

U.S. Fish and Wildlife Service

Northern Rocky Mountain

Recovery Program Update

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NORTHERN ROCKIES FUNDING

Funding of Wolf Recovery and Management in Federal Fiscal Year 2006

Wolf recovery has been almost entirely funded by federal appropriations and private donations. Wolf recovery in the NRM from 1973 through 2006 cost approximately \$24,119,000 (rounded to nearest \$1,000, with no adjustments for inflation and not including USDA Wildlife Services (WS) costs for investigating reports of suspected wolf damage and problem wolf control beyond the \$100,000/year provided by the USFWS to WS from 1992-2004) and the approximately \$200,000/year spent on wolf monitoring and research in the National Parks since 1995. If recovery continues at the current rate and management costs remain within predictions, additional cost to federal taxpayers of \$2,946,000 [assuming approximately \$678,000/year in WS expenditures and \$200,000/year in National Park funding] will be incurred each year wolves remain listed. WS reportedly spent \$152,000 in Montana, \$363,000 in Idaho, and \$153,000 in Wyoming for investigations of suspected wolf attacks on livestock and problem wolf control in FY06 for a total of \$678,000.

In FY 2006 (October 1, 2005 to September 30, 2006) total USFWS funding for wolf recovery and management issues in the northwestern U.S. (nearly all funding was spent in Montana, Idaho, and Wyoming) was about \$2,223,000. Most of that funding was directly allocated to the states of Montana [\$316,000] and Idaho [\$1,063,000] by Congress in federal appropriations language in the federal budget. It was allocated as follows:

In FY06, funding for wolf recovery was similar to FY05 levels and that expected in FY07. Region 6 of the USFWS (which includes Montana and Wyoming) received about \$1,061,000 in FY06. Of that, FY06 Congressional allocations of \$318,000 were designed to help fund MFWP for wolf management in Montana. A base USFWS budget of about \$711,000 was used to conduct the usual monitoring, management, control, and information program in Montana (\$323,000 in base funding was transferred to MFWP) and Wyoming (\$255,000 used by the USFWS for wolf management in Wyoming). The USFWS also finalized and published the 12-month finding (FR 71:43419) on Wyoming's petition to delist wolves, a delisting proposal (FR 72:6106), and helped implement a new nonessential experimental population rule for states/tribes with approved wolf management plans (FR 70:1286). R-6 coordinates wolf management issues in the northwestern U.S. and is the lead for supporting the Department of Justice on litigation issues related to wolf recovery involving the northwestern U.S. (see Litigation). FY06 R-6 funding was allocated for overall program coordination and administrative support [\$165,000 in Helena, MT], wolf management in Montana [\$323,000 to MFWP], and wolf management in Wyoming by the USFWS [\$255,000, that includes \$52,000 to support a cooperative WS/USFWS position in Cody, WY].

USFWS funding levels Region 1 for FY07 appear similar to those in FY06. In FY06 Region 1 (which includes Idaho) received \$1,045,000 in Congressional earmarks which were used to fund the NPT (\$343,000), the Idaho Governor's Office of Species Conservation and IDFG (\$720,000; \$99,000 of which was distributed to livestock producers for missing livestock and make up the remaining 50% for livestock reimbursed at a 50% value by the private compensation program in ID), and the USFWS Idaho wolf recovery program. Carter Niemeyer the R-1 Wolf Recovery Coordinator for Idaho retired in Jan 2006 and Idaho took over all field management activities.

In addition in FY06 WS maintained a \$100,000 Congressional directive for responding to complaints of wolf damage as well as a \$1,300,000 directive for Montana, Idaho, and Wyoming for investigating and addressing predator damage, including predation by wolves. It is unknown if those same level of Congressional earmarks will remain in the FY07 budget. This directive recognized and helped fund the increased costs of conducting coyote control in the presence of wolves. Yellowstone National Park maintained their NPS-funded wolf monitoring and research program at about the \$168,000 level in FY06 but a majority of field research projects are now funded by private donations.

In addition to federal funding, the private TESH continued to fund the salary and benefits of an experienced wolf field biologist in Bozeman, Montana [valued at \$60,000/year]. That biologist is a MFWP volunteer, and logistic and field support and direct supervision are provided by the MFWP (costing about \$20,000/year in federal transfer funding). That employee helps MFWP to monitor wolves and resolve conflicts between wolves and private landowners in southwest Montana. Defenders of Wildlife provided a compensation program for livestock killed by wolves, with expenditures of about \$700,000 from 1987 through December 2006. During the last 5 years, DOW paid an average of over \$84,000/year in compensation to livestock producers in Montana, Idaho, and Wyoming for confirmed and probable wolf-caused damage to livestock and livestock herding and guarding animals. Universities in Idaho, Montana and Wyoming also provided substantial funding and support for their graduate students conducting various wolf research projects.

In FY06 Congress appropriations language contained similar earmarks to the FY05 budget. Funding in FY07 appears likely to be similar to that allocated in FY06.

Funding Sources for Wolf Management for Federal FY2005 and FY2006 [\$1,000]

Fiscal Year	FY 2006	FY2007*
<i>USFWS-Region 6</i>	\$ 743	\$ 740
State of Montana	(\$323)	(\$ 320)
USFWS in Wyoming	(\$255)	(\$ 260)
Administration	(\$165)	(\$ 160)
Montana - Congressional earmark	\$ 318	\$ 318
Wyoming – Congressional earmark	\$ 0	\$ 0
USDA Wildlife Services directives	\$ 678	\$ 678
SUBTOTAL	\$1,739	\$1,736
<i>USFWS-Region 1 (Congressional earmarks)</i>	\$ 99	\$ 99
Idaho Office of Species Conservation	\$ 720	\$ 720
Nez Perce Tribe	\$ 343	\$ 343
SUBTOTAL	\$1,162	\$1,162
TOTAL	\$2,901	\$2,898
* estimated		

NORTHERN ROCKIES PLANNING AND LEGAL ISSUES

Reclassification and Delisting of the Gray Wolf

Wolves, once common throughout North America, became protected under the ESA because human persecution nearly eliminated them from the contiguous United States. By 1974, there were no wolves left in the Northern Rocky Mountains of the United States [NRM]. The ESA prohibited people from harming wolves and mandated that all federal actions seek to conserve and not jeopardize wolves. Ultimately, 3 distinct wolf recovery programs, Midwest, NRM, and Southwest, were initiated. In the NRM, 2006 marked the sixth consecutive year that 30 or more breeding pairs and over 300 wolves were documented. The population of 1,300 wolves in over 86 breeding pairs has fully achieved its biological recovery objectives.

The USFWS can propose delisting of the NRM wolf population when it determines that the population has recovered and it is reasonably assured that wolves would not become threatened again if the ESA protections were removed. The ESA contains several checks and balances to ensure that any decision to delist a species is scientifically sound and will not result in a species being relisted. The ESA requires that all decisions be based on the best scientific data available. The USFWS is mandated to examine all of the factors that may have caused a species to become threatened and to determine that they are not likely to cause the species to become threatened again. Regulating the level of human-caused mortality is the primary factor that must be resolved before delisting could be proposed. The ESA requires that USFWS determine that regulations, other than the ESA, will prevent unchecked human-caused mortality from once again driving wolves toward extinction. Wildlife mortality is typically regulated by state fish and wildlife management agencies and state laws. The USFWS requested that Montana, Idaho, and Wyoming develop state wolf management plans so that wolves would be adequately conserved under state management. In addition, the USFWS believed that state wolf plans would help the public to understand the consequences of delisting and would provide a solid administrative foundation for the final decision. The USFWS provided various degrees of funding and assistance to the states while they developed their wolf management plans. State laws, as well as state management plans, must be consistent with long-term conservation of the wolf population. The links for the state wolf plans for Montana, Idaho and Wyoming are available at <http://westerngraywolf.fws.gov>.

In early January 2004, the USFWS Director determined that Montana's state wolf management plan was an outstanding professional effort and deserved special recognition. Montana's wolf management plan was clearly adequate as a regulatory mechanism to maintain and conserve a recovered wolf population. Idaho's wolf management plan was also adequate as a regulatory mechanism to maintain its share of a recovered wolf population. The Wyoming state wolf plan called for wolves to be considered "trophy game" in Yellowstone National Park, Grand Teton National Park and contiguous wilderness areas and considered as "predators" throughout the remainder of the state (and as trophy game in a larger area of northwest Wyoming if less than 8 packs were outside the national parks). The combination of large areas of predatory animal status, the alternation between "predatory animal" and "trophy game" status in certain areas and the potentially limited area in which human-caused mortality of wolves could be regulated were major concerns. Wyoming's unique and complex proposed regulatory framework and the

specific direction provided by Wyoming law was contrary to its management plan, did not assure the USFWS that Wyoming's plan will conserve wolves at or above a recovered level in northwestern Wyoming. The USFWS will not propose that portion of the wolf population be delisted until Wyoming state laws and their state plan can assure that Wyoming's portion of the NRM wolf population will remain secure without the ESA protections. In early 2007, Wyoming changed its state law and it and the USFWS are attempting to reach agreement on an approved wolf management plan.

On February 8, 2006 the USFWS published an Advanced Notice of Proposed Rulemaking (50 CFR 17 Vol. 71 No 26:6634-6660). It laid out the USFWS's current thinking about a NRM Distinct Population Segment [DPS] for the gray wolf and what a delisting proposal might resemble if Wyoming had an approved state regulatory framework for wolf management outside the National Parks in Wyoming. It included relevant data, a thorough analysis of USFWS's rationale for the DPS border, and why the USFWS believes all threats to the wolf population, except Wyoming state law, have been resolved. It requested extensive public comment on all those concepts. If Wyoming modified their state law and wolf management plan and they were approved by the USFWS, a delisting proposal would be published and public and peer review comment requested.

On August 1, 2006, the USFWS published its 12-month finding (50 CFR Vol. 71, No. 147:43410-43432) on the state of Wyoming's petition to establish a northern Rocky Mountain distinct Population segment composed of Montana, Idaho and Wyoming, and delist it from the list of endangered and threatened species. The Service determined that Wyoming state law and its wolf management plan do not provide the necessary regulatory mechanisms to assure the Wyoming's numerical and distributional share of the northern Rocky Mountain wolf population would be conserved if the protections of the ESA were removed. Wyoming initiated new litigation over that decision (Civil Action No 06-245J).

