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UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
MISSOULA DIVISION

DEFENDERS OF WILDLIFE, NATURAL RESOURCES DEFENSE COUNCIL, SIERRA CLUB, HUMANE SOCIETY OF THE UNITED STATES, CENTER FOR BIOLOGICAL DIVERSITY, JACKSON HOLE CONSERVATION ALLIANCE, FRIENDS OF THE CLEARWATER, ALLIANCE FOR THE WILD ROCKIES, OREGON WILD, CASCADIA WILDLANDS PROJECT, WESTERN WATERSHEDS PROJECT, and WILDLANDS PROJECT, Plaintiffs, v. H. DALE HALL, U.S. Fish and Wildlife Service Director; DIRK KEMPTHORNE, Secretary of the Interior; and the UNITED STATES FISH AND WILDLIFE SERVICE, Defendants.	Case No. cv-08-56-M-DWM DECLARATION OF L. DAVID MECH, PH.D., H.D.A.

I, L. DAVID MECH, declare that the following is true and correct to the best of my knowledge,

I. BACKGROUND

1. I received a B.S. degree in wildlife management from Cornell University in 1958, a Ph.D. in wildlife ecology from Purdue University in 1962, and an Honorary Doctorate of Agriculture from Purdue in 2005. I have worked for the U. S. Department of the Interior (DOI) since 1969 as a wildlife research biologist studying wolves, and I am currently a Senior Research Scientist, Biological Resources Discipline of the U.S. Geological Survey (formerly Division of Endangered Species Research, U.S. Fish and Wildlife Service), Northern Prairie Wildlife Research Center, 8711 37th Street, SE, Jamestown, North Dakota 58401-7317. Headquartered at The Raptor Center, 1920 Fitch Ave., University of Minnesota, St. Paul, MN 55108, I am also an Adjunct Professor in the Dept. of Ecology and Behavioral Biology, University of Minnesota—1979 to present, and the Department of Fisheries, Wildlife, and Conservation Biology—1981 to present (Graduate Faculty of both). My CV is attached.

2. When I began my career in 1958, there were so few wolves living any place where anyone cared about them that for 15 years I was the only full-time wolf researcher in the world. Eventually, as both wolves and concern for their fate increased, my students and trainees, and later others, began to spend full time involved with wolf research, restoration, and management. All have contributed to wolf recovery.

3. During my career, I have had the opportunity to wear many hats, besides my basic one as a wolf researcher. As a DOI employee, and before the Endangered Species Act (ESA) mandated wolf recovery teams, I was detailed to draft the first wolf

recovery plan, that for the red wolf (*Canis rufus*), and soon after that, the first recovery plan for the eastern timber wolf (*Canis lupus lycaon*). Later, when recovery teams were formed, I was appointed to the Eastern Timber Wolf Recovery Team and the Northern Rocky Mountain Wolf Recovery Team and as a consultant to the Red Wolf Recovery Team and the Mexican Wolf Recovery Team. These teams built on the early plans I had drafted.

4. I have studied wolves in several areas of the world, including Isle Royale, Michigan (1958-1962), Denali Park (1986-1995), Alaska, Ellesmere Island Canada (1986 to present), Yellowstone National Park (YNP) (1995 to present), Minnesota (1966 to present). As part of my research on wolves, I helped pioneer the primary technique now used to study wolves, aerial radio-tracking, in Minnesota in 1968 and have since personally radio-collared and aerially radio-tracked hundreds of wolves in Minnesota, Canada, Alaska, Italy, and Yellowstone National Park and supervised the radio-collaring and radio-tracking of hundreds more. I have also studied wolves in a captive colony for 15 years and have lived with and studied a pack of wild wolves in northern Canada for several weeks for most summers from 1988 through 2006.

5. I have helped others begin similar research projects in Italy, Canada, and Alaska and helped train in my research project in Minnesota researchers from Sweden, Norway, Portugal, Israel, Croatia, Spain, India, Russia, and several other countries in wolf research techniques.

6. Along the way, I have also published 9 books and some 300 scientific articles and 100 popular articles about wolves and their prey and wolf management. A listing of them can be found at www.wolf.org in the wolf bibliography section, and my

abstracts and full text articles from the last several years can be found at www.npwrc.usgs.gov.

