

## Environmental Impacts of Mountain Biking

<https://environmental-impacts-mountain-biking.com/scientific-literature/>

**“The Branch is opposed to all forms of cycling on all roads, trails and tracks in wilderness areas, and the policy intent should take the same approach so that Plans of Management do not allow it”**

— *National Parks Association of New South Wales*

“The environmental disadvantages of introducing mountain biking tourism to an area are invariably understated, or not stated at all. This is a great disservice to local environments that often include threatened Australian native plants, mammals, birds, reptiles and invertebrates. This is bad news:

- Bikes trails fragment, degrade and disturb wildlife habitats
- Bikes can spread serious plant diseases such as Phytophthora
- Bikes can cause erosion and siltation of creeks
- Bikes can spread weeds through native bushland
- Bikes can disturb nesting animals such as the endangered (in Tasmania) Wedge-tailed eagle
- Bikes can disturb/destroy micro-habitats for smaller animals such as the endangered Blind Velvet Worm
- Bikes can disturb habitat for threatened Eastern quolls, now extinct on mainland Australia and declining in

Tasmania

[This document is a presentation on the Draft Brisbane Off-Road Cycling Strategy by Ecologist Dr Christine Hosking.](#) (Accessed 11 May 2021)

EXTRACT FROM A BUSHCARER

“There is currently no evidence to suggest that the mountain bike community or the Brisbane City Council Draft Brisbane Off-Road Cycling Strategy can mitigate past, current or future damage caused by mountain bikes in Greater Brisbane. As such, how can the community in general have any confidence that this impact recreational sport can be regulated in a way to be sustainable and maintain the current habitat and biodiversity that reside here. This current strategy will lead to a decline in the conservation aspects of land that is meant to help Brisbane keep its title of the “Biodiversity Capital of Australia”. Brisbane’s Bushland Areas and Mountain bike riding are the antithesis of each other and cannot co-exist sustainably. • Natural Areas must be kept for Nature • Forest Parks/Bushland Reserves need to be preserved • Communities cannot lose their natural areas to self interest groups”.

Comment from Deb: I know Christine well after we were co-carers of an orphan red-necked wallaby. I have asked if she would consider coming up to talk to us.

[https://rethinkaustmtbimpacts.files.wordpress.com/2020/11/naidoo\\_burton\\_2019\\_recreational\\_effects\\_on\\_wildlife.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2020/11/naidoo_burton_2019_recreational_effects_on_wildlife.pdf)

**Relative effects of recreational activities on a temperate terrestrial wildlife assemblage**, Robin Naidoo, A. Cole Burton. Conservation Science and Practice, Wiley publishers. (Accessed 11 May 2021)

**ABSTRACT** Outdoor recreation is one of the fastest growing economic sectors in the world and provides many benefits to people. Assessing possible negative impacts of recreation is nevertheless important for sustainable management. Here, we used camera traps to assess relative effects of various recreational activities— as compared to each other and to environmental conditions—on a terrestrial wildlife assemblage in **British Columbia, Canada**.

Across 13 species, only two negative associations between recreational activities and wildlife detections were observed at weekly scales: mountain biking on moose and grizzly bears. However, finer-scale analysis showed that all species avoided humans on trails, with avoidance strongest for mountain biking and motorized vehicles. Our results imply that environmental factors generally shaped broad-scale patterns of wildlife use, but highlight that recreational activities also have detectable impacts. These impacts can be monitored using the same camera-trapping techniques that are commonly used to monitor wildlife assemblages.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/pickering\\_and\\_norman\\_2017\\_impacts\\_formal\\_informal\\_trails.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/pickering_and_norman_2017_impacts_formal_informal_trails.pdf)

**Comparing impacts between formal and informal recreational trails** Catherine Marina Pickering, Patrick Norman. Environmental Futures Research Institute, Griffith School of Environment, Griffith University, Parklands Drive, Southport, Gold Coast, Queensland 4222, Australia. Journal of Environmental Management. journal homepage: [www.elsevier.com/locate/jenvman](http://www.elsevier.com/locate/jenvman) (accessed 12 May 2021)

This article looks at edge-effect impacts from different trail surfaces. No conclusive evidence and more research needed.

