

## Appendix 6

### TES Plan Amendment Comments

#### Comments Raised from Public Review of the Environmental Assessment (EA)

Of the 145 Environmental Assessments (EA) sent out to the public for a 30 day comment period, 27 individual responses were received from various organizations and private citizens. An additional 138 comments were received in the response of a form letter (see response #24.). All responses received were reviewed to identify concerns, issues, alternatives and overall comments. The comments from each letter were marked and coded, and are included here.

Although this Appendix (6) is attached to the Decision Notice (DN), it is not an appendix to the DN but to the EA itself, given the comments raised are focused entirely on the EA. Thus the reason for calling it Appendix 6, as this displays a numerical continuum with the existing appendices to the EA.

Below are summaries of the comments made, sometimes in the respondent's own words, which coincide with the codes from each comment letter. Please cross-reference this section with the actual letters included in this appendix to track a comment in the respondent's own words. The comments below are grouped by resource area.

The summarizations of the comments received are in **bold type** and listed in numerical sequence. Our responses follow each comment in non-bold type. For ease of reading, some of the key points to a comment have been **highlighted** in the response. We also included a list of Acronyms and Abbreviations (below), which are frequently used in the comments and responses to them.

Acronyms and Abbreviations	
AOI	Area of Influence
APA	Administrative Procedures Act
BA	Biological Assessment
BE	Biological Evaluation
BEA	Bureau of Economic Analysis
BO	Biological Opinion
CA	Conservation Assessment
CRS	Congressional Research Service
CS	Conservation Strategy
DN	Decision Notice
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FS	Forest Service

<b>Acronyms and Abbreviations</b>	
FSM	Forest Service Manual
FWS	Fish and Wildlife Service
GMNF	Green Mountain National Forest
HSI	Habitat Suitability Index
LRMP	Land and Resource Management Plan
M&E	Monitoring and Evaluation
MIS	Management Indicator Species
NEPA	National Environmental Policy Act
NF	National Forest
NFMA	National Forest Management Act
RFSS	Regional Foresters Sensitive Species
ROD	Record of Decision
S&G	Standard and Guideline
TES	Threatened, and Endangered and Sensitive Species
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

### **Indiana Bat**

- 1. A concern was expressed that the Green Mountain National Forest is not likely to hold a viable population of Indiana bat as it is on the edge of the species range and that we lack suitable winter hibernacula and suitable summer habitat (T1, T2). Additional concerns were expressed about lack of clarity for the purpose and effectiveness of snag retention (P3, U8.2).**

We recognize this concern as, to date, we’ve no indication that the GMNF can hold a viable population of Indiana bats. Research and analyses has yet to demonstrate that the GMNF can provide all necessary life and habitat requirements for this species – notably, we lack suitable winter hibernacula. The proposed action and alternatives are designed to (i) minimize incidental harm, and (ii) assist recovery **as directed by the U.S. Fish and Wildlife Service under the Endangered Species Act.** The GMNF may be capable of supporting a viable population; however, at this time our goal is support of species viability – directly supporting local individuals (T1, T2).

In response the questions raised about the proposed new standard for snag retention (see page 10 of the EA, item “d”), we are trying to protect snags from residual stand damage and reserve potential snags. We are also trying to recruit roost trees in a fashion that will create foraging corridors (P3). In addition, we will be monitoring the effectiveness of this standard and guideline (U8.2).

- 2. Concerns were identified regarding habitat, including comments that optimal conditions for canopy closure need to be at 60%-80% (Q6, R5, X4), the current rotation age on the GMNF needs to be extended to provide a continuous supply of suitable roost trees (R10, R17, X16, Y8), that noise needs to be regulated**

**around roost trees (Y10) and that roost trees and foraging corridors need to be retained along streams and intermittent drainages (wetlands) for the purposes of providing drinking water, roosting and foraging habitat(R.18)**

### **Canopy closure**

Irrespective of silvicultural regime (even-aged vs. uneven-aged) this amendment identifies potentially suitable roosting sites for protection, additional to that currently found in the LRMP. The amendment gives direction for retention of these potentially suitable sites and the physical protection of these sites. [Found in Alternative 2 thru 5]. Alternative 3 and 5's directive to retain 5 potentially suitable roost trees in each harvested acre essentially achieves optimal roost tree density – as documented by Romme's (et al.) Habitat Suitability Index (HSI) Model for Indiana bat. Romme's (et al.) HSI model discusses the habitat context for maternity roosting sites; indicating a wide range of conditions selected by female Indiana bats – from sites with over 80% canopy cover to sites completely unshaded, along with conditions between these extremes.

Romme's (et al.) HSI model discusses foraging habitat and displays Indiana bat use/preference in a variety of differing habitat conditions ranging from agricultural croplands through abandoned fields and including floodplain and upland forests. The study referenced by this model shows the wide variety of conditions Indiana bats use for foraging – floodplain forest being most preferred, residential lands the least. Further, this study recommended that suitable roost trees be within 0.2 miles of deciduous forest cover that has greater than 30% canopy closure and 0.6 miles from available water. Clearly, lands managed using even-aged (or uneven-aged) regimes can be tailored to (i) have sufficient potential roost sites, and (ii) be of a size and location fitting within habitat matrix recommendations displayed in the Indiana bat HSI.

### **Rotation age**

Rotation age is one consideration of silvicultural design. The amendment proposes to retain and protect quality potential roosting sites, irrespective of silvicultural considerations – including rotation age. These provisions will identify trees exhibiting conditions attractive for bats roosting (e.g., exfoliating bark, heavily fissured bark, cavities, etc.), and retain these potentially suitable roost sites into the future. We recognize that these characteristics can be developed as a tree grows and ages, however we believe it unnecessary to extend rotation ages simply to maintain a suitable (or optimal) number of potentially suitable roost sites – as this would be achieved through the application of Standards and Guidelines proposed by this amendment. Moreover, we have found no scientific evidence that a tree with a specific diameter is a goal for bats, and agree with our EIS findings for the GMNF Forest Plan that the rotation ages used by the GMNF appear to provide for the best range of tree diameters for meeting wildlife and societies needs. Similar to our response to the comment suggesting narrowing our silvicultural options to uneven-aged treatments only, the lengthening of rotation age holds affect to other management concerns (e.g., harvest returns, timber stand regeneration) and is not

essential for Indiana bat conservation. We envision Forest Plan revision as the appropriate time/place for this type of far-reaching analysis, but most importantly, at this time, longer rotation ages have not been shown to be essential for Indiana bat conservation on the Green Mountain National Forest.

Finally, we are not aware of any literature discussing bat response to disturbing noise (see EA, 75).

### **Wetland habitat**

Analyses we've conducted to date (BA, BO and EA) have yet to identify availability of drinking water as a limiting factor for Indiana bat. This is not the case in other portions of the species range, and was so identified for Daniel Boone NF. Our LRMP clearly protects existing water sources (as was discussed in our BA); this proposed amendment, and its alternatives, does not alter that directed protection. We concur that riparian corridors are important to a variety of biota, including Indiana bats. However, the elimination of logging options from these areas places undue restriction(s) to achieve Indiana bat conservation, as logging can sometimes be used as a tool to improve bat habitat. Romme's (et al.) HSI model clearly establishes that a completely closed canopy is not optimal conditions for either Indiana bat foraging or roosting. We believe it appropriate to retain management options that can better habitat conditions, the ability to selectively remove trees being one of those important options.

- 3. Issues of summer harvest included 300 acres/year of summer tree harvest is an unnecessarily low amount to use for the basis of this analysis (much more could be harvested), combined with concerns that the complete prohibition of summer harvesting under Alternatives 4 and 5 is totally unfounded, and, it is important to the logging industry in Vermont to retain summer harvesting as an option (P5, P7, P7.1, P7.2, P7.3, U2). On the contrary, comments were made that summer logging should be eliminated completely, as this is the time of highest incidental take and there is insufficient evidence that Indiana bats would be less harmed by winter harvesting (Q12, R4.3).**

One goal for analysis of program effects to TES biota is to reflect the situation at hand, as accurately as we can. We believe that by asking the US Fish & Wildlife Service (FWS) to consider our assessment, using an average level of management (for all activities) best reflects the present situation – 300 acres of summer harvest being our recent average. To adequately address jeopardy, the FWS needed analysis basis (i.e., how many acres of summer harvest are to be analyzed?); FWS determination relates to that basis. Actions that vary from the operational procedures established for FWS analysis (e.g., bat surveys, additional acreage of summer harvest) hold potential to alter determination of both the GMNF and FWS. As conditions change, and/or new information is provided, effects analyses will be adjusted accordingly.

FWS has developed Terms and Conditions to implement Reasonable and Prudent measures (which we intend to apply through this proposal) that bring the chances for incidental, direct harm (associated with all of our summer activities) into an extremely unlikely, and discountable, situation.

- 4. Issues of winter harvest included reserve tree requirements should be included in winter logging to address summer habitat loss due to winter harvest and the high degree of roost tree fidelity exhibited by the Indiana bat (Q3, Q4, R18, X17, Y9).**

As discussed earlier – the Terms and Conditions directed by the FWS are designed to reduce levels of incidental, direct harm and disturbance. Analyses provided by BA, BO and this EA document that necessary summer habitat components (e.g., drinking water sources, roost sites) are not limiting to Indiana bat use of the GMNF.

Protection of reserve trees from disturbance when bats are hibernating during the winter has not been identified as essential to Indiana bat conservation. We have found (during the spring and summer of 2001) that Indiana bats, in western Vermont, repeatedly utilize numerous roost sites throughout their non-hibernation period, with no, single, roost site being used exclusively. Kurta has documented the loss of roosting snags (in a beaver pond, during the winter), and the subsequent return and use of other snags (in the same pond) by Indiana bats. These individual roost snags are ephemeral, by nature, and are of much less concern than habitat conditions surrounding these roost snags.

Note: the reference to Kurta comes from: Kurta, A. and K. Williams. 1992. Roosting habitat, microclimate, and behavior of the endangered Indiana bat (*Myotis sodalis*) in southern Michigan. Report to the Nongame Program, Mich. Dept. of Nat. Res., &

Kurta, A., D. King, J. Teramino, J. Stribley, and K. Williams. 1993. Summer Roosts of the Endangered Indiana Bat (*Myotis sodalis*) on the Northern Edge of Its Range. The American Midland Naturalist, 7 pp.

- 5. The 5-mile radius around hibernacula resulted in several concerns: that there is no scientific basis for the 5-mile radius; that there is a need to determine “an area of influence” (AOI) now; and the effect of the radius on the forest plan and goods and services provided (A6, P4, S1).**

A Term and Condition of the Fish and Wildlife Service’s Biological Opinion is that the GMNF identify and Area of Influence (AOI) around known Indiana bat hibernacula, suggesting a 5-mile radius as initial AOI size. This distance is not arbitrary, as it relates to nocturnal movement distances of Indiana bats from occupied hibernacula during spring and fall swarming; and has been established as a distance for AOI plans by the Mark Twain National Forest, the Wayne National Forest and Ohio’s Department of Natural Resources.

The amendment and analysis addresses a 5-mile radius, or “Area of Influence” (AOI) around the Dorset cave as essentially a no vegetative manipulation area, until that AOI plan is completed, which will occur by February of 2002. Thus, an AOI has been established at this point in time.

Based on the information described above, we believe the 5-mile radius is adequate. The next step is to develop the AOI plan, which will utilize site-specific data collected since the issuance of the BO (e.g., bat surveys, vegetation data, etc.) and follow the NEPA process with public involvement, development of alternatives and analysis of effects. During the interim period in which no vegetation management will occur within the AOI, the EA has determined that there will be no negative impacts to Forest Plan goods and services.

