

Subject: RE: Science Proves Mountain Biking Is More Harmful Than Hiking

Date: Fri, 18 Feb 2005 09:59:20 -0800

From: "Ernie Crist" <ernie_crist@dnv.org>

To: "Cam McRae" <cam@nsmb.com>, "Mayor and Council - DNV" <Council@dnv.org>, <Cagebc@yahoo.com>, "James Ridge" <James_Ridge@dnv.org>, "Richard Boulton" <Richard_Boulton@dnv.org>, "Susan Rogers" <Susan_Rogers@dnv.org>

CC: "Senior Management Committee" <managecomm@dnv.org>, <fonvca@fonvca.org>

Dear Mr. McRae:

I don't think you should overly worry as to whether I've been on the trails or not, or have done so often enough. Let's just say I've seen, read and heard enough about the issue to come to an informed opinion, come up with workable solutions and generally look beyond the end of my own and the NSMBA nose.

Let me reiterate again, trail biking on rainy Mount Fromme, with its impact on the community, is a NO WINNER and sooner or later the exercise will come to grief. However, you are not going to believe me anyway so the matter will have to take its course just as it has in other jurisdictions before it sank in and before the respective jurisdictions were compelled to take action. It just so happens that in the District of North Vancouver they are a little slower, a little more backward and haven't quite caught on yet, but then neither have they caught on to other important phenomena - they are like that and just don't know yet that the game is lost.

Thank you,

Ernie Crist

-----Original Message-----

From: Cam McRae [<mailto:cam@nsmb.com>]

Sent: Friday, February 18, 2005 8:11 AM

To: Ernie Crist

Cc: steve@kashas.com; Susan Rogers; c-black1@shaw.ca; mark_col@shaw.ca; Richard Boulton; fonvca@fonvca.org; Cagebc@yahoo.com; Senior Management Committee

Subject: Re: Science Proves Mountain Biking Is More Harmful Than Hiking

Councillor Crist,

It's interesting that you feel we are on a crusade against you. We haven't called for a Moratorium on your activities. An impartial observer might see it differently. That aside I have seen equally exhaustive and scientific studies that have come up with the exact opposite conclusion. I will find the documents and forward them to you.

I have continually asked you whether you have actually seen any of the trails on Fromme to ascertain whether you have any actual experience to back up your opinions about the effect we have on trails.

Each time you avoid the issue and take the discussion in a different discussion.

I will be plain; COUNCILLOR CRIST - HAVE YOU BEEN ON ANY TRAILS ON MOUNT FROMME? IF SO WHICH ONES? CAN YOU TELL ME WHAT YOU SAW THERE?

Without this information it would seem you know not of what you speak.

Sincerely,
Cam McRae

Cam McRae

Editor - nsmb e.magazine

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On 17-Feb-05, at 11:30 PM, Ernie Crist wrote:

> A MESSAGE FROM ERNIE CRIST;
>
> The District had to spend a great deal of money and staff time to
> rectify the damage done to trails by Mountain Bikers on Fromme
> Mountain.
> Numerous trees had also been removed illegally. The same is true for
> illegally built structures. All this was reported to Mayor and Council
>
> and is an indisputable fact. The issue now is do we continue on this
> road with no win in sight or are we going to review the situation and
> come up with solutions that spell win win.
>
> The Mountain Bikers are on a crusade against me (Councillor Ernie
> Crist)
> for having called for a moratorium until this question is answered and
>
> for my efforts I have received more than my fair share of abuse from
> some Mountain Bikers. But facts are stubborn things as the philosopher
> stated.
>
> Below is a truly scientific analysis to what Mountain biking in
> forested and steep Mountain terrain can and will do, especially if the
>
> areas are subject to heavy rainfalls as is the case on Mount Fromme.
>
>
> Sent: Thursday, February 17, 2005 6:03 PM
> To: Mayor and Council - DNV
> Cc: James Ridge
> Subject: Science Proves Mountain Biking Is More Harmful Than Hiking
>
> Please share the following paper with all appropriate and interested
> parties. Please restrict bicycles and other vehicles to pavement,
where
> they belong and where they can't do much harm to wildlife. Mountain
> biking is a very destructive activity, and has no place in natural
> areas. Anyone who wants to visit nature can already do so on foot (or
> via wheelchair).
> Mountain biking drives out all other trail users. There is absolutely
>
> no
> reason to allow access by large pieces of machinery, such as bicycles.
>
> The Impacts of Mountain Biking on Wildlife and People -- A Review of
> the
> Literature Michael J. Vandeman, Ph.D.
> July 3, 2004
>
> "Every recreations -- whether hiker, biker, horse packer, or posey
> sniffer
> -- should not begin by asking, 'What's best for ME?' but rather
> 'What's
> best for the bears?'" Tom Butler "Will we keep some parts of the
> American landscape natural and wild and free -- or must every acre be
> easily accessible to people and their toys? ... Mountain bikes'
impacts
> on the land are large and getting worse. ... The aggressive push of

> mountain bike organizations to build ever-growing webs of trails poses
> serious problems of habitat fragmentation, increased erosion, and
> wildlife conflicts.