On February 8, 2007, the USFWS published a proposed rule (50CFR Vol 72, No. 26:6106-6139) to establish a distinct population segment (DPS) of the gray wolf (Canis lupus) in the Northern Rocky Mountains (NRM) of the United States. The proposed NRM DPS of the gray wolf encompasses the eastern one-third of Washington and Oregon, a small part of north-central Utah, and all of Montana, Idaho, and Wyoming. It also proposed removing the gray wolf in all of the NRM DPS from the List of Endangered and Threatened Wildlife under the Act, because threats will have been reduced or eliminated- if Wyoming adopted a State law and wolf management plan that would adequately conserve wolves. The States of Montana and Idaho have adopted State laws and management plans that would conserve a recovered wolf population into the foreseeable future. However, at that time, Wyoming State law and its wolf management plan were not sufficient to conserve Wyoming's portion of a recovered NRM wolf population.

But in mid-February 2007, Wyoming changed its current law and began to modify its wolf management plan. Therefore, we propose to keep a significant portion of the range in the northwestern Wyoming portion of the NRM DPS listed until the new Wyoming plan can be approved because there currently are not adequate regulatory mechanisms in that area. In this situation, wolves in the significant portion of range in northwestern Wyoming, outside the National Parks, will retain their nonessential experimental status under section 10(j) of the Act.

We will remove the remainder of the NRM DPS from the List of Endangered and Threatened Species and the DPS will longer exist. Any gray wolves in the remainder of Wyoming outside the National Parks and those portions of Washington, Oregon, and Utah in the NRM DPS are not essential to conserving the NRM wolf population and these areas do not constitute a significant portion of the range in the DPS. Therefore these areas will not remain listed. We are also soliciting comments regarding our intention to use ESA section 6 agreements to allow States outside the NRM DPS with Service-approved wolf management plans to assume management of listed wolves, including nonlethal and lethal control of problem wolves. Public comment and peer review is being solicited in early 2007.

After the wolf population is delisted, the ESA requires a mandatory, minimum 5-year post-delisting oversight period. That period, during which the USFWS reviews the implementation of state management plans and wolf population status, providing a safety-net to ensure that the species is able to sustain itself without ESA protection. If wolves became threatened again, the USFWS could relist them by emergency order.

The Experimental Population Rule

The USFWS's February 7, 2005 10j regulation expanded the authority of States and Native American Tribes with USFWS-approved wolf management plans to manage gray wolves in the experimental population areas of CID and GYA. Gray wolves were reintroduced in the Northern Rockies as nonessential experimental populations under the ESA in 1995 and 1996. This designation allowed Federal, State and Tribal agencies and private citizens more flexibility in managing wolves within the experimental population areas. The rule also allowed the states and tribes with FWS-approved wolf management plans to lead wolf management in their states. Only 2 States, Montana and Idaho, where there are about 933 wolves, presently fit that category. At this time, this regulation does not apply to the state of Wyoming because it does not have a USFWS-approved wolf management plan.

In June 2005, the USFWS and MFWP signed a cooperative agreement transferring the decision making authority for all wolf management activities in Montana, including endangered wolves in northern Montana. The state had been managing wolves in northwestern Montana since early 2004 when MFWP signed a cooperative agreement with the USFWS to assume wolf management authorities when USFWS biologist Tom Meier left to take a job with the National Park Service in Alaska. In January 2006, the Governor of Idaho signed a Memorandum of Agreement with the Secretary of the Interior giving Idaho Department of Fish and Game the decision making authority for all wolf management activities in Idaho. Carter Niemeyer the USFWS Recovery Coordinator for Idaho retired in January 2006 and Joe Fontaine the Assistant Wolf Recovery Coordinator and Service Project Leader for wolf Recovery in Montana stopped working on wolf issues in February 2005 and took an Assistant Refuge Manager job in central Mississippi in Feb 2006. As of 2006 all wolf management in the states of Montana and Idaho is being conducted with federal funding but by the state wildlife agencies who hired staff to assume those duties. The USFWS still manages wolves in Wyoming. The entire USFWS wolf program staff are currently Ed Bangs, Wolf Recovery Coordinator in Helena, Montana and Mike Jimenez the Project Leader for Wolf Recovery in Wyoming who is stationed in Jackson, Wyoming.

Litigation

State of Wyoming et al. v. United States Department of the Interior et al., United States District Court for the district of Wyoming, Civil Action No 06-245J. This case involves the USFWS's rejection of Wyoming's petition to establish a NRM DPS for wolves and delist them.

State of Wyoming, et al. vs. United States Department of the Interior, et al., United States District Court for the district of Wyoming, Civil Action No. 04CV01123J. This case involved the USFWS not approving the Wyoming state wolf management plan. The case was expanded by interveners to include alleged failure to properly manage wolves in Wyoming and failure to conduct additional NEPA compliance. A related legal issue between Wyoming and the Department of the Interior also involves Freedom of Information Act issues about the USFWS's withholding of certain documents because they were related to internal deliberations and attorney-client privilege. The Wyoming District Court ruled in the USFWS favor based on procedural grounds in 2005. Wyoming appealed that case to the 10th Circuit Court of Appeals in Denver Colorado, and it is still under consideration. Oral Arguments are scheduled for March 2006. In addition Wyoming filed a petition, dated June 28, 2005 to establish a NRM DPS [solely Montana, Idaho, and Wyoming] and delist it from the ESA. In its 90-day finding the USFWS determined that it contained enough information that further review was warranted and is reviewing their petition more closely. A final Service determination on that petition was made August 1, 2006.

State of Wyoming vs. Michael D. Jimenez, United States District Court for the District of Wyoming, Case No. 04-CR-98J and State of Wyoming vs. Michael D. Jimenez, United States Court of Appeals for the Tenth Circuit. This case involved Park County, Wyoming, allegations that a USFWS biologist violated state law by trespassing and littering (leaving immobilized radiocollared wolves) on private property during a routine wolf capture and radiocollaring operation near Meeteete, Wyoming, in early 2004. The District Court ruled that Mr. Jimenez was immune from such state charges because he was carrying out his official duties as a federal employee and that state prosecution was a form of retaliation and intimidation in response to an unpopular federal program. Wyoming appealed to the 10th Circuit Court and that Court upheld the District Court ruling. Wyoming appealed to the Supreme Court but it refused to hear the case, finally resolving this issue.

Defenders of Wildlife et al. vs. Gale Norton et al., United States District Court of Oregon, Civil No. 03-1348 JO. This case involved the April 2003 reclassification of the gray wolf, the USFWS's establishment and listing of 3 gray wolf DPS (Eastern, Western and Southwestern), the special 4(d) rules within the Western and Eastern DPS. The Defender's et al. litigation primarily involved the Western DPS. On January 31, 2005, the U.S. District Court in Portland, Oregon, issued a decision that reversed the USFWS's April 2003 reclassification of the gray wolf to threatened status throughout the northern United States, eliminated all 3 DPS's, revoked the delisting of wolves in the southeastern U.S. [original listing was wrong as there were only red wolves in the SE US], and revoked both the 4(d) rules that authorized problem wolf management in the Western DPS and Eastern DPS. Under that ruling wolves outside the experimental nonessential areas are now considered endangered [except Minnesota where they remained threatened] and will be managed according to the authorities and rules in place prior to April

2003. This court order eliminated the special 4(d) rule that allowed landowners outside of the experimental nonessential areas in the northwestern U.S. to legally kill or harass wolves that were seen physically attacking their livestock and dogs on their private land. No wolves had been taken under those provisions in the nearly 2 years they had been in effect. As a result of the court order, wolf control outside the experimental population areas can only be implemented by the USFWS or its designated agents. Outside the experimental population areas private citizens cannot harm or kill wolves. The USFWS immediately began to explore legal and other options/strategies with its state and federal partners.

National Wildlife Federation et al. vs. Gale Norton et al., United States District Court of Vermont, Civil No. 1:03-CV-340. This case also involved the April 2003 reclassification of the gray wolf to threatened status and the USFWS's establishment and listing of 3 gray wolf DPS (Eastern, Western and Southwestern). This litigation was resolved in mid-2005 and like the Oregon District Court, the Vermont District Court determined the USFWS improperly applied the DPS policy and did not conduct the required analysis. That court also vacated the 2003 reclassification rule as it applied to the Eastern United States. In late 2005 the Service and Justice Department determined they would not appeal either the Oregon or Vermont Federal District Courts rulings.

ABBREVIATIONS AND ACRONYMS

Central Idaho wolf recovery area	CID
Defenders of Wildlife	DOW
Distinct Population Segment	DPS
Endangered Species Act	ESA
Glacier National Park	GNP
Grand Teton National Park	GTNP
Greater Yellowstone wolf recovery area	GYA
Idaho Department of Fish and Game	IDFG
Montana Fish, Wildlife and Parks	MFWP
Montana State University	MSU
Nez Perce Tribe	NPT
Northwest Montana Wolf Recovery Area	NWMT
Northern Rocky Mountains	NRM
Predator Conservation Alliance	PCA
Turner Endangered Species Fund	TESF
University of Montana	UM
USDA/APHIS/Wildlife Services	WS
U.S. Fish and Wildlife Service	USFWS
U.S. Forest Service	USFS
U.S. National Park Service	NPS
Wyoming Game and Fish Department	WYGF
Yellowstone Center for Resources	YCR
Yellowstone National Park	YNP

CONTACTS

For further information or to report wolf sightings, please contact:

Please remember wolf management in Montana and Idaho is conducted by MFWP and IDFG and they should be the first point of contact in each state for everything except law enforcement-

Montana Fish, Wildlife and Parks, Helena, MT:	(406) 444-3242
Montana Fish, Wildlife and Parks, Kalispell, MT:	(406) 751-4586
Montana Fish, Wildlife and Parks, Dillon, MT:	(406) 683-2287
Montana Fish, Wildlife and Parks, Red Lodge, MT:	(406) 446-0106
Montana Fish, Wildlife and Parks, Bozeman, MT:	(406) 994-6371
MFWP, TESH Volunteer, Bozeman, MT	(406) 556-8514
Nez Perce Tribal Wolf Program, McCall ID:	(208) 634-1061
Idaho Fish and Game, Boise, ID	(208) 334-2920
Idaho Fish and Game, Salmon, ID	(208) 756-2271
Idaho Fish and Game, Nampa, ID	(208) 465-8465
U.S. Fish and Wildlife Service, Helena MT:	(406) 449-5225
U.S. Fish and Wildlife Service, Jackson, WY:	(307) 330-5620
U.S. Fish and Wildlife Service, Boise ID:	(208) 378-5639
Yellowstone Center for Resources, YNP WY:	(307) 344-2243

