

# The Gray wolf in Washington

## Current species status and possibilities for natural recovery

*Julie Palmquist  
Communications Director  
Wolf Haven International*

In early February, 2002, a radio-collared female gray wolf found her way from northwestern Montana to Washington's northeastern "Forgotten Corner" in Pend Oreille County.



Photo of Sheep Mountain pack female at the Ted Turner Flying D Ranch (MT) representative of Y206. Photo courtesy of Val Asher.

The Gravely Pack female, Y206, was first located near Metalline Falls, (made famous by Kevin Costner's 1997 film production "The Postman") on the edge of prime wolf habitat dominated by two adjoining National Forests. The area is also home to the nearly pristine 39,937 acre Salmo-Priest Wilderness where Y206 remained or slightly more than two weeks, dining on both moose and deer, before moving northwest to Castlegar in British Columbia.

The arrival of Y206 ignited a renewed interest in what has been a hot topic off and on since the early 90's when biologists began documenting evidence of individual and pack/pup activity in the North Cascades region (Garines et. al., 2000). At the same time, her presence revealed the need for an accurate and in-depth perspective on the recent status of the gray wolf (*Canis lupus*) in Washington and potential for natural recovery within the parameters set forth by modern wolf conservation issues. The following information was compiled in order to assist in fulfilling those needs.

It would appear that there has been very little scientific data collected on wolf activity in Washington since the state's federal Section 6 wolf and grizzly funding -- \$95,000 per Fiscal Year (FY) -- was first transferred to Idaho in 1995 (FWS, 2002). Personal opinions and anecdotal evidence aside, the gray wolf in Washington has become somewhat of an enigma due to that absence of data. This pertains not only to Washington, but to the Canadian province of British Columbia (B.C.) where one of Washington's three potential source populations for migrating wolves exists (the other two being Montana and Idaho).

The most commonly cited sources for Washington gray wolf information are Laufer and Jenkins' *Historical and Present Status of the Grey Wolf in the Cascade Mountains of Washington* (1989); Almack and Fitkin's *Grizzly Bear and Gray Wolf Investigations in Washington State 1994 -1995* (1998); and Hansen's *Wolves of Northern Idaho and Northeastern Washington* (1986). The *Final Draft Feasibility Study on the Reintroduction of Gray Wolves to the Olympic Peninsula* also provides extensive historical information pertaining to wolves of pacific northwestern Washington. I have attempted to search beyond these traditional resources by examining other peer-reviewed literature produced by both managing and non-managing agency personnel; engaging in personal communication with both state and federal agency wolf recovery personnel; reviewing historical and archaeological literature and scientific/conservation journals; and drawing upon the wealth of government wildlife agency information available on the World Wide Web.

I suspect that when viewed as a whole, the current status and distribution of proximate wolf populations to viable Washington wolf habitat may reveal a

much more elevated and imminent possibility for natural recovery than is acknowledged by the current lead managing agency (the U.S. Fish and Wildlife Service).

## Background: Wolves in Washington a brief history

For what little evidence exists on Washington's long-standing history with wolves, there is significant evidence to suggest that they were once both common and well-distributed throughout the state, and that they had an important role in the development of Washington's natural and cultural heritage.

Laufer and Jenkins (1989) describe the coexistence of wolves and Cascades-area Native Peoples, such as the Skagit, Skykomish, and Tattinapam prior to white settlement, as being relatively harmonious, yet varied. The Quinault, Quileute, and Makah tribes of the Olympic Peninsula assigned wolves a prominent role in their cultural and spiritual lives as evidenced in numerous myths, creation stories, and ceremonies (Retti, et. al., 1999). The handle of a weaver's sword carved with two wolf heads and a wolf petroglyph were among well-preserved artifacts, dating back over 500 years, found at Ozette -- one of the five ancient Makah villages on the westernmost portion of the Peninsula (Kirk and Dougherty, 1978). The Sanpoil and Nespelem believed the wolf to be among the most powerful and dangerous of guardian spirits, capable of bestowing shamanistic talents (Ray, 1932).