**6. Conservation & recovery had issues identified such as: inconsistencies between the EA and the goals of conservation and recovery and failure to consider alternatives. (Q1, R4.2, Y3).**

Actions identified, and assessed, in this EA for conservation and recovery are those felt to be directly related to those identified and documented in the Indiana bat recovery plan, and appropriate for GMNF’s implementation.

Moreover, we have, to the best of our knowledge, addressed comments, issues and alternatives raised by the public, and documented our responses in either the response to comments appendices in the EA and this DN, carried them forward as issues or alternatives, or explained why they were handled as issues or alternatives considered but dismissed (see EA, pages 6-21 and Appendix 1). Indeed, conversation and recovery was identified as a main issue (see EA, page 6), and resulted in the development of alternatives 3 and 5.

As discussed previously, the amendment gives direction for retention of potentially suitable roost sites and the physical protection of these sites. [Found in Alternative 2 thru 5]. Alternative 3 and 5’s directive to retain 5 potentially suitable roost trees in each harvested acre essentially achieves optimal roost tree density – as documented by Romme’s (et al.) Habitat Suitability Index (HSI) Model for Indiana bat. Romme’s (et al.) HSI model discusses the habitat context for maternity roosting sites; indicating a wide range of conditions selected by female Indiana bats – from sites with over 80% canopy cover to sites completely unshaded, along with conditions between these extremes. Romme’s (et al.) HSI model discusses foraging habitat and displays Indiana bat use/preference in a variety of differing habitat conditions ranging from agricultural croplands through abandoned fields and including floodplain and upland forests.

The study referenced by this model shows the wide variety of conditions Indiana bats use for foraging – floodplain forest being most preferred, residential lands the least. Further, this study recommended that suitable roost trees be within 0.2 miles of deciduous forest cover that has greater than 30% canopy closure and 0.6 miles from

available water. **Terms and Conditions for Forest Plan implementation direct for design of potential roost tree retention and their “protectors” to provide for potential foraging corridors – the amendment, and its action alternatives, incorporate that direction.**

**7. A suggestion was made to incorporate standards and guidelines from the Daniel Boone National Forest (Q2).**

A review of the Daniel Boone’s standards and guidelines did lead us to come up with 2 additional conservation measures; 1) we will strive to acquire private lands with known and/or formerly occupied hibernacula from willing sellers, and 2) newly located bat hibernaculum will be assessed for potential threats to all species of bats utilizing those respective sites, and that each hibernaculum will have its own, specifically designed management plan that may or may not include management direction on land adjacent to the hibernaculum. Whether or not management direction would be applied to lands adjacent to the hibernaculum would be dependent on further analysis, such analysis taking into account habitat relationships, landownership patterns and any conflicts with established uses.

The first guideline was taken directly from the Daniel Boone Decision Notice; the second was created based on discussions of the Daniel Boone, Mark Twain and Allegheny NF’s standards and guidelines.

**8. A suggestion was made to identify additional tree species to include in suitable habitat, (Q5, Y14, Y14.1, Y14.2) and use local research for a valid model (Q7).**

In response to this suggestion, we have identified additional tree species, such as shagbark hickory; older sugar maple and yellow birch; dead sugar maple, red maple, white ash and American elm, as suitable roosting trees. This new information will be located under the Direction for Den trees section on page 4.33 under B.11 of the Forest Plan.

**9. Issues regarding hibernaculum include: new information regarding the Dorset cave (the cave is more extensive than originally thought, and contains many unexplored areas which may mean a higher population of hibernating bats); protection of all known hibernacula on the forest; and adoption of an interim no disturbance policy in the zones of influence (Q8, Q9, Q9.1, Q10, R14.1, R16, X15, Y12).**

New information will continue to be incorporated into our project analyses and management decision-making process; data collected from previously unsurveyed hibernacula (including newly discovered portions of the Dorset cave), spring dispersal monitoring, etc., will be integrated as it becomes available. We will continue to make management decision with best available data and information.

**The one known bat hibernacula, owned by the GMNF, is gated to protect hibernating bats from disturbance; recognizing that each hibernacula differs in**

**specific management needs, we have added direction to develop a management plan for all known and (yet to be discovered) bat hibernacula. See discussion under #7 above.**

At this time we feel it inappropriate to direct management around land outside the hibernacula not used by Indiana bats as we've no evidence that tailoring of habitat near these hibernacula (not being used by Indiana bats) will induce use in the future. However, the amendment, and analysis, addresses a 5-mile radius Area of Influence (AOI) around the Dorset cave as essentially a no vegetative manipulation area, until an AOI plan can be completed.

- 10. New information regarding the extensiveness of the Dorset cave (it is larger than originally thought, but we have yet to determine if the unsurveyed areas of the cave are additional hibernaculum), raised concerns such as: consider lands within a 5-mile radius as critical habitat; consider information regarding a study in New York (planned for spring 2001); and gain more information about the needs of the species before returning to timber harvesting. There were also concerns raised, such as the use of the best science available and the use of the new forest planning regulations (Q11, Q11.1, Q11.2, Q11.3, R14.1, R20, X11, X13.1).**

As previously discussed, while recognizing the importance of yet-to-be-developed information and its ultimate use for decision-making, we feel it appropriate to continue making management decisions, because we have, and continue to add to our knowledge, and incorporate "best science" into our decision-making process. As mentioned under #9 above, we do plan on continuing to monitor populations in the Dorset cave. As result of the study conducted in May of this year (2001), as a joint U.S. Fish and Wildlife, New York Department of Environmental Conservation, Vermont Fish & Wildlife Department, and Forest Service effort, 5 Indiana bats were radio-tagged outside of a hibernaculum in New York. Later 3 of these bats were re-located roosting in the Champlain Valley of Vermont. A follow-up study conducted in July, resulted in the finding of approximately two dozen Indiana bats. All but one was captured on private lands in the Champlain valley, west of the GMNF. The one (male) Indiana bat captured on GMNF lands, was found in an area managed for diversity of habitats; habitats that include non-forested openings and regenerating oak. Thus, to date, most Indiana bats found "summering" in Vermont have been captured in lowland locations that exhibit a high degree of habitat diversity, including riverine/riparian habitats.

Though too early to make any substantial conclusions, the information from this study will be incorporated with other "bat" activities, including the bat monitoring we have conducted in partnership with Fish and Wildlife the past 3 summers, our monitoring of active timber sales to ensure bat conservation, and the knowledge we have gained through other partnerships, such as the Northeastern Bat Working Group.

At this time, our plans are to proceed with the 1982 planning regulations, as the 2000 regulations were deemed to be not possible to implement by the Secretary of Agriculture. Thus, direction was given from our Regional Office for the Green Mountain and Finger Lakes National Forests to begin plan revision under the 1982 rule. A new planning rule is expected in the spring of 2002, and we will most likely incorporate parts or the entire new rule into our plan revision process.

**11. Indiana bat populations in New York State are purported to be increasing, and the link to Vermont for summer habitat is not known (R14). Scientific monitoring and baseline population data are not available (R14.2, Q13, T6, V2, X13, X13.2). Attempts to increase bat population could increase raptor populations (T3).**

Indiana bat populations in New York hibernacula are being monitored with the best scientific processes available; and yes, this monitoring data indicates an increased number of hibernating Indiana bats in New York's hibernacula. How these "New York" individuals utilize Vermont and Vermont habitats while unknown is being investigated (study initiated during the spring of 2001).

Preliminary results show some of the hibernating New York bats that were being tracked by U.S. Fish and Wildlife, have been found to use the Champlain Valley for summer activity.

Baseline information is being utilized to express FWS concern for the species in terms of its hibernating population. This hibernating population has dropped sharply over the entire range of the species, and is the basis for its protection under ESA.

That Indiana bats are prey to nocturnal raptors is recognized; at this time it is premature to speculate about raptor response to increase in Indiana bat population, as nocturnal raptors rely upon a variety of habitat components – the increased population of one prey species being only one facet of this relationship.

**12. Concern was expressed regarding incidental take (R12), and the inadequacy of the biological opinion in terms of not understanding of the effects of the shelterwood treatment method (Y15).**

As described throughout this appendix, all alternatives are equal in terms of reducing the chances of incidental take. The major findings of the Biological Opinion do not express any concerns about the type of vegetation management applied, but rather, reducing the risk of harm to individual bats through the retention and protection of suitable roost trees. As stated throughout this document, we consider the roost tree retention and protection standards, combined with the conservation measures under alternatives 3 and 5, optimal for Indiana bat conservation.

**NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)**  
**&**  
**NATIONAL FOREST MANAGEMENT ACT (NFMA)**

- 13. Concerns were expressed that because future cumulative environmental effects on forest resources are uncertain (see EA, page 51) until the management plan for the five mile radius around the hibernaculum is complete, the amendment should be considered significant (A6, S1).**

This concern can be addressed in two parts; 1) the interpretation of “uncertainty” from not doing an action, and 2) the interpretation of “uncertainty” once a specific action is proposed.

1) From a NEPA standpoint, the type of “uncertainty” that requires an EIS is based on scientific uncertainty, rather than the unknowns associated with an action that has not occurred. However, if the unknowns associated with not doing any action (s) were to cause significant effects on any environmental resource, than the “inaction” would be considered significant. In this situation, where no cutting within the 5-mile AOI radius would occur until the management plan is complete, it has been determined that there will be no effect on forest resources. (See page 57 of the EA, which states “The Forest is not aware of any reasonably foreseeable future actions that would seriously reduce the commercial production of timber on GMNF or private lands...”).

2) If during the analysis for the management plan around the hibernaculum we find we are uncertain about the environmental effects on forest resources (or any other environmental resource), we would consider this significant and proceed with an EIS.

- 14. Another concern is that in spite of the USFWS recovery plan and the Endangered Species status, the populations of Indiana bats continue to decline, and although no single action (e.g. a tree felled or area clearcut) will result in the loss of these species, it is the cumulative effects of all our actions and inactions that have led the Indiana bat to the brink of extinction (Q14).**

We agree that the regional decline of Indiana bat is a major concern. Scientists believe that the **leading cause of their decline has been degradation of critical hibernacula**; degradation precipitated by natural changes and both intentional and unintentional human action. In response to the potential of similar degradation, the one known bat hibernaculum on the GMNF was gated in the early 1990’s. **We also know that some forms of timber management can be used to improve Indiana bat habitat** (as evidenced by roost site selection of Indiana bats during the spring and summer of 2001, in western Vermont), **and that the risk of harm to individual bats can be mitigated during a timber operation through the retention and protection of roost trees.**

Fortunately, the regional decline (the region being considered 27 states throughout much of the eastern United States) is not consistent, in that New York is gaining in population at this time.

We believe we have addressed the concerns of this statement by entering into formal consultation with U.S. Fish and Wildlife; the result being the best information and direction we can obtain for Indiana bat conservation. By applying the terms and conditions of Biological Opinion, along with the additional conservation measures outlined in the Environmental Assessment, we are confident we will be able to proceed with Forest Plan implementation while providing for the protection and conservation of the Indiana bat.

**15. There were questions regarding the scope of issues and whether the Forest Service included all relevant issues from the original scoping letters (R3, X1.9).**

As requested by the commenter, we went back to the original scoping letter and rechecked to see if the relevant issues were addressed. Wherever the reference to the “Y” questions are shown in this document, is our response to a comment from the original scoping letter submitted by Forest Watch. As far as our not addressing all the relevant issues, we did our best to identify those we thought relevant and should be analyzed in depth, as well as identify and eliminate from detailed study those which we believe are not significant in accord with the NEPA process.

