

# **Environmental Assessment**

## **Springs Valley Trail Construction Project**

**Orange County, Indiana  
Tell City Ranger District  
Hoosier National Forest**

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Abstract: This environmental assessment addresses a proposal to construct a 10.75-mile multiple-use trail and trailhead parking lot in the Springs Valley area.

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# Preface

The Hoosier National Forest completed a comprehensive land management planning effort with the publishing of the Hoosier National Forest Land and Resource Management Plan (Forest Plan) in 1991. During this effort we made a concerted effort to seek out public involvement. With the public's help we identified issues and alternative approaches to managing the Hoosier National Forest. An environmental impact statement (EIS) was prepared in conjunction with the Forest Plan to document the analysis. The EIS was developed in accordance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality implementing regulations for NEPA.

The approval of the Record of Decision for the final EIS on April 8, 1991, represents the first level of decision making related to land and resource management planning. This decision determined the desired future condition of the Hoosier National Forest and established the guidance under which future projects would be implemented.

The second, and final, level of decision making focuses on the analysis and implementation of management practices and projects designed to achieve the goals and objectives of the Forest Plan. This level involves site-specific analysis to meet the requirements of NEPA and implementation of projects to address specific on-site resource needs.

The environmental assessment (EA) for the Springs Valley Trail Construction Project documents the site-specific analysis for project implementation at the second level of decision making. This EA was initiated as a result of environmental analysis of the proposed project in accordance with NEPA procedures. These procedures afforded interested and affected parties the opportunity to participate. The EA was prepared outlining the alternatives for carrying out the project, noting any needed mitigation measures, and predicting the relevant environmental consequences. The decision maker may now consider the results of this analysis in making an informed decision.

In the past, trail projects such as this one have been categorically excluded from lengthy documentation in an environmental impact statement (EIS) or environmental assessment (EA), and were instead documented in a decision memo. On August 27, 1998, the Seventh Circuit Court of Appeals in Chicago, Illinois (*Rhodes v. Johnson*, No. 97-3687, slip op.) interpreted the Forest Service Environmental Policy and Procedures Handbook (FSH 1909.15) as demanding "that the presence of extraordinary circumstances requires the Forest Service to prepare an environmental assessment" (U.S. Court of Appeals 1998). Extraordinary circumstances listed in Chapter 30 of FSH 1909.15 include steep slopes or highly erosive soils, threatened and endangered species or their critical habitat, flood plains, wetlands or municipal watersheds, congressionally designated areas, such as wilderness, etc. The court's ruling, that the mere presence of any of these conditions within the project area would necessitate the preparation of an EA, differs from the Forest Service's interpretation of that section. However, until the Handbook is revised, we intend to write an EA when any of the conditions listed as extraordinary circumstances are present in the project area.

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# **Purpose and Need for Action**

## **Introduction**

This environmental assessment (EA) displays the direct, indirect, and cumulative effects of the proposed action, a no-action alternative, and a hiking-only alternative. The proposed project involves construction of a new trail and trailhead parking lot.

The primary responsibility of the United States Department of Agriculture (USDA) Forest Service is to provide healthy ecosystems for Americans, present and future. While so doing, we sustain the vitality and diversity of the Hoosier National Forest in perpetuity and provide many benefits.

The proposed project implements the USDA Forest Service Natural Resource Agenda. It addresses sustainable forest ecosystem management in the areas of watershed health and restoration and recreation. Specifically, this project would help sustain healthy watersheds by constructing a well-designed trail that protects soil and water resources and offers an alternative to the practice of illegal riding in environmentally sensitive areas. This project would provide quality recreational opportunities by offering additional trail opportunities in a state with limited public land, limited outdoor recreation opportunities, and few trails offering a longer distance experience. This project also fulfills goals established in the Hoosier National Forest Trail Program finalized in 1995 with broad public participation (U.S. Department of Agriculture, Forest Service 1995a).

## **Purpose of the Proposed Action**

The purpose of this proposal is to provide a multiple use recreational trail for hikers, horse riders, and mountain bicyclists in the Springs Valley area while protecting the soil and water resources of watersheds involved.

## **Need for the Proposed Action**

In 1992, the Hoosier National Forest initiated an effort to establish a forest-wide Trail Program that would provide direction for the existing and future trail system. Following a two-year public involvement process, the final Trail Program was issued in February 1995 (U.S. Department of Agriculture, Forest Service 1995a). This program identified possible new trails that could be added to the system, based on public demand and feasibility from an economic and environmental perspective. The 1995 Trail Program includes a proposal for a multiple use trail around Springs Valley Lake near the Springs Valley Recreation Area to supplement two nearby trails of relatively short length. It is noted that the 1995 Trail Program was not a site-specific decision, but rather self-imposed guidance that the Forest felt was needed to protect ecosystems while providing a recreational opportunity. The public helped formulate that guidance, and the Forest has used that guidance when making site-specific decisions about trails.

There is a need for hike, horse, and bike trails in the Hoosier National Forest. An analysis of current trail permit sales indicates approximately 10,300 horse rides and 6,300 bike rides occurred from the period January 1 through October 31, 2000 (Wadzinski 2000a). Estimates in the Forest Plan Final Environmental Impact Statement show trail-based use at 46,431 Recreation Visitor Days (U.S. Department of Agriculture, Forest Service 1991d, p. 2-19). A Recreation Visitor Day is defined as a 12-hour visit by one person.

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) also documented the demand for activities that involve the use of trails in Indiana (Indiana Department of Natural Resources, Division of Outdoor Recreation 2000). The SCORP listed walking/hiking/jogging as the most popular outdoor recreation activity in the state while bicycling ranked 9th and horseback riding ranked 20th. The SCORP also listed activities that people said they would like to participate in if more facilities were available. In that case walking/hiking/jogging again ranked first, bicycling tied for 7th, and horseback riding ranked 11th. Information in the Indiana SCORP is consistent with national trends indicating an increase in demand for all three activities (Cordell 1999).

Trailhead parking is needed to provide access for trail users in general and horse trailers in particular. The trailhead parking lot would be located at the junction of the proposed trail with County Road 24, rather than at the Springs Valley recreation area, since we have fewer concerns about safety and water quality at the proposed site (see map, page iv).

## **Proposed Action**

The Hoosier National Forest proposes to construct a 10.75-mile multiple-use trail and trailhead parking lot near the Springs Valley primitive recreation area in southwest Orange County (see map, page iv). The proposed trail route encircles the 141-acre Springs Valley Lake and extends east then south to the location of the proposed parking lot beside County Road 24. The trail then crosses the road, proceeds south, then east and north, where it terminates at County Road 24. The proposed route avoids access to Springs Valley Lake, although views of the lake from several locations would be possible. Watering opportunities for horses would exist at three stream crossings. The proposed Springs Valley trail would provide an opportunity for longer trail rides or hikes, when combined with the nearby Lick Creek and Youngs Creek trail systems.

Much of the trail would be constructed with heavy equipment such as a small bulldozer, front end loader, and dump truck. The trail would be constructed approximately eight feet wide, in accordance with Hoosier National Forest supplemental trail standards (U.S. Department of Agriculture, Forest Service 1997), but it would be allowed to grow in from the sides and would be maintained at a width of about five feet.

About 70 percent of the trail would be hardened using number 73 or finer grade gravel. Trail construction would focus on providing proper drainage using rolling dips, side slopes, ditching, and possibly two small retaining walls. The trail gradient would be less than 10 percent, although it may be necessary to have short sections with steeper grades and additional mitigation measures. The trail layout avoids trees as much as possible, but some trees would need to be removed during trail construction.

The proposed trailhead parking lot would accommodate three to five vehicles pulling large horse trailers. The parking lot would employ a pull-through design. It would be constructed by clearing and hardening a relatively flat wooded area, approximately 200 feet by 300 feet. Trees 6 to 16 inches in diameter would need to be removed to construct the parking lot. The parking lot is intended for day use only. This parking lot would be the only authorized parking area for horse users. The parking lot near the Springs Valley Lake would be signed to prohibit horses.

Signs would be posted at the trailhead and plastic posts or colored symbols on trees would be used along the trail. Trail etiquette messages would also be posted indicating which user group should yield when another user group is encountered. An interpretive sign would be posted at the trailhead, describing the significance of the Vincennes/Buffalo Trace in the early history of Indiana. The proposed trail traverses a portion of this historic trace.

It is noted that this trail has been awarded partial funding through a grant from the Recreational Trails Program administered by the Indiana Department of Natural Resources. That office has been notified in writing that acceptance of the grant is dependent upon a decision regarding this environmental assessment (Wadzinski 2000b).

## **Mitigations Included in the Proposed Action**

To protect soil and water quality, standard mitigation measures applicable to the construction of roads and trails will be used, as described in Appendix K of the Forest Plan (U.S. Department of Agriculture, Forest Service 1991c, K-1 to K-3) and the Forest Service Trails Management Handbook (FSH) 2309.18 (U.S. Department of Agriculture, Forest Service 1991a). Best management practices will also be used. Guidance for streamside management will be followed in accordance with direction in Appendix J of the Forest Plan (U.S. Department of Agriculture, Forest Service 1991c, J-1 to J-6).

Specific mitigation measures applicable to the proposed action, hiking-only, and the no-action alternatives are discussed in the environmental effects section and listed in Appendix B of this document. Mitigation measures to protect soil and water resources, rare species of plants and animals, and potentially significant heritage resources are included.

## **Decision to be Made**

The decision to be made is whether to construct the Springs Valley trail and trailhead parking lot as a multiple-use trail, as a hiking-only trail, or not at all.

## **Forest Plan Background**

The Forest Plan was adopted to meet the requirements of the National Forest Management Act (NFMA) of 1976. The proposed project is consistent with the management direction and guidance found in the Forest Plan. Much of the proposed Springs Valley trail would be constructed in Management Area (MA) 7.1, which includes recreation areas. Forest Plan guidance for recreation use in MA 7.1 states: "Hiking, horse, mountain bicycle, interpretive, and service trails may be provided and will be maintained to a high standard" (U.S. Department of

Agriculture, Forest Service 1991c, p. 2-47). The remainder of the trail and the trailhead parking lot would be constructed in MA 2.8, which includes general forest areas in scattered blocks of National Forest System (NFS) ownership. Forest Plan guidance for recreation use in MA 2.8 states: "Hunting, hiking, horseback or other pack stock use, mountain bikes, and other activities like bird watching, picking berries and mushrooms and other forest products, will be emphasized." Guidance for MA 2.8 also states: "Dispersed or developed trailheads may be provided." It further states, "Average trail density will be 2.5 miles per square mile or less." (USDA Forest Service 1991c, p. 2-33).

## **Other Related Projects**

The Hoosier National Forest has experience with similar trail projects. For example, Midwest Trail Ride, Inc. submitted an application for a special use permit to build and maintain trails on National Forest System lands. An environmental assessment (EA) was prepared to document the analysis of that proposal and several alternatives (U.S. Department of Agriculture, Forest Service 1996a). That EA found no significant effects on the environment for that type of project. Similarly, an EA was prepared for Amendment 4 for the Forest Plan and addressed management guidelines for trails (U. S. Department of Agriculture, Forest Service 1994). That EA also found no significant effects.

## **Other Projects in the Proposed Project Area**

Maintenance of nearby designated trails at Youngs Creek and Lick Creek.  
Maintenance of the Springs Valley Recreation Area.  
Maintenance of the Springs Valley Lake dam.  
Maintenance of forest openings.

## **Issues Related to the Proposed Action**

Issues and management concerns related to the proposed action were identified by reviewing Forest Plan direction for the area, and by contacting interested and affected groups and individuals and Forest Service employees. Public comments for this project were requested by a scoping letter sent to 1,021 individuals and organizations on February 18, 1998. We asked the public to inform us of any special conditions or resource concerns. The public was given the opportunity to comment on any issue of concern, to include environmental, heritage, and social issues. The proposal was also announced in the February 1998 issue of the *Hoosier Quarterly* with updates published in the May 1998, August 1998, November 1998, February 1999, November 1999, February 2000, May 2000, and August 2000 issues. Additional input was received in response to a pre-decisional EA dated December 16, 1999 that was made available for review prior to making a decision. Three hundred ten organizations and individuals were notified or provided a copy of that pre-decisional EA.

For the initial scoping effort, two form letters from 43 individuals, one petition, and eleven individual responses were received. Each scoping response was reviewed for issues and concerns related to the proposed project. Four issues were identified in the scoping responses, as well as other comments, suggestions, and questions which are addressed in Appendix A.

In response to the December 16, 1999 pre-decisional EA, 24 responses were received along with 67 letters that appeared to be from one or more schools in the French Lick area. These letters had essentially the same message and were treated as a form letter. Each scoping response was reviewed for issues and concerns related to the proposed project. An additional issue, gravel on trails, was identified. Comments, suggestions, and questions resulting from the December 16, 1999 EA are addressed in Appendix D.

### **Issue 1: Trail use concerns**

Some respondents voiced concern about various aspects of trail use. One person expressed concern about mixing types of uses on one trail, and another person was concerned that certain uses would create muddy conditions on the trail. One respondent didn't feel the trail was needed, and another wanted more hiking-only trails.

### **Issue 2: Traffic and parking concerns**

One person expressed concern about the trail causing increased traffic by all-terrain vehicles (ATV's) and horses on local county roads. Another respondent wanted to be sure the parking lot would accommodate large horse trailers.

### **Issue 3: Trail benefits**

Some respondents pointed out that construction of the proposed trail could help alleviate overuse of other trails. Others commented that several user groups could benefit simultaneously from the trail. Still others noted benefits such as education and appreciation of the out-of-doors resulting from this project.

#### **Issue 4: Concern about the use of gravel on trails**

Many respondents voiced concern about the use of gravel as the tread surface for this project.

#### **Issue 5: Pollution concern for adjacent landowner**

An adjacent landowner expressed concern that runoff from horse manure would contaminate his property.

## **Alternatives**

### **Process used to develop alternatives**

The interdisciplinary (ID) team conducted a field tour of the proposed route and parking area on January 29, 1998 and discussed the proposal, potential effects, and possible alternatives. The ID team reviewed the scoping responses during the week of October 4, 1999 and identified issues related to the proposed project and possible alternatives to address the issues and concerns. The ID team initially determined that the four issues could be adequately addressed by two alternatives. An additional issue and an additional alternative were added after public input was received from the pre-decisional EA of December 16, 1999. The proposed action is called Alternative A; the no-action alternative is called Alternative B, and the hiking-only alternative is called Alternative C. All three alternatives are consistent with the Forest Plan.

### **Alternative A (Proposed Action)**

As described in the purpose and need section of this document, Alternative A (Proposed Action) would involve construction of a 10.75-mile multiple use trail and trailhead parking lot in the Springs Valley area. This alternative addresses issue 2 (parking and traffic concerns) and issue 3 (trail benefits).

### **Alternative B (No Action)**

Alternative B (No Action) does not implement the proposal. Alternative B responds to issue 1 (trail use concerns), issue 2 (traffic and parking concerns), and issue 4 (pollution concern from adjacent landowner).

### **Alternative C (Hiking Only)**

Alternative C (Hiking Only) would provide for construction of the trail on the same route, but for hikers only. Much of the project would be identical to that described above under the Proposed Action (see page 2) but with the following differences. The tread surface would generally be natural soil except in problem areas where spot gravelling may be necessary. The trail tread and route would generally not be constructed by a bulldozer, but rather with a hand crew or a small piece of specialized trail equipment such as a mini excavator with a 48 inch blade. Heavier equipment might be used only occasionally if a particularly difficult task was encountered such as moving large boulders. The trail clearing width would be 48 inches and the clearing height

would be 8 feet. The tread width would be approximately 18 to 24 inches after construction disturbance settles. The parking lot would be built to accommodate just two cars and the Springs Valley Recreation Area would serve as the main access point. Alternative C does not meet the purpose and need to provide a multiple-use trail. This alternative responds to issue 1 (trail use concerns), issue 2 (traffic and parking concerns), issue 3 (trail benefits), and issue 4 (concern about use of gravel).