The most extensive post-colonization records of gray wolves during the early nineteenth and twentieth centuries were noted by pioneers, trappers, government hunters, and fur trading companies. In The Wolves of North America, Young (quoting Suckley and Gibbs, 1860) wrote "They are exceedingly numerous in Oregon and Washington Territories, from the Cascades to the Rocky Mountain divide, and probably extend much further north, east, and west." This is supported by Hansen (1986) who noted that "the early settlers [in Washington] found wolves to be common and serious pests." Records from the Hudson's Bay Archives document the trade of 14,810 wolf pelts (Fig. 1.) among four posts in Washington between 1827 and

1859 (Laufer and Jenkins). In addition, bounties were paid throughout the state, yet it is not known exactly how many of those were paid on fraudulent animals imported from outside the region for profit (Retti et. al., 1999).



Fig. 1. The location of Hudson's Bay Company trading posts in Washington and the numbers of wolf pelts reported in trade between 1827 and 1859 (Source data: Laufer and Jenkins, 1989).

It has generally been accepted that wolves were mostly eradicated from Washington by the 1930's. While employed on the Peninsula from 1916 -1917, Olaus Murie noted that wolves may have already been nearly extinct on the Peninsula by that time (Retti, et. al.). Elsewhere, however, numerous reports of wolf presence -- given varying degrees of probability -- continued to persist through the 1950's. These reports include credit given to State trapper Merle Williams, for taking the "last wolf killed in Washington" in a coyote trap set in the Colville

National Forest (Hansen, 1986; Washington State Dept. of Game, 1975).

During 1975 -1976 two Douglas County men, Pat Brown and Howard Assmussen, were tried in

Spokane federal court for shooting a wolf for attacking livestock and transporting the carcass to a Canadian taxidermist. In spite of Richard Nowak's expert testimony that the skull of the animal killed was "definitely that of a wolf" the men were not charged with killing a wolf due in part to defense testimony by University of British Columbia Professor Taggart Cowan. "There are no longer any timber wolves left in the United States. The only wolf left is the red wolf of the Southwest and some animals in the East that are muddled up with dogs" Cowan stated (*The*



"Wolf-slaying trial" headline from the Spokesman-Review, January, 1976

Spokesman, 1976). Rather, the two men were each fined \$500 on a charge of unlawful transportation of wildlife.

## Recent background and current evidence

The North Cascades Ecosystem (NCE) is among Washington's most promising wolf habitat (Gaines, pers. com.) and is a potential connection to an existing B.C. population. The area encompasses portions of the Okanogan, Wenatchee, and Mount-Baker Snoqualmie National Forests (shown in Fig. 3). In 1990 gray wolves were documented with pups within the U.S. portion of the NCE (Gaines et. al., 2000); Gaines, pers. com.) signaling a great deal of attention from the media, public, and the U.S. Fish and Wildlife Service (FWS). As a result, \$135,000 in Section 6 federal funding was appropriated for both FY 1991 and 1992 primarily for the purpose of conducting surveys, maintaining a wolf sighting hotline, gathering information necessary to develop a recovery plan, and ultimately initiating recovery activities (USGS, [www.npwrc.usgs.gov](http://www.npwrc.usgs.gov)). At the same time, the Washington Gray Wolf Steering Committee was established, drawing upon representatives from scientific, conservation, livestock, and tribal communities. Within the Steering Committee, two subcommittees were created: An Education and Information Subcommittee and a Research and Management Subcommittee, the latter of which was given the task of developing survey protocol and wolf management guidelines.

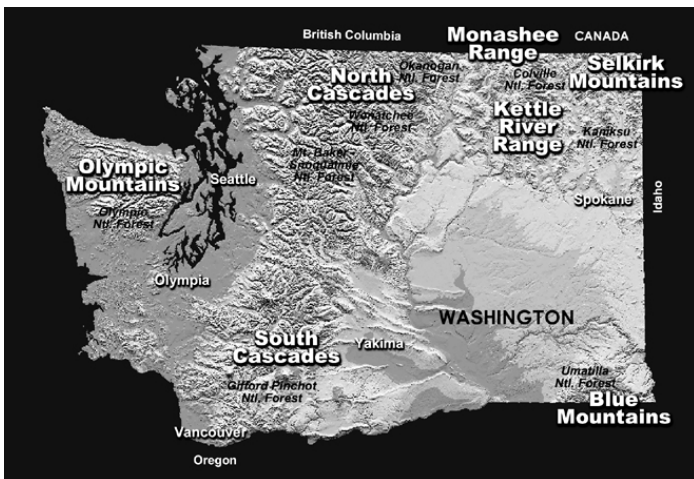


Figure 2. A map of Washington's major landscape features and National Forest areas (original shade relief map provided by USGS).

