U.S. Department Of Agriculture

Forest Service

Greendale Project
Green Mountain National Forest

Record of Decision

February 2004

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Record of Decision

The Greendale Project Record of Decision (ROD) documents my selection of **Alternative IV-Modified Proposed Action** for implementation in the Greendale Project area. My decision is based on consideration of the analysis and environmental impacts documented in the Greendale Project Draft and Final Environmental Impact Statements (DEIS and FEIS), and the supporting project file. These documents have been prepared in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and Forest Service policy and regulation.

As detailed on Introduction page I-1 of the DEIS, the Greendale Project proposal was first made public in 1998, put on hold as the Forest updated its Threatened and Endangered Species program through a Forest Plan amendment, and began again with a Notice of Intent (NOI) and scoping in January of 2002. A detailed analysis led to the release of the DEIS in April of 2003. Consideration of public comments and further analysis have concluded with the FEIS and the ROD.

Background

The Greendale Project is located wholly on the Green Mountain National Forest (GMNF) in the Town of Weston, Windsor County, Vermont. The project consists of commercial and non-commercial management activities designed to move the forest resources toward the desired condition stated in the GMNF Land and Resource Management Plan (Forest Plan) for deer wintering areas and upland game and wildlife habitat in managed forests, and improve stream and fish habitat. The project area consists of 5,404 acres of National Forest System (NFS) lands, of which 840 acres (15.5%) will be directly impacted by the management activities found in the selected alternative. There is a total of approximately 2,816 acres of private land within the project area boundary, resulting in an overall total analysis area of about 8,220 acres.

The project area has a long history of land-use. This use extended back into prehistory, and continued into the late 18th and 19th centuries with farming and logging making use of the landscape, establishing a more permanent residential population, and providing a far different visual aspect to the area, which was at that time likely "open" as far as the eye could see. By the early 20th century, the area reflected the larger pattern of abandonment characteristic of western New England's hill and mountain towns after the Civil War. Declining viability of upland crop, sheep and dairy farming resulted in forest re-growth and increased use for recreational pursuits.

The continued decline in upland farming activities, followed by the beginnings of the National Forest System in the eastern U.S. in the 1930's, resulted in the U.S. Government's acquisition of lands in this part of the Forest in the mid-1930's. The lands were actively managed for timber, scattered farms, and recreational activities. This included the work of the Civilian Conservation Corps (CCC), whose assignments included logging, road building, construction

of recreation facilities, fire fighting, and tree planting, represented by the many pine plantations found across the region.

Over the years, the relationship between the Town of Weston, The Weston Benedictine Priory, and the Forest Service has been positive. There has been, and continues to be, general support from both the Town of Weston and Weston Priory for United States Forest Service (USFS) activities in the Greendale Project Area, including support for timber harvesting, hunting, camping, snowmobile use, cross-country skiing as well as other natural resource management activities and uses. This community support continues specific to the Greendale project.

The Greendale Project Proposed Action

The Proposed Action for the Greendale Project was developed in the mid- to late-1990's and resulted in a Notice of Intent to publish an environmental impact statement in January, 2002. It consisted of six components:

Forest and Visual Management (MA 2.1A)
Forest Management (MA 3.1)
Deer Winter Habitat Improvement (MA 4.1)
Forest Stand and Wildlife Habitat Management (MA 6.2A)
Apple and Aspen Tree Release And Opening Management
Stream and Fish Habitat Improvement

These six components were considered concurrently during the analysis in the manner that they would move the various Management Areas (MAs) toward their desired future conditions as stated in the Forest Plan. Different harvesting techniques were proposed including individual tree and group selection, shelterwood, clearcutting, thinning, and overstory removal. Implementation of the Proposed Action would have resulted in harvesting about 3.9 million board feet of timber (corrected in the FEIS Errata) from approximately 813 acres of the project area. Pages I-2 – I-20 of the DEIS provide a detailed description of the Proposed Action.

The Purpose And Need For The Greendale Project

The Purpose and Need for the project is described in the DEIS on pages I-1 – I-2. However, additional details may also be found throughout the description of the Proposed Action on pages I-2 – I-16. A summarization of all the key factors of the purpose and need is provided here.

The systematic management of vegetation improves both plant and animal species diversity and provides a variety of age classes needed for many wildlife species. Vegetative composition objectives on those lands available for active vegetation management are primarily accomplished through commercial timber sales using a combination of uneven-aged management and even-aged management, including regeneration harvests such as shelterwood cuts and clearcuts. Each treatment method is chosen to meet specific vegetation composition objectives.

Forest monitoring shows that the GMNF has not met Forest Plan objectives for vegetative composition (FEIS Errata, p. 2). The Monitoring and Evaluation Report for 2002 (U.S.D.A Forest Service, 2003), page 24, states that for the period from 1987 to 2002, regeneration cuts for hardwoods occurred at a rate that was 30 percent of Forest Plan level, aspen management at only 14 percent, and conversion to softwoods at 72 percent of what the Forest Plan allows. The report also states that other kinds of harvesting are falling far short of Forest Plan objectives. Selection harvest during the same period achieved only 58 percent of the Forest Plan level and thinning harvests only 38 percent of the Forest Plan level. Available data shown in sections 4.4 and 4.7 (Chapter 4) of the DEIS demonstrates that the current vegetative conditions (structure, species composition, age class distribution) and aquatic/fish habitat conditions within the Greendale Project Area do not meet the specific vegetation, wildlife and fisheries goals and objectives stated for the MAs within the proposed project area.

The most pronounced impact of this reduction in harvesting is the loss of existing, early successional, young forest, and seedling and sapling habitat. Approximately 65 percent of the GMNF's vertebrate species utilize this young, regenerating, open or partially open forest habitat. Though young forest habitat is extremely important to the wildlife community as part of an overall mix of forest conditions, it is currently in short supply and declining both on the GMNF and regionally (section 4.4 of the DEIS). Regeneration harvests are needed to create the early successional seedling/sapling habitat necessary to meet the needs of the vertebrate species relying on this habitat niche.

MA 2.1A lands encompass approximately 38% of the project area. Vegetation management through commercial timber harvesting is needed in MA 2.1A lands (DEIS section 1.2.1, p. I-5) to encourage aspen regeneration on lands where it is dying out, further increase the amount of softwood habitat, and to move the current predominant even-aged forest toward the Forest Plan objective of a visually pleasing, healthy, large tree dominated, multi-aged forest.

MA 3.1 lands encompass approximately 16% of the project area. These lands currently fall well short of the Forest Plan's objective of a mosaic of vegetative conditions consisting of a variety of age classes and species types (DEIS section 1.2.2, p. I-8). Currently, closed canopy hardwood forest dominates 91% of the project area and is primarily in either mature (72%) or young (19%) forest stands. Early successional habitat (0-9 yrs of age) is virtually non-existent as compared to the Forest Plan's 6-10% objective. Vegetation management through commercial timber harvesting is needed to improve species diversity, create early successional habitat, encourage aspen and softwood regeneration, and enhance general forest health that promotes the growth of high quality sawtimber as called for in the Forest Plan.

MA 4.1 lands encompass approximately 13% of the project area. In order to provide long-term suitable and stable deer winter habitat in MA 4.1 lands (DEIS section 1.2.3, p. I-9), vegetation management through commercial timber harvesting is needed to increase the amount of multi-storied softwood stands and increase the amount of hardwood browse and aspen regeneration in an area dominated by closed canopied mature hardwood forests. This area now provides only marginal cover (protection) and little browse for wintering deer and other animals.

MA 6.2A lands encompass approximately 32% of the project area. Currently, age class composition objectives for this MA are not being met and show a particular shortage in early successional habitat (DEIS section 1.2.4, p. I-11). Vegetation management through commercial timber harvesting is needed to improve the growth and condition of hardwood forests, increase the amount of early successional habitat and softwoods, and thereby, improve wildlife habitat diversity. Promoting early successional habitat would be consistent with the Forest Plan's emphasis on non-game species (Forest Plan page 4.131) as well as benefit "deep wood" species such as fisher, black bear, and bobcat either directly, by increasing the production of berry-producing shrubs and other sunlight dependent plants, or indirectly, by improving habitat for important prey species such as deer, snowshoe hare, and small rodents. The thinnings proposed in these areas would also promote healthy, diverse, large tree dominated forests that the management prescription for MA 6.2A calls for.

Other work is needed in the project area to improve the aquatic and fish habitat within Jenny Coolidge Brook, and to improve the quality of historic apple orchards and associated permanent openings that are in danger of being lost (DEIS sections 1.2.6 and 1.2.7, p. I-13 and I-14).

Besides working towards Forest Plan objectives for vegetative composition and moving the Greendale Project's MAs closer to their desired future condition, using commercial timber harvesting to manage vegetation would contribute to the local economy and provides wood products for public consumption. Wildlife habitat and stream restoration activities would benefit the wildlife and fish communities as a whole. They would also provide quality recreational opportunities and economic spin-offs for wildlife viewing, hunting and fishing, and all popular recreational activities in the Greendale Project Area as discussed in section 4.1 of the DEIS.

Decision

My decision is to select **Alternative IV- Modified Proposed Action** for implementation with one minor change associated with Stand 12 in Compartment 45 (MA 3.1 activities). This stand was originally proposed for clearcutting with leave trees in Alternative IV in the DEIS (Table 3.3, p. III-16). Based on additional field data provided by recent on-site reviews, I have decided that no harvesting will be done in that stand. See further discussion of this change under the "Activities in MA 3.1" section and the "Rationale for My Decision" section.

I have made this decision based on my evaluation of the purpose and need, the impacts on the natural and human resources, internal concerns and public issues raised regarding the proposed action, and after carefully considering public comments made during both the initial scoping process and in response to the DEIS.

The specific actions to be implemented under Alternative IV are described briefly below (see also Figure 1 and Table 1 at the end of this document**)** and are presented in detail in the DEIS section 3.4, beginning on p. III-13. Alternative IV will impact about 840 acres of the 5,404 acres of National Forest System lands in the project area, and will produce about 4.16 million

board feet of timber. The impacts of the implementation of this alternative are shown in the DEIS, Chapter 4, The Affected Environment and the Environmental Effects.

Activities in MA 2.1A

Harvest activities will occur on approximately 355 acres (17%) of the 2,074 acres within this MA, occurring in Compartments 27, 29, 30, and 31. Individual tree selection harvest will occur on 277 acres in all or parts of Stand 3, Compartment 27; Stands 6 and 10, Compartment 29; Stands 5, 9, 10 and 20, Compartment 30; and Stands 13 and 15, Compartment 31. Group selection harvest will create a total of about 78 acres of small temporary openings in Stand 6, Compartment 29; Stand 16 and 19, Compartment 30; and Stands 5, 9, 10, 11, 13, 15, 16 and 25, Compartment 31. Group selection harvests in this MA will be done to encourage aspen regeneration and softwood regeneration (DEIS p. III-13 which refers back to p. I-5 – I-6). The prescriptive sizes for these temporary group openings will vary to promote both softwood and aspen regeneration but would generally be less than one acre (DEIS p. I-6, para. 1).

Activities in MA 3.1

Harvest activities will occur on approximately 142 acres, all in Compartment 45. This is about 16 percent of the 883 acres in MA 3.1. A combination of delayed shelterwood harvest and individual tree selection will be used to retain a portion of the forest overstory in Stand 21 (23 acres of delayed shelterwood cuts and 13 acres of individual tree selection harvest) and Stand 23 (25 acres of delayed shelterwood cuts and 9 acres of individual tree selection harvest) to reduce impacts to the visual resources. Delayed shelterwood will also occur on 15 acres in Stand 27 and 6 acres in Stand 44. Trees left in the overstory will be retained for 40-60 years.

Clearcutting in MA 3.1 will occur on a total of about 17 acres in portions of Stands 35 (14 acres) and 39 (3 acres). This will promote aspen and conifer regeneration as well as provide a range of patch sizes for wildlife associated with grass and shrub habitat. Stand 12 of Compartment 45, originally proposed for clearcutting in Alternative IV, will not be harvested, thus reducing the amount of total clearcut harvesting in this alternative from 37 acres to 27 acres. See the section entitled “Rationale for My Decision” for further explanation.

A total of 29 acres of thinning will be done on portions of Stands 26, 35 and 39 to improve forest growth and tree species composition. Group selection harvest will occur on a total of about 5 acres in Stands 36 and 42 to improve tree species composition, primarily working to increase the amount of softwood regeneration. The prescriptive size for these temporary group openings is about 1/4 acre (DEIS p. I-9), the desire being to keep the groups small in these two specific mixedwood (mix of hardwoods and softwoods) stands in order to minimize potential regeneration, and competition, from nearby hardwood species. Finally, unlike the Proposed Action, there will be no overstory removal in either Stand 4 or 30, Compartment 45.