> As interest in extreme riding continues to grow, as trail
> networks burgeon, and as new technology makes it possible for
ever-more
> mountain bicyclists to participate, even the most remote wild
> landscapes
> may become trampled -- and trampled -- by knobby tires. ... The
> destruction of wilderness and the fragmentation of habitats and
> ecosystems is death by a thousand cuts. Will introduction of mountain
> bikes -- and their penetration farther into wilderness -- promote
> additional fragmentation and human conflicts with the natural world?
> Yes." Brian O'Donnell and Michael Carroll "Some things are obvious:
> mountain bikes do more damage to the land than hikers. To think
> otherwise ignores the story told by the ground. Although I have never
> ridden a mountain bike, I am very familiar with their impacts.
> For the last seven years I have regularly run three to six miles
> several
> times a week on a network of trails in the Sandia Mountain foothills
> two
> blocks from my home. ... These trails receive use from walkers,
> runners,
> and mountain bikers; they are closed to motorized vehicles.

> Because I'm clumsy, I keep my eyes on the trail in front of
> me.
> I run or walk in all seasons, in all kinds of weather. I have watched
> the growing erosion on these trails from mountain bike use. The basic
> difference between feet and tires is that tire tracks are continuous
> and
> foot tracks are discontinuous. Water finds that narrow, continuous
tire
> tracks are a rill in which to flow. Also, because many mountain bikers
> are after thrills and speed, their tires cut into the ground. Slamming
> on the brakes after zooming downhill, sliding around sharp corners,
and
> digging in to go uphill: I see the results of this behavior weekly.
...
> I regularly see mountain bikers cutting off cross-country,
> even
> on steep slopes, for more of a challenge. They seem blind and deaf to
> the damage they cause. Admittedly, backpackers and horsepackers can
> cause damage to wilderness trails. But this is a poor argument to
> suggest that we add another source of damage to those trails." Dave
> Foreman
>
> "Studies show that bike impacts are similar to those of other
> non-motorized trail users." Jim Hasenauer (professor of rhetoric and
> member of the board of directors of the International Mountain
> Bicyclists Association)
>
> Introduction:
>
> I first became interested in the problem of mountain biking
in
> 1994. I had been studying the impacts of the presence of humans on
> wildlife, and had come to the conclusion that there needs to be
habitat
> that is entirely off-limits to humans, in order that wildlife that is
> sensitive to the presence of humans can survive (see Vandeman, 2000).
> But what is the best way to minimize the presence of people?
> Restricting
> human access is repugnant, and difficult and expensive to accomplish.

> It

> occurred to me that the best way to reduce the presence and impacts of
> humans is to restrict the technologies that they are allowed to
utilize
> in nature: e.g.
> prohibit bicycles and other vehicles (and perhaps even domesticated
> animals, when used as vehicles).

>
> Having been a transportation activist for eight years
(working
> on stopping highway construction), and having a favorable view of my
> fellow bicyclists as environmentalists, I turned to them to help me
> campaign to keep bicycles out of natural areas. Was I ever surprised!
I
> discovered that many bicyclists (e.g. many mountain bikers) aren't
> environmentalists at all, but are simply people who like to bicycle --
> in the case of mountain bikers, many of them just use nature, as a
kind
> of playground or outdoor gymnasium! (Of course, there are also hikers,
> equestrians, and other recreationists who fall into this category.) To
> my suggestion to keep bikes off of trails in order to protect
wildlife,
> they reacted with hostility!
> (There is a degree of balkanization among activists, where some
> transportation activists ignore the needs of wildlife, and some
> wildlife
> activists eschew bikes and public transit.)

>
> In 1994 I attended a public hearing held by the East Bay
> Municipal Utility (water) District to decide whether to allow bikes on
> their watershed lands. Mountain bikers were there asking for bike
> access, and the Sierra Club was there to retain the right to hike,
> while
> keeping out the bicycles. I said that I had no interest in using the
> watershed, but that I wanted to ensure that the wildlife are protected
> -- hence, I asked that bikes not be allowed. Afterward, the EBMUD
Board
> of Directors took a field trip to Marin County, the birthplace of
> mountain biking, to see the effects of mountain biking there. While
> they
> were hiking along a narrow trail, a mountain biker came racing by,
> swearing at them for not getting out of his way fast enough. That
> helped
> them decide to ban bikes. Today bikes are still restricted to paved
> roads, and EBMUD is still one of the public agencies most protective
of
> wildlife.

>
> It is obvious that mountain biking is harmful to some
wildlife
> and people. No one, even mountain bikers, tries to deny that. Bikes
> create V-shaped ruts in trails, throw dirt to the outside on turns,
> crush small plants and animals on and under the trail, facilitate
> increased levels of human access into wildlife habitat, and drive
other
> trail users (many of whom are seeking the tranquility and
primitiveness
> of natural surroundings) out of the parks. Because land managers were
> starting to ban bikes from trails, the mountain bikers decided to try

> to
> shift the battlefield to science, and try to convince people that
> mountain biking is no more harmful than hiking. But there are two
> problems with this approach: (1) it's not true, and (2) it's
> irrelevant.

>
> I will examine (1) in a moment. But first, let's look at

> relevance: whether or not hiking (or All Terrain Vehicles or urban
> sprawl or anything else) is harmful really has no bearing on whether
> mountain biking is harmful: they are independent questions. Such a
> comparison would only be relevant if one were committed to allowing
> only
> one activity or the other, and wanted to know which is more harmful.
In
> reality, hiking is always allowed, and the question is whether to add
> mountain biking as a permitted activity. In that case, the only
> relevant
> question is: Is mountain biking harmful? Of course, it is. However,
> since many people seem interested in the outcome of the comparison, I
> will examine the research and try to answer it.

