

## Appendix B: Dogs and Wildlife

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#### 1. WASHINGTON STATE FISH AND WILDLIFE DEPARTMENT

##### Public Conduct Rules for WDFW Lands

**Pets** -- hunters can use hunting dogs under their control, but cannot let them or other pets roam unattended; from April through July, all dogs and other pets must be leashed on WDFW lands to protect nesting wildlife.

**WDFW Swanson Lakes Wildlife Area** (21,000 acres) Reardan Audubon Lake Unit -- Keep dogs and other pets on leash or leave in vehicle or at home.

**WDFW Scatter Creek Wildlife Area** The 492-acre Scatter Creek unit is located 20 miles south of Olympia. Dogs must be on leash from April 1 to July 31.

#### 2. NATIONAL WILDLIFE REFUGES

##### Nisqually Wildlife Refuge

3) Are dogs allowed on the Refuge?

We do not allow dogs anywhere on the Refuge (this includes the whole Refuge - entrance road, parking lot, trails, etc.). National wildlife refuges are the only set of federal lands set aside expressly for fish and wildlife above all other purposes. The prohibition of pets including dogs is to reduce disturbance to wildlife and habitat. There are studies that have been done that show that wildlife in the vicinity of trails, even where dogs are leashed, are negatively affected, causing lower wildlife abundance along the trail. It may be because wildlife instinctively look at dogs as predators, whether they are leashed or not.

##### Humboldt Bay National Wildlife Refuge Complex

Can I bring my dog with me to the wildlife refuge?

To avoid conflicts with wildlife and visitors, pets are not permitted on the refuge.

Why are hunting and fishing allowed on this National Wildlife Refuge, but not walking my dog, jogging, or biking?

The National Wildlife Refuge System was established in 1903 to “preserve a national network of lands and waters for the conservation and management of fish, wildlife, and plant resources of the United States

for the benefit of present and future generations.” This includes the following six priority public uses: wildlife observation, photography, interpretation, environmental education, hunting, and fishing. These pursuits are all wildlife dependent, while other activities such as jogging, biking, and dog walking can disturb wildlife and other visitors and can be done at many other places.

### **Eastern Massachusetts National Wildlife Refuge Complex**

DOG POLICY : Effective July 1, 2005, consistent with the Eastern Massachusetts National Wildlife Refuge Complex Comprehensive Conservation Plans, dogs will no longer be permitted on refuge lands at Great Meadows and Oxbow National Wildlife Refuges. Dogs have never been permitted at the Assabet River National Wildlife Refuge (NWR) and that policy will remain in effect.

Why dogs are no longer allowed?

The Fish and Wildlife Service evaluated whether continued dog walking on National Wildlife Refuges was compatible with public safety and wildlife resource conservation in our recently completed Comprehensive Conservation Plans. We found that continuing to allow dog walking on National Wildlife Refuge lands was not advisable because:

- Such use has, and would continue to compromise public safety;
- Such use is likely to continue to result in conflicts with other refuge visitors;
- Such use poses a threat of harassment, disturbance, and harm to wildlife resources, which the Service is mandated by federal law to manage for – first and foremost.

National Wildlife Refuges are established and managed, by law, to ensure that wildlife conservation and protection comes first. Today, over 220 individual species of birds, numerous mammals, and amphibian & reptile species depend on the Eastern Massachusetts refuges for survival. (No formal surveys or inventories have been conducted on the refuge for mammals, amphibians, or reptile species).

National Wildlife Refuges are also places for people. We encourage visitors to come and enjoy the natural environment through nature walks, wildlife observation, photography, environmental education, fishing, and hunting. These are the priority public uses for which we will continue to manage. There is special focus on these activities because they help foster an appreciation and understanding of wildlife and the outdoors. The number of visitors to our refuges is rapidly expanding. The Conservation Plans find that allowing dogs on the refuge conflict with these priority public uses.

Has the public had an opportunity to Comment on this Action?

Yes. The public was invited on several occasions to provide comment regarding this and all other public uses, including how we manage wildlife refuges during development of the Comprehensive conservation plans for each refuge. These Conservation Plans were finalized in January of 2005.