To report livestock depredations:

USDA/APHIS/Wildlife Services, Montana:	(406) 657-6464
USDA/APHIS/Wildlife Services, Wyoming:	(307) 261-5336
USDA/APHIS/Wildlife Services, Idaho:	(208) 378-5077
USDA/APHIS/Wildlife Services toll free:	(866) 487-3297

To report discovery of a dead wolf or information regarding the illegal killing of a wolf:

U.S. Fish and Wildlife Service Special Agent, Billings, MT:	(406) 247-7355
U.S. Fish and Wildlife Service Special Agent, Missoula, MT:	(406) 329-3000
U.S. Fish and Wildlife Service Special Agent, Bozeman, MT:	(406) 582-0336
U.S. Fish and Wildlife Service Special Agent, Casper, WY:	(307) 261-6365
U.S. Fish and Wildlife Service Special Agent, Lander, WY:	(307) 332-7607
U.S. Fish and Wildlife Service Special Agent, Cody, WY:	(307) 527-7604
U.S. Fish and Wildlife Service Special Agent, Boise, ID:	(208) 378-5333
U.S. Fish and Wildlife Service Special Agent, Idaho Falls, ID	(208) 523-0855
U.S. Fish and Wildlife Service Special Agent, Spokane, WA	(509) 928-6050

WEBSITES

USFWS Rocky Mountain weekly and annual wolf updates:
<http://westerngraywolf.fws.gov/>

USFWS Midwestern gray wolf recovery, national wolf reclassification proposal:
<http://midwest.fws.gov/wolf/>

USFWS Endangered Species Program:
<http://endangered.fws.gov/>

USDA/APHIS/Wildlife Services:
<http://www.aphis.usda.gov/ws/>

National Wildlife Research Center:
<http://www.aphis.usda.gov/ws/nwrc/>

Nez Perce Tribe Wildlife Program and 2001 progress report:
http://www.nezperce.org/Programs/wildlife_program.htm

Turner Endangered Species Fund:
<http://www.tesf.org/>

Yellowstone Park Foundation:
<http://www.ypf.org/>

Yellowstone Wolf Tracker:
<http://www.wolftracker.com/>

Yellowstone National Park wolf pack data:
<http://www.nps.gov/yell/nature/animals/wolf/wolfup.html>

Wolf Restoration to Yellowstone:
<http://www.nps.gov/yell/nature/animals/wolf/wolfrest.html>

Montana Fish, Wildlife and Parks wolf management planning:
<http://www.fwp.mt.gov/wildthings/tande/wolf/wolf.html>

Montana State University wolf-ungulate research:
<http://www.homepage.montana.edu/~rgarrott/wolfungulate/index.htm>

Idaho Fish and Game:
<http://www.state.id.us/fishgame/>

Idaho Office of Species Conservation:
<http://www.state.id.us/species/>

Wyoming Game and Fish Department:
<http://gf.state.wy.us/>

Wyoming agricultural statistics:
<http://www.nass.usda.gov/wy/>

Idaho agricultural statistics:
<http://www.nass.usda.gov/id/>

Montana agricultural statistics:
<http://www.nass.usda.gov/mt/>

National agricultural statistics:
<http://usda.mannlib.cornell.edu/reports/nassr/livestock/>

Defenders of Wildlife wolf compensation trust:
<http://www.defenders.org/wolfcomp.html>

International Wolf Center:
<http://www.wolf.org/>

Wolf Recovery Foundation:
<http://forwolves.org/>

Wolf news reports:
<http://www.forwolves.org/ralph/wolfrpt.html>

National Wildlife Federation wolf information:
<http://www.nwf.org/wildlife/graywolf/>

Montana Stockgrowers' Association
<http://www.mtbeef.org/index.htm>

National Geographic wolf information:
<http://www.nationalgeographic.com/tv/specials/wolf/intro.html>

Wolf Education and Research Center:
<http://www.wolfcenter.org/>

People Against Wolves:
<http://home.centurytel.net/PAW/home.htm>

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LITERATURE CITED AND

NORTHERN ROCKY MOUNTAIN WOLF BIBLIOGRAPHY: 2000-2006

- Aidnell, Linda. 2006. Corridor for movement of gray wolf (*Canis lupus*) across rural land between two protected parks in Southwestern Manitoba. MSc. Thesis, University of Manitoba, Winnipeg, MB.**
- Akenson, J., H. Akenson, and H. Quigley. 2005. Effects of wolf reintroduction on a cougar population in the central Idaho wilderness. *Mountain lion workshop* 8:177-187.
- Alexander, S. M., Waters, N. M. and Paquet, P. C. 2005. Traffic volume and highway permeability for a mammalian community in the Canadian Rocky Mountains. *Canadian Geographer / Le Géographe Canadien* 49: 321-331.
- Alexander, S. M., P. C. Paquet, T. B. Logan. 2006. Spatio-temporal co-occurrence of cougar (*Felis concolor*), wolves (*Canis lupus*) and their prey during winter: A comparison of two analytical methods. *Journal of Biogeography* 33: 2001-2012.**
- Almberg, E., R. McIntyre, D.R. Stahler, D.W. Smith, B. Chan, M. Ross, J. Knuth Folts, D. Chalfant, B Suderman. 2004. Managing wolves and humans in Lamar Valley. Final Report on Druid Road Management Project 2004. YNP Report. 9 pp.
- Arjo, W.M., D.H. Pletscher, and R.R. Ream, 2002. Dietary overlap between wolves and coyotes in northwestern Montana. *Journal of Mammalogy* 83(3): 754-766.
- Asher, V., J.A. Shivik, K. Kunkel, M. Phillips, and E. Bangs. 2001. Evaluation of electronic aversive conditioning for managing wolf predation. Proceedings of the International Theriological Congress People and Predators Conference, South Africa.
- Atkinson, M.W. 2006. Disease surveillance in gray wolves in Montana 2003-2006. Unpublished report from Interagency Wolf Conf. Missoula, MT. Nov. 2006. 7pp.
- Atwood, T. C., E. M. Gese, and K. E. Kunkel. 2007. Comparative patterns of predation by cougars and recolonizing wolves in Montana's Madison range. *Journal of Wildlife Management*. In press.**
- Atwood, T. C. 2006. Wolves, coyotes, elk and mule deer: Predator-prey behavioral interactions in southwestern Montana. PhD Dissertation Utah State University, Logan.**
- Ballard, W.B., D. Lutz, T.W. Keegan, L.H. Carpenter, and J.C. Devos Jr. 2001. Deer-predator relationships: a review of recent North American studies with emphasis on mule and black-tailed deer. *Wildlife Society Bulletin* 29(1): 99-115.
- Ballard, W.B., L.N. Carbyn, and D.W. Smith. 2003. Wolf interactions with non-prey. Pp. 259-271 *in* Wolves: Behavior, Ecology, and Conservation (L. D. Mech and L. Boitani, eds.). University of Chicago Press, Chicago IL.

- Bangs, E. 2000. Gray wolf restoration in the northwestern United States. Pages 39-45 *in* Predator Management in Montana: Symposium Proceedings. January 2000, Billings, MT. Conducted by Montana Outfitters and Guides Assoc. and Montana Fish, Wildlife and Parks.
- Bangs, E. 2001. Wolf management by zoning. *International Wolf* 11(3): 21.
- Bangs, E. 2002. Wolf predation and elk in the Greater Yellowstone Area. *International Wolf*. 12(4): 28.
- Bangs, E. 2003. Wolves have reached recovery levels in the Northern Rocky Mountains: How does delisting happen? *International Wolf* 13: 21-22.
- Bangs, E.E. 2004. Book review of Mech, L.D. and L. Boitani [eds]. 2003. *Wolves: Behavior, Ecology, and Conservation*, University of Chicago Press. *Journal of Mammalogy* 85(4): 814-815.
- Bangs, E., and J. Shivik. 2001. Managing wolf conflict with livestock in the northwestern United States. *Carnivore Damage Prevention News* No. 3: 2-5.
- Bangs, E.E., B. Barbee, and R.O. Peterson. 2005. Perspectives on Wolf Restoration. *Yellowstone Science* 13(1): 4-6.
- Bangs, E., J. Fontaine, M. Jimenez, T. Meier, C. Niemeyer, D. Smith, K. Murphy, D. Guernsey, L. Handegard, M. Collinge, R. Krischke, J. Shivik, C. Mack, I. Babcock, V. Asher, D. Domenici. 2001. Gray wolf restoration in the northwestern United States. *Endangered Species Update* 18(4): 147-152.
- Bangs, E., M. Jimenez, C. Niemeyer, T. Meier, V. Asher, J. Fontaine, M. Collinge, L. Handegard, R. Krischke, D. Smith, and C. Mack. 2005. Livestock guarding dogs and wolves in the northern Rocky Mountains of the United States. *Carnivore Damage Prevention News* No. 8/January 2005: 32-39.
- Bangs, E., J. Fontaine, T. Meier, C. Niemeyer, M. Jimenez, D. Smith, C. Mack, V. Asher, L. Handegard, M. Collinge, R. Krischke, C. Sime, S. Nadeau, D. Moody. 2005. Restoration and conflict management of the gray wolf in Montana, Idaho, and Wyoming. *Trans. N. American Wildlife and Natural Resources Conference* Vol 69:89-105.
- Bangs, E.E., J.A. Fontaine, M.D. Jimenez, T.J. Meier, E.H. Bradley, C.C. Niemeyer, D.W. Smith, C.M. Mack, V. Asher, J.K. Oakleaf. 2005. Managing wolf/human conflict in the northwestern United States. Pages 340-356, *in* R. Woodroffe, S. Thirgood, and A. Rabinowitz, eds. *People and wildlife: coexistence or conflict?* Cambridge University Press, Cambridge, United Kingdom.
- Bangs, E., M. Jimenez, C. Niemeyer, J. Fontaine, M. Collinge, R. Krischke, L. Handegard, J. Shivik, C. Sime, S. Nadeau, C. Mack, D. Smith, V. Asher, and S. Stone. 2006. Non-lethal and lethal tools to manage wolf-livestock conflict in the northwestern United States. *Proceedings of the Vertebrate Pest Conference* 22:7-16.**
- Bangs, E., M. Jimenez, C. Niemeyer, J. Fontaine, C. Sime, S. Nadeau, and C. Mack. In press. The art of wolf restoration in the northwestern United States: Where do we go now? Pages 000-000 in 'The World of Wolves', eds. M. Musiano, P. Paquet, and L. Boitani. University of Calgary Press. Calgary, AB.**