Activities in MA 4.1

Harvest activities will occur on approximately 129 acres of the 728 acres of softwood, hardwood, and mixed softwood/hardwood stands in MA 4.1 forests in Compartments 27 and 29. Group selection harvest will occur on about 21 acres of mixedwood and softwood forests in Stands 2, 27 and 33, Compartment 27 and Stand 7, Compartment 29, primarily to increase

the amount of softwoods (DEIS p. III-14 which refers back to p. I-10). The prescriptive size for these temporary group openings is about 1/3 to 1/2 acre in size, but groups may range in size from 1/4 acre to one acre. The size of each opening will be dictated by the existing condition and the amount of sunlight needed (i.e. obtained by opening the area up) to achieve the regeneration objectives. Clearcutting will occur on about 10 acres of hardwood and mixed hardwood/softwood in Stands 25 and 26, Compartment 27 (about 5 acres each) to promote aspen regeneration.

During the development of Alternative IV, the treatment for Stand 10, Compartment 27 was changed from clearcutting as stated in the Proposed Action to a combination of delayed shelterwood harvest (25 acres spread over 2 units) and individual tree selection harvest (25 acres). The two-aged stand structure of the hardwood forest and relatively flat terrain will allow removal of the dominant overstory trees while retaining a semi-open forest overstory of mature trees. The use of individual tree selection harvest will provide visual buffers between the delayed shelterwood units. Each of the delayed shelterwood harvest units will be less than 20 acres to ensure good interspersion of forage and cover (Forest Plan Page 4.111, B12). The objective is to improve tree species composition including aspen and softwood regeneration (Forest Plan Page 4.62-4.65 and Appendix A.03-07).

Thinning will occur on 48 acres in Stands 9 and 22, Compartment 29 to improve forest growth and tree species composition.

Activities in MA 6.2A

Harvest activities will occur on approximately 170 acres of the 1,719 acres of MA 6.2A lands, all in Compartment 32. Thinning will occur on 127 acres of Stands 24, 25, 26, 27, 32, 36 and 37 to improve forest growth and tree species composition. Delayed shelterwood harvest will occur on 32 acres of Stand 34 to increase hardwood tree species composition, wildlife habitat diversity, and remove trees experiencing mortality or declining productivity. Individual tree selection will be done on 11 acres of Stand 35.

Apple Tree, Aspen, And Permanent Opening Management

We will treat approximately 44 acres of historic apple orchards and associated permanent openings in MA 2.1A and MA 3.1. This will require the removal of competing hardwood and softwood regeneration immediately surrounding the individual trees, usually within the apple tree drip-line and on the south side of the tree to increase sunlight. Activities will occur in Stand 103, Compartment 29; Stands 1, 4, 105 and 109, Compartment 31; and Stands 28, 33, 101 and 106, Compartment 45.

Improved Stream And Fish Habitat

Alternative IV will initiate restoration of aquatic and fish habitat in Jenny Coolidge Brook. A total of about 35 trees, ranging in size from 10-20 inches in diameter, will be placed along approximately 2,500 linear feet of stream. Activities include placing trees and root wads into the stream sections to mimic natural woody debris, using the natural stream flow to restore pool habitat in reaches where long runs or riffles currently exist. All work, including selection

of large, woody debris (LWD) trees, will conform to direction in the Forest Plan Standards and Guidelines.

Mitigation

The selection of Alternative IV requires certain mitigation measures to be incorporated in both project design and implementation to lessen the impacts of management activities on the Forest resources and resource use, particularly dispersed winter recreation. These specific mitigation measures to be applied during implementation of Alternative IV are attached as Appendix A of this ROD. The appendix lettering and numbering scheme has changed from that found in the DEIS (mitigation measures are described as Appendix B of the DEIS).

Monitoring Plan

Monitoring consists of the observation of project implementation associated with this decision and the evaluation of the resulting information collected. The purpose of monitoring is to determine the adequacy of mitigation measures needed to avoid or lessen potential environmental harm associated with the implementation of Alternative IV. Monitoring also validates the accuracy of environmental impacts projected by the FEIS and if needed, triggers any additional mitigation measures to keep effects within acceptable levels. The selection of Alternative IV requires that both resources and impacts on public use be monitored. The monitoring plan that will be implemented as part of the Greendale Project is shown in Appendix B of this ROD. The appendix lettering and numbering scheme has changed from that found in the DEIS (the monitoring plan is described as Appendix D of the DEIS).

Rationale for My Decision

Based on the results of the analysis as documented in the EIS, I find that Alternative IV best implements direction found in the Forest Plan for MAs 2.1A, 3.1, 4.1, and 6.2A; best moves the project area closer toward the desired future condition for these MAs while minimizing adverse environmental effects; best meets the purpose and need for the project; and best addresses key issues and concerns raised by both the public and Forest Service resource staff. These issues include:

* partially responding to internal concerns over visual quality and protecting advanced regeneration in past shelterwood harvest areas
* partially responding to public concerns about the loss of grouse and other upland wildlife habitat by increasing the amount of apple orchard restoration
* partially responding to clearcutting concerns by substituting delayed or group selection harvest for clearcutting in some stands.

I have reviewed the economic analysis (DEIS, p. IV-86 – IV-96), and considered the quantitative market costs and benefits, comparing the alternatives in Table 4.9.3 on page IV-91 of the DEIS. Questions on the validity of these figures were raised during the DEIS public comment period so I asked the project ID Team to update this table. This has been done and is

presented in the FEIS Errata. More important to my decision, however, are the qualitative "values" of the non-market costs and benefits associated with the physical and biological resources provided by the environmental analysis (DEIS, Chapter 4, p. IV-1 – IV-85). In that respect, I am confident that Alternative IV will result in higher quality outcomes, as discussed below, than would any of the other alternatives. My selection of Alternative IV is a reasoned, informed decision based on a complete and thorough analysis, and full consideration of public input. Although the decision may not completely satisfy all comments and concerns, and be supported by everyone, I believe that it represents a reasonable balance between the issues raised and the objectives of the Greendale Project proposal.

Alternative IV best meets the goals of increasing vegetative species and age class diversity, and improving vegetative composition in the Greendale Project Area while addressing key public issues and concerns associated with the Proposed Action. As stated on page I-1 of the DEIS, we are far behind in meeting Forest Plan objectives for vegetative composition, in particular, hardwood regeneration, aspen management, and conversion to softwoods. An important outcome of this effort to improve vegetative composition will be an increase in the amount of early successional habitat, a need described in the purpose and need for the proposal. Reference back to page 3 of this ROD and see also the DEIS, pages I-1, and III-13 - III-14; further explanation is found throughout much of Section 4.4 of the DEIS, beginning on page IV-22. This outcome, increasing the amount of early successional habitat, cannot easily and meaningfully be put in quantitative terms. Therefore, the value of improving the "quality" of the wildlife habitat in the project area was an important consideration in my decision.

As the DEIS Section 4.4 states, wildlife species dependent on early successional, young forest habitat are most at risk on the GMNF and throughout Vermont. GMNF data shows that over 80 percent of the Forest is mature forest habitat and that this habitat continues to increase, while young-aged habitat on the Forest and throughout the State is being lost. This results in a lack of the desired mosaic of vegetative conditions. One of our Forest Plan goals is to "maintain adequate quality, amount, and distribution of habitats to support viable populations of all existing native and desired non-native vertebrate species" (Forest Plan p. 4.05). Timber harvesting activities within our various forest management areas are designed to "provide a mosaic of areas of different aged vegetation, and to achieve the objectives of conversion to different vegetative types as quickly as possible" (Forest Plan, p. 3.04). For example, the purpose of MA 2.1A is to "help maintain a balanced mosaic of ecological communities across the forest" (Forest Plan p. 4.93, para. 1). The DEIS in much of Section 4.4 discusses the importance of maintaining a variety, or mosaic, of habitat conditions (p. IV-30), a mixture of age classes (p. IV-34), and a complex forest stand structure (p. IV-39), all of which are key components of quality wildlife habitat.

The positive movement made by Alternative IV in creating and maintaining a mosaic of habitat conditions, and in working toward our long term vegetative composition goals, albeit a relatively small step, nevertheless will increase the amount of young, regenerating, open, or temporarily open habitat required by many of the vertebrate species on the GMNF, and thereby make quality improvements to wildlife habitat. It also will increase the amount of aspen, an uncommon and important early successional species that the Forest Plan calls for increasing where practical (Forest Plan p. 4.30), and works to increase the amount of softwoods where

opportunities are present. Alternative IV also best meets the needs of treating apple orchards and associated openings, an important component of wildlife habitat that should be maintained. I realize that these improvements are most beneficial at the localized level (DEIS, p. IV-22 – IV-23), but nonetheless, I believe they are important in our efforts over the long term to provide the quality, amount, and distribution of habitats needed forest-wide to support viable populations of the forest's vertebrate species.

While I agree that we must improve vegetative composition and increase early successional habitat, I am aware of concerns of some members of the public in regards to clearcutting. In contrast to the other alternatives, Alternative IV produces about the same amount of early successional habitat as would the original Proposed Action, but with less clearcutting (DEIS, p. III-19, Table 3.4 and p. III-26, Table 3.5). It also substitutes delayed shelterwood harvests for standard shelterwood harvests and clearcutting, and thus addresses visual issues. While I recognize the need for clearcuts when appropriate, I am confident we can achieve the early successional habitat goals using the techniques of Alternative IV. Those areas that will be clearcut, only about 27 acres, are indeed, best treated by that harvest method and these harvests are consistent with Forest Plan direction and guidance (see the sections entitled Appropriateness of Even-Aged Timber Management and Optimality of Clearcutting further ahead in this ROD). The Greendale Project Area is very well suited to the mix of management techniques of Alternative IV. Existing habitat, the slope of the lands, and the overall soil conditions will allow the selected harvesting to occur without any significant impacts. I realize that the overall amount of the timber output, about 4.16 million board feet, is larger than some of our more recent decisions. However, this output will be spread out over a number of years (about 5), and would therefore average out to less than one million board feet per year from this project.

One minor change I decided upon was in regard to the treatment of Stand 12 in compartment 45 (MA 3.1 activities). I have decided to drop the unit; in other words, do no harvesting in Stand 12. The stand was originally proposed for clearcutting as stated in the DEIS (Table 3.3, p. III-16). In response to concerns raised by some of the public to limit the use of clearcutting (DEIS p. II-7, section 2.4.1) and to internal concerns that the treatment of this stand may not meet the optimality for clearcutting requirements in the Forest Plan, I asked that an additional field review be done for stand 12. This field review validated that clearcutting would not be the optimal method of treating this stand. Other methods of treatment were considered but similarly rejected. The resulting environmental effects (the impacts to the physical environment), specifically related to this change to Stand 12 (i.e. no harvest), would be less than those disclosed in the DEIS. The overall environmental impacts produced by the full implementation of Alternative IV with this minor change would remain well within the range of effects disclosed in the DEIS, Chapter 4, and as such, does not warrant any additional analysis. I recognize that this small 10-acre change will reduce total outputs of timber produced, reduce costs and revenues figures, and bring about slightly less changes to the physical environment (amount of early successional habitat and softwood regeneration, vegetative diversity, and age-class composition), but I believe these reductions will be minor and insignificant when compared to the original outputs of Alternative IV.

In am also pleased that the management activities and resulting outputs associated with Alternative IV are consistent with the concept of a working forest and the active forest management that has become acceptable in the Greendale area, while at the same time being relatively light on the land. Both the Weston Priory and Wantastiquet Trout Club have active timber management programs on their lands for economic and wildlife habitat-related reasons. The GMNF has a long-standing positive relationship with the Town of Weston. This local community and its interests have played a very important role in shaping the management of adjacent National Forest System Lands. As evident in the town's comments found in Appendix A of the DEIS (p. A-7, comment G-15; p. A-34, comments E-1, E-2), we have strong local government support for the Greendale Project, and it is consistent with the objectives of the Weston Town Plan as stated in Section 4.9, Chapter 4 of the DEIS (p. IV-87). I believe the direct economic returns to the Town of Weston, the employment opportunities generated by timber sales of varying sizes, and the improvements to, and continuation of, a high quality recreational experience that will result from Alternative IV's management actions will have an overall positive impact on the local community. I also am convinced that the commercial and non-commercial wildlife and fish habitat improvement efforts will result in the continuation of the area's quality hunting and fishing experiences already popular with our publics.

I have fully considered Alternative IV's impacts to threatened, endangered, and sensitive species, management indicator species, and to recreation, visual, fish and wildlife, social, and other physical, biological and socioeconomic resource areas. The application of Forest-wide and Management Area standards and guidelines, and mitigation measures (Appendix A of this ROD) will assure that the management activities can be completed with little or no adverse impacts. I believe that any adverse impacts to be short-term in duration, and are an acceptable trade-off for the long-term benefits that will be achieved by Alternative IV. Over time, the Greendale Project and other similar efforts will make a difference in improving the quality of our wildlife habitat, increasing vegetative diversity, and providing the balanced mosaic of habitat needed to help maintain wildlife and plant populations. Therefore, I am convinced that my selection of Alternative IV is a reasonable and responsible decision that will provide the greatest long-term benefits while minimizing short-term impacts.