7. In 1973, I was a founding member of the International Union for the Conservation of Nature and Natural Resources (IUCN) Wolf Specialist Group, which was instituted to guide wolf recovery and management throughout the wolf's original range, which was most of the northern hemisphere. In 1978 I was appointed chair of that group, a position I have held ever since.

8. I am also the Founder and Current Vice Chair, International Wolf Center, Ely, Minnesota (501 (c)(3) non-profit organization for public education about wolves and wolf recovery); 10,000 members; 20 employees; 32-p quarterly magazine *International Wolf* (distribution, 13,000). Web page: www.wolf.org. Our sole purpose is to provide objective, science-based information about wolves.

9. I reviewed and commented on several formal and informal documents related to the Northern Rocky Mountain (NRM) wolf recovery effort, including (a) a November 15, 2001 request to help define "what constitutes a viable gray wolf population in the northern Rocky Mountains of the United States?" (b) a July 25, 2000 request to review a proposed reclassification and delisting of the gray wolf in the U. S., and (c) a September 12, 2003 request to help determine whether (1) the state plans of Montana, Idaho, and Wyoming will achieve the stated objectives of each plan, and (2) if I believe that collectively the plans are adequate to maintain the wolf population at or above the recovery level into the foreseeable future.

10. I also assisted with the efforts to capture, process, radio-collar, and translocate wolves from Alberta (1995) and British Columbia (1996) to Yellowstone

National Park and central Idaho as well as the releases of the wolves into YNP. Since then my graduate students and I have conducted research in Yellowstone each year, resulting in several scientific publications. I have also visited most of the NRM wolf DPS area by vehicle and aircraft.

11. I have been invited to visit and to consult with the governments and/or conservation agencies of Italy, Spain, France, Croatia, Sweden, Israel, and Russia to help them recover, conserve and manage their wolf populations.

12. I have co-authored scientific articles on wolf genetics with Dr. Robert Wayne since 1991 and I co-edited a major wolf reference book, "Wolves: Behavior, Ecology, and Conservation" (2003, University of Chicago Press) in which his chapter on the conservation genetics of the wolf was included. I have reviewed Dr. Wayne's April 4, 2008 Declaration filed in Case CV-08-56-M-DWM.

13. The purpose of this declaration is to respond to plaintiffs' allegations of irreparable injury in their Memorandum in Support of Motion for Preliminary Injunction and to the Declaration of Dr. Robert Wayne. My declaration addresses plaintiffs' assertions that delisting irreparably harms wolf packs, the NRM wolf population, and the ability of members of Plaintiff organizations to view and enjoy wolves in the wild. My declaration also addresses allegations in the Wayne Declaration regarding the conservation status and genetic viability of wolves in YNP.

II. DISCUSSION

A. Response to Wayne Declaration

14. Based on my long history and experience studying wolves in

Yellowstone and throughout the world, I disagree with several of the conclusions drawn by Dr. Wayne's Declaration. Dr. Wayne's conclusion that "an effective metapopulation dynamic . . . has yet to be achieved" in the Northern Rockies is based on data collected from 1995-2004 from only a fraction of the actual population. Wayne Decl. at ¶3. More recent data demonstrates connectivity between the YNP population and wolves elsewhere in the Northern Rocky Mountains. Moreover, the life span of wolves in the wild is at least 13 years (Mech 1988), and they breed from ages 2 (sometimes 1 year of age) – 13. The fact that no "genetically effective immigration of wolves to YNP" was found for a 10-year period from 1995-2004, Wayne Decl. at ¶3, is neither relevant nor important to long-term wolf persistence. A total of 41 wolves were translocated into YNP, and they came from 3 widely disparate populations, Alberta, British Columbia, and Montana. Within both the Alberta and British Columbia founders, there were members of several different packs. Thus the YNP population was founded with high genetic diversity. That the YNP genetic diversity continued to be as high as desirable through 2004 was documented by Von Holdt et al. (2007). No genetically effective immigration has been found in the closed Isle Royale (IR) wolf population for 50 years, yet the population persists at the same range of levels (12-50, average about 25/per year) as it has for 50 years. In fact the Isle Royale wolf population is informative for several reasons. Contrary to the 3 NRM wolf populations it was founded by only 1 female and 1 or 2 males (Wayne et al. 1991) and has inbred for 50 years. The IR wolves look and act like any other wolves, prey successfully on one of the species' largest prey animals, the moose (*Alces alces*), and survive at as high a level as any other wolf population. It has

even withstood a bout of canine parvovirus for decades (Peterson et al. 1998; Fuller et al., 2003:189-190.)