- Barber, S., L. D. Mech, and P. J. White. 2005. Yellowstone elk calf mortality following wolf restoration: bears remain top predator. *Yellowstone Science* 13(3):37-44.
- Berger, J., P.B. Stacey, L. Bellis, and M.P. Johnson. 2001. A mammalian predator-prey imbalance: grizzly and wolf extinction affect avian neotropical migrants. *Ecological Applications* 11: 947-960.
- Berger, J., Swenson, J.E., and I.L. Persson. 2001. Recolonizing carnivores and naïve prey: conservation lessons from Pleistocene extinctions. *Science* 291:1036-1039.
- Berger, J. and D.W. Smith. 2005. Restoring functionality in Yellowstone with recovering carnivores: Gains and uncertainties. Pgs. 100-109 in *Large carnivores and biodiversity conservation*. Editors, J.C. Ray, K.H. Redford, R.S. Steneck and J. Berger. Island Press, Washington D.C.
- Bergman, E., B. Garrott, S. Creel, J.J. Borkowski, R. Jaffe, F.G.R. Watson. 2006. Assessment of prey vulnerability through analysis of wolf movements and kill sites. *Ecological Applications* 16(1): 273-284.**
- Beschta, R.L. 2003. Cottonwoods, elk, and wolves in the Lamar Valley of Yellowstone National Park. *Ecological Applications* 13: 1295-1309.
- Biel Wondrak, A. and D. W. Smith. 2006. Diseases investigated as possible cause of wolf decline. *Yellowstone Discovery* 21: 6-7.**
- Bishop, N.A. and D.W. Smith. 2003. The survivors. *International Wolf* 13(1): 4-7.
- Boyce, M.S., J.S. Mao, E.H. Merrill, D. Fortine, M.G. Turner, J. Fryxell, and P. Turchin. 2003. Scale and heterogeneity in habitat selection by elk in Yellowstone National Park. *Ecoscience* 10:421-431.
- Boyd, D.K., S.H. Forbes, D.H. Pletscher, and F.W. Allendorf. 2001. Identification of Rocky Mountain gray wolves. *Wildlife Society Bulletin* 29(1): 78-85.
- Bradley, E.H. 2004. An evaluation of wolf-livestock conflicts and management in the northwestern United States. M.S. thesis, University of Montana. Missoula, MT.
- Bradley, E. H., D. H. Pletscher, E. E. Bangs, K. E. Kunkel, D. W. Smith, C. M. Mack, T.J. Meier, J. A. Fontaine, C. C. Niemeyer, and M. D. Jimenez. 2005. Evaluating wolf translocation as a non-lethal method to reduce livestock conflicts in the northwestern United States. *Conservation Biology* 19:1498-1508.
- Bradley, E. H., and D. H. Pletscher. 2005. Assessing factors related to wolf depredation of cattle in fenced pastures in Montana and Idaho. *Wildlife Society Bulletin* 33:1256-1265.
- Bradley, E. H., D. H. Pletscher, E. E. Bangs, K. E. Kunkel, D. W. Smith, C. M. Mack, J.A. Fontaine, C. C. Niemeyer, T. J. Meier, and M. D. Jimenez. In Prep. Effects of wolf removal on livestock depredation in Montana, Idaho, and Wyoming.

- Brainerd, S.M., H. Andren, H., E.E. Bangs, E. Bradley, J. Fontaine, W. Hall, Y. Iliopoulos, M. Jiminez, E. Jozwiak, O. Liberg, C. Mack, T. Meier, C. Niemeyer, H.C. Pedersen, H. Sand, R. Schultz, D.W. Smith, P. Wabakken, A. Wydeven. In Press. The effects of alpha wolf (Canis lupus) loss on reproduction and pack dynamics. *Journal of Wildlife Management*.
- Breck, S.W., R. Williamson, C. Niemeyer, and J.A. Shivik. 2002. Non-lethal radio activated guard for deterring wolf depredation in Idaho: summary and call for research. *Proceedings of the Vertebrate Pest Conference* 20: 223-226.
- Breck, S.W. and T. Meier. 2004. Managing wolf depredation in United States: past, present and future. *Sheep and Goat Research Journal* 9: 41-46.
- Bryan, H., C.T. Darimont, T.E. Reimchen, and P.C. Paquet. 2006. Early ontogenetic diet of wolves. *Canadian Field-Naturalist*.**
- Buckley, T.W. 2000. Potential consequences of Gray Wolf [*Canis lupus*] recolonization for wild ungulates, livestock, and humans in the Blue Range Mountain Region of northeastern Oregon and southeastern Washington. M.S. Thesis Evergreen State College, WA 62 pp.**
- Campbell, B.H., B. Altman, E.E. Bangs, D.W. Smith, B. Csuti, D.W. Hays, F. Slavens, K. Slavens, C. Schultz, and R.W. Butler. 2006. "Wildlife Populations." Pages 726-779 in 'Restoring the Pacific NW: the art and science of Ecological Restoration in Cascadia'. D. Apostol and M. Sinclair eds. Island Press. Washington D.C.**
- Carroll, C., M.K. Phillips, N.H. Schumaker, and D.W. Smith. 2003. Impacts of landscape change on wolf restoration success: Planning a reintroduction program based on static and dynamic spatial models. *Conservation Biology* 17(2): 536-548.
- Carroll, C., M.K. Phillips, C.A. Lopez-Gonzales, and N.H. Schumaker. 2006. Defining Recovery goals and Strategies for Endangered Species: The wolf as a case study. *Bioscience* 56:25-37.
- Chavez, A. and E. Giese. 2006. Landscape use and movements of wolves in relation to livestock in a wildland-agriculture matrix. *Journal of Wildlife Management* 70:1079-1086.
- Colorado Wolf Management Working Group. 2005. Findings and recommendations for managing wolves that migrate into Colorado. Colorado Division of Wildlife, Denver, CO. 67 pp. See: <http://wildlife.state.co.us/NR/rdonlyres/619DF3FC-A0DE-4AB1-A606-8334764466E2/0/recomendations.pdf>
- Cook, R. C., J. G. Cook, and L. D. Mech. 2004. Nutritional condition of Northern Yellowstone elk. *Journal of Mammalogy* 85(4):714-722.
- Creel S., G. Spong, J.L. Sands, J. Rotella, J.L. Ziegler, K.M. Murphy, and D.W. Smith. 2004. Population size estimation in Yellowstone wolves with error-prone noninvasive microsatellite genotypes. *Molecular Ecology* 12: 2003-2009.
- Creel, S., J.E. Fox, A. Hardy, J. Sands, B. Garrott, and R.O. Peterson. 2002. Snowmobile activity and glucocorticoid stress responses in wolves and elk. *Conservation Biology* 13(3): 809-814.

- Creel S, Winnie JA, Maxwell B, Hamlin K & Creel M 2005. Elk alter habitat selection as an antipredator response to wolves. *Ecology* 86:3387-3397.
- Creel, S., and J. Winnie J. 2005 Responses of elk herd size to fine-scale spatial and temporal variation in the risk of predation by wolves. *Animal Behaviour* 69: 1181-1189**
- Creel S, D. Christianson, S. Liley, and J. Winnie. 2007. Effects of predation risk on reproductive physiology and demography in elk. *Science* 315:960.**
- Christianson, D and S. Creel. 2007. A review of environmental factors affecting winter elk diets. *Journal of Wildlife Management*. 71(1):**
- Darimont, C. T., P. C. Paquet, and T. E. Reimchen. 2006. Stable isotopic niche predicts fitness in a wolf-deer system. *Biological Journal of the Linnaean Society* 90: 125-137.**
- Duffield, J., C. Neher, and D. Patterson. 2006. Wolves and people in Yellowstone: Impacts on the regional economy. Missoula, MT, The University of Montana: 1-67.**
- Duncan, R., and A. Mahle. 2004. Wolves are still in need of federal protection. *International Wolf* 14(1): 5-7
- Eberhardt, L.L., R.A. Garrott, D.W. Smith, P.J. White, and R O. Peterson. 2003. Assessing the impact of wolves on ungulate prey. *Ecological Applications* 13(3): 776-783.
- Evans, S., D.W. Smith and K. Murphy. 2000. Evaluation of wolf activity along the Tower to Canyon road in Yellowstone National Park, 1995-1999. YNP report, 17 pp.
- Evans, S. B., D. L. Mech, P.J. White, G.A. Sargeant. 2006. Survival of adult female elk in Yellowstone following wolf restoration. *Journal of Wildlife Management* 70(5): 1372-1378.**
- Fascione, N., H. Ridgley, and M. Selden, 2000. Proceedings of Defenders of Wildlife's Carnivores 2000: A Conference on Carnivore Conservation in the 21st Century. Defenders of Wildlife, Washington D.C. 208 pp.
- Ferguson, G. and D.W. Smith. 2005. A decade of wolves in Yellowstone. *Montana Magazine* (May-June):16-22.
- Fortin, D., H.L. Beyer, M.S. Boyce, D.W. Smith, T. Duchesne, J.S. Mao. 2005. Wolves influence elk movements: Behavior shapes a trophic cascade in Yellowstone National Park. *Ecology* 86:1320-1330.
- Fritts, S.H. 2000. Review of Carnivores in Ecosystems: the Yellowstone Experience. *Ecology* 81(8): 2351-2352.
- Fritts, S.H. 2000. A greater tolerance: coexistence of wolves and humans. *International Wolf* 10(1): 8-11.