**16. In addition, 2 commenters included a list of new issues, and asked that the issues be explained and addressed in new alternatives and additional analyses (R3.1, X1.9).**

**a. How well does each alternative protect Indiana bats from harm and promote the recovery of the species?**

Each alternative is equal in terms of minimizing the level of incidental take, as well as the potential effects of smoke on occupied hibernacula or roosting bats during fall swarming. Alternatives 3 and 5 go further than Alternatives 2 and 4 in terms of providing more measures for bat recovery (see EA, pages 29-30).

**b. How well does each alternative reduce the possible killing of Indiana bats roosting in trees?**

As mentioned above, each alternative is equal in terms of reducing the possibility of incidental take. More specifically, each alternative calls for the retention of potentially suitable Indiana bat roost trees as well as the protection of all known Indiana Bat roost trees. In addition, each alternative calls for monitoring to locate potential maternity colonies.

**c. How well does each alternative maintain or enhance conditions for roosting and foraging by Indiana bats?**

Alternatives 3 and 5 enhance roosting conditions more than 2 & 4, as they contain the standard of retaining 5 trees of suitable roosting quality per acre and designing skid trails to avoid the need to fell suitable roost trees. Alternatives 3 and 5 also call for development of a plan in cooperation with U.S. Fish and Wildlife and State Fish and Wildlife to assess the number of suitable roost trees and the amount of preferred foraging habitat available.

All alternatives (with the exception of 4) call for protecting 1/3 of all large diameter (> 12 inches dbh) post harvest snags by retaining live residual trees adjacent to these snags to enhance foraging opportunities. The difference between Alternatives 2, 3 and 5 is that 2 and 3 would apply this standard during the non-hibernation period (summer time) only, whereas under 5 it would be applied during hibernation (winter time). Alternatives 4 and 5 do not provide for summer timber harvesting.

**d. How well does each alternative protect Indiana bat habitat near hibernacula currently occupied by Indiana bats?**

Each alternative is equal in this, in that each one requires the determination of an area of influence and subsequent development of a management plan for the occupied hibernacula. Each alternative also considers the occupied hibernacula as a smoke sensitive area, and provides the relevant protection when planning for prescribed burns.

**e. How well does each alternative promote the recovery of Indiana bats by protecting Indiana bat habitat near hibernacula formerly occupied by Indiana bats?**

Each alternative calls for development of a management plan for each hibernaculum on or near the GMNF, including those formerly occupied by Indiana bats. This is a new Standard and Guideline developed from citizenry comment; see comment number 7, and the Decision Notice. Moreover, the proposed amendment directs continued monitoring of bat hibernacula, including those not currently being used by Indiana bats (e.g., Greeley talc mine, Nickwacket cave), so as to determine which species of bats are occupying these hibernacula. At this point in time, we've no evidence that management of habitat near these hibernacula (not being used by Indiana bats) will induce use in the future.

**f. How well does each alternative respond to the lack of information about the behavior, location and extent of Indiana bats in Vermont?**

Alternatives 2 through 5 all include direction for the development and use of new information – see page 12 of the EA for the specific direction. Additionally, Alternatives 3 & 5 include language specifically designed to enhance knowledge both internally, and externally – see page 16 of the EA. The amendment contains nothing specific to our continuing involvement with either the New England/New York or Northeastern Bat Working groups, however, this will continue as long it is believed amongst all parties that continuing involvement may be one of the best efforts we can pursue.

**g. How well does each alternative promote the maintenance of viable population of Indiana bats on the GMNF?**

First, we've no indication that the "maintenance of viable population of Indiana bats on the GMNF" is feasible. To date, we've no indication that we are able to provide all necessary life and habitat requirements for this species – notably, we lack suitable winter hibernacula. The amendment, and alternatives, are designed to (i) minimize incidental harm, and (ii) assist recovery. Yes, the GMNF may be capable of supporting a viable population; however, at this time our goal is support of species viability – directly supporting local individuals.

**h. How well does each alternative comply with the new planning regulations?**

We are in compliance with the new regulations in that the environmental assessment was submitted for public comment during a time referred to as the "transition period," that is prior to May 9, 2001, where an agency was given a choice as to whether to proceed under the existing or new regulations. We chose to proceed under the existing regulations. Also, as mentioned earlier (see #10), the 2000 planning regulations were deemed not possible to implement by the Secretary of Agriculture.

**i. Does the USFS possess the best available science on Indiana bats, and, if so, how compatible are the alternative actions with that science?**

As described under #10, 14 and 16.f above, we are attempting to utilize the best information available, and continue to collaborate with outside experts and the U.S. Fish and Wildlife Service, as well as ask for public input. The alternatives were all developed with that in mind.

**17. A question was raised regarding whether the decision on the plan amendment is appealable (A12).**

The decision for the amendment will be subject to administrative appeal, under 36 CFR 217.

**18. Concerns over violation of NEPA and NFMA were expressed if the Forest Services continues to proceed with the proposed amendment without analyzing the effects on Management Indicator Species (MIS) (A4.6).**

To address this concern, we believe two questions need be answered – (i) how is the GMNF to proceed with this amendment being fully aware of MIS “short-comings” and (ii) lack of discussion of how the amendment effects MIS species in the EA.

**How is the GMNF to proceed (being fully aware of MIS “short-comings”)?**

NFMA’s requirements for species viability are addressed by utilizing a combination of fine screen (T&E and RFSS) and coarse screen (MIS) programs – these programs compliment each other, all being essential. This amendment proposes to adjust our fine screen components; adjusts prescribed as a result of monitoring and information enhancement. Changes to these fine screen components will, predictably, necessitate subsequent adjustment(s) to the “companion” coarse screen programs. We have begun the process of adjusting our MIS program; developing a timeline for completion of milestones needed to comprehensively assess and adjust the program. This process is detailed in a report referred to as Green Mountain and Finger Lakes NFs’ MIS Program Action Plan (currently in draft form - see project file).

Irrespective of MIS program adjustment needs, we are able to assess effects of the proposed amendment, and its alternatives, to habitats of the GMNF and the species associated with these habitats. This amendment, or its alternatives, holds very little affect to GMNF habitats – essentially, the retention and protection of one habitat component (potentially suitable roost trees and roost snags). The effects of reserving slightly different “wildlife trees” and reserving 1 additional wildlife tree per acre have been assessed for all resource areas and displayed in this EA (see Chapter 3). It is our determination that these proposed adjustments hold no potential to jeopardize the continued viability of species inhabiting the GMNF. Our continuance of MIS, T&E and RFSS monitoring will guide future program adjustments.

**Lack of discussion of how the amendment effects MIS species**

As noted, the EA “held” no direct reference to MIS; however, the EA discussed in detail amendment effects to specific habitats, habitat components and wildlife species subsequently affected (the components of MIS) – see pages 36-38. Of the MIS species identified by the GMNF, two are specifically mentioned as being affected – yellow-bellied sapsucker (as a member of the woodpecker group) and the barred owl. Specific MIS habitat components discussed include cavity and dead trees (potential

nesting and denning sites) and hard mast. We have determined that habitat conditions for other MIS species are unlikely to be altered by this amendment, and its alternatives, and so these “species” were not specifically discussed.

In response to this comment, we have included Appendix 7, which fully displays affects of this proposed amendment (and its alternatives) to the GMNF’s MIS.

**19. A question was raised as to how Alternative #1 violated NFMA and ESA (G4).**

Although the Indiana bat is not known to occur on the GMNF, information gathered from the time the Forest Plan was approved (1987) shows the Forest does provide the appropriate habitat for this bat. In light of this, the Forest Biologist prepared a Biological Assessment (BA) evaluating the effects of ongoing management practices on the Indiana bat. The US Fish & Wildlife Service, in accord with the Endangered Species Act (ESA) reviewed the BA. The resultant Biological Opinion, prepared by Fish and Wildlife, called for the Forest Service to implement the terms & conditions outlined in the proposed action of the EA. Failure to implement the terms & conditions would be a violation of the ESA, and, the National Forest Management Act (NFMA) because NFMA requires compliance with ESA (for more info, see pages 1-3 of the EA).

**20. A comment was made that selection of Alternative 3 was not necessary; that at this time, none of the information brought forth shows a true need for additional conservation measures (P6).**

Alternative 3 was created to respond to public issues raised in accord with the NEPA process. We supported the selection of Alternative 3 as it not only meets the terms and conditions of the Biological Opinion, but also goes beyond that by providing additional conservation measures. Adhering to the terms and conditions of the Biological Opinion and providing for addition conservation measures complies with ESA requirements for both protection and conservation.

**21. A concern was identified regarding the format of the EA (P2).**

Thank you for pointing out that the format of the EA is not “very user friendly” for the “average citizen.” We’ve tried to make the Purpose and Need for the Proposal, Issues and Alternative Section clear, and at the current time this EA provides adequate analysis for the decision maker (in this case the Forest Supervisor) to be able to make an informed decision regarding Indiana bat and Regional Forester’s Sensitive Species conservation. However, will continue to work towards making all sections of future environmental documents clearer.

- 22. Concern was identified regarding the range of alternatives, and that the alternatives developed do not respond to the key issues (R2, R4, R4.1, R4.2, R4.3, R4.4, R4.5, V4, V4.1, X1.8, X3, X3.1, X3.2, X3.3, X3.4, X3.5).**

See pages 9-18 of the EA, which describes the alternatives in detail, in addition to describing how each alternative responds to a key issue or issues, identified previously on pages 6-7. Based on the issues identified, we created 3 alternatives in addition to the No-Action and Proposed Action, which we believe is a reasonable range (R2, X1.8).

- 23. The following is a list of alternatives a commenter wanted us to consider (see R4 and X3 for the list of alternatives in the commentor's own words).**

- a. To protect and promote recovery of Indiana bats, consider no action, modest to aggressive protective measures, modest to aggressive recovery measures.**

The Biological Opinion issued by U.S. Fish and Wildlife Service, did not conclude it was necessary to stop all management activities to protect the Indiana bat. Indeed, timber harvesting can be used as a tool to optimize foraging habitat. We believe the alternatives provide a range of modest to aggressive protective measures and modest to aggressive recovery measures, in that all are protective, but some are more aggressive in recovery measures than others (e.g., alternatives 3 & 5).

- b. Alternatives should be developed to respond to the potential killing of Indiana bats by logging and other activities (e.g., no action, eliminate logging, reduce logging, eliminate summer logging, reduce summer logging).**

Essentially under Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*), the U.S. Fish and Wildlife Service's biological opinion [Service log no. 99-003(F)] determined that the level of anticipated take resulting from 300 acres of forest management activities each summer on GMNF is not likely to result in jeopardy to the Indiana bat. Furthermore, FWS determined implementation of specific terms and conditions would further reduce the impact of any potential for incidental take on site-specific projects.

The 300 acres of summer forest management activities authorized by the FWS Biological Opinion includes:

1. Timber sale harvest activities.
2. Road maintenance on 248 miles of Forest Service maintained roads.
3. Trail maintenance on 995 miles of forest trails.
4. Recreation site maintenance at 40 developed picnic areas, interpretive sites, and campgrounds; 36 trail shelters; and 47 parking areas for trailheads.
5. Maintenance of ski trails at 6 Nordic areas and 3 downhill areas.

The major findings of the Biological Opinion do not express concerns about the type of vegetation management occurring on GMNF, but rather, focuses upon reducing the risk of harm to individual bats through the *retention and protection of suitable roost trees*. Each alternative calls for the retention of potentially suitable Indiana bat roost trees as well as the protection of all known Indiana bat roost trees. Given that our analysis found the following.

- ?? Each alternative would protect potential and existing Indiana bat roost trees.
- ?? Three years of bat monitoring, during the summers of 1999, 2000, and 2001 supports assumptions about the limited number of Indiana bats using the GMNF. One male Indiana bat has been captured on the GMNF, in comparison to over two dozen males and females being captured from private lands west of the GMNF.
- ?? The Biological Opinion did not require the elimination or reduction of logging and other tree removals.