15. Contrary to Dr. Wayne, I do not agree that there is currently no "effective metapopulation dynamic" in the NRM wolf population. As I will document, wolves are extremely mobile, and movement between YNP and Idaho (ID) has been demonstrated. In addition, Dr. Wayne's analysis assumes, without adequate foundation, that there will be a "substantial reduction in wolf abundance in the Northern Rockies." Wayne Decl. at ¶3. It has not been demonstrated that "a substantial reduction" in wolf abundance will occur, and my opinion is that it will not because merely to hold a wolf population stationary requires an annual take of 28-50% per year. Indeed, the agencies outside the NRM which are seeking to reduce wolf populations try to kill 70% per year (Fuller et al. 2003). Such extreme taking of the kind necessary to effectively reduce wolf populations is done via concerted and expensive government agency (Alaska, Yukon Territories for example) programs using helicopters and fixed wing aircraft. Normal regulated public harvest such as is contemplated in the NRM is usually unable to reduce wolf populations (Mech 2001). Starting with a base population of 1,545 wolves in late 2007 (Final Rule) and adding the average 24% annual increase shown from 1995 through 2006 yields 1,916 wolves expected to be present in fall 2008. (Here I should note that the estimate of 1,545 wolves is a minimum estimate, i.e. there were supposedly a minimum of 1,545 wolves. As wolf populations increase, it becomes increasingly harder to count them accurately and the minimal counts become increasingly lower than actual. Thus a better estimate of the actual population could be about 1,700, and thus the 2008 estimate would be 2,108.) Assuming the minimum figure and that ID actually takes 328 wolves which is its limit

but which seems very unrealistic (Mech 2001) that would still be only 17% of the minimal population. Then if MT and WY together took another 210 wolves that still would not exceed a 28% reduction of the total minimum population. Wolves were originally exterminated by concerted, prolonged, year-round government efforts using every means possible, but mostly by widespread open-range poisoning, which is now illegal in most areas and highly regulated in the 2% of wolf range where it is not outright illegal. For these reasons, plaintiffs' allegation that wolves will be harmed at the population level by state management post-delisting are not well founded.

16. Finally, there are several problems with Dr. Wayne's contention that, "In the absence of sufficient immigration …the Yellowstone-area wolves are likely to experience increased juvenile mortality as a result of inbreeding beginning in 3-4 decades." Wayne Decl. at ¶4. First, Dr. Wayne's study (Von Holdt et al. 2007) did not actually show this. Rather the report of the study claimed that this could occur in 6 decades (Von Holdt et al. 2007:19). Second, Wayne's conclusion that "Yellowstone Area wolves are likely to experience increased juvenile mortality" goes beyond his study's design and findings. The study included only YNP wolves, whose population was about 170 wolves (Von Holdt et al. 2007: Figure 8), whereas the Yellowstone area exceeds 450 wolves. Third, Figure 8 itself from the Von Holdt study is highly theoretical and already contradicts itself. Figure 8 predicts a decline in heterozygosity (H_o) in the YNP population of from about 0.740 to about 0.710 in 10 years, yet the H_o actually increased from 0.694 in 1995 to 0.725 in 2004 (Von Holdt et al. 2007:Table 1). Finally, rather than raising concerns about inbreeding depression, the Von Holdt et al. study concluded that "the Yellowstone population has levels of genetic variation similar to that

of a population managed for high variation and low inbreeding…." (Von Holdt et al. 2007. Summary).

17. In addition, of course, the contention itself is all based on the assumption that there will be no immigrants. In fact, since the data of 2004 there have been immigrants into the YNP population, and YNP wolves have emigrated to the ID population. Elsewhere wolf movements (measured straight-line from beginning to end) have been documented up to 1,092 km (655 miles) through every kind of habitat including that similar to the 150-200 km (90-120 miles) separating the main YNP population from the ID population. One satellite-collared wolf from central Minnesota traveled 494 km (296 miles) straight-line distance across Wisconsin farmland but covered a minimum of 4,251 km (2,550 miles) during her travels and crossed highways at least 17 times (Merrill and Mech 2000). Wolves from YNP have traveled to central Colorado and Utah, and wolves from ID have traveled to Oregon and Washington. There is no reason to believe that there is not and will not be regular connectivity among the ID, YNP, and MT populations. Granted, any single wolf that is killed in the northern Rockies reduces these chances, but the actual reduction in individual probability is insignificant.