From April 1991 -January 1995, Almack and Fitkin collected 913 reports of gray wolves in the state, focusing in the North Cascades area.

"Using 16 years as the maximum known recorded life span of a gray wolf, we considered all observations occurring from April 1975 through September 1995 as current. Observations that occurred prior to April 1975 were considered historical." (1998)

Out of the 913 reports documented, 78 (20 recent) were documented as confirmed; 185 as high reliability; 597 as low reliability; 45 as "not a wolf"; and 176 as "historical" with eight "still pending" (Almack and Fitkin, 1998).

In 1994, the radio-collared remains of Ninemile wolf 4041, from northwestern Montana were found on private commercial forest property near Callispel Lake in northeastern Washington, not far from a locked gated road. The remains provided investigators with little evidence as to the cause of death, yet there appeared to be no indication of foul play (Parker, pers. com.). It also appeared as though the wolf might have wandered into the area, curled up beneath a tree, and died of natural causes (Zender, pers. com.). Other wolves located not far from the Washington State/Idaho border include two additional northwestern Montana wolves: one found poached east of Moscow (Parker, pers. com.) and another accidentally killed by an Animal Damage Control (ADC) coyote-getter in 1995 north of Priest River.

As previously noted, in 1995, Washington's wolf and grizzly funding was redirected to Idaho wolf recovery and the Washington Wolf Steering Committee was discontinued. At that point, the Steering Committee's Research and Management Subcommittee had drafted a contingency plan for controlling problem wolves in Washington State. The plan was written over an extensive two-year research period, but it did not receive approval from the FWS Wolf Recovery Coordinator on the grounds that "management guidelines were not necessary in Washington" (Almack and Fitkin, 1998). However, the Service did implement the 1990 Amendment No. 1 for Including Idaho and Northeast Washington to the *Interim Wolf Control Plan for the Northern Rocky Mountains of Montana and Wyoming* (Bangs, pers. com.) as a means for addressing damage control in northeastern Washington, but still has "no interest in any type of active wolf recovery in Washington State" (Bangs, pers. com.).

The FWS continues to maintain its Washington Wolf/Bear Hotline which received six calls related to

wolf sightings in 2000 -2001 (three confirmed hybrid), and four calls in 2001 -2002 (one confirmed hybrid) as of April (Saunders, pers. com., 2002). As this information, and the below images indicate, continued evidence of large canids occurring in Washington (not confirmed as wolf) is not entirely absent.



Two photos of a single large canid in the North Cascades, December, 1999. Courtesy of the USFS National Forest Service.

Given the lack of current research and data having to do specifically with wolves in Washington, there has been no way of knowing whether or not wolves currently reside in the state, although biologists (Gaines, pers. com. and The Newport Miner, 2002) speculate that wolves may be living undetected in some highly remote areas.

## Current population status, distribution, and trends of known wolf populations in areas surrounding Washington state

### British Columbia

As noted earlier, there is a general lack of data available on gray wolf population status and distribution in British Columbia. This is primarily due to the species' Big Game (1966) and Fur Bearer (1976) status. Under such classification, the animals may be hunted with a province-wide hunting license, as opposed to a species license, and only minimal compulsory reporting is required by trappers in the Vancouver Island/Coastal and Kootenay Regions. As a result, wildlife managers have no consistent methods for measuring the number of wolves being harvested each year by any means other than a general hunter questionnaire of uncertain reliability (Austin, pers. com.).

Figure 3. illustrates relative distribution of wolves in the southern portion of British Columbia in 1978 (inset) as compared with the relative distribution in 1983 (Tompa, 1983). In 1979, the provincial population was estimated as 6,300 (Tompa) while today's crude provincial population estimate is at 8,000 (Austin, pers. com.). While wolves are considered to be rare in southern British Columbia (ministry of Environment, Lands, and Parks, 1998) increasing numbers are being reported in the B.C. portion of the Cascade region (Austin, pers. com.).