The Project's Level of Significance

In the DEIS Introduction, page I-1, the Deciding Official at that time decided that the preparation of an EIS was the best course of action to document the Greendale Project analysis. This was based on the uncertainty of the significance of the effects, in terms of context and intensity according to the Council of Environmental Quality regulations for implementing the NEPA process (40 CFR 1508.27), due to the size and scope of our proposal. I believe this was an appropriate course of action.

After reviewing the thorough environmental analysis, and the environmental effects disclosed in Chapter 4 of the DEIS, I have a better understanding of the impacts associated with the Greendale Project and I am convinced there are no significant adverse effects from the proposed management activities in Alternative IV, as well as any of the other alternatives

analyzed. This is true at both the Greendale Project Area level and the Forest level, particularly when applying Forest Plan standards and guidelines, and the mitigation measures described in Appendix A of this ROD.

One reason for my conclusion is the scale of impact. The total amount of lands impacted by vegetation management (796 acres) under Alternative IV equals less than two-tenths of one percent of the GMNF land base and the 257 acres impacted by either clearcuts, shelterwood harvests, or group selection harvests, the most controversial of the management activities being implemented, account for less than one-tenth of one percent of GMNF lands. At the project-level, landscape scale, less than 15 percent of the 5,404 acres of NFS lands within the Greendale Project Area will be impacted by forest management (i.e. timber harvests) activities.

Another reason for my conclusion that the project has no significant effects is that these same types and intensity of management activities have been successfully carried out in the recent past on GMNF lands in the Hapgood Pond and Utley Brook Project Areas. These relatively nearby areas have similar land-use patterns, natural resources, resource constraints, and public uses. These projects were large timber harvests spread out in a big area over a long period of time, just as is proposed for the Greendale Project. One of my concerns for the Greendale Project was the level of disturbance to soil and water resources because of the size and scope of the project. Site inspections and monitoring of the Hapgood Pond and Utley Brook projects showed that no significant impacts associated with the soils and water resources resulted from these projects (DEIS, p. IV-68). Our analysis of effects for the Greendale Project indicates similar results should be expected (DEIS, p. IV-68 – IV- 82).

Furthermore, I find that the more critical resources, in particular, our threatened, endangered, and sensitive plants and animals, are clearly not significantly impacted by management activities (DEIS, p. IV-20 - IV-21, and Appendix C). Finally, I find that there are no unique characteristics of the geographic area that will be significantly affected by the Greendale Project management activities. This includes the adjacent White Rocks National Recreation Area (DEIS, p. IV-2 – IV-13), and heritage resources within the project area (DEIS, p. IV-82 – IV-85).

Public Involvement And Public Issues

An initial Greendale Project scoping letter was mailed to 530 individuals and organizations on April 6, 1998. It described the Proposed Action and internal concerns regarding the project's impacts on the area's social and natural resources. A public meeting was also held in February of 1998. A second scoping letter was sent out to 349 individuals and organizations on December 19, 2001. A Notice Of Intent (NOI) to prepare an Environmental Impact Statement for the Greendale Project was published in the Federal Register on January 17, 2002 (Volume 67, Number 12). The project was also listed for numerous months in the Green Mountain and Finger Lakes National Forests' quarterly Schedule of Proposed Actions. Based on 11 responses (3% response rate) received in 2002, together with the 18 comments (3% response rate) received in 1998, the

Interdisciplinary Team identified 12 public issues regarding the effects of the proposed action.

- Impacts On Recreation Use
- Impacts On Management Area 6.2A
- Impacts On The White Rocks National Recreation Area
- Impacts On Wildlife and Wildlife Habitat
- Deer Habitat Management
- Impacts on Threatened, Endangered, Sensitive Wildlife And Plants
- Project Size and Intensity of Vegetation Management
- Economic Impacts
- Need For A Restoration Alternative
- Impacts On The Spiritual Setting Of The Weston Priory
- Impacts On Water Quality, Fish and Aquatic Habitat
- Impacts On Abenaki/Native Sites, Subsistence Grounds, Sacred And Traditional Areas

A complete discussion of these 12 issues can be found in the DEIS, Chapter 2, Section 2.3. Several public comments were found to be outside the scope of this analysis as they are inconsistent with current Forest Plan direction. They are:

- Elimination Of Clearcutting In The Project Area
- A Less Complex Environmental Analysis
- Back Country Recreation As The Primary Use
- Elimination Of Vegetation Management In MA 6.2A

An explanation of why these comments were considered outside the scope of the analysis is found in the DEIS, Chapter 2, Section 2.4.

The analysis presented in the DEIS was driven in part, by the 12 public issues listed above. The DEIS was completed in March 2003 and released to the public in early April, 2003. A Notice of Availability was published in the Federal Register on April 4, 2003 (Volume 68, Number 65). In addition, the DEIS was mailed to 79 interested and potentially affected individuals and organizations at the beginning of the 45-day public comment period of April 4 to May 19, 2003 and the document was posted on the GMNF website. A public meeting was also held on April 24, 2003, to collect comments on the DEIS. Sixty-seven timely responses were received during the comment period. A Response to Comments document has been prepared and is being released as part of the Final EIS (Appendix F). Consideration of these comments was crucial to my decision.

Other Alternatives Considered

The Greendale Interdisciplinary Team developed a range of alternatives reflecting an array of vegetation management options in addition to the Proposed Action. These were based on project area needs, internal concerns, and on issues raised by those publics responding to our

public involvement efforts. In addition to the selected alternative (Alternative IV), I considered four other alternatives that were analyzed in detail in the EIS which are discussed below. A more detailed description of each alternative considered can be found in the DEIS, Chapter 3, pages III-1 – III-21.

Proposed Action

As noted in the Purpose and Need discussion in this ROD, the Proposed Action was developed to address a variety of needs and further the implementation of our Forest Plan. The Proposed Action consists of elements described in the Scoping Notice, and NOI dated December 2001, and January 2002, respectively with some modifications that reflect dropping management activities within Inventoried Roadless Areas (DEIS, pages I-5 – I-20). The combined harvesting activities proposed would have affected approximately 781 acres of the 5,404 acres of NFS lands within the project area.

To summarize, 196 acres would have been treated using even-aged regeneration harvests (62 acres of clearcutting w/reserve trees left, 84 acres of shelterwood and 25 acres of delayed shelterwood harvests, and 25 acres of overstory removal). About 204 acres would have been thinned, 104 acres treated using group selection uneven-aged harvest methods, and 277 acres harvested using individual tree selection (uneven-aged) methods. This would have resulted in approximately 3.90 million board feet of timber harvested in three or more separate commercial timber sales over about a five-year period. In addition, the Proposed Action would have improved about 32 acres of apple tree orchards and associated permanent openings, and would have also initiated restoration of aquatic and fish habitat in Jenny Coolidge Brook.

The increased amount of vegetative diversity created throughout the project area under the Proposed Action through enhancement of the vegetative composition and age class distribution would be about the same as Alternative IV. Specifically, the amount of early successional habitat provided by harvest treatments would be nearly identical. However, I did not select the Proposed Action because I wanted to reduce the amount of clearcutting while still working toward early successional habitat goals. I will be able to achieve this with Alterative IV, rather than the Proposed Action, by substituting delayed shelterwood harvests for some of the clearcuts (DEIS, p. IV-13). Further, the Proposed Action would have more negative impact on the overall visual quality within the project area compared to Alternative IV, since it has the most clearcut harvest treatments proposed compared to any of the other action alternatives. Clearcut harvests generally would have more impacts to the visual quality than uneven-aged harvest treatments (DEIS, p. IV-16). As such, I believe that Alternative IV would provide a generally lighter on the land approach than would the Proposed Action. Also, the Proposed Action would not accomplish the higher amount of apple orchard improvements that would benefit wildlife.

Alternative I, The No Action Alternative

The No Action Alternative (Alternative I) is required by NEPA. Under this alternative, the existing situation would have remained unchanged (DEIS, p. III-1). Minor maintenance and routine activities such as road blading and trail maintenance would have still continued. Any activities covered by past Decision Notices or Decision Memos would also occur. None of the

proposed vegetative management activities would have been implemented, and the stream and fisheries improvements would not have been done. The current terrestrial and aquatic habitat/vegetative composition trends would continue.

Alternative I would best respond to the concerns of people who feel there are unacceptable negative impacts associated with active vegetative management (i.e., reduced "natural" structural components within the forest, increased fragmentation of a mature canopy forest, decreased habitat for wildlife dependent on older forests, and a reduction in the aesthetic/spiritual quality of the land). Since there would be no management treatments beyond existing maintenance and routine activities within the project area, the forest would continue to mature into an older and more closed canopy structure (DEIS, p. IV-35). Forest species composition would slowly become more homogenous as shade intolerant and semi-intolerant tree and understory species are replaced by shade tolerant hardwoods (DEIS, p. IV-37 and 38). Overall, there would be no potential for forest service management activities to have short-term adverse impacts to the physical resources within the project area such as soils, water, wetlands, visual quality, and heritage sites.

Although I do consider certain aspects of the No Action Alternative to be desirable, I did not select this alternative because it would not meet the objectives described in the purpose and need for action and would not move the project area toward the desired future condition. There would be no increase in vegetative diversity, particularly early successional habitat, in a project area lacking young age classes, aspen, and open areas; no improvement in the abundance and quality of wildlife food and cover; and no increase in the amount of softwoods (conifers) that would result from the group selection harvests. There would be no improvements in species diversity, age class distribution, and stocking levels in the MA 2.1A, MA 3.1, 4.1, and MA 6.2A forests, improvements that would greatly increase wildlife habitat. Opportunities would be lost to promote the growth of high quality sawtimber while improving general forest health. Wood products would not be made available for public consumption. Finally, work to improve stream and fisheries habitat, and prevent the loss of existing historic apple orchards would be not be done.

I understand that the No Action Alternative, by its nature, results in the least amount of short-term adverse environmental effects. However, based on the Greendale project analysis, I believe that the outcomes that would result from implementation of Alternative IV can be accomplished with a minimum of adverse effects and without significant impact, individually or cumulatively, and therefore, does not dictate a need for "no action".

Alternative II, Continuous Forest Cover

Alternative II differs from the Proposed Action in that it uses only thinning and uneven-aged management in most of the forest stands identified in the Proposed Action (DEIS, pages III-2 – III-7). This alternative was developed primarily to address concerns that even-aged harvest methods would adversely impact wildlife dependent on older forest habitats, would decrease the visual quality in the project area, and would exceed the scale of vegetative management considered "low impact" to the environment. It would provide essentially a continuous forest

cover. There would have been 123 fewer acres treated through timber harvest than in the Proposed Action (658 acres vs. 781 acres).

To summarize, there would have been no acres of even-aged regeneration harvests (no clearcutting or shelterwood harvests). All regeneration would have been produced by using larger openings with the group selection methods (uneven-aged) to replace clearcut and shelterwood regeneration harvests as described in the Proposed Action. About 205 acres would have been thinned, 176 acres would have been treated using group selection harvest methods, and 277 acres would have been harvested using individual tree selection methods. The combined vegetation management activities would have resulted in approximately 2.656 million board feet of timber harvested. Apple orchard restoration and stream stabilization and fish habitat improvement would have been the same as the Proposed Action.

Alternative II would retain the existing closed-canopy forest within the project area although not to the degree found under the No-Action Alternative, since there would be gaps created from the individual tree selection and group harvests. As a result, the visual impact to the overall project area would be less adverse compared to the other action alternatives that have various levels of even-aged regeneration harvest treatments. Although Alternative II would only create slightly less early successional habitat than the Proposed Action and Alternative IV in terms of percentages (DEIS, p. III-19, Table 3.4), the diversity of the resulting habitat would not be as great since it would favor shade tolerant species at the expense of shade intolerant trees, shrubs, grasses, and forbs (DEIS, p. IV-35).

I did not select Alternative II because it would not achieve the increase in quality early successional habitat that the project area needs (Purpose and Need; reference back to page 3 of this ROD and see also the DEIS, p. I-1, p. III-13 - III-14, and further explained throughout much of section 4.4 of the DEIS, starting on p. IV-22). This is largely due to the elimination of all even-aged regeneration harvests in Alternative II. Although using strictly uneven-aged management would best address concerns around the use of even-aged management and clearcutting, I feel that Alternative IV, with the moderation offered by the use of delayed shelterwoods instead of clearcuts in some cases, is a better, more effective choice to achieve our goals. In contrast to Alternative II, the greater acreage of treatments (DEIS p. III-26, Table 3.5) provided by Alternative IV does a more effective job of meeting the purpose and need and moving the area closer to its desired future condition.

