Impacts of Mountain Biking

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Mountain Biking is a significant threat to our wildlands—both in designated preserves like national parks, wilderness areas, and the like, but also Wilderness Study Areas (WSA) and roadless lands that may potentially be given Congressional protection under the 1964 Wilderness Act.

Wilderness designation is one of the best ways to protect biodiversity, watersheds, wildlife habitat, and natural ecological processes. And in this day of climate change, protecting forests, shrublands, deserts, and grasslands in our national wilderness system is also one of the best ways to store carbon.

Lest we forget, there is a finite amount of public land that can qualify for wilderness designation. If we must err on one side or the other, we ought to err on the side of protecting our wildlands heritage.

It is important to note that recreation is not the same as conservation. In any dispute about whether to increase recreational use/access or place limits on recreation, protection of wildlife and wildlands should always receive top priority.

One of the philosophical values of wilderness is the idea of restraint. When we designate a wilderness area, we as a society are asserting that nature and natural processes have priority, and we accept limits on ourselves. It is a lesson that is increasingly important for all to learn in an age of climate change, population growth, biodiversity loss, and other major environmental issues.

In a world filled with such vexing and overwhelming issues, worrying about bicycles on trails can seem trivial and inconsequential. But it's important to note that bicycles and other mechanical conveyances, and the lack of commitment to personal restraint that it can foster is indicative of the broader challenges facing society. Namely, how do we live on this planet without destroying it? Self-control and restraint will be critical to our future.

HABITAT FRAGMENTATION

The Colorado Parks and Wildlife Department has documented over 33,000 miles of trails in Colorado already, and this doesn't include thousands of miles of low traffic natural surface roads which are perfectly suitable for mountain bike use. Today only 8 percent of the National Forest acreage in Colorado lies beyond one mile of a roadway (only 4 percent for BLM lands). More recreational access and more miles of trails pose severe threats to wildlife security.

On our national forest system alone, there are more than 400,000 miles of roads. https://www.fs.fed.us/eng/road_mgt/qanda.shtml Habitat fragmentation is significant. The opportunity to protect roadless lands as wilderness is shrinking every day.

Increasingly I believe mountain biking is the greatest single threat to wildlife habitat integrity and new wilderness classifications. I'm not the only one. There is a growing number of public lands advocates who see mountain biking, especially the growing network of new trails as a threat. For instance, in a recent overview of mountain biking in Colorado, the Colorado chapter of Backcountry Hunters and Anglers concluded: "the construction and use of new trail type come at a cost: to wildlife habitat and the health of public lands in general. New trail development is perhaps the greatest threat to wildlife in Colorado today."

There are plenty of mountain bikers who put protecting wildlands as the priority, and their recreational use second. However, almost universally mountain biking organizations oppose new wilderness designation if they pose any restrictions or limits on trail use or new trail creation. Indeed, there is even a sub-set of mountain bikers who support mountain biking in existing wilderness areas. They have succeeded in getting some of the most anti-environmental members of Congress to introduce the Human-Powered Travel in Wilderness Areas Act. While many oppose mountain bikes in Wilderness Areas (even the International Mountain Biking Association) as well as many others, expanding mountain bike use does and can thwart enlargement of our wilderness system.

HOW MOUNTAIN BIKES THREATEN WILDLANDS

Mechanical transport, which includes mountain bikes, is expressly prohibited in designated wilderness. Therefore, new mountain biking trails built in proposed wilderness are a threat to classification under the 1964 Wilderness Act.

Many mountain biking organizations know this and specifically, promote new trails and/or use of existing trails in proposed wilderness areas to create an anti-wilderness constituency and make it politically more difficult to classify these critical wildlands as new wilderness areas.

This strategy has been implemented in the Lionhead Proposed Wilderness, Gallatin Range Proposed Wilderness, Big Snowy Mountains Proposed Wilderness in Montana. The same idea has been used to establish mountain biking in the Palisade Wilderness Study Area on Wyoming's Bridger Teton National Forest.

Similar strategies were used to reduce the size and configuration of the Boulder-White Cloud Mountains WSA in Idaho, which resulted in the split up of one of the largest unprotected roadless areas in the lower 48 states into three separate and smaller wilderness areas.

We see the same pattern on public lands throughout the country.

FOUR MAJOR THREATS

Mountain bikes pose a threat for four major reasons.

