

**Environmental Assessment
Otter Creek Riparian Restoration
And
Plan Amendment 6**

Crawford County, Indiana
Tell City Ranger District
Hoosier National Forest

September 13, 2001

Abstract: This environmental assessment addresses the proposal to restore a riparian ecosystem and adjacent upland ecosystem along the Little Blue River.

Responsible Official:
Kenneth G. Day, Forest Supervisor

For more information contact:
Patrick Merchant
Hoosier National Forest
811 Constitution Ave
Bedford, Indiana 47421
812 275-5987
FAX/TTY: 812 279-3423

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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 (U.S. Department of Agriculture Forest Service 1991b). During plan development 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 (U.S. Department of Agriculture Forest Service 1991a). 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 (U.S. Department of Agriculture Forest Service 1991c). 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 involves site-specific analysis to meet the requirements of NEPA and specific on-site resource needs.

The environmental assessment (EA) for the proposed Otter Creek Riparian Restoration documents the site-specific analysis for project implementation. This EA was initiated as a result of environmental analysis of the proposed restoration project in accordance with NEPA procedures. These procedures afforded interested and affected parties the opportunity to participate. This report 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.

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Otter Creek Riparian Restoration Project

Vicinity Map

Purpose and Need for Action

Introduction

The primary responsibility of the USDA Forest Service is to provide healthy ecosystems for Americans, present and future. While doing this, we sustain the vitality and diversity of the National Forest in perpetuity and provide many benefits.

The Otter Creek Riparian Restoration project is an area of land that occurs in the bottomland and uplands along the Little Blue River in Crawford County, Township 2 South., Range 1 West., Section 34 and 35 and Township 3 South., Range 1 West., Section 2 and 3, on the Tell City Ranger District of the Hoosier National Forest.

This project would be carried out in cooperation with the following partners: Indiana Department of Natural Resources, Division of Fish and Wildlife, and Ducks Unlimited, Incorporated. There is a possibility that additional partners may want to be involved in this project.

This proposal implements the Natural Resource Agenda directed by the Forest Service (U.S. Department of Agriculture Forest Service 1998). It addresses *watershed health and restoration* by restoring a forested riparian ecosystem and adjacent upland ecosystem along the Little Blue River where the majority of the forested ecosystems have been cleared for agriculture production. This restoration will contribute to watershed health by reducing floods, improve water quality, store flood waters, improve the aquatic ecosystem, hasten the reforestation of the uplands as well as provide habitat for a variety of upland and bottomland wildlife species including amphibians, migratory waterfowl, and numerous wading birds. This restoration will result in a more diverse bottomland hardwood forest and upland forest ecosystem. This proposal also addresses *recreation* by enhancing opportunities for fishing, hunting, wildlife viewing, and conservation education.

This EA displays the direct, indirect, and cumulative effects of the proposed action, a no action alternative, and a tree planting but no wetlands alternative. The proposed action is to restore the natural hydrology and reestablish the upland forests, bottomland hardwood forests and palustrine wetlands that once occurred along the Little Blue River.

Purpose of the Proposed Action

The purpose of the proposed action is to restore the features, functions, and hydrology of a bottomland hardwoods riparian ecosystem. We plan to plant selected tree and shrub species on approximately 158 acres of a bottomland hardwood riparian ecosystem and plant selected tree species on approximately 145 acres in the adjacent upland ecosystem.

Need for the Proposed Action

The Federal Government acquired the properties in 1998 and 2000. In the early 1900's the upland forests and riparian bottomland hardwood forests were cleared, and converted to agricultural land. During the last 50 years the bottomland was drained for agriculture.

The conditions of the bottomland and upland do not meet the condition desired for Management Area (MA) 2.4 in the Forest Plan (U.S. Department of Agriculture Forest Service 1991b). The desired future condition for MA 2.4 is characterized by forested shorelines or corridors up to 1 mile or more in width, with an appearance of an unbroken canopy of large diameter trees of a variety of species. The restoration of the bottomland riparian ecosystem presents an opportunity to provide leadership in promoting and demonstrating the values of riparian area management to landowners throughout southern Indiana. This restoration will improve water quality, store floodwaters, and provide habitat for a variety of upland and bottomland wildlife species including amphibians, migratory waterfowl, and numerous wading birds.