Alternative III, Deferred Activities In MA 6.2A

Alternative III would have implemented the same vegetation management activities described in the Proposed Action for MA 2.1A, MA 3.1 and MA 4.1, but timber harvest would have been deferred at this time in MA 6.2A (DEIS, pages III-8 – III-12). This alternative was developed primarily to address concerns that even-aged harvest methods would adversely impact wildlife dependent on older forest habitats, and would reduce the ability to manage for primitive and/or semi-primitive recreation on MA 6.2A lands within the project area as well as the adjoining White Rocks National Recreation Area. This alternative would have affected 145 less acres through timber harvest than the Proposed Action (636 acres vs. 781 acres).

To summarize, 156 acres would have been treated using regeneration harvests (62 acres of clearcutting w/reserve trees left, 69 acres of delayed shelterwood harvest, and 25 acres of overstory removal). About 77 acres would have been thinned, 104 acres would have been treated using group selection uneven-aged harvest methods, and 299 acres would have been harvested using individual tree selection (uneven-aged) methods. The combined vegetation management activities would have resulted in approximately 3.51 million board feet of timber harvested. Apple orchard restoration and stream stabilization and fish habitat improvement would have been the same as the Proposed Action.

Although Alternative III would have the least amount of potential adverse impact to the backcountry recreation experience in 6.2A lands and the adjoining White Rocks National Recreation Area compared to the other action alternatives, I did not select this alternative because I believe there would be a lost opportunity to increase vegetative species diversity and composition within the overall project area (see Purpose and Need, DEIS p. I-1, p. I-11, p. III-14). I do not believe that the potential impacts to the recreation resource within MA 6.2A from Alternative IV (DEIS, p. IV-5 – IV-6) warrants forgoing the opportunity to provide for needed early successional habitat on this portion of the project area. Alternative III would also clearcut more acres to achieve early successional habitat goals than would Alternative IV, and as explained in the section above entitled Rationale for My Decision, I prefer to use delayed shelterwood harvesting, in combination with a reduced level of clearcutting, to move toward our early successional goals.

Environmentally Preferable Alternative

Council on Environmental Quality (CEQ) regulations directs the decision-maker to identify the environmentally preferable alternative. The Environmentally Preferable Alternative (FSH 1909.15(05)) is defined as: "An alternative that best meets the goals of section 101 of the National Environmental Policy Act and required by 40 CFR 1505.2(b) to be identified in a record of decision. Ordinarily, this is the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. In some situations, there may be more than one environmentally preferable alternative."

The Proposed Action and all of the alternatives considered in the DEIS provide protection to the environment afforded by their design, management requirements, and mitigation (Appendix A of this ROD). I believe Alternative I, the No Action Alternative, would produce "the least damage to the biological and physical environment" over the short-term, and in that respect, would be the most environmentally preferable. Over the longer term, however, I believe that Alternative IV would be the choice that "best protects, preserves, and enhances historical, cultural, and natural resources", and therefore, also would be considered the most environmentally preferable.

The No Action Alternative, by simply limiting actions to the status quo along with implementation of any other project decisions (other NEPA decisions), would produce the least overall short-term disturbance and potential adverse effects to the biological and physical

resources. However, I have two primary reservations with selecting the No Action Alternative, alone, as my environmentally preferable choice. The first is the stream improvements that would occur in any of the action alternatives, and not with the No Action Alternative. These improvements are needed, produce little or no overall disturbance to the physical environment, and make environmentally desirable positive changes to the aquatic and fisheries habitat.

My second reservation with identifying the No Action Alternative, alone, as the most environmentally preferable is that the needed improvements to the wildlife habitat would also not occur. Without active management, the Greendale Project Area would revert to a closed-canopy forest with undesirable negative consequences to both plant and wildlife community diversity. The DEIS demonstrates the need for creating early successional habitat and improving vegetative diversity. Because of its location, and its physical characteristics (species mix, ground and slope conditions), the Greendale Project Area offers a good opportunity, with little adverse effect, for creating this habitat through regeneration harvests. This, in turn, will improve species diversity and stand structure, and create those habitat niches that are missing in the area and across the Forest, something I consider environmentally preferable.

Alternative IV best addresses my reservations in regards to the No Action Alternative. Alternative IV would provide the best opportunity over the long term to increase vegetative diversity and composition, and improve wildlife habitat. Although many of the proposed activities of Alternative IV are similar to those of the Proposed Action, I believe that Alternative IV's proposed harvest methods, the greater amount of habitat changed, and the increase in treatments of the apple orchards and associated openings would produce more environmentally preferred results.

Findings Required By Laws and Regulations

Stated below are my findings in regards to compliance with the appropriate laws and regulations. This includes compliance with the National Forest Management Act (five components), the Endangered Species Act, and other relevant laws.

National Forest Management Act Compliance

Forest Plan Consistency 16 U.S.C. 1604(i) (Sec. 6, NFMA)

The actions of Alternative IV are consistent with the GMNF's Final Environmental Impact Statement and Record of Decision dated January 15, 1987 and related 1987 Forest Land and Resource Management Plan, as amended. Alternative IV will move the project area toward the desired future condition for MAs 2.1A, 3.1, 4.1, 6.2A, and 9.4 (Purpose and Need, DEIS, p. I-1 – I-2; Section 3.4 Alternative IV-Modified Proposed Action, p. III-13 – III-18). The only stream improvement work proposed is for Jenny Coolidge Brook and is consistent with Forest Plan direction (DEIS, p. I-14, para. 3). While management activities will occur around Greendale Brook, no specific work will be done on this significant stream; therefore, there would be no adverse effects to its recreational and fishery values (see Response to Comments, Appendix F of the EIS, comment P4-1).

This decision is consistent with both the forest-wide standards and guidelines (Forest Plan, p. 4.15-4.90), and the standards and guidelines for MAs 2.1A (p. 4.95-4.97), 3.1 (p. 4.104-4.106), 4.1 (p. 4.109-4.114), 6.2A (p. 4.131-4.133), and 9.4 (p. 4.180-5 – 4.180-20). As shown in Chapter 4 of the DEIS, all of the expected impacts from this project are consistent with, and within the range of, the expected impacts disclosed in the Final Environmental Impact Statement for the Forest Plan.

Lands Suitable for Harvest 16 U.S.C. 1604(k), 36 CFR 219.14, and 36 CFR 219.27(c) (1)

I have determined that the land on which harvesting will be done is suitable for timber production.

1. The land is forest land (as defined in 36 CFR 219.3) which is at least 10% occupied by trees of any size. This has been verified through on-the-ground examination of the stands proposed for harvest. Documentation of these examinations is found in the project file.

2. Technology is available to ensure timber production from the land without irreversible resource damage to watershed conditions. This is documented in the Environmental Effects sections of the DEIS for Wetlands, Water and Soil Resources (p. IV-68 – IV-75) and Fisheries (p. IV-76 – IV-82). See also FEIS Errata, p. 10-11, Irretrievable and Irreversible Commitment of Resources for Wetlands, Water, and Soil Resources, and for Fisheries Resources.

3. The lands proposed for timber harvest have not been withdrawn from timber production by an Act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service.

4. The land has not been deemed inappropriate for timber production due to assignment to other resource uses or considerations of cost efficiency.

Appropriateness of Even-Aged Timber Management 16 U.S.C. 1604(f) (Sec. 6, NFMA)

Even-aged management has been selected as an appropriate method to meet some of the vegetation management and wildlife objectives in the Greendale Project area. The following reasons were used to determine the appropriateness of even-aged management:

1. Forest Plan prescriptions for MA 4.1 encourage even-aged techniques to create browse, maintain stocking levels and tree vigor, provide for a mixture of species within stands, ensure adequate management and creation of permanent openings, and promote softwood development (Forest Plan p. 4.107-4.112).

2. Forest Plan direction for MA 6.2A and MA 3.1 states that the primary silvicultural system will be even-aged (Forest Plan p. 4.131; p. 4.104).

3. Overstory removals, thinnings, clearcutting, and shelterwood harvesting are appropriate to achieve our objectives of improved wildlife habitat diversity; aspen, softwood, and hardwood regeneration; increasing the amount of early successional habitat (i.e. improving age class diversity); and producing high quality sawtimber for species such as northern hardwoods, aspen, and conifers (Forest Plan p. 4.62-4.67). The DEIS, in the Purpose and Need Section 1-1, the Proposed Action Section 1.2, and the Wildlife, Wildlife Habitat/Vegetation Management Section 4.4, includes a thorough discussion of the need for even-aged management to achieve these desired results, particularly for regeneration harvests.

4. The Forest Plan states that delayed shelterwood harvests are appropriate and effective methods to allow regeneration of more shade tolerant species where the second cut of a standard shelterwood should be delayed for 40 to 60 years, where large trees need to be maintained in areas of high visual sensitivity, and where selection cutting cannot be applied economically (Forest Plan p. 4.64).

5. The selected silvicultural methods for each stand identified in Alternative IV are consistent with the rationale for using these methods provided for in Appendix A of the Forest Plan (pages A-03 to A-09). Each stand prescription has been reviewed and approved by a certified Silviculturist.

6. Forest Plan Appendix A, under Selection of Harvest Methods (p. A-08), states that "clearcuts will be used" to create habitats of pioneer species, such as aspen and paper birch, that need full sunlight to regenerate. Forest Plan page 4.65 states that " Clearcutting is the optimum method and will be used to: convert hardwood stands to softwoods or aspen to enhance vegetative diversity".

Optimality of Clearcutting 16 U.S.C. 1604(f) (Sec. 6(f), NFMA)

In accordance with Forest Plan direction (pages 4.65 and A.08), I have determined that clearcutting is the optimum harvest method to regenerate aspen and softwoods on 17 acres of mixedwood and softwood stands in MA 3.1, Compartment 45 (stand 35, 14 acres; stand 39, 3 acres); and on 10 acres of mixedwood and hardwood stands in MA 4.1, Compartment 27 (stand 25, 5 acres and stand 26, 5 acres). A total of 27 acres of clearcutting will be done.

Field surveys indicate that various amounts of aspen trees and clones are interspersed within these softwood, mixedwood, and hardwood stands, along with advanced regeneration of softwoods in the mixedwood stands. Clearcutting is the optimum method in these instances to increase the amount of aspen through regeneration (Forest Plan p. 4.65, point c.3.), and to increase the softwood component by converting, as opportunities exist, small parts of the hardwood component of these stands to softwoods to enhance vegetative diversity (Forest Plan p. 4.65, point c.4.). We will also take advantage of opportunities to remove diseased, damaged, or high risk portions of these stands and encourage aspen and softwood regeneration (Forest Plan p. 4.65, points c.1, 2.).

These clearcuts will regenerate small new stands and provide a range of patch sizes for wildlife

associated with grass and shrub habitat on MA 3.1 lands (DEIS, p. I-9). Site-specific field inventories validate the need to promote aspen and softwood regeneration in stands where they are either dying out or where their relative proportion can be increased in mixed hardwood and softwood stands, and to increase the amount and distribution of early successional habitat (DEIS, p. I-8). In the MA 4.1 stands, the clearcuts will improve tree species composition and create needed browse for wintering deer by encouraging aspen regeneration (the primary prescriptive objective on these lands) and will also be used to encourage softwood regeneration where opportunities exist (DEIS, p. I-10), particularly on those areas severely affected by disease (Forest Plan p. 4.65, points c.1, 2.).

Clearcutting of aspen stimulates root suckering and increases stocking and early growth. Aspen is a very shade intolerant species and will not regenerate under the shade of other trees. Research has shown that for effective sprouting to occur, there must be full sunlight. Other harvest systems will not provide the conditions needed for optimal aspen regeneration. Seed tree (the Forest Plan, page A.03, considers this to be the same as clearcutting) and shelterwood harvest methods (standard and delayed) were considered. However, these methods would not leave the area in the desired "open" condition to the same extent as clearcutting. The shade of the residual overstory that would remain with these techniques would hinder, and most likely prohibit, the adequate regeneration of the aspen clones found on the site.

Other Vegetative Manipulation Requirements Including Assurance of Restocking 36 CFR 219.27(b)

Based on my review of the Greendale Project documents, I find that the selection and location of the proposed activities, the application of standards and guidelines from the Forest Plan, and site specific mitigation measures will ensure the vegetative management activities in this project will comply with the requirements of 36 CFR 219.27(b). According to these requirements, projects involving manipulation of tree cover shall:

1. Be best suited to the multiple use goals established for the area, with potential environmental, … impacts, being considered in this determination. I find that the EIS and analysis demonstrate that Alternative IV is consistent with the multiple use goals and objectives stated in the Forest Plan. Reference the DEIS, section entitled Forest Service Authority, Policy, and Management Direction (p. I-2); The Project's Purpose, Need & Proposed Action (DEIS Chapter 1, p. I-1 – I-20); outcomes produced by Alternative IV, (DEIS p. III-13 – III-18); and the table that describes each alternative's Ability to Meet the Stated Desired Condition (DEIS p. III-19 – III-21).