First, there is the tendency for some mountain bikers to create new "rogue" trails. Second, the increasing mechanization of mountain bikes, including now electric bikes, dramatically expands the terrain and distances that can be accessed by a bike. Third, there is a culture among many mountain bikers that glorifies thrills, speed, and the "conquest" of natural barriers. Fourth, there is a growing body of research that demonstrates that mountain bikes have significant impacts on wildlife.

Despite the issues, most large conservation groups have been slow or loath to criticize mountain biking and its culture. Indeed, many groups are actively working with mountain biking organizations to expand the trail miles and impacts to proposed and existing wilderness study areas.

For instance, the Gallatin Forest Partnership in Montana which includes Greater Yellowstone Coalition, Montana Wilderness Association, The Wilderness Society and Winter Wildlands among others proposes "wildlife management area" designation for a portion of the Congressional designated Hyalite Porcupine Buffalohorn WSA in the Gallatin Range over classification as federal wilderness. This compromise is proposed largely to appease mountain biking interests even though more than 2/3 of the trails on the Custer Gallatin National Forest are open to mountain biking.

ROGUE TRAILS

I wrote a book on Thrillcraft, looking at the ecological impacts of motorized recreation. https://www.stopthrillcraft.org/ and https://www.youtube.com/watch?v=lzLYpH_ZI8o

During my research for that book, I found that many of the effects and cultural attributes reported for motorized recreation applied to mountain biking as well.

One of the similarities is the "outlaw mentality" among many motorized abusers of the land, and the same attitude seems to permeate many mountain bikers as well.

For instance, a study in Georgia documented that of the 59 routes surveyed in the Chattahoochee NF, illegal ORV use occurred on 67 %, including designated wilderness and trails restricted to pedestrians.

Another study conducted in Colorado on behalf of Colorado Coalition for Responsible ORV Riding found that even though most thrillcraft enthusiasts understood that they should not stray from designated trails, more than two-thirds admitted they go off-trail occasionally, and 15-20% admitted they regularly rode off legal routes.

There is a considerable sub-set of mountain bikers who are principally concerned with their recreational opportunities above all else. Many even feel a sense of entitlement not unlike the same feeling expressed by many in motorized recreational circles who believe if it's public land, they have a "right" to access it. Indeed, one of the main justifications mountain bikers use to placate opponents is to argue they help maintain trails, never once realizing that there may already be too many trails and recreational access fragmenting our public lands. https://www.bikemag.com/lines-in-the-dirt/montana-access/

To most mountain bikers, there can never be too many trails. In the past, most of the rogue and illegal trail construction was done by motorized thrillcraft users, but today the dominant source of illegal trail and new trail construction comes from mountain bikers.

A report issued by the Colorado Backcountry Hunters and Anglers (BHA) in southwest Colorado, around Durango, illegal trails are vexing land managers and wildlife officials, who have struggled with reining in the longstanding, escalating problem. "We're not talking small connector trails," said Shannon Borders, spokeswoman for the Bureau of Land Management. "We're talking miles of illegally built trails."

Tyler Fouss, a BLM law enforcement ranger, said the trails appear to be mostly constructed and used by mountain bikers. The BLM and other agencies treat the illegally built trails as a criminal case of trespass, but it's tough to find perpetrators. Since 2015, no one has been caught in connection with building illegal routes.

In an NPR report about mountain biking on New Hampshire's White Mountain National Forest http://outsideinradio.org/transcript-rake-and-ride Jody Chinchen, District Trails Manager on the Pemigewasset Ranger District showed the reporter a new "illegal" trail that she says is "17 miles" long.

The NPR reporter notes that Chinchen calls these trails incidental trails… user-created trails… non-network trails… what she calls bureaucratic euphemisms for what they are: trails that got built on federal land without permission. Chinchen estimated there are about 35 or 40 miles of these illegal trails just in her district of the National Forest.

Many federal agencies unable to stop or thwart illegal trail building eventually try to appease mountain bikers by making previously illegally constructed trails part of the official trail system.