Public workshops were developed, public hearings held, formal public comment periods were opened, and a draft of Comprehensive Conservation Plans were distributed to solicit public input on management of the refuges. The Service distributed responses to the many public comments we received. In accordance with results from the final review, the Comprehensive Conservation Plans call for elimination

of dog walking on area National Wildlife Refuges by 2005. For more information, you may request a copy of the Comprehensive Conservation Plans from our office, or obtain them on the web at <http://www.fws.gov/northeast/easternmanwrcomplex>.

Why aren't dogs compatible with the mission of putting wildlife first on the Eastern Massachusetts Refuges?

- Dogs can intimidate other refuge visitors, and deprive them of the peace that refuges provide. Visitation to the National Wildlife Refuges is expanding, potentially aggravating user conflicts;
- Dog feces left on trails are an unhealthy and unsightly nuisance to refuge visitors and impact refuge vegetation. The presence of dog feces on public trails is one of the most common complaints we receive.
- Dogs, whether leashed or unleashed, conflict with the refuge efforts to provide recreational opportunities for a myriad of visitors and many school groups which visit the refuges for environmental education,
- Dog walking has resulted in user conflicts with persons engaged in priority public uses (wildlife observation, photography, etc.);
- Instinctively, dogs want to chase wildlife. Unleashed dogs commonly chase nesting wildlife, which can result in destruction of ground nests and young. Dogs may step on nests or young chicks, as they “freeze” in response to danger;
- Wildlife can't distinguish between dogs on leashes or unleashed dogs. Many will leave their nests or young, leaving them vulnerable to be killed by predators, or a long separation can result in death;
- Even a tame dog can cause alarm or fear of wildlife;
- Resources needed to manage dog use detract from our ability to focus efforts on providing high quality wildlife dependent priority use programs;

Did you consider allowing dogs on leash?

Yes. Despite the many dog owners who responsibly keep pets leashed, there are many who do not. Our staff and volunteers estimate that as many as 25% to 40% of the persons walking their dogs do not keep them on leash.

Wildlife does not differentiate between dogs on or off a leash. Dog walking is not a priority public use on National Wildlife Refuges, and interferes with or detracts from the mandated purpose of the refuge in putting wildlife conservation first.

### **3. NATIONAL PARKS**

In general, pets are only permitted in National Parks along roadways, in developed areas and in campgrounds, and must be restrained on a leash no longer than 6 feet in length, caged or crated at all times. Pets are not permitted inside buildings, on most trails, on beaches, or in the backcountry.

## **Dog Regulations for the Top 50 National Parks**

1. Blue Ridge Parkway (21,646,864 visitors) Dogs are allowed on most trails and in all 9 campgrounds.
2. Golden Gate National Recreation Area (13,806,766) Dogs are welcome on most of the nearly two dozen parcels of Federal land. No dogs are permitted in Tennessee Valley, China Beach, Muir Woods, Alcatraz and the Phleger Estate.
3. Great Smoky Mountains National Park (9,215,806) Dogs are prohibited from all park trails except the 2-mile trail from Park Headquarters to Gatlinburg and the 2-mile trail between Cherokee and the Oconaluftee Visitor Center. Dogs are allowed in the picnic areas and campgrounds.
4. Gateway National Recreation Area (8,955,609) At Sandy Hook dogs are allowed on the beach from Labor Day to March 15 and throughout other areas of the park at any time; no dogs are allowed on Jacob Riis Park from Memorial Day weekend through Labor Day weekend and no dogs are allowed at the Breezy Point Tip from March 15 through August.
5. Lake Mead National Recreation Area (7,627,906) Dogs are allowed on trails but not on the beaches.
6. Delaware Water Gap National Recreation Area (5,248,958) Dogs are welcome on trails and most locations within the recreation area. No dogs are allowed at Milford Beach, Hidden Lake Beach, Smithfield Beach or on the mowed areas at Kittatinny Point Visitor Center, Bushkill Visitor Center, Watergate Recreation Site or Hialeah Picnic Area.
7. Gulf Islands National Seashore (4,572,364) Dogs are not permitted on the beaches or in the picnic pavilions.
8. Cape Cod National Seashore (4,431,059) Dogs are prohibited from nature trails, shorebird nesting areas and all lifeguard protected beaches. In addition to non-protected beaches, canine hikers can use seashore fire roads and the West and Sunset horse trails in the Province Lands. Dogs are welcome at the seashore fresh water ponds from October 16 through May 14.
9. Grand Canyon National Park (3,936,823) Dogs are allowed on trails throughout developed areas of the South Rim but never below the rim. On the North Rim, dogs are allowed only on the bridle trails that connects the lodge with the North Kaibab Trail.
10. **Olympic National Park** (3,654,022) Dogs are not permitted on park trails or meadows. Dogs are not allowed on any beaches except Rialto Beach north to Ellen Creek and on the Kalaloch beach strip between the Hoh and Quinault Indian reservation. Dogs are allowed in the campgrounds.
11. Cape Hatteras National Seashore (3,651,066) Dogs are allowed throughout the park except on designated swimming beaches.
12. Chesapeake & Ohio Canal National Historical Park (3,477,090) Dogs are allowed along the towpath and on most trails. No dogs are permitted on the boardwalk trails on the Olmsted Island Bridges and on the Billy Goat “A” Trail around Bear Island.