<https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/watson-et-al.-2018-wilderness-values.pdf>

**The exceptional value of intact forest ecosystems**, James E.M. Watson et al., in Nature Ecology & Evolution, Perspective <https://doi.org/10.1038/s41559-018-0490-x>

**ABSTRACT** As the terrestrial human footprint continues to expand, the amount of native forest that is free from significant damaging human activities is in precipitous decline. There is emerging evidence that the remaining intact forest supports an exceptional confluence of globally significant environmental values relative to degraded forests, including imperilled biodiversity, carbon sequestration and storage, water provision, indigenous culture and the maintenance of human health. Here we argue that maintaining and, where possible, restoring the integrity of dwindling intact forests is an urgent priority for current global efforts to halt the ongoing biodiversity crisis, slow rapid climate change and achieve sustainability goals. Retaining the integrity of intact forest ecosystems should be a central component of proactive global and national environmental strategies, alongside current efforts aimed at halting deforestation and promoting reforestation.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/mtnbike\\_submission\\_nsw\\_npa.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/mtnbike_submission_nsw_npa.pdf)

**National Parks and Wildlife Service Cycling Policy Review and Sustainable Mountain Biking Strategy. Submission by Clarence Valley Branch of the National Parks Association of NSW. (Accessed 12 May 2021)**

The context is different as Redwood is not a National Park, but comments are relevant. I found paragraph 5 that discusses “want” vs. “need” relevant to Redwood. Highlighted sections:

Provision of sustainable visitor use and enjoyment that is compatible with the conservation of the national park’s natural and cultural values.

The Branch considers the activity of, and special provision for, mountain biking is inconsistent with the intent of the Act as outlined above, as well as in other sections.

Under the ROS concept, mountain biking is best suited for land tenures other than national parks, and where the construction for, and practice of, the activity is appropriate.

The Branch does not believe the word “need” should be used in the context of the proposed strategy recommendation. The most that can be said is that there is a “demand”, or in the distinction that comes from economics, a “want”. To pursue this line of thinking is to invite other inappropriate uses of national parks to be allowed, simply because the Service interprets “want” as “need”. Examples of things that “need” to be done in national parks are pest control, visitor management that does not conflict with the conservation objectives, erosion control, and rehabilitation. People who want to bush-bash in 4WDs, take timber or wildflowers, hunt, take their dogs, and so on are not given the right to pursue their “want” in national parks.

The Branch is opposed to all forms of cycling on all roads, trails and tracks in wilderness areas, and the policy intent should take the same approach so that PoMs do not allow it. CVB concurs with the first point, that cycling is not permissible on tracks in wilderness areas and nature reserves.

It is clear from this submission that national parks are not suitable for the activity of mountain biking, nor for any special provision by way of use of existing tracks purpose-built tracks or technical features. Suitable sites must be found outside the national park system.

It is a case of caring for and enjoying the natural environment while keeping human impact to a minimum. Mountain biking and the extra impacts it would place on the environment, resources and long-term good management of the national park system is, of itself, unacceptable. And there are other places where the activity should be looking at, many of which could still provide the experience that practitioners seek.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/pickering\\_and\\_hill\\_2007\\_impacts\\_tourism\\_on\\_vegetation\\_phytophthora\\_pathogens.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/pickering_and_hill_2007_impacts_tourism_on_vegetation_phytophthora_pathogens.pdf)

**Impacts of recreation and tourism on plant biodiversity and vegetation in protected areas in Australia.** Catherine Marina Pickering, Wendy Hill. *Journal of Environmental Management* 85 (2007) 791–800. (Accessed 12 May 2021)

**ABSTRACT** This paper reviews recent research into the impact of recreation and tourism in protected areas on plant biodiversity and vegetation communities in Australia. Despite the international significance of the Australian flora and increasing visitation to protected areas there has been limited research on recreational and tourism impacts in Australia. As overseas, there are obvious direct impacts of recreation and tourism such as clearing of vegetation for infrastructure or damage from trampling, horse riding, mountain biking and off-road vehicles. As well, there are less obvious but potentially more severe indirect impacts. This includes self-propagating impacts associated with the spread of some weeds from trails and roads. It also includes the severe impact on native vegetation, including many rare and threatened plants, from spread of the root rot fungus *Phytophthora cinnamomi*. This review highlights the need for more recreational ecology research in Australia.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/coppes\\_et\\_al-2017\\_outdoorrec\\_wildlife\\_impacts.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/coppes_et_al-2017_outdoorrec_wildlife_impacts.pdf)