## **Alternatives not considered in detail**

The ID team considered other possible alternatives that might be used to address the issues and concerns about this project. However, these alternatives were dropped from detailed consideration, as discussed below.

### **Alternative D - Construct separate trail for each user group:**

Issue 3 (trail use concerns) could have been addressed in part by offering separate trails for hikers, mountain bikers, and horse riders. However, the land base of the area is considered much too small to support three trail systems, and the cost would be prohibitive due to the need to construct and maintain three trails instead of one. Furthermore, this issue was addressed during a two-year public involvement process that resulted in a forest-wide Trail Program in 1995 (U.S. Department of Agriculture, Forest Service 1995a). When it became apparent that the Hoosier National Forest did not have enough land to provide a separate trail system for each type of use, the forest users at that time said they would rather share trails with other user groups than have fewer trails dedicated to single uses. Since that time, it has been Hoosier National Forest policy to provide multiple-use trails for horse riding, mountain biking, and hiking, and to promote user etiquette so that various user groups can safely share the limited trail resources.

### **Alternative E - Use abandoned hiking trail:**

During the initial analysis, the ID team discussed the possibility of using a 5-mile abandoned hiking trail around the lake that was used prior to NFS ownership. Upon field review, the ID team determined that the route would not be acceptable as a multiple-use trail, due to steep slopes, proximity to the lake, and the short length. However, some segments of this trail are included in the proposed trail (Alternative A).

### **Alternative F - Eliminate or reduce the use of gravel as a tread surfacing material:**

Evaluation of the scoping responses to the December 16, 1999 EA indicated much concern about the use of gravel as a tread surface. Therefore, elimination or reduction of the use of gravel was considered as an alternative.

One way to eliminate the use of gravel is to simply use the natural soil as the trail tread. This is not considered to be acceptable based on the poor condition of Hoosier National Forest trails before hardening techniques were used. This was the case prior to the Forest's 1995 Trail Program, when most of the Forest's trails were suffering from severe soil and water impacts. The 1995 Trail Program was developed in part as a response to those impacts. Tread hardening with

gravel has been completed on trails since that time and has greatly reduced that problem (Wadzinski 1998). In addition, the Forest Plan Draft Environmental Impact Statement identifies installing tread surfacing such as gravel and other materials as a trail maintenance activity (U.S. Department of Agriculture, Forest Service, 1990, p. 4-98). The Forest Plan also permits hard surfaced trails (U.S. Department of Agriculture, Forest Service, 1991c, p. 2-18).

Other agencies also do not use native soil tread where impacts are great. For example, gravel is used extensively at the Harrison Crawford State Forest and Brown County State Park. Also, the Hoosier National Forest recreation and engineering teams visited the National Park Service Big South Fork Recreation Area in October 1998. That area is very similar to the Hoosier National Forest and is very popular with horse riders, mountain bikers, and hikers. The use of native tread was discussed and hardening techniques were observed. National Park Service staff advised and demonstrated that graveling is the only method found to adequately protect soil and water resources on trails where impact is great.

Another possibility is to use a natural soil tread surface and close the trail during the wet season (late fall through spring) and on wet days during the rest of the year. This could work because impacts are generally minimal during dry times. However, weather driven closure is not considered practical because it would be nearly impossible for limited Forest Service staff to frequently check each segment of trail to see if conditions were dry enough to allow use. This would also be a severe inconvenience to users, especially to those who traveled long distances only to have the trail closed due to wet weather. Also, such a policy would be difficult to enforce. A seasonal closure was in effect for the German Ridge trail during the early 1990's and found to be unsuccessful as evidenced by severe erosion problems that continued to occur. Much of that trail was recently graveled and now supports all weather use with few soil and water impacts (Wadzinski 1998). Public participation during the development of the 1995 Trail Program showed very strong support for year around use.

The use of geotextiles was also considered as a way to eliminate gravel. Geotextiles do not by themselves protect the soil and generally require covering to function as intended (Indiana Department of Natural Resources 1992). A soil covering would suffer the same impacts from trail users and would still be subject to erosion, and gravel would ultimately be needed to protect the integrity of the geotextile. Geotextiles provide opportunities to improve subsurface drainage in muddy, wet areas. Geotextiles could be used in areas on this trail on a case-by-case basis, but it is very unlikely they would eliminate the need to use gravel.

Other tread surfaces were also considered. Possibilities include mulch, wood chips, kitty litter, and a chemical substance known as a soil binder. Mulch and wood chips would degrade within a season and are not practical. Kitty litter is also considered impractical due to the difficulty of buying in bulk and expense. Soil binders would also be cost prohibitive, are difficult to apply, and do not hold up well under heavy impact such as horse use. A polymer binder along with various tread materials were tried on an experimental basis on segments of trail near the Blackwell Horsecamp in the summer of 1991 (Bennett 1991). Various application methods and mixing ratios were attempted. The polymer did not provide the hardened surface as it was supposed to, and resulted in a thin crust that quickly broke down likely due to incompatibility with local soils types.

Still another possibility is to only gravel short segments of the trail where soil and water impacts are particularly severe. However, there must be a means to haul gravel to those spots, and small ATVs or hand crews have proven to be very inefficient for the volume normally needed. Usually several trips with a dump truck are necessary to haul the volume of gravel needed to repair even a small segment. If the truck were used on unprotected tread, the trail tread would be severely damaged by the weight and number of trips. Therefore, it is necessary to provide a base for equipment access. It also has the added benefit of easy and low impact access for future repair work. This approach has also been recognized by other trail providers such as the National Park Service at the Big South Fork National Recreation Area. Extensive trail systems require the use of mechanized equipment to provide cost effective maintenance.

Smaller equipment was also considered in the interest of using less gravel and creating a narrower trail. Hoosier National Forest staff investigated other equipment sources, and observed equipment used by other agencies. It was determined that smaller equipment would be inefficient in terms of the volume of material hauled and horsepower needed to install drainage devices such as rolling dips. The smallest possible piece of equipment that can still be considered practical for that application is what is used on trail projects.

Past experience on several trails in the Hoosier National Forest have demonstrated that while graveled trails are initially wide and slightly rough, over time the trail grows in and the gravel mixes in with the soil. After a period of one to two years the trail resumes a more natural appearance, but with a solid base free of mud. It is acknowledged this is not always the case depending on environmental conditions. However, for the most part the trail does heal and conditions are much improved over previous soil and water impacts. In addition, it is noted a fine grade of limestone is used to provide a firm surface and make travel more comfortable and safer for horses, bicycles, and hikers. The Hickory Ridge trail leaving out of the north and south boundaries of the Hickory Ridge trailhead is cited as an example of where gravel trail tread has successfully worked and the trail appears natural.

In summary, the reason for the use of gravel is to protect the underlying soil from the heavy impacts that would occur from horse hooves, bicycle tires, and to a lesser degree, hiking shoes. The hardening helps eliminate muddy areas, prevents soil from eroding into nearby water sources, and provides a stable surface for users. Without some means to protect soil and water resources on a year-round basis, it would be impossible to fulfill our basic responsibilities of protecting resources. This is documented by the soils specialist in this environmental assessment under *Mitigation Measures for Soil and Water Resources*: “Constructing and using recreation trails on soils in this area without applying mitigation measures, such as draining and hardening the surface tread, could cause rutting, muddy soils, erosion, and stream sedimentation.” Based on current technology and conditions, the use of gravel is the only feasible means of protecting soil and water resources on this trail. For the reasons stated above, the alternative of eliminating or decreasing the use of gravel was dropped from further consideration. However, an alternative for a hiking only trail, which does greatly reduce the need for gravel, was analyzed in detail and is documented in this environmental assessment in the sections titled *Alternatives* and *Environmental Effects*.

## **Environmental Effects**

This section presents the environmental effects of implementing each alternative. Knowing the environmental consequences of the alternatives gives the decision maker a basis for selecting an alternative to implement. The significance of environmental effects related to the proposed actions determines whether it will be necessary to prepare an environmental impact statement.

The effects presented in this section respond to the issues identified earlier. The issues include both social concerns and resource effects. This section also discusses the effects of the alternatives on forest resources that may be affected by the proposed project, including soil and water, plant and animal habitat (including rare species), and heritage resources.

## **Social Concerns**

### **Affected Environment**

The proposed trail route encircles Springs Valley Lake near the Springs Valley recreation area and extends generally eastward to County Road 24 (see attached map). Other trails and recreation facilities in the vicinity include the 10.5-mile Youngs Creek multiple-use trail, the Youngs Creek horse camp, the 7.5-mile Lick Creek multiple-use trail, and the 1-mile Pioneer Mothers hiking trail. Observations of trail use by Forest Service employees and the level of soil compaction and litter indicate moderate use, although data on the recreational use of these sites has not been systematically collected and compiled. In general, Lick Creek and Youngs Creek trails are popular with horse riders and mountain bikers with occasional use by hikers. Pioneer Mothers is a popular hiking area. Youngs Creek trail has a special use permit trail that may support a commercial camp at some future time. Springs Valley Lake and the Springs Valley recreation area are used primarily for fishing, primitive camping, and hunting, as well as for gathering forest products such as mushrooms.

The proposed parking lot would be located at the junction of the proposed trail and County Road 24. The trail would continue generally eastward and terminate on County Road 24 about 1.5 miles west of the intersection of County Road 24 and 33. A portion of the 10.5-mile Youngs Creek multiple-use trail lies near that intersection. Users of the two trails could link them by riding or hiking on the county road.

### **Issue 1: Trail use concerns**

Some people are concerned about mixing different uses on the trail, or don't like the mud resulting from certain uses. Other people don't feel the trail is needed, or would like to have more trails for hiking only.

### **Effects of Alternative A (Proposed Action)**

The proposed action would create a trail open to use by horses, mountain bikes, and hikers. One effect would be the possibility of conflicts between the user groups while they attempt to use the

trail at the same time. However, few conflicts are anticipated because there have been no significant problems reported on the 204 miles of multiple-use trails in use on the Forest. Signs and brochures designed to educate and encourage users to abide by trail etiquette have apparently been successful in reducing user conflicts. Another effect would be that some hikers may choose to not use the trail because they do not like to use trails that have been constructed for multiple use.

Trail muddiness has been a problem with Forest trails that get a lot of use in wet seasons. This effect would be mitigated by good trail design, proper drainage, and the use of fine grade gravel to provide a smooth surface and maintain a firm trail tread. Some trail users may initially complain about the width of the trail and the use of gravel. However, past experience indicates that the trail width tends to decrease after construction as vegetation grows in from the sides, and the gravel eventually works into the soil.

### **Cumulative effects of Alternative A**

This alternative would contribute to satisfying a demand for outdoor recreation opportunities in the state. In Indiana, only 4% of the landbase is in public ownership creating a highly competitive situation for outdoor recreation (Indiana Department of Natural Resources 2000). There are no other long distance trails for bikes, horses, or hikers in the immediate vicinity except the Lick Creek and Youngs Creek trails previously discussed. The nearest recreation facility is Patoka Lake, which is managed by the Indiana Department of Natural Resources. That facility offers a 10-mile paved bike path and three hiking trails totaling 7.8 miles. Horse and mountain bike trails are not available at Patoka Lake.

Another cumulative effect would be the addition of trail miles to the Hoosier National Forest. Construction of the Springs Valley trail would add 10.75 miles of multiple-use trails to the trail system, resulting in 12 such trails with a total of 173.6 miles of trail open to horses, mountain bikes, and hikers. Forest Plan guidance for trail density in MA 2.8 states that trail density may not exceed 2.5 miles of trail per square mile of land. Approximately two miles of this trail proposal lie in MA 2.8. Currently, trail density in MA 2.8 is .68 miles of trail per square mile, leaving 106.8 miles of trail that could be built in MA 2.8 before density would be exceeded. This proposal would use two miles of that reserve leaving an ample reserve of 104.8 miles of trail available in MA 2.8 before density is exceeded. The other 8.75 miles of trail would lie in MA 7.1 where there are no density limits.

The effects discussed above are minor when considered within the context of the entire state and the Forest. Also, no new recreation developments or changes in use patterns are expected within a five mile radius of the project area. Based on past and current recreation practices on public and private lands and the anticipated effects of future recreation activities, Alternative A would create no adverse cumulative effects regarding trail use concerns.

### **Effects of Alternative B (No Action)**

The no-action alternative would not construct a trail in the Springs Valley area. This alternative would save time and money. Visitors would continue to use other trail opportunities in the area, would travel to other areas to find trails, or not participate in a trail experience. Hikers could still

use the area, but horse riders and mountain bikers are restricted to designated trails by forest order, so they could not use this area.

### **Cumulative effects of Alternative B (No Action)**

The no action alternative would continue to contribute to the overall shortage of recreation opportunities in the state. The effects discussed above are minor when considered within the context of the entire state and the Forest. Based on past and current recreation practices on public and private lands and the anticipated effects of future recreation activities, Alternative B would create no adverse cumulative effects regarding trail use concerns.

### **Effects of Alternative C (Hiking Only)**

This alternative would create a trail open to use by hikers only. One effect would be the reduction of the likelihood of conflict between user types because only one user type (hikers) would be allowed on the trail. There is the possibility of user conflict if another user type was to use the trail illegally, but the single use designation would be expected to greatly reduce that concern. For example, Forest staff have neither observed nor taken such complaints on the Two Lakes Loop trail, which is designated as hiking only. Another effect would be a narrower trail with a natural tread surface, which is preferred by many hikers.

### **Cumulative effects of Alternative C (Hiking Only)**

The cumulative effects of Alternative C are identical to those of Alternative A, except it would only contribute to trail opportunities for hikers, and not for bikers or horse riders. Construction of the trail would add 10.75 miles of hiking trails to the Hoosier National Forest, resulting in 10 hiking-only trails for a total of 45.9 miles. Density changes would remain the same as described for Alternative A.

## **Issue 2: Traffic and parking concerns**

One respondent was concerned that the trail may attract more horse and all-terrain vehicle (ATV) traffic on county roads in the area, and another wanted to be sure that the parking lot would be large enough for horse trailers.

### **Effects of Alternative A (Proposed Action)**

There is no traffic data available for these roads so it is not possible to compare existing use to expected use (Orange County Highway Department 2000). However, one likely effect of this alternative is that the traffic on County Road 24 would increase somewhat due to more users visiting the area because of the trail opportunity, and by users that wish to extend their trip by traveling to the Youngs Creek trail by road. To get from the proposed Springs Valley trail to the Youngs Creek trail system visitors would have two options. They could drive approximately 9 miles from the proposed trailhead parking lot to the Youngs Creek campground on County Road 43. Or, they could continue riding or hiking about 1.5 miles on County Road 24 from the endpoint of the proposed trail to the intersection of County Roads 24 and 33, where they could gain access to the Youngs Creek trail system. However, construction of the Springs Valley trail and trailhead would not be expected to attract enough users at one time to seriously impact traffic

safety. The width and line-of-sight on county roads in this area are considered adequate to provide reasonably safe travel under normal circumstances. Individuals who choose to hike or ride horses or mountain bikes on a public highway incur additional risk and extra care is warranted on their part. The proposed Springs Valley trail would not be open to motorized off-highway vehicles, so this project would not be expected to attract ATV use in the area.

### **Cumulative effects of Alternative A (Proposed Action)**

The Council on Environmental Quality regulations defines cumulative impact as follows: "Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7). There are approximately 600 miles of road in Orange County. There are no known plans for additional road, road upgrades, or construction of attractions by other public or private entities within an approximate five-mile radius of the proposed trail project area that may affect traffic. The cumulative impact on the environment of the incremental impact of constructing an 10.75 mile multiple use trail and constructing a parking lot to accommodate three to five vehicles pulling large horse trailers when added to other past, present, and reasonably foreseeable future actions is very small.

