HOME BOOKS JOURNALS LEARNING BLOG **CSIRO PUBLISHING**

PACIFIC CONSERVATION BIOLOGY

Search This Journal...

Member since 2017

Full Text

Share

PDF (1.7 MB)

Get Permission

View Dimensions

View Altmetrics

Export Citation

A journal dedicated to conservation and wildlife management in the Pacific region.

You are here: Home > Journals > PC > PC24071

Shopping Cart: (empty)

Contacts

CONTENT >

Just Accepted

Most Read

Collections

All Content

Special Issues

FOR AUTHORS >

Submit Article

FOR REVIEWERS >

Review Article

Reviewer Guidelines

Reviewer Recognition

Annual Reviewer Index

FOR SUBSCRIBERS >

Subscription Prices

Library Recommendation

e-Alerts

Customer Service

FOR ADVERTISERS >

Scope

General Information

Latest

JOURNAL HOME >

Contents Vol 31(3) **RESEARCH ARTICLE** (Open Access)

COPE

About the Journal **Editorial Structure Publishing Policies Expressions of Interest** Lower Income Countries

Bad dog? The environmental effects of owned dogs Philip W. Bateman (D A * and Lauren N. Gilson (D A *

> + Author Affiliations * Correspondence to: bill.bateman@curtin.edu.au, lauren.gilson@curtin.edu.au Handling Editor: Graham Fulton

Pacific Conservation Biology 31, PC24071 https://doi.org/10.1071/PC24071

Submitted: 18 September 2024 Accepted: 9 March 2025 Published: 10 April 2025

© 2025 The Author(s) (or their employer(s)). Published by CSIRO Publishing. This is an open access article distributed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND)

Abstract Dogs as owned pet animals are globally ubiquitous and numerous. While the impact of cats, both feral and owned, on biodiversity has been relatively well-studied, by contrast, the comparative effect

of owned dogs has been poorly acknowledged. As the commonest large carnivore in the world, the

environmental impacts of owned dogs are extensive and multifarious: they are implicated in direct **Author Instructions** killing and disturbance of multiple species, particularly shore birds, but also their mere presence, Licence to Publish even when leashed, can disturb birds and mammals, causing them to leave areas where dogs are Open Access exercised. Furthermore, scent traces and urine and faeces left by dogs can continue to have this Read and Publish **Publishing Charges** contribute to toxic pollution through wash-off of chemical ectoparasite treatment applications. Awards and Prizes

pet food. *Global Environmental Change* **65**, 102153.

households-now-own-a-pet/ [Accessed 13 December 2024]

| Crossref | Google Scholar |

December 2024]

| Crossref | Google Scholar |

Australia. *Pacific Conservation Biology* **28**, 15-17.

| Crossref | Google Scholar |

| Crossref | Google Scholar |

| Crossref | Google Scholar |

Bulletin **121**, 7-12.

| Google Scholar |

| Crossref | Google Scholar |

| Crossref | Google Scholar |

| Crossref | Google Scholar |

Environmental Law and Policy 13, 187.

| Crossref | Google Scholar | PubMed |

| Google Scholar |

29, 124-132.

| Google Scholar |

118, e2010083118.

23, 107-115.

USA)

| Crossref | Google Scholar |

| Crossref | Google Scholar |

Press: USA)

European Journal of Wildlife Research 67, 70.

| Crossref | Google Scholar | PubMed |

effect even when dogs are not present. Faeces and urine can transfer zoonoses to wildlife and, when accumulated, can pollute waterways and impact plant growth. Owned dogs that enter waterways Finally, the sheer number of dogs contributes to global carbon emissions and land and fresh water use via the pet food industry. We argue that the environmental impact of owned dogs is far greater, more insidious, and more concerning than is generally recognised. **Keywords:** conservation, human-animal interaction, pets, wildlife disturbance, zoonoses.

References Alexander KA, Kat PW, Frank LG, Holekamp KE, Smale L, House C, Appel MJ (1995) Evidence of canine

distemper virus infection among free-ranging spotted hyenas (Crocuta crocuta) in the Masai Mara, Kenya. Journal of Zoo and Wildlife Medicine 26, 201-206. | Google Scholar |

| Crossref | Google Scholar | Allen JA, Setälä H, Kotze DJ (2020) Dog urine has acute impacts on soil chemistry in urban greenspaces. Frontiers in Ecology and Evolution **8**, 615979.