18. The article by Liberg et al. (2005) that Wayne cites to document "increased juvenile mortality as a result of inbreeding depression" is not relevant because it pertains to a far smaller, isolated Scandinavian population that is not comparable to the far larger, genetically diverse, and better connected YNP wolf population. The Scandinavian population addressed in Liberg et al. (2005) was founded by only 3 individuals, whereas Yellowstone's population had 41 founders, and Idaho's had 35. It should also be noted that that Scandinavian population with only 3 founders and a

reduction of pup production still continued to increase. Also, similar to the Wayne Declaration, the study noted that "the probability of natural immigration seems low, as no new immigrants have appeared [from Finland—some 900 (546 miles) km away] in the last 13 years." However, the report should have stated that no known immigrant had appeared in 13 years. It also must be noted that 13 years before the end of the Liberg study an immigrant did appear and contributed to the population from a wolf population some 900 km (546 miles) away. That single wolf helped "genetically rescue" (Vila et al. 2003) the population of < 10 wolves (founded by only 3 individuals) and allowed it to increase to 92-109 wolves (Liberg 2005). Since then one of the wolves in the population dispersed out of it a straight-line distance of 1,092 km (655 miles) and its minimum travel distance was conservatively estimated at > 10,000 km (> 6,000 miles) (Wabakken et al. 2006).

19. Such known travel distances for wolves indicate that it is possible for and probable that wolves will immigrate into not only YNP but into the rest of the northern Rockies from British Columbia, Alberta, Saskatchewan, or Minnesota. Indeed, Canadian wolves are known to have founded the Montana wolf population despite open seasons including poisoning in Canada at the time (Ream et al. 1989, 1991). Other wolves have been documented dispersing long distances from the northern Rockies into Canada (Boyd and Pletscher 1999). There is little reason to believe that the YNP wolf population will not receive immigrant wolves from other populations. Even if it did not, however, there is no reason to believe it would not persist for as long as other known small wolf populations, such as a population on the Italian Peninsula that -- although once

numbering only 100 wolves -- has never gone extinct and now numbers about 600 wolves.

B. Response to Plaintiffs' Claim That "Delisting Irreparably Injures Wolf Packs"

20. The full content of this section of Plaintiffs' brief makes clear that the actual claim is that delisting reduces the chances of some wolf packs breeding in a given year. The assumption made is that delisting will allow some breeding (formerly "alpha") wolves to be killed. (Note here, that the term "alpha" is outdated [Mech 1999, 2000], so this document will substitute the term "breeding.") It can probably be granted that delisting will allow some breeding wolves to be killed. This fact, however, would not necessarily cause irreparable harm to a pack whose breeding male or female or breeding pair was killed.

21. This is true for several reasons. Wolf packs do not need to breed every year, and some packs do not. Second, wolf packs that lose a male or female breeder often import a substitute breeder from the flux of lone wolves circulating about the population looking for a breeding role (Mech and Boitani 2003). Or if such a stepparent has already joined the pack, an opposite-sex, maturing member of the pack can similarly step up into the breeding role. It is true that Brainerd et al. (2008) found that <u>for the first year</u> after breeder loss, some packs failed to breed. However, 56% of packs that lost a breeder still bred the first time possible. Had the non-breeding packs been studied for additional years, I am confident almost all would have bred via the process described above. For wolf populations > 75, the average time to reproduction after breeder loss was only 12 months (Brainerd et al. 2008: 92). These facts show that breeder loss in no way

constitutes irreparable harm to any wolf pack. The wolf populations in YNP, in WY, in MT and in ID are each much larger than 75 wolves – and will be maintained above that level in the future -- and lack of reproduction by some packs does not cause irreparable damage to any of these populations or to the packs therein.

C. Response to Plaintiffs' Claim That "Delisting Irreparably Injures Wolves at the Population Level"

22. This item refers to "unregulated killing," with the implication that unregulated killing of wolves will be a consequence of delisting. However, after delisting, wolves will still be totally protected in YNP, Grand Teton National Park and Glacier National Park by the National Park Service. In the rest of Montana and throughout Idaho, there will be no unregulated taking according to state wolf management plans. In Wyoming outside of YNP, wolf taking will also be regulated except for eastern Wyoming, where only about 2% of the NRM wolf population lives. The eastern Wyoming area is the region where wolf conflicts with humans would be greatest and where more wolves would be killed for livestock-depredation control anyway. Continued conflicts of this type foster a negativity towards wolves that can be minimized by allowing unregulated taking, thus helping further a more positive attitude toward wolves in general.