- Fritts, S.H., C.M. Mack, D.W. Smith, K.M. Murphy, M.K. Phillips, M.D. Jimenez, E.E. Bangs, J.A. Fontaine, C.C. Niemeyer, W.G. Brewster, and T.J. Kaminski. 2001. Outcomes of hard and soft releases of reintroduced wolves in Central Idaho and the Greater Yellowstone area. Pages 125-147 in *Large Mammal Restoration: Ecological and Sociological Challenges in the 21st Century*, D.S. Maehr, R.F. Noss and J.L. Larkin, eds. Island Press, Washington, D.C.
- Fritts, S.H., R.O. Stephenson, R.D. Hayes, and L. Boitani. 2003. Wolves and Humans. Pages 289-316 in L.D. Mech and L. Boitani, editors *Wolves: Behavior, Ecology, and Conservation*. University of Chicago Press. Illinois, USA.
- Garrott, R. A., J. A. Gude, E.J. Bergman, C. Gower, P. J. White, and K. L. Hamlin. 2005. Generalizing wolf effects across the Greater Yellowstone area: a cautionary note. *Wildlife Society Bulletin* 33:1245-1255.
- Garrott, R., S. Creel, and K. Hamlin. 2006. Monitoring and assessment of wolf-ungulate interactions and population trends within the Greater Yellowstone Area, SW Montana and Montana. <http://www.homepage.montana.edu/~rgarrott/wolfungulate/index.html>.**
- Gipson, P.S., E.E. Bangs, T.N. Bailey, D.K. Boyd, H. D. Cluff, D.W. Smith, and M.D. Jimenez. 2002. Color patterns among wolves in western North America. *Wildlife Society Bulletin* 30(3): 821-830.
- Gude, J. A. 2004. Applying risk allocation theory in a large mammal predator-prey system: elk-wolf behavioral interactions. M.S. Thesis, Montana State University, Bozeman, MT USA.
- Gude, J. A., B. Garrott, J.J. Borkowski, F. King. 2006. Prey risk allocation in a grazing ecosystem. *Ecological Applications* 16(1): 285-298.**
- Gunther, K. A. and D. W. Smith. 2004. Interactions between wolves and female grizzly bears with cubs in Yellowstone National Park. *Ursus* 15(2): 232-238.
- Hebblewhite, M., P.C. Paquet, D.H. Pletscher, R.B. Lessard, and C.J. Callaghan. 2003. Development and application of a ratio estimator to estimate wolf kill rates and variance in a multi-prey system. *Wildlife Society Bulletin* 31(4): 933-946.
- Hebblewhite, M., D.H. Pletscher, and P. Paquet. 2003. Elk population dynamics following wolf recolonization of the Bow Valley of Banff National Park. *Research Links* 11(1):10-12.
- Hebblewhite, M. and D. H. Pletscher. 2002. Effects of elk groups size on predation by wolves. *Canadian Journal of Zoology* 80:800-809.
- Hebblewhite, M., D. H. Pletscher, P.C. Paquet. 2002. Elk population dynamics in areas with and without predation by recolonizing wolves in Banff National Park, Alberta. *Canadian Journal of Zoology* 80: 789-799.
- Hebblewhite, M., C. White, C. Nietvelt, J. Mckenzie, T. Hurd, J. Fryxell, S. Bayley, and P. C. Paquet. 2005. Human activity mediates a trophic cascade caused by wolves. *Ecology* 86: 1320-1330.**

- Hebblewhite, M, E.H. Merrill, T.L. McDonald. 2005. Spatial decomposition of predation risk using resource selection functions: an example in a wolf-elk predator prey system. *Oikos* 111:101-111.**
- Hebblewhite, M. and Merrill, E. H. (2007) Multi-scale wolf predation risk for elk: Does migration reduce risk? *Oecologia*, In Press.**
- Hebblewhite, M., Percy, M. and Merrill, E. H. (2007) Are all GPS collars created equal? Correcting habitat-induced bias using three brands in the Central Canadian Rockies. *Journal of Wildlife Management*, In Press.**
- Hebblewhite, M. and Smith, D. W. (2007) Wolf community ecology: ecosystem effects of recovering wolves in Banff and Yellowstone National Parks. *The world of wolves: new perspectives on ecology, behavior, and policy* (eds M. Musiani, L. Boitaini & P. C. Paquet), University of Calgary Press, Calgary, AB.**
- Hebblewhite, M., Merrill, E. H., Morgantini, L. E., White, C. A., Allen, J. R., Bruns, E., Thurston, L. and Hurd, T. E. (2006) Is the migratory behavior of montane elk herds in peril? The case of Alberta's Ya Ha Tinda elk herd. *Wildlife Society Bulletin*, In Press.**
- Henry, T. 2006. Yellowstone's Trophic Cascade: Evidence of an Ecosystem on the Mend? *Yellowstone Discovery*. 21: 1-5.**
- Holland, J. S. 2004. The wolf effect. *National Geographic*, October.
- Holyan, J., D. Boyd, C. Mack, and D. Pletscher. 2005. Longevity and productivity of three wolves, *Canis lupus*, in the wild. *Canadian Field-Naturalist*. 119:446-447.
- Hurford, A., M. Hebblewhite, M.A. Lewis. 2006. A spatially explicit model for an Allee effect: Why wolves recolonize so slowly in Greater Yellowstone. *Theoretical Population Biology* 70: 244-254.**
- Husseman, J.S. 2002. Prey selection patterns of wolves and cougars in East-central Idaho. Unpublished thesis, University of Idaho, Moscow.
- Husseman, J.S., D.L. Murray, G. Power, and C. Mack. 2003. Correlation patterns of marrow fat in Rocky Mountain elk bones. *Journal of Wildlife Management* 67(4): 742-746.
- Husseman, J.S., D.L. Murray, G. Power, C. Mack, C.R. Wenger, and H. Quigley. 2003. Assessing differential prey selection patterns between two sympatric large carnivores. *Oikos* 101: 591-601.
- Jaffe, R. 2001. Winter wolf predation in an elk-bison system in Yellowstone National Park, Wyoming. Unpublished thesis, Montana State University.
- Jacobs, A.K. 2000. Leadership behavior in dominant breeding, subordinate breeding, and non-breeding wolves (*Canis lupus*) in Yellowstone national Park, WY. Unpublished thesis. Science in Forestry. Houghton, MI, Michigan Technological University. 54pp.
- Jimenez, M. D., and J. Stevenson. 2003. Wolf-elk interactions on state-managed feed grounds in Wyoming. 2002 progress report. USFWS, 190 N First St., Lander WY 82520. 11 pp.

- Jimenez, M. D., and J. Stevenson. 2004. Wolf-elk interactions on state-managed feed grounds in Wyoming. 2003 progress report. USFWS, PO Box 2645, Jackson, WY 83001. 13 pp
- Jimenez, M.D., S.P. Woodruff, S. Cain, and S. Dewey. 2005. Wolf-elk interactions on winter range and state-managed feed grounds in Wyoming. 2005 progress report. USFWS, P.O. Box 2645, Jackson, WY 83001. 12 pp.
- Jimenez, M.D., S.P. Woodruff, S. Cain, and S. Dewey. 2006. Wolf-elk interactions on winter range and state-managed feed grounds in Wyoming. 2006 progress report. USFWS, P.O. Box 2645, Jackson, WY 83001. XX pp.**
- Jimenez, M.D., V.J. Asher, C. Bargman, E.E. Bangs, and S. Woodruff. Submitted 2006. Wolves killed by cougars and a grizzly bear in western United States and Canada. Canadian Field Naturalist.**
- Jimenez, M.D., E. E. Bangs, C. A. Sime, and V. Asher. In Prep. Sarcoptic mange found in wolves in the Rocky Mountains in western United States.**
- Kostel, K. 2004. Leftovers Again? Science News. March.
- Kunkel, K.E., and D.H. Pletscher. 2000. Habitat factors affecting vulnerability of moose to predation by wolves in southeastern British Columbia. Canadian Journal of Zoology 78: 150-157.
- Kunkel, K.E., and D.H. Pletscher. 2001. Winter hunting patterns and success of wolves in Glacier National Park, Montana. Journal of Wildlife Management 65: 520-530.
- Kunkel, K.E., D.H. Pletscher, D.K. Boyd, R.R. Ream, and M.W. Fairchild. 2004. Factors correlated with foraging behavior of wolves in and near Glacier National Park, Montana. Journal of Wildlife Management 68(1): 167-178.
- Kunkel, K., C. M. Mack, and W. E. Melquist. 2005. An assessment of current methods for surveying and monitoring wolves. Nez Perce Tribe, Lapwai, Idaho, USA.
- Leonard, J.A., C. Vila, and R.R. Wayne. 2005. Legacy lost: genetic variability and population size of extirpated U.S. Grey Wolves (*Canis lupus*). Molecular Ecology 14:9-17.
- Mack, C.M., I. Babcock, and J. Holyan. 2002. Idaho Wolf Recovery Program: Restoration and management of gray wolves in Idaho. Progress report 1999-2001. Nez Perce Tribe, Department of Wildlife Management, Lapwai, ID. 34 pp.
- Mack, C.M., and J. Holyan. 2003. Idaho wolf recovery program: Restoration and management of gray wolves in central Idaho. Progress report 2002. Nez Perce Tribe, Department of Wildlife Management, Lapwai, ID. 34 pp.
- McIntyre, R., and D. W. Smith. 2000. The death of a queen: Yellowstone mutiny ends tyrannical rule over Druid Pack. International Wolf 10(4): 8-11.