13. Colonial National Historical Park (3,320,873) Dogs are allowed to walk the battlefield at Yorktown and play on the beach at Cape Henry. Dogs are also welcome in Colonial Williamsburg.
14. Yosemite National Park (3,305,631) Dogs are not allowed on any park trail or in any picnic area. Dogs are permitted anywhere on the Yosemite Valley floor between the Happy Isles Nature Center or Mirror Lake parking lot and the Pohona bridge. Dogs are not permitted on any slope above the Valley floor. Several campgrounds allow dogs.
15. Cuyahoga Valley National Park (3,191,359) Dogs are allowed on all park lands.
16. Rocky Mountain National Park (3,005,524) Dogs are not allowed on any park trail. Dogs are allowed in parking areas, picnic areas and campgrounds.
17. Yellowstone National Park (2,969,868) Dogs are not allowed on trails or boardwalks. Dogs are permitted within 100 feet of roads, parking areas and campgrounds.
18. Chattahoochee River National Recreation Area (2,712,783) Dogs are permitted across park lands.
19. Grand Teton National Park (2,606,492) Dogs are not allowed on park trails; dogs can walk on roads and road shoulders, parking lots, picnic areas and campgrounds.
20. Acadia National Park (2,550,586) Dogs are allowed everywhere in the park except Sand Beach, Echo Lake Beach, the Isle au Haut campground and the “ladder” trails.
21. Zion National Park (2,510,627) Dogs are allowed on only one trail: the Pa’rus Trail. Dogs are allowed in campgrounds and along roadways.
22. Point Reyes National Seashore (2,254,465) Dogs are not permitted on trails or in campgrounds. Dogs are allowed on the south end of Limantour Beach, Point Reyes Beach North and Point Reyes Beach South.
23. Mount Rushmore National Memorial (2,159,189) Dogs are not allowed anywhere in the park except in the pet exercise area at the end of the upper parking ramp.
24. Glen Canyon National Recreation Area (2,127,265) Dogs are allowed in the park.
25. Assateague Island National Seashore (2,107,032) In Maryland, dogs are allowed on the beach and in campgrounds, but not on the trails. In Virginia, dogs are not allowed in the park - even in a car.
26. Rock Creek Park (2,099,504) Dogs are allowed on trails throughout the park.
27. Mammoth Cave National Park (1,898,817) Dogs are allowed on the above-ground trails in the park.
28. Glacier National Park (1,864,822) Dogs are not allowed on park trails but can stay in drive-in campgrounds and visit picnic areas.
29. Indiana Dunes National Lakeshore (1,834,435) Dogs are allowed on most park trails.
30. Gettysburg National Military Park (1,829,790) Dogs are permitted outside park buildings.

