

**IMBA**  
**PO Box 7578**  
**Boulder CO 80306**

**NEMBA**  
**PO Box 2221**  
**Acton MA 01720**

**VMBA**  
**PO Box 1172**  
**Waitsfield VT 05673**

## **IMBA, NEMBA and VMBA Comments on the Green Mountain National Forest Plan Revision**

**July 5<sup>th</sup>, 2005**

The International Mountain Bicycling Association (IMBA), the New England Mountain Bike Association (NEMBA) and the Vermont Mountain Bike Association (VMBA) respectfully submit comments on the Green Mountain National Forest Draft Management Plan and Draft EIS. Together, we represent the interests of 45 million mountain bicyclists in the United States.

The International Mountain Bicycling Association is a national and international education and advocacy organization with 450 member clubs, 32,000 individual members, and more than 400 corporate partners and dealer members. IMBA creates, enhances, and preserves trail opportunities for mountain bikers worldwide.

The New England Mountain Bike Association represents the interests of its 4,600 members and the over two million mountain bicyclists in Vermont, New Hampshire, Maine, Massachusetts, Rhode Island and Connecticut. NEMBA focuses on promoting responsible and sustainable mountain bicycling, creating partnerships with land management agencies, and preserving the natural environment and recreational resources.

The Vermont Mountain Bike Association is a Vermont-based grassroots organization founded in 1998 with the primary objective of creating and enhancing mountain bicycling opportunities in the Green Mountains. With 1,400 members, VMBA works with federal, state, and local land managers to open publicly owned lands for mountain biking. VMBA's efforts to open public lands in Vermont to mountain biking have been very successful with cooperative agreements in effect around the state.

### **Demographic Overview of Mountain Bicycling**

According to the Outdoor Industry Association's 2003 study, 45 million Americans rode bicycles on narrow trails ("singletrack") an average of 14 times in 2003, for a total of over 500,000 outings. This makes mountain biking the second largest trail user group in the country. There are over 5,300,000 mountain bicyclists in the northeast, not including eastern Canada.<sup>1</sup>

<u>State</u>	<u># of Mountain Bikers</u>	<u>Per Capita</u>
Vermont	95,853	20.0%
New York	2,293,579	15.4%
New Jersey	1,210,912	18.5%
Massachusetts	1,021,633	20.4%
Connecticut	319,997	13.7%
Maine	179,829	17.8%
New Hampshire	178,670	18.6%

Underlying all of our comments is our fundamental concern that the US Forest Service has virtually excluded and under serviced this significant user group in the Green Mountain National Forest. As a multiple use agency, we urge the Forest Service to rectify this imbalance in the final

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<sup>1</sup> Outdoor Recreation Participation & Spending Study: A State-by-State Perspective. Outdoor Industry Foundation. (2003).

draft of the Revision Plan, and begin to work closely with our organizations to create more mountain bike opportunities in the Green Mountains.

IMBA, NEMBA and VMBA allocate significant resources toward building partnerships with land management agencies. We have a strong desire to work with the Green Mountain National Forest to improve trail conditions and build a strong trails community in the Green Mountains. We appreciate the agency's willingness to cooperate with our organizations.

### **Socio-economic Benefit of Mountain Biking**

One of the stated goals of the Revision Plan "is to provide for a mix of quantitative and qualitative socio-economic benefits provided by the Forest to the public" (p. A-20). Studies show that mountain biking has a significant positive impact on local economies. In Moab, UT, for example, a mountain biker spends between \$197 and \$204 per trip, and the annual value of a trail is between \$8,422,800 to \$8,770,300.<sup>2</sup> This potential benefit is virtually absent for the communities abutting the GMNF because of the onerous restrictions placed on mountain bicycling. With over 5,300,000 mountain bikers in the northeast states, increasing Wilderness areas in the GMNF, with its concomitant ban on bicycle use, would further the negative economic impact to communities abutting the GMNF.

### **Bicycles as Sustainable Recreation Worthy of Promotion in the GMNF**

Mountain biking has fallen through the bureaucratic cracks in the Green Mountain National Forest. The prior Forest Plan took place before mountain biking was established, and many of the recreation policies focused solely on pedestrian-based and motorized uses in the Forest.

NEMBA attempted to propose more favorable access to the Forest and signed an Memorandum of Understanding with the Green Mountain National Forest in February 1997.<sup>3</sup> This MOU states that the Forest Service shall "Continue working with NEMBA (and other trail organizations) to identify existing trails on the Green Mountain National Forest that offer logical connections for mountain biking. [...] Consider existing trails and old logging roads for the use of mountain bikes."

However, changes of Forest Service personnel during this period and delays in the current Plan Revision prevented any real progress to be made to meet the MOU's goals. Thus, mountain bicycling barely has a toehold in the Green Mountain National Forest, and is only an allowed use on 37 miles of a 906-mile trail system. We hope this changes with this Revision Plan.

It is important that the Forest Service and Revision Plan Team understand that all available scientific research indicates that the natural resource impacts of mountain biking are about the same as those of hiking.<sup>4</sup> Similarly, the science of trail design has come a long way in the last

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<sup>2</sup> The Economic Benefits Of Mountain Biking At One Of Its Meccas: An Application of the Travel Cost Method to Mountain Biking in Moab, Utah. Peter Fix and John Loomis. Department of Agricultural and Resource Economics, Colorado State University, Fort Collins, Colorado.

<sup>3</sup> Memorandum of Understanding between New England Mountain Bike Association and USDA Forest Service , Green Mountain National Forest. R920-97-0018. February 10, 1997.

<sup>4</sup> Cessford, Gordon R., Off-Road Impacts of Mountain Bikes: A Review and Discussion. Science & Research Series. (1995), NO. 92.

Sprung, Gary, "Natural Resource Impacts of Mountain Biking," International Mountain Bicycling Association. (2004)

decade, and creating a sustainable trail --whether it is for hiking or mountain biking-- is essentially the same. *Both forms of recreation should be managed equally, and given equal due.*

The final version of the Forest Revision Plan has the opportunity to modernize its approach to mountain biking, and we hope the Forest Plan Revision Committee will take our comments to heart. Our organizations are willing to play an active role and assist the Forest Service in providing greater trail access to mountain bicyclists. We look forward to partnering with the staff of the Green Mountain National Forest to bring resources, volunteerism and stewardship from our constituency.

## **Executive Summary**

- *We support the general approach of the preferred Alternative E of the Revision Plan with modifications with regard to mountain bike use and specific Wilderness designations as described below. Alternative E provides a balanced and equitable approach toward resources and land protection, timber management and wildlife management. However, the policies regarding mountain bike use, as a human-powered activity, should be equitable and treated on par with hiking.*
- *The Standards and Guidelines should to allow mountain bicycling on trails and roads unless specifically posted closed. Mountain bicycling should be allowed on all roads (motorized and non-motorized) that are open for public use. Mountain bicycling should be allowed on all trails unless specifically posted closed to bicycling.*
- *We oppose the designation of Wilderness in the Glastenbury area and the Plan should not designate Glastenbury as a Wilderness Study Area. We urge the Plan to protect this area as a National Recreation Area or Remote Recreation Area. Wilderness designation prohibits bicycle use, and the Glastenbury area has numerous trails and old roads that are suitable to mountain biking or currently allow this activity.*
- *We support the protection of all the inventoried roadless areas in the Green Mountain National Forest. The agency should apply prescriptions that prohibit road building in those areas. The agency should recommend to Congress the use of diverse designations to protect the roadless areas of the forest.*

Our comments derive from the following interests:

- Protecting natural resources
- Providing adequate recreational opportunities for non-motorized trail users
- Applying rules equitably for user groups with comparable impacts
- Maintaining district rangers' ability to adaptively manage resources case-by-case, based on actual conditions

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<sup>4</sup> (Continued) Thurston, Eden and Reader, Richard J., "Impacts of Experimentally Applied Mountain Biking and Hiking on Vegetation and Soil of a Deciduous Forest," *Environmental Management*, (2001), 27(3):397-409.

Wilson, John P. and Seney, Joseph P., "Erosional Impacts of Hikers, Horses, Motorcycles and Off-Road Bicycles on Mountain Trails in Montana," *Mountain Research and Development*, (1994), 47(1):77-88.

Weesner, Meg, in Cactus Forest Trail Environmental Assessment, Saguaro National Park, Arizona, National Park Service 2003

## **Bicycle Use Should be Allowed on Trails and Roads Unless Specifically Posted Closed**

Of primary concern to IMBA, NEMBA and VMBA is the closed-unless-posted-open policy for mountain bicycling in the Green Mountain National Forest. We are highly opposed to this policy. We will make specific recommendations for changes in the proposed Standards and Guidelines; however, it is important for the Plan Revision Team to understand why bicycles should be allowed on all trails and roads unless posted closed.

The Green Mountain National Forest's closed-unless-posted-open policy for mountain biking is unfair, unnecessary and highly prejudicial. It is a policy that runs counter to virtually every other National Forest in the country.

To explain the national policy, one must first consider the basic framework of American law. The American legal system is based on the notion that if an activity is not prohibited, it is allowed. This pattern holds true on national forests, "the land of many uses." If the Green Mountain National Forest can find an element of public lands law that says trails are generally closed to bicycling, then it should be cited. Otherwise, the basic premise of our legal system means that a particular national forest cannot make such a blanket assertion.

On the other hand, a particular national forest does have the authority to make a rule closing trails and roads, even *all* trails and roads, to any use. But such rules must be based on non-arbitrary, non-capricious considerations. With regard to bicycling, the Forest Service would have to demonstrate that the activity harms valuable forest resources to such a degree that a widespread ban is justified. As is shown below, we believe this cannot be reasonably asserted.

Before discussing impacts, we will delve further into Forest Service rules and policy, and then provide specific examples.

### **USDA Forest Service Bicycling-specific Rules**

The USDA Forest Service has issued only one formal, national rule specific to bicycle access in national forests: 36CFR Sec. 261.16. This CFR only refers to designated Wilderness and states: "The following are prohibited in National Forest Wilderness...(b) Possessing or using a hang glider or bicycle." However, this Wilderness bicycling rule is not the subject of the current discussion, which deals with non-Wilderness, general forest lands.<sup>5</sup>

Furthermore, the Forest Service has not issued any national guidance regarding bicycling. For example, the Recreational Opportunity Spectrum, devised in the early 1980s, does not even refer to bicycling.

### **USDA Forest Service Rules Governing Vehicles**

Nonetheless, existing Forest Service rules do establish that mountain bikes may access trails and roads within national forest units, unless the trail or road is closed to mountain bike access by an order. This general policy of 'open unless closed' trails is effectively implemented by rules on

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<sup>5</sup> Still, it is worth noting that a related rule regarding Wilderness excludes bicycling from the definition of "mechanical transport." CFR Sec. 293.6(a) defines mechanical transport to "include any contrivance which travels over ground, snow, or water on wheels, tracks, skids, or by floatation and is propelled by a nonliving power source contained or carried on or within the device" (underline added). Bicycling is definitely a living power source.

forest development trails (36 CFR 261.55) and use of vehicles off National Forest system roads (36 CFR 261.56).