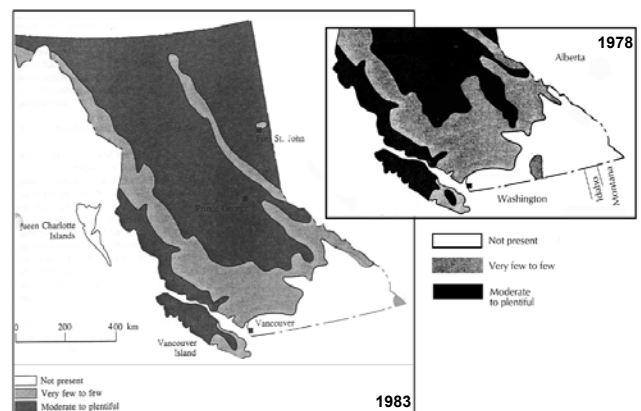


Figure 3. Distribution trend of the gray wolf in British Columbia, 1978 -1983. (Original map copyright Frank S. Tompa, 1983; Source data

## Idaho and northwestern Montana

According to the Rocky Mountain Wolf Recovery 2001 Annual Report, there were approximately 261 wolves within the Central Idaho Recovery Area at the end of 2001. Of that total, 51 wolves (comprising 19 percent of the total estimated population) were being monitored in 17 packs and three individuals were being monitored as lone or dispersing wolves.

In the Northwestern Montana (NWMT) Wolf Recovery Area, recovery personnel documented a total of about 84 wolves. Twenty-six wolves from 13 packs or pairs were being monitored, representing 31 percent of the total population.

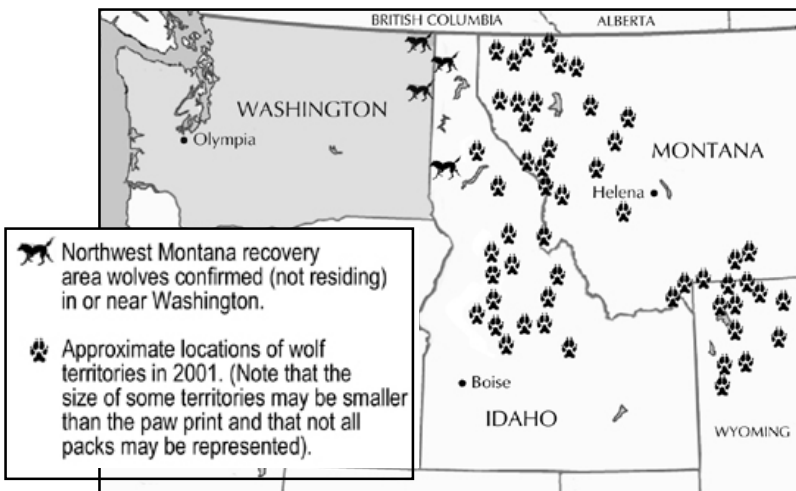


Figure 4. Approximate locations of recovering wolf pack territories within the Northern Rockies region and known wolves confirmed (not residing) in or near Washington. Original source data: NRMWR 2001 Annual Report.

Figure 4. illustrates the approximate locations of wolf territories throughout most of the Northern Rocky Mountain Wolf Recovery Area. Since reintroduction, the numbers of wolves in the Northern Rockies tri-state recovery areas (in WY, ID, and parts of Montana) have grown steadily and the three populations appear to "increasingly resemble and function as a single, large population" (FWS, 2002). In 1995 there were six packs naturally occurring in northwestern Montana; today that number has nearly tripled. During 1995 and 1996, 35 wolves taken from British Columbia were reintroduced into Central Idaho; today the number of wolves in Idaho has grown to more than 260. (At the end of 2001, there were 131 wolves in 10 packs in Wyoming.)

## Modern wolf conservation issues and potential barrier influencing wolf migration and recovery in Washington.

### Proposed reclassification

Wolves in Idaho and Wyoming are currently designated as "nonessential experimental" according to the 1994 Final Rule establishing a *Nonessential Experimental Population of Gray Wolves in Yellowstone National Park in Wyoming, Idaho, Montana, Central Idaho, and Southwestern Montana*. The designation, which is similar to the threatened status of wolves in Minnesota, allows for greater management flexibility in those areas where conflict might arise between reintroduced wolves and livestock. Figure 5. illustrates the approximate borders of both the Idaho and Yellowstone experimental areas designated in the Final Rule. Wolves began naturally recolonizing northwestern Montana with fully endangered status from neighboring Canada in the early 1980's and are managed according to a separate management plan -- the same management plan now being used for northeastern Washington.



