutworm moths, elk and bison are either declining and/or are expected to decline in the foreseeable future as a result of habitat loss, climate change, drought, invasive species and other anthropogenic causes. Traditionally, whitebark pine seeds have provided a core dietary staple for grizzly bears. Yet, the whitebark pine, a species the FWS agrees warrants federal protection, is in decline because of a variety of problems.¹¹ Another key source of

sustenance, the cutthroat trout, has stopped spawning in all tributaries of Yellowstone Lake.¹² Army cutworm moths, a staple for grizzly bears since the late 1990's, could likely disappear because they nectar on tundra flowers, which are highly vulnerable to global warming. Added to these threats to the sustainability of the GYE grizzly bear population, Yellowstone's Jackson and Northern Range elk herds and its Central Range bison herd are all in decline.¹³ Because of warming summer temperatures and drought severity since 2005,¹⁴ berries have become largely unavailable to grizzly bears. These food failures—whitebark pine, cutthroat trout, huckleberries—have caused grizzly bears to switch to a more meat-based diet, including domestic livestock. As a result, bears have been in conflict with humans, leading to record numbers of lethal actions taken against them.¹⁵ This additive mortality harms their persistence.¹⁶ Furthermore, biologists have noted that grizzly bear cub production has declined¹⁷—perhaps because of more predation on cubs by wolves and other bears as a result of their new dependence upon a meat-based diet, which puts them into greater proximity with other predators, resulting in deadly strife on grizzly bear cubs.

The loss of flora and fauna upon which grizzly bears depend in Yellowstone and Grand Teton national parks, in part, explains why grizzly bears are dispersing in greater numbers from park lands to national forests lands, which are grazed by public lands permittees, to search for food. Because of ubiquitous livestock outside of park lands, record numbers of grizzly bears have had lethal encounters.¹⁸

Worse, if grizzly bears are delisted, the GYE bears who already live or disperse outside of the DMA's artificial boundary will not be counted toward states' population objectives and will likely be subject to persecution. Yet, these dispersing individuals are vital for providing connections between other populations, maintaining *genetic diversity* and preventing *genetic drift* and *inbreeding depression*.¹⁹

While the conclusions of certain studies upon which the FWS relies suggest that grizzly bears have reached their carrying capacity, there is ample support for an alternative theory that bears have lost their historic dietary staples and are now turning to both native and domestic ungulates, putting them in closer proximity to humans, wolves and/or other bears.²⁰ While this shift is occurring it is impossible to predict whether and when the GYE grizzly bear population might reach "carrying capacity". FWS is not scientifically justified in concluding with certainty that the GYE population has reached long-term stability and is therefore secure for the foreseeable future. There is far too much uncertainty reflected in the current science to justify such a conclusion; rather, the best available science and the precautionary principle demands continued federal monitoring of this vulnerable population, which will only happen with continued ESA protection.

The public highly values grizzly bears. In 2015, Yellowstone received 4.1 million visits and Grand Teton had 4.6 million contributing \$890 million to Wyoming's gateway communities, and \$1.1 billion to Wyoming's overall economy. These figures greatly outweigh revenues generated by either Wyoming's livestock or hunting industries.²¹ Grizzly bears, in the human economy, are worth far more alive than dead.

For all of these reasons, we urge you not to remove grizzly bears from protections under the ESA. Now is the time to redouble grizzly bear conservation efforts, not decrease them.

Signed:

Jane Goodall, PhD, DBE
Founder, the Jane Goodall Institute & UN Messenger of Peace

David M. Armstrong, PhD
Professor Emeritus
Department of Ecology and Evolutionary Biology
University of Colorado
Boulder, CO 80309

Jonathan Balcombe, Ph.D.
Humane Society Institute of Science and Policy
Humane Society of the United States
Washington, DC

Marc Bekoff, Ph.D.
Professor Emeritus, Ecology and Evolutionary Biology
University of Colorado
Boulder, Colorado

Bradley J. Bergstrom, Ph.D.,
Professor of Biology, Valdosta State University
Valdosta, Georgia

Robert L. Beschta, Ph.D.
Professor Emeritus, Forest Ecosystems and Society
Oregon State University
Corvallis, Oregon

Jeremy T. Bruskotter, PhD
Associate Professor, School of Environment & Natural Resources
The Ohio State University
Columbus, Ohio