The former establishes that when provided by a proper order the following are prohibited on a forest development trails:

- (a) Being on a trail.
- (b) Using any type of vehicle prohibited by the order.
- (c) Use by any type of traffic or mode of transport prohibited by the order.
- (d) Operating a vehicle in violation of the width, weight, height, length, or other limitations specified by the order.
- (e) Shortcutting a switchback in a trail.<sup>6</sup>

The latter regulation complements these prohibitions by establishing that “when provided by an order, it is prohibited to possess or use a vehicle off National Forest System roads.”<sup>7</sup>

In addition, 36 CFR 261.13 states additional requirements as follows:

It is prohibited to operate any vehicle off National Forest System, State or County roads:

- (a) Without a valid license as required by State law.
- (b) Without an operable braking system.
- (c) From one-half hour after sunset to one-half hour before sunrise unless equipped with working head and tail lights.
- (d) In violation of any applicable noise emission standard established by any Federal or State agency.
- (e) While under the influence of alcohol or other drug;
- (f) Creating excessive or unusual smoke;
- (g) Carelessly, recklessly, or without regard for the safety of any person, or in a manner that endangers, or is likely to endanger, any person or property.
- (h) In a manner which damages or unreasonably disturbs the land, wildlife, or vegetative resources.
- (i) In violation of State law established for vehicles used off roads.”<sup>8</sup>

A vehicle is defined as “any device in, upon, or by which any person or property is or may be transported, including any frame, chassis, or body of any motor vehicle, except devices used exclusively upon stationary rails or tracks.”<sup>9</sup>

Mountain bikes would probably be included under this federal definition of “vehicle” (although many states do not consider bikes to be a “vehicle”) and consequently, are subject to the requirement for forest development trails and use of vehicles off National Forest System roads.

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<sup>6</sup> TITLE 36--PARKS, FORESTS, AND PUBLIC PROPERTY PART 261—PROHIBITIONS, Sec. 261.55 Forest development trails.[55 FR 25832, June 25, 1990]

<sup>7</sup> TITLE 36--PARKS, FORESTS, AND PUBLIC PROPERTY, Sec. 261.56 Use of vehicles off National Forest System roads. [42 FR 2957, Jan. 14, 1977, as amended at 66 FR 3218, Jan. 12, 2001]

<sup>8</sup> TITLE 36--PARKS, FORESTS, AND PUBLIC PROPERTY, Sec. 261.13 Use of vehicles off roads. [42 FR 2957, Jan. 14, 1977, as amended at 42 FR 35959, July 13, 1977; 66 FR 3218, Jan. 12, 2001]

<sup>9</sup> TITLE 36--PARKS, FORESTS, AND PUBLIC PROPERTY, PART 261, PROHIBITIONS--Sec. 261.2 Definitions.

Thus, mountain bikes are allowed on trails and roads in National Forest system units unless specifically prohibited by an order issued under 36 CFR 261.50.

### **Examples of USDA Forest Service Bicycling Management**

Until recently very few national forests had any rules about bicycling. This meant that bicycling was allowed anywhere except Wilderness. Recent forest plans have begun to address bicycling, and the vast majority favors an open-unless-posted-closed policy.

- In the 2005 draft management plan for the White Mountains National Forest, the Forest Service has proposed an open-unless-closed policy on all system trails.
- The Huron-Manistee 2005 draft Forest Plan states, "Mountain bike use is allowed on all Forest Service roads unless closed by Forest Supervisor's order. (guideline, Section II, 12). Its DEIS states, "Currently mountain biking is allowed on all trails unless posted closed."
- The 2005 Draft Plan for the Ottawa National Forest states, "Besides wilderness and specifically designated hiker only trails (including the North Country National Scenic Trail), the entire forest is open to mountain bikes. This includes closed, gated and blocked roads unless the road is specifically closed to bicycles."
- The 1998 Routt National Forest Plan stated, "Allow mountain bikes on roads and trails Forest-wide (outside of wilderness), unless prohibited. (Forest Wide Directions, page 15)"
- The Ottawa National Forest's website states: "The Ottawa National Forest provides a wide variety of mountain biking opportunities ranging from well maintained and signed loops to more challenging cross country travel. Besides wilderness and specifically designated hiker only trails (including the North Country National Scenic Trail), the entire forest is open to mountain bikes."<sup>10</sup>
- In California, Mendocino National Forest's recreation manager, Jack Horner, said there are no administrative orders closing trails to bicycling in the Mendocino National Forest. In the Shasta-Trinity National Forest, Public Uses Officer John Skyler, said the agency has not issued any administrative orders closing trails to bicycling. In Six Rivers National Forest, public affairs officer, Julie Ranieri, said the agency has not issued any administrative orders closing trails to bicycling in the Six Rivers N.F.<sup>11</sup>
- Wayne National Forest currently allows bicycling on all trails: "There are no trails designed exclusively for mountain bikes. Monday Creek (Athens RD), Hanging Rock (Ironton RD) and Pine Creek (Ironton RD) Trails are off-road vehicle trails where mountain bike riding is welcome. Kinderhook Trail (Marietta Unit) is a horse trail that also provides for mountain bikes. The remaining trails on the Marietta Unit are hiking trails where mountain bike riding is welcome."<sup>12</sup>

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<sup>10</sup> Ottawa National Forest website, "Mountain Bike Opportunities."  
[www.fs.fed.us/r9/ottawa/recreation/trails/biking.html](http://www.fs.fed.us/r9/ottawa/recreation/trails/biking.html)

<sup>11</sup> Personal Communications, Gary Sprung.

<sup>12</sup> Wayne National Forest website, "Mountain Biking."  
[http://www.fs.fed.us/r9/wayne/recreation\\_sites/biking/biking.html](http://www.fs.fed.us/r9/wayne/recreation_sites/biking/biking.html)

- In the Jefferson National Forest, "You may ride your bike on any forest road or trail unless it is specifically closed to mountain bike use. The closed routes are very few and are well signed."<sup>13</sup>
- In the Allegheny National Forest, mountain biking is allowed on any Forest Service travelway: trails, gated roads and open roads.<sup>14</sup>

Only a small handful of National Forests maintain a closed-unless-posted-open policy, such as the relatively small Hoosier National Forest (Indiana). Even so, Hoosier NF offers 183 miles of mountain biking.

### **Natural Resource Impacts of Bicycling**

As mentioned above, significant impacts to valuable public resources could be a reason to close trails to bicycling. Before discussing particulars, we ask the Forest Service to recognize that closure of trails ought to be the last management tool used to address impacts. Closures alienate the public users of the forest, who are your constituency. Closures are a crude tool when many more sophisticated management approaches can mitigate issues while allowing use to continue.

Our organizations understand that trail use by all users can cause negative impacts to natural ecosystems. We seek to provide mountain biking opportunities that are environmentally responsible.

The Draft Plan calls for allowing hiking cross-country, forest-wide. Where is the evidence that this is sustainable while bicycling on trails and roads is not? Before banning bikes while allowing other uses, the Green Mountain National Forest needs evidence regarding the relative effects of people walking, running, horseback riding, mountain bicycling, or motorcycling. We have reviewed the available science and have found that it points to a conclusion that the natural resource impacts of mountain biking are about the same as those of hiking,<sup>15</sup> As such, natural resource impacts should not be used as a rationale for limiting mountain bike use on trails. Please see IMBA's attached paper, "Natural Resource Impacts of Mountain Bicycling" (*Appendix A*).

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<sup>13</sup> Jefferson National Forest website, "Mountain Biking."  
[http://www.fs.fed.us/r8/gwj/recreation/mountain\\_biking/index.shtml](http://www.fs.fed.us/r8/gwj/recreation/mountain_biking/index.shtml)

<sup>14</sup> Allegheny National Forest website, "Mountain Biking."  
[http://www.fs.fed.us/r8/gwj/recreation/mountain\\_biking/index.shtml](http://www.fs.fed.us/r8/gwj/recreation/mountain_biking/index.shtml)

<sup>15</sup> Cessford, Gordon R., Off-Road Impacts of Mountain Bikes: A Review and Discussion. Science & Research Series. (1995), NO. 92.

Sprung, Gary, "Natural Resource Impacts of Mountain Biking," International Mountain Bicycling Association. (2004)

Thurston, Eden and Reader, Richard J., "Impacts of Experimentally Applied Mountain Biking and Hiking on Vegetation and Soil of a Deciduous Forest," *Environmental Management*, (2001), 27(3):397-409.

Wilson, John P. and Seney, Joseph P., "Erosional Impacts of Hikers, Horses, Motorcycles and Off-Road Bicycles on Mountain Trails in Montana," *Mountain Research and Development*, (1994), 47(1):77-88.

Weesner, Meg, in Cactus Forest Trail Environmental Assessment, Saguaro National Park, Arizona, National Park Service 2003

Similar considerations apply to physical impacts on trails. The two empirical studies (Wilson and Seney: 1994; Thurston and Reader: 2001) have compared the effects of bicycling and hiking on trail erosion and found no significant differences.

With respect to impacts on wildlife, the issue is extremely complex, but it would be an error to single out bicycling (or any other non-motorized trail use) as especially harmful compared to other users. Among the many parameters of wildlife impact are duration of impact, noise, and startling. Generally, hikers have longest duration, mountain bikers startle more, and motorcycles cause more noise, but there is little evidence to support any statements regarding the relative significance of these effects. The diversity of species affected greatly compounds the complexity of this issue.<sup>16</sup>

In areas with sensitive wildlife or vegetation conditions, all recreation --not just one type-- should be prohibited or seasonally restricted. Land managers should be careful in discriminating between non-motorized uses when considering the ecological impacts of trails.

### **Social Impacts of Bicycling**

The real impact of bicycling is its social consequences. Pedestrians, equestrians and mountain bikers should be able to share trails in a spirit of common courtesy and accommodation and on most national forests, bicyclists coexist with other users in general harmony. But some hikers simply do not want to see any bikes on trails, or claim that some bicyclists are rude when passing slower travelers. Feelings about this can grow strong and user conflict can become harsh.

When user conflict occurs, agency managers should employ or select strategies that resolve the problem while preserving high quality experiences for a broad user base. There are many management options short of separating or eliminating uses that are effective in managing diverse uses compatibly. We are attaching and highly recommending the articles, "The Minimum Tool Rule," and "A Hierarchy of Options For Managing Trail User Conflicts" by Andy Kulla, a recreation planner with the Lolo National Forest. Kulla spells out a number of management techniques and advances the idea that trail closure is the worst option for dealing with user conflict. See *Appendix B*.

Another excellent resource on user conflict and trail sharing is the US DOT document, "Conflicts on Multiple-Use Trails: Synthesis of the Literature and State of the Practice," by Roger Moore.<sup>17</sup>

To date, there is no information to support the claim that the presence of bicycles on shared-use trails increases the risk to other trails users' safety. Mountain bicyclists have an excellent safety

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<sup>16</sup> Gander, Hans & Ingold, Paul, "Reactions of Male Alpine Chamois *Rupicapra r.rupicapra* to Hikers, Joggers and Mountainbikers," *Biological Conservation*, (1996), 79:107-109.