### **Effects of Alternative B (No Action)**

The no-action alternative would have no effect on traffic on local county roads. Neither the trail nor the trailhead parking lot would be constructed in this alternative.

### **Cumulative Effects of Alternative B (No Action)**

Because there are no effects, the no action alternative would have no cumulative effects regarding traffic and parking.

### **Effects of Alternative C (Hiking Only)**

This alternative limits use to hikers only, so no bike or horse traffic would be present on the county roads. The new parking lot would be designed to accommodate two cars but not horse trailers. It is possible that there may be some increase in traffic by hikers driving their cars to the area.

### **Cumulative effects of Alternative C (Hiking Only)**

The cumulative effects of Alternative C are similar to Alternative A, that is, very small.

### **Issue 3: Trail benefits**

Several scoping respondents expressed general support of the project, while others cited specific benefits, such as reducing use and lessening impacts on other, more popular trails. Other people commented that the project would provide a chance to enjoy wildlife and the out-of-doors, and an educational opportunity for children.

### **Effects of Alternative A (Proposed Action)**

An effect of this alternative would be to provide trail benefits such as appreciation of nature to three user types: hikers, bike riders, and horse riders. It is unknown and unpredictable whether this project would benefit other trails by reducing use and lessening impacts on those other trails. It is possible it would simply attract additional users. Other user types that access the Forest would benefit from this proposal. For example, hunters and mushroom gatherers could benefit from traveling on a trail rather than cross country to get them closer to their favorite site.

### **Cumulative Effects of Alternative A (Proposed Action)**

Individuals and society benefit from recreation in many ways: better health, less crime, employee productivity, and economic gain, just to name a few (Indiana Department of Natural Resources, Division of Outdoor Recreation 2000). A cumulative effect on this issue would be to contribute to these benefits to society, particularly to south-central Indiana.

The effects discussed above are minor when considered within the context of the entire state and the Forest. Also, no new recreation developments or changes in use patterns are expected within a five mile radius of the project area. Based on past and current recreation practices on public and private lands and the anticipated effects of future recreation activities, Alternative A would create no adverse cumulative effects regarding trail benefits.

### **Effects of Alternative B (No Action)**

No trail would be constructed in this alternative. The Springs Valley Recreation Area would still be open to fishing, primitive camping, hunting, and hiking. However, there would be no designated trails in the Springs Valley area for horse riding and mountain bicycling. Riders would need to go elsewhere to ride trails or forego trail riding in favor of the permitted activities.

### **Cumulative Effects of Alternative B (No Action)**

The individual and societal benefits from recreation as discussed above would not be available to hikers, bikers, and horse riders.

The effects discussed above are minor when considered within the context of the entire state and the Forest. No new recreation developments or changes in use patterns are expected within a five mile radius of the project area. Based on past and current recreation practices on public and private lands and the anticipated effects of future recreation activities, Alternative B would create no adverse cumulative effects regarding trail benefits.

### **Effects of Alternative C (Hiking Only)**

The effects of this alternative on this issue would be identical to Alternative A except it would benefit only hikers and not bikers or horse riders. However, some hikers may feel a greater benefit because they prefer the experience of a hiking-only trail that offers a narrower width and natural tread surface.

### **Cumulative effects of Alternative C (Hiking Only)**

Individuals and society benefit from recreation in many ways: better health, less crime, employee productivity, and economic gain, just to name a few (Indiana Department of Natural Resources, Division of Outdoor Recreation 2000). A cumulative effect on this issue would be to contribute to these benefits to society, particularly to south central Indiana.

The effects discussed above are minor when considered within the context of the entire state and the Forest. Also, no new recreation developments or changes in use patterns are expected within a five mile radius of the project area. Based on past and current recreation practices on public and private lands and the anticipated effects of future recreation activities, Alternative C would create no adverse cumulative effects regarding trail benefits.

### **Issue 4: Gravel on trails**

Many respondents were concerned about the use of gravel as the tread surface for this project. This section will summarize the effects of the use of gravel from a social perspective. For a discussion on the effects of the use of gravel from an environmental perspective, see Soil and Water Resources on page 16. An alternative to eliminate or reduce the use gravel was also considered, but was dropped from further consideration. See Alternative F on page 7 for a summary of that analysis.

### **Effects of Alternative A (Proposed Action)**

Alternative A calls for the use of gravel on the trail tread. One effect of gravelling on the trail is to allow all-weather use by hikers, bikers, and horse riders. Users would be able to ride under any conditions and not be inconvenienced by weather related closures. The tread would likely be free of excessive mud which is unpleasant for all user types. Another effect is some users from all three use types may not be happy with the wide trails and hard tread surface. Some hikers have said they do not like the experience of a hardened and wide trail. Some bikers prefer a narrow trail and state the gravel is difficult to ride on and causes slippage, which could cause them to fall. Some horse riders say the gravel is hard on the horse's hooves. It is possible some users may choose not to use the trail because of these concerns. However, past experience as documented on page 9 of this EA indicates the trail will become narrower over time and the gravel will become less noticeable. Users are generally more accepting when this occurs. Another effect is the added expense associated with applying gravel. It is estimated this trail could cost approximately \$100,000.

### **Cumulative effects of Alternative A (Proposed Action)**

Because there are many trail opportunities in Indiana, users could choose to use this trail if they like gravel, or easily go elsewhere to a trail more acceptable to their preferences (Indiana Department of Natural Resources, Division of Outdoor Recreation 2000). After considering past, present, and future actions of Federal and non-Federal parties, we conclude the cumulative effects are very small.

### **Effects of Alternative B (No Action)**

If the trail were not built, there would be no effect because gravel would not be used and the trail would not be available.

### **Cumulative effects of Alternative B (No Action)**

There would be no cumulative effects regarding use of gravel from the social perspective.

### **Effects of Alternative C (Hiking Only)**

If the trail were built for hiking only, gravel would not be used except in problem areas and the trail would be narrower. One effect is hikers may still get a bit muddy, but would experience a more natural setting from the narrower trail and soil tread surface. Another effect is the trail would be cheaper to build and maintain because the impacts from hikers are less severe than from horses or bicycles (Seney and Wilson 1994). The estimated cost to build a hiking only trail is approximately \$40,000.

### **Cumulative effects of Alternative C (Hiking Only)**

There would be no cumulative effects regarding use of gravel from the social perspective.

## **Resource Effects**

### **Soil and Water Resources**

#### **Affected Environment**

Springs Valley Lake was constructed in the upper reaches of French Lick Creek within the Lost River watershed. The proposed Springs Valley trail system would traverse the side slopes and ridges that surround the lake. Within the project area, Gilpin-Wellston silt loams occur on 18 to 50 percent slopes. Gilpin soils are found on side slopes along drainages and in the steepest areas. Wellston soils are found in bench-like areas and on ridgetops between drainageways. The wider ridges have Zanesville silt loams, which have a fragipan that causes a perched water table during the wettest times of the year (U.S. Department of Agriculture, Soil Conservation Service 1984).

The primary concern for soils is erosion, which can reduce long-term soil productivity. Some of the soils within the project area are highly erosive, depending on the steepness of the slope and the amount of vegetative cover, as well as the texture of the surface layer and the parent material from which the soils formed.

For water, the primary concern is stream sedimentation, which results when eroded soil makes its way to the stream. Sediment in the stream reduces water quality and impacts the aquatic ecosystem. By muddying the water and covering stream beds with silt, stream sedimentation can degrade the habitat for fish, freshwater mussels, and other aquatic life forms.

#### **Mitigation Measures**

Constructing and using recreation trails on soils in this area without applying mitigation measures, such as draining and hardening the surface tread, could cause rutting, muddy soils, erosion, and stream sedimentation. The intent of the standard mitigation measures for trails is to maintain a firm travel tread without excessive muddiness, erosion, or sedimentation. Trails that are constructed and maintained to the recommended standards would be adequately protected from damaging soil impacts.

When constructing multiple-use trails on steep slopes and erosive soils, we can mitigate soil erosion by keeping the trail gradient to 10 percent or less, by constructing cross drains to divert water from the trail, and by applying fine grade gravel to harden the trail tread. Where it is necessary to have short trail sections with gradients of greater than 10 percent, the erosion hazard can be mitigated by constructing additional water diversions and applying gravel to the steeper sections. The outlets of the diversions could be protected using riprap or other armoring material if needed. Additional specifications for trail location, alignment, and tread hardening techniques are described in the Trails Management Handbook (FSH 2309.18) and Engineering Management publications EM-7720-103 and EM-7720-104, which are incorporated herein by reference (U.S. Department of Agriculture, Forest Service 1991a, 1996b, 1996c).

Streams crossings and the approaches on each side of the stream can cause erosion and stream sedimentation. When approaching and crossing a stream, trail users can loosen sediment from the banks or stir up sediment in the channel, which then becomes suspended in the water, is carried downstream and later deposited on the stream bottom. Hardening the approaches and the crossings would reduce the effects on stream banks, channel substrate, and water quality. However, special care must be taken when hardening stream crossings to ensure that the elevation of the channel is not changed. If too much material is added to harden a crossing, it can create a barrier to fish migration or increase channel erosion downstream. Specifications for mitigating stream approaches and crossings are identified in FSH 2309.18, EM-7720-103, and EM-7720-104 (U.S. Department of Agriculture, Forest Service 1991a, 1996b, 1996c).

To further curb erosion and prevent stream sedimentation, we would revegetate all disturbed soils outside the trail tread and parking lot, using an appropriate seed mixture (based on the amount of shading) and mulch.

These mitigation techniques have been applied on similar trail projects and found to be successful (Wadzinski 1998).

### **Effects of Alternative A (Proposed Action)**

The proposed trail would be constructed with a bulldozer wherever possible. Approximately 70 percent of the trail would be hardened with fine grade gravel. Trail gradients would be 10 percent or less, except for occasional, short segments of the trail that exceed 10 percent. Water diversions would be constructed on the short, steep sections and fine grade gravel would be applied to the trail surface and the water diversions to mitigate the erosion hazard. If necessary, the outlets of the diversions would be armored with riprap.

A technique known as "turnpiking" may be necessary where the trail crosses the borrow area used to construct the dam. Soil and gravel of different sizes would be used to build a raised trail through the perpetually wet area, using trail standards for turnpiking.

The route of the proposed trail crosses two perennial streams, three intermittent streams, and numerous ephemeral streams, which flow only in direct response to precipitation. Water diversions would be constructed just prior to stream crossings and the approaches to the crossings would be hardened with fine grade gravel as necessary to curb erosion and prevent sedimentation.

The trailhead parking lot would be graded for proper drainage and hardened with limestone aggregate as necessary to prevent excessive wetness and provide a firm surface. Where construction exposes bare soils outside the parking lot and the trail tread, the disturbed areas would be seeded with an appropriate seed mixture (based on the amount of shading) and mulched.

Some compaction of the 5-foot trail corridor would be likely to occur, but primarily within the 24 to 36 inch tread width. Soil productivity would be reduced within the 24 to 36 inch trail tread for the duration of use. However, the construction of the Springs Valley trail and trailhead as described in this alternative would not cause excessive erosion or other detrimental effects to soil and water resources, as long as the standard mitigation measures are followed.

#### **Effects of Alternative B (No Action)**

In the no-action alternative, there would not be any change to soil and water resources.

#### **Effects of Alternative C (Hiking Only)**

The effects of trail construction would be less because of the use of a hand crew and possibly a small piece of specialized trail equipment rather than a bulldozer. Only spot gravelling would be used thus the effects to the soil of the equipment to haul the gravel would not occur. Trail gradients would be 10 percent or less, except for occasional, short segments of the trail that exceed 10 percent. Water diversions would be constructed on the short, steep sections and fine grade gravel if needed would be applied to the trail surface and the water diversions to mitigate the erosion hazard. If necessary, the outlets of the diversions would be armored with riprap.

A technique known as "turnpiking" may be necessary where the trail crosses the borrow area used to construct the dam. Soil and gravel of different sizes would be used to build a raised trail through the perpetually wet area, using trail standards for turnpiking. Incorporating the use of geotextiles would eliminate the need for some of the gravel.

The route of the proposed trail crosses two perennial streams, three intermittent streams, and numerous ephemeral streams, which flow only in direct response to precipitation. Water diversions just prior to stream crossings would be constructed and some approaches to the crossings would be hardened with fine grade gravel as necessary to curb erosion and prevent sedimentation.

The smaller trailhead parking lot would have less effect on the soil resources. The trailhead parking lot would be graded for proper drainage and hardened with limestone aggregate as necessary to prevent excessive wetness and provide a firm surface. Where construction exposes

bare soils outside the parking lot and the trail tread, the disturbed areas would be seeded with an appropriate seed mixture (based on the amount of shading) and mulched.

Some compaction of the 4-foot trail corridor would be likely to occur, but primarily within the 18 to 24 inch tread width. Soil productivity would be reduced within the 18 to 24 inch trail tread for the duration of use. However, the construction of the Springs Valley hiking trail and trailhead as described in this alternative would not cause excessive erosion or other detrimental effects to soil and water resources, as long as the standard mitigation measures are followed.

### **Cumulative Effects**

The area of consideration for cumulative effects includes the watershed of French Lick Creek above the Springs Valley Lake dam.

Activities that have occurred in the past on National Forest System lands in this area include timber harvesting, site preparation, planting of new stands, and construction of roads, trails, camp sites, an earthen dam, and a boat launch area. On private land, landowners have practiced: conversion of woodlands to agricultural land, crop production, livestock grazing, timber harvesting, and abandonment of farming. In some cases, farms were abandoned after excessive erosion due to past agricultural practices. Other farms were abandoned when private land was also sold to the United States during establishment of the Hoosier National Forest. On lands acquired by the Forest Service, subsequent forestry practices have been conducted using best management practices and mitigation measures to curb soil erosion and prevent stream sedimentation.

A National Forest Closure Order (No. 09-12-20 of April 2000) limited use by horses and bicycles to the designated trail system (U.S. Department of Agriculture, Forest Service 2000). This closure has greatly reduced adverse impacts to soil and water resources. Non-designated, user-created trails had proliferated in years prior to the closure, and many of these trails were muddy, eroding excessively, and contributing sediment to local streams.

Anticipated future USDA Forest Service activities in this area include the harvest and sale of firewood and house logs, and emergency salvage of pine and hardwood trees that may be damaged by storms, insects or disease in the future. Mitigation measures would be employed to minimize the impacts of these activities. There would be no appreciable impacts to watersheds or to soil and water resources as a result of future Forest Service activities.

On private land, timber harvests, agricultural crop production, livestock grazing, and activities associated with nearby residences are occurring and will likely continue.

In Alternative A and Alternative C, the use of mitigation measures would result in minimal effects on soil and water. These effects, when added to the effects of past and current practices on public and private lands and the anticipated effects of future activities, would result in no adverse cumulative effects to soil and water resources. Alternative B would result in no changes to the existing situation and no cumulative effects.

### **Caves and Karst Resources**

## **Affected Environment**

There are caves, numerous sinkholes, and springs in the project area. A number of unusual cave invertebrates have been found in the cave system. Due to the sensitive karst fauna in the Springs Valley area, it is important to minimize erosion and sedimentation. The sinkholes scattered throughout the forest act as direct conduits to the cave system. The more sediment that gets into these sinkholes, the greater the adverse effect would be on the animals in the caves.

