

TO: Lynne Sechrist

FROM: J. Graves and B. Throop

RE: Buffer Zone Proposal

Attached please find what we feel to be an exciting proposal for a change in land use at Green Mountain College. This represents the thoughts and contributions of a number of faculty, staff, and students at the college.

We submit this to you for your approval. If you approve the proposal, we hope that you will forward it to other appropriate administrators. We would very much like to move ahead with implementation in April, so we are hoping for administrative action before the end of March.

We would be happy to meet with you if you have any questions or suggestions.

Thank you very much.

A Proposal for a change in land use along the Poultney River at Green Mountain College

Drafted by J. Graves and B. Throop. Contributors include M. Blust, J. Graves, G. Marcy, R. Pawling, B. Throop
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Campus land is a tremendous asset to academic programs. As GMC strives to build its image as an environmentally focused liberal arts college, the land itself becomes an important educational and marketing tool. The following proposal outlines some initial changes in land use and begins planning for future changes. Ideally, this proposal will become a portion of an overall Facility Plan for the campus, which will guide the future direction of land use.

History

Beginning in 1995, GMC began to deliberately shift its curriculum toward a greater emphasis on the environment. A new general education program with an environmental focus was initiated in the fall of 1996, as was a new Environmental Studies major. In its first year, the major attracted 35 students. As the curriculum has shifted, new educational and co-curricular needs bearing on land use have arisen. In Spring 1996, GMC staff and members of the Poultney-Mettowee Natural Resources Conservation District (PMNRCD) noted that three bends in the Poultney River at the college are not protected by well-established woody vegetation, and that these sites are experiencing relatively rapid streambank erosion. The PMNRCD has since received \$1300 from the Natural Resources Conservation Service (NRCS) for a streambank stabilization project here. A meeting was held January 13 this year to discuss project details.

Attending from GMC were Mike Blust, Jim Graves, Gary Marcy, Robert Pawling (also of PMNRCD), and Debbie Robinson (also of PMNRCD); from outside agencies, those attending were Bill Forbes of NRCS, Steve Roy of U.S. Fish and Wildlife Service, and Jonas Rosenthal, the Town Manager of Poultney. The group came to consensus on several points:

1. The site due west of the Village of Poultney pump house number one will be stabilized this Summer and Fall using rock and plantings.
2. The other 2 sites need no rock treatment now. Woody vegetation should be allowed to regrow to protect the shoreline.
3. For long-term stabilization, a natural riparian forest should be allowed to grow, creating a buffer zone of native vegetation beside the river.
4. A long term goal is to preserve the river and its floodplain as a healthy and dynamic ecosystem for students to observe, study, and enjoy.

A Proposal

Establish a buffer zone of vegetation along the Poultney River, having a minimum width of 35 meters (115 feet), measured at right angles to the river from the location of the eastern-most historical river bank. As shown on the accompanying map, the recommended minimum zone includes some areas greater than 35 m in width. Within this zone, vegetation will be allowed to grow up naturally in some areas and it will be planted with native species in other areas, establishing riparian forest with both educational and ecosystem values. The first major component of a campus trail system will be established along the river. Vehicular traffic will be limited as much as possible within the buffer zone; in particular, routes running parallel to the river will be shifted to lie outside the 35 m buffer zone. The total land area included in the proposed buffer is approximately 14.2 acres. Since much of the river on campus has some buffer, lands withdrawn from cultivation will be considerably less than 14.2 acres; we estimate that it will not exceed 9 acres under this proposal.

Rationale for the Proposal

Values

1. Ecosystem health - Prior to human settlement, the Poultney River almost certainly wound its way through forests on floodplains such as the one at Green Mountain College. A vegetation

buffer zone will function in several ways like the original vegetation to promote soil conservation, water quality, and biodiversity:

Streambank stabilization: deep tree roots and trees that fall into the river will reduce rates of streambank erosion. Trees on the floodplain will reduce the velocity of flow during floods, create eddies where sediments collect, catch flood debris, and reduce erosion.

Water quality improvement: the buffer of forest will act as a filter to runoff from the campus and farm. Sediments in runoff waters will tend to settle out in the buffer zone instead of entering the stream. Nutrients in runoff will be better absorbed by the buffer. Stream water temperatures will also be moderated by the shade from stream-side trees.

Habitat improvement: a wide forest buffer will improve the habitat for forest nesting bird species, including several warbler species, red-eyed vireos, thrush species, scarlet tanagers, and woodpeckers. The quality of habitat will also improve for species found along river corridors, including raccoon and beaver. Stream habitat will improve, as treefalls in the river improve cover and feeding areas for fish and other aquatic animals.

2. Educational values - in accord with the idea that all aspects of a college, including land use, should be integral to its educational mission, the value of the buffer zone will go well beyond its role in streambank stabilization. Already, the campus is an important resource for our core Images of Nature course, and courses in the humanities, visual arts, and sciences. There is now a great deal of enthusiasm among faculty and students for a number of land-based initiatives that will serve academic programs and interdisciplinary activities, expand extracurricular student learning, increase student participation and 'ownership', and facilitate cooperative endeavors between students, faculty and administration:

Writing, Discussion, and Art courses: students in our Gen Ed core courses Images of Nature (GN 1000) and Dimensions of Nature (GN 2000), and in Beginning Drawing I and II (AR 1011, AR 1012) are increasingly taking inspiration from the river and its ribbon of forest for their writing, drawing, and photography. The proposed buffer zone will enhance the river and its surroundings as a source of images, ideas, and issues.