**Outdoor recreation causes effective habitat reduction in capercaillie *Tetrao urogallus* : a major threat for geographically restricted populations.** Joy Coppes, Judith Ehlacher, Rudi Suchant and Veronika Braunisch. *Journal of Avian Biology* 48: 001–012, 2017. (Accessed 12 May 2021)

This paper discusses the effects on Capercaillie living in the Black Forest, south west Germany, from winter and summer outdoor activities. A conclusion is: “Based on our results we recommend a general reduction in recreation infrastructure density in key habitats, the establishment of undisturbed wildlife refuges with a diameter of at least 800 m, as well as enhancing visual protection by maintaining a strip of dense understory along trails.” Although a different context, Black Breasted Button Quail would be similarly affected.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/pickering\\_and\\_barros\\_2015\\_impacts\\_subalpine\\_mtn\\_biking\\_hiking.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/pickering_and_barros_2015_impacts_subalpine_mtn_biking_hiking.pdf)

**Using functional traits to assess the resistance of subalpine grassland to trampling by mountain biking and hiking.** Catherine Marina Pickering, Agustina Barros. *Journal of Environmental Management* (2015) (Accessed 12 May 2021).

**ABSTRACT** Functional traits reflect plant responses to disturbance, including from visitor impacts. The impacts of mountain biking and hiking on functional composition were compared using a common experimental protocol in a subalpine grassland in the Australian Alps. The overlapping cover of all species was recorded two weeks after different intensities of hiking (200 and 500 passes) and mountain biking (none, 25, 75, 200 and 500 passes). Species' functional trait data were combined with their relative cover to calculate community trait weighted means for plant height, leaf area, percentage leaf dry matter content and Specific Leaf Area (SLA). Species such as *Poa fawcettiae* with larger leaves and SLA but lower dry weight content of leaves were more resistant to use, with differences between bikers and hikers only apparent at the highest levels of use tested. This differs from some vegetation communities in Europe where plants with smaller leaves were more resistant to hiking. More research using

functional traits may account for differences in species responses to trampling. Managers of conservation areas used for hiking and biking need to minimise off trail use by both user groups.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/impacts\\_tramplng\\_2015.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/impacts_tramplng_2015.pdf)

**Recreational trampling negatively impacts vegetation structure of an Australian biodiversity hotspot.** S. Mason, D. Newsome, S. Moore, R. Admiraal. *Biodivers Conserv* (2015) 24:2685–2707. (Accessed 12 May 2021).

This paper looks at the effects of trampling by Wildflower Tourists in Western Australia.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/impacts\\_trails\\_2015.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/impacts_trails_2015.pdf)

**The impacts of trail infrastructure on vegetation and soils: Current literature and future directions.** Mark Ballantyne, Catherine Marina Pickering. *Journal of Environmental Management* (2015)(Accessed 12 May 2021)

**ABSTRACT** Reflecting the popularity of nature-based activities such as hiking and mountain biking, there are thousands of kilometres of recreational trails worldwide traversing a range of natural areas. These trails have environmental impacts on soils and vegetation, but where has there been research, what impacts have been found and how were they measured? Using a systematic quantitative literature review methodology, we assessed the impacts of trails on vegetation and soils, highlighting what is known, but also key knowledge gaps. Of the 59 original research papers identified on this topic that have been published in English language peer-reviewed academic journals, most were for research conducted in protected areas (71%), with few from developing countries (17%) or threatened ecosystems (14%). The research is concentrated in a few habitats and biodiversity hotspots, mainly temperate woodland, alpine grassland and Mediterranean habitats, often in the USA (32%) or Australia (20%). Most examined formal trails, with just 15% examining informal trails and 11% assessing both types. Nearly all papers report the results of observational surveys (90%), collecting quantitative data (66%) with 24% using geographic information systems. There was an emphasis on assessing trail impacts at a local scale, either on the trail itself and/or over short gradients away from the trail edge. Many assessed changes in composition and to some degree, structure, of vegetation and soils with the most common impacts documented including reduced vegetation cover, changes in plant species composition, trail widening, soil loss and soil compaction. There were 14 papers assessing how these local impacts can accumulate at the landscape scale. Few papers assessed differences in impacts among trails (7 papers), changes in impacts over time (4), species-specific responses (3) and only one assessed effects on plant community functioning. This review provides evidence that there are key research gaps including assessing informal trails, comparing trail types, landscape and temporal scale impacts, functional responses and impacts on threatened ecosystems/species. A more diverse geographic spread of research is also required including in regions experiencing rapid growth in tourism and recreation.