### **Effects of Alternative A (Proposed Action)**

The proposed trail has been laid out to avoid caves and is further from some caves than the existing non-designated trails. Only one cave occurs near the trail. This cave is uphill and is not visible from the trail, therefore, it will not be affected by runoff nor will it attract visitors. The proposed trail in the vicinity of the cave is on an old roadbed, so no cutting of vegetation is necessary near the cave entrance. Due to careful trail layout, all of the caves will be protected from direct impacts resulting from recreational trail use.

When mechanical equipment is used to construct trails, it lays bare a lot of soil. Depending on the time of year, the soil can stay bare, and subject to the erosive effects of weather for several months. In this project, we will mitigate the bare soil by using fine-grade gravel to harden approximately 70 percent of the trail. This mitigation will reduce that risk in areas where erosion is likely. Furthermore, all disturbed areas, except for the trail tread and the parking lot, would be seeded with an appropriate seed mixture and mulched. Where the forest canopy is too dense to allow adequate sunlight for successful revegetation (such as in shady pine stands), the disturbed soils that are not part of the trail tread would just be mulched.

If additional caves, sinkholes, or springs are discovered during construction that would be affected by the project, the forest karst coordinator would be notified and trail construction would cease until an assessment could be made.

As long as these mitigation measures are applied during implementation, the proposed project would not be expected to adversely affect the karst ecosystem.

### **Cumulative effects of Alternative A (Proposed Action)**

The Council on Environmental Quality regulations defines cumulative impact. That is, "Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7). Because of careful trail layout, we protected all caves from direct or indirect effects. Because there are no incremental impacts there are no cumulative impacts by definition.

### **Effects of Alternative B (No Action)**

There would be no change in the current situation. Hikers exploring the area would occasionally visit caves. The no-action alternative would not result in any ground-disturbing activity that might generate sediment that could adversely affect the karst ecosystem.

### **Cumulative effects of Alternative B (No Action)**

There are no cumulative effects from this alternative as it relates to cave and karst resources, since no impacts to this resource will occur.

### **Effects of Alternative C (Hiking Only)**

The effects are similar to those described for Alternative A. The hiking-only trail would be narrower and would only need to be spot graveled in problem areas, since the impacts from hikers are less than horses and mountain bikes. Seeding and mulching would also occur with this alternative. In addition, we would follow standard mitigation measures; so excessive erosion and sedimentation are not expected.

### **Cumulative effects of Alternative C (Hiking Only)**

Cumulative effects are nearly identical to those of Alternative A.

### **Issue 5: Pollution concern for adjacent landowner**

An adjacent landowner expressed concern that runoff from horse manure would contaminate his property.

### **Affected Environment**

The trail passes close to (within approximately 1/8 mile) or borders private property at six locations. There are two locations where the trail is near the head of a drainage that leads to private property.

### **Effects of Alternative A (Proposed Action)**

This alternative would have no affect on adjacent lands in regards to this issue. The proposed trail is over one-half mile away from the private property in question. It is extremely unlikely any manure runoff would travel that distance to contaminate the private property. Generally, high concentrations of manure do not accumulate at one spot such as in a stream crossing, because the horses are constantly moving while on a trail. Also, horse manure naturally degrades very quickly. USDA Forest Service standards do not permit trails to be placed in riparian (streamside) areas, and stream crossings are designed for minimal exposure to streams. These mitigation measures create a buffer between trails and water sources.

### **Cumulative effects of Alternative A (Proposed Action)**

The Council on Environmental Quality regulations defines cumulative impact. That is, "Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7). Within the two drainages that lead to private property, there are no known sources

of manure runoff. In addition, as discussed above, this alternative would have no impact on adjacent lands. Therefore, because there is no incremental impact, there is no cumulative effect.

### **Effects of Alternative B (No Action)**

The no-action alternative would not create any trails on which horse use is permitted; therefore, there would be no effect.

### **Cumulative effects of Alternative B (No Action)**

There would be no cumulative effects from this alternative regarding manure concerns because horse use would not occur.

### **Effects of Alternative C (Hiking Only)**

The hiking only alternative would not create any trails on which horse use is permitted; therefore, there would be no effect.

### **Cumulative effects of Alternative C (Hiking Only)**

There would be no cumulative effects from this alternative regarding manure concerns because horse use would not occur.

## **Plant and Animal Habitat**

### **Affected Environment**

The proposed trail passes through dry-mesic upland forest dominated by white oak, black oak, and pignut hickory, and upland mesic forest dominated by white oak, sugar maple, and shagbark hickory. The majority of the forest is mature and relatively undisturbed. The proposed route crosses perennial and intermittent streams. The riparian areas associated with the crossings of the three largest streams (the "arms" of Springs Valley Lake) are quite disturbed and dominated by early successional species, including a number of exotic species. The intermittent stream on the north side of Springs Valley Lake has a less disturbed riparian area. Other areas of interest include the extensive rock outcroppings on the southeast corner of the route, and a very disturbed open area that was used for borrow during construction of the lake dam.

### **Federally-listed Endangered, Threatened or Proposed Species**

#### **Documentation and Consultation**

Surveys for listed species have been conducted in the project area, and a biological evaluation (BE) has been prepared that addresses the effects of the proposed project on federally-listed endangered, threatened, and proposed species and the Regional Forester's sensitive species. The BE was developed by Hoosier National Forest biologists with informal assistance from the United States Department of the Interior (USDI) Fish and Wildlife Service, Bloomington Field

Office and the Indiana Department of Natural Resources (IDNR), Division of Nature Preserves. Letters requesting comments on the proposed project were sent to both agencies.

In their letter of April 24, 1998, the USDI Fish and Wildlife Service responded with recommendations to avoid impacting the endangered Indiana bat (*Myotis sodalis*) during trail construction (Pruitt 1998). Subsequent to that letter the USDI Fish and Wildlife Service has recommended more restrictive measures on similar projects, and that more stringent guidance will be followed for this project. USDI Fish and Wildlife Service recommends that trees not be cut during the Indiana bat reproductive season. Further coordination with that office is required if it is necessary to cut trees within that time frame.

The IDNR Division of Nature Preserves initially responded that there were no listed species in the Natural Heritage Data Base for this area. That letter was misplaced and a second response was requested. The Division of Nature Preserves responded that new data was available and a check of the Natural Heritage Program maps indicated there were now four cave invertebrate species mapped in a cave near the proposed route (Hedge 2000). The Biological Evaluation for this project found that the trail would not effect any cave fauna (Olson 2000a).

The interdisciplinary team biologist also followed up with phone calls to the USDI Fish and Wildlife Service on March 23, 2000 and IDNR Division of Nature Preserves on March 22, 2000 to confirm each agency's response.

The Hoosier National Forest has entered into formal consultation with USDI Fish and Wildlife Service on the effects of Forest Plan implementation on federally listed species. The result of this consultation is likely to result with an incidental take statement for Indiana bat. Until that time, we will continue to use recommended mitigations for listed species.

### **Descriptions and habitat of federally-listed species**

Four federally-listed species have part of their range on the Hoosier National Forest: the endangered Indiana bat (*Myotis sodalis*), gray bat (*Myotis grisescens*), fanshell mussel (*Cyprogenia stegaria*), and the threatened bald eagle (*Haliaeetus leucocephalus*). There are no known federally listed threatened or endangered species within the project area. There is no critical habitat for these species in the project area.

### **Indiana bat**

The following summary of the existing literature on the habitat needs of the Indiana bat is consistent with the Agency Draft Indiana Bat Revised Recovery Plan (U.S. Department of Interior, Fish and Wildlife Service 1999).

The Indiana bat ranges throughout of the eastern half of the United States. Its population has been in decline for the past several decades, although the population of Indiana bats wintering in Indiana has remained steady. There are five types of habitat necessary for the life cycle of Indiana bats: hibernating, foraging, summer roosting, maternity roosting, and fall swarming habitats.

Indiana bats hibernate in caves (hibernacula) that meet their temperature requirements. They cluster around their hibernacula starting in August and September, begin hibernation as early as October (Brady *et al.* 1983), and leave their hibernacula in late March to April.

Indiana bats forage in the canopy of both riparian and non-riparian woodlands (Tyrell and Brack 1991). Optimal foraging habitat for Indiana bats is considered to be open forest with little understory and 50 to 70 percent canopy closure (Romme *et al.* 1995).

During the summer, Indiana bats typically roost beneath the loose bark of dead or living trees, or within cavities in dead trees (Humphrey *et al.* 1977; Gardner *et al.* 1991). Indiana bats tend to return to the same summering areas each year, and may use the same roost trees in successive years as long as the trees remain standing (Brady *et al.* 1983, Gardner *et al.* 1991). However, the bats may also move from one roost tree to another during the season (Gardner *et al.* 1991).

Pregnant females congregate at roost sites in late spring and summer, forming a maternity colony. Roost trees used by maternity colonies can be of many different species, but are most often dead or dying trees with loose bark (Callahan 1993, Callahan *et al.* 1997, Gardner *et al.* 1991, Romme *et al.* (1995).

In August and September, Indiana bats migrate from their summering grounds toward their hibernacula, where they fly in and out of the cave entrances from dusk to dawn. During this period of fall swarming, the bats copulate and build up fat reserves for hibernation (Cope and Humphrey 1977). Bats are generally active within 1.4 miles of their hibernacula during fall swarming (Kiser and Elliott 1996).

There are no known hibernacula, summer roosting, maternity roosting, or fall swarming sites within the project area. The nearest known Indiana bat hibernaculum is a cave approximately 10 miles away, and the nearest known maternity colony is over 50 miles away.

### **Gray bat**

The gray bat uses caves year-round for hibernating, roosting, and maternity sites. It forages in riparian areas and occasionally in non-riparian forests (J. Whitaker, pers. comm., 18 Sep 97). Whenever possible, gray bats fly under the forest canopy when traveling between their roost and feeding areas, apparently to provide protection from predators such as screech owls (Tuttle 1979).

No gray bats were found on the Hoosier National Forest during bat surveys in 1990, 1995 and 1996. The only record of a gray bat on the national forest is an adult male that was caught in 1998 about 50 miles from the project area.

### **Fanshell**

The fanshell is a mussel of medium to large rivers of the Ohio River basin. It occurs on National Forest System land in Lawrence County. However, there is no suitable habitat for this species in the project area.

### **Bald eagle**

Bald eagle is associated with large bodies of water. They prefer to nest in mature forests with an open structure, near water, and with little human disturbance (Grier *et al.* 1983). Bald eagles have constructed nests at Monroe Reservoir and Patoka Lake, but we did not observe bald eagles or their nests during visits to the project area.

### **Mitigation measures for federally-listed species**

Removal of standing trees could affect Indiana bat in two ways. First, felling trees during the roosting season could potentially harm Indiana bats roosting in those trees. Second, removing trees that are suitable for roosting would reduce the potential roosting habitat for Indiana bats within the project area.

In order to avoid direct impacts to roosting bats, any trees that must be removed during trail construction or parking lot expansion will be removed between September 16 and March 31. Further consultation will be sought from the USDI Fish and Wildlife Service if there is a need to cut outside of that time frame. Because there are many potential roost trees in the National Forest, mitigation for the reduction of potential roosting habitat is not needed. Indiana bats should need to expend only minimal energy in finding new roost trees if a previously used tree has been cut.

### **Effects of Alternative A (Proposed Action)**

The construction of the Springs Valley trail system and parking lot would have no effect on Indiana bat hibernacula, maternity colonies, or fall swarming sites. Foraging habitat for Indiana bats within the project area is less than optimal, based on the habitat suitability index of Romme *et al.* (1995). The proposed project would have minimal effects on Indiana bat foraging habitat.

In order to avoid direct impacts to roosting Indiana bats, we will implement the recommended mitigation measure. Trees will be removed during the period September 16 through March 31, or further consultation will be sought from the USDI Fish and Wildlife Service. By implementing these mitigation measures, we reduce the risk of inadvertently taking an Indiana bat. Therefore, the effect of this project on Indiana bats is discountable.

Because there are no known occurrences of gray bats in or near the project area, this project would have no effect on the gray bat.

Since there is no habitat suitable for fanshell mussels within the project area, the proposed project would not affect this species.

The project would have no effect on bald eagles, as there are no known occurrences of nesting or roosting in the vicinity of the proposed Springs Valley trail and parking area.

### **Effects of Alternative B (No Action)**

The no-action alternative would have no effect on Indiana bat hibernacula, maternity colonies, or fall swarming sites. No trees would be removed in this alternative, so Alternative B would not

affect foraging habitat or roosting habitat for Indiana bats. There would be no risk of directly impacting Indiana bats.

There are no known occurrences of gray bats in or near the project area, and the no-action alternative would have no effect on the gray bat.

There is no habitat suitable for fanshell mussels within the project area, and the no-action alternative would not affect this species.

Alternative B would have no effect on bald eagles, as there are no known occurrences of nesting or roosting in the vicinity of the project area.

### **Effects of Alternative C (Hiking Only)**

The construction of the Springs Valley trail system and parking lot would have no effect on Indiana bat hibernacula, maternity colonies, or fall swarming sites. Foraging habitat for Indiana bats within the project area is less than optimal, based on the habitat suitability index of Romme *et al.* (1995). The hiking only alternative would have even fewer effects on Indiana bat foraging habitat than the proposed action.

In order to avoid direct impacts to roosting Indiana bats, we will implement the recommended mitigation measure. Trees will be removed during the period September 16 through March 31, or further consultation will be sought from the USDI Fish and Wildlife Service. By implementing these mitigation measures, we reduce the risk of inadvertently taking an Indiana bat. Therefore, the effect of this project on Indiana bats is discountable.

Because there are no known occurrences of gray bats in or near the project area, this project would have no effect on the gray bat.

Since there is no habitat suitable for fanshell mussels within the project area, the proposed project would not affect this species.

The project would have no effect on bald eagles, as there are no known occurrences of nesting or roosting in the vicinity of the proposed Springs Valley trail and parking area.

### **Regional Forester's Sensitive Species**

The Regional Forester's Sensitive Species list (revised 29 February 2000) shows 78 species which are documented to occur within the boundary of the Hoosier National Forest. Those species with appropriate habitat in the project area are discussed below.

#### **Regional Forester's Sensitive Species Plants**

Forests in the project area may provide habitat for several Regional Forester's Sensitive plants. Large Yellow Lady's-slipper (*Cypripedium pubescens*) is a perennial herb flowering in late spring. It is typically found in rich forests. Illinois Wood-sorrel (*Oxalis illinoensis*) is a perennial herb found in moist forests, especially on calcareous substrates. It blooms during May. American Ginseng (*Panax quinquefolia*) is a perennial herb found in rich, moist forests. It

flowers in June and July. Yadkin Panic-grass (*Panicum yadkinense*) is a perennial grass of moist forests, often associated with calcareous soils. Eastern Featherbells (*Stenanthium gramineum*) is a perennial herb flowering from July to September. It is found in moist woodlands, especially those having calcareous soils. White Thoroughwort (*Eupatorium album*) is a perennial herb growing in open forests. Its white flowers are produced in mid-summer. Surveys in this area have not located any populations of these herbs.

Butternut (*Juglans cinerea*) is a mesic forest tree. It is found in floodplain and stream terrace forests. It flowers from April to June. There is one site for butternut in watershed of Tucker Lake but it is not near the proposed trail location.

### **Mitigation measures for sensitive plants**

Prior to project implementation, the trail route would be checked for the presence of the above listed species. Surveys would be conducted at times of the year when the species can be recognized. To ensure that no butternut trees would be cut, field crews would be made aware of the possible presence of butternuts and instructed not to cut these trees if located.

### **Effects of Alternative A (Proposed Action)**

The proposed action would disturb potential habitat of the previously mentioned sensitive species along the proposed trail route. If individuals of these plants occur on the trail route or in the parking area location, they could be destroyed during project implementation. However, such impacts would not cause a trend toward federal listing of these species. Mitigation measures as described in the previous paragraph would be employed so that effects to the species would be minimized.