- MacNulty, D.R. 2002. The predatory sequence and the influence of injury risk on hunting behavior in the wolf. Unpublished thesis. Department of Fisheries, Wildlife, and Conservation Biology. Minneapolis, MN, University of Minnesota. 71pp.
- MacNulty, D.R., N. Varley, and D.W. Smith. 2001. Grizzly bear, *Ursus arctos*, usurps bison, *Bison bison*, captured by wolves, *Canis lupus*, in Yellowstone National Park, Wyoming. *Canadian Field-Naturalist* 115: 495-498.
- McNay, M.E. 2002. Wolf-human interactions in Alaska and Canada: a review of the case history. *Wildlife Society Bulletin* 30(3): 831-843.
- Mao, J.S., M.S. Boyce, D.W. Smith, F.J. Singer, D.J. Vales, J.M. Vore and E.M. Merrill. 2005. Habitat selection by elk before and after wolf reintroduction in Yellowstone National Park. *Journal of Wildlife Management* 69(4):1691-1707.
- Mech, L.D. and Boitani, eds. 2003. *Wolves: behavior, ecology, and conservation*. Univ. Chicago Press, Chicago, IL .
- Mech, L.D. 2004. Why I support federal wolf delisting. *International Wolf* 14(1):5-7.
- Mech, L.D. 2006. Estimated age structure of wolves in northeastern Minnesota. *Journal Wildlife Management* 70:1481-1483.
- Mech, L.D., R. T. McIntyre, D. W. Smith. 2004. Unusual behavior by bison, *Bison bison*, toward elk, *Cervus elaphus*, and wolves, *Canis lupus*. *Canadian Field Naturalist* 118: 115-118.
- Mech, L.D., D.W. Smith, K.M. Murphy, and D.R. MacNulty. 2001. Winter severity and wolf predation on a formerly wolf-free elk herd. *J. of Wildlife Management* 65(4): 998-1003.
- Meier, T. 2001. Wolf depredation in the United States. *International Wolf* 11(3): 4-5.
- Messer, M. A. 2003. Identifying large herbivore distribution mechanisms through application of fine scale snow modeling. M.S. Thesis, Montana State University Bozeman. 46 pp.
- Miller, B.,B. Dugelby, D. Foreman, C. Martinez del Rio, R. Noss, M. Phillips, R. Reading, M. Soule, J. Terborgh, and L. Wilcox. 2001. The importance of large carnivores to healthy Ecosystems. *Endangered Species Update* 18:202-210.
- Montag, Jessica M. 2004. Lions, Wolves, and Bears, Oh My! Predator Compensation Programs in the West. *Fair Chase*, Summer: 52-54.
- Montag, J. 2003. Compensation and predator conservation: limitations of Compensation. *Carnivore Damage Prevention News* 6:2-6.
- Montag, J.M., M.E. Patterson, and W.A. Freimund. 2005. The wolf viewing experience in the Lamar Valley of Yellowstone National Park. *Human Dimensions of Wildlife* 10:273-284.
- Montag, J.M., M.E. Patterson, and B. Sutton. 2003. Political and Social Viability of Predator Compensation Programs in the West. Final Project Report. Wildlife Biology Program, School of Forestry, University of Montana, Missoula, MT 59812. 136pp.

- Montana Wolf Management Advisory Council, 2000. Report to the Governor. Montana Fish, Wildlife and Parks, Helena. 12 pp.
- Montana Wolf Management Advisory Council, 2003. Montana gray wolf conservation and management plan. Final environmental impact statement C. A. Sime, ed. Montana Fish, Wildlife and Parks, Helena. 420 pp.
- Musiani, M. and P. Paquet. 2004. The practices of wolf persecution, protection, and restoration in Canada and the United States. *BioScience* 54: 50-60.
- Musiani, M., C. Mamo, L. Boitani, C. Callaghan, C. Cormack Gates, L. Mattei, E. Visalberghi, S. Breck, and G. Volpi. 2003. Wolf depredation trends and the use of fladry barriers to protect livestock in western North America. *Conservation Biology* 17: 1538-1547.
- Musiani, M., Muhly, T., Callaghan, C., Gates, C.C., Smith, M., Stone, S. and Tosoni, E. 2004. Recovery, conservation, conflicts and legal status of wolves in western North America. Pages 51-75 in N. Fascione, A. Delach and M. Smith, (eds.). *Predators and People: from conflict to conservation*. Island Press, Washington, D.C., USA.
- National Research Council. 2002. Ecological dynamics on Yellowstone's Northern Range. Committee on ungulate management in Yellowstone National Park. National Academy Press, Washington, DC. 198 pp.
- Niemeyer, Carter. 2004. Crying Wolf in Central Asia. *International Wolf* Vol 14 (2): 7-9.
- Niemeyer, Carter. 2004. Education goes both ways with wolf depredations. *International Wolf* Vol. 14 (3): 14-15.
- Oakleaf, J. K. 2002. Wolf-cattle interactions and habitat selection by recolonizing wolves in the northwestern United States. M.S. Thesis, University of Idaho, Moscow, Idaho.
- Oakleaf, J.K., C. Mack, and D.L. Murray. 2003. Effects of wolves on livestock calf survival and movements in central Idaho. *Journal of Wildlife Management* 67: 299-306.
- Oakleaf, J.K., D.L. Murray, J.R. Oakleaf, E.E. Bangs, C.M. Mack, D.W. Smith, J.A. Fontaine, M.D. Jimenez, T.J. Meier, and C.C. Niemeyer. 2006. Habitat selection by recolonizing wolves in the Northern Rocky Mountains of the United States. *Journal of Wildlife Management* 70:554-565.
- Oregon Dept. of Fish and Wildlife. 2005. Oregon Wolf Conservation and Management Plan. Salem, OR. The plan is posted at www.dfw.state.or.us under wolves.
- Paquet, P.C. and L.N. Carbyn. 2003. Gray Wolf, pp. 482-510, *in* Wild Mammals of North America. G Fledhamer, B.C. Thompson, and J.A. Chapman, eds. John Hopkins Press.
- Paquet, P. C., S. M. Alexander, P. L. Swan, and C. T. Darimont. 2006. Pages 130-156 in *Connectivity Conservation*, eds K. R. Crooks and M. Sanjayan. Influence of natural landscape fragmentation and resource availability on distribution and connectivity of marine gray wolf (*Canis lupus*) populations on Central Coast, British Columbia, Canada. Cambridge University Press. N.Y. & England.

- Patterson, M.E., J.M. Montag, and D.R. Williams. 2003. The urbanization of wildlife management: Social science, conflict, and decision making. *Urban Forestry and Urban Greening* 1:171-183.
- Peterson, R.O., A.K. Jacobs, T.D. Drummer, L.D. Mech, and D.W. Smith. 2002. Leadership behavior in relation to dominance and reproductive status in gray wolves, *Canis lupus*. *Canadian Journal of Zoology* 80: 1405-1412.
- Phillips, M., N. Fascione, P. Miller and O. Byers. 2000. Wolves in the Southern Rockies. A population and habitat viability assessment: Final Report. IUCN/SSC Conservation breeding Specialist Group, 12101 Johnny Cake Ridge Road, Apple Valley, MN 55124.
- Phillips, M.K., E.E. Bangs, L.D. Mech, B.T. Kelly, and B. Fazio. 2005. Living alongside canids: lessons from the extermination and recovery of red and grey wolves in the contiguous United States. Pages 297-309 in D. MacDonald and C. Sillero, (eds.). *The biology and conservation of wild canids*. Oxford University Press, New York, Oxford.
- Pyare, S., and J. Berger. 2003. Beyond demography and delisting: ecological recovery for Yellowstone's grizzly bears and wolves. *Biological Conservation* 113:63-73.
- Riley, S. J., G. M. Nessler, and B. A. Maurer. 2004. Dynamics of early wolf and cougar eradication efforts in Montana: implications for conservation. *Biological Conservation* 119:575-579.
- Ripple, W.J., and R.L. Beschta. 2003. Wolf reintroduction, predation risk, and cottonwood recovery in Yellowstone National Park. *Forest Ecology and Management* 184: 299-313.
- Ripple, W.J. and R.L. Beschta. 2004. Wolves and the ecology of fear: Can predation risk structure ecosystems? *Bioscience* 54(8): 755-766.
- Ripple, W. J. and R. L. Beschta. 2006. Linking wolves to willows via risk-sensitive foraging by ungulates in the northern Yellowstone ecosystem. *Forest Ecology and Management* 230: 96-106.**
- Ripple, W.J., and E.J. Larsen. 2000. Historic aspen recruitment, elk, and wolves in northern Yellowstone National Park, USA. *Biological Conservation* 95:361-370.
- Ripple, W.J., E.J. Larsen, R.A. Renkin, and D.W. Smith. 2001. Trophic cascades among wolves, elk and aspen on Yellowstone National Park's Northern Range. *Biological Conservation* 102: 227-234.
- Ripple, W.J., E.J. Larsen, R.A. Renkin, and D. W. Smith. 2001. Trophic cascades among wolves, elk, and aspen on Yellowstone National Park's northern range. *Biological Conservation* 102: 227-234.
- Robbins, J. 2004. Lessons from the WOLF. *Scientific American*. Vol. 290 (6): 76-81.
- Ruth, T.K. 2000. cougar-wolf interactions in Yellowstone National park: competition, demographics, and spatial relationships. *Wildlife Conservation Society*. August 2000:1-28.

- Ruth, T. K., D. W. Smith, M. A. Haroldson, P. C. Buotte, C. Schwartz, H. Quigley, S. Cherry, K. M. Murphy, D. B. Tyers, and K. Frey. 2003. Large-carnivore response to recreational big-game hunting along the Yellowstone National Park and Absaroka-Beartooth Wilderness boundary. *Wildlife Society Bulletin* 31: 1150-1161.
- Samuel, W. M. 1981. Attempted experimental transfer of Sarcoptic Mange (*Sarcoptes scabiei*) among red fox, coyote, wolf and dog. *Journal of Wildlife Diseases*. 17(3): 343-347
- Sands, J. 2001. Stress hormones and social behavior of wolves in Yellowstone National Park. Unpublished thesis. Biological Sciences. Bozeman, MT, Montana State University. 51pp.
- Sands J. L. and S. Creel 2004. Social dominance, aggression and fecal glucocorticoid levels in a wild population of wolves, *Canis lupus*. *Animal Behaviour* 67: 387-396
- Schaefer, C.L. 2000. Spatial and temporal variation in wintering elk abundance and composition, and wolf response on Yellowstone's Northern Range. Unpublished thesis, Michigan Technological University. 95pp.
- Shivik, J. A. 2006. Tools for the Edge: What's New for Conserving Carnivores. *Bioscience* 56:253-259.
- Shivik, J. A. 2004. Nonlethal alternatives for predation management. *Sheep and Goat Research Journal*. 19:64-71
- Shivik, J. 2001. The other tools for wolf management. *WOLF!* Vol 11 (2): 3-7
- Shivik, J.A., A. Treves, and P. Callahan. 2003. Nonlethal techniques for managing predation: primary and secondary repellents. *Conservation Biology* 17: 1531-1538
- Shivik, J.A., V. Asher, L. Bradley, K. Kunkel, M. Phillips, S. W. Breck, and E. Bangs. 2002. Electronic aversive conditioning for managing wolf depredation. *Proceedings of the Vertebrate Pest Conference* 20: 227-231.
- Smith, B.L., E.S. Williams, K.C. McFarland, T.L. McDonald, G. Wang, and T.D. Moore. 2006. Neonatal mortality of elk in Wyoming: environmental, population, and predator effects. U.S. Department of the Interior, U.S. Fish and wildlife Service, Biological Technical Publication, BTP-R0007, Washington D.C.**
- Smith, D.W. 2000. The wolves of Yellowstone. *Southeastern Wildlife Magazine*.
- Smith, D.W. 2001. Wildlife Art: Does it make a difference for wolves? *Wildlife Art* 20 (6): 102-105.
- Smith, D.W. 2002. Wolf #7: The passing of a matriarch. *Yellowstone Science* 10: 18-19.
- Smith, D.W. 2002. Book review -- *Wolves and Human Communities: Biology, Politics, and Ethics*. *Journal of Mammalogy* 83: 915-918.
- Smith, D.W. 2002. Wolf Pack Leadership: Doug Smith explores the issue in Yellowstone and Isle Royale. *Howlings: The Central Rockies Wolf Project* 11(2): 10-12.