>
> The mountain bikers' other line of research aims to prove
that
> mountain bikers are just like hikers, implying that they should have
> the
> same privileges as hikers. (Of course, they already have the same
> privileges! The exact same rules apply to both groups: both are
allowed
> to hike everywhere, and neither is allowed to bring a bike where they
> aren't
> allowed.) Using surveys, they have tried to show that mountain bikers
> are really environmentalists, lovers of nature, and deep ecologists.

Of
> course, surveys are notoriously unreliable: statements of belief don't
> easily translate into behavior. I'm going to ignore this research,
> since
> I am (and the wildlife are) more interested in actual impacts, not
> intentions.

>
> The International Mountain Biking Association (IMBA) has done
> me the favor of collecting all the research they could find that
seemed
> favorable to mountain biking. Gary Sprung (2004) summarized it in his
> carefully worded essay, "Natural Resource Impacts of Mountain Biking".
> Gary says "the empirical studies thus far do not support the notion
> that
> bikes cause more natural resource impact". I will show that this is
not
> true; in fact, those studies, if their data are interpreted properly,
> show the exact
> opposite: that mountain biking has much greater impact than hiking!
> Gary
> says that we should make "make rational, non-arbitrary, less political
> decisions regarding which groups are allowed on particular routes".
> This
> is disingenuous. Mountain bikers (but not bikes) are already allowed
on
> every trail.

>
> Impacts on Soil (Erosion):

>
> Gary says "No scientific studies show that mountain bikers
> cause more wear to trails than other users". He cites Wilson and Seney
> (1994) and claims that "hooves and feet erode more than wheels. ...
> Wilson and Seney found no statistically significant difference between
> measured bicycling and hiking effects". He quotes the study: "Horses
> and
> hikers (hooves and
> feet) made more sediment available than wheels (motorcycles and
> off-road
> bicycles) on prewetted trails" (p.74).

> This study is frequently cited by mountain bikers as proof
> that
> mountain biking doesn't cause more impact than hiking. But it has a
> number of defects that call its conclusions into question. The authors
> used a "rainfall simulator" to measure "sediment made available" by
> the
> various treatments. They "[collected] surface runoff and sediment
> yield
> produced by the simulated rainstorms at the downslope end of each
> plot",
> which they claim "correlates with erosion" (they don't say what the
> correlation coefficient is). This doesn't seem like a good measure of
> erosion. For example, if a large rock were dislodged, the very weak
> "simulated rainfall"
> wouldn't be capable of transporting it into the collecting tray; only
> very fine particles would be collected. In fact, they admit that the
> simulator's "small size ... meant that the kinetic energy of the
> simulated rainfall events was roughly one-third that of natural
> rainstorms". Another reason to suspect that the measurements aren't
> valid is that "none of the relationships between water runoff and soil
> texture, slope, antecedent soil moisture, trail roughness, and soil
> resistance was statistically significant".

>
> The authors also ignored the relative distances that various
> trail users typically travel (for example, bikers generally travel
> several times as far as hikers, multiplying their impacts accordingly)
> and the additional impacts due to the mountain bike bringing new
> people
> to the trails that otherwise would not have been there (the same
> omission is true of all other studies, except Wisdom et al (2004)).
> They
> do say "Trail use in the last ten years has seen a dramatic increase
> in
> off-road bicycles" (p.86), but they don't incorporate this fact into
> their comparison. In addition, there is no recognition of different
> styles of riding and their effect on erosion. We don't know if the
> mountain bikers rode in representative fashion, or, more likely, rode
> more gently, with less skidding, acceleration, braking, and turning.
> There was also no recognition that soil displaced sideways (rather
> than
> downhill) also constitutes erosion damage.
> It seems likely that they underestimated the true impacts of mountain
> biking. I don't think that these results are reliable. (Note that the
> study was partially funded by IMBA.)

>
> Gary next cited Chiu (Luke.Chiu@utas.edu.au) and Kriwoken
> (L.K.Kriwoken@utas.edu.au), claiming that there was "no significant
> difference between hiking and biking trail wear". It is apparent he
> and
> the authors misstated the implications of the study. If we assume, as
> they claim, that bikers and hikers have the same impact per mile
> (which
> is what they measured), then it follows that mountain bikers have
> several times the impact of hikers, since they generally travel
> several
> times as far. (I haven't found any published statistics, but I have
> informally collected 72 mountain bikers' ride announcements, which
> advertise rides of a minimum of
> 8 miles, an average of 27 miles, and a maximum of 112 miles.)

>
> Besides ignoring distance travelled, there were a number of
> other defects in the study. The biking that was compared with hiking
> was
> apparently not typical mountain biking. It was apparently slower than
> normal and included no skidding. Bikers who skidded (a normal

> occurrence) were not compared with hikers. Their erosion impacts were
 > much greater than those of any hikers (judging from the study's graph
 > labelled "Figure 3").
 > Bikers' impacts under wet conditions were also greater than those of
 > the
 > hikers, which probably would have been statistically significant, if
 > the
 > numbers (of data points) had been greater. One useful result was that
 > the bikers tended to create a V-shaped groove, whereas the hikers'
 > impact was spread more evenly across the trail. They admit that this
 > "could act as a water channel and increase erosion" (p.356). They also
 > surveyed trail
 > users: "34% of riders listed excitement/risk as a main reason for
 > visiting [the park]. This, combined with the 57% of 'other users' who
 > visit for relaxation, sets up a potential for goal interference, in
 > that
 > a rider aiming for an exciting/risky experience has the potential to
 > interfere with a walker aiming to have a relaxing experience." (p.357)
 > This would also tend to indicate that many bikers travel faster than
 > those in this study, since they are seeking "excitement" and "risk".