31. Chickasaw National Recreation Area (1,511,522) Dogs are allowed on park trails except on paths leading into the Environmental Study Area (east of the Travertine Nature Center).
32. Hot Springs National Park (1,438,043) Dogs are allowed on the trails and other areas outside buildings in the park.
33. Sequoia & Kings Canyon National Park (1,418,512) Dogs are not allowed on park trails; dogs can visit the picnic areas and campgrounds.
34. Mount Rainier National Park (1,267,044) Dogs are allowed on no trails except a small portion of the Pacific Crest Trail near the park's eastern boundary.
35. Valley Forge National Historical Park (1,190,893) Dogs are allowed on all park trails.
35. Valley Forge National Historical Park(1,190,893) Dogs are allowed on all park trails.
36. Sleeping Bear Dunes National Lakeshore (1,190,748) Dogs are allowed on most park trails but cannot make the Dune Climb. Dogs are not allowed on North or South Manitou Island.
37. Joshua Tree National Park (1,174,142) Dogs are not allowed on the trails but can be in the campgrounds.
38. Vicksburg National Military Park (1,067,130) Dogs are allowed in the park.
39. Lake Meredith National Recreation Area (1,043,380) Dogs are permitted throughout the park.
40. Canaveral National Seashore (1,042,090) Dogs are not allowed on the beach or beyond the parking lots.
41. Amistad National Recreation Area (952,096) Dogs are allowed on trails and in most areas of the park.
42. Everglades National Park (940,482) Dogs are allowed in parking lots and campgrounds but not on trails.
43. Cumberland Gap National Historical Park (928,596) Dogs are allowed on park trails.
44. Badlands National Park (906,868) Dogs are allowed only in developed areas such as campgrounds, parking areas and along roads - not on any trails.
45. Big South Fork National Recreation Area (901,419) Dogs are allowed on most park trails.
46. Bryce National Park (899,408) Dogs are not allowed on park trails; dogs can visit the picnic areas and campgrounds.
47. Curecanti National Recreation Area (892,408) Dogs are allowed on the trails.
48. Chickamauga & Chattanooga National Military Park (845,037) Dogs are allowed in the park.
49. Manassas National Battlefield (790,086) Dogs are allowed throughout the park.

50. Fire Island National Seashore (779,241) Dogs are prohibited from swimming beaches and other posted areas.

49. Manassas National Battlefield (790,086) Dogs are allowed throughout the park.

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#### 4. STUDIES

##### **Effects of dog leash laws and habitat type on avian and small mammal communities in urban parks**

Andrew Forrest, Colleen Cassady St. Clair

###### Abstract

Remnant natural areas within urban settings can act as important refuges for wildlife, substantially increasing local biodiversity. However, habitat suitability for these species is potentially affected by human recreational activities including the presence of free-running dogs. To compare the diversity and abundance of songbird and small mammal communities between areas with bylaws that require, or do not require, dogs to be leashed, point counts and live-trapping surveys were conducted in three habitat types (deciduous, coniferous, and meadow) in the river valley parks of Edmonton, Alberta. Among birds, there was no difference between areas with different leashing bylaws in species diversity for any of the three habitat types. Similarly, there was no difference in bird diversity for a subset of species that were plausibly breeding at these sites. However, higher bird diversity was recorded in deciduous and coniferous sites than in meadow sites, regardless of leash designation, probably as a function of the horticultural practice of mowing meadows. Among both birds and small mammals, there was no difference in the abundance of individuals as a function of leashing bylaws. Our results suggest that off-leash dogs have no effect on the diversity or abundance of birds and small mammals in urban parks, but it is also possible that other factors, such as leash law compliance, reduced or obscured the effects of off-leash dogs in this study.

**Wildlife response to pedestrians and dogs.** Miller, S.G., R.L. Knight, and C.K. Miller. 2001. *Wildlife Society Bulletin* 29:124–132.

###### Abstract

Domestic dogs (*Canis familiaris*) are frequent visitors to protected areas, but little is known about how they affect wildlife communities. We studied the effects of dogs on wildlife communities by comparing the activity levels of wildlife in areas that prohibited dogs with areas that allowed dogs. We measured wildlife activity on trails and up to 200 m away from trails using five methods: (1) pellet plots, (2) track plates, (3) remote triggered cameras, (4) on-trail scat surveys, and (5) mapping prairie dog (*Cynomys ludovicianus*) burrow locations. The presence of dogs along recreational trails correlated with altered patterns of habitat utilization by several species. Mule deer (*Odocoileus hemionus*) activity was significantly lower within 100 m of trails in areas that allowed dogs than in areas that prohibited dogs. Small mammals, including squirrels (*Sciurus* spp.) and rabbits (*Sylvilagus* spp.), also

exhibited reduced levels of activity within 50 m of trails in areas that allowed dogs when compared with areas without. The density of prairie dog burrows was lower within 25 m of trails in areas that allowed dogs. The presence of dogs also affected carnivore activity. Bobcat (*Felis rufus*) detections were lower in areas that allowed dogs, and red fox (*Vulpes vulpes*) detections were higher. These findings have implications for the management of natural areas, particularly those that allow dogs to be off-leash.