We believe the current alternatives adequately respond to the concern about potential killing of Indiana bats by logging and other activities.

**c. Alternatives should be developed to respond to potential reduction of roost trees and foraging conditions for bats...**

As noted earlier, each alternative calls for the retention of potentially suitable Indiana bat roost trees greater than 4" dbh as well as the protection of all known Indiana Bat roost trees. *In addition, each alternative calls for monitoring to locate potential maternity colonies.* Elimination of even-aged management was considered, but not in detail for the reasons described on page 18 of the EA.

As for retaining foraging corridors along all streams and intermittent drainage areas regardless of when these areas are logged, see page 81 of the EA, which responds to the suggestion of not logging within 300 feet of such areas. Currently, there is no evidence that bats benefit from no management.

Moreover, all site specific projects will require a Biological Evaluation (BE) to specifically assess the impacts of a particular proposal on Indiana bat conservation. If any negative impacts are found, mitigation measures or alternative actions would be developed to negate the impact. That site specific BEs are required for individual projects is essential, as it not possible to address these concerns on a forest-wide basis, (meaning through this programmatic plan amendment), until a specific action is proposed.

**d. Develop Alternatives to protect areas near occupied hibernacula...**

No management activity will occur within the five mile radius of the sole hibernacula occupied by Indiana bat until the management plan for the Area Of Influence “AOI” is complete.

**e. Develop alternatives to address formerly occupied hibernacula**

This amendment includes a Standard and Guideline for the development of an AOI plan for National Forest lands adjacent to, or near all bat hibernacula. At this time, the GMNF owns no formerly occupied Indiana bat hibernacula. However, should any occupied hibernacula be discovered, we will commence with preparation of a management plan. To date, we’ve no indication that management of an AOI for previously occupied hibernacula can induce re-establishment of use. See also discussion under #7 and #16e.

**f. Alternatives should be developed to promote and maintain a viable Indiana bat population.**

Note the previous discussion; we believe we have made the best effort we can.

**g. Alternatives should be developed based on new forest planning regulations.**

See response to #10 and 16.h above.

**h. Alternatives should be developed based on best available science.**

See response to #s 10, 14, 16.f, and 16.i above.

**24. Some commenters (including the 138 responses that were received in a form letter format – see introductory paragraph on page 1) thought the following alternatives and mitigating measures should have been considered in detail in the EA (B, C, F, R4.1, V4, V4.1, X3.1). In addition, one individual responded with variations to the form letter; these variations are displayed in *italics* below (E1).**

**a. A cessation of or substantial decrease in logging on the GMNF and a cessation or substantial decrease in logging when Indiana bats could be roosting in trees (May 15 to August 30 or later), and where there is greatest threat to physical ecosystem components, such as soil structure (which is very important to soil dwelling vertebrates and invertebrates) and reproductive activities such as amphibians (which are, as a taxon, in global decline).**

See response to 12 and 23.b. The major findings of the FWS Biological Opinion do not express concerns about the type of vegetation management occurring on GMNF, but rather, focuses upon reducing the risk of harm to

individual bats through the retention and protection of suitable roost trees. The amendment gives direction for retention of these potentially suitable sites and the physical protection of these sites [Found in Alternative 2 through 5]. Based on these reasons, we do not believe it necessary to consider this proposed alternative in detail. Moreover, Alternatives 4 and 5 were created to address the public's concern of summer logging (see EA, pages 17-18). The ceasing summer logging alternatives were not chosen as the preferred alternatives for two reasons: 1) The Biological Opinion from US Fish and Wildlife Service did not call for the elimination of summer logging as a term and condition essential for Indiana bat conservation, and 2) the effects to Indiana bat from alternatives 4 and 5 were the same as alternative 2, (which does allow for summer harvesting - see page 30 of the EA). As mentioned above, the focus for Indiana bat protection is through the retention and protection of suitable roost trees, which can be done during a summer harvesting operation.

In response to the comments in *italicized* type, see the response under 24.e below.

- b. Ceasing or substantially reducing clearcutting, shelterwood cutting and other types of even-aged regeneration and shifting from even-aged management of northern hardwoods to uneven-aged management, where the major natural dynamic is small scale disturbance on the scale of single-tree or very small patch disturbance.**

The major findings of the FWS Biological Opinion do not express concerns about the type of vegetation management occurring on GMNF, but rather, focuses upon reducing the risk of harm to individual bats through the *retention and protection of suitable roost trees*. This amendment gives direction for retention of these potentially suitable sites on GMNF and the physical protection of these sites [Found in Alternative 2 through 5].

This suggestion from public comments, to shift from even-aged management of hardwood timberlands to uneven-aged management, was not considered in detail for two reasons – it would not provide habitat for those species which require young, regenerating forest, and there is no evidence that Indiana bats benefit from uneven-aged management (EA pages 18-19). In response to the comments in *italicized* type, see the response under 24.e below.

- c. An increase in the rotation age of hardwoods in MA 2.1 and 3.1 to provide greater structural diversity and therefore more (and a greater diversity of) niche space.**

See discussion in 2, 59, 61 and 67. In response to the comments in *italicized* type, see the response under 24.e below.

- d. **Protection of lands around all former or potential Indiana bat hibernacula, not just the one hibernaculum known to be occupied by Indiana bats in recent years.**

See discussion under 7, 16.e and 23.e above. In response to the comments in *italicized* type, see the response under 24.e below.

- e. **Maintaining abundant roost trees, foraging corridors and *mature, uncut forests along all along all streams and intermittent drainages regardless of the time of year when such areas are logged (watercourses, and small wetlands within the northern hardwood, mixed forest and conifer ecosystems are especially important to many, many species of herptiles, small mammals and invertebrates).***

As discussed under 23.b and 23.c above, suitable Indiana bat roost trees will be protected and retained. See also #2 and page 81 of the EA and, which responds to the suggestion of not logging within 300 feet of streams and other riparian areas. Currently, there is no evidence that bats benefit from no management, so it is thought to be best to keep our options open at this time.

In response to the comments in *italicized* type under 24a.-e., we certainly appreciate these concerns, however they are beyond the purpose and need for this specific proposal, which is conservation of TES species. Indeed, a thorough analysis of these comments would most likely lead to developing an alternative for management of the entire GMNF that would be different from our present management, which was approved under our current Forest Plan. Therefore, analysis of these concerns would be most comprehensively addressed during the process of Forest Plan revision.

- f. **Other alternative measures listed in Appendix 1 of Forest Watch's scoping comments.**

Every alternative suggested in this Appendix was addressed in pages 80-82 of the EA. As the responses on these pages explain, some of the suggestions created viable alternatives, some of them were alternatives considered but dismissed, and some were responded to directly in Appendix 1 of the EA.

It should also be noted that for this, and other comments listed under #24, that while we believe the suggested alternatives would not be of benefit to Indiana bat conservation, such alternatives would be relevant for consideration as part of the Forest Plan revision process.

**25. Some commenters stated the USFS failed to consider all alternatives suggested directly or indirectly during scoping and this is a violation of NEPA (R4.2, X3.2).**

See response to 22 above. We believe we did consider all alternatives suggested directly. If anything was missed that was suggested indirectly, it was inadvertent. Also, in accord with the NEPA process, we briefly described why some alternatives were eliminated from detailed study (see pages 18-21 of the EA).

**26. There is a concern there was a “double standard” applied in the EA’s rationale for dismissing alternatives, the double standard being that if the EA states that the amount of logging on the GMNF is insignificant in terms of Indiana bat conservation and recovery, combined with the statement that Indiana bats are not found to benefit from one type of management over another (e.g., evenaged vs. unevenaged), then why is the agency setting about making changes that involve the retention of trees, the amount of logging, etc (R.42).**

The Biological Opinion (BO) did not direct that any changes in the amount of logging are needed for Indiana bat conservation. Rather, the goal is to reduce risk to individual bats through the protection and retention of suitable roost trees (see previous discussion under #12).

**27. There is also a concern that where the EA concludes there is insufficient evidence that Indiana bats benefit from one form of timber management over another or that the bats benefit from bigger, larger trees resulting from longer rotations, that these conclusion are false, and the agency needs to reconsider these conclusions based on the literature (R4.2, R.4.3, X3.2, X3.3).**

Silvicultural practices (even-aged or uneven-aged) can be tailored to provide habitat suitable for both roosting and foraging by Indiana bat. See also discussion under #2.

**28. Another concern was expressed that the EA did not take into account a ranking system (which was prepared by the USFS) of how particular management activities impact the Indiana bat; that this information should have been used to prepare the proposed action and alternatives; and because it did not, NEPA and the Administrative Procedures Act have been violated (R4.4, X3.4).**

This table was developed to assist Forest Service staff assess potential for effect to Indiana bats. However, relationships documented by Romme’s (et al.) HSI model, such as what constitutes suitable roost sites, suitable roosting habitat and suitable foraging habitat, were used to develop this (referred-to) table. The table is a product of the same information, just the same as that used in our BA and EA.

Aspects displayed in this “tool”, along with other aspects of GMNF management, were comprehensively assessed in the Forest’s most recent Biological Assessments (for federally listed species, 1999; for Regional Forester’s sensitive species, 2000). The Biological Assessment (BA) for federally listed species was, in turn, reviewed by

U.S. Fish and Wildlife Service (FWS); FWS's analysis, comments and recommendations specific to these aspects are documented in a Biological Opinion (2000). These assessments and opinion were essential components to the development of this amendment's proposed action and its alternatives.

The table does not constitute additional information and we believe not referencing it directly does not violate NEPA or APA (because it is a product we developed using exactly the same information, but for a different purpose....)

It should be noted, that commenter's table (as displayed in comment document R4.4) is not an accurate synopsis of the table prepared by the GMNF. The GMNF's table discusses relative levels of risk from individual projects being considered – displayed in terms of “higher, moderate, and lower”. The intent is to assist field staff in their initial evaluation of potential projects, not as a tool to make effect determination. The commenter has displayed a relationship utilizing the terms “high and lower” – a subtle, but important, change as (inappropriately) all activities are characterized as holding risk to Indiana bat.

**29. A comment was made that the Endangered Species Act and other laws were violated in that the EA did not adequately consider reasonable alternatives and mitigating measures that would help protect and promote the recovery of Indiana bats and other endangered species (R4.5 and X3.5).**

Two of the Alternatives (3 &5) were developed to respond to this concern. All other specific suggestions were responded to (see response to #25 above). See also Appendix 4 of the EA, which explains the actions the GMNF is taking for endangered species protection, management and recovery.

**30. Clarification was requested regarding whether the Forest Service is using 1982 NFMA requirements or the new framework, which was made effective November 9, 2000. It was also felt that the amendment should be done under the new requirements, and should be done as part of the upcoming GMNF Plan revision process (A1, R20).**

The Forest Service is proceeding with the proposed amendment under the 1982 NFMA requirements. The initial proposal was mailed to public in May of 2000 for comments, prior to the new regulations being effective in November of that year. Also, the notice of availability of the environmental assessment was published in the Federal Register prior to May 9, 2001. Given that the proposal falls within the “transition period,” (36 CFR 219.35), the GMNF has elected to proceed under the 1982 regulations. See also responses to 16.h and 23.g, about how the 2000 regulations are now considered obsolete.