23. In any case, the number of wolves projected to be killed under state management should not jeopardize the viability of the NRM wolf population. Every year, most wolf populations almost double in the spring through the birth of pups (average = 6/litter [Mech 1970]; most packs produce a single litter, but several YNP packs produce 2 or 3 litters per pack). For example in May 2008, there will not be 1,500

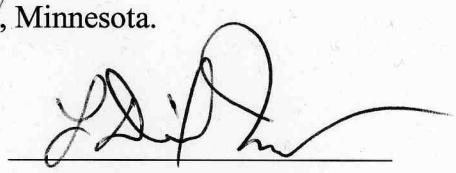
wolves, but 3,000! (Wolf population estimates are usually made in winter when the population is at the annual nadir. This approach serves to provide conservative estimates and further ensure that management remains conservative.) As indicated above, 28-50% of a wolf population must be killed by humans per year (on top of natural mortality) to even hold a wolf population stationary.

24. As also indicated above, the NRM wolf population is already a metapopulation with proven connectivity among its subpopulations and continuous connectivity expected regardless of possible reduction in numbers of dispersers and immigrants as a result of state-sanctioned taking. Furthermore, even if connectivity were to be totally disrupted—a highly unlikely event given the extreme documented mobility of wolves—each subpopulation remains large enough to withstand even the threat of genetic deterioration based on documented persistence of several smaller wolf populations for many decades (Fuller et al. 2003:189-190).

25. Thus I conclude that this delisting does not irreparably injure wolves at the population level.

Pursuant to 28 U.S.C. § 1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge information and belief.

Executed on May 7, 2008 at St. Paul, Minnesota.

By: 

L. David Mech

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FORMAL EDUCATION:

B.S. Degree, Conservation, Cornell University, 1958, Ithaca, NY
Ph.D. Degree, Wildlife Ecology, Purdue University, 1962, Lafayette, IN

OCCUPATION:

Senior Research Scientist (ST), 1999 to present; Wildlife Research Biologist (GS 12-GM 15), 1969 to 1999; Biological Resources Division of the U.S. Geological Survey (formerly Division of Endangered Species Research, U.S. Fish and Wildlife Service), Northern Prairie Wildlife Research Center, 8711 37th Street, SE, Jamestown, North Dakota 58401-7317. Headquartered at The Raptor Center, 1920 Fitch Avenue, University of Minnesota, St. Paul, MN 55108 (mechx002@umn.edu).

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pwrc.nbs.gov/mechnc.htm
fw.umn.edu/Personnel/Faculty/Mech.html
arctic.noaa.gov/essay_mech.html
www.wolf.org

Adjunct Professor, Department of Ecology and Behavioral Biology, University of Minnesota, 1979 to present; Department of Fisheries and Wildlife - 1981 to present (Graduate Faculty).

PREVIOUS POSITIONS:

Assistant Professor and Research Associate, Macalester College, 1966-1968.

Research Associate, University of Minnesota, 1963-1966.

Research Assistant, Purdue University, 1958-1962.

RESEARCH INTERESTS:

Wolf ecology and behavior; predator-prey relations; population regulation; social ecology.

PRIMARY RESEARCH:

Ongoing study of (1) wolf population trends and wolf-deer co-actions in the Superior National Forest, Minnesota, 1968 to present, (2) wolf social behavior and prey interactions on Ellesmere Island, Canada, 1986 to present (3) wolf ecology in Yellowstone National Park, 1997 to present.

BOOKS:

THE WOLVES OF ISLE ROYALE, 1966. U.S. Government Printing Office. 210 pp.
(Reprinted 2002. University of the Pacific, Honolulu Hawaii)

THE WOLF: ECOLOGY AND BEHAVIOR OF AN ENDANGERED SPECIES. 1970. Doubleday,
Reprinted in paperback by University of Minnesota Press, 1981. 384 pp.

HANDBOOK OF ANIMAL RADIO-TRACKING. 1983. University of Minnesota Press. 108 pp.