**Songbird and medium-sized mammal communities associated with exurban development in Pitkin County, Colorado.** Odell, E. and R.L. Knight. 2001. *Conservation Biology* 15:1143–1150. [CrossRef](#)

Abstract: Residential development is occurring at unprecedented rates in the Rocky Mountain region of the United States, with unknown ecological consequences. We conducted our research in exurban development in Pitkin County, Colorado, between May and June in 1998 and 1999. Unlike suburban development, exurban development occurs beyond incorporated city limits, and the surrounding matrix remains the original ecosystem type. We surveyed songbirds and medium-sized mammals at 30, 180, and 330 m away from 40 homes into undeveloped land to examine the effect of houses along a distance gradient, and in developments of two different housing densities as well as undeveloped sites to examine the effect of housing density. **We placed bird species into one of two groups for the house-distance effect: (1) human-adapted species, birds that occurred in higher densities close to developments and lower densities farther away and (2) human-sensitive species, birds that occurred in highest densities farthest from homes and in lowest densities close to development.** For both groups, densities of individual species were statistically different between the 30- and 180-m sites. Six species were classified as human-adapted, and six were classified as human-sensitive for the house-distance effect. Dogs (*Canis familiaris*) and house cats (*Felis domesticus*) were detected more frequently closer to homes than farther away, and red foxes (*Vulpes vulpes*) and coyotes (*Canis latrans*) were detected more frequently farther away from houses. With respect to the effect of housing density, most avian densities did not differ significantly between high- and low-density development but were statistically different from undeveloped sites. Six species were present in higher densities in developed areas, and eight species were present in higher densities in undeveloped parcels. Similar results were found for mammalian species, with dogs and cats detected more frequently in high-density developments and red foxes and coyotes detected more frequently in undeveloped parcels of land. From an ecological standpoint, it is preferable to cluster houses and leave the undeveloped areas in open space, as opposed to dispersing houses across the entire landscape.

**Wildlife responses to recreation and associated visitor perceptions.** Taylor, A.R. and R L. Knight. 2003. *Ecological Applications* 13:951–963. Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins, Colorado 80523 USA

Outdoor recreation has the potential to disturb wildlife, resulting in energetic costs, impacts to animals' behavior and fitness, and avoidance of otherwise suitable habitat. Mountain biking is emerging as a popular form of outdoor recreation, yet virtually nothing is known about whether wildlife responds differently to mountain biking vs. more traditional forms of recreation, such as hiking. In addition, there is a lack of information on the “area of influence” (within which wildlife may be displaced from otherwise suitable habitat due to human activities) of different forms of recreation. We examined the responses of

bison (*Bison bison*), mule deer (*Odocoileus hemionus*), and pronghorn antelope (*Antilocapra americana*) to hikers and mountain bikers at Antelope Island State Park, Utah, by comparing alert distance, flight distance, and distance moved. Within a species, wildlife did not respond differently to mountain biking vs. hiking, but there was a negative relationship between wildlife body size and response. We determined the area of influence along trails and off-trail transects by examining each species' probability of flushing as perpendicular distance away from a trail increased. All three species exhibited a 70% probability of flushing from on-trail recreationists within 100 m from trails. Mule deer showed a 96% probability of flushing within 100 m of recreationists located off trails; their probability of flushing did not drop to 70% until perpendicular distance reached 390 m. We calculated the area around existing trails on Antelope Island that may be impacted by recreationists on those trails. Based on a 200-m “area of influence,” 8.0 km (7%) of the island was potentially unsuitable for wildlife due to disturbance from recreation.

Few studies have examined how recreationists perceive their effects on wildlife, although this has implications for their behavior on public lands. We surveyed 640 backcountry trail users on Antelope Island to investigate their perceptions of the effects of recreation on wildlife. Approximately 50% of recreationists felt that recreation was not having a negative effect on wildlife. In general, survey respondents perceived that it was acceptable to approach wildlife more closely than our empirical data indicated wildlife would allow. Recreationists also tended to blame other user groups for stress to wildlife rather than holding themselves responsible.