**31. Concerns were raised regarding the proposed amendment and whether the effects are significant, and whether an EIS should be prepared. Other comments also focused on the whether the Forest Service Manual's definition of a**

**significant amendment was properly applied, as well as a lack of discussion of what constitutes a significant amendment according to the GMNF Plan and Record of Decision (A3, A5, A6, A7, A8, A9, A9.1, A10, A10.1, A10.2, F1, F2, R1, R1.1, R1.2, R1.3, R1.4, X1-X1.7).**

See Chapter 3 of the EA, which describes the expected direct, indirect and cumulative effects of the Proposed Action and each alternative. Biological, physical, social and economic factors are considered. None of the findings are significant; they do not impact the types and levels of resources, uses, outputs and activity occurring on large areas of the GMNF. This is the case even for those alternatives (4 and 5) that would discontinue summer harvesting.

The Forest Service Manual does list 2 examples of what constitutes a significant amendment, and the proposed action and alternatives fall into neither example. We agree that there can be many other situations that could be considered significant, and that the manual does not call for a proposal to meet both definitions in order to be considered significant. However, in accord with the NEPA process, the question of significance is addressed further in the assessment itself, with no significant findings (see discussion above).

Implementation of the Proposed Action or any of alternatives would also fall within the definition of a non-significant amendment according the GMNF Plan and ROD. What is proposed is modifying 2 standards and guidelines, adding additional ones, modifying our monitoring program and outlining a program for additional conversation measures. Such modifications would improve the efficiency of the standards and guidelines. None of the modifications associated with the Proposed Action and alternatives were found to affect the intent of the Plan.

**32. Other commenters felt the amendment should be considered “significant” due to the inadequacies of the monitoring program for MIS species (A5.)**

We believe the MIS question is addressed under #18 and in the supplement to the EA (see **Appendix 7 of the DN.**)

**33. Some commenters brought up the Supplemental Environmental Impact Statement prepared by the Allegheny National Forest to address Threatened and Endangered Species, pointing out that if that National Forest thought the proposal significant enough to do an EIS, then the Green Mountain NF should do the same. They also thought that the sheer length and complexity of the EA indicates an EIS must be prepared (A10, A10.1).**

The Draft EIS prepared by the Allegheny NF (February 2000) explains why the decision was made to prepare an EIS (see pp 2-3), which was to increase public involvement opportunities and to address concerns over recent court rulings. This decision was made in spite of the determination that the amendment would not be significant. The amendment was not considered significant because it proposed only

minor changes to standards and guidelines that would not alter Forest Plan outputs, or substantially alter how the Forest is currently managed and for the other reasons described on pages 2-3 of the DEIS.

Although the EA prepared by the Green Mountain is long and complex, we included a lot of information in the appendices, and, as described above, did not arrive at any findings significant enough to bring the assessment up to the next level of an EIS.

**34. Comments were received regarding the length of time allowed for public comment (A2, A2.1, G1).**

This EA, and the subsequent decision that will be made, are not subject to the 36 CFR 215 notice and comment period. The administrative appeal opportunities for this project will be pursuant to 36 CFR 217, which does not mandate a 30-day notice and comment period. However, we believed that it was important to provide the public an opportunity to comment on this EA.

The Forest Supervisor gave the decision to not extend the comment period a great deal of thought. Two requests to extend the 30 day public comment were received prior to the close of the comment period. Along with these requests, were requests for additional information under the Freedom of Information Act. Many of agency's staff worked diligently to get the information out within 6 days of the initial request, so as to provide the information as soon as possible. Thus, it was felt that 30 days to focus on the EA itself, along with 1 extra week to provide comments on the FOIA related information, would be adequate.

**35. Concern was identified regarding the use of the “best available science” on Indiana bats (R4).**

See responses to 10, 14, 16.f., 16.i and 23.h above.

**36. Adequacy of the current Forest Plan (in terms of Indiana bat protection and conservation) as well as lack of implementation of the Forest Plan (due to past legal proceedings) was questioned (U9, Y11).**

See pages 2-3 of the EA, which describes the process the GMNF undertook with U.S. Fish and Wildlife to determine whether the management practices occurring in accord with the current Forest Plan are having a negative impact on Endangered Species. The resultant Biological Opinion from Fish and Wildlife outlined the terms and conditions that need to be applied for Indiana bat conservation. Application of the terms and conditions would successfully occur through this proposed amendment to the current Forest Plan. This is our rationale for believing an amendment to our current Plan is the best means to provide for Indiana bat protection and conservation.

**37. Socio-economic concerns were identified, including: whether prohibiting summer harvest would have an effect on goods & services (A13, U2).**

Forest Service Handbook 1909.15.15 – Environmental Policy and Procedures Handbook, directs Forest Service managers to “Express the effects in terms of change that would occur in the physical (land, water, air) biological (plants and animals), economic (money passing through society), and social (the way people live) components of the human environment.” In the comment EA, changes to “money passing through society” were displayed in Table 10 for alternatives where change could be quantified. Specifically to Alternatives 4 and 5 (where no summer logging would occur), estimates of social/economic change were described in a narrative form on page 56 of the EA. Narrative estimates of effects were provided to the decision maker because no county economic or financial data was available that described the financial effects of this. Also, the need for this type of data was not indicated in the scoping comments (A13).

In addition, we did receive a comment that summer harvesting on the GMNF is important to forest products industry (U6).

**38. The amendment (and Forest Plan) should recognize the economic impacts of delaying harvesting based on the past, present and future costs which have been occurring in the form of legal challenges since the Forest Plan was approved (G3).**

That this amendment should address the economic impacts of delayed timber harvesting due to legal challenges is outside of the purpose and need for this amendment, which is Indiana bat and Regional Forester’s Sensitive Species conservation. To date, there have been no legal fees associated with this amendment.

**39. The cost of uneven aged silviculture in the form of the helicopter logging that occurred at the Lincoln Brook timber sale (R9, X8);**

The comment is given as a financial reason for GMNF to switch to uneven aged silviculture. The intent of the comment is to demonstrate that financial returns to timber sale purchasers exceed costs, even when a helicopter is used to log a northern hardwood stand where uneven aged silviculture is practiced. This comment is noted.

**40. Failure to consider how no summer logging would benefit summer recreation (non-timber values) by reducing recreation/logging conflicts (R13, U7, X.2.2, X2.4).**

The GMNF receives recreation use during all seasons. In non-winter months the recreation use is more diverse and scattered over a larger area. In winter, the use tends to be somewhat more focused and more concentrated on trails and facilities developed for specific activities, such as cross country skiing or snowmobiling. Many of the winter trails are co-located with the road system that would be needed

for timber harvest. The effects statement in the EA describes the changes that increasing winter timber harvest would have on the recreation resources. As mentioned above, recreational use in the summer is more scattered and diverse than winter recreation, and given that summer logging has averaged 300 per acres year, when you look at that figure within the context of a 370,000 acre forest, the impacts of logging to summer recreation were found to be minimal, therefore the effects section did not describe this effect in detail. The effects section did describe in detail changes that increasing winter timber harvest would have on the winter recreation resources because those effects were more concentrated on roads and trails.

Due to co-located transportation systems and recreation use that is more concentrated on the trail system, the potential for conflict does increase during the winter season and the effects statement in the EA discloses that effect. Additional discussion on this topic can be found in the response to item #105.

**41. Failure to consider that the sights and sounds of logging are far more compatible with noisy snowmobiling than with quiet, backcountry types of recreation activities that occur in the summer.**

In general, the sights and sounds of logging are more compatible with motorized recreation than with backcountry, non-motorized recreation. It is also true that backcountry recreation is an important emphasis in the Land and Resource Management Plan (LRMP), especially in wilderness, primitive and semi-primitive settings (LRMP page 4.06). Reducing summer timber harvest would reduce the potential impact on summer backcountry recreation in localized areas. Since much of the use occurs in primitive, wilderness or other areas not open to timber harvest, the overall potential is reduced somewhat. However, there would be a corresponding increase in potential impact on winter backcountry recreation, especially cross-country skiing and snowshoeing.

**42. Failure to consider the full range of economic and social costs and benefits including the non-timber resources (R19, X2.3);**

See response to 37. To suggest the economic analysis is flawed because it did not consider externalized costs of items 1-16, is well outside the purpose and complexity of the proposed action. Section 1970.3 of the *Forest Service Manual*, states that it is agency policy “to ensure that the degree of analysis is commensurate with the scope and complexity of the proposed action.” The analysis focused on the effects of revising or adding additional protection measures and management guidelines for federally listed endangered and threatened species to those already in the Forest Plan. In regards to the eleven comments that request the Forest Service to determine the value of un-logged forests, these too are well outside the scope and complexity of the proposed action as described above. Whether or not to harvest trees on GMNF is not the purpose of the analysis. A better forum for considering this issue may be during the revision proceedings of GMNF Forest Plan, planned to begin in the fall of 2001. See additional information in response to comment X2.5.

**43. The accuracy of the economic analysis (S5, S6-S6.6, T7, U1, X2-X2.5).**

A comment was received that suggested the economic analysis was misleading because it was based on inadequate data and an outdated economic model. The primary reason County Business Patterns, prepared by US Census Bureau, was chosen as the data source was because the data focused on payroll or wages by industries within Vermont counties. Data from the Bureau of Economic Analysis (BEA) was not used because it focused on personal income, which is much different than payroll or wages. Personal income (as defined by BEA) includes not only wages, but also income from dividends, interest, rent, and transfer payments to persons for which they did not render current services. Examples of transfer payments include retirement and disability insurance benefit payments, medical payments, veterans benefit payments, and family assistance payments. The intent of the economic analysis was to measure changes in “the money passing through society” with varying levels of timber removals from GMNF that resulted from each alternative. From an economic perspective, only marginal changes are relevant. Because no change in dividends, interest, rent, and transfer payments was expected from any alternative, the personal income data in BEA was not used (S5, S6.6)

**44. In response to comment T7, where concerns were expressed that the economic impacts under Alternatives 2 & 3 would be great to the forest industry, this comment is noted and the social/economic effects are described on pages 52-58 of the EA.**

**45. In response to comment U1, which points out that forest products jobs could be jeopardized all for a species where Vermont is at the edge of its range, this comment is noted.**

**46. In response to comments X2 and X2.1, which state that the Forest Service must consider all benefit and costs, not just timber related costs, we believe these comments are incorrect. See response to 37.**

**47. A commenter felt the EA did not assess the impacts of extended timber harvest under the no summer logging alternatives (X2.3).**

The effects of no summer logging (Alternatives 4 and 5) were disclosed on pages 56 and 57 of the EA. These effects address the estimated changes brought about by extending timber sale contracts by 1 or more years.

**48. A commenter suggested that if the Forest Service employed the analytical processes and procedures it recommends, the agency would henceforth determine net public benefits of undisturbed and un-logged forests (X2.5).**

Section 1970.3 of the *Forest Service Manual*, states that it is agency policy “to ensure that the degree of analysis is commensurate with the scope and complexity of the

proposed action.” The EA focused on the effects of revising or adding additional protection measures and management guidelines for federally listed endangered and threatened species to those already in the Forest Plan. Whether or not to harvest trees on GMNF is not the purpose of the analysis and statements requesting Forest Service to assess the economic value of un-logged forests are not within the purpose and need of this analysis. Furthermore, we disagree with the statement that NEPA requires the Forest Service to maximize net public benefits in every management decision made.

As described in the #37 response, Forest Service policy for EA’s is to express the effects in terms of change that would occur in the physical (land, water, air) biological (plants and animals), economic (money passing through society), and social (the way people live) components of the human environment and this EA meets those standards.