Comment by Deb Ford: we need to do this in Jubilee Park.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/debus\\_et\\_al\\_seaeagle\\_corella\\_2014.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/debus_et_al_seaeagle_corella_2014.pdf)

**Response of White-bellied Sea-Eagles *Haliaeetus leucogaster* to encroaching human activities at nest sites.** S.J.S. Debus, G. Baker, D. Owner and B. Nottidge. *Corella*, 2014, 38(3): 53-62. (Accessed 12 May 2021).

This paper looks at the impact of development and other human activities on White-bellied Sea-Eagles in south-eastern Australia.

The following is from The Powerful Owl Project website:

[https://birdlife.org.au/documents/Powerful\\_Owl\\_Project\\_SEQ\\_October\\_2020\\_report.pdf](https://birdlife.org.au/documents/Powerful_Owl_Project_SEQ_October_2020_report.pdf)

“The Powerful Owl is listed as vulnerable in Queensland but we lack up to date information on where the owls are found, how big their population is, how that population is trending over time or what factors are related to breeding success. Powerful Owl are reliant on large patches of forest with trees from 100 to 500 years old (Kavanagh 1997, Loyn et al. 2001), and the loss of forest habitat is seen as the primary reason Powerful Owl populations have declined (Webster et al. 1999, NSW Scientific Committee 2008).” I have downloaded the 2020 Report.

[https://rethinkaustmtbimpacts.files.wordpress.com/2020/02/decline\\_eastern\\_quoll\\_tas\\_fancourt\\_et\\_al\\_2013.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2020/02/decline_eastern_quoll_tas_fancourt_et_al_2013.pdf)

**Evidence of rapid population decline of the eastern quoll (*Dasyurus viverrinus*) in Tasmania.** Bronwyn A. Fancourt, Clare E. Hawkins and Stewart C. Nicol. *Australian Mammalogy*, 2013, 35, 195–205. (Accessed 12 May 2021).

This paper discusses the decline of the eastern quoll but is inconclusive about the reasons, and MBT are not mentioned.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/burgin\\_hardiman\\_2012\\_mtnbiking\\_wildlife\\_disturbance.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/burgin_hardiman_2012_mtnbiking_wildlife_disturbance.pdf)

**Is the evolving sport of mountain biking compatible with fauna conservation in national parks?** Shelley Bürgin and Nigel Hardiman. (Accessed 12 May 2021).

**ABSTRACT** Historically, most people have tended to visit national parks for 'rest, relaxation and reinvigoration', typically resulting in moderate ecological impacts. However, increasingly, recreation in natural areas is including 'adventure' sports. One such recreation/sport that now incorporates a range of forms, including adventure derivatives, is mountain biking. In the more extreme forms, riders use extensive trails, often with steep segments and natural or human-made obstacles demonstrate technical skills (e.g., balance, calculated risk-taking, excitement, speed). Appreciation of the natural environment is seldom, if ever, a reason for participation. In this paper we consider the potential for impact on the fauna of national parks. While there is a dearth of information on the impact of mountain biking, we conclude that park management needs to be strategic in their consideration of the issues associated with mountain biking or the outcome will be further degradation of natural areas and, at the least, loss of many animals if not major threats to populations.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/pickering\\_etal\\_2010\\_impacts\\_on\\_veg\\_soils\\_hiking\\_mtnbiking\\_horse.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/pickering_etal_2010_impacts_on_veg_soils_hiking_mtnbiking_horse.pdf)

**Comparing hiking, mountain biking and horse riding impacts on vegetation and soils in Australia and the United States of America.** Catherine Marina Pickering, Wendy Hill, David Newsome, Yu-Fai Leung. *Journal of Environmental Management* (2009). (Accessed 12 May 2021).