THE ARCTIC WOLF: LIVING WITH THE PACK. 1988. Voyageur Press, Stillwater, MN. (English, French, Italian, German). 128 pp.

THE WAY OF THE WOLF. 1991. Voyageur Press, Stillwater, MN. (English, German). 120 pp.

WOLVES OF THE HIGH ARCTIC. 1992. Voyageur Press, Stillwater, MN. 127 pp.

THE ARCTIC WOLF: TEN YEARS WITH THE PACK. 1997. Voyageur Press, Stillwater, MN. (English, Hungarian and Czech). 144 pp.

THE WOLVES OF DENALI. 1998. University of Minnesota Press. (Mech, Adams, Meier, Burch, and Dale). 227 pp.

THE WOLVES OF MINNESOTA: HOWL IN THE HEARTLAND. 2000. Voyageur Press, Stillwater, MN. (Editor, and author of 6 chapters). 146 pp.

WOLVES: BEHAVIOR, ECOLOGY, AND CONSERVATION. 2003. University of Chicago Press. (Co-editor of book, and co-author of three chapters). 448 pp.

OTHER PUBLICATIONS:

Approximately 330 scientific and > 100 popular articles on wolves, deer, moose, raccoons, ecology, predation, radio tracking, and conservation. (See separate lists and http://library.npwrc.cr.usgs.gov/starweb/staffbio/servlet.starweb?path=staffbio/mech.web&id=w4biomech&pass=ok&search1=AUF%3DMech,+L.+D.&format=staffpubs)

MOVIE FILMS AND AUDIO VISUAL PRESENTATIONS:

Chief consultant and contributed footage to *Following the Tundra Wolf,* Peace River Films, Inc. 1974.

Techniques of Animal Immobilization by U. S. Seal and L. D. Mech. 24 min., sound, color. Sponsored by World Wildlife Fund International and Project Tiger – India. 1983.

Animal Immobilization -Techniques of Drug Delivery by U. S. Seal and L. D. Mech. 20 min., sound color. Sponsored by World Wildlife Fund International and Project Tiger – India. 1984.

Co-Narrator, Scientific Consultant, and participant in *Brother Wolf* multi-projector, sound, slide presentation. (Gold Award winner, 1987 New York Film and TV Festival).

Scientific consultant and participant in *White Wolf*, BBC/National Geographic TV documentary, 1988.

Chief consultant and participant in *Wolves, with Timothy Dalton*, PBS TV Special, Fall 1993.

PROFESSIONAL AND HONORARY SOCIETIES:

American Society of Mammalogists
Ecological Society of America
Gamma Sigma Delta
Sigma Xi
Wildlife Society
Chair, World Conservation Union (IUCN) Wolf Specialist Group, 1978 to present.

BOARD MEMBERSHIPS:

Board of Directors, Minnesota Zoological Society, 1972-1980.
Board of Directors, Springbrook Nature Center, 1973-1976.
Founder of International Wolf Center, Past Chair of Board of Directors, Present Vice-Chair of Board, 1985 to present.

SPECIAL ASSIGNMENTS:

Member, Eastern Timber Wolf Recovery Team, U.S. Fish and Wildlife Service, 1972 to present.

Consultant, Northern Rocky Mountain Wolf Recovery Team, U.S. Fish and Wildlife Service, 1975 to present.

Consultant, Red Wolf Recovery Team, U.S. Fish and Wildlife Service, 1978 to present.

Member, WORLD CONSERVATION UNION (IUCN) Wolf Specialist Group, 1972 to present.

Chair, WORLD CONSERVATION UNION (IUCN) Wolf Specialist Group, 1978 to present.

Chairman, Working Group on Bobcat, Lynx, and River Otter, U.S. Endangered Species Scientific Authority (ESSA), 1978.

Chief Consultant, Science Museum of Minnesota's major traveling exhibit "Wolves and Humans." 2.6 million viewers. 1983.

Contributor, Essay: "A Distant Perspective on the Future of Americans Outdoors" in *Report of the President's Commission on Americans Outdoors*. 1986.

Member, Glacier National Park Science Advisory Council, 1988-1989.

Participant, National Science Foundation workshop on "Research Priorities for Single Species Conservation Biology," Front Royal, VA. November 13-16, 1988.

Consultant, Wolf reintroduction into Yellowstone and Central Idaho, U.S. Fish & Wildlife Service, U.S. National Park Service, 1995-present.