Forest Planning efforts are the proper forum to assess effects of management practices that may affect public benefits. For example, in a November 6, 2000 letter to Mr. John Talberth of National Forest Protection Alliance, the Forest Service said “While the concept of net public benefits is widely discussed in the economics literature, and while various statutes and administrative directives suggest that this is indeed an admirable goal of national forest management, the reality is that there is no objective way to determine when this goal is being achieved – too many relevant factors cannot be quantified, let alone expressed in monetary terms. In a democratic society such as ours, the presumption is that net public benefits will be maximized as diverse stakeholder groups compete with one another through the forest planning process [emphasis added].

The Congressional Research Service (CRS) in a paper succinctly expressed this reality on Forest Service timber sales. The paper states, “net public benefits cannot be calculated, and are assumed to be determined through public participation in national forest planning.”<sup>1</sup> When one recognizes this, it becomes apparent that the agency’s public involvement and collaborative processes, not its analytical procedures, are the primary tools by which it can work towards maximizing net public benefits. A better forum for net public benefits of undisturbed and un-logged forests may be during the revision proceedings of GMNF Forest Plan, planned to begin in the fall of 2001.

**49. A commenter remarked that the quality of timber on National Forests is very valuable, due to the Forest Service being able hold onto the timber longer than a private landowner would be able to afford to (U5).**

This comment is noted.

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<sup>1</sup> *Below-Cost Timber Sales: Overview*; CRS Report to Congress; 95-15 ENR; p. 9.

## **Regional Foresters Sensitive Species**

### **50. A question was raised regarding whether the designation of 87 new RFSS will have an important effect on the entire forest plan (A7).**

As noted in the Biological Evaluation (BE) for the EA (p. 119), and the programmatic BE (p. 41), we do not believe that the simple designation of 87 RFSS will have an “important” effect on the entire forest plan or over significant areas. Of the 66 plant species on the list, all have been identified either by the Vermont State Heritage Program or by Jenkins (1981) as species of concern and have therefore been tracked by the Forest, per Forest Plan direction (Appendix E), since 1986. All known occurrences of these species have been documented, and any project taking place in the vicinity of known populations is field evaluated and mitigated as needed to protect the species and habitat.

This conservative approach is consistent with Forest Plan direction, and so an updated list that includes the same species we have been tracking and protecting is not likely to change this approach. Second, as detailed in the programmatic BE (Table 2, pp. 6-13; pp. 20-40) and DEA (Appendix 2, Table 2, pp 102-109), most of the species on the list (74 %; all but one animal) are associated with discrete habitats (e.g. cliffs, streams, ponds, wetlands, vernal pools) that are currently protected in the Forest Plan – for example timber harvesting is not allowed in most of these habitats (see Table 1 in Appendix B). The remaining habitats (enriched northern hardwoods, subalpine spruce-fir, and dry oak woods) have been and continue to be reviewed carefully when projects are proposed in these habitats – these habitats were recognized in the Forest Plan as having potential for species of concern (Appendix E, p. E.07).

### **51. A concern was identified regarding future biological evaluations and mitigation measures and their degree of impact (A8).**

Within the foreseeable future, we do not anticipate significant impacts to forest resources as a result of preparing biological evaluations or implementing mitigation measures. Such activity has been Forest Service policy during implementation of the current Forest Plan; 1987- present (FSM 2672.4), and so is not new to our management. Biological evaluations are a function of the number of projects proposed and evaluated, which has varied unpredictably every year due to swings and shifts in program budgets. The need for mitigation measures is equally unpredictable, as only a small percentage of projects are likely to have RFSS occurrences or habitat. Historically, only a small percentage of projects are actually found to have suitable RFSS habitat or occurrences (see M&E Reports over the past 5-10 years). As all of the 87 RFSS are associated with habitats that are recognized in the Forest Plan as either sensitive or having potential for species of concern, and as such habitats are reviewed during project analysis for suitability and occurrence of any species of concern to the Forest Service or the State of Vermont per Forest Plan (p. 4.37, S&G F2c) and FSM direction, we don’t anticipate that adding new species to the same habitats will lead to significant impacts to resources or management.

**52. A need to develop species-specific management objectives, standards & guidelines and include them in the Forest Plan was identified (S2, A11, A11.1, A11.2, A10.2). Also, there was some confusion regarding the next RFSS entries into the Forest Monitoring Plan (A11.2).**

The programmatic BE (USDA 2000c) conducted a detailed analysis of the 87 RFSS relative to current Forest Plan standards and guidelines (pp 13-40). This document concluded that Plan implementation under current standards and guidelines "...is providing as high a likelihood as possible that the ecological conditions of these habitats are maintained so as to contribute to viability of these species, considering their natural distribution and abundance" (p. 41). Based on current knowledge of the species on the RFSS list, and their habitat relationships, there are no additional actions we can foresee taking, beyond those already described in the Forest Plan and this amendment, which would provide any substantive benefit to these species (see Table in Appendix B; Programmatic BE p. 18).

Because all but one of the habitats associated with these species are either dependent upon physiographic characteristics (e.g. elevation, climate, rock exposure, geology, landforms, peat accumulation) that our current management is not likely to change or create but rather protect, or are associated with natural disturbance regimes and system functions that are either presently maintaining these habitats (e.g. beaver activity in wetlands, wind-throw) or are being reintroduced (aquatic ecosystem restoration) under current Forest Plan management, there is little more than protection that is required at this time to assist these species in maintaining viable populations on the Forest (Programmatic BE pp. 20-40).

In the one habitat we do have where the dominant prehistoric disturbance regime has not returned (natural fire on the western escarpment ecosystem), it would be premature at this time to propose objectives for the species of this habitat, or additional standards and guidelines, other than protection and monitoring which is already provided in the Forest Plan and this amendment (Programmatic BE p. 37). Reintroduction of such a regime needs to be carefully studied due to the risks associated with the steep, cliff/outcrop-dominated terrain, and the needs and tolerances of the species (Programmatic BE pp. 35-38).

Indeed, for the remaining species, it is not only premature to propose objectives beyond those already providing protection in the Plan, it would be arbitrary to do so, as we have no evidence to suggest that any additional activities on our part beyond protection and monitoring will contribute towards species viability (Programmatic BE p. 18).

The state of our knowledge regarding TES species biology and habitat management is continuously evolving. Ongoing TES research conducted within the range of a TES species may provide new and relevant information that will need to be considered during Plan implementation; regular monitoring and inventory itself can also lead to

new understanding of species population dynamics. Preparation of Conservation Assessments (CA) will be the vehicle by which we gather this additional information, if it exists, on RFSS species (FSM 2672.11 – 6a; DEA p. 120). There may be occasions where these assessments will identify the need for additional objectives, standards, and guidelines needed to maintain viability for RFSS species. Such additional measures would be proposed as part of a Conservation Strategy (CS), which would involve a plan amendment and public involvement (FSM 2672.11-6b).

In addition, because many species occur on several Forests, and CAs are prepared for a given RFSS species, habitat or guild across its range in the Region, preparation of CAs in order to develop CSs is not exclusively dependent upon funding and accomplishment on the GMNF. For example, there are 7 CAs currently in preparation by the GMNF for RFSS on the Forest; there are an additional 10 CAs being prepared by other Forests in the Region for RFSS on the GMNF. Currently, about 28% of all RFSS in the Region have CAs that have been completed or are being prepared. It is also important to note that preparing CA's for habitats or guilds will greatly expedite the assessment process, and the Forest and the Region are actively pursuing these opportunities.

Regarding the proposed additions to the Forest's Monitoring Plan for RFSS, as referenced in comment A11.2, the trend data is species and habitat specific, while the status data relates to changes in designations of species as RFSS. Changes in status from undesignated to designated as RFSS will trigger the need for more rigorous trend data, and will be based on the new designation process described in FSM 2672.11 - 4; delisting as RFSS would be based in part on trend data from monitoring as identified in the Monitoring Plan. The changes to the Monitoring Plan proposed on page 15 of the EA include all RFSS species, by either species population or habitat, and so none have been excluded from monitoring.

**53. An objection to the proposal to not list the RFSS in the Forest Plan was raised, suggesting that not including a list was an attempt to avoid future amendments or circumvent NEPA, and that the lack of a list leads to confusion of Forest Service staff (S4).**

We endorse the new planning rule's goal of Forest Plans as "living documents". In addition, we believe that the current amendment as described in the EA is in response to new information and newly identified issues, as expected under the new regulations. However, we do not interpret the living document notion to suggest that changes in FS policy and rules, including new lists, lead to incorporation of such information, verbatim, into plan amendments. The purpose of this part of the new rule is to ensure that new information is considered, and Plans amended accordingly. That is exactly what this amendment does.

We believe that the intent of the new rule is to ensure that we do something with the new information, as opposed to ensuring that amendments simply identify the new information. New information itself is simply information; it does not dictate an

action. It is the people who evaluate the new information, informed by public comment, who suggest the actions. The public comment and alternative development process is in response to what we propose to do about the new information – not the information itself. It would be unnecessary and confusing, and likely a source of annoyance, for the public to be provided an opportunity to comment on an amendment to simply update a list, when in fact the list is outside the scope of public comment.

This list itself is a Regional list, and so it exists for the Forest to work with, regardless of whether or not it is in the Plan. In that sense it is no different than any other FSM update that changes FS policy – we have no option but to respond to the changes. Consequently, we believe a more effective approach to ensuring the public is aware of changes to the list is to build the list into each year’s annual monitoring report, which is a public document (EA p. 120). It has been our intention, as part of the report describe any changes in status to species on the list, and the process for evaluating such changes relative to the Forest Plan. However, this intention is not clearly displayed in the proposed amendment. This requirement is displayed on page 14 of the EA in the 4<sup>th</sup> bullet of changes specific to RFSS; on page 15 of the EA, as the last item to be monitored, in the portion of the table in Forest Plan Appendix C that will be modified as standard and guideline E.2 in Appendix 3 of the EA on page 150, which displays the new language to be incorporated into the Forest Plan per the amendment.

Consequently, in response to this concern, we have adjusted standard and guideline E.2 in Appendix 3 by adding the following sentence at the end: “The annual monitoring report will describe any change to the List, and the process for evaluating such relative to the Forest Plan.” We have also adjusted the Unit of Measure item; in the amended Table C, for RFSS status to read “Forest list and evaluation update,” and the purpose of the monitoring item for RFSS status to read “Determine status of RFSS and Species of Viability concern on Forest.

As to confusion of Forest staff in determining what list to use, the current situation involves a very outdated list in the Forest Plan that neither the Forest nor the public uses for project evaluation (Programmatic BE pp. 18-19). Long ago both the FS and the public realized that the lists changed more frequently than the Plan could be amended, and so both the Forest and the public refer to state lists, the Jenkins report, and other sources of the most current information. In fact, the current Forest Plan requires us to update our plant list with the State’s lists annually (LRMP p. E.05). The RFSS list has undergone several updates, none of which are reflected in the Plan list, but all of which are reflected in BEs and BAs prepared for project reviews. Having a list that accurately reflects current information would be the most helpful tool to project managers and biologists, as well as the public, and it does not require being in the Plan to be effective – as has been demonstrated by our project reviews.

## Threatened, Endangered & Sensitive Species

### **54. Concern was raised regarding effects of future management activities on RFSS and TES species (A9, A9.1, P7.3).**

The EA addresses both broad programmatic effects (EA at 31-32; also EA at 119-120; also Programmatic BE at 17-20) of the changes in the RFSS list, as well as the more case-specific effects of the changes for Indiana Bat, as well as specifics related to habitat types associated with RFSS (EA at 30-33; also EA at 120-134; also Programmatic BE at 20-40). The programmatic effects analysis does provide the analysis of overall impact of the amendment forest-wide. The conclusions of this analysis relative to the importance or significance of the amendment is discussed above related to comment 50.

