

IMPACTS OF DOGS ON WILDLIFE:

Excerpts from Recent Research & Reviews

Four-legged friend or foe? Dog walking displaces native birds from natural areas

By Peter B Banks and Jessica V Bryant, University of New South Wales, published in *Biology Letters* in December 2007

<http://rsbl.royalsocietypublishing.org/content/3/6/611>

This 2007 study compared 45 sites where dog-walking was allowed with 45 sites where dog-walking was prohibited in the urban fringe of Sydney, Australia:

Dog walking is among the world's most popular recreational activities, attracting millions of people to natural areas each year with diverse benefits to human and canine health. But conservation managers often ban dog walking from natural areas fearing that wildlife will see dogs as potential predators and abandon their natural habitats, resulting in outcry at the restricted access to public land.

“Dog walking caused a 41% reduction in numbers of bird individuals detected and a 35% reduction in species richness”

– Peter Banks & Jessica Bryant

Here we show that dog walking in woodland leads to a 35% reduction in bird diversity and 41% reduction in abundance, both in areas where dog walking is common and where dogs are prohibited. These results argue against access by dog walkers to sensitive conservation areas.

The dramatic reduction in bird diversity and abundance in response to dog walking has immediate implications for other popular recreational activities pursued by humans. This includes bird watching and ecotourism where visitor satisfaction shows a strong relationship to numbers of species seen.

It is also possible that the particular sensitivity of ground dwelling birds to dog walking may lead to a cascade of potential behavioural changes in birds with implications for their local conservation.

Wildlife going to the Dogs: Man's best friend is one of wildlife's worst enemies

By Jennie Miller, Yale School of Forestry and Environmental Studies, published in the *Yale Environmental Review*, November 2012

<http://environment.yale.edu/yer/article/wildlife-going-to-the-dogs#gsc.tab=0>

The following conclusions are drawn from a 2012 review of current ecological research on predator-prey relationships:

With a global population of over 500 million, the domestic dog is the world's most populous mammalian carnivore. Despite the nourishment and shelter that people provide to canine companions,

many dogs range freely into the wilderness surrounding their human homes, encountering wild animals as they roam. Dogs have long been known to chase and kill wildlife but the impact of their presence on prey has now been confirmed.”

“The most profound effects of carnivores on prey may be through fear rather than mortality”

– Jennie Miller

These results contribute to the rapidly growing body of evidence by Dr. John Laundre and other ecologists who study predator-prey interactions, suggesting that the most profound effects of carnivores on prey may be through fear rather than mortality. The non-lethal effects of predators can include habitat displacement to safer but less desirable areas (e.g. less food or shelter), increased stress, reduced feeding, and decreased reproduction.

The risk created by domestic dogs is particularly alarming because humans help sustain their ubiquitous presence. However, this problem also offers its solution: since most dogs reside in or around human homes, dog management could simply be a matter of convincing owners and communities to control their pets.

Because dog populations are orders of magnitude larger than natural predator populations, domestic dogs represent a formidable threat to other species worldwide. Domestic dogs and other pets are underappreciated drivers of wildlife decline that must be better controlled through community- and state-level policies and conservation efforts.

The Effect of Dogs On Wildlife

By Tom Chester, author of *Field Guide to the Santa Rosa Plateau, Riverside County, California*, published online April 2005

<http://tchester.org/srp/lists/dogs.html>

Some dog owners delight in seeing their dogs roam free off the leash, since the dogs get even more fun from that. However, due to the disturbance to wildlife caused by dogs, many parks and preserves have banned them. Tom Chester lists some of the reasons behind that ban:

Dogs roaming off trail can trample vegetation, and if dogs are numerous they can remove the vegetation in popular areas by trampling, scratching and digging. Trampling is the major impact of hikers and their pets to plants.

Direct Predation. Even though my experience is that dogs are rarely successful in catching the many birds and squirrels they chase, dogs occasionally directly kill wildlife, or injure the wildlife enough to cause their subsequent death.