PATENTS:

No. 4,652,261, March 24, 1987. Drug-injection animal capture collar, L. D. Mech, R. C. Chapman, W. W. Cochran; manufactured by Minnesota Mining and Manufacturing (3M), Inc. Currently manufactured by Advanced Telemetry Systems, Isanti, MN.

SEMINARS AND TALKS

Approximately 20 per year at colleges, universities, museums, etc.

REVIEWER FOR:

Journals:
Acta Zoologica Fennica, Behaviour, Canadian Field Naturalist, Canadian Journal of Zoology, Journal of Mammalogy, Journal of Wildlife Management, Mammals of the World, National Wildlife, Science, Wildlife Society Bulletin and others.

Granting Agencies:

Canada Council, Mardag Foundation, National Geographic Society, National Institutes of Health, National Science Foundation, World Wildlife Fund International.

CONSULTING EDITOR:

Wildlife Monograph No. 49 - *Morphology, reproduction, dispersal, and mortality of Midwestern red fox populations*. Gerald L. Storm, Ronald D. Andrews, Robert L. Phillips, Richard A. Bishop, Donald B. Siniff, and John R. Tester. April 1976. 82 pages.

Wildlife Monograph No. 84 - *Interrelationships of wolves, prey, and man in interior Alaska*. W. C. Gasaway, R. O. Stephenson, J. L. Davis, P. E. K. Shepherd, O. E. Burris. 1984. 50 pages.

HONORS AND AWARDS:

Special Achievement Award, U.S. Fish and Wildlife Service (for wolf research in Minnesota), 1970.

Terrestrial Wildlife Publication Award, The Wildlife Society, (for book *THE WOLF*), 1972.

Civil Servant of the Year Award, U.S. Fish and Wildlife Service, Region III, 1973.

Best Wildlife Book Award, Symposium on Threatened and Endangered Wildlife, Washington, DC (for *THE WOLF*), 1974.

Distinguished Service in Science Education and Science Research Award, Minnesota Academy of Sciences, 1981.

Special Achievement Award, U.S. Fish and Wildlife Service (for publication record, 1975-1980), July 1981.

Gulf Oil Professional Conservationist Award, 1984.

The Minnesota Award, for Outstanding Contribution to the Profession of Wildlife Management. Minnesota Chapter, The Wildlife Society, January 1986.

Professional Award of Merit, North Central Section, The Wildlife Society, 1988.

Best Book by Minnesota Author 1989, Book Arts Category for *THE ARCTIC WOLF: LIVING WITH THE PACK*, from Minnesota Festival of the Book.

Aldo Leopold Award for Distinguished Service to Wildlife Conservation. The Wildlife Society, Washington DC, March 23, 1993.

Outstanding Job Performance, National Biological Service, 1994.

Distinguished Agricultural Alumni Award, Purdue University, April 1995.

Research Award for Superior Effort to Enhance Human-Wildlife Relationships, Jack C. Berryman Institute for Wildlife Damage Management, 1998.

National Outdoor Book Awards, Honorable Mention for *The Arctic Wolf: Ten Years with the Pack*, 1998.

National Conservation Achievement Award for Science, National Wildlife Federation, 1999.

Star Award ($2,000 bonus) for “Outstanding Efforts and Dedication.” Biological Resources Division, U.S. Geological Survey, February 8, 2000.

"L. David Mech Distinguished Undergraduate Research Award" program instituted in the Department of Forestry and Natural Resources, Purdue University, March 1, 2000.

Shoemaker Distinguished Lifetime Achievement Award for science and education, U.S. Geological Survey, November 3, 2000.

Star Award ($1,000 bonus) for "Outstanding Efforts and Dedication." Biological Resources Division, U.S. Geological Survey, April 17, 2001.

National Park Service Director's Award for National Natural Resources Researcher of the Year, 2003 ($2,000 cash, bronze sculpture) March 23, 2004.

Wildlife Publications Award for Outstanding Edited Book Category, The Wildlife Society (for the book *WOLVES: BEHAVIOR, ECOLOGY, AND CONSERVATION),* 2004.

Scientific Publication Award, for editing *Wolves: Behavior, Ecology, and Conservation*. Northern Prairie Wildlife Research Center. Biological Resources Division, US Geological Survey. May 18, 2004.

Award for Wildlife Conservation and Research, International Wildlife Photography Society of Spain. February 2005.