### **Effects of Alternative B (No Action)**

The No Action alternative would have no effect on Regional Forester's Sensitive Species plants.

### **Effects of Alternative C (Hiking Only)**

The hiking only alternative would disturb potential habitat of the previously mentioned sensitive species along the proposed trail route to a lesser degree than the proposed action. If individuals of these plants occur on the trail route or in the parking area location, they could be destroyed during project implementation. However, such impacts would not cause a trend toward federal listing of these species. Mitigation measures for these species would be employed as described in the above paragraph titled *Mitigation measures for sensitive plants* so that effects to the species would be minimized.

### **Regional Forester's Sensitive Species Animals**

Two Regional Forester's Sensitive animals of upland forests have habitat within the project area, but neither have been documented in the Tucker Lake area. Cerulean Warbler (*Dendroica cerulea*) is a bird of large tracts of mesic forests, usually along major streams in southern Indiana. Timber Rattlesnake (*Crotalus horridus*) inhabits dry, usually rocky forests with grasses dominating the ground flora.

Three Regional Forester's Sensitive Species have wider ecological requirements and may have some habitat in the project area. Evening Bat (*Nycticeius humeralis*) is an inhabitant of hardwood forests, but breeding colonies have been found mostly in buildings (Mumford and Whitaker 1982). It apparently forages at the edges of forests. Bobcat (*Lynx rufus*) is a wide-ranging predator requiring a diversity of habitat within its home range. This species needs secluded areas and requires dense brush or rocky outcrops for cover. River Otter (*Lutra canadensis*) is closely associated with perennial streams and rivers in forested areas.

Caves are developed in limestone bedrock. Caves may have running or standing water, or they may be dry. There are a number of invertebrates which are endemic to certain cave systems. Only a portion of the caves in the Springs Valley area have been inventoried for their fauna. Sensitive species which have been found include: Troglotic Ground Beetle (*Pseudanophthalmus stricticollis*), Bollman's Cave Millipede (*Contyla bollmani*), Packard's Cave Amphipod (*Crangonyx packardi*), Campground Cave Copepod (*Megacyclops* undescribed species), and Northern Cave Crawfish (*Orconectes inermis inermis*).

Other sensitive species which may have habitat in these caves include: Ice Thorn (*Carychium exile*), Cave Rove Beetle (*Aleochara lucifuga*), Young's Cave Ground Beetle (*Pseudanophthalmus youngi youngi*), Fountain Cave Springtail (*Pseudosinella fonsa*), Wingless Winged Cave Springtail (*Sinella alata*), Cavernicolous Springtail (*Sinella cavernacum*), Two-toothed Springtail (*Tomocerus bidentatus*), Cave Funnel-web Spider (*Calymmaria cavicola*), Cave Obligate Copepod (*Cauloxenus stygius*), Golden Cave Harvestman (*Erebomaster flavescens*), Wonderful Pseudoscorpion (*Hesperoernes mirabilis*), Carter's Cave Spider (*Nesticus carteri*), Cavernicolous Sheet-web Spider (*Porhomma cavernicola*), and Granulated millipede (*Scytonotus granulatus*). Northern Cavefish (*Amblyopsis spelaea*) is also limited to distribution in subterranean waters ranging from south-central Indiana to central Kentucky.

### **Effects of Alternative A (Proposed Action)**

Construction of the trail and parking area would have minimal and temporary effects to habitat of the species which could occur in the project area. These disturbances would not cause a trend toward federal listing of these species. The project would not be likely to affect any of the species found in caves because mitigation measures explained in the Forest Plan would be in place to minimize erosion and sedimentation in the karst system.

### **Effects of Alternative B (No Action)**

The No Action alternative would have no effect on Regional Forester's Sensitive Species animals.

### **Effects of Alternative C (Hiking Only)**

Construction of the trail and parking area would have less and shorter effects to habitat of the species which could occur in the project area than the proposed action. These disturbances would not cause a trend toward federal listing of these species. The project would not be likely to affect any of the species found in caves because mitigation measures explained in the Forest Plan would be in place to minimize erosion and sedimentation in the karst system.

## Forest Species of Concern

Species listed by the state as endangered, threatened, rare (plants), or special concern (animals) are recognized by the Hoosier National Forest as Forest Species of Concern. There are 17 animal species and 53 plant species listed in the Forest Plan Appendix C (U.S. Department of Agriculture, Forest Service 1995b) as occurring on the Hoosier National Forest. One plant species (*Linum striatum*) has been added since the administrative update because it has since been found on the national forest.

### Description and habitat of forest plant species of concern

One listed plant species, ridgestem yellow flax (*Linum striatum*), has been found in the project area. This perennial plant grows in disturbed areas, including the borrow area along the trail route. Only one other site for this species is known on the Hoosier National Forest.

There is suitable habitat for the following Forest Species of Concern within the project area, although none of these plant species were found during field surveys:

Bush's sedge (*Carex bushii*), cluster fescue (*Festuca paradoxa*), angle-pod (*Gonolobus obliquus*), coppery St. John's-wort (*Hypericum denticulatum*), secund rush (*Juncus secundus*), orange coneflower (*Rudbeckia fulgida*), yellow nodding ladies'-tresses (*Spiranthes ochroleuca*), spring landies'-tresses (*Spiranthes vernalis*), and perennial foxtail (*Setaria geniculata*) are plants which occur in open areas, such as the ridgetop forest opening and the dam borrow area.

Illinois wood-sorrel (*Oxalis illinoensis*) is found in rich forests, usually with calcareous substrates. There is habitat for this species low on the slopes and in riparian areas. Appalachian quillwort (*Isoetes engelmannii*) is usually found on the margins of ponds or on wet soil. There is habitat in the riparian areas.

Illinois pinweed (*Lechea racemulosa*), Nuttall's bush-clover (*Lespedeza nuttallii*), Canada lily (*Lilium canadense*), false garlic (*Nothoscordum bivalve*), Yadkin panic-grass (*Panicum yadkinense*), prairie parsley (*Polytaenia nuttallii*), creeping dewberry (*Rubus enslenii*), Small's snake-root (*Sanicula smallii*), southern skullcap (*Scutellaria parvula* var. *austrlais*), small skullcap (*Scutellaria parvula* var. *parvula*), featherbells (*Stenanthium gramineum*), baren strawberry (*Waldsteinia fragaroides*), and netted chain-fern (*Woodwardia areolata*) are all plants which may occur in dry forests and barrens. There is habitat for these species in the ridgetop opening and the adjacent dry forest.

### Mitigation measures for forest plant species of concern

To avoid impacts to ridgestem yellow flax, the trail crews and heavy equipment would confine disturbance to the trail corridor itself within the old borrow area. No ground disturbance would occur outside of a 10-foot swath through the borrow area.

Prior to project implementation, the trail route would be checked for the presence of Illinois wood sorrel, one of the rarest plants on the Hoosier National Forest, and other forest plant

species of concern. This survey would be conducted during the appropriate time of year to identify these plants, if they are present.

### **Effects of Alternative A (Proposed Action)**

Among the plant species listed as Forest Species of Concern, only secund rush, orange coneflower, Appalachian quillwort, Yadkin panic-grass, and featherbells are known to occur in the Crawford escarpment, where Springs Valley Lake is located. If any of these species are found during the pre-implementation survey, then the location of the proposed trail route can be shifted to avoid impacting these plants. The remaining species are unlikely to occur in the Crawford escarpment. Therefore, the proposed project would have no adverse effects on forest plant species of concern.

### **Effects of Alternative B (No Action)**

The no-action alternative would have no effect on forest plant species of concern.

### **Effects of Alternative C (Hiking Only)**

Among the plant species listed as Forest Species of Concern, only secund rush, orange coneflower, Appalachian quillwort, Yadkin panic-grass, and featherbells are known to occur in the Crawford escarpment, where Springs Valley Lake is located. If any of these species are found during the pre-implementation survey, then the location of the proposed trail route can be shifted to avoid impacting these plants. The remaining species are unlikely to occur in the Crawford escarpment. Therefore, this alternative would have no adverse effects on forest plant species of concern.

### **Description and habitat of forest animal species of concern**

The following animal species, listed as Forest Species of Concern, have known or potential habitat within the project area.

River otter (*Lutra canadensis*) lives in ponds and rivers in forested areas. The Indiana Department of Natural Resources recently released otters into the watershed of Patoka Lake, about five miles south of Springs Valley Lake.

Bobcat (*Felis rufus*) is a wide-ranging nocturnal predator that requires a diversity of habitats, including forests and open lands. There have been a few bobcat sightings in the general vicinity of the project area.

Sharp-shinned hawk (*Accipiter striatus*) most frequently nests in pine and occasionally in hardwoods. This species requires open forest understory for hunting habitat. Red-shouldered hawk (*Buteo lineatus*) is a wide-ranging bird usually nesting in bottomlands or other moist hardwood sites. It typically forages in large woodlots. Broad-winged hawk (*Buteo platypterus*) nests primarily in mesic hardwood forests. This species typically requires a large foraging area which includes forest, edges, and openland. None of these hawks have been observed in the Springs Valley Lake watershed.

Worm-eating warbler (*Helmitheros vermivorus*) inhabits dry upland forests with dense understory vegetation. It rarely occurs in red cedars, but will forage in open areas. Black-and-white warbler (*Mniotilta varia*) is found in mature forests with scattered, dense brush where it nests. Bewick's wren (*Thryomanes bewickii*) is found in brushy areas. Hooded warbler (*Wilsonia citrina*) is found in moist deciduous forest with dense understory vegetation. It also requires some open brushy habitat for foraging for insects. None of these species has been documented in the Springs Valley Lake area, but all are reasonably likely to occur in the vicinity.

Timber rattlesnake (*Crotalus horridus*) is most frequently found in rocky forests with fairly dense grassy vegetation. Rough green snake (*Ophiodrys aestivus*) is often found in open grass-dominated and brushy areas where its food source of large insects occurs. Neither of these snakes has been documented in the Springs Valley Lake area.

### **Effects of Alternative A (Proposed Action)**

Construction of the proposed trail and parking area would be unlikely to seriously disrupt the raptors (sharp-shinned hawk, red-shouldered hawk, and broad-winged hawk) or the neotropical migratory birds (worm-eating warbler, black-and-white warbler, hooded warbler, and Bewick's wren) listed as Forest Species of Concern, although the project may influence their areas of activity. The timber rattlesnake and the rough green snake are not likely to be affected by the proposed project, should either species occur here.

### **Effects of Alternative B (No Action)**

The no-action alternative would not affect animal species listed as Forest Species of Concern.

### **Effects of Alternative C (Hiking Only)**

Construction of the hiking only trail and parking area would be unlikely to seriously disrupt the raptors (sharp-shinned hawk, red-shouldered hawk, and broad-winged hawk) or the neotropical migratory birds (worm-eating warbler, black-and-white warbler, hooded warbler, and Bewick's wren) listed as Forest Species of Concern, although the project may influence their areas of activity. The timber rattlesnake and the rough green snake are not likely to be affected by this alternative, should either species occur here.

## **Management Indicator Species**

Management Indicator Species (MIS) are defined as "plant and animal species, communities, or special habitats selected...to assess the effects of management activities on their populations and the populations of other species with similar habitat needs which they may represent" (U.S. Department of Agriculture, Forest Service 1991b, 2620.5). The MIS list includes "species believed to be vulnerable to population decline and species most likely to provide an indication of effects of management actions through population change" (USDA Forest Service 1991c, Appendix C, p. C-13).

The effects on MIS of the proposed action and the no-action alternative are discussed in detail in Appendix C of this document. The table below presents a summary of those effects.

<b>Table 1: Summary of Effects on Management Indicator Species</b>		
<b>Species</b>	<b>Alternatives A &amp; C</b>	<b>Alternative B</b>
	<b>Proposed Action &amp; Hiking Only</b>	<b>No Action</b>
Wood duck ( <i>Aix sponsa</i> )	No effect*	No effect
American woodcock ( <i>Scolopax minor</i> )	No effect*	No effect
Ruffed grouse ( <i>Bonasa umbellus</i> )	No effect	No effect
Wild turkey ( <i>Meleagris gallopavo</i> )	No effect*	No effect
Broad-winged hawk ( <i>Buteo platypterus</i> )	No effect*	No effect
Pileated woodpecker ( <i>Dryocopus pileatus</i> )	No effect*	No effect
Acadian flycatcher ( <i>Empidonax virescens</i> )	No effect*	No effect
Scarlet tanager ( <i>Piranga olivacea</i> )	No effect*	No effect
Louisiana waterthrush ( <i>Seriurus motacilla</i> )	No effect*	No effect
Black-and-white warbler ( <i>Mniotilta varia</i> )	No effect*	No effect
Wood thrush ( <i>Hilocichla mustelina</i> )	No effect*	No effect
Worm-eating warbler ( <i>Helmitheros vermivorus</i> )	No effect*	No effect
Prairie warbler ( <i>Dendroica discolor</i> )	No effect	No effect
Pine warbler ( <i>Dendroica pinus</i> )	No effect	No effect
Yellow-breasted chat ( <i>Icteria virens</i> )	No effect*	No effect
Raccoon ( <i>Procyon lotor</i> )	No effect	No effect
Bobcat ( <i>Felis rufus</i> )	No effect	No effect
Gray squirrel ( <i>Sciurus carolinensis</i> )	No effect	No effect
Largemouth bass ( <i>Micropterus salmoides</i> )	No effect	No effect
Smallmouth bass ( <i>Micropterus dolomieu</i> )	No effect	No effect
Southern redbelly dace ( <i>Phoxinus erythrogaster</i> )	No effect	No effect
Rock bass ( <i>Ambloplites rupestris</i> )	No effect	No effect
Bluegill ( <i>Lepomis macrochirus</i> )	No effect	No effect
Grass pickerel ( <i>Esox americanus</i> )	No effect	No effect
Pugnose minnow ( <i>Opsopoeodus emiliae</i> )	No effect	No effect
Redfin shiner ( <i>Lythrurus umbratilis</i> )	No effect	No effect
Stream invertebrates	No effect	No effect
Cave invertebrates	No effect	No effect
Cliff plant associations	No effect	No effect
Barrens/glades	No effect	No effect

\* Although the proposed project would have no effect on local populations, it could influence the selection of nest and feeding locations.

### **Cumulative Effects**

In the past, various activities have taken place in this area that may have affected plant or animal species which are now federally-listed, on the Regional Forester's list, listed as Forest Species of Concern, or considered Management Indicator Species. Past activities on private land that may

have affected these species include conversion of forested habitat to agricultural land or homesteads, timber harvest, road construction, livestock grazing, use of riparian areas, and modification of streams, among others. Past activities on National Forest System lands in this area which may have affected some of these species include timber harvest, road building, reforestation, and the maintenance of forest openings.

Present or reasonably foreseeable future activities on private land which may have an impact on these species include continued agricultural use of riparian areas, timber harvest, construction and use of roads, and activities associated with nearby residences. Private lands near the project area will continue to be a mix of forests, open pasture, crop fields, and homesteads.

Present or reasonably foreseeable future activities on National Forest System land in the vicinity include the maintenance of forest openings and the conversion of non-native pines to native hardwoods, either naturally or through vegetation management such as timber harvest. Since native hardwood stands generally provide better habitat for native wildlife and plants than pine plantations, this conversion should be beneficial for most of these species.

The proposed project would have no appreciable cumulative effects on listed species, when added to the effects of past, present, and reasonably foreseeable future activities. The cumulative effects of the proposed project on plant and animal habitat within the project area is small.

## **Heritage Resources**

### **Affected Environment**

A field survey for heritage resources was conducted on the proposed trail route and the site of the parking area (Roark 1998). Eight new historic sites were identified, including three homesteads, three farmsteads, a quarry, and a transportation route. One of the farmstead sites appears to be ineligible for listing, but the remaining seven sites require further work to assess their significance according to National Register of Historic Places criteria. These sites are considered potentially eligible for inclusion on the National Register.