“Trampling is the major impact of hikers and their pets to plants”

– Tom Chester

Indirect Predation. Even when dogs are unsuccessful in catching the object of their chase, the potential prey has had to expend significant energy in order to save their life. Since in many cases animals are just barely surviving, expenditure of extra energy may push them over the edge to malnutrition and allow other predators to kill them. In particular, pregnant wildlife and newborn animals do not have the reserves to repeatedly expend in avoiding dogs. Both types of predation are severely reduced, if dogs remain leashed.

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.

Canine Distemper Virus in Wildlife

Diversity of susceptible hosts in canine distemper virus infection: a systematic review and data synthesis
BMC Veterinary Research 12:78
Marlen Martinez-Gutierrez and Julian Ruiz-Saenz, 2016

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4865023/>

In 2016, a review of over 200 veterinary science research papers showed that CDV [Canine Distemper Virus], one of the most infectious diseases of domestic dogs, is highly prevalent in wild carnivores, rodents, and primates from 43 countries, including Canada. Therefore, CDV poses a conservation threat for endangered wild species around the world.

“Toronto Wildlife Centre’s wildlife hotline received 1554 calls about raccoons perceived to be sick or injured in the fall of 2015 – a dramatic rise from the 191 calls received in the fall of 2014. TWC’s Executive Director Nathalie Karvonen attributes the extreme rise in call volume to the rapid spread of canine distemper virus in raccoon populations.”

– Toronto Wildlife Centre

The impacts of dogs on wildlife and water quality: a literature review

By Lori Hennings, Senior Natural Resource Specialist, Portland Metro Parks and Nature

<http://www.oregonmetro.gov/sites/default/files/impacts-of-dogs-on-wildlife-water-quality-science-review.pdf>

In April, 2016, Lori Hennings reviewed over 75 publications from the scientific literature on the impacts of domestic dogs on wildlife. She concluded:

The evidence that dogs negatively impact wildlife is overwhelming. It is clear that people with dogs – on leash or off – are much more detrimental to wildlife than people without dogs. Dogs (*Canis lupus familiaris*) are considered to be a subspecies of wolves (*Canis lupus*), and wildlife perceive dogs as predators.

Impacts include:

1. **Physical and temporal displacement** – The presence of dogs causes wildlife to move away, temporarily or permanently reducing the amount of available habitat in which to feed, breed and rest. Animals become less active during the day to avoid dog interactions. Furthermore, the scent of dogs repels wildlife and the effects remain after the dogs are gone.

2. **Disturbance and stress response** – Animals are alarmed and cease their routine activities. This increases the amount of energy they use, while simultaneously reducing their opportunities to feed. Repeated stress causes long-term impacts on wildlife including reduced reproduction and growth, suppressed immune system and increased vulnerability to disease and parasites.

3. **Indirect and direct mortality** – Dogs transmit diseases (such as canine distemper and rabies) to and from wildlife. Loose dogs kill wildlife.

“The evidence that dogs negatively impact wildlife is overwhelming” – Lori Hennings

4. **Human disease and water quality impacts** - Dog waste pollutes water and transmits harmful parasites and diseases to people. The average dog produces ½ to ¾ pound of fecal matter each day – a hundred dogs can produce more than 500 pounds of waste per week. Pet waste as a significant contributor to one of the region’s most ubiquitous and serious pollutants, *E. coli* bacteria.

People do not always take responsibility for their impacts on wildlife. Several studies demonstrate that natural area visitors, including dog owners, often don’t believe they are having much of an effect on wildlife, or assign blame to different user groups rather than accepting responsibility themselves. Some natural area visitors assume that when they see wildlife, it means that they are not disturbing the animals – or worse, that because they didn’t see any wildlife, they didn’t disturb any.

In summary, people and their dogs disturb wildlife, and people are not always aware of or willing to acknowledge the significance of their own impacts. People with dogs are much more detrimental to wildlife than people alone; off-leash dogs are worse; and off-trail impacts are the highest.

Wildlife conservation is not the only valid reason to preserve natural areas. Park providers must weigh the trade-offs between wildlife, habitat, water quality and recreational values. But when considering different types of public access in a natural area, it is important to understand that the research is clear: people with dogs substantially increase the amount of wildlife habitat affected and are more detrimental to wildlife than people without dogs.

Compiled by **ProtectNatureTO**. We are a group of concerned park users whose goal is to protect wildlife and preserve and enhance remaining natural areas in the city by advocating for responsible use.