Alexander P, Berri A, Moran D, Reay D, Rounsevell MDA (2020) The global environmental paw print of

| Crossref | Google Scholar | Subscribe to our **Email Alert** or **S** feeds for the latest journal papers. Animal Medicines Australia (2022) More than two-thirds of Australian households now own a pet. Available at https://animalmedicinesaustralia.org.au/media-release/more-than-two-thirds-of-australian-

> Banks PB, Bryant JV (2007) Four-legged friend or foe? Dog walking displaces native birds from natural areas. Biology Letters 3, 611-613. | Crossref | Google Scholar | PubMed |

Barnett BD (1986) Eradication and control of feral and free-ranging dogs in the Galapagos Islands. *Proceedings of the Vertebrate Pest Conference* **12**, 358-368. | Google Scholar | Blamey LK, Bulman CM, Tuck GN, Woehler EJ, Marker PF, Patterson TA (2024) Evaluating risks to seabirds

on the urban-coastal interface: modelling dog attacks on little penguin populations in Tasmania. *Aquatic* Conservation: Marine and Freshwater Ecosystems **34**, e4113. | Crossref | Google Scholar | Bryson E, Anastasi A, Bricknell L, Kift R (2024) What do Australians do with their dog poo? A survey of

dog-owning household practices and attitudes. Australasian Journal of Environmental Management 31, 238-259. | Crossref | Google Scholar | Cleaveland S, Appel MG, Chalmers WS, Chillingworth C, Kaare M, Dye C (2000) Serological and

wildlife. *Veterinary Microbiology* **72**, 217-227. | Crossref | Google Scholar | PubMed | Conway DMP, Saker KE (2018) Consumer attitude toward the environmental sustainability of grain-free pet foods. Frontiers in Veterinary Science 5, 170.

Costanzi L, Brambilla A, Di Blasio A, Dondo A, Goria M, Masoero L, Gennero MS, Bassano B (2021)

Beware of dogs! Domestic animals as a threat for wildlife conservation in Alpine protected areas.

demographic evidence for domestic dogs as a source of canine distemper virus infection for Serengeti

De Silva SS, Turchini GM (2008) Towards understanding the impacts of the pet food industry on world fish and seafood supplies. *Journal of Agricultural and Environmental Ethics* **21**, 459-467. | Crossref | Google Scholar |

environment. Science of the Total Environment 858, 159550. | Crossref | Google Scholar | PubMed | Dog Population by Country (2024) World population review. Available at

Diepens NJ, Belgers D, Buijse L, Roessink I (2023) Pet dogs transfer veterinary medicines to the

https://worldpopulationreview.com/country-rankings/dog-population-by-country [accessed 13

in a high-use recreational environment. *Bird Conservation International* **9**, 255-270.

Doherty TS, Dickman CR, Glen AS, Newsome TM, Nimmo DG, Ritchie EG, Vanak AT, Wirsing AJ (2017) The global impacts of domestic dogs on threatened vertebrates. Biological Conservation 210, 56-59. | Crossref | Google Scholar |

Dowling B, Weston MA (1999) Managing a breeding population of the Hooded Plover *Thinornis rubricollis*

Forrest A, St. Clair CC (2006) Effects of dog leash laws and habitat type on avian and small mammal communities in urban parks. *Urban Ecosystems* **9**, 51-66. | Crossref | Google Scholar |

Franklin M, Rand J, Marston L, Morton J (2021) Do pet cats deserve the disproportionate blame for wildlife predation compared to pet dogs? Frontiers in Veterinary Science 8, 731689. | Crossref | Google Scholar | PubMed |

familiaris. Australian Zoologist **37**, 102-104. | Crossref | Google Scholar | Fulton G (2022) Researcher disillusionment and ungoverned damage to Becher Point Wetlands, Western

Fulton G (2014) Observations of hunting behaviour in an urban predator: the domestic Dog Canis

Gascoyne SC, Laurenson MK, Lelo S, Borner M (1993) Rabies in African wild dogs (*Lycaon pictus*) in the Serengeti region, Tanzania. *Journal of Wildlife Diseases* **29**, 396-402. | Crossref | Google Scholar | PubMed |

Gómez-Serrano MÁ (2021) Four-legged foes: dogs disturb nesting plovers more than people do on tourist beaches. *Ibis* **163**, 338-352. | Crossref | Google Scholar |

Greenwell CN, Dunlop JN (2023) Drivers of colony failure in a vulnerable coastal seabird, the Australian Fairy Tern (Sternula nereis nereis). Pacific Conservation Biology 29, 490-502.