Figure 5.

In July, 2000, the U.S. Fish and Wildlife Service (FWS) published its *Proposal to Reclassify and Remove the Gray Wolf From the List of Endangered and Threatened Wildlife in Portions of the Conterminous United States; Proposal to Establish Three Special Regulations for Threatened Gray Wolves*. Since publication, the response from scientific and conservation communities and the general public (nearly 20,000 comments in all) has been

overwhelmingly negative in regard to the Proposal -- particularly toward its presentation of four Distinct Population Segments (DPS).

In part, and as a matter affecting wolves in Washington, the FWS proposed that the Western Gray Wolf DPS consist of gray wolves in Washington, Oregon, Idaho, Montana, Wyoming, Utah, Colorado, and portions of Arizona and New Mexico. The initial phase of the reclassification process would reclassify wolves in Washington, Oregon, northern Idaho, northwestern Montana from endangered to threatened, while wolves in the experimental area would retain their experimental status until recovery goals have been met. Since it is likely that biological recovery goals will be met by 2003, the delisting process could begin shortly after, if federally-approved state management plans are in place for Idaho, Montana, and Wyoming. According to the Service's proposal, wolves throughout the entire Western DPS would then be completely delisted based on the attainment of goals written specifically for those three states.

Once devoid of federal protection, the gray wolf in Washington would remain listed as a state Endangered Species under Washington Administrative Code (WAC) 232-12-014. Although state law required the state's lead managing agency (WDFW) to write a recovery plan for endangered species under WAC 232-12-297, such a plan has not yet been written for the gray wolf partly because -- as in many states -- of the federal endangered listing (Allen, pers. com.). In the meantime, the management plan being used in northeastern Washington is a damage control plan that is in place primarily to address problems which might arise in the event of negative wolf/livestock interaction. The plan was not developed to address Washington's unique location among three potential source populations (MT, ID, B.C., Canada) -- each with a distinct legal classification status -- nor does it provide a geographical definition of the area it comprises. If a wolf in northeastern Washington were involved in a livestock depredation, it would likely be killed by the FWS, regardless of its origin or status, unless the state requested alternative action (Bangs, pers. com.). However, while lethal or relaxed management options may be appropriate in areas where wolves are well on their way to recovery, in areas such as Washington the death of a single individual can seriously impede recovery (see Mech, *Gray Wolves: Factors Impeding Wolf Recovery*).

## Potential land development and landscape barriers

It has been said that "wolf habitat is primarily defined by rapidly moving metal objects: cars and bullets" (Singleton, pers. com., et. al.). Potential barriers for wolf and other large carnivore migration from British Columbia may include development along the Fraser River (Austin, pers. com.) and in the B.C. portion of the Okanagan (Singleton, pers. com.).



*Development along the Fraser River (BC), facing Washington. Photo by Bluenose Camera.*

By increasing human access, road densities have been documented to negatively affect wolf populations (Carroll, et. al. citing Fuller, 1989, et. al.). Additionally, while much of B.C.'s Fraser Valley remains largely undeveloped, the Fraser River is well known for its numerous rapids and deep canyons, creating some natural barriers, in places, for dispersal into southern B.C. and Washington.

In response to the FWS proposal to reclassify and delist gray wolves, a number of conservation groups noted that "physical, ecological, anthropogenic, and sociopolitical barriers will effectively block wolf dispersal" from Idaho into the southern half of eastern Washington. Agricultural activity alone in those counties bordering Idaho (see Figure 6.) is certainly significant enough to set the stage for those very issues.

While the above examples present only a portion of existing and potential migration barriers, they suffice for the purpose of illustrating the need for further investigation and monitoring of how and where wolves migrate into Washington State and where they currently exist. This is not to say that wolves have not or can not survive in proximity to human activity, or traverse what may appear to be nearly impassable man-made and natural barriers... There is in fact a great deal of evidence to the contrary.