2. Occur on lands where adequate restocking within five years can be assured. All silvicultural prescriptions for treating stands were approved by a certified silviculturist and meet direction of the Forest Plan. Review of forest stocking records has clearly shown successful restocking by applying the standard silvicultural and site prep methods identified in this analysis. Soil conditions, moisture regimes, and present vegetative stocking levels are the same or very similar to other areas on the Forest where restocking has been successful. First and third year stocking surveys will be scheduled for all regeneration harvests and will be conducted in the Greendale Project Area to monitor regeneration in appropriate harvest areas. Mitigation measures have been developed to facilitate

reforestation (Appendix A of this ROD, mitigation measure W-9).

3. Not be chosen primarily because they will give the greatest dollar return or the greatest output of timber, although these factors shall be considered. Alternative IV was chosen based on a combination of factors including the protection of other resource values, management to achieve Forest Plan objectives, creation and maintenance of a diversity of wildlife habitat, fishery habitat improvement, and commodity output needs, as well as economic considerations. Refer to the section of this document entitled Rationale for My Decision. Refer also to the DEIS, pages IV-86 – IV-94 for details on the economic analysis.

4. Be chosen after considering potential effects on residual trees and adjacent stands. To the degree that they are related to specific Greendale Project issues, effects on vegetation are disclosed in the Affected Environment and the Environmental Effects section of the DEIS (Chapter 4). In particular, the discussion of cumulative effects takes into consideration the actions occurring on, and effects to, stands adjacent to those being manipulated, both on NFS lands and private lands. The anticipated general effects of activities on vegetation are disclosed in the Forest Plan Draft Environmental Impact Statement, chapter IV, pages 4.01-4.80.

5. Avoid permanent impairment of site productivity and ensure conservation of soil and water resources. Reference the DEIS, Chapter 4 (The Affected Environment and the Environmental Effects) for Wetlands, Water, and Soil Resources pages IV-68 - IV-75; Fisheries pages IV-76 - IV-82; Greendale Project Mitigation Measures listed in Appendix A of this ROD (also listed in Appendix B of the DEIS); and Forest Plan standards and guidelines.

6. Provide the desired effects on water quantity and quality, wildlife and fish habitat, regeneration of desired species, forage production, recreation uses, aesthetic values, and other resource yields. These considerations are addressed in the environmental effects section, DEIS chapter 4.

7. Be practical in terms of transportation and harvesting requirements, and total costs of preparation, logging and administration. I am basing this determination on the fact that the selected activities are consistent with Forest Plan direction and are similar to those that have been or are currently being practiced on the Green Mountain National Forest, Rochester and Middlebury Ranger Districts and the Manchester Ranger District. All harvest activities are close to existing roads and will require no extraordinary investments or expenditures in order to complete harvest operations. Refer also to the DEIS, pages IV-86 – IV-94 for details on the economic analysis.

Endangered Species Act Compliance 16 U.S.C. 1531-1536, 1538-1540

The actions of Alternative IV are in full compliance with the Endangered Species Act. A Biological Evaluation (BE) was completed (Appendix C; all DEIS appendices printed as one separate document). The conclusions of the threatened, endangered, and sensitive species

analysis may be found in the DEIS on pages IV-20 - IV-22. In summary, the BE concluded that neither the Proposed Action nor its alternatives, including Alternative IV, would have an adverse impact on either Federally listed Threatened and Endangered species or Forest Service Sensitive plant and animal species provided specific mitigation measures were implemented.

The GMNF recently completed a thorough analysis of its TES program (September, 2001). The result was an amendment to the Forest Plan that incorporated new information not only for the Indiana bat but also for all TES species by way of updated standards and guidelines, resource protection objectives, and monitoring (see DEIS, p. Introduction I-1). I believe that this extensive effort, compliance with terms and conditions of the Biological Opinion (BO) issued by the U.S. Fish and Wildlife Service, the developed mitigation as stated in the BE (p. C-47) and within the list of all project mitigation measures (Appendix A of this ROD, Greendale Project Mitigation Measures, Section A.1.7), and continued monitoring as planned (Appendix B of this ROD, Greendale Project Monitoring Plan, Sections B.4 and B.5) both within the project area and as appropriate across the Forest, allows us to implement the actions of Alternative IV without fear of jeopardy to any TES specie.

Other Relevant Laws

I have considered other relevant laws and regulations that may affect this decision. These include, but are not limited to, the Multiple Use-Sustained Yield Act of 1960, the Forest and Rangeland Renewable Resources Planning Act of 1974, the Clean Air Act, the Clean Water Act, and the National Historic Preservation Act. I have fully considered the effects of this decision on the public, as well as the public's issues and concerns brought forward during the comment periods and feel that these issues have been adequately addressed in the Greendale Project EIS, its appendices and in this Record of Decision. I have determined that my decision to implement the Greendale Project Alternative IV meets all applicable laws, regulations, and policies, as well as Forest Service direction and guidance as outlined in the Forest Service Manuals and Handbooks.

Implementation

The decision identified in this ROD will be implemented through both commercial timber sales and non-commercial partnerships (stewardship program, volunteers, etc.). I expect 3-4 commercial timber sales to take place during an approximately 5-year period. These sales will vary in size to encourage bidding by the smaller timber purchasers.

If no appeal is received, implementation of this decision may occur on, but not before, five (5) business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for fifteen (15) days following the date of appeal disposition.

Administrative Review and Appeal Procedures

On June 4, 2003, new appeal regulations were issued. Any project for which the legal notice for public comment was issued after June 4, 2003 is subject to the new regulations. The

Greendale Project DEIS legal notice for comment was issued in early April, 2003, and therefore, the Greendale Project is subject to the old appeal rules dated November 4, 1993.

Accordingly, this decision is subject to administrative review as stated in 36 CFR 215.7. An appeal may be filed by those who have commented or otherwise expressed an interest in this project before the close of the comment period. A written Notice of Appeal must be postmarked or received within 45 calendar days beginning the day after the date of publication of notice of this decision in the legal notice section of the Rutland Herald, Rutland, Vermont. However, when the 45-day filing period will end on a Saturday, Sunday, or Federal Holiday, the filing time is extended to the end of the next Federal working day.

Send the Appeal to:

ATTN: Appeals Deciding Officer
USDA - Forest Service, Eastern Region (R9)
Gaslight Building, Suite 700
626 E. Wisconsin Avenue
Milwaukee, WI 53202

The Notice of Appeal may alternatively be faxed to:

414-944-3963
Attn: Appeals Deciding Officer
USDA Forest Service, Eastern Regional Office

Any appeal of this decision must be fully consistent with 36 CFR 215.14, Content of an Appeal, including the reasons for appeal. An appeal must: 1) state that the document is an appeal pursuant to 36 CFR 215; 2) state the appellant's name, address, and telephone number; 3) identify the decision being appealed (include the title of this document, its date, and the name and title of the Responsible Official who signed it; 4) identify the specific change(s) in the decision that the appellant seeks or the portion of the decision to which the appellant objects; and 5) state how the Responsible Official's decision fails to consider comments previously provided, either before or during the 45-day public comment period and if applicable, how the appellant believes the decision violates law, regulation, or policy.

Contact Person

For additional information, contact: Gina Owens, District Ranger, at the Manchester Ranger District (address below), (802) 362-2307, ext. 212. The project file contains detailed information and data used in the completion of this analysis and is available for review at the Manchester Ranger District office.

USDA Forest Service
Manchester Ranger Station
2538 Depot Street
Manchester Center, VT 05255

The DEIS, FEIS, and ROD are also available for viewing on the GMNF website at:
http://www.fs.fed.us/r9/gmfl/nepa_planning/nepaplanning.htm

Signature and Date of Decision

_____ _____

GINA OWENS Date
District Ranger
Manchester Ranger District

REPLACE WITH 11 X 17 MAP

Table 1. Summary Of Alternative IV Activities

FOREST MANAGEMENT

Stand Number	Stand Acres	Forest Type	Treatment Method	Harvest Acres
Management Area 2.1A (2,074 Acres)				
Compartment 27				
3	56	Hardwood	Individual Tree Selection (ITS)	30
Compartment 29				
6	42	Softwood	Group (9ac) & ITS (33ac)	42
10	57	Hardwood	Individual Tree Selection	57
Compartment 30				
5	21	Hardwood	"	21
9	10	Hardwood	"	10
10	37	Hardwood	"	37
16	23	Hardwood	Group Selection	5
19	44	Softwood	"	9
20	30	Hardwood	Individual Tree Selection	30
Compartment 31				
5	20	Mixedwood	Group Selection	4
9	33	Hardwood	"	6
10	78	Mixedwood	"	16
11	11	Softwood	"	2
13	49	Hardwood	Group (10ac) & ITS (39ac)	49
15	25	Hardwood	" (5ac) " (20ac)	25
16	43	Mixedwood	Group Selection	9
25	15	Hardwood	"	3
Subtotal	**594 Ac**			**355 Acres**
Management Area 3.1 (883 Acres)				
Compartment 45				
12	48	Softwood	Clearcut (10ac dropped)	No Harvesting
21	36	Hardwood	Delayed Shlterwd (23ac), ITS (13ac)	36
23	34	Mixedwood	Delayed Shlterwd (25ac), ITS (9ac)	34
26	9	Hardwood	Thin	9
27	15	Hardwood	Delayed Shelterwood	15
35	34	Mixedwood	Clearcut (14ac) & Thin (18c)	32
36	18	Mixedwood	Group Selection	3
39	5	Softwood	Clearcut (3ac) & Thin (2ac)	5
42	5	Mixedwood	Group Selection	2
44	6	Hardwood	Delayed Shelterwood	6
Subtotal	**210 Acres**			**142 Acres**

Table 1. Summary Of Alternative IV Activities (cont.)

FOREST MANAGEMENT

Stand Number	Stand Acres	Forest Type	Treatment Method	Harvest Acres
Management Area 4.1 (728 Acres)				
Compartment 27				
2	38	Mixedwood	Group Selection	8
10	91	Hardwood	Delayed Shlterwd (25ac, 2 units), ITS (25ac)	50
25	8	Mixedwood	Clearcut	5
26	11	Hardwood	"	5
27	18	Mixedwood	Group Selection	4
33	23	Mixedwood	"	5
Compartment 29				
7	20	Softwood	Group Selection	4
9	21	Hardwood	Thinning	20
22	35	Hardwood	"	28
Subtotal	**265 Acres**			**129 Acres**
Management Area 6.2A (1,719 Acres)				
Compartment 32				
24	23	Hardwood	Thinning	14
25	17	Hardwood	"	6
26	25	Hardwood	"	15
27	25	Hardwood	"	25
32	22	Hardwood	"	22
34	60	Hardwood	Delayed Shelterwood	32
35	11	Hardwood	Individual Tree Selection	11
36	20	Hardwood	Thinning	15
37	36	Hardwood	"	30
Subtotal	**239 Acres**			**170 Acres**

Table 1. Summary Of Alt. IV Activities (cont.)

APPLE TREE RELEASE/OPENING MANAGEMENT*

Stand Number	Stand Acres	Forest Type	Treatment Method	Harvest Acres
Compartment 29				
103	7	Mixedwood	Aspen/Apple Tree Release	6
Compartment 31				
1	6	Mixedwood	Apple Tree Release	6
4	36	Mixedwood	Apple Tree Release	1
105	3	NonForest	"	3
109	1	NonForest	"	1
Compartment 45				
28	16	Hardwood	"	1
33	23	Hardwood	"	23
101	3	NonForest	"	1
106	2	NonForest	"	2
Subtotal	**97 Acres**			**44 Acres**

Total Project Area = 5,404 Acres
Total Acres Affected = 840 Acres

Forest Management = 796 Acres

Apple Tree/Opening Mgt. = 44 Acres*

Clearcut Acres = 27 Acres
Delayed Shelterwood = 126 Acres
Shelterwood = 0 Acres
Thinnings = 204 Acres
Group Selection = 104 Acres
Indiv. Tree Selection = 335 Acres

*** Apple Release Primarily Through Noncommercial Means**

APPENDIX A
GREENDALE PROJECT
MITIGATION MEASURES

All mitigation measures developed during the Greendale Project analysis may be found in Appendix B of the DEIS. All measures applicable to Alternative IV are listed below. Any new measures or changes to existing mitigation resulting from the public comment period and further analysis during the FEIS development are documented in the FEIS and are highlighted below.