As the commenter notes, effects of future actions are determined through a biological evaluation, as required under FSM 2672.4, in response to projects when they are proposed. As specific management actions cannot be predicted because they require decisions that have not yet been made, effects analysis at this specific scale would be useless in the context of this amendment. However, we can, and have, analyzed the range of effects that can occur to species given the range of management actions that are supported by the Plan, as constrained by existing Standards and Guidelines in the current Plan. The case-specific effects analyses noted above do just that, and in fact the Programmatic BE (USDA 2000c) clearly describes potential negative effects both in the context of management without constraints (as a baseline for the analysis), and then in the context of the existing Plan with existing constraints (e.g. Programmatic BE pp. 32-34).

### **55. A concern was raised regarding impacts to other TES species (R11, U4).**

The concern as noted in R11 appears to be simply a statement, which is true. We have played down the potential positive benefit of Alternative 4 simply because in practice, our mitigation measures for protection of RFSS and species of concern under the existing Plan (LRMP pp. 4.35-4.37) ensure the same level of protection as that which would be provided in Alternative 4. If protection afforded by winter logging is what is needed at a site for a certain species, then it would be recommended as mitigation; we have never had a circumstance where winter logging recommended as mitigation for protection of a species of concern was ignored. Regarding comment U4, the effects of the proposed action and alternatives on TES species are described in the BE and EA (pp. 27-35).

### **56. A request was made for the Forest Service to take effective action to enhance species viability (S3), and a question was raised regarding whether the proposed amendment will lead to loss of species viability (A5, R11, X10, Y1-Y1.2).**

See responses to 55 above, and 52 under RFSS section.

## Timber Management

- 57. Concerns were raised regarding even-aged vs. uneven-aged management (Q4.1, R4.3, R4.4, R6-R6.2, R10, U3, U3.1, X5-X5.3, X8, X9, Y7). (See responses below to individual letter codes).**
- 58. The following is a response to the comment of “For this reason, the wholesale removal of forest through clearcutting in any of its variations (shelterwood removal or any other term for even-aged management) should cease on the GMNF.” (Q4.1).**

This comment references unknowns related to stress (for Indiana bats) involved with migration and difficulties related to “altered” habitat conditions at the bat’s intended destination. The supposition being that the wholesale removal of forest will add undue stress to the migrants. Seemingly, this concern focuses on two facets: (i) availability of potentially suitable roost sites, in (ii) locations conducive to Indiana bats (e.g., wooded landscapes).

Irrespective of timber management regime (even-aged vs. uneven-aged) this amendment identifies potentially suitable roosting sites for protection, additional to that currently found in the Forest Plan. The amendment gives direction for retention of these potentially suitable sites and the physical protection of these sites. [Found in Alternative 2 thru 5]. Alternative 3 and 5’s directive to retain 5 potentially suitable roost trees in each harvested acre essentially achieve optimal roost tree density – as documented by Romme’s (et al.) Habitat Suitability Index (HSI) Model for Indiana bat. Romme’s (et al.) HSI model discusses the habitat context for maternity roosting sites; indicating a wide range of conditions selected by female Indiana bats – from sites with over 80% canopy cover to sites completely unshaded, along with conditions between these extremes.

Romme’s (et al.) HSI model discusses foraging habitat and displays Indiana bat use/preference in a variety of differing habitat conditions ranging from agricultural croplands through abandoned fields and including floodplain and upland forests. The study referenced by this model shows the wide variety of conditions Indiana bats use for foraging – floodplain forest being most preferred, residential lands the least. Further, this study recommended that suitable roost trees be within .2 miles of deciduous forest cover that has greater than 30% canopy closure and .6 mile from available water. **Clearly, lands managed using even-aged (or uneven-aged) regimes can be tailored to (i) have sufficient potential roost sites, and (ii) be of a size and location fitting within habitat matrix recommendations displayed in the Indiana bat HSI.**

**59. Some commenters stated that the switch to longer rotations combined with unevenaged management, would ensure a continuous supply of big old roost trees as well as high quality sawtimber (R4.3, Y13).**

The major findings of the FWS Biological Opinion do not express concerns about the type of vegetation management occurring on GMNF or rotation ages for forest stands, but rather, focuses upon reducing the risk of harm to individual bats through the *retention and protection of suitable roost trees*. This amendment gives direction for retention of these potentially suitable sites on GMNF and the physical protection of these sites [Found in Alternative 2 through 5].

We have found no scientific evidence that a tree with a specific diameter is a goal for bats, and agree with our EIS findings for the GMNF Forest Plan that the rotation ages used by the GMNF appear to provide for the best range of tree diameters for meeting wildlife and societies needs.

Regarding a continuous supply of suitable roost trees, highlights of the 1997 Vermont Forest Inventory indicate that there are 66,071,000 dead trees located on the 4,629,000-forested acres in Vermont. That equals an average of over 14 dead trees for every acre of Vermont forestland (public lands and private lands combined). This report also describes Vermont's forests, including GMNF forests, as increasing in acreage and maturing.

Based on these reasons and those described in the EA (pages 18-21), we do not believe it necessary to consider this proposed alternative in detail.

**60. Some commenters stated there was no credible basis for the agency claims that it cannot eliminate even-aged management entirely because it is necessary to 'support viable populations of existing native and desired non-native vertebrate species on the National Forest (R6-R6.2, X5-X5.3).**

As displayed in the comment EA (page 19); "there exists no clear documentation, nor evidence from GMNF survey work, that indicate Indiana bats prefer, or benefit from, habitats managed strictly through all-aged silviculture (over those managed through even-aged silviculture)". Response to 57 (see above) discusses capacity for either silvicultural system of timber management to provide quality habitat for Indiana bats. At this point, there exists no compelling reason to consider this significant change, and its associated analyses (as discussed on page 18 of the EA), to the existing LRMP.

- 61. Commenters pointed out the agency has chosen to not consider the alternative of increasing the rotation age of hardwoods combined with uneven-aged management on the national forest, but provides no clear or logical reason for this decision (R10, X9, Y13).**

Reasons for not considering the suggested alternative to increase the rotation age of hardwoods combined with unevenaged management on the national forest was described on pages 19-21 of the EA.

In addition, our response in #59 above may provide further insight as to why we do not believe it necessary to consider this proposed alternative in detail.

- 62. Some commenters supported the EA’s rationale for not seeing a reason to stop even-aged management.**

This comment is noted.

- 63. Some commenters pointed out that shelterwood treatments are needed to regenerate oak and more shade tolerant species (U3.1).**

We agree, using Even-aged Management, specifically the Shelterwood system, is the preferred system for regeneration of intermediate intolerant species like oak (see Forest Plan pages 4.62 and A.04).

- 64. Some commenters stated that the Forest Service should: 1) Not use clearcutting or its variants (shelterwood and seed tree cutting) to log hardwoods, and 2) Maintain individual tree selection on every acre logged to ensure a continuous supply of big, old roost trees for bats and other species. It was felt this would be more compatible with the scenic views and recreation experiences people want for their national forests (Y7).**

As displayed in the comment EA (page 19); “there exists no clear documentation, nor evidence from GMNF survey work, that indicate Indiana bats prefer, or benefit from, habitats managed strictly through all-aged silviculture (over those managed through even-aged silviculture)”. Response to 57 (see above) discusses capacity for either system of timber management to provide quality habitat for Indiana bats. At this point, there exists no compelling reason to consider this significant change, and its associated analyses (as discussed on page 18 of the EA), to the existing LRMP.

Moreover, with every timber sale proposed, our resultant analysis always includes potential effects on scenic views and recreation experiences. If negative impacts are identified, they are often mitigated, or the proposal altered in the form of alternative actions to address these concerns.

- 65. Concern regarding the 300-acre trigger for consultation was identified, specifically that that is not anywhere near the amount of summer activity that**

**should be happening to meet the goals for vegetation, recreation and wildlife habitat management under the Forest Plan. For this very small amount of acreage to become a standard that triggers consultation without further survey is not appropriate P5).**

One goal for analysis of program effects to TES biota is to reflect the situation at hand, as accurately as we can. We believe asking the US Fish & Wildlife Service (FWS) to consider our assessment, using an average level of management (for all activities) best reflects the present situation. However, the 300 acre limit may be exceeded without consultation if surveying (following Fish and Wildlife protocols) of individual project areas does not detect any Indiana bats (see page 12 of EA).

**66. Eliminating summer harvest was raised as an issue (A13, Q12, R4.3, U2).**

See response under #37.

**67. Issues were also raised regarding the rotation age of hardwoods (R4.3, R8, R10, X7, Y13).**

**68. More specifically, “Several statements appear in the EA expressing the USFS’ belief that there is insufficient evidence for it to conclude that: (1) Indiana bats prefer or benefit from areas managed using uneven-aged versus even-aged silviculture (Draft EA, pp. 18-19); (2) Indiana bats prefer or benefit from bigger, older trees resulting from timber management on longer rotations (Draft EA, p. 19); and (3) Indiana bats would be harmed less by winter logging than by summer logging (Draft EA, p.30)” (R4.3).**

For statement #1, see our response in #24.b and #59. The major findings of the FWS Biological Opinion do not express concerns about the type of vegetation management occurring on GMNF or rotation ages for forest stands, but rather, focuses upon reducing the risk of harm to individual bats through the *retention and protection of suitable roost trees*. This amendment gives direction for retention of these potentially suitable sites on GMNF and the physical protection of these sites [Found in Alternative 2 through 5].

Alternative 3 and 5’s directive to retain 5 potentially suitable roost trees in each harvested acre essentially achieve optimal roost tree density – as documented by Romme’s (et al.) Habitat Suitability Index (HSI) Model for Indiana bat. Romme’s (et al.) HSI model discusses the habitat context for maternity roosting sites; indicating a wide range of conditions selected by female Indiana bats – from sites with over 80% canopy cover to sites completely unshaded, along with conditions between these extremes.

Romme’s (et al.) HSI model discusses foraging habitat and displays Indiana bat use/preference in a variety of differing habitat conditions ranging from agricultural croplands through abandoned fields and including floodplain and upland forests. The

study referenced by this model shows the wide variety of conditions Indiana bats use for foraging – floodplain forest being most preferred, residential lands the least. Further, this study recommended that suitable roost trees be within .2 miles of deciduous forest cover that has greater than 30% canopy closure and .6 mile from available water. Clearly, lands managed using even-aged (or uneven-aged) regiments can be tailored to (i) have sufficient potential roost sites, and (ii) be of a size and location fitting within habitat matrix recommendations displayed in the Indiana bat HSI.

For statement #2, see our response in #82. To be perfectly clear, the major findings of the FWS Biological Opinion do not express concerns about the type of vegetation management occurring on GMNF or rotation ages for forest stands, but rather, focuses upon reducing the risk of harm to individual bats through the *retention and protection of suitable roost trees*. The GMNF amendment gives direction for retention of these potentially suitable sites on GMNF and the physical protection of these sites [Found in Alternative 2 through 5]. The amendment purposes to retain and protect quality potential roosting sites, irrespective of silvicultural consideration – including rotation age. We believe Plan revision as the appropriate forum for discussions on timber management rotation ages.

For statement #3, our updated BA discusses in detail, the relative levels of direct harm associated with all management activities, as does the BO from the FWS. The point of discussion appearing on page 30 (EA) is that, taking all information into account (including FWS' terms and conditions for reasonable and prudent measures), the difference in predicted levels of direct harm (associated with summer vs. winter management) are so nearly alike as to be discountable.

**69. General comments were made on the need for old Growth (R8, X7)**

The GMNF Plan decision (1987) stated that old growth will occur in Wilderness, National Recreation Areas, Management Area 6.1, and in some special areas, amounting to 100,000 acres. Any additional needs for old growth will be discussed in the context of Forest Plan revision.