The conditions of the adjacent uplands that occur in MA 2.8 in the project area do not meet those described for MA 2.8 in the Forest Plan (U.S. Department of Agriculture Forest Service 1991b). The desired condition for MA 2.8 consists of a variety of forest plant communities. The area is a general forestland with the appearance of large areas of old forests with scattered openings. These areas will provide a variety of forest types, reflecting different ecological sites and management activities. The restoration of the upland ecosystem presents an opportunity for the Hoosier National Forest and its partners to provide leadership in promoting and demonstrating the values of upland forest restoration to landowners throughout southern Indiana.

The project is located along the Little Blue River at the mouth of Otter Creek where the majority of the riparian ecosystems on private land are used for agricultural purposes.

This proposal of restoring riparian and upland ecosystems on the Hoosier National Forest is consistent with the National Forest Management Act. The Hoosier Land and Resource Management Plan established as one of its goals: "Protect and Manage Forest Ecosystems." Forest-wide guidance to protect and manage ecosystems provides that:

"all aquatic and riparian ecosystems will be protected. . . . natural wetlands are restored whenever feasible. Management of these areas requires a total ecosystem approach, including waterfowl, other wildlife, and aquatic flora considerations."

The Management Area 2.4 guidance provides that: "No vegetation management or removal will occur on banks or in associated riparian areas except as necessary to manage threatened and endangered species, restore natural wetlands, stabilize banks, develop and maintain access sites for recreation, or restore natural riparian vegetation."

Proposed Action

Plan Amendment

Portions of The Trust for Public Land acquisition (Sagarsee tract, case T-9908 and Gilliatt tract, case T-9702) are not shown on Forest Plan maps. Therefore, the proposed action will amend the Forest Plan maps and management area acreage tables to show the management area allocation for these tracts as shown on the enclosed proposed management area allocation map (Figure 3 page 7).

Table 1 displays the additional acreages the proposed action will add to the total acreage of Management Area 2.4 and Management Area 2.8.

Management Area	1991 Plan	Plan Amendment 5	Proposed Action Alt	Plan Amendment 6
MA 2.4	13,972	13,423	+252	13,675
MA 2.8	97,232	95,906	+117	96,023

Riparian Ecosystem

On the 158 acre riparian ecosystem (Figure 2 page 6) the proposed action is to remove sections and render ineffective any field drainage tile that may have been installed, fill drainage ditches that were constructed to drain the fields, restore the flow pattern of a stream that was diverted, repair natural levees that were altered, construct low level dikes with water level control structures, and plant native tree and shrub species on the bottomlands. In the future it may be necessary to either mechanically or hand release the seedlings from competing competition. The release would be aimed at improving the seedlings survival. The proposed action will result in diverse bottomland hardwood forests and palustrine wetland forests.

The drainage tile and drainage ditches were usually located through the wettest areas of the fields that remained wet long enough to interfere with normal agricultural operations. The drainage ditches were dug into and through the natural levees to drain water into the river. There is no evidence either from past records, from aerial photography, or on the ground that drainage tile was ever installed. There is no evidence of tile outlets along the banks of the Little Blue River.

The natural levees occur along the bank of the Little Blue River except in places where natural drainages flowed through. Filling and compacting with soil, and armoring with rock to protect from erosion will repair natural levees. Six dikes, a total of 3200 feet, each about 2 to 4 feet high at the center and 8 feet wide across the top will be constructed. The construction area for the low level dikes will be approximately 25 feet from the banks of the Little Blue River. Water level control structures will be placed at natural outlets in the levees. The water control valves will be closed most of the time and only opened to drain the shallow water wetlands during

maintenance and repair work. This will create four to six shallow water areas, depending on water levels, covering about 75 to 100 acres that may have standing water most of the year. Once the dikes are constructed the soil on the dikes will be prepared for seeding, fertilizing, and liming. The seeded areas will be mulched. Search for and removal of sections of the drainage tile and construction of the dikes may occur over the next several years. Between 680 and 1200 trees and shrubs per acre will be planted on the approximately 58 acre riparian area (158 riparian acres minus 100 acres shallow water wetlands).

A parking area will be established at the old home site. The parking area will be approximately 50 feet by 50 feet with a gravel base. Barrier posts will be set around the perimeter of the parking area.

Upland Ecosystem

On the 145-acre adjacent uplands ecosystem (Figure 2 page 6) the proposed action is to plant native tree and shrub species. In the future it may be necessary to either mechanically or hand release the seedlings from competing competition. The release would be aimed at improving the seedlings survival. The proposed action will result in a diverse adjacent upland hardwood forests.

Between 680 and 1200 trees and shrubs per acre will be planted on the approximately 145-acre upland area.