The historic transportation route is a portion of the first travelway across southern Indiana, known as the Old Buffalo Trace or the Vincennes Trace. The route was created by American bison migrating between the open prairies of Illinois and the Falls of the Ohio. It was also used by Native Americans and pioneers who settled southern Indiana or moved westward to settle the Northwest Territories. The trace, along with some of the other historic sites in the vicinity, could provide important clues about the settlement of Indiana and the westward expansion by Americans of European descent. Additional inventory and evaluation of sites in this area is recommended in the future. At this time, an interpretive sign is recommended for placement at the trailhead.

### **Mitigation measures for potentially eligible historic sites**

The seven potentially significant historic sites will be protected from ground disturbance until they can be evaluated to clearly determine their eligibility. A 20-meter buffer zone will be

established around the sites (12-Or-593, 12-Or-595 through 600). Existing roads within these buffer zones may be used, as long as there are no earth-disturbing activities (widening, digging ditches, etc.) within the protective buffer zone.

If any archaeological artifacts or human remains are discovered during project implementation, the work would stop and the finding would be reported immediately to the Forest Archaeologist. The discovery would also be reported to the IDNR Division of Historic Preservation and Archaeology.

This mitigation has been successfully used in other projects. For example, in the Midwest Trail Special Use Permit Environmental Assessment of 1996 (U.S. Department of Agriculture, Forest Service 1996a), an existing trail was used which passed in close proximity to several historic sites. During the 1999 inspection, no adverse effects due to trail use were observed at the historic sites.

### **Effects of Alternative A (Proposed Action)**

As long as the mitigation measures are employed, the proposed project would have no effect on significant or potentially significant archaeological sites. No known historic properties listed in or eligible for inclusion in the National Register of Historic Places would be affected by the project.

### **Effects of Alternative B (No Action)**

The no-action alternative would have no effect on significant or potentially significant archaeological sites. Under this alternative, the placement of an interpretive sign discussing the significance of Buffalo Trace would not occur.

### **Effects of Alternative C (Hiking Only)**

As long as the mitigation measures are employed, the proposed project would have no effect on significant or potentially significant archaeological sites. No known historic properties listed in or eligible for inclusion in the National Register of Historic Places would be affected by the project.

### **Cumulative Effects**

As long as the mitigation measures are employed, the proposed project would have no effect (or cumulative effect) on significant or potentially significant archaeological sites. No known historic properties listed in or eligible for inclusion in the National Register of Historic Places would be affected by the project.

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# Appendix A

## Public Comments from Initial Scoping

Public comments for this project were requested by a scoping letter sent to 1,021 individuals and organizations on February 18, 1998. The proposal was also announced in the February 1998 issue of the *Hoosier Quarterly* with updates published in the May 1998, August 1998, November 1998, and February 1999 issues. The comments were solicited in conjunction with a similar proposal for the Shirley Creek area. Some respondents replied with comments applicable to both and some responded specifically to this project. Eight individual responses and 2 form letters from 43 individuals were received with comments applicable to both projects. There were three individual responses applicable specifically to this project as well as one petition signed by 30 individuals. One response was received that did not address any issue and was unclear as to the writer's intent.

Each response was examined to identify specific concerns and issues. Most responses contained several issues or concerns that were grouped in categories of similar interests. Each response was assigned an identification number to identify the respondent and track the comments. A summary of the comments are presented by category. In the following summary, "C" indicates a comment and "R" indicates the USDA Forest Service response. Direct quotes appear in quotation marks and paraphrased comments do not have quotation marks. The source of the comment is indicated by the response number in the comment section in parentheses. Grouped comments have several response numbers in parentheses.

The following list identifies those who responded during the scoping process:

<b>Name/organization represented</b>	<b>Response #</b>
Bowen, Pat	10
Conteras, Lottie and Nancy Sease	2
Duncan, Lester and Loretta	1
Form Letter #1	14
Form Letter #2	15
Hein, Nancy	11
Hopper, Robert- Boy Scouts of America Buffalo Trace Council	6
Koontz, Greg	5
Lane, Gary	7
Lee, John	3
Lehman, Thomas	13
Newhall, Stan	9
Noll, Joy	8
Petition- Wildwood Lakes Association	4
Revalee, Shaaron	12

## General Comments

C: Several respondents voiced their general support of the project such as they were "in favor" and "heartily approve" but did not offer a specific reason (4, 6, 9, 11, 12).

R: Comments noted.

## Benefits

C: Some respondents pointed out the benefits of the proposal (3, 8, 10, 12, 14, 15). One respondent felt the proposal would "lessen the pressure of usage on the more popular sites" and another stated the project would have the "effect of lessening pressure on all the trails." Several respondents sent in a form letter that stated it would be "a good educational opportunity for the kids." Other benefits noted included providing opportunity for several user groups, a chance to enjoy the wildlife and out-of-doors, and relief from limited riding opportunities.

R: It is acknowledged that trails provide recreational benefits in a number of ways including education and appreciation of nature. In regard to the comment regarding trail pressure and limitations, the Forest has been striving to meet the recreational demand for trails where appropriate. This project was proposed as a result of a two year public involvement effort that was used to formulate a forest-wide Trail Program in 1995. That plan identified specific locations for future trails which included the Springs Valley trail.

## Trail use concerns

C: Three respondents commented on trail use types and one questioned the need for more trails (1, 6, 7, 13). One asked "do you really want to mix hikers, bikers, and horses on such a small trail?" There was also concern about mud caused by bikes and horses. Another asked for "more trails for hikers." One commenter felt "there is an efficient amount of trails and facilities available" and would be opposed to trail construction.

R: In regard to mixed use, this issue was addressed during the public involvement process for the 1995 Trail Program. At that time it became apparent that the Hoosier National Forest did not have an adequate land base to provide a separate trail system for each use type. The message from the users at that time was that they would prefer to share trails rather than have fewer trails dedicated to a single use. It has been Hoosier National Forest policy since that time to provide trails for use by horses, bikes, and hikers (multiple-use trails), and rely on user etiquette to safely share limited trail resource. For the most part there have been very minimal user conflicts. The mud concern has been resolved on other multiple-use trails on the forest through mitigation measures such as tread hardening and drainage control. The same measures would be applied should this project proceed. In response to the comment regarding too many trails, the Forest has been striving to meet the recreational demand for trails where appropriate. This project was proposed as a result of the 1995 Trail Program process. Public input and the analysis indicated that there was a need for a trail in the Springs Valley area. Conditions have not changed since that time and the conclusion is felt to be still valid.

## Traffic and parking concerns

C: Three responses were received regarding traffic and parking (1, 8, 12). One respondent was concerned that the trail may attract more horse and all-terrain vehicle (ATV) traffic on county roads and another wanted to be sure "that the day parking areas be large enough for ease of parking the longer horse trailers." Another respondent requested more detailed information on the location of the parking areas.

R: Additional parking information was provided to the requester. The day use parking would be designed to accommodate large horse trailers. In regard to the concern about increased traffic and its effect on horses and ATVs on the road, it is acknowledged that traffic on nearby county roads may increase somewhat. However, the project is not expected to attract enough users at one time to seriously impact traffic safety. The width and line-of-site on the area roads are felt to be adequate enough to provide reasonably safe travel under normal circumstances. Also, individuals that choose to use an off road means of transportation such as horses and ATVs on a public highway do incur additional risk and extra care is warranted on their part.

## Pollution concerns for adjacent landowner

C: There was one comment from an adjacent landowner with a concern about manure runoff (2) coming on to their property.

R: In talking by phone to a person calling on behalf of the respondent, it appears the property in question is over a half mile away from the trail. More detailed maps were sent to this respondent to clarify the location of the trail in relationship to their property. Manure runoff from trails has not been a problem in the past on the 196 miles of trail open to horses on the Hoosier National Forest. Generally, high concentrations of manure do not accumulate on a trail as it would in a corral because the horses are constantly moving. USDA Forest Service standards do not permit trails to be placed in riparian (streamside) areas, and stream crossings are designed for minimal exposure to streams. Because of this, much buffer exists between trails and any means of the manure to move by water runoff. In this particular case it is extremely unlikely any manure runoff would travel the half mile to the private property. Also, horse manure naturally degrades very quickly.

## Suggestions

C: One commentor suggested that stock water be made available and trail mileages and riding times be included on trail maps (12).

R: These suggestions are appreciated. The trail is designed to make several stream crossings, however, USDA Forest Service standards prohibit locating the trail in riparian areas. Therefore, water access may be limited in some segments of the trail. It was not considered feasible to construct watering ponds. The suggestion for mileage and riding times will be considered if the projects proceeds and a trail map is published.

## Comments not related to this project

C: Several comments were received that were not related to this project and were therefore not included in this analysis (5, 8, 9, 10, 11, 12). Some wanted ATV use, others had concerns about the trail tag program, there was a comment on the Hickory Ridge trail rehabilitation work, and a suggestion was made for more hiker only trails in the Deam Wilderness. Also, there was one response that did not appear to address any issue, but contained statements such as "ride on" and always wear a helmet".

R: The Hickory Ridge and Deam trail comments are noted. ATV use is prohibited on the Hoosier National Forest per a 1987 amendment to the Forest Plan and therefore cannot be considered in this proposal. The trail tag comments will be added to the public feedback file regarding that program.

# Appendix B

## Mitigation Measures

Forest Plan guidance for mitigating potential adverse effects of management activities applies to all alternatives. Guidance for Management Area 2.8 and 7.1 may be found in the Forest Plan on pages 2-31 to 2-35 and 2-45 to 2-48, respectively. Mitigation measures applicable to the proposed action or the no-action alternative are described in the environmental effects section of this document and are summarized in this appendix.

To protect soil and water resources, as well as the aquatic and karst ecosystems, from erosion and sedimentation, the following mitigation measures will be employed. Forest-wide standard mitigation measures applicable to the construction of roads and trails will be used, as described in Appendix K of the Forest Plan (U.S. Department of Agriculture, Forest Service 1991c, K-1 to K-3) and the Forest Service Trails Management Handbook (FSH) 2309.18 (U.S. Department of Agriculture, Forest Service 1991a). Additional specifications for trail location, alignment, and tread hardening techniques as described in Engineering Management publications EM-7720-103 and EM-7720-104 (U.S. Department of Agriculture, Forest Service 1996b, 1996c) will be followed. Best management practices will also be used. Forest-wide guidance for streamside management zones, riparian areas, riparian filter strips, and special consideration zones will be followed in accordance with direction in Appendix J of the Forest Plan (U.S. Department of Agriculture, Forest Service 1991c, J-1 to J-6).

In particular, the hazard of soil erosion and subsequent sedimentation of the streams or karst systems will be mitigated by keeping the trail gradient to 10 percent or less, by constructing cross drains to divert water from the trail, and by applying crushed limestone to harden the trail tread. Where it is necessary to have short trail sections with gradients of greater than 10 percent, the erosion hazard will be mitigated by constructing additional water diversions and applying fine grade gravel to harden the diversions and the steeper sections. The outlets of the diversions may be protected using riprap or other armoring material if needed. In addition to water diversions, rolling dips, side slopes, ditching, turnpiking, and possibly small retaining walls may also be used to ensure proper drainage. About 70 percent of the trail will be hardened using number 73 or finer grade gravel. All disturbed soils outside the trail tread and parking lot will be seeded with an appropriate seed mixture (based on the amount of shading) and mulched. Where the forest canopy is too dense to allow adequate sunlight for successful revegetation (such as in shady pine stands), the disturbed soils will be mulched but not seeded.

Streams crossings and the approaches on each side of the stream will be hardened by applying crushed limestone. However, special care will be taken to ensure that the elevation of the channel is not changed, since such a change could create a barrier to fish migration or increase channel erosion downstream.

If additional caves, sinkholes, or springs are discovered during construction that would be affected by the project, the forest karst coordinator would be notified and trail construction would cease until an assessment could be made.

To protect roosting Indiana bats from direct impacts, the most recent recommendations provided by the USDI Fish and Wildlife Service will be followed. Any trees that must be removed during trail construction or parking lot expansion will be removed between September 16 and March 31. Further consultation will be sought from the USDI Fish and Wildlife Service if there is a need to cut outside of that time frame.

To ensure that no butternut trees are cut as part of this project, the field crews will be made aware of the possible presence of butternuts, taught how to identify them, and instructed not to cut any butternut trees. Portions of the trail will be rerouted to avoid butternut trees, if necessary.

To avoid impacts to ridgestem yellow flax, the trail crews and heavy equipment will confine their disturbance to the trail corridor itself within the old borrow area. No ground disturbance will occur outside of a 10-foot swath through the borrow area.

Prior to project implementation, the trail route will be checked for the presence of Illinois wood sorrel and other forest plant species of concern. This survey will be conducted during the appropriate time of year to identify these plants, if they are present.

The seven potentially significant historic sites will be protected from ground disturbance until they can be evaluated to clearly determine their eligibility. A 20-meter buffer zone will be established around the sites (12-Or-593, 12-Or-595 through 600). Existing roads within these buffer zones may be used, as long as there are no earth-disturbing activities (widening, digging ditches, etc.) within the protective buffer zone.

If any archaeological artifacts or human remains are discovered during project implementation, the work will stop and the finding will be reported immediately to the Forest Archaeologist. The discovery will also be reported to the IDNR Division of Historic Preservation and Archaeology.

To mitigate potential conflicts between trail users, signs will be posted to explain which user group should yield when another user group is encountered.

## Appendix C

# Management Indicator Species: Effects of the Proposed Springs Valley Trail Construction Project

### Introduction

The Forest Service is mandated under Code of Federal Regulations (CFR) 200.3(b)(2) "to administer and manage lands . . . in accordance with . . . the National Forest Management Act" (NFMA). The NFMA does not mention Management Indicator Species (MIS) or monitoring wildlife populations. Direction for MIS is located in 36 CFR 219.19 which establishes the basis for managing and maintaining viable populations of existing native and desired non-native vertebrate species. It states that for planning purposes a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. Specifically, 36 CFR 219.19(a)(6) states "population trends of the management indicator species will be monitored and relationships to habitat changes determined. This monitoring will be done in cooperation with state fish and wildlife agencies to the extent practicable."

The Forest Service Manual (FSM) provides further direction on MIS both in the Wildlife, Fish, and Sensitive Plant Habitat Management directives (FSM 2600) and the Planning Directives (FSM 1900). MIS are defined as "plant and animal species, communities, or special habitats selected for emphasis in planning in order to assess the effects of management activities on their populations and the populations of other species with similar habitat needs which they may represent" (FSM 2620.5). The FSM further states that species selected will be those that "best represent the issues, concerns, and opportunities to support the recovery of Federally-listed species, provide continued viability of sensitive species, and enhance management of wildlife and fish for commercial, recreational, scientific, subsistence, or aesthetic values or uses" (2621.1).

The Hoosier National Forest Land and Resource Management Plan (Forest Plan) integrates MIS into the planning process consistent with Forest Service Manual direction under Resource Integration Requirements (1922.15 items 10 and 11). The FSM states "10. Ensure that the set of management indicator species includes RPA and regional wildlife and fish indicators and represents all significant forest level wildlife and fish diversity and resource production issues, concerns, and opportunities." and "11. Ensure that management prescriptions will provide for the habitat capability to meet demand for management indicator species and provide access for recreational and commercial uses with minimal disturbance to species use of suitable habitats."

The manual further requires that plans "Ensure that the plan provides for the kinds, amounts, and distribution of habitat needed for the recovery of threatened and endangered species and needed to maintain viable, well-distributed populations of all existing native and desired non-native species" (FSM 1922.15(13)).