A.1.1 Heritage Resources

The following Project Area locations (Compartment, Stand) contain potentially affected Heritage Resources, as indicated in parentheses:

- C 27, Stand 25 (Wsn-30.00),
- C 29, Stands 6 (Wsn-48.00, -33.02), 10 (Wsn-47.0), 16 (Wsn-33.03), 25 (Wsn-63.01 26 (Wsn-34.00, and stone walls along travel route), 27 (Wsn-34.00)
- C 30, Stands 5 (Wsn-29.05 and areas w/ prehistoric potential), 9 (Wsn-27.03), 16 (Wsn-27.02), 104 (Wsn-29.01), 106 (Wsn-27.01, with extensive Stone walls throughout the stand)
- C 31, Stands 4 (Wsn-29.01), 5 (Wsn-20.01), 13 and 15 (Wsn-20.03 - 20.05)
- C 32, Stands 24, 25, 26, 27 and 34 (prehistoric potential)
- C 45, Stands 12 (Wsn-6.01 and -6.02; prehistoric potential), 28 (Lde-25.0 and 25.01), a 101 (Wsn-11.00)

H-1 - To protect historic archaeological sites within stands being treated under the selected Alternative, the entire site area mapped on Heritage Resource Inventory forms will be flagged, painted or otherwise marked for exclusion from commercial logging activity areas. In some cases (for example, where sites are in close proximity to travel ways), the Forest Archaeologist and Sale lay-out personnel may determine that snow-fencing would also be appropriate form marking site buffer areas. This mitigation measure would be applied during sale layout. The timber sale contract will include provision for assessing damage charges when damage to known resources occurs.

H-2 - To protect historic archaeological sites located outside treated stands but near skid routes and/or new or expanded landings, the same measures as specified in Mitigation Measure H-1 will be applied. Early coordination between the Administrator and Archaeologist is important.

H-3 - The contractual obligation (and penalties for failing) to protect known heritage resource sites from disturbance will be discussed as part of the pre-work meeting to be held between contractors, purchaser and Forest Service personnel. The Timber Sale Administrator will monitor compliance with site protection boundaries while the Sale is active. The Forest

Archaeologist will monitor the condition of the sites as the Sale closes. Disturbance or damage will be corrected before any additional damage/disturbance results by the purchaser and/or through the use of KV funds.

H-4 – The unnamed trail to the east of Holt Mountain bordering Stands 21, 26, 27 and 28 has been identified as a probable skid route. It is also a well-preserved 19th c. farm road bounded by the remains an historic farm and associated out-buildings, as well as extensive stone walls. In order to protect the historic and aesthetic values along this route, the Forest Archaeologist and Sale Administrator will work together in the field, prior to implementation of this aspect of the project, to more narrowly define the conditions to be placed on its use, including the timing/frequency/direction of skidding, and the type/size of acceptable equipment to be used.

A.1.2 Recreation And White Rocks National Recreation Area (WRNRA) Resources

Mitigation Measure R-1 has been modified from that described in Appendix B of the DEIS, page B-3 to now read:

R-1 - Harvest activities in Stands 24-27, 32, and 34-37, Compartment 32, should occur during non-winter months, the period of lowest recreational use in these portions of MA 6.2A and the adjacent WRNRA. If this is not possible given soil and water constraints (see Soils Section), specifically on sections of the Catamount and VAST Trail System(s), either; (1) establish alternative temporary routes to maintain the continuity of all, or portions of these trail systems. (These will be established by qualified trails staff and the designated timber sale administrator in partnership with representatives from Catamount and/or VAST); or (2) schedule harvest activities so only a portion of the winter trail system is closed to recreational use at any given time during winter months. The objective is to minimize the loss of winter recreation and to meet Forest Plan requirements (page 4.55) to provide alternate routes for closed trails. Specifically;

- FT 343 (Coolidge Connector), FR 17A, FR 17 north to FT 340 (Greendale Trail) will be open to winter recreation use and serve as a bypass for winter recreation users around winter forest management activities on FR 18, FR 17, and FR 29. These trails and roads serve as primitive shared portions of the Catamount Trail and VAST snowmobile trails.

- Skidding and plowing of roads/trails will be minimized during the winter months to approximately 1/10 of a mile on a section of FR 17A. Skiers will be able to walk the short distance and resume their activities after walking through this area. This distance will not represent a barrier to snowmobiles.

- Timber management activities will also be restricted to weekdays to further minimize impacts to recreational users.

R-2 – System trails should be closed to recreational use for the period that skidding is occurring directly on the trail. Trails that are being crossed with skidders should remain open. Avoid using the Moses Pond Trail for any harvest related access, especially during winter months.

Mitigation Measure R-3 has been modified from that described in Appendix B of the DEIS, page B-4 to now read:

R-3 - As part of the provisions of the timber sale contract, require the timber purchaser to rehab any impacted trail upon completion of the timber sale. This work would consist of restoration of existing water bars, seeding and mulching areas of disturbed soil, clearing of logging debris from trails, removal of hazardous leaning trees or tops caused by the logging, replacement of any damaged or missing trail signs/blazes, and smoothing of any ruts as a result of harvest activity. At the completion of summer harvesting, restoration will take place no later than October 15 of each year during the life of the timber sale. This will allow skiing to occur during periods that the trails are not closed for skidding. The exception is the portions of the trails used for winter tree harvest and/or skidding.

R-4 - As part of the sale contract provisions, upon completion of the timber sale, require the purchaser to replace any road closure devices such as earthen berms or large boulders that have been removed for access. All log landings located directly along Forest Roads 16, 17A, 17, 18, 29, and 78 will be closed at the completion of any seasonal harvesting and at the completion of the entire sale. The closure will be placed approximately 50 feet from the main road to allow recreational parking for one or two cars.

R-5 - To reduce the possibility of encroaching into the White Rocks National Recreation Area, retain a 150-foot leave-strip from the approximate boundaries in Stand 3 (Compartment 27), and Stands 36 and 37 (in Compartment 32). Boundary identification should be done by GPS techniques unless the WRNRA boundaries are surveyed and marked prior to implementation of vegetation management activities.

R-6 - To reduce impacts to the winter trail system and winter parking areas, require the timber purchaser to harvest along Forest Roads 17 and 18 first, followed by harvesting along FR 17 A and 29; or vice versa. This would avoid snowplowing of roads that are used for skiing, snowmobiles, and snowshoe activities, while also allowing for one of the two parking lots to remain functional for winter recreational users.

Mitigation Measure R-7 has been modified from that described in Appendix B of the DEIS, page B-4 to now read:

R-7 - As part of the provisions of the timber sale contract, clearly sign any plowed portions of Forest Roads 17, 18, and 29 as closed to public access beyond the snowmobile/cross-country ski parking area. The purpose would be to keep wheeled vehicles from driving past the winter parking areas. Proper signing would also be required along sections of the Catamount Trail and VAST Trail as they enter the project area to alert users of approaching logging activities and potential reroutes. District trails staff will work directly with the timber sale administrator to

identify sign locations. To minimize safety concerns related to snowmobiles, log trucks and other vehicles sharing the same travelways, the following measures will be implemented.

- For winter trails in which skidding will cross the trail (and the trail remains open), skidding will be prohibited from all weekends and legal holidays.

- Proper signing will occur at trailheads warning recreational users of harvest activity crossing the trail; signing will also occur 100 feet on the trail before the skid crossing, and as appropriate in parking lots and at trail intersections.

- Post and maintain signs (and, if needed, appropriate speed limit signs), year- round warning recreation users of the presence of logging activities and logging trucks. Locate signs on those Forest Roads where harvest activity and recreation activities will occur (trails staff and timber sale administrator will identify locations).

  This new measure has been added:

- Notify Catamount Trail Association (CTA) approximately one month before logging activities begin so CTA can temporarily remove trail blazes and post new ones, as appropriate, and alert trail users of any temporary re-routes. This will be the responsibility of the Forest Service District Trails specialist.

A.1.3 Soil And Water Resources

S-1 - Skilled Forest Service personnel will designate skid road locations and the needed water-bar locations, during timber sale lay out. Water-bars on all skid roads, in winter units, shall be constructed prior to freeze-up, of the first year of planned operation. Water bars are used to control water runoff and are critical in reducing erosion

S-2 - Skid road and trail grades will normally be less than 15%, minimizing erosion. Steeper grades will be allowed for short distances only where excessive erosion will not occur.

S-3 - Skidders will not be allowed to operate when ground condition are such that excessive erosion will occur, as when the soils are seasonally wet.

S-4 - A strip of undisturbed soil, or filter strip, will separate skid roads, skid trails, log landings, and other earth disturbing activities from streams and some wetlands. The filter strip width will range from 50 feet to 215 feet, depending on the land slope and soil erosion potential. Application of filter strips will minimize the risk of sedimentation. If, for any reason, soil disturbance must occur in the filter strip, special mitigation measures will be implemented to assure that sedimentation does not occur.

S-5 - Numerous small stream crossings are expected to occur. A small amount of sedimentation is expected at each of these stream crossings but past monitoring on similar soils indicates the amount of sedimentation is minor. However, the skidder will cross streams at locations designated by the sale administrator, using appropriate structures such as those

specified in the Vermont Agency of Natural Resources Acceptable Management Practices (AMPs). The structures installed will be inspected and approved by a FS timber sale administrator. To ensure proper functioning, the sale administrator will also monitor them.

S-6 – Only winter logging will be used in stands having frequent wet weather seeps, and having soils that tend to stay moist. Those stands are:

- Compartment 27 Stands 2,3,10, 25, 26, 27, and 33;
- Compartment 29 Stands 7, 9 and 10;
- Compartment 30 Stands 5, 9, 10, 16, 19 and 20;
- Compartment 31, Stands 5, 9, 10, 11, 13, 15, 16, 25
- Compartment 32 Stands 24, 25, 26, 27, 32, 34, 35, 36 and 37;
- Compartment 45 Stands 4, 21, 23, 26, 27, 30, 35, 36, 39, 42 and 44.

S-7 - At least 10 large diameter trees (>12" dbh) per 1000 feet of stream bank will be maintained in the riparian buffer strip. In addition to maintaining stream shading and water temperatures, this would ensure a continued source of large woody debris to the stream channel for habitat quality in the future.

S-8 - No trees next to the stream contributing to stream bank stability will be harvested. This determination will be done during timber sale layout by qualified district staff.

Mitigation Measure S-9 has been modified from that described in Appendix B of the DEIS, page B-6 to now read:

S-9 - Protect Class II wetlands, Class II riverine wetlands (Greendale Brook, Jenny Coolidge Brook, Utley Brook, and an unnamed stream along the northeast boundary of Compartment 45, near FR 16), and Class III wetlands greater than approximately 1/10 acre in size by not allowing logging within 50 feet of any of these above mentioned wetlands. All other Class III wetland areas are protected by winter logging. In addition, no logging will be done on inclusions of poorly drained soils. Flagging of these areas will be done during sale layout by qualified district staff.

S-10 - The need for a log truck bridge has been identified. It is located in Compartment 27, Stand 10. The construction and use of this bridge will further minimize erosion and sedimentation. The bridge site was also used for the Weston Priory Sale in 1978. We will follow the state of Vermont permitting process. This bridge will be designed to facilitate fish movement.

S-11 - All routine maintenance and fueling of heavy equipment must be performed on landings or other locations approved by the Timber Sale Administrator. The Timber Sale Administrator and other qualified FS personnel will monitor the use of such equipment. This mitigation measure is intended to address the concern of some people that timber harvesting increases pollution.

A.1.4 Significant Biological Features

B-1 - To protect Jenny Coolidge Brook Wetland**,** ensure that no activities {harvesting, roads, trails, skidding, landings) take place within 100' of the wetland edge unless specifically tied to the stream re-habilitation efforts.

B-2 - Ensure that during the selection harvesting in Stand 5, Compartment 31, no more than 25% of the basal area of the stand is removed within 400' of the wetland edge.

A.1.5 Visual Resources

V-1 - Layout Compartment 45, Stand 21 as shown in marking crew instructions, leaving a 150' wide buffer midway down the stand to minimize view of harvest unit from the Wantastiquet Pond.

V-2 – Where roadside harvest takes place along Moses Pond Road, Trout Club Road and Jenny Coolidge Road, directionally fall trees away from the roadways and pull back all slash from the road edges a minimum of 50', then lop and scatter so as not to create an unnatural edge. Within the same 50' zone, the stump height must be less than 6-12". Outside this zone, the standard 14" stump height is permitted.

V-3 - Locate northern clearcut unit in Comp 45, Stand 35 at least 300 feet from Trout Club Road.

V-4 - Retain the existing vegetative buffer along the Trout Club Road (FR 16) adjacent to the Comp 45, Stand 4 over story removal stand.

V-5 - Although stands chosen for group selection harvest are located adjacent to roads, trails and Greendale Campground, the groups selected for harvest will not be located directly adjacent to the use areas. Instead, a vegetative screen of at least 50 feet will be left to mask the slash, stumps and other evidence of timber harvest.

V-6 - Create a scenic vista from FR 29 to a pond located in Compartment 30, Stand 5 would be enhanced through the thinning of the undergrowth accomplished through the fuels maintenance prescribed in Alternative IV.

V-7 - Adjacent to recreation trails, and the Greendale Brook significant stream, pull back slash 50 ft from the edge, then lop and scatter so as not to create an unnatural edge. Also directionally fall trees in this zone away from trails and the stream.