Gompper ME (2014) Introduction: outlining the ecological influences of a subsidised, domesticated

predator. In 'Free-ranging dogs and wildlife conservation'. (Ed. ME Gompper) pp. 1–7. (Oxford University

Grimm-Seyfarth A, Harms W, Berger A (2021) Detection dogs in nature conservation: a database on their world-wide deployment with a review on breeds used and their performance compared to other methods. *Methods in Ecology and Evolution* **12**, 568-579.

Hardie S, Mai DL, Howell TJ (2023) Social support and wellbeing in cat and dog owners, and the moderating influence of pet-owner relationship quality. *Anthrozoös* **36**, 891-907. | Crossref | Google Scholar |

Holderness-Roddam B, McQuillan PB (2014) Domestic dogs (Canis familiaris) as a predator and

| Crossref | Google Scholar | Jorgensen JG, Brown MB (2014) Piping Plovers Charadrius melodus and dogs: compliance with and attitudes toward a leash law on public beaches at Lake McConaughy, Nebraska, USA. Wader Study Group

disturbance agent of wildlife in Tasmania. Australasian Journal of Environmental Management 21, 441-452.

Lenth BE, Knight RL, Brennan ME (2008) The effects of dogs on wildlife communities. *Natural Areas* Journal **28**, 218-227. | Crossref | Google Scholar |

Lafferty KD (2001) Disturbance to wintering western snowy plovers. *Biological Conservation* **101**, 315-325.

ME Gompper) pp 170–180 (Oxford University Press: USA) Lilleyman A, Franklin DC, Szabo JK, Lawes MJ (2016) Behavioural responses of migratory shorebirds to disturbance at a high-tide roost. *Emu* **116**, 111-118.

Leonard JA, Echegaray J, Randi E, Vilà C, Gompper ME (2013) Chapter 7. Impact of hybridization with

domestic dogs on the conservation of wild canids. In 'Free-ranging dogs and wildlife conservation'. (Ed.

Maguire GS (2018) A review of dog impacts to beach-nesting birds and management solutions. BirdLife Australia, Melbourne, Vic, Australia. Available at https://beachvol.birdlife.org.au/public_files/40/Dog%20management%20solutions.pdf

Maguire GS, Miller KK, Weston MA (2019) Only the strictest rules apply: Investigating regulation

compliance of beaches to minimize invasive dog impacts on threatened shorebird populations. In

'Impacts of invasive species on coastal environments'. Coastal Research Library. (Eds C Makowski, C

Finkl) Vol. 29, pp. 397–412. (Springer: Cham) Mallil K, Justy F, Rueness EK, Dufour S, Totis T, Bloch C, Baarman J, Amroun M, Gaubert P (2020) Population genetics of the African wolf (Canis lupaster) across its range: first evidence of hybridization

with domestic dogs in Africa. *Mammalian Biology* **100**, 645-658.

69, 467-474. | Crossref | Google Scholar | PubMed | McCall R (2007) Dogs vs. birds: negotiated rulemaking at Fort Funston. Hastings West-Northwest Journal of

Martens P, Su B, Deblomme S (2019) The ecological paw print of companion dogs and cats. BioScience

Parasites & Vectors 16, 55. | Crossref | Google Scholar | PubMed | Miller SG, Knight RL, Miller CK (2001) Wildlife responses to pedestrians and dogs. Wildlife Society Bulletin

Mendoza Roldan JA, Otranto D (2023) Zoonotic parasites associated with predation by dogs and cats.

The ecological impact of humans and dogs on wildlife in protected areas in eastern North America. Biological Conservation 203, 75-88. | Crossref | Google Scholar |

Perkins R, Goulson D (2023) To flea or not to flea: survey of UK companion animal ectoparasiticide usage

and activities affecting pathways to the environment. PeerJ 11, e15561.

Parsons AW, Bland C, Forrester T, Baker-Whatton MC, Schuttler SG, McShea WJ, Costello R, Kays R (2016)

widespread pesticide contamination of English rivers. Science of The Total Environment 755, 143560. | Crossref | Google Scholar | PubMed | Perri AR, Feuerborn TR, Frantz LAF, Larson G, Malhi RS, Meltzer DJ, Witt KE (2021) Dog domestication and

the dual dispersal of people and dogs into the Americas. *Proceedings of the National Academy of Sciences*

Perkins R, Whitehead M, Civil W, Goulson D (2021) Potential role of veterinary flea products in

Phillips-Donaldson D (2024) How pet food consumers globally view sustainability. Available at https://shorturl.at/tqGt9 [accessed 11 December 2024] Ramírez-Cruz GA (2020) Analysis of the effect of recreational dog walking on the occupancy probability

of the ringtail Bassariscus astutus (Carnivora: Procyonidae) within an urban ecosystem. Urban Ecosystems