> Impacts on Plants:

> Gary says "No scientific studies indicate that bicycling
 > causes
 > more degradation of plants than hiking. Trails are places primarily
 > devoid of vegetation, so for trail use in the center of existing
 paths,
 > impacts to vegetation are not a concern." However this is a concern
 for
 > plants that try to establish themselves in the trail, and for roots
 > that
 > cross the trail and end up being killed or damaged.

> He cites Thurston and Reader (2001), claiming that "hiking
 and
 > bicycling trample vegetation at equal rates ... the impacts of biking
 > and hiking measured here were not significantly different". Actually,
 > that is not true. Although overall impacts weren't significantly
 > different, "soil exposure [was] greater on biking 500 pass lanes than
 > hiking 500 pass lanes"
 > (p.404). In other words, after 500 passes, mountain biking began to
 > show
 > significantly greater impacts. Thus their conclusion, "the impacts of
 > biking and hiking measured here were not significantly different"
 > (p.405) is unwarranted.

> The authors said "Bikers traveled at a moderate speed,
 usually
 > allowing bicycles to roll down lanes without pedaling where the slope
 > would allow." Thus it would appear that the mountain biking that they
 > measured is not representative: it was unusually slow and didn't
 > include
 > much opportunity for braking, accelerating, or turning, where greater
 > impacts would be expected to occur.

> The authors also said "Some hikers feel that bikers should be
 > excluded from existing trails" (p.397). Of course, this is not true.
 > Hikers are only asking that bikes be excluded, not bikers. On page 407
 > they admit the "possibility ... that mountain bikers simply contribute
 > further to the overuse of trails". In other words, allowing bikes on
 > trails allows trail use to increase over what it would be if bikes
 > weren't allowed. This is probably true, and deserves to be recognized
 > and researched.

> They found that "One year following treatments, neither
> vegetation loss nor species loss was significantly greater on treated
> lanes than on control lanes" (p.406). They conclude that the
recreation
> impacts are "short-term", and experience "rapid recovery". This is
> unjustified. Killing plants and destroying seeds modifies the gene
> pool,
> and introduces human-caused loss of genetic diversity, and evolution.
> Dead plants and lost genetic diversity do not "recover" (see Vandeman,
> 2001).

> However, the greatest defect of the study and its
> interpretation is that is that it doesn't consider the distance that
> bikers travel. Even if we accepted their conclusions that impacts per
> mile are the same, it would follow that mountain bikers have several
> times the impact of hikers, since they are easily able to, and do,
> travel several times as far as hikers. Try walking 25 or 50 or 100
> miles
> in a day!

> Impacts on Animals:

> Gary cites Taylor and Knight (1993), claiming that "hiking
and
> biking cause [the] same impact to large mammals on Utah island".

First,
> as noted by Wisdom et al (2004), this study lacked a control group,
and
> hence can't infer causation. Second, the authors made the same mistake
> that all other researchers made: they ignored the different distances
> that hikers and bikers travel. I also wonder how realistic it was to
> have all recreationists continue past the animals without stopping to
> look at them.
> (All of those researchers also failed to implement blind measurement
> and
> analysis: the researchers were aware, as they were measuring, which
> treatment they were testing. Only Wisdom et al were able to carry out
> their measurements (electronically) without any people even being
> present.)

> This is a very informative paper. The authors "examined the
> responses of bison ..., mule deer ..., and pronghorn antelope ... to
> hikers and mountain bikers ... by comparing alert distance, flight
> distance, and distance moved" (p.951). They noted, significantly, that
> "Outdoor recreation has the potential to disturb wildlife, resulting
in
> energetic costs, impacts to animals' behavior and fitness, and
> avoidance
> of otherwise suitable habitat. ... outdoor recreation is the second
> leading cause for the decline of federally threatened and endangered
> species on public lands"
> (p.951). They also noted that "Mountain biking in particular is one of
> the fastest-growing outdoor activities, with 43.3 million persons
> participating at least once in 2000" (p.952). However, they didn't
draw
> on this fact when they concluded "We found no biological justification
> for managing mountain biking any differently than hiking" (p.961).

> The authors also surveyed the recreationists, and found that
> they "failed to perceive that they were having as great an effect on
> wildlife as our biological data indicated. Most recreationists felt
> that
> it was acceptable to approach wildlife at a much closer distance (mean
> acceptable distance to approach = 59.0 m) than wildlife in our
> experimental trials would typically allow a human to approach (mean