- Smith, D.W. 2004. Wolf behavior: Learning to live in life or death situations. Pages 1181-1185 in Encyclopedia of Animal Behavior, Marc Bekoff (ed.), Greenwood Press, Westport, CT.
- Smith, D.W. 2004. The wolf in fairy tales. Pages 39-40 in: Encyclopedia of Animal Behavior, ed., Marc Bekoff, Greenwood Press, Westport, CT.
- Smith, D.W. 2005. Mixed messages about opportunistic carnivores. Conservation Biology 19:1676-1678.
- Smith, D.W. 2005. Ten years of Yellowstone wolves, 1995-2005. Yellowstone Science 13(1): 7-33.
- Smith, D.W. 2005. Ten years of Yellowstone wolves 1995-2005. Points West Magazine, Buffalo Bill Historical Center, Spring:3-6.
- Smith, D.W. 2005. The predator and prey battle. Points West Magazine, Buffalo Bill Historical Center, Spring:7.
- Smith, D. W. 2006. Coexisting with large carnivores: Lessons from Greater Yellowstone (book review). BioScience 56(10): 848-849.**
- Smith, D.W. 2006. Re-introduction of gray wolves to Yellowstone National Park, USA. Re-Introduction News 25: 29-31.**
- Smith, D.W. and M.K. Phillips. 2000. Northern Rocky Mountain Wolf (*Canis lupus nubilus*). Pages 219-223, in Endangered Animals: A Reference Guide to Conflicting issues, R.P. Reading and B. Miller, eds. Greenwood Press, Westport, CT. 383 pp.
- Smith, D.W., and D.S. Guernsey. 2001. Yellowstone Wolf Project: Annual Report, 2000. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-2001-01. 14 pp.
- Smith, D.W., and D.S. Guernsey. 2002. Yellowstone Wolf Project: Annual report, 2001. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-2002-04.
- Smith, D.W. and R. McIntyre. 2002. Wolf pack size: How did the Druid Peak Pack get to be so big? International Wolf 12(1): 4-7.
- Smith, D.W. and D.R. Stahler. 2003. Management of habituated wolves in Yellowstone National Park. Yellowstone National Park: Yellowstone Center for Resources, National Park Service.
- Smith, D.W. and G. Ferguson. 2005. Decade of the wolf: Returning the wild to Yellowstone. Lyons Press, Guilford, CT, 212 pp.
- Smith, D.W., K.M. Murphy, and D.S. Guernsey. 2000. Yellowstone Wolf Project: Annual Report, 1999. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-2000-01.

- Smith, D.W., K.M. Murphy, and S. Monger. 2001. Killing of Bison (*Bison bison*) calf, by a wolf (*Canis lupus*), and four coyotes (*Canis latrans*), in Yellowstone National Park. *Canadian Field-Naturalist* 115 (2): 343-345.
- Smith, D.W., R.O. Peterson, and D. Houston. 2003. Yellowstone after wolves. *BioScience* 53(4): 330-340.
- Smith, D.W., D.R. Stahler, and D.S. Guernsey. 2003. Yellowstone Wolf Project: Annual Report 2002. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-NR-2003, 1-14.
- Smith, D. W., D. R. Stahler, and D. S. Guernsey. 2003. Yellowstone Wolf Project Winter Study Handbook. Yellowstone Center for Resources.
- Smith, D. W., D. R. Stahler and D. S. Guernsey. 2004. Yellowstone Wolf Project: Annual Report 2003. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming. YCR-NR-2004-04. pp. 1-18.
- Smith, D.W., L.D. Mech, M. Meagher, W.E. Clark, R. Jaffe, M.K. Phillips, and J.A. Mack. 2000. Wolf-bison interactions in Yellowstone National Park. *Journal of Mammalogy* 81(4): 1128-1135.
- Smith, D.W., K.M. Murphy, R. McIntyre, T. Zieber, G. Plumb, B. Phillips, B. Chan, J. Knuth Folts, D. Chalfant, and B. Suderman. 2000. Managing wolves and humans in Lamar Valley: A final report on the Druid road project 2000. YNP report, 5pp.
- Smith, D.W., R. McIntyre, E. Cleere, G. Plumb, B. Phillips, B. Chan, M. Ross, J. Knuth Folts, D. Chalfant, and B. Suderman. 2001. Managing wolves and humans in Lamar Valley: A final report on the Druid road project 2001. YNP report. 7pp.
- Smith, D.W., D. R. Stahler, R. McIntyre, D. Graf, E. West, G. Plumb, B. Phillips, B. Chan, M. Ross, J. Knuth Folts, D. Chalfant, and B. Suderman. 2002. Managing wolves and humans in Lamar Valley: A final report on the Druid road project 2002. YNP report. 9pp.
- Smith, D.W., D.R. Stahler, K.M. Murphy, D.S. Guernsey, R.T. McIntyre, E.E. Bangs, and M.K. Phillips. In preparation. Colonization and population expansion of reintroduced wolves in Yellowstone National park. *Journal of Mammalogy*.
- Smith, D.W. 2005. Ten Years of Yellowstone Wolves, 1995-2005. *Yellowstone Science* 13(1): 7-33.
- Smith, D.W., T.D. Drummer, K.M. Murphy, D.S. Guernsey, and S.B. Evans. 2004. Winter prey selection and estimation of wolf kill rates in Yellowstone National Park. *Journal of Wildlife Management* 68: 153-166.
- Smith, D.W., D. Murray, E. Bangs, J. Oakleaf, C. Mack, J. Fontaine, D. Boyd, M. Jimenez, D. Pletscher, C. Niemeyer, T. Meier, D. Stahler, D. Guernsey, J. Holyan. In preparation. Survival of colonizing wolves in the northern Rocky Mountains of the United States, 1982-2004. *Wildlife Monographs*.

Smith, D. W., D. Stahler, D. Guernsey, and E. Bangs, 2006. Wolf Restoration in Yellowstone National Park. Pages 242-254 in D. R. McCullough, K. Kaji and M. Yamanaka (eds.), Wildlife in Shiretoko and Yellowstone National Parks: Lessons in Wildlife Conservation from Two World Heritage Sites. Shiretoko Nature Foundation, Hokkaido, Japan.

Stahler, D.R. 2000. Interspecific interactions between the common raven (*Corvus corax*) and the gray wolf (*Canis lupus*) in Yellowstone National Park, Wyoming: Investigations of a predator and scavenger relationship. Unpublished thesis, University of Vermont. 105pp.

Stahler, D.R., B. Heinrich, and D.W. Smith. 2002. Common ravens, *Corvus corax*, preferentially associate with gray wolves, *Canis lupus*, as a foraging strategy in winter. *Animal Behavior* 64: 283-290.

Stahler, D.R., D.W. Smith, and R. Landis. 2002. The acceptance of a new breeding male into a wild wolf pack. *Canadian Journal of Zoology* 80: 360-365.

Stahler, D.R., D.W. Smith, R. McIntyre, E. West, B. Phillips, B. Chan, M. Ross, J. Knuth Folts, D. Chalfant, and B. Suderman. 2003. Managing wolves and humans in Lamar Valley: A final report on the Druid road project 2003. YNP Report. 9 pp.

Stahler, D. R., D. W. Smith, D.S. Guernsey. 2006. Foraging and feeding ecology of the gray wolf (*Canis lupus*): Lessons from Yellowstone National Park, Wyoming, USA. *Journal of Nutrition* 136: 1923-1926.

Stronen, A. V. 2006. Genetic Variation, Dispersal, and Disease in Wolves (*Canis lupus*) in the Riding Mountain National Park Region, Manitoba. Final Report. 46 pp.

Stronen, A. V, Brooks, R. K., Paquet, P. C., and S. Mclachlan. 2007. Farmer attitudes toward wolves: Implications for the role of predators in managing disease. *Biological Conservation* 135: 1-10.

Switalski, T.A., T. Simmons, S.L. Duncan, A.S. Chavez, and R.H. Schmidt. 2002. Wolves in Utah. An analysis of potential impact and recommendations for management. Utah Cooperative Fish and Wildlife Research Unit, Utah State University. Natural Resource and Environmental Issues, Vol. X.

Taper, M.L., and P.J.P. Gogan. 2002. The northern Yellowstone elk: Density dependence and climatic conditions. *Journal of Wildlife Management* 66(1): 106-122.

Tessaro, S. V. and L. B. Forbes. 2004. Experimental *Brucella abortus* infection in wolves. *Journal of Wildlife Diseases*. 40(1): 60-65

Theberge, J. B., M. T. Theberge, J. A. Vucetich, and P. C. Paquet. 2006. Pitfalls of applying adaptive management to a wolf population in Algonquin Provincial Park, Ontario. *Environmental Management* 37: 451-460.