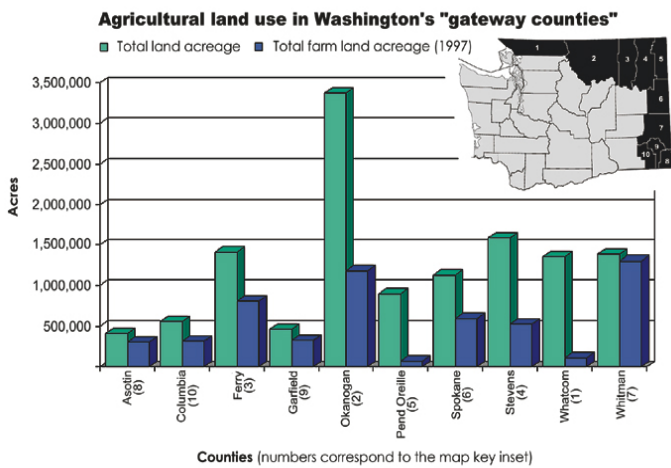


Figure 6. Source information provided by the National Agricultural Statistics Service, USDA, and Washington State Department of Agriculture.

## Assessing the needs of wolves in Washington

In their manuscript, *Using Weighted Distance and Least-cost Corridor Analysis to Evaluate Region-scale Large Carnivore Habitat Connectivity in Washington*, Singleton and Gaines (USFS) identify six concentrations of potential large carnivore habitat throughout the southern half of British Columbia and Washington. The analysis, projected for publication later this year, should provide a tool for determining what areas need to be looked at in terms of networks of habitat suitability and their possible connections as well as factors which may impede or contribute to movement of large wide-ranging carnivores.

Washington state is changing rapidly, with an estimated 70,000 acres of private undeveloped land and wildlife habitat being converted annually to urban, industrial, and other use (WDFW, 2000). Additionally, Washington's population is expected to increase by about 29 more Tacoma-sized cities (pop. 193,556, Census, 2000) in the next 50 years (BLM, 2000). The future for wolves in Washington and in other states beyond currently defined core recovery areas is uncertain. If wolves are going to survive in Washington, to the benefit of our natural systems, a commitment must be made before recovery is no longer considered feasible or necessary due to loss of suitable wolf habitat and habitat connections.

Continued research, such as that of Singleton and Gaines, should address the affects of development, habitat fragmentation, and both game and non-game wildlife management practices on wolves and other wide-ranging carnivores.

Some wildlife managers believe wolves are already in the state, while others believe it will take at least ten years for breeding pairs to establish territories within Washington's boundaries. Science, however, is not based upon assumptions (whether there are or aren't wolves in Washington -- or that there will or won't be in the near future). The term "natural recovery" does not automatically imply that wolves will be able to reestablish themselves in a given area unaided by a recovery plan.

In the contiguous United States, wolf populations have been able to biologically recover only in those areas where adequate legal protections are in place and outreach and cooperation among diverse interest groups are both facilitated and required by a recovery plan. Federal plans have nearly resulted in biologically successful wolf recovery in Idaho, Montana, and Wyoming, and a number of successes have been gained toward both Mexican gray (federal/state) and red wolf recovery. In Michigan and Wisconsin each state's Department of Natural



More prime wolf habitat in Washington's Okanogan National Forest. Photo by Julie Palmquist

Resources intensely monitored wolves as they reestablished themselves (at first and for some time, observations were individual and sporadic) and developed recovery plans accordingly. Such efforts on behalf of the states resulted in the highly successful reestablishment of wolves in those areas.

It would appear, in the light of the undeniable success of Northern Rocky Mountain Wolf Recovery, Washington has become an "area outside of the recovery area" rather than a unique geographical setting for wolf recovery. Originally slated for release in June, the Service's Final Rule on the reclassification and delisting proposal has been delayed. If the rewrite closely resembles the current proposal, ensuing litigation is certain to delay the delisting process for an indefinite period of time.

Evidence indicates that the current absence of documentation on wolves in Washington may result from an overall lack of surveying monitoring, and information sharing (and perhaps the wolf's own elusiveness) as opposed to a lack of real presence or dispersal. If such activities continue to be postponed until (if) they become more feasible on logistical or even political levels, where would the science be in this? Certainly those areas of viable habitat with prey throughout the North Cascades Ecosystem, northeastern Washington, and elsewhere in Washington constitute a significant portion of the wolf's former range in the Pacific Northwest. Whether the commitment is made by the federal government or Washington State, the recovery-related activities begun in the early 1990's must be reinitiated, as abandoning this responsibility under endangered species legislation would be scientifically, legally, and ethically wrong.