Guillaume Chapron, PhD
Associate Professor, Department of Ecology
Swedish University of Agricultural Sciences
Riddarhyttan, Sweden

Peter Chesson, PhD
Department of Ecology and Evolutionary Biology
University of Arizona
Tucson, Arizona

Susan G. Clark, PhD
Joseph F. Cullman 3rd Adjunct Professor of Wildlife Ecology and Policy Sciences
School of Forestry & Environmental Studies, and Fellow, Institution for Social & Policy Studies
Yale University
New Haven, Connecticut

Megan M. Draheim, PhD
Visiting Assistant Professor, Center for Leadership in Global Sustainability
Virginia Polytechnic Institute and State University
Arlington, Virginia

Robin Dobson, PhD
Ecologist, U.S. Forest Service
Hood River, Oregon

John G. Duman, PhD
Department of Biological Sciences
University of Notre Dame
Notre Dame, Indiana

Robert A. Evans, M.S.
Wildlife Biologist, US Forest Service, retired
Iron River, Michigan

Tracy Feldman, Ph.D.
Assistant professor
Department of Natural and Life Sciences
St. Andrews University (a Branch of Webber International University)
Laurinburg, North Carolina

Jed Fuhrman, PhD
Fellow of the American Academy of Arts & Sciences McCulloch-Crosby Chair of Marine Biology
University of Southern California
Los Angeles, California

Bob Gillespie, PhD
Agriculture and Natural Resources Program
Wenatchee Valley College
Entomologist
Wenatchee, Washington

Anthony J. Giordano, Ph.D.
Founder & Chief Scientist
S.P.E.C.I.E.S.
Ventura, California

John Grandy, PhD
Executive Director
The Pegasus Foundation
Washington, DC

Gregory F. Grether, Ph.D.
Department of Ecology & Evolutionary Biology
University of California
Los Angeles, California

John Hadidian, PhD
Senior Scientist, Wildlife Protection (retired)
Humane Society of the United States
Gaithersburg, Maryland

Ann Harvey, M.S.
Research Associate, Northern Rockies Conservation Cooperative
Wilson, Wyoming

Rick Hopkins, Ph.D.
Principal and Senior Conservation Biologist
Live Oak Associates, Inc.
San Jose, California

Falk Huettmann PhD,
Associate Professor, EWHALE Lab, Biology and Wildlife Dept., Institute of Arctic Biology
Fairbanks, Alaska

Craig K Harris, Ph.D.
Associate Professor, Department of Sociology
Michigan AgBio Research
Center for Regional Food Systems
Michigan State University
East Lansing, Michigan

Rodney L. Honeycutt, PhD
University Professor, Natural Science Division
Pepperdine University
Malibu, California

Timothy Kaminski, MSc
Montana Cooperative Wildlife Research Unit
University of Montana
Livingston, Montana

Ken Keefover-Ring
Assistant Professor, Departments of Botany and Geography
University of Wisconsin-Madison
Madison, Wisconsin

Alex Krevitz, M.A.
Kunak Wildlife Studies
Coarsegold, California

Jennifer Leonard, PhD
Conservation and Evolutionary Genetics Group,
Biological Station of Doñana
Seville, Spain

William Lynn, PhD
Marsh Institute
Clark University
Worcester, Massachusetts

Malcolm R. MacPherson, PhD
Retired Scientist
Santa Fe, New Mexico

David J. Mattson, PhD
Yale School of Forestry & Environmental Studies
USGS Station Leader & Research Wildlife Biologist (retired)
New Haven, Connecticut

Francis Mauer, M.S.
Wildlife Biologist (retired)
US Fish and Wildlife Service
Fairbanks, Alaska

Wayne McCrory BSc (Hon. Zoology, UBC)
Registered Professional Biologist (RPBio.)
McCrory Wildlife Services Ltd.
New Denver, British Columbia, Canada

Michael Paul Nelson, PhD
Department of Forest Ecosystems and Society
Oregon State University
Corvallis, Oregon

Reed F. Noss, PhD
Provost's Distinguished Research Professor
Department of Biology, University of Central Florida
Orlando, Florida

Ron Nowak, PhD
Office of Endangered Species, US Fish & Wildlife Service (retired)
Washington, DC

Henry Owen, PhD
Professor of Biological Sciences, Emeritus
Eastern Illinois University
Charleston, Illinois

Paul C. Paquet, PhD
Wildlife Ecologist, Department of Geography
University of Victoria
Victoria, British Columbia, Canada

