

Natural Resources & Dogs

What science says about the impacts, resources in County Parks, and impact minimization measures and Creating tools to analyze where different dog recreation can be accommodated.

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06/06/2002 - Updated 09:07 PM ET

Dog waste poses threat to water

By Traci Watson, USA TODAY

For as long as the dog has been man's best friend, dog waste has posed a menace to man's nose and foot. Now science has revealed a more unsavory truth: It's an environmental pollutant.

In the mid-1990s, scientists perfected methods for tracking the origin of nasty bacteria in streams and seawater. From Clearwater, Fla., to Arlington, Va., to Boise the trail has led straight to the hunched-up dog — and to owners who don't pick up after their pets.

At some beaches, dogs help raise bacteria levels so high that visitors must stay out of the water. Goaded by such studies, some cities have directed as much as \$10,000 in the last few years to encourage dog owners to clean up

Cities want to pick up 'piles'

By Traci Watson, USA TODAY

Cities struggle with 'dog piles' Where they're cracking down:

- **San Diego.** The city spent roughly \$10,000 on extra trash cans, nagging signs and plastic "mutt mitts" at its Dog Beach, where the surf was closed to swimmers 125 times in 2000. The measures led to "measurably fewer dog piles. That's the term we use," says Ted Medina, deputy director for coastal parks. He estimates the beach is 30%-40% cleaner than it was before the effort started late last year.

Accessed 12/18/2016:

<http://usatoday30.usatoday.com/news/science/2002-06-07-dog-usat.htm>

<http://www.livescience.com/27330-dogs-disrupt-wildlife.html>

<http://www.latimes.com/nation/la-oc-lewis-dogs-environmentalism-20141102-story.html>

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Don't Just Blame Cats: Dogs Disrupt Wildlife, Too

By Megan Gannon, Live Science Contributor | February 21, 2013 03:58pm ET

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Credit: Dreamstime

Though they seem so natural in our [homes](#), cats and dogs are natural

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NATION

Op-Ed Just how bad is your dog for the environment?

Simple Truth

If any human activity can disturb wildlife any dog activity can disturb wildlife...

- Domestic dogs can and do harm wildlife
- Dogs can impact spatial and temporal use patterns of wildlife
- Dogs can impact resource quality and availability



<http://pagosasprings.com/cpw-warning-about-dogs-and-wildlife/>

Accessed 12.18.16

Where are we going?

- Dog Behavior and Types of Environmental Impacts
- Literature about Human's and their Canine Companions
- Resources in County Parks Worthy of Insulating from Disturbance
- Pragmatic Solutions and Approaches
- Science driven decision-making for natural resource conservation approach

Types of Impacts

1. Physical and Temporal Displacement

- Wildlife may move away temporarily or permanently and reduce “available” habitat
- Change wildlife use patterns (e.g. wildlife shifts to night-time only)
- Potential odor causes avoidance

2. Disturbance and Stress Response

- Wildlife stop routine activities when encounter or smell dogs
- Increased stress increases energy use and reduces available opportunities to complete necessary functions (foraging, rest, reproduction activities)

3. Indirect and Direct Mortality

- Injury
- Death
- Disease (distemper, rabies, parvo)

4. Human Disease and Water Quality Impacts

- *E. coli* bacteria loading in natural water bodies
- Parasite transfer to humans (worms etc.)
- Rashes and fungal infections (poison oak, ringworm, etc.)

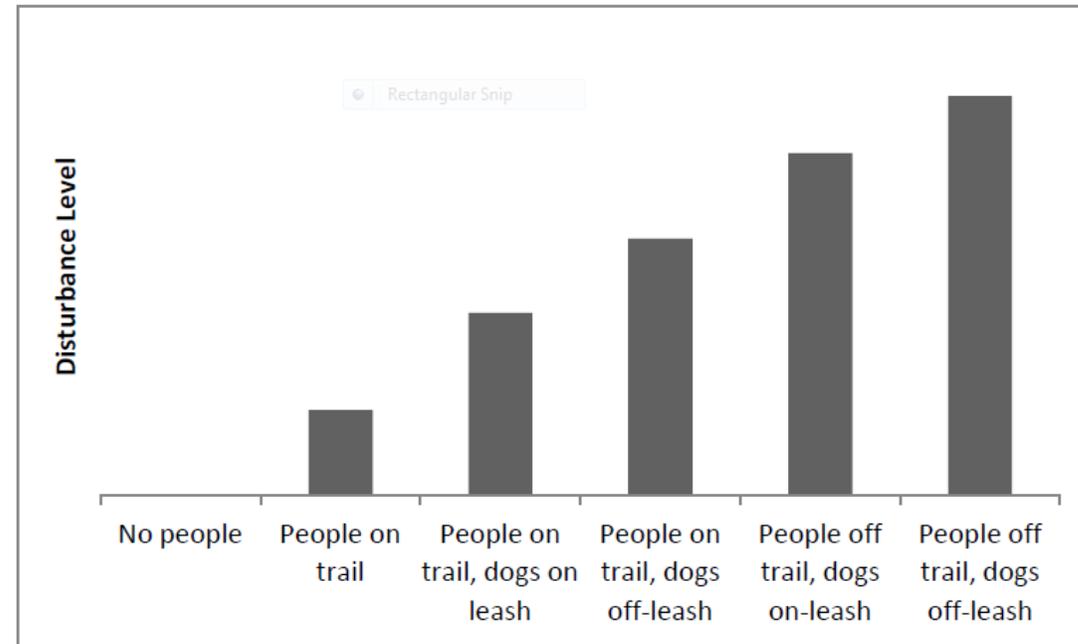
Recreational Activities Can Vary in Impacts