For instance, for twenty years, the Wenatchee National Forest played a cat and mouse exercise with illegal mountain bike trail builders. The forest would destroy the illicit trail, and the mountain bikers would rebuild it. Finally, after twenty years, the Forest Service is making the path a part of its official trail system. https://www.singletracks.com/blog/trail-advocacy/the-illegal-washington-trail-that-inspired-a-movie-re-opens-this-time-sanctioned-by-forest-service/

The Helena Lewis and Clark National Forest in Montana has proposed creating new mountain biking trails and legalizing rogue trails in the Elkhorn Mountain Wildlife Management Area. This is a typical response of the agencies to illegal trail construction. They often authorize the trails and add them to the agency trail system, even though there was no environmental review of the impacts on wildlife and other recreaitonists.https://forums.mtbr.com/trail-building-advocacy/thrill-bike-threat-elkhorn-mountains-1093737.html

Increasingly the Forest Service is using "Categorical Exclusions" (CE) that to approve new trail construction and avoid environmental review by the National Environmental Policy Act designed to articulate impacts. CE is being used by the Helena and Lewis and Clark National Forest along the Continental Divide Trail, and by the Willamette National Forest for creation of new mountain bike trails in the 157,000 acre Oregon Cascades National Recreation Area, an area proposed for wilderness designation, in part, because it is the largest unprotected roadless area in the Oregon Cascades.

One of the environmental impacts that is ignored when a CE is used to approve new trail construction is the potential impact on wilderness designation.

INCREASING MECHANIZATION

Back in the 1980s, while living in Missoula, Montana, I rode some of the first proto types for mountain bikes. These were clunky old bike frames with large tires which we rode primarily on old logging roads. They were also good on city streets because you wind up fewer flat tires from glass or other road hazards.

Over time, the bike frames were constructed out of lighter materials like carbon fiber, new braking systems, lower gears for hill climbing, adjustable seats, and other modifications significantly increased the speed, and ability to travel rough trails or off trails entirely. With the advent of snow bikes and e-bikes (electric bikes), the season of use has expanded as well as the distances that can be traveled in a single day.

The growing mechanization of mountain bikes and the "convergent" evolution of bike

design, especially the advent of electric motors makes them increasingly like dirt bikes.

Due to these improvements, it is reasonable for a mountain biker to cover 20-30 miles in two or three hours. By contrast, all but the fittest hiker is going to have trouble traveling even 20 miles in an entire day. The ability to travel farther and faster, "shrinks" wildlands. That is why mountain bikers continuously advocate for more trails and routes.

One of the problems with the mechanical improvements of mountain bikes over the years has been a greater ecological footprint. The distance one can travel, and the places one can access has increased tremendously. This means mountain bikers "chew up" trails and landscapes and the potential for displacement of wildlife is vastly amplified.

A hiker's speed doesn't' appreciably increase year after year, and as a result, a hiker can experience the same trail over and over without becoming "bored" with the hike. However, the motivation for many mountain bikers is the thrill of speed and risk combined with "bragging" rights. This motivation leads to a significant "desire" to increase the number of miles traveled as well as the demand for new trails.

WILDLIFE IMPACTS

All of this modification is creating more and more conflicts with other recreational users as well as wildlife. Although the research that explicitly targets mountain bikes is in its infancy, what we do know is disconcerting.
https://www.lib.washington.edu/msd/norestriction/b67566091.pdf There is a "zone of influence" where recreational use can displace wildlife or reduce the habitat quality.

It is critical to note that even hiking can adversely impact wildlife. But the speed and greater distances that the mechanical advantage mountain bikes confer substantially increases those impacts. A good overview of mountain biking studies can be found here.
http://www.culturechange.org/mountain_biking_impacts.htm

Although explicitly looking at the effects of roads on wildlife, many of the same conclusions would apply to trails. Effects of Roads on Animal Abundance: an Empirical Review and Synthesis https://www.ecologyandsociety.org/issues/view.php?sf=41 Another study by biologist Barrie Gilbert– Motorized Access on Montana's Rocky Mountain Front: A synthesis of scientific literature offers useful insights that apply equally to non-motorized mountain biking.

In a review of mountain biking and wildlife impacts, authors Jeff Marion and Jeremy Wimpey published an assessment, "Environmental Impacts of Mountain Biking: Science Review and Best Practices. In that paper they state: "Trails and trail uses can also affect wildlife. Trails may degrade or fragment wildlife habitat, and can also alter the activities of nearby animals, causing avoidance behavior in some and food-related attraction behavior in others. While most forms of trail impact are limited to a narrow trail corridor,

disturbance of wildlife can extend considerably further into natural landscapes."

According to a recent report by the Colorado Backcountry Hunters and Anglers (BHA) "Impacts of Off-Road Recreation on Public Lands Habitat" "Wildlife habitat in Colorado is being significantly impacted by the proliferation of mechanized (i.e., mountain bike) and motorized (ATV/OHV) trails on public lands. Sportsmen and wildlife managers are finding that elk hunting opportunities, in particular, are being compromised by trail development in many parts of the state."