> flight distance of all species = 150.6 m). ... Of all visitors
> surveyed,
> 46%, 53%, and 54%, respectively, felt that bison, deer, and pronghorn
> were being negatively affected by recreation on Antelope Island. ...
> Visitors expressed little support for allowing only one type of
> recreational use on island trails, having fewer trails on the island,
> for requiring visitors to watch an educational video about the effects
> of recreation on wildlife, and for allowing recreation only on the
> north
> (developed) end of the island"
> (p.957). (Gary Sprung omitted this information from his summary.)
>
> They noted that the wildlife might habituate to the presence
> of
> humans, but that exactly the opposite happened with the pronghorn:
they
> "in fact used areas that were significantly farther from trails than
> they had prior to the start of recreational use on the island"
(p.961).
> They also
> noted: "Because flushing from recreational activity may come at the
> cost
> of energy needed for normal survival, growth, and reproduction ...,
and
> because it may cause animals to avoid otherwise suitable habitat ...,
> it
> is important that recreationists understand that their activities can
> flush wildlife and may make suitable habitat unavailable" (p.961). I
> think that the wealth of such information provided by the authors
makes
> this paper especially valuable.
>
> They concluded "Our results indicate that there is little
> difference in wildlife response to hikers vs. mountain bikers"
(p.957).
> I was present when Ms. Taylor presented her findings at the Society
for
> Conservation Biology meeting at the University of Kent, in Canterbury,
> England, in July, 2002. I pointed out to her that she wasn't justified
> in concluding, as she did, that "hiking and mountain biking have the
> same impacts", since she only measured impacts per incident. Since
> bikers are able, and typically do, travel several times as far as
> hikers, a more proper conclusion would be that bikers have several
> times
> as much impact on wildlife as hikers. That is why I am so disappointed
> to find her later concluding in this 2003 paper, "We found no
> biological
> justification for managing mountain biking any differently than
hiking"
> (p.961). If mountain bikers can travel even twice as far as hikers,
and
> disturb twice as many animals, I would think that that is biologically
> significant! It isn't much help that she goes on to admit that
"because
> bikers travel faster than hikers, they may cover more ground in a
given
> time period than hikers, thus having the opportunity to disturb more
> wildlife per unit time" (p.961). She has still drawn an unjustified
> conclusion, and it is certain to be frequently quoted (out of context)
> by mountain bikers, as they try to lobby for more trail access.
>
> I also wonder about the accuracy of their measurements of
> distance. Distance is notoriously difficult to measure accurately,
> especially when animals and recreationists may be hidden from view

> ("Due
> to the inherent errors in triangulating in the steep canyon country,
> only ground visual locations were used in the analysis" p.577). Bias
> may
> also have been introduced by the fact that researchers knew, as they
> were measuring, which treatment they were measuring.

>
> Sprung next cited Papouchis et al (2001), claiming that
> "Hikers
> have [the] greatest impact on bighorn sheep [in Canyonlands National
> Park] ... because the hikers were more likely to be in unpredictable
> locations and often directly approached [the] sheep". Actually, this
is
> an artifact of the experimental design, and not a result of research:
> the researchers, for some reason, told the hikers (who were research
> assistants) to approach the sheep! So the study actually compared
> apples
> and oranges: bikers who stay on a road, vs. hikers who approach
bighorn
> sheep! Nothing useful can be concluded from such a study, except that
> people who approach bighorn sheep disturb them. Of course, there is
> nothing to prevent mountain bikers from getting off their bikes and
> doing the same thing. It's unfortunate that the opportunity was lost
to
> gain more valuable knowledge. I wrote the authors, asking why they had
> done this, but I got no reply. It would appear that the intention was

> to
> exonerate mountain biking (this also applies to most of the other
> studies).

>
> It is interesting that "when bighorn sheep did respond to
> human
> activity, they noticed vehicles and mountain bikers, on average, from
> twice the distance they noticed hikers" (p.577). This would seem to
> imply that, were hikers to remain on the trail where the mountain
> bikers
> were, they might have equal or lower impacts than the mountain bikers.

>
> It is also unfortunate that there was no control group, so
> that
> they could determine the effect of the presence of roads, with and
> without people on them. They did note that "avoidance of the road
> corridor by some animals represented 15% less use of potential
suitable
> habitat in the high-[visitor-]use area over the low-[visitor-]use
area.
> ... human presence in bighorn sheep habitat may cause sheep to vacate
> suitable habitat"
> (p.573). This argues for eliminating all recreation in the area,
> especially since the absence of water forces recreationists to bring
> motor vehicles carrying water and other supplies: "mountain bikers
> frequently use the 161-km White Rim trail, a 4-wheel-drive road.
> Caravans of mountain bikers accompanied by support vehicles are
common.
> Day use along the Shafer and White Rim trails exceeded 17,500 vehicles
> during the study period, 1993-1994. This use was concentrated from
> March
> to October, with peak use of 134 vehicles/day in May" (p.575).

>
> The authors conclude "Contrary to our original expectations
> and
> the concerns of park managers, the increase in numbers of mountain
> bikers visiting the park does not appear to be a serious threat to
> desert bighorn sheep, probably because mountain bikers are restricted

> to
 > predictable situations such as the currently designated road
 corridors"
 > (p.580). For several reasons, this conclusion is not justified: (1) as
 > they reported, all recreationists drive the sheep away from parts of
 > their habitat, causing loss of energy as well as habitat; (2)
 > permitting
 > bikes causes the total number of visitors to increase significantly;
 > (3)
 > bikes can't travel alone -- they require motorized support vehicles,
 > further increasing impacts (e.g. worsening air quality); (4) there is
 > nothing to prevent mountain bikers from getting off their bikes and
 > approaching the wildlife; if hikers do that, so will mountain bikers;
 > there is no reason to exonerate mountain bikers.

>
 > They note, significantly, "However, these results should not

> be
 > extrapolated to other public lands where mountain bikers are not
 > confined to designated trails and may surprise sheep in novel
 > situations" (p.580).
 > Gary Sprung didn't mention this, thus encouraging inappropriate use of
 > this study's already-questionable results.

>
 > I would like, however, to commend the authors for stating "we
 > recommend that park managers manage levels of backcountry activity at
 > low levels" (p.580). The best policy would be to ban all vehicles,
 > including bicycles (as well as animals used as vehicles). That would
 > reduce human impacts, without directly restricting who could go there
 > (perhaps occasional exceptions could be made for the disabled).