In April 2016 Metro, a Portland-based government agency, conducted a thorough literature review and summary of the state of research on dog-related impacts on wildlife and water quality.

The complete white paper can be found here:

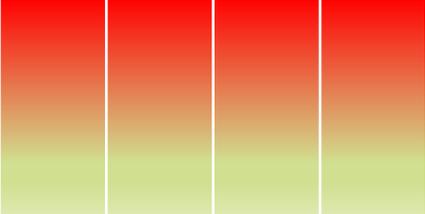
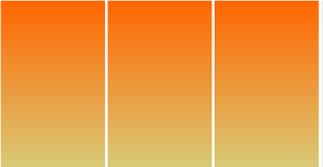
<http://www.oregonmetro.gov/sites/default/files/impacts-of-dogs-on-wildlife-water-quality-science-review.pdf>

Figure 1. Conceptual illustration of the relative impacts on wildlife due to people without and with dogs.

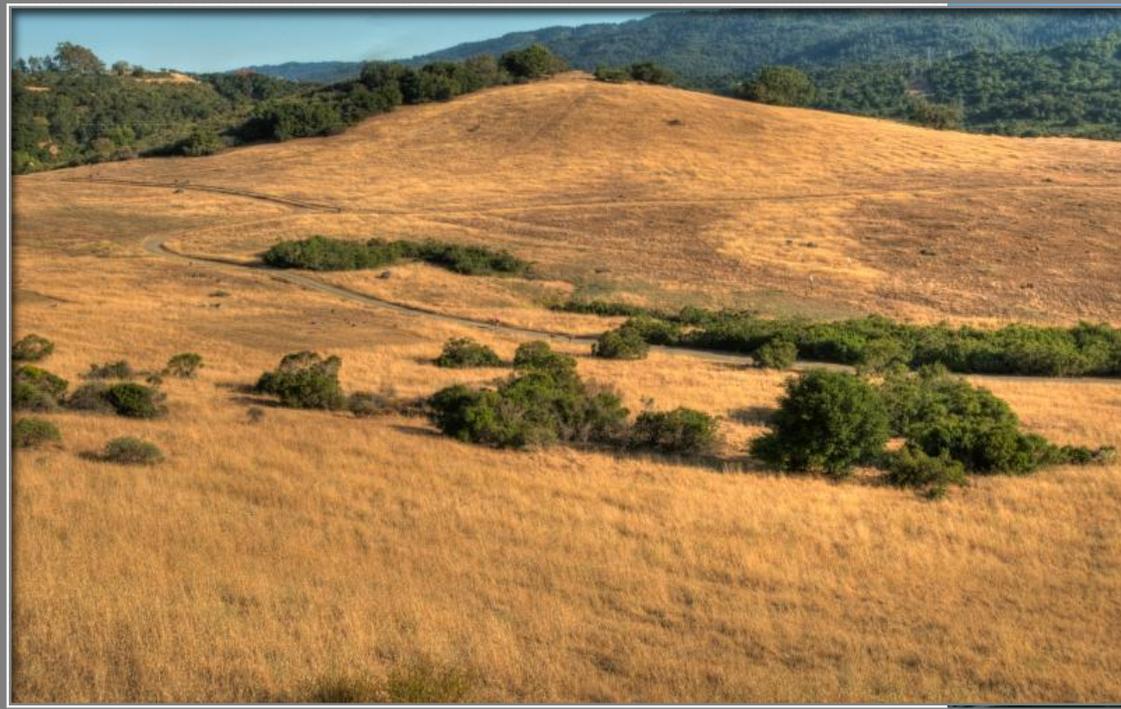


Citation: 2016. Metro Parks and Nature. The impacts of dogs on water quality and wildlife: A literature review.