The Forest Plan forest-wide guidance for managing vegetation to provide diverse ecosystems states that "habitat objectives and capability for management indicator species will be considered in forest management as appropriate. MIS are monitored on National Forest land to determine population trends and to evaluate effects of management activities on selected species" (Forest Plan p. 2-6). We list the requirements for monitoring MIS in the Forest Plan on page 5-5.

Analysis of project level effects is used to determine an activity's contribution to meeting forest-wide objectives for providing for well distributed, viable populations. Management activity effects are examined in light of the existing habitat conditions, both within and outside the Forest, and documented population conditions or trends.

This document is an analysis of the effects of constructing the Springs Valley Trail on management indicator species for the Hoosier National Forest. Construction would occur along a 10.75 mile route through mesic to dry-mesic upland forest (Olson 1998). Effects are also discussed for a no action alternative. Effects on these species are indicative of those on other plants and animals utilizing similar habitats.

Cumulative effects to species are indicated by long term trends which have been established through monitoring. In some cases monitoring over a longer term is needed to establish a trend or no identifiable trend exists.

Considerable amounts of private and other agency lands are interspersed with National Forest System lands in Indiana. Effective monitoring of population trends, particularly for wide ranging species or populations, requires strategies which cross ownership boundaries. For these reasons most monitoring includes measurements or observations on the Forest nested with those on other ownerships. Cumulative effects analyses also need to incorporate information from areas without regard to political or administrative boundaries. Statewide or county-wide monitoring included in this document which is often performed by state agencies serves this purpose well.

## **Species Effects**

Wood duck (*Aix sponsa*) - This duck favors bodies of water with overhanging trees or brush and downed logs. It is often found in wetlands and marshes but will use any body of water. Wood duck nests in cavities in hardwood trees. These are not necessarily close to water, but are usually in bottomland areas. Breeding begins in early March. Ponds or perennial streams under forest canopy are required after eggs hatch, however. Acorns and grains provide most of the food for this species, but insects are frequently taken by young birds. Trail construction would not affect these habitats and so would not affect this species. No action would not effect this species either. Monitoring of wood duck production for Indiana indicates generally increasing populations with annual variability. Nesting success for this species was higher in Indiana than for the Mississippi Flyway as a whole (Hartman 1997, 1998a, 1998b, Olson 1998).

American woodcock (*Scolopax minor*) - This bird nests in wet meadows and thickets but uses dry, upland, old-field habitats for courtship. Earthworms are their preferred food, although other invertebrates are also eaten. Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action

would not effect this species either (Olson 1998). The 11 year trend for this species is downward about five percent (Lehman 1998a).

Wild turkey (*Meleagris gallopavo*) - This species uses both heavily wooded areas and openings. It typically nests in upland hardwood forests, although pine plantations are occasionally used. They begin nesting in early April. Grains of grasses, acorns, and other plant material form most of their food, but many invertebrates are also taken. Open land is also required for foraging for insects. Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998). Population trends for turkeys show continuing increases in Indiana (Bucks 1998a).

Ruffed grouse (*Bonasa umbellus*) - This species is found in woods, woods borders, brushy areas, dense young forest, or openings. It breeds during April and May. These birds feed largely on insects during the summer, but fruits and other plant material is consumed throughout the year. Because of the limited amount of habitat in the area a trail would have no effect on local populations. No action would not effect this species either (Olson 1998). The population trend for this species indicates significant declines since a peak in the 1970's. (Bucks 1998b and 1998c).

Broad-winged hawk (*Buteo platypterus*) - These hawks tend to nest in extensive woodlands or larger woodlots. It typically requires a large foraging area which includes forest, edges, and openland. This species takes primarily small mammals, reptiles, and insects as food. Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998). Populations of this bird have not shown significant changes since 1966 (Castrale et al. 1998).

Pileated woodpecker (*Dryocopus pileatus*) - This bird uses deep woods, woodlots, residential areas, and narrow bands of woods along stream courses. It is a cavity nesting species which requires large snags, and large woody debris on the forest floor. Nesting begins in early May. Insects and larvae provide most of this birds food. It is unlikely that suitable habitat is limiting populations of this species on the Forest, however the species is largely restricted to landscapes with high forest cover. Populations have shown a significant annual increase since 1966 (Castrale et al. 1998). Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998).

Acadian flycatcher (*Empidonax virescens*) - This bird is found in heavily wooded areas with developed understories and on wooded streambanks within floodplains. This bird requires snags in the understory from which it forages for insects. Nests are located on slender branches of trees and shrubs, usually 10 to 20 feet above the ground. Nesting usually occurs during June. This bird eats insects taken primarily while in flight. Population trends for this species have not shown significant changes since 1966 (Castrale et al. 1998). Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998).

Scarlet tanager (*Piranga olivacea*) - This tanager nests in large, dry, upland forests and utilizes clearings and forest edges for foraging (Mumford and Keller 1984). Nests are found on horizontal branches often above openings during June. Insects and larvae provide most of this species food. These are gleaned from leaves and twigs. Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998). This species has showed a significant annual increase in population since 1966 (Castrale et al. 1998).

Louisiana waterthrush (*Seriurus motacilla*) - This bird lives along small, usually perennial, woodland streams and is seldom found far from water. Nests are usually found in root tangles along stream banks from early May through mid June. This bird eats insects and other invertebrates taken from the edges of streams. Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998). This species populations have increased significantly since 1966 (Castrale et al. 1998).

Wood thrush (*Hilocichla mustelina*) - This bird prefers woodlands and will nest near clearings or buildings in wooded areas (Mumford and Keller 1984). It nests in deciduous forest understory trees about ten feet above the ground during June. It is found in both open and closed canopy forests. This species feeds on insects, and fruits and berries. Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998). Population trends indicate a significant decline in this species statewide since 1966. They are much more abundant in south-central Indiana landscapes dominated by forest, including the Hoosier National Forest (Castrale et al. 1998).

Black-and-white warbler (*Mniotilta varia*) - This bird nests in both secondary and mature forests. It nests at the base of large trees among dense ground vegetation in May and early June. Insects and larvae provide most this species food. These are taken from the trunk and lower branches of large trees. Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998). While this species has been detected during Breeding Bird Surveys there is no reported significant population trend information (Castrale et al. 1998).

Worm eating warbler (*Helmitheros vermivorus*) - This warbler prefers dense woodlands with down timber or dense understory vegetation. Nests are near or on the ground in late May and early June. Insects and larvae provide most of this species food, and is taken mostly from the ground. Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998). Survey information has not shown a significant population trend for this species (Castrale et al. 1998).

Prairie warbler (*Dendroica discolor*) - This bird nests in overgrown, old-field habitats. It is found in somewhat open brushy areas with many shrubs and saplings. Nests average about seven to eight feet above the ground in shrubs and small trees. Breeding takes place from May to July. Insects and larvae provide most of this species food. Because of a limited amount of habitat in the area a trail would have no effect on local populations. No action would not effect this

species either (Olson 1998). Significant changes in populations have not been detected since 1966. The greatest concentrations of this species are in southern Indiana, including the Hoosier National Forest (Castrale et al. 1998).

Pine warbler (*Dendroica pinus*) - This warbler prefers to nest in pine plantations, usually of shortleaf, more rarely in white pine. Most nests are well above the ground from May to July. Insects and larvae provide most of this species food. Because of the limited amount of habitat in the area a trail would have no effect on local populations. No action would not effect this species either (Olson 1998). While this species has been detected during Breeding Bird Surveys there is no reported significant population trend information (Castrale et al. 1998).

Yellow-breasted chat (*Icteria virens*) - This bird prefers thickets, briar patches, and somewhat open grassy area with many shrubs and saplings. Nests are near the ground, frequently in blackberry brambles from May to July. Insects and larvae provide most of this species food. Because of the amount of habitat in the area a trail would have no effect on local populations although it would influence nesting and feeding locations. No action would not effect this species either (Olson 1998). Population monitoring for this species indicates a significant annual decline since 1966 (Castrale et al. 1998).

Cliff plant associations - These plant communities include a number of vascular and non-vascular plants which occur on sandstone cliffs. They may be moist or dry, or have species characteristic of both depending on their height and aspect. Trail construction is not proposed for any cliffs. There will be no effect on cliff plant associations for either the action or no action alternatives. Monitoring of these associations on the Forest indicates they are healthy and have not been disturbed (U.S. Department of Agriculture Forest Service 1998).

Barrens/glades - Barrens and glades are grass dominated plant communities with some degree of tree canopy, typically dry site oaks. Glades have large amounts of exposed bedrock. Both communities are dominated by prairie herbs. Trail construction is not proposed for any barrens or glades. There will be no effect on barrens or glades for either the action or no action alternatives. Restoration efforts are improving the health and vigor of barrens and glades on the Forest. Monitoring indicates healthy and diverse vegetative conditions in these communities following treatments (Olson 1997).

Raccoon (*Procyon lotor*) - This species is a habitat generalist although it prefers to forage near water. It uses most terrestrial habitats and generally needs streams or ponds. Raccoons travel along hedgerows and waterways. Dens are typically in large hollow trees. Young are born in April and May. Raccoons are omnivorous. Because of the amount of habitat in the area a trail would have no effect on local populations. No action would not effect this species either (Olson 1998). Population indices for raccoons show increased populations since the 1970's with relative stability in recent years (Lehman 1998b).

Bobcat (*Felis rufus*) - Bobcats may be found in a variety of habitats including forests and open lands. They often forage along roads and openings. They are nocturnal predators. Dens are usually in crevices in rock. Young are born in late spring. Because of the amount of habitat in the area a trail would have no effect on local populations. No action would not effect this species either (Olson 1998). Although populations remain low, numbers of this species are

apparently increasing with sightings tripling since 1992 and increased incidence of roadkill (Lehman and Weaver 1998, IDNR 1999).

Gray squirrel (*Sciurus carolinensis*) - This species utilizes overmature or declining trees with hollows for den sites. It prefers mature deciduous forest, often with scattered brushy or open areas. This species may nest in cavities or build nests of twig and leaves in treetops. Litters of young are produced from February through October. It eats mostly plant material. Because of the amount of habitat in the area a trail would have no effect on local populations. No action would not effect this species either (Olson 1998). Populations of this species are stable with some year to year fluctuation (Lehman and Weaver 1998). It is unlikely that habitat is limiting.

Largemouth bass (*Micropterus salmoides*) - The largemouth bass has been stocked in most ponds and lakes on the Hoosier National Forest, and can sometimes be found in deep pools or backwaters of medium to larger streams. Spawning occurs during May and June. It feeds on insects, crustaceans, and smaller fish. Standard trail construction mitigations protect aquatic habitats from potential effects such as sedimentation or increased sunlight. For this reason, aquatic habitat would not be affected, nor would this species. In addition, the no action alternative would have no affect on this species.

Smallmouth bass (*Micropterus dolomieu*) - The smallmouth is found in clear, gravel bottomed streams with relatively cool water. Spawning occurs during May and June. It feeds on insects, crustaceans, and smaller fish. There is no habitat or populations of smallmouth bass in the project area so there is no effect of any alternative.

Southern redbelly dace (*Phoxinus erythrogaster*) - This species prefers small, clear, cool streams in ravines. Spawning occurs during May and June. They feed mostly on algae and creek sediments. Standard trail construction mitigations protect aquatic habitats from potential effects such as sedimentation or increased sunlight. For this reason, aquatic habitat would not be affected, nor would this species. In addition, the no action alternative would have no affect on this species.

Rock bass (*Ambloplites rupestris*) - The rock basis found in clear, relatively cool water, in silt-free rocky streams. It has been introduced into some lakes and ponds by anglers. It feeds on insects and crustaceans. It tends to utilize vegetated and brushy stream margins and pools, and the rocky and vegetated margins of lakes. Standard trail construction mitigations protect aquatic habitats from potential effects such as sedimentation or increased sunlight. For this reason, aquatic habitat would not be affected, nor would this species. In addition, the no action alternative would have no affect on this species.

Bluegill (*Lepomis macrochirus*) - This fish is stocked into most ponds and lakes on the Hoosier National Forest. It is found most often in clear ponds with fairly dense vegetation, but may occur in many other bodies of water. It feeds on insects and crustaceans. Standard trail construction mitigations protect aquatic habitats from potential effects such as sedimentation or increased sunlight. For this reason, aquatic habitat would not be affected, nor would this species. In addition, the no action alternative would have no affect on this species.

Grass pickerel (*Esox americanus*) - The pickerel is found in vegetated pools and slack waters in streams. Spawning occurs during March and April. It feeds on smaller fish. There is no habitat

for or populations of this fish in the project area. For this reason, pickerel habitat would not be affected, nor would this species. In addition, the no action alternative would have no effect on this species.

Pugnose minnow (*Opsopoeodus emiliae*) - The pugnose minnow is found in vegetated pools and slack waters of streams. Spawning probably occurs in June. It feeds on small invertebrates. Standard trail construction mitigations protect aquatic habitats from potential effects such as sedimentation or increased sunlight. For this reason, aquatic habitat would not be affected, nor would this species. In addition, the no action alternative would have no effect on this species.

Redfin shiner (*Lythrurus umbratilis*) - This species is found in pools in smaller streams. Their food habits are essentially unknown. Standard trail construction mitigations protect aquatic habitats from potential effects such as sedimentation or increased sunlight. For this reason, aquatic habitat would not be affected, nor would this species. In addition, the no action alternative would have no effect on this species.

Stream invertebrates - Stream invertebrates occur in ephemeral, intermittent, and perennial streams. Each stream type has its own characteristic group of species. This group of animals includes crayfish, molluscs, aquatic larval forms of insects, segmented worms, and others. Standard trail construction mitigations protect aquatic habitats from potential effects such as sedimentation or increased sunlight. For this reason, aquatic habitat would not be affected, nor would these animals. In addition, the no action alternative would have no effect on these animals.

Cave invertebrates - Cave invertebrates may be found in true caves and in deep rock shelters. Cave habitats can be affected by changes in airflow or hydrologic regimes. Trail construction is not proposed adjacent to caves so airflow would not be affected. Standard trail construction mitigations protect aquatic habitats from potential effects such as sedimentation or increased sunlight, so hydrologic regimes would not be affected and maintenance of vegetation cover adjacent to trails protects areas from soil erosion. The no action alternative would also have no effect on cave invertebrates. Monitoring of caves on the Forest has found an array of species existing in a system with no major environmental problems. Population trends have not been determined (Hobbs 1995, Liddle 1995).

Wetlands - Wetlands include ephemeral wetlands, marshes (herbaceous dominated permanent wetlands), and swamps (wetlands dominated by trees and or shrubs). Each type has distinct vegetation, soils, and hydrology. No trail construction is proposed for wetlands. There will be no effect on wetlands from any alternative. Acres of wetlands are recorded in Combined Data System (CDS) database. The number of acres of wetlands on the Forest has been increased through restoration projects and lake construction.

Monitoring of fish and stream invertebrates - Monitoring of management indicator fish species and stream invertebrates is accomplished by Hoosier National Forest personnel, the Indiana Department of Natural Resources Division of Fish and Wildlife, and the Indiana Department of Environmental Management. Surveys of each water body are completed to develop species composition profiles and information is gathered on water quality and habitat characteristics. Productivity varies between bodies of water and segments of streams and rivers. Baseline information has been gathered which shows comparatively healthy and dynamic aquatic

ecosystems on and around the Hoosier National Forest. Population trend data is not yet available. Survey information in the following documents is also incorporated by reference (Andrews 1986, 1991, 1992, and 1996; Andrews and Pearson 1983; Ayers 1978; Ball 1973; Ball and Schoenung 1996; Burch 1987a, 1987b, 1987c, 1988a, 1988b, and 1988c; Burch and Glander 1987, 1988, and 1989; Carnahan 1993, 1995, and 1997; Carnahan and Stevanavage 1995; Clarke et al. 1998; Dufour 1999; Ewing 1989, 1993, and 1997; Flatt and James 1981; Glander 1984a, 1984b, 1984c, 1984d, 1985, 1986, 1987a, 1987b, 1988, 1989a, and 1989b; Gulish 1968; Hottell 1980; Jones and Pfister 1992; Keller 1971a and 1971b; Lehman 1989, 1990a, 1990b, 1990c, and 1996; Ridenour and Johnson 1974; Simon 1995; Stefanavage 1993a and 1993b; Thomas 1986; and Wenzel 1989a and 1989b).