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## Bibliography

Allen, H. (WDFW) 2002. Personal communication.

Almack, J.A., S.H. Fitkin. 1998. Grizzly bear and gray wolf investigations in Washington State 1994 -1995. Final Progress Report. Washington Department of Fish and Wildlife, Wildlife Management Program. Resource Division.

Austin, M. (B.C. MELP) 2002. Personal communication.

Bangs, E. (FWS) 2002. Personal communication.

Gaines, W.L., P.H. Singleton, A.L. Gold. 2000. Conservation of rare carnivores in the North Cascades Ecosystem, Western North America. *Natural Areas Journal* 20:366-375.

Carroll, C., P. Pacquet, R.F. Noss. Modeling Carnivore Habitat in the Rocky Mountain Region: A Literature Review and Suggested Strategy. 1999. World Wildlife Fund, Canada. 15-22.

Darimont, C.T., P.C. Paquet. 2000. The Gray Wolves (*Canis lupus*) of British Columbia's Coastal Rainforests: Findings from Year 2000 Pilot Study and Conservation Assessment. Prepared for the Raincoast Conservation Society. Victoria, BC. 62 pp.

Department of the Interior, Fish and Wildlife Service. 1999. Availability of the Reassessment of the Interim Wolf Control Plan for the Northern Rocky Mountains. *Federal Register* Vol.64, No. 214: 60453-60454.

Department of the Interior, Fish and Wildlife Service. 2000. Endangered and Threatened Wildlife and Plants; Proposal to Reclassify and Remove the Gray Wolf From the List of Endangered and Threatened Wildlife in Portions of the Conterminous United States; Proposal to Establish Three Special Regulations for Threatened Gray Wolves; Proposed Rule. *Federal Register* Vol.65, No. 135: 43450-43496.

Department of the Interior, Fish and Wildlife Service. 1994. Establishment of a Nonessential Experimental Population of Gray Wolves in Yellowstone National Park in Wyoming, Idaho, Montana, Central Idaho and Southwestern Montana; Final Rules. *Federal Register* Vol.59, No. 224: 60252-60281.

Fitkin, S. (WDFW) 2002. Personal communication.

Gaines, W.L., G.K. Neale, R.H. Naney. Response of coyotes and gray wolves to simulated howling in North-central Washington. 1995. *Northwest Science* Vol. 69, No. 3:217-222.

Gaines, W.L. (NFS) 2002. Personal communication.

Government of British Columbia, Ministry of Environment, Lands, and Parks. 2001 -2002 Hunting and Trapping Synopsis. [<http://wlapwww.gov.bc.ca/wld/hunting0102/index.htm>].

Hansen, H. J. 1986. Wolves of Northern Idaho and Northeastern Washington. Montana Coop. Wildlife Research Unit. U.S. Fish and Wildlife Service.



Holden, T. (WDFW) 2002. Personal communication.

Holt, B. (FWS) 2002. Personal communication.

Kirk, R., R.D. Dougherty. 1978. Exploring Washington Archaeology. University of Washington Press. 81-97.

Laufer, J.R. and P.T. Jenkins. 1989. Historical and present status of the gray wolf in the Cascades Mountains of Washington. *Northwest Environmental Journal* 5:313-327.

Madonna, K.J. 1995. The wolf in North America: Defining international ecosystems vs. defining international boundaries. *Journal of Land Use & Environmental Law* Vol. 102. [[www.law.fsu.edu/journals/landuse/Vol102/madonna.html](http://www.law.fsu.edu/journals/landuse/Vol102/madonna.html)]

Ministry of Environment, Lands and Parks Resource Inventory Branch for the Terrestrial Ecosystems Task Force Resources Inventory Committee. 1998. *Inventory Methods for Wolf and Cougar -- Standards for Components of British Columbia's Biodiversity*; no. 34. 3-4. [<http://www.for.gov.bc.ca/ric>]

Murie, M.E. 1975. Unpublished transcription of Olaus Murie's field notes 1916-1917. Courtesy Olympic National Park.

Newport Miner. "Area wolf not looking for Little Red Riding Hood." March 13, 2002.