Honorary D. A. Degree, Purdue University. May 15, 2005.

Meritorious Service Award, U.S. Department of the Interior. August 17, 2005.

Job Performance Award, ($5,000), April 13, 2006, U.S. Geological Survey

Job Performance Award, (5,000), February 2008, U.S. Geological Survey

Cooperative Conservation Award, U.S. Department of the Interior. For wolf recovery in the upper Midwest. May 9, 2007.

MN 150. Selected as one of "150 people, places, and things that shape our state" by the Minnesota Historical Society in honor of Minnesota's Sesquicentennial. October 11, 2007. (http://discovery.mnhs.org/MN150/index.php?title=L._David_Mech). .

Minnesota Conservation Hero. Selected as one of Minnesota's conservation leaders by Conservation Minnesota. (Formerly League of Conservation Voters.) March 10, 2008. http://www.conservationminnesota.org/news.cfm?at=1&aid=353

OTHER ACHIEVEMENTS:

Founder and current vice-chair, International Wolf Center, Ely, MN (501.C3 non-profit organization for public education about wolves and wolf recovery); 13,000 members; 20 employees; 32-page quarterly publication *International Wolf* (distribution 15,000). Web site www.wolf.org.

MAJOR FOREIGN ASSIGNMENTS:

Kenya, Tanzania - August 1970, consulted on leopard and lion radiotracking - Tsavo National Park, Serengeti Research Institute, and ABC-TV.

Northwest Territories - July 1971 - wolf-caribou study – *National Geographic* magazine.

Italy - April 1974 - assisted and advised local biologists in live-trapping, anesthetizing, radio-collaring, and radio-tracking wolves, and in setting up wolf research project - World Wildlife Fund.

Manitoba - 1 week, September 1975, advised and assisted Canadian Wildlife Service in live-trapping, anesthetizing, radio-collaring, and radio-tracking wolves in Riding Mountain National Park.

India - April 1976 and February 1980 with Dr. U. S. Seal, taught radio-telemetry and animal anesthesia, World Wildlife Fund and Project Tiger (India government) and Forestry Research Institute Personnel under the auspices of World Wildlife Fund, Project Tiger, and U.S. Fish and Wildlife Service. Darted and radio-tagged elephants, tigers, Asian lions, and ungulates.

Alaska - Several trips - set up and advised on research on wolves, moose, and bears on Kenai National Moose Range and on wolves in Arctic National Wildlife Refuge (ANWR). Directed long-term study of wolves and prey (caribou, moose, Dall sheep), Denali National Park, February 1986 to 1997 for U.S. National Park Service.

U.S.S.R. - September 23 - October 8, 1978 - IUCN General Assembly meeting and arrangements for future US-USSR Exchange program on Censusing Large Mammals. February 10-24, 1979, reviewed wildlife censusing in USSR.

Sweden - March 16-20, 1981, one of four guest lecturers in a full-time short course on "Predation and Competition in Vertebrate Communities" at the University of Lund.

Spain-Portugal - May 15-30, 1981, consulted with governments of Portugal and Spain to help initiate a cooperative wolf project between the two countries.

Mexico - March 3-9, 1986, advised Mexican authorities regarding conservation and research on the Mexican wolf.

Ellesmere Island, Nunavut, Canada - Spring, summer 1986, *National Geographic* magazine; summer 1987 co-produced National Geographic/BBC TV documentary (*White Wolf*); summer, 1988-2007, for continued study of wolf social behavior and relations with prey.

Italy – September 14-15, 1994, advised government of Tuscany about wolf management.

Croatia – June 6-12, 1998, advised government about wolf conservation and management.

Spain – June 6-13, 1999, advised government about wolf conservation and management.

Sweden – April 30-May 4, 2002, participated in panel on conservation genetics of the Scandinavian wolf population. (Grimso Wildlife Research Station, Swedish University of Agricultural Sciences).

BIOGRAPHICAL LISTINGS:

5,000 Personalities of the World
American Men and Women in Science
Community Leaders and Noteworthy Americans
Contemporary Authors
Dictionary of International Biography
Famous Personalities in the Midwest
International Authors and Writers Who's Who
International Book of Honor
International Directory of Distinguished Leadership
International Scholars Directory
Marquis Who's Who
Men of Achievement
The Writers Directory

Who's Who in Frontiers of Science and Technology
Who's Who in the Midwest