Research comparing the effect of hikers, horse riders, and thrillcraft (mountain bikes and ORVs) on elk flight demonstrates significant differences in impact to wildlife. Hikers can clear a swath of disturbed animals 1/2-mile wide, especially if they have a dog. Equestrians may impact a swath 3/4th-to-1 mile wide, and ATV's and mountain bikes clear a swath a full 2 miles wide! Grizzly bears show similar avoidance for roads and heavily used trails. https://calgaryherald.com/news/local-news/risk-of-bear-mortality-study-finds-people-not-roads-bug-grizzlies-the-most

Many mountain valleys are not more than two miles wide, so essentially if there is significant mountain biking activity, it can preclude wildlife usage of that area.

Furthermore, the flight response of elk is 15% faster from mountain bikes in comparison to hikers and equestrians.

In another study of human disturbance of elk calving grounds, found that an average of 10 disturbances/cow above ambient levels, the elk herd showed no growth. Their results support maintaining disturbance-free areas from all human entry for elk during parturitional periods.

https://backcountryhunters-my.sharepoint.com/personal/webster_backcountryhunters_org/_layouts/15/onedrive.aspx?id=%2Fpersonal%2Fwebster_backcountryhunters_org%2FDocuments%2FAttachments%2F1Off%20Road%20Rec-Public%20Land%20Impacts-

The BHA mountain biking research noted that former Colorado Parks and Wildlife District Wildlife Manager, Jim Haskins reported "New mountain bike [trail] construction will likely result in permanent habitat fragmentation. Habitat fragmentation impedes the movement of wildlife across landscapes. Looped trails may create islands of habitat that may be avoided entirely by wildlife."

A Montana study of mechanical Off-Road use found that elk habitat effectiveness was reduced by 25% with a density of 1 mile of trail per square mile.

In an article in Mountain Journal, Todd Wilkinson interviewed retired grizzly bear expert Chris Servheen. https://www.bikemag.com/lines-in-the-dirt/montana-access/ . Due to the speed that bikes travel, Servheen concluded that mountain bikes pose a significant threat to grizzly bears, as well as bike riders. Serhveen was quoted: “High speed and quiet human activity in bear habitat is a grave threat to bear and human safety and certainly can displace bears from trails and along trails. Bikes also degrade the wilderness character of wild areas by mechanized travel at abnormal speeds.”

Wilkinson’s article noted that Matthew Schmor, a graduate student at the University of Calgary, summarized survey data he collected from 41 individuals in the Calgary-Canmore region who had had interactions with bears while mountain biking. Some of the interactions were aggressive encounters in which a bicyclist(s) was charged or chased by a bear(s).

Schmor found that 76 percent (31 of 41) of mountain bike riders had not contacted officials about their bear encounters.” This is important because some organizations suggest that if mountain biking (and other recreation) poses a threat to wildlife, they can monitor and enforce restrictions. But if most encounters are unreported, then limits are less likely to be imposed.

Dr. Brian Horesji, a wildlife biologist from Canada confirms that bikes can displace bears, and other wildlife with negative consequences. He writes: “The basic science solidly supports the general claim that bikers and bikes are displacing bears, can contribute to their habituation and are consequently adding negative load on human / wildlife conflict. I think it has been conclusively established that most kinds of human activity / presence displace bears (and almost all other species), and if there are bears that are not displaced / become habituated, they die at a disproportionate rate, hence their fitness is reduced (as is that of there mothers and fathers). Amongst the leading agents of displacement are industrialized forms of human activity that depend on machines / motors / mechanization to move people great distances, often, quickly, and with considerable “baggage” (garbage, guns, trailers, ATVs, dogs, and so on).”
http://www.thewildlifenews.com/2014/08/05/mountain-biking-impacts-on-bears-and-other-wildlife-by-brian-horesji/

Horesji goes on to talk about cumulative impacts. “The demand / need for refuge from humans is greatest when human use is highest, usually on weekends. Previously un-biked niches in the landscape are of disproportionate value during these peak periods. So, what happened? These refuge habitats were dissected by bike roads, which is destructive enough, but biker use also peaks on weekends, aggravating habitat loss at a time when demand / need for it is greatest, so the negative impact of biker use is not linear in relation to the increased number of bikes, but exponential given the elevated need by wildlife.”

According to the Colorado BHA report, for a given time frame of recreation, not only do mountain bikers adversely impact big game 4 times as much as hikers, they affect 50% to 75% more animals.