Dog Activities Can Vary in Impact

Unmanaged* Dog Activity Examples	Impact Ranking None to High	Potential Impacts	Resource(s) Impacted
Hunting including digging		Indirect and Direct Mortality	Wildlife death (amphibians, reptiles, birds, small and medium sized mammals); Injury; disease
Waste		Human Disease and Water Quality Impacts	Water quality (<i>E. coli</i> in water) disease transfer, wildlife usage
Chasing		Disturbance and Stress Response	Stress induced wildlife response
Playing in and drinking from streams		Human Disease and Water Quality Impacts and Disturbance and Stress Response	Sediment loading and water quality Resource competition in limited seasons (e.g. water)

*Unmanaged in this context means that a human does not interfere to correct or mitigate behavior.



San Mateo County Parks are in a Biodiversity Hotspot

From bay to coast and grassland to redwoods, we really have it all...

Endangered or Threatened Wildlife Resources in County Parks or Trails

- Marbled murrelet
- Dusky-footed woodrat
- California red-legged frog
- San Francisco garter snake
- Bay checkerspot butterfly
- Callippe silverspot butterfly
- Mission blue butterfly
- San Bruno elfin butterfly



Images: CS: Patrick Kobernus; MAMU:
Portland Audubon; MB: MB Flickr sharing;
DFWR: Bay Nature

Endangered or Threatened Plant Resources

- Marin dwarf flax
- San Francisco lessingia
- Diablo sunflower
- Manzanitas:
 - Montara Mountain
 - San Bruno
 - Kings Mountain
 - Santa Cruz
- Santa Cruz cypress
- Western leatherwood
- Yellow leptosiphon
- And more....



Photo Credit: John Game

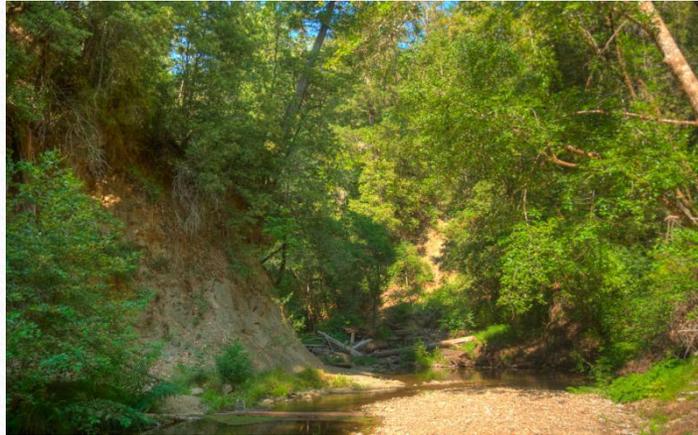


Lessingia germanorum, CDFW photo by Jeb Bjerke

Special Habitat Communities



Oak woodlands



Riparian areas



Grasslands and prairie

Resource Maps for San Bruno Mountain



Resource Protection Laws and Ordinances

State and Federal

- Federal Endangered Species Act
- Migratory Bird Treaty Act
- State Endangered Species Act
- CDFW Fish & Game Codes

County Policies and Ordinances

- County of San Mateo General Plan
- County of San Mateo Ordinances specifically Chapter 3.68.080
 - Cultural Resource Protection
 - Abiotic resource protection (geology etc.)
 - Biotic resource protection (flora, fauna, aquatic)

Pragmatic Solutions and Inspiring Stewardship

Finding ways to mitigate and reduce impacts if dog recreation is
desired

Potential Mitigation of Impacts

Restrict or Limit Access

- Spatial restrictions: Most sensitive parks or areas are off limits
- Temporal restrictions: Time of day, nesting season, rainy season, etc)
- Leash-only areas

Education

- Provide context for why restrictions occur in certain areas
- Educate communities about water quality: bacteria loads and sediment
- Provide interpretive signs in areas with restrictions