**ABSTRACT** Hiking, horse riding and mountain biking are popular in protected areas in Australia and the United States of America. To help inform the often contentious deliberations about use of protected areas for these three types of activities, we review recreation ecology research in both countries. Many impacts on vegetation, soils and trails are similar for the three activities, although there can be differences in severity. Impacts include damage to existing trails, soil erosion, compaction and nutrification, changes in hydrology, trail widening, exposure of roots, rocks and bedrock. There can be damage to plants including reduction in vegetation height and biomass, changes in species composition, creation of informal trails and the spread of weeds and plant pathogens. Due to differences in evolutionary history, impacts on soil and vegetation can be greater in Australia than in the USA. There are specific social and biophysical impacts of horses such as those associated with manure and urine, grazing and the construction and use of tethering yards and fences. Mountain bike specific impacts include soil and vegetation damage from skidding and the construction of unauthorised trails, jumps, bridges and other trail technical features. There are gaps in the current research that should be filled by additional research: (1) on horse and mountain bike impacts to complement those on hiking. The methods used need to reflect patterns of actual usage and be suitable for robust statistical analysis; (2) that directly compares types and severity of impacts among activities; and (3) on the potential for each activity to contribute to the spread of weeds and plant pathogens. Additional research will assist managers and users of protected areas in understanding the relative impacts of these activities, and better ways to manage them. It may not quell the debates among users, managers and conservationists, but it will help put it on a more scientific footing.

This paper comments that little research had been carried out on the impacts of MBT – published 2009.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/bekessy\\_etal\\_2009\\_wedge\\_tailed\\_human\\_impacts\\_tasmania-2.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/bekessy_etal_2009_wedge_tailed_human_impacts_tasmania-2.pdf)

**Modelling human impacts on the Tasmanian wedge-tailed eagle (*Aquila audax fleayi*).** Sarah A. Bekessy, Brendan A. Wintle, Ascelin Gordon, Julian C. Fox, Ryan Chisholm, Bill Brown, Tracey Regan, Nick Mooney, Steve M. Read, Mark A. Burgman. *Biological Conservation* (2009). (Accessed 12 May 2021)

This paper looks at different types of human activities on Wedge-tailed eagle unnatural mortality. Does not discuss MBT.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/cherriman\\_etal\\_2009\\_disturbance\\_wedge\\_tailed.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/cherriman_etal_2009_disturbance_wedge_tailed.pdf)

**Supplementary Notes on the Breeding Behaviour of Wedgetailed Eagles *Aquila audax*.** S.C. CHERRIMAN, A. FOSTER and S.J.S. DEBUS. AUSTRALIAN Field Ornithology 2009, 26, 142–14. (Accessed 12 May 2102).

**SUMMARY** Aspects of territorial and courtship displays, breeding behaviour, nest defence and reaction to human disturbance are described for the Wedge-tailed Eagle *Aquila audax* in parts of southern Australia. Included are a description of a display by a pair that flagged the site of a future nest, and an account of nest abandonment after a focal dead tree in the nesting territory, near the nest-tree, was removed. The latter incident suggests that such focal perching trees, in addition to the nest-tree, might be a component of territory quality. However, the Eagle is notoriously sensitive to disturbance, especially early in the nesting cycle.

Comment from Deb Ford: relevant to Redwood Park if Wedgies have been seen nesting.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/blumstein\\_et\\_al-2005-avian\\_response\\_human\\_disturbance.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/07/blumstein_et_al-2005-avian_response_human_disturbance.pdf)

**Inter-specific variation in avian responses to human disturbance.** DANIEL T. BLUMSTEIN, ESTEBAN FERNÁNDEZ-JURICIC, PATRICK A. ZOLLNER and SUSAN C. GARITY. Journal of Applied Ecology 2005 42, 943–953. (Accessed 12 May 2021)

This paper looks at disturbance by human visitors and how it impacts avian species' ability to forage.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/barker\\_and\\_wardlaw\\_1995\\_tasmanian\\_rare\\_plants\\_and\\_phytophthora.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/barker_and_wardlaw_1995_tasmanian_rare_plants_and_phytophthora.pdf)

**Susceptibility of Selected Tasmanian Rare Plants to *Phytophthora cinnamomi*.** P. C. J. Barker and T. J. Wardlaw. Aust. J. Bot., 1995,43,379-386. (Accessed 12 May 2021)

This paper looks at the effects of *Phytophthora cinnamomi* on various plants. May have limited relevance although some affected plants belong to Australia-wide species and bike tyres can spread the soil-borne pathogen.

[https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/marks\\_etal\\_1975\\_phytophthora\\_victoria.pdf](https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/marks_etal_1975_phytophthora_victoria.pdf)

**The Distribution of *Phytophthora cinnamomi* in Forests of Eastern Gippsland, Victoria.** G. C. Marks, P. C. Fagg and F. Y. Kassaby. Aust. J. Bot., 1975, 23, 263-75. (Accessed 12 May 2021).