Taylor, Audrey R. and Knight, Richard L., "Wildlife Responses to Recreation and Associated Visitor Perceptions," *Ecological Applications*, (2003), 13(4):951-963

Herrero, Jake, and Stephen Herrero, "Management Options for the Moraine Lake Highline Trail: Grizzly Bears and Cyclists," (2000)

Papouchis, Christopher M. & Singer, Francis J., & Sloan, William, "Responses of Desert Bighorn Sheep To Increased Human Recreation," *Journal of Wildlife Management*, (2001), 65(3):573-582.

Spahr, Robin, "Factors Affecting The Distribution Of Bald Eagles And Effects Of Human Activity On Bald Eagles Wintering Along The Boise River, 1990," Boise State University, (1990)

<sup>17</sup> Available free from the Bicycle and Pedestrian Information Center, 877-925-5245, or on IMBA's website: [www.imba.com/resources/bike\\_management/index.html](http://www.imba.com/resources/bike_management/index.html).

record, requiring few rescue efforts. Safety is probably even less of a concern on narrow singletrack trails compared to roads because bicycles travel at lower speeds on singletrack.

### **Summary on Open Unless Closed Bicycle Use**

The Forest Service proposal to prohibit bicycling and equestrian travel on all Green Mountain National Forest trails and roads contrasts with American law and National Forest Service Policy. We have provided numerous examples of other forests that take an open-unless-closed approach to bicycling. We have provided evidence that the natural resource impacts of bicycling are about the same as hiking and that social conflicts are manageable. We therefore request that the Green Mountain National Forest abandon the closed-unless-open policy it has used in the past and are proposing to codify in the Forest Plan. Instead, the GMNF should adopt the general policy that trails are open-unless-closed to bicycling.

We propose the following substitute for the proposed rule:

*Except for areas and routes closed to public travel by official order, trails and non-system routes will be open unless closed to mountain bike use.*

If the GMNF believes some trails do warrant closure to bicycling — while leaving those routes open to hiking — the Forest Service needs to demonstrate why that may be justified and should thoroughly discuss proposed closures with the public.

### **Proposed Changes to the Revision Plan's Standards and Guidelines**

The Standards and Guidelines is a critical aspect of the Revision Plan. The Standards dictate specific management requirements, and any deviation requires amendment to the Forest Plan. The Guidelines offer discretionary requirements designed to meet most situations but can be modified on the project level. Our comments are designed to better address mountain bicycling in the Standards and Guidelines. In our view, the policies regarding mountain bicycling need to be modernized in the Green Mountains, and the most appropriate place to pro-actively incorporate this recreational use is to specify these policies in the Standards and Guidelines.

Overall, there is a stark contrast in the way hiking is viewed in the Standards and Guidelines when compared to that of any other use. There appear to be virtually no restrictions on hiking, whether on trail or off trail, whether on system trails and roads or on non-system trails and roads. Mountain bicycling, on the other hand, is heavily regulated and is presumed prohibited unless specifically allowed. This is unjust, and we urge the Forest Planners to treat mountain bicycling more favorably and regulate it with a less heavy hand.

As discussed in the previous section, mountain bicycling and hiking should be regulated in a similar fashion, due to their comparable impacts. In contrast, the Green Mountain National Forest has one of the most restrictive policies on mountain biking in the country, and we urge the Revision Plan Team to make every effort to adequately provide for bicycle access in the Forest.

It is our goal to be as specific in our recommendations as possible. Therefore we will treat each relevant category in the Standards and Guidelines with specific citations and recommended changes in language.

### **2.3.12 Trails -- Non-motorized -- Hiking Trails (page 33)**

### Inconsistent Classification of Trails

The classification of Non-Motorized Trails is inconsistent. Currently, the categories used in the Revision Plan (p. 33) are: "Hiking Trails," "Cross-Country Skiing," "Mountain Bicycles," "Saddle, Pack and Draft Animals" and "Dogsledding and Skijoring." There are three issues that are problematic with this classification:

First, it is inappropriate to broadly classify trails as single-use trails based upon the type of activity: hiking, skiing, cycling, horseback riding, dogsledding and skijoring. Many of these trails have multiple uses, and the Revision Plan should not imply that there will be single-use.

Second, there is grammatical inconsistency, and all the classifications should be labeled in a similar grammatical fashion. A mountain bicycle is a piece of equipment used for the activity of mountain biking. A hiking trail is the travelway used for the activity of hiking. We urge the Revision Plan Team to label each activity consistently: hiking, mountain biking, dogsledding, skijoring, etc.

Third, the Guidelines states (p. 33) that "[m]ultiple use trails should be emphasized over single use trails[,]", the only true single use "hiking trails" are the Appalachian Trail and the Long Trail. The AT and the LT should be treated separately from other USFS non-motorized trails.

### Side Trails to the Appalachian Trails and Long Trail Should Not Be For Only "Foot Traffic"

The Long Trail and the Appalachian Trails are restricted to foot travel. However, we recommend that the Standard and Guidelines for "side trails" to the LT and AT be changed to accommodate potential mountain bike use and not simply regarded as for "foot traffic". The concept of "foot travel" was historically used to differentiate between human-powered, motorized, and horse travel. This history pre-dates mountain bicycling as a form of recreation, and thus the language requires modernization to allow for human-powered recreation. A bicycle crossing the AT or LT on a side trail in no way mars the experience of hikers, yet the current language would effectively prevent possible trail crossings. This unfairly hampers mountain bicyclists' and other non-motorized users' desire to secure greater fair access to trails which may cross these historic foot trails.

The guidelines currently state (p. 33):

**Side trails to the Appalachian and Long Trails (identified in the Long Trail System Management Plan and Dartmouth Outing Club Local Management Plan for the Appalachian Trail) should be managed primarily as non-motorized trails designated for foot travel. Minor exceptions, such as sharing with motorized uses, may be allowed where there are no other reasonable alternatives.**

We urge the forest service to remove the reference to "foot travel." Thus, the guideline would read as follows:

**Side trails to the Appalachian and Long Trails (identified in the Long Trail System Management Plan and Dartmouth Outing Club Local Management Plan for the Appalachian Trail) should be managed primarily as non-motorized trails. Minor exceptions, such as sharing with motorized uses, may be allowed where there are no other reasonable alternatives.**

If there is Forest Service concern about trail degradation on side trails to the AT and LT related to equestrian use, then the language should reflect limiting those trails to "human-powered use." The impact of bicyclists and hikers on trails is essentially equal, and should not be used as a rationale for restricting mountain biking on trails that cross the AT or LT.

## Mountain Bicycles (p. 34)

### Change in Title to Connote Activity rather than Equipment

We urge that Forest Service change the language of the Standard regarding mountain bicycling. The title, "Mountain Bicycle," should be changed to "Mountain Bicycling" in order to be consistent with other activities. Mountain bicycling is a recreational activity, similar to the category, Cross-Country Skiing. A "mountain bicycle," however, is a piece of equipment used for that activity.

### Change Standard to Allow Mountain Bicycling Unless Posted Closed

This comment is the most important point that we wish to see implemented in the Plan Revision. As was discussed in detail in above, the Standard for mountain bicycling should be changed to allow bicycling on trails and roads unless posted closed.

The Standard states (p. 34):

**Mountain biking shall be allowed only on National Forest System roads and trails that are designated for that use.**

The Standard should be changed to:

**Mountain biking shall be allowed on National Forest System roads and trails unless posted closed to that use.**

## Cross Country Skiing

### Change Guideline to Allow Other Uses

The language used in the Guideline (p. 34) should be changed to incorporate hiking, mountain biking and other non-motorized uses during the summertime. The language presumes (but does not state) that hiking is allowed on cross-country ski trails. The guideline language should state clearly that both hiking and mountain biking are a legitimate summer use.

The guideline states:

**The Catamount Trail should be managed predominately as a non-motorized cross-country ski trail. Minor exceptions, such as sharing with motorized uses, may be allowed where there are no other alternatives.**

We urge the following change:

**The Catamount Trail should be managed predominately as a non-motorized cross-country ski trail. Minor exceptions, such as sharing with motorized uses, may be allowed where there are no other alternatives. Summer use shall allow other forms of non-motorized travel, including hiking and mountain bicycling.**

Cross-country ski trails are conducive to mountain bicycling and hiking during the summer months, and both these activities should be promoted, especially since the trails already exist.

## Remote Backcountry Forest (6.1) (p. 51)

### Mountain Biking should be a Legitimate Activity in Remote Backcountry

Mountain bicycling is an activity consistent with the management and resources goals of Remote Backcountry Forests. In fact, as with hikers, mountain bikers highly value and seek out and appreciate remote backcountry trail experiences. However, the language used in reference with backcountry trails (p. 51) is unnecessarily prohibitive in allowing for future use of backcountry trails by mountain bicyclists because of its prejudicial reference to "foot trails."

**Foot trail recreational opportunities will be available that provide a relative sense of isolation and remoteness in a predominantly natural or natural-appearing landscape.**

This language should be replaced with the following:

**Non-motorized trail recreational opportunities will be available that provide a relative sense of isolation and remoteness in a predominantly natural or natural-appearing landscape.**

Our proposed language is consistent with the goals of the Revision Plan regarding Remote Backcountry Forest, as cited below (p. 51):

**The Remote Backcountry Forest will be accessible by foot and other non-motorized means of transport, such as skis, snowshoes, horses, and mountain bikes.**

However, we find the following language unclear regarding where bicycles shall be allowed and not allowed. The language is potentially prejudicial to mountain bicycle use:

**Such uses will tend to be concentrated around trail corridors; horse and mountain bike use will be restricted to existing closed road and trail travelway corridors.**

We recommend that the language be simplified and clarified to allow trail and road access all non-motorized uses. We suggest:

**Such non-motorized uses will tend to be concentrated around trail corridors.**

The Remote Backcountry Trail Guidelines (p. 52) support the need to change this language:

**The use of horses, pack animals, dog teams, and bicycles may be permitted on trails as long as such uses do not interfere with MA Desired Future Condition.**

## **Diverse Backcountry (6.2) (p. 54)**

### Removal of the Term "Foot Trail"

We support the designation of Diverse Backcountry since it recognizes the need to provide a wide range of recreational trail uses. However, we urge the Forest Service to remove the term "foot trail" when describing trails in the Diverse Backcountry. "Foot trail" is a prejudicial term that connotes single-use, hiking-only trails. Many of these so-called "foot trails" could be equally appropriate as shared-use non-motorized trails that accommodate bicycles.

Throughout the Revision Plan, the Forest Service should not elevate or prioritize a single use on trails. The Forest Service should not refer to trails as "hiking trails" unless this is in reference to the Appalachian Trail and the Long Trail. Trail use should specify the particular activity or generic category of activities, i.e., non-motorized or motorized.