The results of both the biological and human-dimensions aspects of our research have implications for the management of public lands where the continued coexistence of wildlife and recreation is a primary goal. Understanding wildlife responses to recreation and the “area of influence” of human activities may help managers judge whether wildlife populations are experiencing stress due to interactions with humans, and may aid in tailoring recreation plans to minimize long-term effects to wildlife from disturbance. Knowledge of recreationists' perceptions and beliefs regarding their effects on wildlife may also assist public lands managers in encouraging positive visitor behaviors around wildlife.

**Effects of Management of Domestic Dogs and Recreation on Carnivores in Protected Areas in Northern California.** SARAH E. REED, ADINA M. MERENLENDER. (2011) Conservation Biologyno-no Online publication date: 1-Feb-2011.

Abstract:

In developed countries dogs (*Canis lupus familiaris*) are permitted to accompany human visitors to many protected areas (e.g., >96% of protected lands in California, U.S.A.), and protected-area management often focuses on regulating dogs due to concerns about predation, competition, or transmission of disease and conflicts with human visitors. In 2004 and 2005, we investigated whether carnivore species richness and abundance were associated with management of domestic dogs and recreational visitation in protected areas in northern California. We surveyed for mammalian carnivores and human visitors in 21 recreation areas in which dogs were allowed offleash or onleash or were excluded, and we compared our observations in the recreation areas with observations in seven reference sites that were not open to the public. Carnivore abundance and species richness did not differ among the three types of recreation areas, but native carnivore species richness was 1.7 times greater ( $p < 0.01$ ) and the relative abundances of

native coyotes (*Canis latrans*) and bobcats (*Lynx rufus*) were over four times greater ( $p < 0.01$ ) in the reference sites. Abundances of bobcats and all carnivores declined as the number of visitors increased. The policy on domestic dogs did not appear to affect species richness and abundance of mammalian carnivores. But the number of dogs we observed was strongly associated with human visitation ( $R^2 = 0.54$ ), so the key factors associated with recreational effects on carnivores appear to be the presence and number of human visitors to protected areas.

**Birds and Beaches, Dogs and Leashes: Dog Owners' Sense of Obligation to Leash Dogs on Beaches in Victoria, Australia.** Kathryn Williams, Michael Weston, Stacey Henry, Grainne Maguire. (2009) *Human Dimensions of Wildlife* 14:2, 89-101 Online publication date: 1-Mar-2009.

#### Abstract

Domesticated dogs threaten the conservation of beach-nesting birds in Australia through disturbance, and destruction of eggs and chicks. Leashing of dogs can improve conservation outcomes, but few dogs are leashed on beaches. We surveyed dog owners to explore their sense of obligation to leash dogs on beaches. Dog owners were more likely to feel obliged to leash their dog when they believed other people expected dogs to be leashed, and when they believed their dog was a threat to wildlife or people. Dog owners were less likely to feel obliged to leash their dog if they considered unleashed dog recreation to be important. Improved compliance may be achieved through community-based approaches to foster social norms for dog control, tailoring information products to emphasize the risk that all unleashed dogs may pose to beach-nesting birds and raising awareness of designated off-leash exercise dog recreation areas.

Dogs can apparently transmit a number of pathogens to wildlife:

Parvovirus affects other canines, and was the source for wolf pup mortality in Glacier National Park area in the early 1990s.

Muscle cysts (*Sarcocystis* spp.) can affect ungulates like deer and elk.

Leptospirosis is a bacterial disease that affects the kidneys and urinary tract of most species of mammals.

Parasites such as ticks, keds, tapeworms, and fleas are well-known problems in dogs that can be passed to other wildlife.

Many of these pathogens are transmitted through the abundant feces that dogs leave on any trail.

**The Effects of Dogs on Wildlife Communities** Benjamin E. Lentha,<sup>1,2</sup> Richard L. Knighta, Mark E. Brennan<sup>b</sup> <sup>a</sup>Department of Forest, Rangeland & Watershed Stewardship, Colorado State University, Fort Collins, CO 80523-1472 <sup>b</sup>Boulder County Parks and Open Space, 5201 St. Vrain Rd., Longmont, CO 80503