V-8 - Within 50 feet of FR 18 (Greendale Road) and Greendale Brook, the stump height of trees harvested must be 6" or less. Outside of the 50 ft zone the 14" standard stump height is permitted.

V-9 - Reduce slash to less than 2 ft in height for 50 -150 ft distance along Greendale Brook, FR 18 (Greendale Road), and Greendale Campground. For remaining roads and recreation trails, lop slash to a height of 2 ft for 50 -100 ft of road and trail edges and a height of 3 ft for the next 50 ft. Outside of the 150ft zones, the standard 4 ft maximum slash height is acceptable except in MA 4.1 where the 2 ft maximum is applied throughout for deer management.

V-10 – Shelterwood units in Compartment 32, Stands 34 and 35 and Compartment 45, Stands 21, will be separated by manageable stands at least 500 feet wide. The marking crew will use the attached schematic map (also found in the Greendale Project file) as the template for the marking crew instructions for specific harvest unit layout.

V-11- Lay out the shelterwood unit in Compartment 32, Stand 34 (adjacent to the Beaver Meadows Trail) to create an aesthetically pleasing trail side environment. Highlight the White Birch trees located in this area adjacent to the trail by leaving them uncut. Leave a denser canopy closure (50% or more) within 150 feet of trail. Feather out the denser trailside zone by gradually leaving fewer trees until it reaches the desired silvicultural prescription (basal area) for this stand.

V-12 – Compartment 29, Stand 22 lies partially inside of Greendale Campground. Do not harvest timber inside of Greendale Campground. Lay out unit within this stand on west side of Greendale Brook.

A.1.6 Wildlife And Vegetation Resources

W-1 - (**Deer Management**) to reduce the risk of winter disturbance to deer, temporary access roads and skid trails open for tree harvest activities will be closed to general public vehicle access during tree harvest and permanently closed by physical barriers after tree harvest is completed. This will be enforced by forest closure orders and law enforcement patrols. The effectiveness of signing, barriers and law enforcement will be modified if original closure proves ineffective. A signing and barrier closure plan will be included as part of the sale area improvement plan.

W-2 - (**Deer Management**) As designated cross country ski and snowmobile trails within or adjacent to MA 4.1 deer wintering areas currently remain a potential source of disturbance for wintering deer, no attempt will be made to upgrade their condition or change their use under this proposal.

W-3 - (**Beech Management**) All healthy beech trees showing evidence of bear use and other suitable replacement trees will be identified and retained during tree harvest unit layout (Forest Plan page 4.33). This is particularly important in Compartment 29 where signs of bear are evident. Provisions for their protection will be part of timber sale contracts. Post-sale bear habitat monitoring will be included as part of the Sale Area Improvement Plan to ensure that beech retention objectives were met for bear use of the area.

W-4 - (**General Wildlife Habitat Diversity**) Wetlands within the Greendale Project Area and any others found during sale layout, will be protected under state and federal regulations, and as such no harvest activities will occur in them (also see Soils Mitigation Measure S-9). In addition, wildlife reserve trees such as bear-clawed beech, snags, den trees, nest trees and mast trees will be reserved during the timber management activities as per size and number criteria listed in Forest Plan standards and guidelines (see pages 4.31- 4.34). Reservation of these trees will be marked during timber sale layout. Provisions for their retention will be included in the timber sale contract.

W-5 - (**General Wildlife Habitat Diversity**) Apple trees and permanent openings within the Project Area are managed as part of our normal maintenance program for tree species diversity, cultural resources, and wildlife habitat diversity (Forest Plan, page 4.30). Apple tree release opportunities identified within the Project Area, and any others found, should be noted during timber sale layout for inclusion in K-V opportunities. These trees will be protected and managed by removing competing hardwoods as part of the Stand Improvement Plan.

W-6 - (**Goshawk Management**) Although site-specific surveys have not located goshawk nests, the potential exists that northern goshawk could nest in the project area. Those sites that deemed suitable for nesting in the project area should be surveyed at the appropriate season for nesting goshawks before project implementation. If an occupied nest is located, follow procedures developed cooperatively with the U.S. Fish and Wildlife Service calling for a six hundred and sixty foot radius zone of unaltered habitat around the nest site with an additional six hundred and sixty foot buffer area where no activity is to occur during the nesting period (April 15 thru July 31st).

W-7 – (Denning Bears) to address concerns regarding denning female bears with cubs, the following mitigation will be applied to the Greendale Project: In the rare case that a sow with cubs is disturbed by harvest operations and leaves the den, timber sale activities will cease. Restrictions to avoid the area at risk (den site) will be put into place to allow re-entry by the disturbed sow. Forest Service and State of Vermont Wildlife Biologists will work together closely to determine the length of time and size of area for which to restrict operations. Minimum time before allowing timber sale operations to resume would be two or three days to see if the sow will return to the den and to allow Biologists time to make a determination of further restrictions, both time and area. The maximum time of restriction could be the remainder of the winter harvest season.

W-8 - (**Aspen Regeneration**) Aspen is identified in the Forest Plan as an uncommon vegetation type to be emphasized. Along with stands identified in this EIS for aspen regeneration, timber sale layout crews will identify other opportunities for aspen regeneration using non-commercial means. Non-commercial regeneration of aspen in these stands will be identified as part of the Sale Area Improvement Plan.

W-9 - (Reforestation) activities planned to occur after merchantable trees are cut include the felling of non-merchantable trees to prepare the site for either planting of hemlock or natural regeneration of hardwood or aspen. These trees will be felled, with the exception of designated wildlife perch, den, or mast trees, to allow maximum sunlight to reach the forest floor. In some

cases, regeneration of softwoods requires the planting of softwoods. Reforestation activities include approximately 602 acres of site preparation for softwood, hardwood and/or aspen regeneration for all regeneration harvest units.

The KV-plan will include provisions for follow-up softwood and aspen release (cutting competing hardwoods) within 5-7 years where needed in stands managed for either softwood or aspen regeneration.

A.1.7 Threatened, Endangered And Sensitive Species

T-1 - (**Indiana bat**) Based on Project Area specific woodland bat surveys in July of 2002, the Indiana bat is not known to occur within the Project Area. However, suitable Indiana bat maternal and roosting habitat exists. Alternative IV will not reduce the total amount of suitable habitat. However, the quality of maternal roosting habitat may be reduced in the short-term by activities that either reduce the forest canopy closure below 30% or maintain a canopy closure in excess of 80%.

To mitigate the possible loss of potentially suitable roost trees for Indiana bats, that Forest Plan standards and guidelines for retention of "wildlife trees" (including large hollow trees) will be followed to eliminate this possibility for damage. Reserve trees should be large trees with existing or the potential to have exfoliating bark such as red or sugar maple.

T-2 - (Eastern small-footed bat) Some potential exists for damage to potential roosting habitat for eastern small-footed bat in the project area. It is my recommendation that Forest Plan standards and guidelines for retention of "wildlife trees" (including large hollow trees) be followed to eliminate this possibility for damage.

T-3 - (Tuckerman's pondweed and **floating bur-reed)** To protect Tuckerman's pondweed and floating bur-reed, which are documented to occur in Moses Pond, and other aquatic Sensitive plant species that have potential habitat there (see list in effects section), ensure that all skid trails, haul roads, and landings built or used within the Moses Pond drainage basin have a forested buffer of at least 100' between them and the edge of the pond and associated marsh. The timber sale administrator should monitor the implementation of these mitigation measures throughout the duration of sale activities in this drainage basin.

Mitigation Measure T-4 has been modified from that described in Appendix B of the DEIS, page B-12 to now read:

T-4 – (Wetland sensitive plant associates) To protect sensitive plant species associated with wetlands, the 50 ft. no-cut zone proposed to protect soil and water in Class II and 1/10 acre or greater Class III wetlands will aid in preventing changes in light regime and hydrology for these species, if they exist. Likewise, the winter-only logging mitigation will protect species that could possibly occur in the smaller Class III wetlands. A soil scientist or botanist prior to the start of timber harvest will check the sale's layout. The timber sale administrator will monitor the implementation of these mitigation measures through the duration of the sale.

T-5 – (Rock slope sensitive associates) Do not harvest in the northern part of Stand 9, above 2180' elevation, due to the soil-related risks of these steep rocky slopes, and the potential for rare plants (see also Soil Effects section of Greendale BE).

A.1.8 No Non-Native Invasive Plants Species (NNIS)

N-1 – (Equipment Cleaning) the timber sale contract will include the national mandatory equipment-cleaning clause, with the goal of preventing any NNIS seeds from being transported unintentionally to the Greendale project area. The timber sale administrator will be responsible for ensuring that equipment is cleaned prior to coming on to National Forest land, and will have the option of requiring cleaning to occur at a pre-designated place and time. If equipment only accesses the site once, it will only have to be cleaned once. If, however, equipment is continually moved between the project area and other sites that are not known to be weed-free, it must be cleaned prior to each time the site is accessed.

N-2 – (Winter Only Logging) Winter logging is preferable where given the choice. Ground disturbance will be minimal, thus limiting the opportunities for establishment of seeds of these invasive species.

N-3 – (Monitoring and Removal) Once all project activities are complete, all skid roads used in association with this project will be re-surveyed, and any newly established NNIS will be dealt with through integrated pest management.

APPENDIX B
GREENDALE PROJECT MONITORING PLAN

A monitoring plan has been developed to track implementation of the Greendale Project. Other monitoring actions that are routinely part of the normal forest monitoring processes and become part of the GMNF's annual monitoring report will supplement the actions listed below.

B.1 MONITORING ACTIONS FOR ALL RESOURCE AREAS

B.1.1 Monitoring of Standards and Guidelines, and Mitigation Measures

What: Monitor whether project mitigation measures and Forest Plan standards and guidelines are being implemented, and are meeting intended objectives.

Purpose: To verify whether resources are receiving good protection.

Frequency: Every 1-2 weeks while timber harvest is on going; conduct specialists review at conclusion of harvest operations.

Responsible Person: Timber Sale Administrator; Specialists as necessary during harvest; All Specialists upon conclusion of harvest activities.

Monitoring Techniques: Take a list of applicable Forest Plan standards and guidelines, and a copy of Record of Decision Appendix A, Greendale Project Mitigation Measures to the timber sale area. Visually check to see if all measures are being implemented and are effective. Document the results.

B.2 MONITORING ACTIONS FOR HERITAGE RESOURCES

In response to internal Concern 2.2.8, Issue 2.3.12 (DEIS p. II-3 and II-6), and to be consistent with Forest Resource Monitoring needs, we will collect the following three sets of monitoring data for each site during and after the project's implementation:

B.2.1 Mitigation Measure Implementation:

- Were the sites/areas identified (see DEIS Section 4.8.1; Appendix A of the ROD, Greendale Project Mitigation Measures, Heritage Resources, under A.1.1), marked and/or otherwise buffered? **Y/N**
- Was the Forest Archaeologist involved in establishing the buffer zone? **Y/N**

B.2.2 Mitigation Measure Effectiveness

- Based on site condition monitoring, were the sites protected from direct impact (e.g., skidders)? **Y/N** (specify #s)
- Based on site condition monitoring, were the sites protected from indirect impacts (e.g., vandalism, collecting)? **Y/N**

B.2.3 Site Condition

- Were there unanticipated effects to the sites from the project? **Y/N**; if yes, describe

B.3 MONITORING ACTIONS FOR RECREATION RESOURCES:

B.3.1 Monitoring of Signing and Restrictions

What: Monitor effectiveness of signing and operating restrictions in providing a safe environment for snowmobile users and cross-country skiers as referenced in the Greendale Project Mitigation Measures, Appendix A of this ROD, Section A.1.2 (Appendix B, Section B.1.2 of the DEIS). Assure that signing is being maintained.

Purpose: To verify that safe conditions are maintained.

Frequency: Periodically while timber harvest is on going.

Responsible Person: Timber Sale Administrator, Recreation Specialist

Monitoring Techniques: Site visits to look at effectiveness of the operating restrictions and of the signing used to warn cross-country skiers about on-going logging and truck traffic, and to alert truck drivers for possible encounters with skiers. Gather opinions from skiers and loggers as to need and effectiveness.

B.3.2 Unauthorized Vehicle Use

At the pre-work conference, the Timber Sale Purchaser will be briefed to be on the lookout for unauthorized vehicle use of the sale area. They will be encouraged to pass on pertinent information.

Once sale begins, the Timber Sale Administrator will monitor for and document such use or lack of such use on the daily Timber Sale inspection form and share the findings with the Timber Sale Contracting Officer, the sale purchaser, Law Enforcement, District Ranger and Recreation/Trails staff. This will be done at least weekly or as needed during winter periods when the sale is active.

Forest Law Enforcement will visit sale areas periodically during winter and summer months and document findings and pass them on to the people mentioned above.

Appropriate action to stop use and/or investigation would occur according to the situation. The documentation of findings and any actions taken will be submitted to the Team Leader of this analysis project to place in the project files. Post sale monitoring for unauthorized vehicle use will be conducted and summarized along with other resource monitoring at the conclusion of this project.