Randall DA, Williams SD, Kuzmin IV, Rupprecht CE, Tallents LA, Tefera Z, Argaw K, Shiferaw F, Knobel DL, Sillero-Zubiri C, Laurenson MK (2004) Rabies in endangered Ethiopian wolves. *Emerging Infectious Diseases* **10**, 2214-2217. | Crossref | Google Scholar | PubMed |

ONE 9, e86409. | Crossref | Google Scholar | PubMed | Ritchie EG, Dickman CR, Letnic M, Vanak AT (2014) Chapter 2. Dogs as predators and trophic regulators. In 'Free-ranging dogs and wildlife conservation'. (Ed. ME Gompper) pp. 55–68. (Oxford University Press:

Randi E, Hulva P, Fabbri E, Galaverni M, Galov A, Kusak J, Bigi D, Bolfíková BČ, Smetanova M, Caniglia R

(2014) Multilocus detection of wolf x dog hybridization in Italy, and guidelines for marker selection. *PLoS*

threatened species beach habitats. *Journal of Environmental Planning and Management* **63**, 1022-1036. | Crossref | Google Scholar | Silva-Rodríguez EA, Verdugo C, Aleuy OA, Sanderson JG, Ortega-Solís GR, Osorio-Zúñiga F, González-Acuña D (2010) Evaluating mortality sources for the Vulnerable pudu *Pudu puda* in Chile: implications for

Schneider TJ, Maguire GS, Whisson DA, Weston MA (2020) Regulations fail to constrain dog space use in

Taborsky M (1988) Kiwis and dog predation: observations in Waitangi State Forest. *Notornis* **35**(3), 197-202. | Google Scholar |

Tamponi C, Knoll S, Tosciri G, Salis F, Dessì G, Cappai MG, Varcasia A, Scala A (2020) Environmental

the conservation of a threatened deer. *Oryx* **44**, 97-103.

bird's nests. Science of the Total Environment 964, 178439.

spot-on products. Science of the Total Environment 599, 960-966.

| Crossref | Google Scholar |

BROWSE BY SUBJECT

Animals

LINKS

About Us

Contact Us

Workshops

Cosmos

Help

contamination by dog feces in touristic areas of Italy: parasitological aspects and zoonotic hazards. The American Journal of Tropical Medicine and Hygiene 103, 1143. | Crossref | Google Scholar | PubMed | Tassin de Montaigu CT, Glauser G, Guinchard S, Goulson D (2025) High prevalence of veterinary drugs in

Taylor-Brown A, Booth R, Gillett A, Mealy E, Ogbourne SM, Polkinghorne A, Conroy GC (2019) The impact of human activities on Australian wildlife. PLoS ONE 14, e0206958. | Crossref | Google Scholar | PubMed |

Teerlink J, Hernandez J, Budd R (2017) Fipronil washoff to municipal wastewater from dogs treated with

| Crossref | Google Scholar | PubMed | Trouwborst A, McCormack PC, Martínez Camacho E (2020) Domestic cats and their impacts on biodiversity: a blind spot in the application of nature conservation law. *People and Nature* **2**, 235-250.

Pichegru L, Pistorius PA (2019) Identification of land predators of African Penguins Spheniscus demersus through post-mortem examination. Ostrich 90, 359-372. | Crossref | Google Scholar |

Vanstreels RE, Parsons NJ, McGeorge C, Hurtado R, Ludynia K, Waller L, Ruthenberg M, Purves A,

Weston MA, Stankowich T (2014) Chapter 4. Dogs as agents of disturbance. In 'Free-ranging dogs and wildlife conservation'. (Ed. ME Gompper) pp. 94–116 (Oxford University Press: USA) Woolley LA, Murphy BP, Geyle HM, Legge SM, Palmer RA, Dickman CR, Doherty TS, Edwards GP, Riley J, Turpin JM, Woinarski JC (2020) Introduced cats eating a continental fauna: invertebrate consumption by

feral cats (Felis catus) in Australia. Wildlife Research 47, 610-623. | Crossref | Google Scholar | Yavor KM, Lehmann A, Finkbeiner M (2020) Environmental impacts of a pet dog: an LCA case study. Sustainability 12, 3394.

Marine & Freshwater

Built Environment Natural Environment Food & Agriculture **Physical Sciences** Plants & Fungi Gardening & Horticulture Science in Society Children

CONNECT WITH US

f W @ in