## Remote Wildlife Habitat (6.3) (p. 56)

### Allow Mountain Bicycling in Remote Wildlife Habitat

Mountain bicycling is unfairly excluded as a recreational use on existing trails in the proposed Remote Wildlife Habitat, even though hiking and "other non-motorized means of transport, such as skis and snowshoes" are allowed. As documented above, mountain bicycling's impact on wildlife is similar to that of hiking, and thus there is no scientific basis for the exclusion of cycling in areas where hiking is a permitted activity.<sup>18</sup> If mountain bicycling is excluded due to impacts on wildlife, hiking should be excluded as well. If there is a specific environmental concern for a particular trail, this trail should be posted as closed to everyone.

The desired ROS class of Semi-primitive Non-motorized in Remote Wildlife Habitat should include bicycling. Again, the use of "foot" is prejudicial and should be removed. Is a "foot" on a bicycle pedal different than a foot on a boot, a ski or on a snowshoe?

The proposed draft states (p. 56):

**Continuing human impacts from roads, trails, and other recreational uses, and the resulting recreation-related disturbances to wildlife will be minimal. Disturbance from timber and vegetation management activities will occur infrequently. Forest Service system trails will be retained for access on foot and by other non-motorized means of transport, such as skis and snowshoes. New foot or ski trails will not be established. Existing Forest Service System snowmobile trails will be retained. [Underline added]**

We request that this language also incorporate mountain bicycling, so that the relevant underlined sentence reads:

**Forest Service system trails will be retained for access on foot and by other non-motorized means of transport, such as bicycles, skis and snowshoes.**

## Standards and Guidelines for Appalachian Scenic Trail (8.1) (p. 65) and the Long Trail (8.2) (p. 71)

### Change Standard to Allow for Mountain Bicycling to Cross the AT on GMNF Trails

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<sup>18</sup> Gander, Hans & Ingold, Paul, "Reactions of Male Alpine Chamois *Rupicapra r.rupicapra* to Hikers, Joggers and Mountainbikers," *Biological Conservation*, (1996), 79:107-109.

Taylor, Audrey R. and Knight, Richard L., "Wildlife Responses to Recreation and Associated Visitor Perceptions," *Ecological Applications*, (2003), 13(4):951-963

Herrero, Jake, and Stephen Herrero, "Management Options for the Moraine Lake Highline Trail: Grizzly Bears and Cyclists," (2000)

Papouchis, Christopher M. & Singer, Francis J., & Sloan, William, "Responses of Desert Bighorn Sheep To Increased Human Recreation," *Journal of Wildlife Management*, (2001), 65(3):573-582.

Spahr, Robin, "Factors Affecting The Distribution Of Bald Eagles And Effects Of Human Activity On Bald Eagles Wintering Along The Boise River, 1990," Boise State University, (1990)

The Standards for Non-Motorized trails (p. 64) that cross the AT is prejudicial against bicyclists and equestrians. We understand and acknowledge the AT's restriction to pedestrian-based travel; however, we urge the Forest Service to allow for the possibility that trails that cross the AT will have bicycle and equestrian use. Currently, the guideline only allows bicycles and equestrians to cross the AT on Forest Service roads, state highways or town roads. Other trails that cross the AT are proclaimed for foot travel only. This is unjust and overly restrictive.

**The use of horses, pack animals, dog teams, and bicycles shall be prohibited on the AT footpath and within 500 feet of the trail except where it crosses or is located on National Forest System roads, state highways, or town roads.**

We urge the Forest Service to change this to the following in order to accommodate a wider range of potential types of uses on side trails which cross the AT:

**The use of horses, pack animals, dog teams, and bicycles shall be prohibited on the AT footpath and within 500 feet of the trail except where it crosses or is located on National Forest System trails and roads, state highways, or town roads.**

#### Allow Other User Groups to Participate in Creating New Trails

We are concerned that future trail crossing will not be allowed because of the high level of control given to the Appalachian Trail Council and local AT Clubs regarding trails that cross the AT.

The Guideline notes (p. 65):

**New horse, pack animal, dog team, and bicycle crossings should be minimized, except as approved in consultation with the Forest, ATC, and local AT clubs. Trail users should be informed and educated about closures and guidelines for using the trail, especially regarding horses, pack animals, dog team, and bicycles.**

Similarly,

**Side trails to the Appalachian and Long Trails (identified in the Long Trail System Management Plan and Dartmouth Outing Club Local Management Plan for the Appalachian Trail) should be managed primarily as non-motorized trails designated for foot travel. Minor exceptions, such as sharing with motorized uses, may be allowed where there are no other reasonable alternatives. Management of side trails to the Appalachian and Long Trails should conform to the following documents:**

- Long Trail System Management Plan
- Dartmouth Outing Club Local Management Plan for the Appalachian Trail

Given the length and breadth of the AT and LT, we believe that it is highly prejudicial to prevent bicycles from crossing these trails. Such a stance further alienates cyclists and prevents this user group from enjoying important remote, long distance trail experiences. It is founded upon a dated use of the term "footpath" on the one hand, and on the other a desire among certain elements in the hiking community to provide a further hurdle for cyclists to access trail opportunities. It is similar to a gated country club insisting upon a moat around the whole community. It is time to bring down some of these gates to the public enjoyment of public land, especially where mountain bicycling is concerned.

Regarding possible future changes in trail usage that could accommodate mountain bicycling, we believe that communication with AT clubs is important and beneficial. But in the last analysis, it should be the Forest Service that makes the decision about future trail crossings and which users will be allowed to use existing trail crossings. There should also be a provision that allows for other partners within the cycling and equestrian community to provide input and take an active

role in the decision-making process. We question the legality of the formal policy that gives a private group such as the Appalachian Trail Council a special role nearly tantamount to veto power. Does this conform to the Federal Advisory Committee Act and the Administrative Procedures Act?

These same comments apply equally to the Standards and Guidelines for the Long Trail for Non-Motorized Trails (8.2) (p. 71). In addition, we urge that the Forest Service allow mountain bicycling on all sections of the Long Trail which allow Motorized Use (p.72).

### **White Rocks National Recreation Area (8.3) (p.74)**

We support Alternative E's approach to National Recreation Areas. Mountain bicycling would be an allowed use in the White Rocks NRA, and we hope that all effort will be made to accommodate a significant amount of trail mileage for bicycling on existing and future trails in all NRAs in the Green Mountains. We also urge that Glastenbury be designated as a NRA or as Remote Backcountry, and not Wilderness Study Area.

### **Alpine/SubAlpine Special Area (8.4) (p. 77)**

#### Allow Mountain Bicycling in Alpine/SubAlpine Special Areas

We question why bicycles are banned from Alpine/Subalpine Special Areas while hiking is allowed on existing trails. Apart from the pedestrian-only Appalachian and Long Trail, bicycling should be allowed on other trails in Alpine and SubAlpine Special Areas. We urge the Forest Service not to use the term "hiking trail" when there may be occasion to allow bicycles on said trail. By using this term in the forest plan, the effect is a permanent ban on bicycling in these areas.

We urge the Forest Service to change the Trail Standard to remove the ban on bicycles from this area. The current draft reads:

**Trail use by horses and pack animals, dog teams, bicycles, and other non-footrelated uses shall be prohibited.**

We suggest the following change:

**Trail use by horses and pack animals, dog teams, and other non-human powered uses shall be prohibited. Hikers and bicyclists must stay on trails.**

### **Research Natural Areas 8.6 (p. 86)**

#### Allow Mountain Bicycling in Research Natural Area

RNAs will be managed to conform to the desired ROS class of Primitive, and recreation will be incidental and not promoted in RNAs. However, since hiking is allowed on some existing trails in this area, mountain bicycling should also be allowed. The 1995 Forest Service Memorandum of Understanding with IMBA states, "Mountain bike use is not excluded from areas inventoried as "primitive" in the ROS."<sup>19</sup> Thus, mountain bicycling should be allowed in Primitive ROS areas that are not designated Wilderness.

We urge the Forest Service to change the Standard regarding Trails in RNAs. Currently, the Standard is (p. 87):

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<sup>19</sup> Servicewide Memorandum Of Understanding 00-SU-11130124-224; Section III-H

**The use of horses, pack animals, dog teams, bicycles, and motorized vehicles on RNA trails shall be prohibited.**

We suggest the following change in language:

**The use of horses, pack animals, dog teams, and motorized vehicles on RNA trails shall be prohibited.**

### **Ecological Special Areas 8.7 (p. 89)**

We support Alternative E's classification of Ecological Special Areas since it allows for mountain bicycling as part of its ROS of Semi-Primitive Non-Motorized classification.

### **Recreation Special Areas 8.8 (p. 92)**

We support Alternative E's classification of RSAs since they allow for mountain bicycling as part of its ROS of Semi-Primitive Motorized classification. This includes support for the Moosalamoo Recreation and Education Area.

### **Wilderness and Roadless Areas**

We urge the Forest Service to maximize protection of roadless areas but minimize the amount of Wilderness expansion in the Plan Revision. We recommend that roadless areas be preserved by classifying them as National Recreation Areas or as Remote Backcountry Recreation.

Mountain bicycles are prohibited in Wilderness while horseback riding, pack animals, and hunting are allowed. Mountain bicyclists are strong advocates of resource and open space protection, and have a solid history of supporting environmental and open space protection. However, the Forest Service's ban on bikes in Wilderness makes supporting new Wilderness designations difficult unless these areas offer no future potential for mountain bike recreation.

#### **Background of Bicycles in Wilderness**

The current regulations prohibit bicycles in Wilderness, and so our comments are based on the assumption that bicycles will continue to be prohibited. However, we do not agree with the agency interpretation of the 1964 Wilderness Act, and believe that Congress' legislative history during the formulation of the Wilderness Act shows that the lawmakers did not intend for "mechanized transport" to include bicycles.

We agree with the position argued in the Penn State Environmental Law Review by Theodore Stroll, in his article "Congress' Intent in Banning Mechanical Transport in the Wilderness Act of 1964" (2004).

Stroll argues that the Forest Service's 1966 regulation implementing the 1964 Wilderness Act permitted human-powered transport, including mountain bicycles, but that in 1977 and especially in 1984 the regulation was re-interpreted to exclude mountain biking. The 1966 Forest Service regulation is as follows:<sup>20</sup>

"...there shall be in National Forest Wilderness ... no use of motor vehicles, motorized equipment, motorboats, or other forms of mechanical transport .... (a) *Mechanical*

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<sup>20</sup> Theodore Stroll, "Congress' Intent in Banning Mechanical Transport in the Wilderness Act of 1964." Penn State Environmental Law Review, Volume 12, Autumn 2004, Number 3: 464

*transport*, as herein used, shall include any contrivance which travels over ground, snow, or water on wheels, tracks, skids, or by floatation and is propelled by a nonliving power source contained or carried on or within the device."