B.4 MONITORING ACTIONS SPECIFIC FOR WILDLIFE, THREATENED, ENDANGERED, AND SENSITIVE ANIMALS:

B.4.1 General Habitat Management

What: All wildlife mitigation measures described in Appendix A of this ROD, Sections A.1.6 and A.1.7, (Appendix B, Sections B.1.6 and B.1.7 of the DEIS) will be monitored, either by the Forest Wildlife Biologist or by a person(s) designated by the Forest biologist.

Purpose: To insure that the mitigation measures are incorporated into vegetation management layout and project implementation. Habitat conditions after vegetation activities are complete will be reviewed to determine if the objectives stated in the proposal are achieved.

Frequency: During/after the timber sale has been marked and before harvest operations begin; at the close of the timber sale operating season.

Responsible Person: Timber Sale Administrator; Wildlife Biologists

B.4.2 Monitoring for Bat Retention Trees

What: Survey the project area for number and quality of roost trees.

Purpose: Determine that standards and guidelines from the Forest Plan TES amendment regarding roost tree retention are being followed, and that adequate numbers of roost trees are being left.

Frequency: During/after the timber sale has been marked and before harvest operations begin; annually after the close of the timber sale operating season.

Responsible Person: Timber Sale Administrator; Wildlife Biologists

Monitoring Techniques: Combination of visual direct counts and re-visitation of established variable plots. Survey units during or after marking (i.e., before harvest operations begin) to validate that an adequate number of potential roost trees are delineated to be left. At the end of the timber sale operating season (annually), survey the harvested areas to see if retention guidelines have been met.

B.4.3 Monitoring for Goshawk Use

What: Survey for nesting goshawks.

Purpose: Investigate use of the project area by goshawks; ensure that proper mitigation is applied if goshawks are found to be present.

Frequency: Annually during the appropriate season while vegetation management activities are taking place

Responsible Person: Wildlife Biologists

Monitoring Techniques: Visual inspection combined with call and response protocol procedure.

B.5 MONITORING ACTIONS SPECIFIC SENSITIVE PLANTS AND NON-NATIVE INVASIVE SPECIES

B.5.1 Tuckerman's pondweed and **floating bur-reed**: The timber sale administrator should ensure that all skid trails, haul roads, and landings built or used within the Moses Pond drainage basin have a forested buffer of at least 100 feet between them and the edge of the pond and associated marsh.

B.5.2 Sensitive plant species that are associated with wetlands: The layout of the timber sale should be checked by a soil scientist or botanist prior to the start of timber harvest, and the timber sale administrator should monitor the implementation of these mitigation measures that exclude all wetlands from the project area, and provide a buffer zone of at least 50 feet, increasing with increased slope, as directed on page 4.19 in the Forest Plan.

B.5.3 Round-leaved orchis: Once the sale is complete, the Forest botanist will monitor the site to determine if the round-leaved orchis is still present, and to determine whether any non-native invasive species are present. In addition, the NNIS prevention measures will be monitored as described below, in B.5.4.

B.5.4 Threats to biodiversity because of NNIS: The timber sale administrator will monitor the implementation of the equipment-cleaning clause. Logging equipment that cannot be demonstrated to come from weed-free areas will be required to be washed prior to coming to the proposed project area, and post–harvest skid road monitoring will occur within one year of the end of all harvest activities. If NNIS (see attached **Vermont Department of Agriculture, Food and Markets Quarantine #3 - Noxious Weeds**) are found at that time, the methods of control best suited to species found will be implemented.

B.6 MONITORING ACTIONS SPECIFIC FOR SOIL, WATER, AND WETLANDS RESOURCES, SOIL AND WATER RESOURCES

All mitigation measures described in Appendix A of this ROD, Sections A.1.3 and A.1.4 (Appendix B, Sections B.1.3 and B.1.4 of the DEIS) will be monitored, either by the soil scientist, or by a person(s) designated by the soil scientist.

Responsible Person: **Soil and Water personnel**

B.7 MONITORING ACTIONS SPECIFIC FOR FISHERIES:

B.7.1 General Habitat Management

What: All fisheries mitigation measures coincide with the Soil and Water Resources mitigation measures described in Appendix A of this ROD, Section A.1.3 (Appendix B, Section B.1.3 of the DEIS). These will be monitored, either by the Forest Fisheries Biologist or by a person(s) designated by the Forest biologist.

Purpose: To insure that the mitigation measures are incorporated into vegetation management layout and project implementation. Habitat conditions after vegetation activities are complete will be reviewed to determine if the objectives stated in the proposal are achieved.

Frequency: During/after the timber sale has been marked and before harvest operations begin; at the close of the timber sale operating season.

Responsible Person: Timber Sale Administrator; Fisheries Biologist

B.7.2 Monitoring of Fish Populations

What: Fish population monitoring in Greendale and Jenny Coolidge brooks.

Purpose: To assess changes in population abundance and trends for brook trout and Atlantic salmon; assess survival and growth of juvenile Atlantic salmon in Greendale and Jenny Coolidge brooks.

Frequency: Fish population monitoring in each stream once per year in late summer/early fall.

Responsible Persons: Fisheries personnel

Monitoring Technique: Standard electro-fishing protocols and use of a Modified Zippin Removal Method for determining fish population estimates.

B.8 VISUAL QUALITY MANAGEMENT

B.8.1 Monitoring of Visual Quality Objectives (VQO's)

What: Monitor Visual Quality Objectives referenced in the Visual Quality Affected Environment section and the Visual Quality Effects section.

Purpose: To verify if the lands meet the Visual Quality Objectives (VQO's) displayed in the Affected Environment section of the EIS.

Frequency: Monitor during leaf on and / or leaf off seasons as needed.

Responsible Person: Forest Landscape Architect

Monitoring Techniques: Visual inspection from roads and trails referenced in the EIS.

Noxious Weeds Monitoring Plan Attachment #1

VERMONT DEPARTMENT OF AGRICULTURE, FOOD AND MARKETS QUARANTINE #3 - NOXIOUS WEEDS

Section I: Statement of Concerns

Whereas, the Vermont Department of Agriculture, Food and Markets having found that certain noxious weeds out compete and displace plants in natural ecosystems and managed lands; and

Whereas, competition and displacement of plants by certain noxious weeds has significant environmental, agricultural and economic impacts; and

Whereas, it has been determined to be in the best interest of the State of Vermont to regulate the importation, movement, sale, possession, cultivation and / or distribution of certain noxious weeds:

Therefore, the State of Vermont is hereby establishing this noxious weed quarantine regulation by the authority of 6 V.S.A., Chapter 84, Pest Survey, Detection and Management.

Section II: Definitions

"Class A Noxious Weed" means any noxious weed on the Federal Noxious Weed List (7 C.F.R. 360.200), or any noxious weed that is not native to the State, not currently known to occur in the State, and poses a serious threat to the State.

"Class B Noxious Weed" means any noxious weed that is not native to the state, is of limited distribution statewide, and poses a serious threat to the State, or any other designated noxious weed being managed to reduce its occurrence and impact in the State.

"Commissioner" means the Commissioner of Agriculture, Food and Markets, or his or her designee.

"Noxious Weed" means any plant in any stage of development, including parasitic plants whose presence whether direct or indirect, is detrimental to the environment, crops or other desirable plants, livestock, land, or other property, or is injurious to the public health.

"Plant and Plant Products" means trees, shrubs, and vines; forage, fiber, and cereal plants; cuttings, grafts, scions, buds and lumber; fruit, vegetables, roots, bulbs, seeds and wood; and all other plants, parts of plants, and plant products.

"Possession" means to grow, manage or cultivate through planting, pruning, watering, fertilization, weeding, propagation, or any other means that promotes the growth of the noxious weed. This does not include the incidental occurrence of a noxious weed on wild or managed land.

Section III: Designation as a Noxious Weed

(A) The following conditions shall be met for a plant or plant product to be designated as a Class A or B Noxious Weed:

(1) As determined by a pest risk assessment, a quarantined noxious weed must pose an actual or anticipated threat to a substantial agricultural, forestry or environmental interest and / or the general public.

(2) Establishment of a quarantine for a specified noxious weed is likely to contribute to the objective of preventing introduction or for limiting the spread and / or severity of the noxious weeds impact to the agricultural, forestry or environmental interest.

(3) No substitute or alternative mitigating action will accomplish the same pest prevention purpose.

(4) The economic and/or environmental benefits of quarantining a specified noxious weed outweigh the economic and/or environmental benefits associated with the noxious weed.

(B) The following biological factors shall be used to evaluate whether or not a plant or plant product has satisfied the conditions for designation as a Class A or Class B Noxious Weed.

(1) Native origin of the plant;
(2) Known distribution;
(3) Mechanism and potential for spread to and within Vermont;
(4) Past, current and potential environmental, economic and human health impacts;
(5) Feasibility of control and spread prevention;
(6) Regional and national perspective;
(7) Designation as a federal noxious weed; and / or
(8) Other pertinent factors.

(C) Designation as a Class A or Class B Noxious Weed shall occur through the Administrative Rule procedure as outlined in 3 V.S.A., Chapter 25.

Section IV: Designated Noxious Weeds

(A) Class A Noxious Weeds.

(1) All weeds listed in 7 C.F.R. 360.200 as amended, which is hereby incorporated by reference including subsequent amendments and editions.

(2) *Ailanthus altissima* (tree-of-heaven)
(3) *Cabomba caroliniana* (fanwort)

(4) *Egeria densa* (Brazalian elodea)
(5) *Hydrilla verticillata* (hydrilla)
(6) *Hygrophila polysperma* (Roxb.) T. Anderson (E. Indian hygrophila)
(7) *Myriophyllum aquaticum* (Vell.) Verdc. (Parrot feather)
(8) *Myriophyllum heterophyllum* (variable-leaved milfoil)
(9) *Salvinia auriculata* (giant salvinia)
(10) *Salvinia biloba* (giant salvinia)
(11) *Salvinia herzogii* (giant salvinia)
(12) *Salvinia molesta* (giant salvinia)
(13) *Vincetoxicum hirundinaria* Medikus. (pale swallow-wort)

(B) Class B Noxious Weeds.

(1) *Aegopodium podagraria* L. (goutweed)
(2) *Alliaria petiolata* (*A. officinalis*) (garlic mustard)
(3) *Butomus umbellatus* (flowering rush)
(4) *Celastrus orbiculatus* Thunb. (Oriental bittersweet)
(5) *Fallopia japonica* (Polygonum cuspidatum) (Japanese knotweed)
(6) *Hydrocharis morsus-ranae* L. (frogbit)
(7) *Iris pseudoacorus* L. (yellow flag iris)
(8) *Lonicera x bella* (Bell honeysuckle)
(9) *Lonicera japonica* (Japanese honeysuckle)
(10) *Lonicera maackii* (Amur honeysuckle)
(11) *Lonicera morrowii* (Morrow honeysuckle)
(12) *Lonicera tatarica* (Tartarian honeysuckle)
(13) *Lythrum salicaria* (purple loosestrife)
(14) *Myriophyllum spicatum* (Eurasian watermilfoil)
(15) *Nymphoides peltata* (Gmel.) Ktze. (yellow floating heart)
(16) *Phragmites australis* (common reed)
(17) *Potamogeton crispus* L. (curly leaf pondweed)
(18) *Rhamnus cathartica* (common buckthorn)
(19) *Rhamnus frangula* (glossy buckthorn)
(20) *Trapa natans* L. (water chestnut)
(21) *Vincetoxicum nigrum* L. (black swallow-wort)

Section V: Prohibitions

(A) The movement, sale, possession, cultivation, and / or distribution of Class A Noxious Weeds designated in Section IV of this quarantine regulation is prohibited.

(B) The movement, sale, and/or distribution of Class B Noxious Weeds designated in Section IV of this quarantine regulation are prohibited.

(C) Violation of any of the prohibitions listed in Section V of this regulation may result in:

(1) The issuance of cease and desist orders; and / or,
(2) Temporary or permanent injunctions; and / or,
(3) Administrative penalties not to exceed $1,000 per violations, as specified in 6 V.S.A., Chapter 84, Sections 1037 and 1038.

Section VI: Exemptions

(A) Scientific and educational exemptions may be granted by the Commissioner to allow for the movement, possession and field experimentation of noxious weeds for scientific and educational purposes under such conditions as may be prescribed by the commissioner. When granting exemptions, the commissioner shall take into consideration both the value of the scientific or education purpose and the risk to Vermont's environment, economy and citizens.

(B) Transportation of any Class A or B Noxious weed on any road or highway of the state is exempt if any of the following is true:

(1) It is for disposal as part of a management control activity; or

(2) It is for the purpose of identifying a species or reporting the presence of a species, and the Class A or B Noxious weed is in a sealed container; or

(C) Preserved specimens in the form of herbaria or other preservation means are not subject to this regulation.