>
 > Gary next cited Gander and Ingold (1997), claiming that
 > "hikers, joggers & mountain bikers [are] all the same to chamois". But
 > again, this is not an accurate representation of the results: "They
 > fled
 > over longer distances in jogging and mountain biking experiments ...
 > carried out late in the morning" (p.109). Also, "the three activities
 > carried out on the ground could have long-term consequences as they
 > prevent the animals from using areas near trails. Thus, depending on
 > the
 > density of trails and the intensity of recreational activities in a
 > certain area, animals may lose a large part of their habitat" (p.109).

>
 > The authors conclude "Our results show that specific
 > restrictions on mountainbiking above the timberline are not justified
 > from the point of view of chamois" (p.109). Once again (is there a
 > pattern here?), this conclusion is not justified. It ignores the fact
 > that mountain bikers are able to travel several times as far as
 hikers,
 > and thus negatively impact several times as much wildlife. It also
 > ignores the fact that bicycles enable a large increase in numbers of
 > human visitors (note that this places the blame on the bicycle, not
 the
 > bicyclists -- my argument doesn't depend on there being any difference
 > between hikers and mountain bikers). And, of course, wherever the
 > number
 > of visitors increases, there is pressure to build more trails,
 > destroying even more habitat. Once again, it would appear that this
 > study was undertaken with the intent of excusing mountain biking.

>
 > Gary next cites a study of bald eagles by Robin Spahr (1990).
 > "Spahr found that walkers caused the highest frequency of eagle
 > flushing".
 > However, this study is difficult to interpret. Eagles don't congregate

> in large numbers, like sheep, so it is hard to ensure that all
> treatments are equally balanced: it is hard to imagine that the
> conditions under different treatments (or even within treatments) were
> equal. Also, the bikers were apparently instructed to ride by without
> looking at the eagles, whereas some of the walkers were told to look
> and
> point at the eagles (the paper is vague on this point). In other
words,
> the study was comparing apples with oranges. Thus, I don't know if
this
> was really a controlled study. Spahr also found that "bicyclists
caused
> eagles to flush at [the] greatest distances", which would tend to
> indicate that bicyclists have greater impacts. Distances are also
> notoriously difficult to measure accurately. We are given no
> information
> about the "rangefinder", in order to judge its accuracy. At best,
these
> are mixed results. And, once again, the greater distances that bikers
> travel are ignored, as well as the greater visitor numbers that the
> bicycle enables. Therefore, the study cannot be said to support any
> conclusion about how hiking compares with mountain biking, and
> certainly
> not Gary's statement: "Hikers have greater impact on eagles than
> cyclists". To Spahr's credit, she did not attempt to generalize beyond
> her data.

>
> Gary concludes "Mountain biking, like other recreation
> activities, does impact the environment. On this point, there is
little
> argument. But ... a body of empirical, scientific studies now
indicates
> [sic] that mountain biking is no more damaging than other forms of
> recreation, including hiking [Gary's emphasis]. Thus, managers who
> prohibit bicycle use (while allowing hiking or equestrian use) based
on
> impacts to trails, soils, wildlife, or vegetation are acting without
> sound, scientific backing." Au contraire, as I have indicated, the
very
> studies that Gary and IMBA cite as support for mountain biking
actually
> show that mountain biking does much more harm to the environment than
> hiking! Gary goes on to fault "the wisdom of prohibiting [sic]
> particular user groups". However, as I explained earlier, mountain
> bikers are not prohibited from using any trails. Bicycles are
> occasionally prohibited. Mountain bikers are merely required to follow
> the same rules as everyone else, and walk.

>
> At the bottom of the same web page is the notice: "IMBA
wishes
> to obtain and incorporate into future revisions of this document any
> new
> or additional empirical science regarding the impacts of mountain
> biking. IMBA welcomes input [my emphasis]. To offer information,
please
> contact the author at gary@imba.com". On April 25 I emailed Gary (and
> Pete Webber,
> pete@imba.com) the Wisdom et al study, which demonstrates that
mountain
> bikers have a greater impact on elk than hikers. Not only hasn't this
> new research been incorporated into his paper, but I haven't even
> received a reply. It would appear that IMBA isn't really interested in
> achieving a scientific answer to this question.

>
> In 2003, Jason Lathrop wrote an excellent "critical
literature

> review" on the ecological impacts of mountain biking, raising some
> questions found nowhere else. He quotes the BLM: "An estimated 13.5
> million mountain bicyclists visit public lands each year to enjoy the
> variety of trails. What was once a low use activity that was easy to
> manage has become more complex". He criticizes all of the studies for
> not using realistic representations of mountain biking. For example,
on
> Thurston and Reader, he says "this study's treatment passes at best
> loosely approximate the forces exerted by actual mountain biking. On
> real trails, riders possess widely varying levels of skill, resulting