#### Abstract

Domestic dogs (*Canis familiaris*) are frequent visitors to protected areas, but little is known about how they affect wildlife communities. We studied the effects of dogs on wildlife communities by comparing

the activity levels of wildlife in areas that prohibited dogs with areas that allowed dogs. We measured wildlife activity on trails and up to 200 m away from trails using five methods: (1) pellet plots, (2) track plates, (3) remote triggered cameras, (4) on-trail scat surveys, and (5) mapping prairie dog (*Cynomys ludovicianus*) burrow locations. The presence of dogs along recreational trails correlated with altered patterns of habitat utilization by several species. Mule deer (*Odocoileus hemionus*) activity was significantly lower within 100 m of trails in areas that allowed dogs than in areas that prohibited dogs. Small mammals, including squirrels (*Sciurus* spp.) and rabbits (*Sylvilagus* spp.), also exhibited reduced levels of activity within 50 m of trails in areas that allowed dogs when compared with areas without. The density of prairie dog burrows was lower within 25 m of trails in areas that allowed dogs. The presence of dogs also affected carnivore activity. Bobcat (*Felis rufus*) detections were lower in areas that allowed dogs, and red fox (*Vulpes vulpes*) detections were higher. These findings have implications for the management of natural areas, particularly those that allow dogs to be off-leash.

**DOMESTIC DOGS IN WILDLIFE HABITATS EFFECTS OF RECREATION ON ROCKY MOUNTAIN WILDLIFE** Carolyn A. Sime – Wildlife Biologist, Montana Fish, Wildlife and Parks, Kalispell A Review for Montana

**ABSTRACT**

It is difficult to segregate human demographic trends from trends in rural development and outdoor recreational participation in settings like the West where they appear to be interrelated. One extension of human recreation in wildlife habitats is the effect of disturbance, harassment, displacement, or direct mortality of wildlife attributable to domestic dogs that accompany recreationists. At some level, domestic dogs still maintain instincts to hunt and/or chase. Given the appropriate stimulus, those instincts can be triggered in many different settings. Even if the chase instinct is not triggered, dog presence in and of itself has been shown to disrupt many wildlife species.

Authors of many wildlife disturbance studies concluded that dogs with people, dogs on-leash, or loose dogs provoked the most pronounced disturbance reactions from their study animals. During winter, concerns are primarily related to human activity on ungulate winter ranges. Dogs extend the zone of human influence when off-leash. Many ungulate species demonstrated more pronounced reactions to unanticipated disturbances, as a dog off-leash would be until within very close range. In addition, dogs can force movement by ungulates (avoidance or evasion during pursuit), which is in direct conflict with overwinter survival strategies which promote energy conservation. During summer, concerns are primarily related to the birth and rearing of young for all wildlife species. Dogs are noted predators for various wildlife species in all seasons.

Domestic dogs can potentially introduce diseases (distemper, parvovirus, and rabies) and transport parasites into wildlife habitats. While dog impacts to wildlife likely occur at the individual scale, the results may still have important implications for wildlife populations. For most wildlife species, if a “red flag” is raised by pedestrian-based recreational disturbance, there could also be problems associated with the presence of domestic dogs.

Managers may consider the following when evaluating recreational impacts of dogs in wildlife habitats: species biology, reproductive potential, abundance, density, distribution, degree of habitat specificity or reliance on certain habitat components, and predisposition and sensitivity to disturbance by other agents. This information is intended to increase awareness among natural resource professionals and the public about the potential implications of uncontrolled domestic dogs in wildlife habitats and to encourage responsible outdoor recreation ethics. The presence of domestic dogs may introduce diseases or parasites to small mammals, and the burrows of fossorial mammals can be physically damaged as a result of domestic dogs (Stuht and Youatt 1972, Thorne et al. 1982, Durden and Wilson 1990). In addition, dogs walking across burrows caused alarm reactions (Mainini et al. 1993).

## **OTHER STUDIES**

In the case of birds, the presence of dogs may flush incubating birds from nests (Yalden and Yalden 1990), disrupt breeding displays (Baydack 1986), disrupt foraging activity in shorebirds (Hoopes 1993), and disturb roosting activity in ducks (Keller 1991). Many of these authors indicated that dogs with people, dogs on-leash, or loose dogs provoked the most pronounced disturbance reactions from their study animals.

As there are life history stages of various wildlife species in which disturbance by domestic dogs could cause particularly pronounced impacts, the following sections address potential effects by season. Where possible, published literature specifically related to dogs is presented to demonstrate impacts. In the absence of published literature, potential impacts from domestic dogs are speculated, as indicated.