Encourage Good Behavior

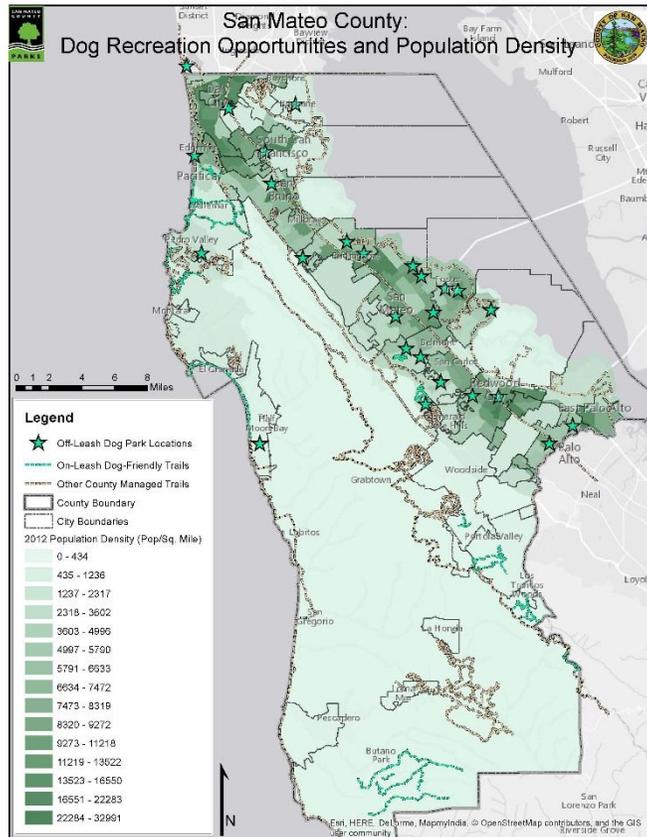
- Special passes and fees
- Fines and penalties for breaking the rules
- Access to model dog owners and their furry friends

Balancing Resource Protection and Dog-Recreation Access

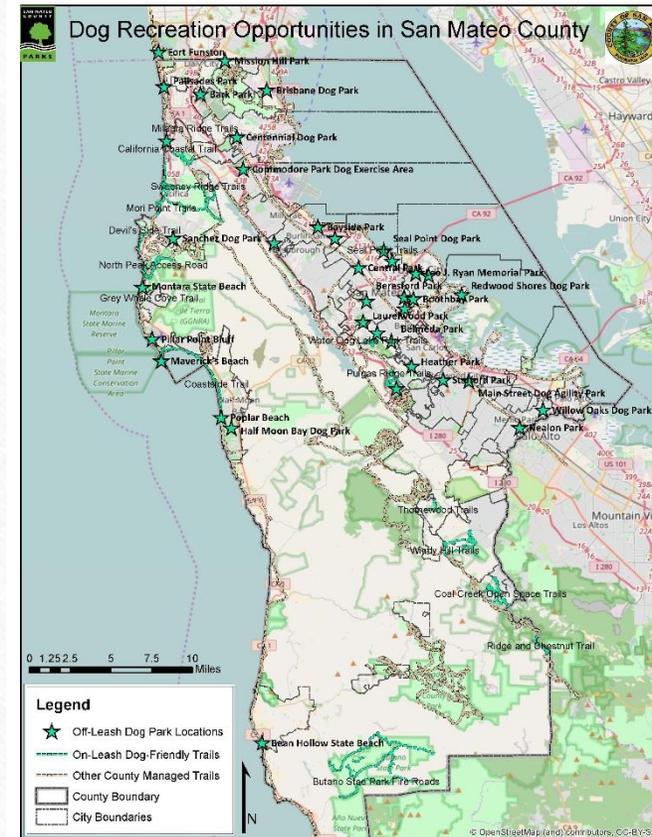
Consider a matrix of criteria to evaluate locations by park and
habitat community

Opportunity & Need Evaluation

Location and Population Density



Current Access Opportunities



Decision Matrix Example

Location Factors	Location Protection Needs (1-3; low = 1)	Impact Severity (1-3; low = 1)	Impact Score (LPN + IS)
Location supports endangered species	3	3	6
Location supports threatened species	3	3	6
Location is a riparian habitat	3	3	6
Location has ground nesting birds	2	3	6
Location is small < 100ac	2	2	4
Location is large >1000ac	2	1	3

Literature Review Short List

Phillips GE, Alldredge AW. 2000. Reproductive success of elk following disturbance by humans during calving season. *Journal of Wildlife Management* 64:521-530.

Randler R. 2006. Disturbances by dog barking increases vigilance in coots *Fulica atra*. *European Journal of Wildlife and Research* 52:265-270.

Reed SE, Merenlender AM. 2011. Effects of management of domestic dogs and recreation on carnivores in protected areas in Northern California. *Conservation Biology* 25:504-513.

Silva-Rodriguez EA, Ortega-Solis GR, Jimenez JE. 2010. Conservation and ecological implications of the use of space by chilla foxes and free-ranging dogs in a human-dominated landscape in southern Chile. *Austral Ecology* 35:765-777.

Silva-Rodriguez EA, Sieving KE. 2012. Domestic dogs shape the landscape-scale distribution of a threatened forest ungulate. *Biological Conservation* 150:103-110.

Silva-Rodriguez EA, Sieving KE. 2011. Influence of care of domestic carnivores on their predation on vertebrates. *Conservation Biology* 25:808-815.

Questions?



My most common outdoor companion is my 12-year old dog, Tsuga...

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