> in
> variant speeds, turning, and braking.
> This study does not address these variables." Lathrop also makes the
> excellent point that "Direct mortality [of animals] is virtually
> unstudied.
> I could find no references to it in the literature. Anecdotal evidence
> suggests, however, that small mammals are vulnerable to impact and are
> not uncommonly killed."
>
> And: "Taylor (2001) concluded that short-term behavioral
> changes do not vary between bicyclists and hikers on a per-encounter
> basis.
> However, because bicyclists are capable of and, in most areas,
> typically
> do travel much farther than hikers, it is reasonable to conclude that
> they will create a somewhat higher total number of encounters and
> flushings."
>
> Cessford (1995) did an oft-quoted review (which I am
including
> only because it is so widely cited) that, like all others,
uncritically
> accepts Wilson and Seney (1994) as proof that mountain biking impacts
> are no worse than those of hikers. His paper is mostly speculation,
> based on few actual research findings. He disparages negative
> information about mountain biking by such devices as claiming that
> problems are caused by a minority of mountain bikers, exhibiting "poor
> riding habits", that accidents involving hikers and bikers are "rare",
> that hikers' dislike for being around bikes in the woods, and feelings
> that bikes cause greater environmental harm than hiking, are mere
> "perceptions". He blames hikers for "misperceiving" mountain bikers,
> claiming that "the two groups are more similar than is generally
> perceived. ... The bicyclists ... are basically hikers who are using
> mountain bikes to gain quicker access to the wilderness boundary". He
> speculates, without any evidence, that "the degree of conflict with
> mountain biking may diminish over time as other users become more
> familiar with bike-encounters and riders themselves". A more likely
> interpretation is that hikers who dislike being around bikes simply
> stop
> using trails that are open to bikes, thereby lessening the conflict!
>
> Finally, in 2004, Wisdom et al did a very well controlled
> study
> comparing the impacts of ATV riders, mountain bikers, and hikers on
elk
> and mule deer. They say we have an "urgent need for timely management
> information to address the rapid growth in off-road recreation. ...
> Mountain biking [is] ... increasing rapidly". Recreationists were
> allowed to stop for less than a minute to look at the animals. All
> measurements were made electronically, using an Automated Telemetry
> System and GPS, allowing control measurements to be made "blind", with
> no humans present! "Use of the automated telemetry system to track
> animal movements, combined with the use of GPS units to track human
> movements, provided real-time, unbiased estimates of the distances

> between each ungulate and group of humans [the recreationists were in
> pairs]". He pointed out that direct measurements, a la Taylor and
> Knight, tend to be biased, because some animals can't be observed. The
> area was entirely fenced, allowing researchers to completely control
> human access.

>
> They found: "Movement rates of elk were substantially higher
> during all four off-road activities as compared to periods of no human
> activity. ... For the morning pass, movement rates of elk were highest
> during ATV activity, second-highest during mountain bike riding, and
> lowest during hiking and horseback riding. ... Peak movement rates of
> elk during the morning pass were highest for ATV riding (21
> yards/minute), followed by mountain bike riding (17 yards/minute) and
> horseback riding and hiking (both about 15 yards/minute). ... By
> contrast, peak movement rates of elk during the control periods did
> not

> exceed 9 yards/minute during daylight hours of 0800-1500, the
> comparable
> period of each day when off-road treatments were implemented.
> Interestingly, movement rates of elk were also higher than control
> periods at times encompassing sunrise and sunset for the days in which
> an off-road activity occurred, even though humans were not present at
> these times of the day. These higher movement rates near sunrise and
> sunset suggest that elk were displaced from preferred security and
> foraging areas as a result of flight behavior during the daytime
> off-road activities. In particular, movement rates of elk at or near
> sunrise and sunset were higher during the 5-day treatments of mountain
> bike and ATV activity".

>
> "Higher probabilities of flight response occurred during ATV
> and mountain bike activity, in contrast to lower probabilities
observed
> during hiking and horseback riding. Probability of a flight response
> declined most rapidly during hiking, with little effect when hikers
> were
> beyond 550 yards from an elk. By contrast, higher probabilities of elk
> flight continued beyond 820 yards from horseback riders, and 1,640
> yards
> from mountain bike and ATV riders. In contrast to elk, mule deer
showed
> less change in movement rates during the four off-road activities
> compared to the control periods". (Perhaps they seek cover, rather
than
> running away.)

>
> "The energetic costs associated with these treatments deserve
> further analysis to assess potential effects on elk survival. For
> example, if the additional energy required to flee from an off-road
> activity reduces the percent body fat below 9 percent as animals enter
> the winter period, the probability of surviving the winter is
extremely
> low. Animal energy budgets also may be adversely affected by the loss

> of
> foraging opportunities while responding to off-road activities, both
> from increased movements, and from displacement from foraging habitat.
> ... Our results from
> 2002 also show clear differences in elk responses to the four off-road
> activities. Elk reactions were more pronounced during ATV and mountain
> bike riding, and less so during horseback riding and hiking. Both
> movement rates and probabilities of flight responses were higher for
> ATV
> and mountain bike riding than for horseback riding and hiking."

>
> It is also instructive to note that only one pair of ATV

users

> were needed to cover the 20-mile study area, but two pairs of mountain
> bikers and three pairs of hikers were needed, to cover the distance in
> the time allotted, underscoring the different relative distances that
> the three groups are capable of covering.

>

> Summary:

>

> Mountain bikers have turned to scientific research to try to
> make mountain biking seem less harmful, and in particular, to studies
> comparing it with hiking. Although they have interpreted this data as
> indicating that mountain biking impacts are no greater than those of
> hiking, a more careful look at these studies leads to the conclusion
> that mountain biking impacts are actually several times greater than
> those of hikers.

>

> Some of the important characteristics of mountain biking that
> have been ignored are: speed; distance traveled; the increase in
number

> of visitors that bikes allow; increased trail-building, with its
> attendant habitat destruction; the displacement of soil (other than
> downhill); the killing of roots and soil organisms and ecosystems;
most

> effects on wildlife; manner of riding (skidding, braking,
acceleration,

> turning, and representativeness); tire tread; and noise (bikes are
> relatively quiet, but a rattling chain may be perceived as "alien" to
> natural surroundings).

>

> In addition, measuring techniques need to be described in
more

> detail, "blind" measurements should be considered (where the measurers
> don't know what treatment they are measuring), controls need to be
> added, and "intangibles" (e.g. loss of feelings of safety and loss of
> the primitive feel of natural settings) need to be taken more
> seriously.