Thus, the 1966 formulation did not include bicycles as a prohibited conveyance, and this rule remains part of the Code of Federal Regulations at 36CFR293.6(a). Stroll concludes that the 1977 and 1984 ban on bicycles runs counter to Congress' original intent when formulating the Wilderness Act:<sup>21</sup>

The Forest Service, National Park Service, and the Bureau of Land Management should reexamine the prohibition of bicycles in Wilderness that they have promulgated in federal regulations. The regulations appear to run counter to congressional intent. In promulgating the new regulations to control human-powered travel in Wilderness, the agencies should ensure that they do not prohibit human-powered activities like boating, kayaking, skiing, rock climbing, or mountain climbing.

The ban against mountain bicycling is especially troublesome since it is frequently based upon the false belief that the physical impacts of mountain bikes create lasting and harmful effects on the landscape. Again, existing scientific studies show that the impacts of bicycles are commensurate to those of hiking. Horseback riding, allowed in Wilderness areas, has significantly higher levels of environmental impact.<sup>22</sup>

### **Recommended Land Protection Alternatives to Wilderness**

Given the current interpretation banning bicycles from Wilderness, as well as our strong desire to protect wild natural areas, we seek to find compromises and support the protection of all inventoried roadless areas. We believe that these areas can be protected using other designations such as improved National Conservation Areas, National Scenic Areas, and Remote Backcountry designations.

In the GMNF Plan Revision, we would urge the Forest Service to increase the acreage protected by National Recreation Areas, especially in the Glastenbury area. We urge the Forest Service to minimize the expansion of Wilderness and Wilderness Study Areas in Alternative E. Furthermore, we prefer a prescription similar to that offered in the "12 Remote Backcountry Areas" proposed for the southern Appalachian national forests, and partially implemented in the plan revision for the Chattahoochie National Forest in Georgia (*See Appendix C*). We encourage the Forest Service to adopt prescriptions such as Remote Backcountry in order to preserve roadless areas while allowing for non-motorized, primitive recreation. Furthermore, the Forest Service should make formal recommendations to Congress for more diverse designations such as National Protection Areas and National Conservation Areas.

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<sup>21</sup> IBID, 482.

<sup>22</sup> Cessford, Gordon R., *Off-Road Impacts of Mountain Bikes: A Review and Discussion*. Science & Research Series. (1995), NO. 92.

Thurston, Eden and Reader, Richard J., "Impacts of Experimentally Applied Mountain Biking and Hiking on Vegetation and Soil of a Deciduous Forest," *Environmental Management*, (2001), 27(3):397-409.

Wilson, John P. and Seney, Joseph P., "Erosional Impacts of Hikers, Horses, Motorcycles and Off-Road Bicycles on Mountain Trails in Montana," *Mountain Research and Development*, (1994), 47(1):77-88.

Weesner, Meg, in *Cactus Forest Trail Environmental Assessment*, Saguaro National Park, Arizona, National Park Service 2003

Sprung, Gary, "Natural Resource Impacts of Mountain Bicycling," IMBA, 2004.

## **Glastenbury and Other Areas of Importance for Mountain Biking**

The Glastenbury area<sup>23</sup> is of critical importance for the future of mountain biking in the Green Mountain National Forest, and we support Alternative E because it would keep the possibility of future use open in this area.

Although the area is remote and does not include major roadways (apart from the boundaries) it is covered in old town and log roads that are easily navigable with high clearance vehicles, and could provide are ready made routes for mountain bikers, cross country skiers and other user groups. We support Alternative E because it limits our potential losses in the area to the roughly 17,000 acre Wilderness Study Area which would run west from the ridgeline / AT-LT corridor. This would preserve access to the major portion of the existing road and trail network that lies to the north and east of the proposed Wilderness Study Area.

In 2003, The GMNF staff asked VT NEMBA and VMBA to prepare an inventory of trails and roads that should receive high priority for mountain bike use. The GMNF has this document. Below is a brief summary of some of the trails that are especially critical to mountain biking in the Forest.

### **Trails and Roads Important to Mountain Bicycling in the Glastenbury Area**

The road and trail inventory for mountain biking includes, but is not limited to, the following Route Numbers: 71, 84, 85, 86, 106, 192, 261, 268, 272, 275, 307, 307A, 313, 324,325, 325A, 325B, 326, 327, 335, 339, 368, 371,372, 373, 373A, 374, 375, 376, 383 383.02, 430 and Corridor 7.<sup>24</sup>

These trails would easily interconnect with trails on the Somerset reservoir lands currently owned by the TransCanada power company, and with other trails in the area of Mt. Snow that are already developed for mountain bike use. The trail inventory could also include the snowmobile trail known as the "Up and Down Trail" that accesses the Glastenbury summit and fire tower. This would provide a unique and unparalleled recreational opportunity for mountain bikers.

The Lamb's Brook, southeast of Searsburg, has numerous trails important to mountain bicycling, especially #266, the Old Stage Trail, and Corridor 9. Alternative E categories this area as a mix of Diverse Forest, Remote Backcountry, and Remote Wildlife. Mountain bicycling should be allowed in all of these categories, even in Remote Wildlife Areas.

### **Trails and Roads Important to Mountain Bicycling in Other Areas**

Beyond the Glastenbury area, there are numerous other roads, trail networks and corridors we believe would be appropriate for mountain bike use. These would include, but are not limited to:<sup>25</sup>

Stratton area: the old I.P. Road F.R. 341 which is currently designated as experimental, the Stratton Pond trail from North Brookwood Rd. to Stratton Pond and other pre-existing trails in areas to be designated as Diverse Forest Use, Remote Backcountry or Remote Wildlife. This

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<sup>23</sup> The area generically referred to as "Glastenbury" is in the southern portion of the Manchester district of the GMNF, bounded north by the Kelly Stand Road; east by the Somerset Road and Reservoir; south by Vermont Rte 9 and west by Vermont Rte 7. It includes lands not only in the town of Glastenbury, but also Woodford, Somerset, Stratton and Sunderland as well. It represents an area of more than 40,000 acres, which is fairly evenly divided by the central spine of the Green Mountains, along which lies the Appalachian and Long Trail corridor.

<sup>24</sup> USGS / USFS 7.5 minute topographic maps for Woodford / Sunderland / Mt Snow (1997) and Stratton Mtn. (1986).

<sup>25</sup> 1992 Green Mountains National Forest Map for the southern half.

could include all designated snowmobile trails that can reasonably be adapted for summertime use.

Peru / Weston / Landgrove / Londonderry / Dorset / Danby and Wallingford areas: The former Peru Outdoor Recreation Club (P.O.R. C.) trails, including FRs 12 and 22; the former Nordic Inn (now MacCartney House) trails; the section of snowmobile Corridor 7 between Porky Point, Griffith Lake and the Old Job / Danby Mt. Tabor Road including FRs 21, 58, 30, 301 and 322 ; FR 21- the trail from Mad Tom Notch to East Dorset. The existing trails in the Greendale, Moses Pond, Wallingford Pond and White Rocks areas incl. FRs 16,17,18 20, 29, 60, 244 and 248. All of these pre-existing trails are in areas to be designated National Recreation Areas, Diverse Forest Use, or Remote Wildlife.

Dorset: pre-existing trails in the area of The Mettawee and Netop Mtn.

Northern Half of the GMNF: The US Forest Service has VT NEMBA and VMBA's document referencing the trails important to mountain bicyclists in this area.

We urge the Revision Plan Team to protect Glastenbury and other remote areas using other designations such as improved National Conservation Areas, National Scenic Areas, and Remote Backcountry designations. We urge them to plan for future mountain bicycling in these and other areas of the GMNF.

## **Future Partnership with Mountain Bike Groups**

It is the mission of IMBA, NEMBA and VMBA to partner with land management agencies in order to create and maintain appropriate mountain bike opportunities. All three of our organizations welcome the opportunity to partner with the GMNF and its staff. Future partnerships might include:

- Trail inventory of suitable trails to be promoted for mountain bicycling
- Trail maintenance
- Grant-writing for specific projects such as trail construction, enhancement, and maps
- Educational programs to educate cyclists and non-cyclists to share trails
- Training in trail design, construction and maintenance
- Volunteer and stewardship development.

In short, we look forward to building a lasting relationship with the GMNF for the benefit of everyone.

## **Conclusion**

The current Revision Plan is the most appropriate time for the GMNF to improve its policy toward mountain bicycling. As an environmentally sustainable and socially legitimate form of trail recreation, mountain biking should be accommodated.

In summary, we urge the Forest Plan Revision Team to:

- reverse its out-of-date policy of closing all trails to cyclists unless posted open. Trails and roads should be open to bicycle use unless posted closed
- remove references to "foot traffic" and "hiking trails" unless specifically referencing the AT and LT
- allow for a broader range of uses on Side Trails crossing the AT and LT
- allow mountain bicycling in Remote Backcountry Forest
- remove the term "foot trail" in reference to trails in Diverse Backcountry

- allow mountain bicycling in Remote Wildlife Habitat if hiking is allowed
- allow mountain bicycling in Alpine/SubAlpine Areas
- allow mountain bicycling in Research Natural Areas
- allow mountain bicycling on existing and future trails in National Recreation Areas
- allow mountain bicycling as a summertime use on Cross-Country Ski Trails
- limit the expansion of Wilderness Designation and protect roadless areas using other designations that do not ban bicycle use, especially in the Glastenbury area

Thank you for allow our organizations submit formal comments to the Forest Revision Plan.

Sincerely,



Gary Sprung  
Senior National Policy Advisor  
For International Mountain Bicycling Association



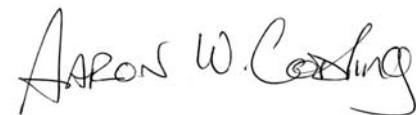
Philip Keyes  
Executive Director  
New England Mountain Bike Association



Daniel F. Mahoney  
President  
Vermont Mountain Bike Association



Gary Kessler  
Vermont IMBA State Representative



Aaron Codling  
President  
Vermont NEMBA

# Natural Resource Impacts of Mountain Biking

*A summary of scientific studies that compare mountain biking to other forms of trail travel*

*By Gary Sprung, International Mountain Bicycling Association*

In recent years, hiking and environmental groups have often lobbied to ban mountain bikes from trails on the grounds that mountain bikes damage the environment. Some land managers have closed trails to bicycling because of alleged, excessive resource damage.

Do mountain bikers truly cause more impact on natural resources than other trail users?

Very little research has attempted to answer this question, but the empirical studies thus far do not support the notion that bikes cause more natural resource impact. What science does demonstrate is that all forms of outdoor recreation — including bicycling, hiking, running, horseback riding, fishing, hunting, bird watching, and off-highway-vehicle travel – cause impacts to the environment.<sup>26</sup>

Social scientists have conducted surveys to study the feelings, perceptions, and attitudes of cyclists, hikers, equestrians and motorized trail users. This information, along with anecdotal evidence and media reports, show that trail users sometimes do not get along. User conflict is fairly well understood and demonstrably real.

People involved in user conflict sometimes simply state their preferences and ask decision-makers to take action. In a democracy, the allocation of trails based on users' differing interests is a normal, appropriate course of action by land managers. But when people make unsubstantiated allegations regarding natural resource damage to justify prioritization of their type of trail use, land managers should be wary.