**Competition for Resources.** Water is usually the scarcest resource in many places during the summer and fall, especially at the **Santa Rosa Plateau**. For example, in early October 2001, there are just four small ponds left on the entire Plateau, which are vital to the lives of many of the wildlife species here. Dogs love water, both to cool themselves and to drink, and would therefore be significant consumers of this valuable resource. It would not take many dog pool visits to deplete these pools of water, thereby killing many individuals that depend on them.

**Addition of nitrogen to the soil.** Patrick Murphy, a plant ecologist, points out that dog poop adds significant nitrogen to the soil, which encourages the growth of non-native plants at the expense of native plants. (SDUT 12/9/01, E2)

**Scent?** It has often been said that just the scent left by a dog can affect the behavior of other species. While this is certainly plausible, due to the strong importance of scent marking used by animals, apparently this has never been documented. (This does not mean that this is not a problem; simply that it has not been shown to be true or false.) See "A Review of Mammalian Scent Marking."

Allowing dogs on the trails results in hazards to dogs and their owners as well. The biggest threat is due to the extensive stands of poison oak in the **Reserve**. Dogs are well-known vectors of the poison oak oil that results in the human members of the dog's family getting poison oak. There are also large numbers of plant seeds at the Reserve which are harmful or annoying to dogs. Foxtails and other such grass seeds are in enormous abundance in the grasslands of the Reserve, and can result in serious injury or death to dogs. I have personally paid vet bills of over one thousand dollars due to foxtails causing abscesses and

infections in my dogs and cats. Cockleburs cause such huge knots of fur that they usually have to be cut out of the dogs fur. Small hitchhikers such as filaree seeds, bur clover, etc. cause much annoyance as well, requiring significant grooming of dogs after traveling in such areas.

Finally, allowing dogs in the Reserve would significantly decrease the quality of the experience for many visitors.

Dogs leave messy, smelly poop on the trail, and it is a simple fact that most people do not clean up after their dogs. Every visitor would be forced to navigate around a large quantity of dog poop, and might be likely to step in it or worse, especially when the trails are slick, as they are much of the time during the peak use period. Patrick Murphy counted 1,492 piles of dog poop on a single trail in Boulder, Colorado in one month, the **Sanitas Valley Trail**, despite a Boulder ordinance that requires dog owners to pick up after their pets. (SDUT 12/9/01, E2)

Dog poop may seem superficially the same as the fairly large amount of coyote poop that is on the trails at the SRP, but in fact, the coyote poop is much different. Coyote poop is not smelly at all, and most of the time is not messy. Coyote poop is typically either filled with hair, if they have been lucky enough to catch a rabbit or other small mammal, or with berry seeds. Docents have been known to pick up coyote poop to show visitors what the coyote has eaten. Imagine doing this with the black goeey mess caused by the typical dog diet!

Furthermore, coyote poop is naturally present at the Santa Rosa Plateau, and serves an important scent-marking goal which would be seriously disturbed by dogs attempting to put their own scent on every piece of coyote poop.

Dogs decrease the number and diversity of wildlife near the trail. Many people come to the Santa Rosa Plateau to see animals, so their enjoyment would be directly diminished.

Many non-dog owners are immensely bothered when a strange dog comes up to them and starts to smell them at close quarters, or worse, jumps up on them or barks at them. Many dog owners may not even be aware of this, since, after all, dog owners consider this close contact with their dog to be a pleasant experience, and may even think that everyone else enjoys this, too.

The presence of dogs would inevitably result in a small number of bad encounters between dogs themselves and between dogs and visitors. Small children are especially in danger from loose dogs, ranging from simply being knocked down by an enthusiastic dog to being bitten or seriously harmed.

A little recognized consequence of human recreation in wildlife habitats is the effect domestic dogs may have on wildlife, even in the company of their owners. Most domestic dogs still retain instincts to hunt and/or chase other animals. Even if dogs are controlled and not allowed to chase wildlife, their very presence has been shown to be disruptive to many wildlife species. Especially during winter, harassment by dogs results in excessive energy expenditures by wildlife. During spring and summer, pregnant wildlife and newborns can be particularly vulnerable to harassment or attacks by domestic dogs. Dogs are noted for their “incidental” predation upon birds and small mammals during all seasons. Domestic dogs can potentially introduce diseases (distemper, parvovirus, and rabies) and transport parasites into wildlife habitats. While impacts of domestic dogs are most notable for their effects on individual animals, the cumulative effects from dogs may have important implications for wildlife populations.