Value courses: issues of land management, of environmental health, and of the values of species and ecosystems are discussed in many of our courses on campus, including the Gen Ed core, and Value Theory and the Environment (PH 2003). The buffer zone will be a living example that students can see, discuss, and, where appropriate, modify. Here students can consider issues surrounding the role of human activities in ecosystems. As various uses of the land are discussed, students will look more closely at their own values and belief systems, and better understand different rationales for land use.

Biology courses: the campus is a field lab for students in General Biology (BI 1021), Ornithology (BI 1052), Botany (BI 1013), and Ecology (BI 2025). In these courses, they discover a diverse and beautiful flora and fauna, particularly in our patches of old fields, woods, hedgerows, and aquatic environments. The proposed buffer would improve the campus as a resource for these existing uses and for new courses that are being developed for the Environmental Studies program. In the buffer zone, biology students can study forest succession, recording changes in vegetation and associated animal life in permanent plots over time. Different plots could be released from mowing in different years, creating a set of different-aged stands that would dramatically demonstrate successional change. Several faculty members are working on plans for a series of successional plots on larger sections of the campus floodplain land. The proposed buffer zone would provide the opportunity to initiate some of these succession study plots.

Recreation: campus lands will become increasingly important to recreation courses, especially in the Environmental Studies program. Students will be involved in the assessment of recreation values, and in design of a trail system on campus that will include trails in the proposed buffer zone.

Restoration: students will be able to restore native vegetation in portions of the buffer zone. Some of the native species once found near the Poultney River will return only very slowly through natural dispersal to the site. These species could be planted. Already, at least two student clubs have expressed an interest in planting trees as a service project, using club funds to buy trees. Since April is a good time to plant, students could rally volunteers for 1 or more tree planting days. They would contribute to the campus in a way that they can show their grandchildren, learn about the culture of trees, and have a good time.

Trail system: the buffer zone would be a major corridor for portions of a campus trail. Several members of our campus community are interested in a campus trail system, which would greatly enhance the value of our campus land as an educational, recreational, and aesthetic resource. Students could be active participants in trail construction and maintenance; this would make an ideal service learning or club project. The college can pay for signage and for foot bridges by seeking grant funds.

Aesthetic values: the beauty of the proposed buffer zone will complement its other values.

Already, our campus derives much of its charm from the character of its green spaces. Our environment plays a vital role in what we are about in the classroom, but it also gives us inspiration. Forests along the river will add to the scenic beauty of our campus and have the potential to become a major attraction for students and visitors.

Marketing values: the proposed trail and land use change by the river will become a highlight for many prospective students who are visiting the college. Our lands are a wonderful asset to our environmental focus. Visiting students will be looking for the land values that this proposal seeks to promote.

3. Benefits to the wider community - In addition to improving the environment for the Green Mountain College community, the buffer zone will function in several ways to better link us with schools and the public in our region. Bank stabilization, forest succession, and restoration areas will be used in demonstrations for visiting school groups and for other interested visitors. Teachers at Poultney Elementary School are planning to use our campus as an outdoor lab: their students will monitor changes in riverbank location, and regrowth of trees in the proposed buffer zone. Junior High and High School students participating in the Riverwatch program will monitor changes in water quality in the Poultney River. The proposed buffer zone improves the value of the streambank stabilization project proposed by the Poultney Mettowee Natural Resource Conservation District, and will be part of their demonstration to the surrounding community of good soil conservation practices. A trail system in the area would be a big attraction for the variety of people visiting our campus, and would be a highlight for prospective students.

Recommended width

The proposed 35 m width is a recommended minimum. This allows some room for the river's natural tendency to alter its course. Much wider widths of unbroken forest would be required for good reproduction of some forest-nesting bird species, but the recommended width will establish a narrow zone of forest interior. The midpoint of the zone will be a little less than one tree height from each edge of the zone. Thus, the middle of the zone can have treefall dynamics similar to that found in larger forest tracts.

Feasibility

A buffer zone will be easy to establish. Service learning students are available to measure the zone and place markers along its outer edge. The head of maintenance operations will need to inform staff of the change, and be sure that vehicles operate outside of the buffer. A snowmobile route lies near the proposed edge of the buffer and may need to be shifted eastward in some places; by working with the snowmobile club, this change will be easy. Water quality in the area of the Village of Poultney Wells will be positively impacted by a widened buffer zone; will need

to work with the village to determine how close to well-house number 2 trees can be allowed to grow, and to change the route of access to the pumphouse (so that it is not so close to the river). Farming activity will need to be excluded from the buffer zone; this requires evaluation and, if necessary, revision of our current lease of lands for farming purposes.

Implementation

The land use projects for the buffer zone will be coordinated by a committee appointed by the Dean of the College consisting of three faculty members, one student and a member of the buildings and grounds staff. The primary responsibilities of the committee will be to create and update a plan which integrates the educational, recreational and ecological projects in the buffer zone and to oversee and evaluate the projects, in conjunction with their sponsors. The committee will work closely with the land use subcommittee of the Greening Committee to integrate the plan with other campus land use initiatives.

The committee will solicit proposals for land use from faculty, staff and student organizations and create a tentative five year plan. The plan will be submitted to the President for final approval. On an annual basis, land use in the buffer zone will be evaluated, and the plan will be updated.

Ideally, the buffer zone proposal will be approved during March of 1997. Planning will begin immediately upon approval and appointment of the buffer zone committee. By mid-April, elements of a preliminary land use plan will be submitted to the President for approval. Before the end of the school year, students would be involved in the first phases of stream bank stabilization and possibly one of the restoration plots. On their return in the fall, students will be able to see the first fruits of their labors. The five year plan will be submitted to the President by October 1, 1997.