To make rational, non-arbitrary, less political decisions regarding which groups are allowed on particular routes, managers need scientific studies that compare the impacts of the various user groups. Objective information that is independent of conflicting human desires can form a basis for sound policy decisions. Better understanding of the differing impacts of the various recreation forms can guide political debate and public policy. This document looks at differences in three main categories: physical impacts to trails or facilities, vegetation damage, and effects on wildlife.

In each case, several studies have examined the topic, but only a handful have compared the effects of bicyclists with other trail users.

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<sup>26</sup> Science also demonstrates that roads -- whether used or not, or regardless of which groups use them -- can cause harmful environmental effects. A more limited body of science indicates that trails may cause somewhat similar effects. But this document addresses only the comparison of user groups' impacts, not the effects of roads and trails.

***No scientific studies show that mountain bikers cause more wear to trails than other users.***

Trails deteriorate over time. To what extent do bicyclists cause this, and how does that compare with the impacts of other trail users? Many people have hypothesized based on ideas involving the characteristics of tires versus shoes, skidding, area and pressure of impact, and other factors. But as of 2003, only two empirical studies have scientifically compared the erosion impacts of bicycling with other forms of trail travel.<sup>27</sup>

**Wilson and Seney: Hooves and feet erode more than wheels**

In 1994, John Wilson and Joseph Seney of Montana State University published “Erosional Impacts of Hikers, Horses, Motorcycles and Off-Road Bicycles on Mountain Trails in Montana.” (12) The study tracked 100 passages by each of the four groups over control plots on two trails in national forests. For some of the passages, the researchers pre-wetted the trail with a fixed quantity of water using a rainfall simulator. The researchers measured sediment runoff, which correlates with erosion.

Wilson and Seney found no statistically significant difference between measured bicycling and hiking effects. They did find that horses caused the most erosion of the trails, and that motorcycles traveling up wetted trails caused significant impact. They also concluded, “Horses and hikers (hooves and feet) make more sediment available than wheels (motorcycles and off-road bicycles) on prewetted trails and that horses make more sediment available on dry plots as well.” (p.74) Wilson and Seney suggested that precipitation will cause erosion even without human travel and this factor may significantly outweigh the effects of travel. Trail design, construction, and maintenance may be much more important factors in controlling erosion.

**Chiu and Kriwoken: No significant difference between hiking and biking trail wear**

In a study whose publication in *Annals of Leisure Research* is pending, two researchers at the University of Tasmania, Australia, conducted an experiment on an abandoned fire road to compare track (“track” is the term for trail in Australia) impacts from hiking and bicycling. For the study “Managing Recreational Mountain Biking in Wellington Park, Tasmania, Australia,” (2) the authors had hikers and bicyclists pass test plots 400 times each, and measured the surface profile of the track before, during and after the passes. They compared flat and steep and wet and dry conditions. Chiu and Kriwoken found no significant difference in the trail wear caused by the two user groups. They did find significant impact from skidding tires, and they did find that impacts on wet trails were greater than on dry for both types of use.

**Goeft and Alder: Erosion trends not clear**

Other, non-comparative studies have looked at the erosion effects of bicycling. Goeft and Alder (5) investigated erosion on two trails in western Australia for one year, with various combinations of uphill, downhill and flat sections, curved and straight. Trail width varied with time, narrowing a little but not showing a clear trend. Soils on older

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<sup>27</sup> 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. To offer information, please contact the author at [gary@imba.com](mailto:gary@imba.com).

sections of trail were more compacted than newer. Erosion was influenced by slope, time, and age of trail, but did not show a clear trend.

**Bjorkman: Artificially hardened trails erode less**

Bjorkman, 1996, (1) cleared vegetation from two very steep slopes (62%) in a state park in southern Wisconsin and left one bare while protecting the other with artificial hardening surfaces. Trail users traveled over these surfaces and the study measured sedimentation from each slope. The protected path generated .11 tons per acre, and on the untreated slope produced 10.86 tons per acre.

**Crockett: Minimal change from repeated bicycle passage**

In 1986 the Santa Clara County Parks and Recreation Department of northern California studied the erosional effects of bicycling on the Edwards Field Trail (3). Forty-five cyclists made a total of 495 passes over 12 transects. Measurements were taken before and after the passes. Trail width both increased and decreased at various plots, and the same was true of the cross-sectional area of the transect, which is a measurement of the amount of soil in that spot. The researcher, Christopher S. Crockett, observed minimal change in the visual trail characteristics in most cases. The data led the county parks department to open trails to mountain biking.

**Discussion:**

The two comparative studies discerned minimal differences between bicycling and hiking. These studies may not resolve the continuing debate over who does what to trails. This scientific inquiry needs to be repeated in other geographic locations, on other soils, with more passages by each user group.

Because the Goeft and Alder and Bjorkman studies allowed multiple users on the same trails without measuring differences, and the Crockett/Santa Clara study involved only bicyclists, those studies do not provide information to compare erosion processes among users.

***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. This issue is relevant with regard to widening of trails and travel off of established trails.

**Thurston and Reader: Hiking and bicycling trample vegetation at equal rates**

Again, only one study has compared bicycling with other recreation with regard to the damage to vegetation caused by trampling. Eden Thurston and Richard Reader of the University of Guelph, Ontario, published in 2001, "Impacts of Experimentally Applied Mountain Biking and Hiking on Vegetation and Soil of a Deciduous Forest." (10) The authors set up two identical lanes of travel over natural vegetation in a deciduous forest. They measured plant stem density, species richness, and soil exposure before, during and after the 500 passages in each lane by hikers and bicyclists. Results: "Three principal

findings emerged from this study. First, impacts on vegetation and soil increased with biking and hiking activity. Second, the impacts of biking and hiking measured here were not significantly different. Third, impacts did not extend beyond 30cm of the trail centerline.” (Thurston and Reader, 2001, p.405)

**Bjorkman: Vegetation on shared-user trails occurs mostly in center of trail**  
**Weesner/NPS: Moderate trail widening controlled by volunteers**

Bjorkman, 1996, (1) studied erosion of existing and brand new trails in a state park in southern Wisconsin. Measurements on existing trails indicated a rapid and substantial loss of vegetation along the trail centerline. The disappearance of vegetation 2.0 meters to the side was much less and slower. Along the centerline, soil compacted steadily, but there was little compaction two meters to the side. The width where no vegetation existed increased rapidly at first, then a bit more slowly, and was more rapid in shade than in sun, and more pronounced where the soil had more sand or less silt. Weesner, 2003, (11) reported the results of National Park Service observations of a trail in southern Arizona over almost a decade. Results: Some trail segments widened moderately and some just a little. Volunteer trail maintenance occurred on some plots and effectively kept the trail narrow.

**Discussion:**

The Thurston and Reader study provided high-quality information through a solid process. Neither Bjorkman nor Weesner controlled for multiple-uses and thus those studies do not provide a basis for comparison of vegetative impacts of trail users.

***Science has yielded mixed results comparing impacts on wildlife of hiking and bicycling.***

To date, four studies have rigorously compared the impacts of bicycling on wildlife with the impacts of other users. The studies involved bison, mule deer, pronghorn antelope, desert bighorn sheep, European alpine chamois, and American bald eagle. A fifth study provided a statistical suggestion regarding grizzly bear.

**Taylor and Knight: Hiking and biking cause same impact to large mammals on Utah island**

In 1993, Audrey Taylor and Richard Knight published “Wildlife Responses to Recreation and Associated Visitor Perceptions,” (9) a study on Antelope Island, situated in the Great Salt Lake of Utah. They measured behavioral responses of bison, mule deer and pronghorn antelope to the passages of hikers and bicyclists. In each case, an assistant acted as a hiker or cyclist while a researcher collected data as a hidden observer. The recreationist moved at a typical pace, did not stop nor look at the animals, and did not talk. The study measured alert distance, flush response, flight distance, and distance moved. Recreationists stayed on trails for the bison and antelope trials, while the mule deer observations involved recreationists traveling both on and off trails. Taylor and Knight wrote, “...the large degree of overlap between the 95% confidence intervals for hiking and biking is indicative of a lack of biological difference between wildlife responses to these activities.” (p.955)

Calculating the amount of trails and the sensitivity distances of wildlife, Taylor and Knight estimated that approximately seven percent of the island “was potentially unsuitable for wildlife due to disturbance from recreation.” (Only the northern half of the island has trails, and the southern half is off limits to public recreation.)

Taylor and Knight also surveyed general public recreationists on the island and found that hikers, bicyclists, and equestrians blamed other groups more, and blamed their own groups less, for wildlife impacts. They also found that all recreationists underestimated the distances at which wildlife were sensitive to human presence.

**Papouchis, Singer and Sloan: Hikers have greatest impact on bighorn sheep**

Christopher Papouchis, Francis Singer, and William Sloan, reported in 2001 on “Responses of Desert Bighorn Sheep To Increased Human Recreation.” (7) The authors observed 1,029 bighorn sheep/human interactions in two areas, a high-use and a low-use, of Canyonlands National Park, Utah, in 1993 and 1994. They compared behavioral responses, distances moved, and duration of responses to vehicles, mountain bikers, and humans on foot. Hikers caused the most severe responses in desert bighorn sheep (animals fled in 61% of encounters), followed by vehicles (17%) and mountain bikers (6%), apparently because the hikers were more likely to be in unpredictable locations and often directly approached sheep.

**Gander & Ingold: Hikers, joggers & mountain bikers—all the same to chamois**

In 1996 Hans Gander, and Paul Ingold published, “Reactions of Male Alpine Chamois *Rupicapra rupicapra* to Hikers, Joggers and Mountainbikers.” (4) The authors measured the effects on male alpine chamois of the passage of hikers, bicyclists and joggers. Thirty-two passages were carried out by single persons traveling on a trail that runs through a meadow above timberline in a game reserve in the Bernese Oberland of Switzerland. The animals responded similarly to each of the human activities. Subsequent to the passage of people, the chamois tended to avoid the pasture.

**Spahr: Hikers have greater impact on eagles than cyclists**

In her 1990 graduate thesis, Robin Spahr examined “Factors Affecting The Distribution Of Bald Eagles And Effects Of Human Activity On Bald Eagles Wintering Along The Boise River.” (8) Spahr observed people recreating and also “simulated” recreational behaviors on a section of the Boise River in Boise, Idaho, and measured the effects on eagles.

Spahr found that walkers caused the highest frequency of eagle flushing, with 46% of walkers causing eagles to flush. Fishermen were second at 34%; bicyclists - 15%; joggers - 13%; and vehicles - 6%. Bicyclists caused eagles to flush at greatest distances, with a mean of 148 meters, a minimum of 96 meters and a maximum of 200 meters Walkers' mean was lower, at 87 meters, but their minimum was closer, at 17 meters and maximum was higher than bicyclists', at 300 meters. Mean distance of eagle flushing by vehicles was 107 meters; by fishermen, 64 meters; by joggers, 50 meters. “The disturbance indexes, which reflect both flushing distance and frequency, indicated that walkers were

the most disturbing to eagles. Bicyclists, followed closely by fishermen, were the next most disturbing,” Spahr wrote.