Thiessen, C. 2006. Population structure and dispersal of wolves in the Canadian Rocky Mountains. MSc. Thesis. University of Alberta, Edmonton, AB. 158pp.

- Thurston, L.M. 2002. Homesite attendance as a measure of alloparental and parental care by gray wolves (*Canis lupus*) in northern Yellowstone National Park. Unpublished thesis, Texas A and M University. 175pp.
- Trapp, J. R. 2004. Wolf den site selection in the Northern Rocky Mountains. Thesis, Prescott College, Prescott, Arizona, USA.
- Trapp, J.R. P. Beier, C. Mack, D.R. Parsons, P.C. Paquet. In review. Wolf den site selection in the northern Rocky Mountains. *Canadian Field-Naturalist*.
- USDA/APHIS/Idaho Wildlife Services. 2001. Wolf Activity Report, Fiscal Year 2000. USDA/APHIS/Wildlife Services, 9134 West Black Eagle Drive, Boise ID 83709. 14pp.
- USDA/APHIS/Idaho Wildlife Services. 2002. Wolf Activity Report, Fiscal Year 2001. USDA/APHIS/Wildlife Services, 9134 West Black Eagle Drive, Boise ID 83709. 13pp.
- USDA/APHIS/Idaho Wildlife Services. 2003. Wolf Activity Report, Fiscal Year 2002. USDA/APHIS/Wildlife Services, 9134 West Black Eagle Drive, Boise ID 83709. 13pp.
- USDA/APHIS/Idaho Wildlife Services. 2004. Wolf Activity Report, Fiscal Year 2003. USDA/APHIS/Wildlife Services, 9134 West Black Eagle Drive, Boise ID 83709. 15pp.
- USDA/APHIS/Idaho Wildlife Services. 2005. Wolf Activity Report, Fiscal Year 2004. USDA/APHIS/Wildlife Services, 9134 West Black Eagle Drive, Boise ID 83709. 14pp.
- USDA/APHIS/Idaho Wildlife Services. 2006. Wolf Activity Report, Fiscal Year 2005. USDA/APHIS/Wildlife Services, 9134 West Black Eagle Drive, Boise ID 83709. 14pp.
- USDA/APHIS/Idaho Wildlife Services. 2007. Wolf Activity Report, Fiscal Year 2006. USDA/APHIS/Wildlife Services, 9134 West Black Eagle Drive, Boise ID 83709. 14pp.**
- U.S. Fish and Wildlife Service. 2003. Endangered and threatened wildlife and plants; final rule to reclassify and remove the gray wolf from the list of endangered and threatened wildlife in portions of the conterminous United States; establishment of two special regulations for threatened gray wolves; final and proposed rules. *Federal Register* 68: 15803-15875.
- U.S. Fish and Wildlife Service. 2000. Proposal to reclassify and remove the gray wolf from the list of endangered and threatened wildlife in portions of the conterminous United States. *Federal Register* 65(135): 43449-43496.
- U.S. Fish and Wildlife Service, Nez Perce Tribe, National Park Service, and USDA Wildlife Services. 2000. Rocky Mountain Wolf Recovery 1999 Annual Report. USFWS, Ecological Services, 100 N Park, Suite 320, Helena MT. 23pp. <http://westerngraywolf.fws.gov/annualreports.htm>
- U.S. Fish and Wildlife Service, Nez Perce Tribe, National Park Service, and USDA Wildlife Services. 2001. Rocky Mountain Wolf Recovery 2000 Annual Report. USFWS, Ecological Services, 100 N Park, Suite 320, Helena MT. 35pp. <http://westerngraywolf.fws.gov/annualreports.htm>

- U.S. Fish and Wildlife Service, Nez Perce Tribe, National Park Service, and USDA Wildlife Services. 2002. Rocky Mountain Wolf Recovery 2001 Annual Report. T. Meier, ed. USFWS, Ecological Services, 100 N Park, Suite 320, Helena MT. 41pp. <http://westerngraywolf.fws.gov>.
- U.S. Fish and Wildlife Service, Nez Perce Tribe, National Park Service, and USDA Wildlife Services. 2003. Rocky Mountain Wolf Recovery 2002 Annual Report. T. Meier, ed. USFWS, Ecological Services, 100 N Park, Suite 320, Helena MT. 64pp. <http://westerngraywolf.fws.gov>.
- U.S. Fish and Wildlife Service, Nez Perce Tribe, National Park Service, and USDA Wildlife Services. 2004. Rocky Mountain Wolf Recovery 2003 Annual Report. T. Meier, ed. USFWS, Ecological Services, 100 N Park, Suite 320, Helena MT. 65pp. <http://westerngraywolf.fws.gov>.
- U.S. Fish and Wildlife Service, Nez Perce Tribe, National Park Service, and USDA Wildlife Services. 2005. Rocky Mountain Wolf Recovery 2004 Annual Report. D. Boyd, editor. USFWS, Ecological Services, 100 N. Park, Suite 320, Helena, MT. 72pp. <http://westerngraywolf.fws.gov>
- U.S. Fish and Wildlife Service, Nez Perce Tribe, National Park Service, and USDA Wildlife Services. 2006. Rocky Mountain Wolf Recovery 2005 Annual Report. C. A. Sime and E. Bangs, editors. USFWS, Ecological Services, 585 Shepard Way, Helena, MT. 149 pp. <http://westerngraywolf.fws.gov>**
- U.S. Fish and Wildlife Service. 2005. Endangered and threatened wildlife and plants; Regulation for nonessential experimental populations of the western distinct population segment of the gray wolf; final rule. Federal Register 70(4): 1286-1311.
- U.S. Fish and Wildlife Service. August 1, 2006. Endangered and threatened wildlife and plants; 12-month finding on a petition [Wyoming's] to establish a Rocky Mountain Gray Wolf Population [Canis lupus] as a Distinct Population Segment. To Remove the NRM wolf population from the list of endangered and threatened wildlife. Federal Register 71(147):43410-43432.**
- U.S. Fish and Wildlife Service. February 8, 2007. Endangered and threatened wildlife and plants; Designating the northern Rocky Mountain population of Gray Wolf as a Distinct Population Segment and removing this distinct population segment from the federal list of endangered and threatened wildlife; Proposed Rule. Federal Register 72(72):6106-6139.**
- Vander Wal, E., Paquet, P.C., Messier, F. November 2006. Interaction among disease, habitat, and predation in the elk population of Riding Mountain National park. Interim Report. University of Saskatchewan. 32 pp.**
- Varley, N. and M. S. Boyce. 2006. Adaptive management for reintroductions: updating a wolf recovery model for Yellowstone National Park. Ecological Modelling 193: 315-339.**
- Vucetich, J.A., D.W. Smith, and D.R. Stahler. 2005. Influence of Harvest, climate, and wolf predation of Yellowstone elk, 1961-2004. Oikos 111:259-270.
- White, P.J. and R.A. Garrott. 2005. Yellowstone's ungulates after wolves- expectations, realizations, and predictions. Biological Conservation. 125:141-152.

- White, P.J. and R.A. Garrott. 2006. Northern Yellowstone elk after wolf restoration. *Wildlife Society Bulletin* 33:942-955.**
- White, P.J., D.W. Smith, J.W. Duffield, M.D. Jimenez, T. McEneaney, and G. Plumb. 2005. Wolf EIS Predictions and Ten-Year Appraisals. *Yellowstone Science* 13(1):34-41.
- Whittington, J., C.C. St. Clair, and G. Mercer. 2004. Path tortuosity and the permeability of roads and trails to wolf movement. *Ecology and Society* 9(1): 4.
- Wilmers, C. C. and W. M. Getz. 2004. Simulating the effects of wolf-elk population dynamics on resource flow to scavengers. *Elsevier* 177: 193-208.
- Wilmers, C.C., and D.R. Stahler. 2002. Constraints on active-consumption rates in gray wolves, coyotes, and grizzly bears. *Canadian Journal of Zoology*. 80: 1256-1261.
- Wilmers, C.C., D.R. Stahler, R.L. Crabtree, D.W. Smith, and W.M. Getz. 2003. Resource dispersion and consumer dominance: scavenging at wolf- and hunter-killed carcasses in Greater Yellowstone, USA. *Ecology Letters* 6: 996-1003.
- Wilmers, C.C., R.L. Crabtree, D.W. Smith, K.M. Murphy, and W.M. Getz. 2003. Trophic facilitation by introduced top predators: gray wolf subsidies to scavengers in Yellowstone National Park. *Journal of Animal Ecology* 72: 909-916.
- Wilmers, C. C. and W.M. Getz. 2005 Gray wolves as climate change buffers in Yellowstone. *PLoS Biology* 3:571-576.
- Wilmers, C. C. and E. Post. 2006. Predicting the influence of wolf-provided carrion on scavenger community dynamics under climate change scenarios. *Global Change Biology* 12: 403-409.**
- Winnie, J. and S. Creel. 2007. Sex-specific behavioral responses of elk to spatial and temporal variation in the threat of wolf predation. *Animal Behaviour*. 71: 215 - 225.**
- Winnie, J, Christianson D, Maxwell B and Creel, S 2006. Elk decision-making rules are simplified in the presence of wolves. *Behavioral Ecology and Sociobiology* 61: 277 - 289.**
- Wondrak Biel, A. and D.W. Smith. 2005. Yellowstone wolf found near Denver. NPS Natural Resource Year in Review – 2004. National Park Service, U.S Department of the Interior, Washington D.C., ISSN 1544-5429.
- Woodroffe, R., S. Thirgood, and A. Rabinowitz, eds. *People and wildlife: coexistence or conflict?* Cambridge University Press, Cambridge, United Kingdom. 497 pp.
- Woodruff, Susannah. 2006. Characteristics of wolf and cougar kill sites in the southern Yellowstone ecosystem. M.A. Thesis, Prescott College, Prescott, Arizona. 49pp.**
- Wright, G.J. 2003. An analysis of the northern Yellowstone elk herd: population reconstruction and selection of elk by wolves and hunters. Unpublished thesis, Michigan Technological University 124pp.
- Wright, Gregory J., R. O. Peterson, D.W. Smith, T.O. Lemke. 2006. Selection of northern Yellowstone elk by gray wolves and hunters. *Journal of Wildlife Management* 70(4): 1070-1078.**