> The direct killing of small animals deserves attention.

>

> On the other hand, why do we need research to prove what is
> obvious? We don't need any research to know that we shouldn't step in
> front of a speeding truck. Or mountain bike.

>

> References:

>

> Butler, Tom, "Mountain biking in wilderness: What bears want -- a
> wilderness view". Wild Earth, Vol.13, No.1, 2003, p.4,
> <http://www.wildlandsproject.org>.

>

> Cessford, Gordon R. (gcessford@doc.govt.nz), "Off-road impacts of
> mountain bikes -- a review and discussion". Science & Research Series
> No.92, Department of Conservation, P. O. Box 10-420, Wellington, New
> Zealand, 1995,
> <http://www.mountainbike.co.nz/politics/doc/impacts/index.htm>.

>

> Chiu, Luke (Luke.Chiu@utas.edu.au) and Lorne Kriwoken
> (L.K.Kriwoken@utas.edu.au), "Managing Recreational Mountain Biking in
> Wellington Park, Tasmania, Australia". Annals of Leisure Research,
> Vol.6, No.4, 2003, pp.339-361.

>

> Foreman, Dave, "A modest proposal". Wild Earth, Vol.13, No.1, 2003,
> pp.34-5, <http://www.wildlandsproject.org>.

>

> Gander, Hans and Paul Ingold, "Reactions of male alpine chamois
> Rupicapra r. rupicapra to hikers, joggers and mountainbikers".
> Biological Conservation, Vol.79, 1997, pp.107-9.

>

> Goeft, Ute and Jackie Alder, "Sustainable mountain biking: a case study from the southwest of Western Australia". *Journal of Sustainable Tourism*, Vol.9, No.3, 2001, pp.193-211.

>

> Hasenauer, Jim (imbajim@aol.com), "A niche for bicycles". *Wild Earth*, Vol.13, No.1, 2003, pp.21-22, <http://www.wildlandsproject.org>.

>

> Lathrop, Jason, "Ecological impacts of mountain biking: a critical literature review". 2003, [http://www.wildlandscpr.org/resourcelibrary/reports/mountainbikingreport](http://www.wildlandscpr.org/resourcelibrary/reports/mountainbikingreport.htm)

> .htm.

>

> McCoy, Michael and Mary Alice Stoner, "Mountain bike trails: Techniques for design, construction and maintenance". *Bikecentennial*, P. O. Box 8308, Missoula, MT 59807, 1992.

>

> O'Donnell, Brian and Michael Carroll, "Don't tread here". *Wild Earth*, Vol.13, No.1, 2003, pp.31-33, <http://www.wildlandsproject.org>.

>

> Papouchis, Christopher M. (papouchis@hotmail.com), Francis J. Singer, and William B. Sloan, "Responses of desert bighorn sheep to increased human recreation". *Journal of Wildlife Management*, Vol.65, No.3, 2001, pp.573-82.

>

> Spahr, Robin, "Factors affecting the distribution of bald eagles and effects of human activity on bald eagles wintering along the Boise River". A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science of Raptor Biology, Boise State University, March, 1990.

>

> Sprung, Gary (gary@imba.com), "Natural resource impacts of mountain biking -- a summary of scientific studies that compare mountain biking to other forms of trail travel", 2004, http://www.imba.com/resources/science/impact_summary.html.

>

> Taylor, Audrey (audrey_taylor@fws.gov) and Richard L. Knight (knight@cnr.colostate.edu) "Wildlife responses to recreation and associated visitor perceptions". *Ecological Applications*, Vol.13, No.4, 2003, pp.951-63.

>

> Thurston, Eden and Richard J. Reader (rreader@uoguelph.ca), "Impacts of experimentally applied mountain biking and hiking on vegetation and soil of a deciduous forest". *Environmental Management*, Vol.27, No.3, 2001, pp.397-409.

>

> Vandeman, Michael J. (mjvande@pacbell.net), "Wildlife Need Habitat Off-Limits to Humans!" Presented at the Society for Conservation Biology meeting, University of Montana, Missoula, Montana, June 10, 2000, <http://home.pacbell.net/mjvande/india3.htm>.

>

> Vandeman, Michael J. (mjvande@pacbell.net), "The Myth of the Sustainable Lifestyle". Presented at the Society for Conservation Biology meeting, University of Hawaii, Hilo, Hawaii, July 30, 2001,

> <http://home.pacbell.net/mjvande/sustain.htm>.
>
> Wilson, John P. (jpwilson@usc.edu) and Joseph Seney, "Erosional impact
> of hikers, horses, motorcycles, and off-road bicycles on mountain
> trails
> in Montana". Mountain Research and Development, Vol.14, No.1, 1994,
> pp.77-88.
>
> Wisdom, M. J. (mwisdom@fs.fed.us), Alan A. Ager (aager@fs.fed.us), H.
> K.
> Preisler (hpreisler@fs.fed.us), N. J. Cimon (ncimon@fs.fed.us), and B.
> K.
> Johnson (johnsobd@eou.edu), "Effects of off-road recreation on mule
> deer
> and elk". Transactions of the North American Wildlife and Natural
> Resources Conference 69, 2004, in press.
>
> ===
> I am working on creating wildlife habitat that is off-limits to humans
> ("pure habitat"). Want to help? (I spent the previous 8 years fighting
> auto dependence and road construction.)
>
> <http://home.pacbell.net/mjvande>
>
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