### **Herrero and Herrero: Bikers more likely to suddenly encounter bears**

In 2000 Jake Herrero and Stephen Herrero published, “Management Options for the Moraine Lake Highline Trail: Grizzly Bears and Cyclists.” (6) The authors' firm was hired by Parks Canada to provide recommendations for managing bicycling on a particular trail in Banff National Park in Alberta Canada. Intended primarily as a management strategy, the report was not an experimental investigation of grizzly bear responses to bicyclists. However, the authors referenced their compiled database of human/grizzly bear interactions and found a statistical *suggestion* that bicyclists, because they travel quietly and more quickly, are more likely to have sudden confrontations with grizzly bears on that trail than are other trail users (hikers and equestrians). The authors also found no difference between the effects of bicycling and hiking on bear habitat and stated there was no evidence that bicyclists should be managed differently than other users in that regard.

### **Discussion:**

These studies just scratch the surface of a complex topic. The diversity of species and their differing responses to human recreation make generalizations across species difficult. However, this group of studies at least suggests that the impacts of bicycling on wildlife are generally similar to the effects of hiking.

### **Conclusion**

Mountain biking, like other recreation activities, does impact the environment. On this point, there is little argument. But with regard to the non-human environment, people often debate whether or not mountain bikes cause more damage to trails, vegetation, and wildlife than other forms of recreation such as hiking and horseback riding.

A body of empirical, scientific studies now indicates that **mountain biking is no more damaging than other forms of recreation, including hiking**. 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.

In contrast, if a manager prohibits one user group on the basis of providing a particular type of experience for another group, the evidence provided by social studies may or may not justify that decision. The wisdom of prohibiting particular user groups in order to satisfy the desires of other groups is a matter for politics rather than science.

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## **Appendix B**

# THE MINIMUM TOOL RULE

Public land managers who seek to provide high-quality recreation experiences on trails face the challenge of increasing user conflicts. Successful resolution of this problem depends on the management approach. The International Mountain Bicycling Association recommends that managers adopt the "minimum tool rule": Use the least intrusive measures that will solve the problem.

This approach is explained well in "Conflicts on Multiple-Use Trails: Synthesis of the Literature and State of the Practice," by Roger Moore (1994):

The nature of the recreation experience limits the manager's options in addressing the potential negative impacts of trail use. Freedom, and freedom of choice in particular, are essential for high-quality outdoor recreation on and off trails. Multiple-use trail managers must be sensitive to this fact and avoid restriction and manipulation whenever possible. The 'minimum tool rule' proposed by Hendee, Stankey, and Lucas (1990) for wilderness management is an appropriate guideline for the management of most multiple-use trails as well. They advocate using the least intrusive measures (whether physical or managerial) that will still achieve area objectives. This sensitivity is critical to maintaining the freedom and naturalness so important to most trail-based recreation.

Some managers, unaware of this principle, have fallen into a more simple and less successful approach. Andy Kulla, a recreation manager in the Lolo National Forest of Montana, calls it "Ignore or Restrict: ... New uses are ignored until they conflict with a traditional established use and then are managed by prohibition or restriction... The manager then tries to resolve a conflict between two or more often very angry and alienated user groups. By then it's often too late... Positions are taken, heels are dug in, and emotions rather than rational thought dominate the negotiations."

Kulla developed a list of possible management actions and arranged them according to the minimum tool rule. His hierarchy of solutions (see page two) offers excellent guidance to all recreation managers.

### REFERENCES:

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Kulla, A., "A New Perspectives Approach to National Forest Recreation and its Application to Mountain Bike Management." Unpublished paper prepared for Utah State University's Professional Development for Outdoor Recreation Managers/Planners Shortcourse, 1991.

# A hierarchy of options for managing trail user conflict

by Andy Kulla, USDA Forest Service - Lolo National Forest  
1994

Listed from most preferable to least preferable.

## **Signing**

Urge cyclists to stay on routes, slow down, limit party size, consider other users, etc. voluntarily through signing. Use signs to make sure that cyclists who care, but don't know proper etiquette, have enough information to monitor themselves. Present a good map depicting areas that are open, closed, congested, or whatever.

## **Peer Pressure**

Encourage your friends and other cyclists to patrol their own ranks in a positive way.

## **Education**

Work with bike shops, local clubs, universities, other user groups, city bike programs, mountain bike outfitters and guides, and other interested parties to educate bicyclists about low impact use, etiquette, and consideration for other users. Develop posters, brochures, and a logo or trademark to become a recognized reminder or symbol of considerate cycling.

## **Use Closed Roads**

Emphasize and encourage use of closed roads as bike routes because single track trails become congested quickly and have high potential for conflict.

## **Soft-Cycling Training Programs**

Develop training programs on low impact cycling for adults and school children to be presented by clubs, organizations, bike shops.

## **Trail Design**

On new trails or trails that can be reconstructed, include design features that restrict speed and enhance sight distance, and build wide, or pull-out, sections to facilitate safe passing of cyclists, horses, and hikers.

## **Barriers To Control Speed**

Leave or install barriers in the trail to control speed. Things like protruding rocks, roots, bumps, sharp curves, down trees, speed barriers and waterbars will help.

## **Requested Walking Zone**

Request or require that cyclists walk their bikes in certain areas where speed, recklessness, or congestion are potential problems.

## **One-Way Only**

Designate the direction of travel on trails with very heavy use to avoid the potential for head on collisions.

## **Post Speed Limits**

Set maximum allowable or recommended speeds for cyclists. Encourage voluntary compliance or involve local cyclists in positive enforcement. Encourage speeds that allow a cyclist to stop in less than half the distance they can see.

**Patrolling**

Use properly trained volunteer groups to patrol and talk with cyclists.

**Restrict Cyclists By Time**

Allow for mountain bike use only at certain times of day.

**Restrict Cyclists By Day**

Allow for mountain bike use on only certain days when other use may be at lower levels. (odd/even days or weekend/week day)

**Separate Sections**

Construct separate routes for mountain cyclist use where there is the greatest congestion (like at trailheads).

**Construct Separate Routes**

Construct separate trails for mountain bikes where there is strong user support (like money and/or labor) and where no other solutions are feasible.

**Zoning**

Close certain areas to cycling and then allow and encourage that use in other designated areas. This method is dependent on having other areas available and usable.

**Close Area To Cyclists**

This should be only used as a last resort after other efforts have proven ineffective.

## APPENDIX C

### "12. REMOTE BACKCOUNTRY AREAS" for the Chattahoochie National Forest in the Southern Appalachians of Georgia

#### 12.A. REMOTE BACKCOUNTRY RECREATION--FEW OPEN ROADS

**Emphasis:** These lands are managed to provide users with a degree of solitude and a semi-primitive experience in large remote areas that still allow the use of motorized vehicles on four-wheel drive roads. Areas will be 2500 acres or greater in size unless adjacent to a prescription that also provides a semi-primitive experience (1A, 1B, 4A, 6A, 12B, 12C, etc.).

**Desired Condition:** These areas will provide large tracts of backcountry recreation opportunities with a non-motorized emphasis that allows some vehicular access. Human activities may be evident in some places. Visitors will occasionally see other people especially near the few open roads in these areas. A non-motorized trail system will provide the predominant means of access and trails will be improved or developed. Closed roads will be available for non-motorized uses. Outdoor skills will be important for visitors in the more remote portions of these areas. Hiking, horseback riding, mountain biking, backpacking, dispersed camping, hunting, and fishing are typical activities available in this area. If the allocated area has some existing, designated trails with established ATV uses, the Management Area direction could specifically allow for this use.

The landscape will appear to be primarily shaped by ecological processes, rather than management activities and the landscape character will be natural-appearing. Openings in the forest canopy created by vegetation management would be for the purposes of habitat needs or ecological benefits, however they will not be readily evident. The areas will be unsuitable for timber production. Disturbances would be primarily caused by natural process (floods, storms, insects and diseases, and fires). Occasionally, some vegetation manipulation and open forest canopies would be present due to threatened, endangered, sensitive and locally rare species habitat improvements; forest health considerations to restore native vegetative communities; and restoration of riparian ecosystems.

*Where canebrakes or wiregrass communities exist or were known to occur historically, prescribed fire will be an essential component of maintaining these habitats within the riparian ecosystem. Existing resource improvements in riparian ecosystems are allowed to continue but are seldom expanded.*

The habitat associates emphasized within this allocation are area sensitive mid- to late-successional deciduous forest associates (only in the large patches for coastal plains, piedmont, ridge/valley); mid- to late-successional deciduous forest associates; bottomland hardwood associates; and basic and mixed mesic forest associates. (See tables xx for list of species included in each association and those selected as MIS). In addition, the distribution of these areas will provide optimal denning sites and remote habitat conditions for black bear within its range. The protection of rare communities and species associates will be provided, along with protection measures for population occurrences for threatened, endangered, sensitive and locally rare species. This will provide a high likelihood that species within these associations will continue to persist on National Forest System lands. Aquatic habitats and associated species within or downstream of these areas will be maintained or improved because of the undisturbed terrestrial and riparian forest, resulting in high water quality conditions.

#### **Standards and Guidelines:**

Lands: See Forest-wide Standards and Guidelines, some acquisition priorities may vary by Management Area.

Special Uses: See Forest-wide Standards and Guidelines.

Federal Minerals: Using lease terms for environmental protection, Federal mineral leases would be allowed. Mineral material authorizations would be allowed.

Mineral and Fossil Collecting: See Forest-wide Standards and Guidelines.

Private Mineral Rights: See Forest-wide Standards and Guidelines.

Forest Health: Stands may be actively managed to reduce the risks and hazards of damage from native and exotic pests, while still meeting a high level of scenic integrity. Aggressive tactics should particularly be considered for areas within one and one-half times the tree height of trails. Indigenous forest pests are kept within acceptable levels through Integrated Pest Management Techniques. Forest pests not native to the area are minimized through judicious use of biological controls, silvicultural practices, and timely salvage of damaged trees. Actions need to be consistent with FS Policy, the Vegetation Management EIS, the Gypsy Moth EIS, and the Southern Pine Beetle (SPB) EIS.

Streamside Zones: Any limitations on activities within these areas will be defined in the Forest-wide Standards and Guidelines.

Fire: See FS Policy, Veg. Mgt. EIS; Direction may vary some by Management Area.

Old Growth Patches: In the Forest Plan, direction will be needed that addresses how stands containing existing old growth characteristics will be managed, and the distribution parameters for allocating small patches of old growth.

Recreation: Manage for Semi-Primitive Motorized Setting Conditions. Emphasize non-motorized recreation opportunities but allow public vehicular access on a few roads. Provide a non-motorized trail system that utilizes old roads as well as new trails where possible to create a desired trail system. Plan trail systems to reduce social encounters and provide opportunities for solitude. Maintain trails to maintenance levels 1-3. Emphasize Leave-No-Trace principles.

Scenery Management: Manage area to emphasize scenic quality in all activities. The Landscape Character is Natural Appearing. The Scenic Integrity Level is High.