Debra A. Patla, MS
Research Associate, Northern Rockies Conservation Cooperative
Moran, Wyoming

Craig Pease, PhD
Professor of Science and Law
Vermont Law School
South Royalton, Vermont

Kathleen Perillo, M.S.
Professor, Biology and Environmental Science
Clark College
Vancouver, Washington

Rolf O. Peterson, Ph.D.
Research Professor
Michigan Technological University
Houghton, Michigan

Erica Pianka, PhD
Integrative Biology
The University of Texas at Austin
Austin, Texas

Richard P. Reading, Ph.D.
Department of Biological Sciences and Graduate School of Social Work
University of Denver
Denver, CO

Brett Riddle, PhD
School of Life Sciences
University of Nevada – Las Vegas
Las Vegas, Nevada

William J. Ripple, PhD
Distinguished Professor of Ecology
Oregon State University
Corvallis, Oregon

Andrew Rowan, PhD
The Humane Society International
Washington, DC

Sahotra Sarkar, PhD
Departments of Integrative Biology and Philosophy
University of Texas at Austin
Austin, Texas

Margaret Schadler, PhD - American Society of Mammologists
Union College
Schenectady, New York

Heidi Schmidt
Managing Editor of Missouri Botanical Garden

Steve Sheffield, Ph.D.
Professor of Biology
Department of Natural Sciences – Biology
Bowie State University
Bowie, Maryland

Winston P. Smith, Ph.D.
Principal Research Scientist, Institute of Arctic Biology
University of Alaska - Fairbanks
Juneau, Alaska

Michael Soule, PhD
Professor Emeritus
University of California, Santa Cruz
Santa Cruz, California

Teresa Telecky, PhD
Director, Wildlife Department
Humane Society International
Washington, DC

Adrian Treves, PhD
Nelson Institute, University of Wisconsin
Madison, Wisconsin

Stephanie Trewhitt
Trewhitt Mammalogy Lab, Department of Biological Sciences
San Jose State University
San Jose, California

Richard Vance
Professor Emeritus
Department of Ecology and Evolutionary Biology
University of California at Los Angeles
Los Angeles, California

Sacha Vignieri, PhD
Senior Editor, Science
Washington, DC

John Vucetich, Ph.D.
Professor, School of Forest Resources and Environmental Science
Michigan Technological University
Houghton, Michigan

Arian Wallach, Ph.D.
Chancellor's Postdoctoral Research Fellow
Centre for Compassionate Conservation
School of Life Sciences, University of Technology
Sydney, Australia

Glenn Walsberg, PhD
Professor Emeritus, School of Life Sciences,
Arizona State University,
Tempe, Arizona

Jennifer Watt, PhD
Environmental and Sustainability Studies Program/Department of Geography
University of Utah
Salt Lake City, Utah

Robert Wielgus, Ph.D.
Associate Professor and Director of the Large Carnivore Conservation Lab, School of Environment
Washington State University
Pullman, Washington

David Zaber, PhD
Resource Ecologist
Applied Integrated Consulting
Ely, Minnesota

References:

¹ 81 Fed. Sup. 1374 (3/11/16): <https://www.gpo.gov/fdsys/pkg/FR-2016-03-11/pdf/2016-05167.pdf>

² *Trophy hunting* is the practice of killing or pursuing with the intent to kill a grizzly bear (or other wild animal) where the primary motivation is to obtain the animal for display, in whole or in part, or for bragging rights. The Associated Press obtained and released a leaked (12-4-2015) "Memorandum of Agreement Regarding the Management and Allocation of Discretionary Mortality of Grizzly Bears in the Greater Yellowstone Area.

³ <http://www.fws.gov/mountain-prairie/es/grizzlyBear.php>

⁴ Schwartz, C. C., S. D. Miller, M. A. Haroldson. 2003. Grizzly Bear (*Ursus arctos*) in Wild Mammals of North America: Biology, Management, and Conservation. Johns Hopkins University Press, Baltimore, Maryland.

⁵ <http://www.fws.gov/mountain-prairie/es/grizzlyBear.php>

⁶ <http://www.nps.gov/yell/learn/nature/gbearinfo.htm>

⁷ Doak, D.F. and K. Cutler. 2014. Re-Evaluating Evidence for Past Population Trends and Predicted Dynamics of Yellowstone Grizzly Bears. *Conservation Letters* 7(3)313-322. David Mattson, "Http://Www.Grizzlytimes.Org/#!Honest-Science/C1ch8".