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## Appendix D

### Public Comments from December 16, 1999 Environmental Assessment

The pre-decisional EA was made available for public review on December 16, 1999. Those who commented on the initial scoping were provided copies and other interested parties were notified of the availability of the EA by letter. Three hundred five individuals and organizations were notified in this manner. A legal notice also was published in the Perry County News on December 16, 1999 and the document was available on the Hoosier National Forest website. There were 24 responses received along with 67 letters that appeared to be from classes from one or more schools in the French Lick area. These letters had essentially the same message and were treated as a form letter.

Each response was examined to identify specific concerns and issues. Most responses contained several issues or concerns that were grouped in categories of similar interests. Each response was assigned an identification number to identify the respondent and track the comments. Respondents who responded on an organization letterhead or identified themselves as an organization officer were identified with their organization. A summary of the comments are presented by category. In the following summary, "C" indicates a comment and "R" indicates the USDA Forest Service response. Direct quotes appear in quotation marks and paraphrased comments do not have quotation marks. The source of the comment is indicated by the response number in the comment section in parentheses. Grouped comments have several response numbers in parentheses.

The following list identifies those who commented on the December 16, 1999 EA:

<b>Name/organization represented</b>	<b>Response #</b>
Brown, Denzil	1
Capehart, Marvin and Dorothy	2
Dunlap, Keith	3
Fischesser, Tony	12
Form letter	24
Gilliatt, Lynn, Orange County Saddle Club	6
Hoppel, Debi, Indiana Trail Riders Association	22
Lee, Linda	13
Mahler, Andy	23
Martin, Tony	7
Miller, Fran	17
Miller, Susan	15
Mittenthal, Suzanne, Hoosier Hikers Council	20
Padgett, David	14
Parkes, Sonja	4
Ries, Richard, Indiana Bicycle Coalition	9

Rollins, Yvette, Hoosier Horsemen, Inc.	11
Rowland, Chris	21
Rowland, Tim	8
Royer, Cheryl	10
Showater, GeGe	16
Strauser, Tim	18
Sturgeon, Jack	5
Yakimchick, Mike	19

General comments:

C: Many respondents stated they supported the trail (2, 6, 7, 8,10, 11, 15, 17, 18, 19, 21, 23, 24).

R: Comments are noted.

Need for more trails:

C: Several respondents stated the need for more trails (1, 4, 11, 14, 16, 18, 21, 24). Some felt more trails would relieve overuse "the more trails open (within reason of course) the less impact to the few." Other wanted more variety "riding the same trails over and over can be monotonous" or cited the lack of recreational facilities in that area.

R: The forest has been striving to meet the recreational demand of trails where appropriate. This project was proposed as a result of a two year public involvement effort that was used to formulate a forest wide Trail Program in 1995. That plan specified locations of future trails and included a multiple use trail at Springs Valley.

Benefits:

C: Comments were received that highlighted the benefits of the trail (4, 5,6, 8, 12, 14, 15, 17, 24). Family experiences, education, enjoyment of the out-of-doors, jobs, and alternatives for teens were all cited.

R: It is acknowledged that trails provide recreational benefits in a number of ways.

Roads and parking:

C: Comments were received regarding roads and parking (3, 5, 24). One respondent felt the roads were adequate for trailers and suggested a pull through parking lot. Another stated the benefit of getting users off the roads. One respondent expressed concern that horse riders may park in the lake area parking lot and the EA did not specifically prohibit it.

R: We agree that the roads in the area are adequate and it is desirable to have a place for users off of roads. The parking lot is planned to be of pull through design. The parking lot proposed for this project would be the only parking lot authorized for horse trailer parking, and horses would

continue to be prohibited off trail which includes the Spring Valley Lake parking area. The text of the EA has been modified to clarify this point.

#### Trail maintenance:

C: There were two responses related to trail maintenance (2, 3). One respondent pointed out that the trail crosses many bottomland areas necessitating the need for costly maintenance. That respondent also stated that the income from the trail tag program would not be adequate to cover maintenance and hiking trails could be constructed at a fraction of the cost. Another respondent voiced concern that the old abandoned foot trail would remain in use and that steps should be taken to obliterate the old trail: "without taking the responsibility to remove the old trails, the EA is severely flawed in its conclusion that it will improve the current conditions".

R: It is acknowledged that the trail will be costly in order to protect soil and water resources. In this and any project involving expenditure of public funds, the Forest Service has a responsibility to weigh the benefits against the cost. Public input during the 1995 Trail Program process indicated that there is a benefit from and a demand for a multiple use trail at Springs Valley. The projected direct cost for this trail is approximately \$100,000 and is considered reasonable to cover the construction of the 10.75 mile trail, parking lot, and miscellaneous amenities such as signs. Strict government procurement regulations are in place to insure that only reasonable and competitive bids are accepted. If the trail is built, maintenance costs are expected to be minimal due to the initial effort put into properly building the trail. Experience has shown that a properly located, drained, and hardened trail requires little heavy maintenance. This is in contrast to prior practices on the Hoosier National Forest where areas that were not properly located, drained, and hardened needed frequent heavy maintenance.

In regard to the comment about the old foot trail, there are no plans to obliterate it. Total obliteration of a trail is an expensive process and is not considered a necessary part of this project. If the old trail is shown to be causing soil and water impacts, it might be a good candidate for a soil restoration project in the future. However, based on experience with similar trail closures elsewhere on the forest, it is unlikely that illegal use on the trail would occur to the point of causing serious damage. Experience with closure of 60+ miles of trail in the Deam wilderness has been fairly successful. In this example the trails are simply marked or brush is piled to inform users it is not a legal trail. A forest order is in place that prohibits horse and bike use users from being off a designated trail. Foot travel is still allowed but leaves little impact. While it is acknowledged that not everyone obeys this rule, for the most part users comply. In addition, leaving the old trail in place does provide a hiking opportunity for those who don't wish to share the trail, even though it is on a non-maintained, unmarked trail.

#### Resources concerns

C: Comments regarding resource concerns were received (3, 9, 23). One respondent was concerned that the trail crossed the recharge area for the Not Our Area Cave and wanted to be "sure the cultural/heritage resources of the stone/concrete dam near the mouth of the cave is protected." There was also a concern about the EA statement that Indiana bats will expend only minimal energy in finding new roost trees if a previously used tree has been cut. Another respondent wanted the parking lot located in an area where no trees needed to be cut and suggested "tree cutting should be avoided or kept to an absolute minimum." The respondent

further stated that no Indiana bat trees should be cut nor any that contribute to the current canopy closure in order to prevent fragmentation and effects on songbirds. Another respondent asked if anyone "answered concerns of leachate from limestone changing pH along and adjacent to the trail". There was also a concern about fragmentation from the 8 foot construction width and calcium coming from gravel that might contribute to the decline of neotropical songbirds.

R: In response to the cave concern, the trail route is not in the recharge for the Not Our Area Cave. Consultation with the forest karst coordinator and soil scientist confirmed that the proposed route would pass below the sinkholes associated with this cave (Reynolds and Merchant 2000). Also, all heritage resources over 50 years old found to be potentially eligible for nomination to the National Register of Historic places are protected by law. The site in question was identified and is protected under those guidelines. Also, it has been determined the trail would not affect that site (see Heritage Resource Effects, page 33).

In regard to the bat concern, the Hoosier National Forest has made the assumption that Indiana bats may occur anywhere on the Forest. All records of these bats have been solitary males, except on small bachelor roost in a cave. Because of previous informal consultation with USDI Fish and Wildlife Service on various other projects, the Forest has agreed to limit the removal of potential Indiana bat roost trees to the season when the bats are not present to avoid any potential take of the bats. No trees having characteristics of suitable bat roosts are to be removed from the site between April 1st and September 15th. Since removal of any trees along the proposed route of the trail will be done while bats are not present, bats will require only minimal effort to find adequate roosts, similar to the effects produced by other roosts which may have become unsuitable over the winter (Olson 2000b).

The forest in the area around Tucker Lake is dominated by white oak, black oak, and pignut hickory. These dominants in many of the stands in this area average over eight inches dbh, which indicates that many of the trees are considerably greater than that diameter. These and many of the other species of trees in the vicinity may provide ample suitable roosting sites for bats, especially solitary males. There are probably also many trees which could provide characteristics suitable for maternity colonies (over nine inches dbh with exfoliating bark and exposed to solar radiation), although no maternity colonies of Indiana bat have been found on the Hoosier (Olson 2000b).

Although there is little, if any, published information on the energetics of Indiana bats, it is presumed that they would expend little additional energy locating new roosts because of the small number of potential roosts which would need to be removed for this project in relation to the vastly larger number of suitable roost trees within the bats foraging distance from the project location (Olson 2000b).

In response to the tree cutting concern, every effort is made to remove as few trees as possible. This makes the work easier and cheaper, enhances visual resources, and provides for a better recreational experience when a trail is routed to wind among trees. However, it is noted some trees will have to be removed when there is simply no other way to route the trail. The Indiana bat will be protected through the mitigation measures discussed on pages 25 and B-2. The proposed parking lot location was selected based on several factors: safe sight distance for vehicles entering and leaving the area, a flat area that would not require a great deal of soil

disturbance, reasonably well drained area, and reasonable access to the trail system without the need to cut additional trail. No other site meeting this criteria is present.

In regard to the calcium and pH question, leachate will affect only a small area immediately adjacent to the trail. The leachate will raise the pH a small amount but because the area is small and immediately adjacent to the trail, the effect on the vegetative community or ecosystem will be insignificant. (Merchant 2000).

In response to the neotropical migrant concern, the following discussion is provided. The amount of fragmentation of forest habitat produced by the placement of a trail is negligible. The removal of a small number of canopy trees for a trail of 8-feet in width is similar to that of windthrow or a single tree harvest (Robinson 1993). In the understory, habitat is typically in random clumps, so the separation of groups of understory trees and shrubs by a trail is also very small. The trail is likely to be placed where a minimum of understory vegetation will be disturbed. Gravel eaten by cowbirds as a calcium source is usually found in their feeding areas. Although there are some possible feeding areas along the proposed trail route, the amount is very small when compared to that which is already available in the vicinity along county roads and private lands in the area. The additional gravel placed along the trail will not significantly increase the total amount in the area which is available from other sources. (Olson 2000c).

#### Gravel

C: Many comments were received regarding the proposed use of gravel on the trail tread (3, 5, 6, 7, 8, 9, 13, 14, 18, 21, 23, 24). Some cited safety concerns from sliding or getting skinned knees. Others felt the additional expense was not needed and stated the trail would look like a road in an area where they wish to be in the woods. Additional concerns were the wider trail width needed to apply gravel, aesthetics, large stone being too rough for mountain biking, fine stone being too slow and unmaneuverable for mountain bikes, liability, disturbance during construction, invitation for illegal motorized use, and hard on feet. Some stated that wide gravel trails used by horses would be undesirable for hikers. Several suggestions were offered as alternatives to gravel: use volunteer or prison labor or Forest Service employees, use mulch, use small equipment, gravel only portions of the trail, relocate the trail, make the trail narrower, gravel only the muddy areas, and use geotextiles. One respondent asked if the intent of gravel use was to develop a log road for a future sale or "is there some hidden agenda regarding motorized use?"

R: Because of the interest in gravel, and additional alternative to eliminate or reduce the use of gravel was considered. Most of the above comments are addressed in that discussion which can be found on page 7. Other comments are addressed below.

Safety is a concern and for that reason all trails are built to Forest Service standards (U.S. Department of Agriculture, Forest Service 1991a, 1996b, 1996c). As documented on page 9 of this EA, gravel will mix in with the soil and be less noticeable and less likely to cause falls.

The use of hand crews such as volunteers, prisoners or Forest Service staff would be feasible only if the trail was constructed with natural tread. Since it has been determined that the use of gravel is necessary for the proposed action, it is not practical to use hand crews due to the amount of earth moving and hardening that must occur. Such crews would be capable of clearing

and route and installing small drainage control devices, but would not be able to efficiently haul the necessary gravel or install the rolling dips and ditches needed to control erosion.

In response to construction disturbance, such disturbance during construction is an inevitable part of the process and is mitigated as described on pages 16 and B-1.

In regard to the intended use of the trail, it is noted that the purpose of the project is to provide a trail for recreational use as described in the Purpose and Need section on Page 1. The trail is not intended or designed for logging or off road motorized use. It would be inappropriate and illegal to use this process to pursue a project for a reason other than the stated purpose and need.

In regard to the concern about encouraging illegal off road motorized use, it is noted that such use is prohibited by forest order. It is acknowledged there is some illegal use and it is possible it may occur on this trail as well as on any trail. The Hoosier National Forest is doing the best in can with limited enforcement resources to address this problem throughout the forest.

#### Multiple use

C: Comments were received regarding the proposed multiple use status for the trail (2, 5, 7, 9, 10, 11, 15, 20). Comments were received both in favor and against. There were suggestions to provide additional hiker or biker only loops to augment the proposal. One respondent felt the trail would not be suitable for hiking and stated "it is bureaucratic fiction to classify horse trails as hiking resource, and get preference points in federal highway grants for multiple use trails".

R: Separate trails for each user group were considered as an alternative but dropped from further review (see Page 7). Adding a few additional but separate loops for each user group offers a variation to that, but was not considered in detail for the same reasons stated on page 7. Furthermore, mixing uses would likely create a temptation for all user groups to use trail segments not designated for that type of use thus resulting in an enforcement problem. The Forest has adjacent use types on the Deam Wilderness trails and Mogan Ridge trails, but does not intermix use types because of this compliance concern.

It is acknowledged that not all users are happy with the multiple use concept. The Forest is attempting to implement the needs of the public by staying consistent with the intent and public feedback of the 1995 Trail Program.

It is acknowledged that multiple use trails are rated higher when competing for Recreational Trails Program grant funds.

#### Comments beyond the scope of the project

C: Comments were received that were beyond the scope of the project (2, 13, 15, 16, 23). Comments were received both in favor of and opposed to motorized trail use. Another asked for additional trails or changes in trail restrictions, and another respondent asked for recreational equipment at Springs Valley Lake. Some respondents thanked the Forest Service for previous work. Two respondents from the same household were concerned they didn't receive a copy of the December 16, 1999 EA.

R: In regard to the motorized use comments, such use is prohibited on the Hoosier National Forest and therefore beyond the scope of this proposal.

In response to the trail comments, future trails and trail restrictions are based on previous decisions and were not part of this proposal. While we certainly appreciate being informed of current needs and wants, the Forest intends to stay consistent with the 1995 Trail Program at this time.

Regarding the recreational equipment suggestion at Springs Valley Lake, such action is beyond on the scope of this project. Installation of such equipment, while a good idea, is unlikely due to low use and limited funding.

We appreciate the thanks from Forest users.

In response to the EA mailing comment, standard procedure was followed. During initial scoping interested and affected parties are invited to comment. Those who comment are automatically sent a copy of the predecisional EA; all others are notified of the availability of the EA and are offered a copy upon request. A check of the mailing records indicates the initial scoping letter was mailed to that household, and since no response was received, a letter announcing availability of the EA was sent rather than a copy of EA. A copy of the EA was sent on January 14, 2000 to this household per their request.