Road Management: Manage all roads as closed to public vehicular access except selected routes and maintain an open road density of less than .8 miles per 1000 acres. Allow forest development roads not needed for resource activities to revegetate naturally unless reconditioned for use as trail routes. Maintain roads used for project activities such as creating or maintaining wildlife openings at maintenance level 2.

OHVs: Street-legal vehicles allowed on open four-wheel drive roads. Management Area direction could allow ATV use on designated trails.

*Riparian: No new wildlife openings would be allowed in riparian ecosystems as well as no new roads, except at stream crossings. Compaction from human activity does not impair soil productivity or fertility. Existing roads and trails would be maintained to minimize impacts. Existing roads and trails in riparian ecosystems will be closed if they cannot be maintained to meet water quality standards.*

## **12.B. REMOTE BACKCOUNTRY RECREATION - NON-MOTORIZED**

**Emphasis**: Provide recreation opportunities in large remote areas where users can obtain a degree of solitude and the environment can be maintained in a near-natural state. There will be little evidence of humans or human activities other than recreation use and non-motorized trails. These areas are generally 2500 acres or larger (unless adjacent to a prescription that also provides a semi-primitive experience such as 1A, 1B, 4A, 6A, 12C, etc.) and will be managed for Semi-Primitive Non-Motorized setting conditions.

**Desired Condition:** The landscape character will be naturally appearing. These areas will provide large tracts of backcountry recreation opportunities where human activities are subordinate to the landscape. Visitors will see little evidence of humans or human activities other than backcountry recreation use. Access will be provided on a non-motorized trail system and use will be well-dispersed. Development of hiking trail systems will be emphasized. Outdoor skills and self-reliance will be important for visitors because of the remoteness of these areas. Hiking, nature study, backpacking, orienteering, hunting, and fishing will be typical activities available in a setting where freedom from the sights and sounds of modern civilization is important.

The landscape will appear to be primarily shaped by ecological processes, rather than management activities. This area would be considered as unsuitable for timber production. Non-motorized recreation opportunities will be provided through a well-designed trail system. Wildlife that benefits from old trees and greatly reduced disturbance from humans and motorized vehicles are favored on these lands. Disturbances would be primarily caused by natural process (floods, storms, insects and diseases, and fires). Occasionally, some vegetation manipulation and open forest canopies would be present due to threatened, endangered, sensitive, or locally rare species habitat improvements, forest health considerations to restore native vegetative communities, and restoration of riparian ecosystems.

*Where canebrakes or wiregrass communities exist or were known to occur historically, prescribed fire will be an essential component of maintaining these habitats within the riparian ecosystem. Existing resource improvements in riparian ecosystems are allowed to continue but are seldom expanded.*

The habitat associates emphasized within this allocation are area sensitive mid- to late-successional deciduous forest associates (only in the large patches for coastal plains, piedmont, ridge/valley); mid- to late-successional deciduous forest associates; bottomland hardwood associates; and basic and mixed mesic forest associates (See tables xx for list of species included in each association and those selected as MIS). In addition, the distribution of these areas will provide optimal denning sites and remote habitat conditions for black bear within its range. The protection of rare communities and species associates will be provided, along with protection measures for population occurrences for threatened, endangered, sensitive and locally rare species. This will provide a high likelihood that species within these associations will continue to persist on National Forest System lands. Aquatic habitats and associated species within or downstream of these areas will be maintained or improved because of the undisturbed terrestrial and riparian forest, resulting in high water quality conditions.

#### **Standards and Guidelines:**

Recreation: Manage for SPNM Setting conditions. No public vehicular access. Emphasize low-impact non-motorized recreation opportunities. Provide a non-motorized trail system that accommodates as well as disperses use and provides opportunities for solitude. Maintain trails to maintenance levels 1-3. Emphasize Leave-No-Trace Principles.

Scenery Management: Manage area to emphasize scenic quality in all activities and maintain a near-natural appearing setting. The Landscape Character is Natural Appearing. The Scenic Integrity Level is High.

Lands: See Forest-wide Standards and Guidelines, some acquisition priorities may vary by Management Area. Acquisition that eliminates gaps in ownership is favored.

Special Uses: No new utility corridors or communication/electronic sites will be authorized within these areas. Other special uses are authorized if consistent and compatible with the goals and objectives of these areas.

Federal Minerals: Using No Surface Occupancy or Controlled Surface Use stipulations or lease terms for environmental protection, Federal mineral leases would be allowed. Mineral material authorizations to administer the area would be allowed.

Mineral and Fossil Collecting: See Forest-wide Standards and Guidelines.

Private Mineral Rights: See Forest-wide Standards and Guidelines.

Forest Health: Insect and disease outbreaks may be controlled when necessary to protect the values for which the area was established, reduce hazards to visitors, or for safety and legal reasons. When actions are needed, biological controls, hand control methods, and pesticides should be the methods first considered. Eradication of recently established exotic pests may be considered. Control of established exotic pests through the release of natural enemies may also be considered. Actions will need to be consistent with FS Policy, the Vegetation Management EIS, the Gypsy Moth EIS, and the Southern Pine Beetle (SPB) EIS.

Streamside Zones: Any limitations on activities within these areas will be defined in the Forest-wide Standards and Guidelines.

Road Management: No new roads. Existing roads will be closed and decommissioned where possible.

Fire: See FS Policy, Veg. Mgt. EIS; Direction may vary some by Management Area.

*Riparian: No new wildlife openings would be allowed in riparian ecosystems as well as no new roads. Compaction from human activity does not impair soil productivity or fertility. Existing roads and trails would be maintained to minimize impacts. Existing roads and trails in riparian ecosystems will be closed if they cannot be maintained to meet water quality standards.*

OHVs: Closed to OHV use.

## **12.C. NATURAL PROCESSES IN BACKCOUNTRY REMOTE AREAS**

**Emphasis**: Provide large remote areas (2,500 acres or larger unless adjacent to prescriptions that also provide a semi-primitive non-motorized experience such as 1A,1B,4A,6A,12B, etc.) of unfragmented late-successional forest cover; to maintain and/or restore the integrity of upland headwaters; to provide large-sized old-growth units; to provide optimal habitat for plant, animal, and bird species associated with late-successional, interior forest and high elevation forest conditions; to provide biological reserves of native genetic materials; and to accommodate backcountry recreation use in a large remote setting.

**Desired Condition**: The landscape character achieves a goal of naturally evolving. The recreation setting will be semi-primitive non-motorized. These areas will provide tracts of backcountry recreation opportunities where human activities are subordinate to the landscape. Visitors will see little evidence of humans or human activities other than backcountry recreation use. Outdoor skills and self-reliance will be important for visitors because of the remoteness of these areas. The area will have no open roads. There will be no new system roads or temporary roads. Old roads or logging trails may be maintained as trails. The trail system provides for a variety of primitive, dispersed recreation experiences and difficulty levels, with opportunities for hiking, horseback riding, mountain biking, hunting, fishing, and camping. New trails are provided when necessary to optimize locations, correct resource damage, reduce user interaction, or improve user access to the variety of features in the forest. Trails and camping sites are systematically maintained to correct or prevent resource damage.

The forest ecosystem generally evolves as a result of natural processes. The forest structure is complex, containing multiple canopies with a range of sizes and species of trees, as well as snags, downed logs, and shrubs and non-woody vegetation growing on the forest floor.

Wildlife preferring unfragmented mature forest vegetation predominate. Habitat is provided for threatened, endangered, sensitive, locally rare species. Habitat conditions are optimal for interior forest dwelling species. The habitat associates emphasized within this allocation are mid- to late-successional deciduous forest associates and basic and mixed mesic forest associates (see tables xx for list of species included in each association and those selected as MIS). In addition, the distribution of these areas will provide optimal denning sites and remote habitat conditions for black bear within its range. The protection of rare communities and species associates will be provided, along with the protection measures for population occurrences for threatened, endangered, sensitive and locally rare species. This will provide a high likelihood that species within these associations will continue to persist on National Forest System lands. Aquatic habitats and associated species within or downstream of these areas will be maintained or improved because of the undisturbed terrestrial and riparian forest, resulting in high water quality conditions. Watershed improvement projects may be needed to improve and correct degraded systems.

*Riparian ecosystems will remain essentially unchanged, modified only by natural processes. Management actions in riparian ecosystems will occur only where required by law or to protect human health and safety. Existing resource improvements in riparian ecosystems (e.g., wildlife openings and dispersed recreation sites) are decommissioned and restored to natural conditions.*

Prescribed fires of various intensities may be used to maintain or restore habitat for wildlife and fire dependent species. Existing old growth stands are identified and managed to retain their old growth characteristics while other portions of the area gradually attain the characteristics through time.

This area would be considered as unsuitable for timber production. Exotic pest outbreaks may be suppressed, but generally, forest insect and disease outbreaks are uncontrolled except when threatened, endangered, sensitive or locally rare species and their habitats may be adversely effected.

#### **Standards and Guidelines:**

Lands: See Forest-wide Standards and Guidelines, some acquisition priorities may vary by Management Area.

Special Uses: No new utility corridors or communication/electronic sites will be authorized within these areas. Other special uses are authorized if consistent and compatible with the goals and objectives of these areas.

Federal Minerals: Using No Surface Occupancy or Controlled Surface Use stipulations or lease terms for environmental protection, Federal mineral leases would be allowed. Mineral material authorizations to administer the area would be allowed.

Mineral and Fossil Collecting: See Forest-wide Standards and Guidelines.

Private Mineral Rights: See Forest-wide Standards and Guidelines.

Forest Health: Insect and disease outbreaks may be controlled when necessary to protect the values for which the area was established, reduce hazards to visitors, or for safety and legal reasons. When actions are needed, biological controls, hand control methods, and pesticides should be the methods first considered. Eradication of recently established exotic pests may be considered. Control of established exotic pests through the release of natural enemies may also be considered. Actions will need to be consistent with FS Policy, the Vegetation Management EIS, the Gypsy Moth EIS, and the Southern Pine Beetle (SPB) EIS.

Streamside Zones: Any limitations on activities within these areas will be defined in the Forest-wide Standards and Guidelines.

Fire: See FS Policy, Veg. Mgt. EIS; Direction may vary some by Management Area.

Recreation: Manage for SPNM Setting conditions. No public vehicular access. Emphasize low-impact non-motorized recreation opportunities. Provide a non-motorized trail system that disperses use and provides opportunities for solitude. Maintain trails to maintenance levels 1-3. Emphasize Leave-No-Trace Principles.

Scenery Management : Manage to emphasize natural processes. The Landscape Character is Naturally Evolving. The Scenic Integrity Level is Very High.

Road Management: No new roads. Close existing roads and allow forest development roads not reconditioned as trails to revegetate naturally.

OHVs: Closed to OHV use.

*Riparian: No new wildlife openings would be allowed in riparian ecosystems as well as no new roads. Compaction from human activity does not impair soil productivity or fertility. Existing roads and trails would be maintained to minimize impacts. Existing roads and trails in riparian ecosystems will be closed if they cannot be maintained to meet water quality standards.*