**70. Some commenters said protection of riparian areas needs to be considered, specifically not to log in broad (300 or more feet wide) corridors along streams or other riparian areas to protect important foraging and roosting habitat for bats, provide important habitat and travel corridors for other wildlife, and promote high water quality and fisheries habitat (Y6, Y6.1).**

We concur that riparian corridors are important to a variety of biota, including Indiana bats. However, the elimination of logging options from these areas places undue restriction(s) to broad management goals. Romme's (et al.) HSI model clearly establishes that a completely closed canopy is not optimal conditions for either Indiana bat foraging or roosting. We believe it appropriate to retain management

options that can better habitat conditions, the ability to selectively remove trees being one of those important options.

**71. Land suitability was also a concern (U10).**

This comment references discrepancy between Table A.02 in the Forest Plan, and comment EA, which describes GMNF as having 141,000 acres of commercial forest land. Table A.02 was developed in 1986 when the forest contained 325,400 acres. Comment EA describes forest today at 374,134 acres due to land acquisition. “Commercial forest land” (as described on page N.05 of Forest Plan) has increased from 122,000 acres (Table A.02 of Forest Plan) in 1986 to 141,000 acres in 1999 (FS Biological Assessment for TES – 1999).

**Other Issues**

**72. A concern was expressed regarding the protection of fuel sources and their effect on fire potential (T4).**

As discussed on page 37 of the EA, the significance of increasing the minimum retention of four wildlife trees per acre to five trees per acres is limited because of the relatively small acreage of the forest that receives timber management activities. Therefore, effects of this change would not add significantly to any additional fuel loading from the 1998 Ice Storm. This is because any fuels that occurred from the ice storm have significantly rotted due to high moisture conditions in the forest and time since the ice storm and are not a threat. Normally, treetops and branches resulting from timber harvesting decompose within 3 to 5 years. The results of reserving an extra wildlife tree per care on these lands is not thought to create any significant change to the fuel loading or create any unusual way for fire to spread.

Wildfires on the GMNF are unusual, small in size, and occur mostly in lower elevations, for a few weeks period in spring and fall. The character of these fires are that they burn light fuels like leaves and grasses and are quickly extinguished by cooperating Volunteer Fire Depts. or GMNF staff. Since Alternative 3 will not produce a significant change to the number of dead trees that occur now in the forest, it is not likely that there would be a measurable, increased risk of fire spreading due to flaming dead trees falling across streams.

**73. An issue was raised regarding the propagation of insects and diseases due to retention of old, damaged, diseased or malformed trees (T5).**

Since the total annual amount of timber harvesting relative to the whole GMNF is small, we believe implementation of Alternative 3 would not lead to significant propagation of disease and pests. The greatest insect and disease problems on the GMNF come from impacts related to defoliators such as gypsy moth, forest tent and saddled prominent caterpillars. These insects eat leaves and affect tree vigor. If stresses such as timber harvest or drought occur within two years of defoliation, tree

mortality and secondary pathogens such as *Armillaria mellea* (shoe string root rot) can occur. We work annually with the Forest Service's State and Private Forestry Branch and the State of VT to conduct aerial and ground surveys to identify outbreaks of insects and disease. We then plan around outbreaks to suppress as appropriate or salvage timber as appropriate.

While harvest activities would be guided by standards and guidelines that require retention of slightly more wildlife trees per acre, this does not mean that we would not practice good forestry. All trees have value in the forest. Indeed, evidence of insects and disease indicate that natural systems are working and the forest is "healthy".

The affects of Alternative 3 would still allow for removal of old, damaged, diseased or malformed trees that meet minimum product standards, according to marking instructions after wildlife tree needs are met. It would still allow us to improve the residual stand by thinning and removing trees to address stand concerns related to spacing, quality and defect. We would still conduct forest health monitoring by assessing insect and disease outbreaks and take action as needed.

We are not aware of any existing insect or disease condition that would be inflamed by increasing wildlife reserve tree numbers from 4 to 5 trees per acre. We do not have any insects or disease that are unique to GMNF and would spread out to private land. When insects and disease do affect the National Forest, they tend to be affecting adjacent private lands in the same way, at the same time, as well.

**74. A concern was raised regarding impacts to future land acquisition on the GMNF (U6).**

Habitat requirements for RFSS are detailed in the programmatic BE (Table 2; pp. 20-40). Many habitats associated with these species are currently protected either as federal, state, or private conservation lands. The Forest Plan has identified protection of TES species as one objective for land acquisition (LRMP p. 4.79). However, as the habitats for these species are the same as previously identified in the Forest Plan for species of concern (LRMP p. E.07), and as no change in land acquisition goals are identified in this amendment, it is unlikely that there will be a change in emphasis for land acquisition.

**75. An issue was raised regarding the focus of the National Forest in providing what is not available elsewhere, in particular the notion that clearcutting is required to maintain viability (R7).**

We know of no plant or animal species identified as RFSS that requires clearcutting to maintain its viability as a species, or be retained as a viable component of the GMNF's biota. The question of providing what private lands cannot is met by this amendment, in that it provides management guidance through additional protection

measures to maintain viable populations of TES species – something that we are well suited to do.

See also pages 18-19 of the EA, which explains how the GMNF is managing to provide a variety of wildlife habitats, (including endangered species) to meet current Forest Plan goals.

**76. Education of forest staff and users was identified as a need (S7).**

We have been and continue to provide training and mentoring for those forest staff and users interested in TES species conservation. The GMNF is member and participant in numerous organizations concerned with biota of the northeast US, including the New England Plant Conservation Program, Keeping Track, Northeastern Bat Working Group, Partners in Flight and VINS' Woodland Bird Monitoring Program (among others). Our participation in these conservation groups' efforts gives us tremendous insight into state-of-the-art knowledge of our environment; information that is, in turn, passed along to Forest staff and partners. The GMNF is increasing "biologist" staffing; most recently we hired our first permanent botanist. We anticipate that staffing increases will better assist our future efforts in data collection, monitoring, and partnership coordination; all designed to deepen, and share, our environmental knowledge.

Page 28 of the EA displays ongoing educational efforts; page 29 and 30 displays our beliefs about relative strength of each alternative with respect to enhancement and distribution of information specific to Indiana bats. Alternative 3 and 5 address recommendations of the FWS (found in the BO, 2/16/00) for training of GMNF employees and for development of outreach programs.

We believe the either Alternative 3 or Alternative 5 give the strongest support and direction to continuing effort to enhance and share knowledge about TES species.

**77. Concern was expressed regarding the inventory and monitoring program (A4.5, A14, A14.1, A14.2), and the additional resource protection objectives and monitoring recommended in the proposed action and alternatives.**

If one starts with the premise that TES species are those most at risk for loss of viability, then any monitoring program for species viability should at least consider monitoring of these species and their habitats, and in a fashion that gives the highest likelihood of providing trend data for future determinations of risk to viability, as well as for evaluating actions that could be taken for enhancing populations. The proposed monitoring plan (DEA p. 15) attempts to do just that, providing monitoring guidance for RFSS species and habitats where none currently exists in the Forest Plan. In fact, the monitoring guidance provided in the proposed amendment fills in a critical missing gap in monitoring the effects of our management on the viability of species (DEA p. 120; Programmatic BE p. 17, 19), which is a goal of the MIS program.

Regarding inventory, as noted in the Programmatic BE (p. 19-20), we have been conducting inventories and evaluating habitat relationships for the past 15 years. Every iteration of the process provides further insight into these relationships, and helps us to further refine our models. It is clear, as noted in the Programmatic BE (p. 19), that a routine annual program, combined with constantly improving understanding of habitat relationships, will be more successful at locating new populations. As noted in the Programmatic BE (p. 20), we have been conducting inventory on the Forest, in cooperation with the VNNHP, of areas with high and moderate potential for rare species and important natural communities. It is clear that the potential habitats for these species do not constitute anywhere near the entire 375,000 acres of the Forest, nor are most of these habitats at risk (EA, pp. 102-109). The estimate of acres was based on historical inventories accomplished and reported over the past 5 years in Monitoring and Evaluation Reports and internal reporting systems. The estimate recognizes the limits imposed by funding, as well as the limits on volunteer interest.

Regarding the proposal to complete 1 Conservation Assessment (CA) per year, this estimate recognized not only the funding realities we face in terms of a Regional list of 665 species, and the low level of risk species tend to face on this Forest in terms of our management actions, it also recognized that because the GMNF shares species with other Forests, preparing CAs for GMNF species is not limited by our own accomplishments (see discussion above for comment S2/A11, second paragraph). We currently do not believe that these species are limited by the lack of CAs, and the Programmatic BE has demonstrated that these species are adequately protected without any CAs prepared for them.

The Eastern Region of the Forest Service in FSM 2672.11 – 7, identifies the need to prioritize preparation of these documents, with a focus on high priority species. Without such guidance in place prior to 2000, there is little to go by for estimating how GMNF species will rank in priority with other species, or how long it takes to complete these assessments, and how many will be prepared by other Forests. Our approach has been to plan on preparing at least one/year, with the hope that more will be done when funding and priorities provide the opportunity. We also included in the objective that the CAs can be prepared for groups as well as single species, which will greatly accelerate the number of RFSS covered by CAs (see also response to comment 52). We will report on and monitor that number, and if after several years it appears unrealistically low, we'll amend the Plan to change the figure. Currently, 17 CAs are being prepared for RFSS on the GMNF. It should be noted that the Region has dedicated significant funding over the past 2 years for this effort; there is no guarantee this funding priority will continue.

**78. A concern was identified regarding potential impacts to adjacent private land (G2).**

We interpret this concern to be only related to the Indiana bat, which is the only species protected by ESA being addressed by this amendment. ESA requirements

differ between such entities as “sister agencies “ (e.g., USDA – Forest Service) and private citizenry. In essence, Federal land management agencies are required to have as primary role the protection and conservation of listed species – private citizenry have requirement to do no harm to listed species. Private citizenry requirements are not affected by GMNF actions. However, recognizing that one goal of GMNF management is to learn more about the species, new information may lead private citizenry to adjust their respective actions.

**79. Concerns were raised regarding violations of laws and regulations (R4.5, P1).**

Some commenters believe we have gone too far, and others not far enough towards meeting all applicable laws and regulations. However, this proposal represents our best efforts to comply with the letter and intent of all applicable laws and regulations.

**80. A comment was received that the public health impacts from Indiana bats in the form of rabies and histoplasmosis were not addressed in the EA (T8).**

In response to this concern, a staff member from Animal and Plant Health Inspection Service, an agency under USDA, was contacted. In essence, disease risk that bats present to humans is very limited (rabies, histoplasmosis), but a number of people (~2/year) continue to die from bat rabies. GMNF staff in direct contact with bat management are aware of health risks, trained in "exposure-avoidance" and pre-treated for the health risk factors.

However, we believe the GMNF's program to conserve Indiana and/or eastern small-footed bats holds virtually no potential to alter general population risk of exposure to bat rabies. However, this may be an opportunity for the GMNF to "conduit" state-of-the-art information of how our citizenry can protect themselves from animal borne disease, via our web-page, or through pamphlet development and distribution.

**81. Nine individuals demonstrated their concern about the restriction of forest harvesting on the Green Mountain National Forest and throughout the country. Eight responded in favor of the Alternatives 2 and 3, which they said identified the option to manage trees for a variety of products and social needs. All individuals recognized the importance of protecting sensitive and endangered species in the area. Eight stated they support the standards and guidelines developed by the Forest Service in collaboration with the State and Federal Fish and Wildlife Services for the conservation of these species. They suggested, however, that these guidelines for preservation do not warrant the abolition of summer harvesting altogether (I, J, K, L, M, N, O, W and Z.1).**

These comments are noted.