Niemeyer, C. (FWS) 2002. Personal communication.

North Cascades National Park Interpretive Staff. 1998. *Wolves in the North Cascades: Questions and Answers*. [<http://www.nps.gov/noca/wolf.htm>]

Parker, R. (FWS) 2002. Personal communication.

Province of British Columbia Ministry of Environment, Lands and Parks -- Wildlife Program. 1996. *Wildlife Harvest Strategy -- Improving British Columbia's Wildlife Harvest Regulations*. 45-46.

Ratti, J.T., M. Weinstein, J.M. Scott, P. Avsharian, A. Gillesberg, C. Miller, M.M. Szepanski, L.K.

Bomar. 1999. *Final Draft: Feasibility Study on the Reintroduction of Gray Wolves to the Olympic Peninsula*. Dept. of Fish and Wildlife Resources and the Idaho Coop. Research Unit, University of Idaho.

Ray, Verne. 1932. *The Sanpoil and Nespelem: Salishan Peoples of Northeastern Washington*. UW Publications in Anthropology. Vol. 5, Dec. 1932.

Saunders, L. (FWS) 2002. Personal communication.

Singleton, P.H., J.F. Lehmkuhl, W.L. Gaines. 2001. Using weighted distance and least-cost corridor analysis to evaluate regional-scale large carnivore habitat connectivity in Washington. *International Conference on Ecology & Transportation (ICOET) 2001 Proceedings*. 583-593. [[www.itre.ncsu.edu/cte/icoet](http://www.itre.ncsu.edu/cte/icoet)]

Singleton, P. (NFS) 2002. Personal communication.

Spokesman-Review. "Wolf-slaying trial draws big crowd." January 28, 1976.

Spokesman-Review. "Skulls, genes star at 'wolf' trial." January 29, 1976.

Spokesman-Review. "On one count -- Two ranchers found guilty." January 30, 1976.

Tompa, F.S. 1983. *Problem wolf management in British Columbia: conflict and program evaluation*. *Canadian Wildlife Service Report Series 45*: 112-119.

Tompa, F.S. 1983. *Status and management of wolves in British Columbia*. *Canadian Wildlife Service Report Series 45*: 2024.

U.S.D.A. Forest Service, Pacific Northwest Region. 2000. *Monitoring Report for the Land and Resource Management Plan -- Wenatchee National Forest Fiscal Year 1999*. 38-40.

U.S. Department of the Interior. *Endangered Species Act*. 50 CFR, Part 17, Subpart H -- *Experimental Populations, Section 17.84 -- Special Rules (i) Gray wolf (Canis lupus)*.

U.S. Fish and Wildlife Service. 1990. *Amendment No. 1 for Including Idaho and Northeast Washington to the Interim Wolf Control Plan for the*

Northern Rocky Mountains of Montana and Wyoming.

U.S. Fish and Wildlife Service, the Nez Perce Tribe, the National Park Service, and USDA Wildlife Services (T. Meier, editor). 2002. Rocky Mountain Annual Report. 35 pp.

[<http://mountain-prairie.fws.gov/wolf/annualrpt01/2001report.htm>]

USGS Northern Prairie Wildlife Research Center. Status of Listed Species and Recovery Plan Development. Gray Wolf *Canis Lupus* -- Endangered. Washington.

[<http://www.npwrc.usgs.gov/resource/distr/others/reprog/states/species/caniluwa.htm>]

Washington State Department of Game. 1975. 1974-1975 Big Game Status Report -- Wolf Section. 236-248.

Wenatchee World. "Wolf slain; now farmer faces charge." January 5, 1975.

Wenatchee World. "Two plead innocent to shooting wolf." July 5, 1975.

Wenatchee World. "Timber wolf slaying trial opening Tuesday." January 23, 1976.

Wenatchee World. "Defense opens after 11 testify in wolf killing." January 28, 1976.

Wenatchee World. "Wolf killer testifies 'I just stuck the gun out and pulled the trigger'." January 29, 1976.

Wenatchee World. "Innocent, guilty in wolf killing." January 30, 1976.

Young, S.P., E.A. Goldman. *The Wolves of North America*.

Zender, S. (WDFW) 2002. Personal communication.

Zimmer, D. (FWS) 2002. Personal communication.