MONITORING IMPACTS IS NOT EFFECTIVE

Worse, correspondingly, many so-called conservation groups are advocating for "Backcountry Area" designation in place of supporting wilderness designation. The California Wilderness Coalition (CWC), the Montana Wilderness Association (MWA), and the Deschutes Chapter of the Sierra Club are among the many environmental groups that support "backcountry" "conservation area" or other alternative classifications for wilderness-quality lands to appease mountain bikers. For a discussion of this issue of wildlife management designation for Montana's Gallatin Range see: https://mountainjournal.org/gallatin-mountains-in-montana-deserve-wilderness-protection

For instance, in a letter articulating their support for Backcountry designations, the CWC says: "The proposed BMA prescription intends to conserve roadless lands while allowing for more recreational activities and management flexibility than is permitted in recommended wilderness."

But such designations often permit many other activities that wilderness designation would preclude. For instance, the CWC supports logging in backcountry areas for so-called forest "restoration."

See the following link for more in depth discussion of the problem of alternative designations https://www.thewildlifenews.com/2018/11/11/alternatives-to-wilderness/

Many of the conservation groups supporting designations like Backcountry, Wildlife Management Areas, Conservation Areas, and other non-wilderness alternatives suggest that conflicts with wildlife (and other recreationists) can be controlled with monitoring and enforcement of seasonal restrictions. However, it's critical to note that limitations are only as functional as the political will and the funding to enforce them-which in most cases is zero. Plus "solutions" like seasonal closures or alternative day designation for different uses, etc. are only attempting to mitigate adverse effects.

The Gunnison National Forest in Colorado has concluded: "No positive benefits to wildlife have been identified from increases in travel management access."

MOUNTAIN BIKING THRILLCRAFT CULTURE

One of the things I analyzed in my Thrillcraft book was the general "theme" of Thrillcraft advertisements. Those ads glorified speed, conquering nature, and "going where no one has gone before." Similar themes appear on the covers of mountain biking magazines and

in the ads. Nearly all prominent photos show a mountain biker racing downhill and often flying through the air. “Fast and furious,” says one ad. “Strikingly fast,” says another.

To many thrillcraft advocates, including mountain bikers, the natural world is merely an outdoor gymnasium where they play.

By comparison if you were to review ads for hiking gear, the theme is more sedate, and about being out in and appreciating the natural landscape. In other words, some recreational pursuits are more about bonding and learning to respect the natural world, while others are about self-glorification.

The iconology of these ads also says much about the mountain biking culture. Compare side by side photos of dirt bikers and mountain bikers, and you will be hard pressed to tell the difference. Both wear gaudy shirts with company logos, crash helmets, and other protective gear.

One of the rationales given by mountain bikers to justify the ever-expanding trail systems is that it allows one to get closer to nature or out in nature.

But if one takes the industry advertisement as insight into the mind of the user, communing with nature is not the primary goal. Instead it seems the main goal is tearing up the miles and self-gratification. Roaring along at high speeds on a machine is hardly conducive to communing with nature.

If anything, thrillcraft use exacerbates our society’s alienation from nature, creating a barrier that separates people from experiencing nature on its own terms.

SOCIAL IMPACTS ON OTHER PEOPLE

I have not dwelled on the social impact that mountain biking can have on other recreationists because this is ambiguous at best. Mountain bikers are viewed more favorably than say motorized recreationists, though with the growing popularity and speed of electric mountain bikes that distinction may soon be reduced.

Nevertheless, there is evidence that increasing mountain bike trail usage displaces other recreationists as much as it does wildlife. If one is continuously looking over your shoulder for a fast-moving bike barreling down the trail towards you, the peaceful enjoyment of a walk in the woods is compromised.

A 1999 Montana study of the impact of Off-Road use on hikers demonstrates this disparity. Although somewhat dated, the study found that 90% of trail users in the state were hikers and only 2% were Off Road users. When questioned if the presence of ORVs on trails

bothered a person, some 89% of the hikers agreed that the presence of ORVs diminished their enjoyment of the area. Though the study was done before mountain biking became popular, their effects of mountain biking on other recreationalists are likely the similar.

CONCLUSIONS: Given the rarity of lands that could even qualify for Big W or wilderness classification under the 1964 Wilderness Act, as well as the growing body of scientific literature demonstrating that recreation, including mountain biking, can pose significant threats to our wildlife heritage and biodiversity preservation, conservation-oriented groups and individuals must advocate strongly for wilderness designation of our remaining wildlands and restrictions when necessary on the growing impact from recreation of all stripes, but in particular, mountain bikes.