This paper looks at distribution across land of *Phytophthora cinnamomi* but apart from Eucalypts does not list other susceptible species. May have limited relevance although some affected plants belong to Australia-wide species and bike tyres can spread the soil-borne pathogen.

<https://rethinkaustmtbimpacts.files.wordpress.com/2019/03/conservation-of-tas-plant-species-threatened-by-phytophthora.pdf>

**Conservation of Tasmanian Plant Species & Communities Threatened by *Phytophthora cinnamomi*.** Richard Schahinger, Tim Rudman and Tim Wardlaw. Nature Conservation Branch Technical Report 03/03, Department of Primary Industries, Water and Environment (2003). (Accessed 12 May 2021)

This paper looks at management options.

<https://www.abc.net.au/news/2017-08-07/tasmanias-battle-between-ecotourism-forestry-plays-out-in-derby/8766304> (accessed 19 May 2021)

"Derby had the mountain bikes foisted upon them," he says.

"The council didn't come to Derby and say: 'Would you like to be the centre of mountain biking in Australia?' Because I can tell you, the people would have said no if they'd done that."



Mr Coxhead says adapting to tourism hasn't been easy for many long-established business owners.

"They've got no idea what these yuppies on mountain bikes require," he says.

<https://theconversation.com/humans-force-wild-animals-into-tight-spots-or-send-them-far-from-home-we-calculated-just-how-big-the-impact-is-152619>

(Accessed 19 May 2021)

Discusses human impact on animal movement. (Feb 2021)

The ability to travel is essential to animal survival because it allows animals to find mates, food and shelter, escape predators and competitors, and avoid disturbances and threats.

And because animal movement is linked to many important ecological processes — such as pollination, seed dispersal and soil turnover — disruptions to movement can cascade through ecosystems.

[https://www.couriermail.com.au/subscribe/news/1/?sourceCode=CMWEB\\_WRE170\\_a&dest=https%3A%2F%2Fwww.couriermail.com.au%2Fquestnews%2Fsoutheast%2Froque-mountain-bikers-](https://www.couriermail.com.au/subscribe/news/1/?sourceCode=CMWEB_WRE170_a&dest=https%3A%2F%2Fwww.couriermail.com.au%2Fquestnews%2Fsoutheast%2Froque-mountain-bikers-)

(Accessed 19 MY 2021)

**Rogue mountain bike riders trash conservation zones** (May 2020)

Rogue mountain bike riders have vandalised conservation zones on Brisbane's southside again, carving out new tracks and brazenly restoring tracks closed by authorities.

<https://bulimbacreek.org.au/2018/02/destruction-in-whites-hill-reserve/>

(Accessed 19 May 2021)

Provides details of damage done in Whites Hill Reserve by construction of illegal bike trails.

<http://carindaleconnect.com.au/community/2014/05/mountain-biking-environmental-threat/>

(Accessed 19 May 2021)

Wayne Cameron of B4C on the threat to the environment by Mountain Bikers.

"It is, as usual, a numbers game – if the newspaper and Councillors get 100 replies and 80 are from organised mountain bikers – we will eventually lose these reserves."

<https://rethink-warburton-mountain-bike-destination.com/>

(Accessed 19 May 2021)

**Rethink Warburton Mountain Bike Destination**

The major concerns about this project are:

- **traffic & parking** problems
- strain on infrastructure
- strain on our **emergency services**, already stretched beyond capacity
- problems with **evacuation in the event of fires**
- **dominance of a mountain biking culture** to the detriment of other subcultures
- loss of a close knit local community, replaced by a tourist culture
- loss of permanent accommodation creating a transient population of tourists
- stress to **wildlife**, both animal and plant
- destruction of bush for trails, both legal and illegal

- damage to sites of **heritage and aboriginal significance**
- Loss of **amenity** for residents
- loss of amenity to **other recreational users of the bush**
- dumping of rubbish by tourists
- lighting of fires by tourists in our highly fire prone home

<https://mjvande.info/>

(Accessed 21 May 2021)

Many environment-related aphorisms, eg.

"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has." Margaret Mead

"The darkest places in hell are reserved for those who maintain their neutrality in times of moral crisis." Dante Alighieri

"What must be opposed is the pernicious belief that the universe is human-centered, that all else on Earth in land, sky and water is of lesser value than human life. No divine providence has given us the right to plough, mine, slash and burn, displacing and exterminating all organisms except our own kind, tormenting the paradise into which we are born, often only to satisfy frivolous wants."  
Stan Rowe