⁸ The DMA is the geographic area where state wildlife agencies will monitor the grizzly bear population. The FWS's Rule also calls it the Primary Conservation Area.

⁹ Virgil Moore, M. Jeff Hagener, and Scott Talbott, "Final Draft 12-4-2015: Memorandum of Agreement Regarding the Management and Allocation of Discretionary Mortality of Grizzly Bears in the Greater Yellowstone Area," *AP Story at: http://bigstory.ap.org/article/a4738ff1a2c14920b0c45063302d5c4e/apnewsbreak-states-divvy-yellowstone-area-grizzly-hunt*, (2016).

¹⁰ Wyoming's House Joint Resolution on gray wolves and grizzly bears characterizes both with unbridled animosity: gisweb.state.wy.us/2016/bills/HJ0004.pdf. Wyoming Game and Fish Department, "Draft Wyoming Grizzly Bear Management Plan," <https://wgfd.wyo.gov/WGFD/media/content/Wildlife/Hot%20Topics/FINAL-DRAFT-GB-Mgmt-Plan-3-15-16.pdf>, (2016).

¹¹ The FWS writes: "Threats to the whitebark pine include habitat loss and mortality from white pine blister rust, mountain pine beetle, catastrophic fire and fire suppression, environmental effects resulting from climate change, and the inadequacy of existing regulatory mechanisms." <http://www.fws.gov/mountain-prairie/species/plants/whitebarkpine/>

¹² <http://www.fws.gov/mountain-prairie/species/fish/yct/yctstatusreviewreport.pdf>

¹³ D. D. Bjornlie et al., "Whitebark Pine, Population Density, and Home-Range Size of Grizzly Bears in the Greater Yellowstone Ecosystem," *Plos One* 9, no. 2 (2014); C. M. Costello et al., "Influence of Whitebark Pine Decline on Fall Habitat Use and Movements of Grizzly Bears in the Greater Yellowstone Ecosystem," *Ecology and Evolution* 4, no. 10 (2014); F. T. van Manen et al., "Density Dependence, Whitebark Pine, and Vital Rates of Grizzly Bears," *Journal of Wildlife Management* 80, no. 2 (2016).

¹⁴ Bjornlie et al., "Whitebark Pine, Population Density, and Home-Range Size of Grizzly Bears in the Greater Yellowstone Ecosystem; Costello et al., "Influence of Whitebark Pine Decline on Fall Habitat Use and Movements of Grizzly Bears in the Greater Yellowstone Ecosystem; van Manen et al., "Density Dependence, Whitebark Pine, and Vital Rates of Grizzly Bears."

¹⁵ Figure 8 of Wyoming's plan shows that since 1990 an increasing trajectory in both self defense and management removals of grizzly bears. Wyoming Game and Fish Department, "Draft Wyoming Grizzly Bear Management Plan."

¹⁶ Because of human-bear conflicts over domestic livestock and hunter-killed ungulates, significantly more bears have been killed since 2005 compared to the period 1990-2004. See: IGBST's grizzly bear mortality data base:

<http://www.nrmssc.usgs.gov/science/igbst/mort>.

¹⁷ van Manen et al., "Density Dependence, Whitebark Pine, and Vital Rates of Grizzly Bears."

¹⁸ See: IGBST's grizzly bear mortality data base: <http://www.nrmssc.usgs.gov/science/igbst/mort>.

¹⁹ *Genetic diversity* increases a species' chances of long-term survival because negative traits (such as inbreeding) become widespread within a population when that population is left to reproduce only with its own members. *Genetic drift* refers to a populations' loss of genes, making a population less vital, more disease prone, and unable to overcome natural disasters. L. S. Mills and F. W. Allendorf, "The One-Migrant-Per-Generation Rule in Conservation and Management," *Conservation Biology* 10, no. 6 (1996).

²⁰ Doak, D.F. and K. Cutler. 2014. Re-Evaluating Evidence for Past Population Trends and Predicted Dynamics of Yellowstone Grizzly Bears. *Conservation Letters* 7(3)313-322. David Mattson, "Http://Www.Grizzlytimes.Org/#!/Honest-Science/C1ch8".

²¹ <http://nature.nps.gov/socialscience/nps-state.cfm?state=Wyoming>