Mitigations Included in the Proposed Action

Standard mitigation measures applicable to construction will be used (U.S. Department of Agriculture Forest Service 1991b, Appendix K) to protect soil and water quality. Best management practices will be used.

Management of streamside management zones will occur in accordance with direction in the Forest Plan (U.S. Department of Agriculture Forest Service 1991b, Appendix J).

Construction is proposed during the driest times of the year to mitigate potential compaction to the soil. Seeding, mulching, and fertilizing immediately following construction will mitigate soil erosion.

Other mitigations for the proposed action are discussed in the environmental effects section of this document.

Decision to be Made

The decision to be made is whether to restore these 158 acres of riparian ecosystem and 145 acres of upland ecosystem and to amend the Forest plan to show the management area allocation for these tracts.

Forest Plan Background

This proposal is consistent with the Forest Plan. The proposal moves the area toward the desired future condition (DFC) as described by the goals, objectives, and guidance for Management Area 2.4 (U.S. Department of Agriculture Forest Service 1991b, pp. 2-28 to 2-30). Restoration in Management Area 2.4 will be done to improve the visual character of the area.

Forest Plan guidance for protecting and managing ecosystems states that the Little Blue River "will be managed in the interim to ensure that the values of these areas are protected . . . Drained natural wetlands . . . are restored whenever feasible" (U.S. Department of Agriculture Forest Service 1991b, pp. 2-8 to 2-9). The Forest Plan was adopted to meet the requirements of the National Forest Management Act (NFMA) of 1976.

The proposal also moves the area toward the desired future condition (DFC) as described by the goals, objectives, and guidance for Management Area 2.8 (U.S. Department of Agriculture Forest Service 1991b, pp. 2-31 to 2-35). Planting in Management Area 2.8 will be done to speed up and improve the species diversity of the area.

Other Related Projects

The national forest has experience with similar projects involving restoration of riparian ecosystems including:

Roland Riparian Restoration	Brownstown Ranger District
Moffatt Riparian Restoration	Brownstown Ranger District
Sherfick Tract Wetlands Restoration	Brownstown Ranger District
Crane Creek Wetlands Restoration	Brownstown Ranger District
Narrows Marsh Wetlands Restoration	Brownstown Ranger District

These projects are all within 24 miles of the proposed project. The underlying analysis for these projects did not reveal any significant effects, for projects of this kind.

Other Projects in the Proposed Area

Maintenance of forest openings.

Otter Creek Riparian Restoration Project

**Location Map
English and Taswell Quadrangle
Indiana**

Scale 1:12000

**Proposed Management
Area Allocation**

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 publics, our partners and USDA Forest Service employees.

Public comments were requested in the scoping letter sent March 15, 2001. These letters informed 1,260 individuals and organizations and requested their comments about the proposed action. The notification included a 30-day comment period.

There were eight public comments in support of the project received in response to this scoping letter.

Soil and water resources were not considered issues because they are adequately protected by standard mitigation measures.

Although floodplains and wetlands are present the proposed action will not have a significant negative effect on these resources because the proposed action is to restore the natural hydrological functioning of these resources.

One major issue was identified and will serve as a basis for evaluating the alternatives including the proposed action.

Issue 1: Health and function of the Little Blue River riparian and upland ecosystems.

There is a concern that the loss of bottomland hardwood forests and associated shallow water wetlands and loss of upland hardwood forests is negatively affecting the health and function of the riparian and upland ecosystems along Otter Creek and the Little Blue River.

Alternatives

Process used to develop alternatives

We designed the Proposed Action to be compatible with Forest Plan direction. The interdisciplinary (ID) team met and discussed issues and alternatives for the Otter Creek Riparian Restoration project. Given the issues three alternatives were developed to respond to concerns. The proposed action is called Alternative A. The no action alternative is called Alternative B. A tree planting but no wetlands alternative is called Alternative C.

Alternative A (Proposed Action)

Alternative A (Proposed Action) is explained in detail in the purpose and need section of this environmental assessment.

Alternative B (No Action)

This alternative does not implement the proposed riparian restoration project. Rendering ineffective the drainage ditches and any field drainage tile would not occur. The area would revert to a bottomland hardwood forest of early to mid seral stage species. Tree roots would eventually render the functioning of any tile ineffective. The vegetative diversity, including tree species such as swamp white oak (*Quercus bicolor*), swamp chestnut oak (*Quercus michauxii*) and pin oak (*Quercus palustris*), that originally occurred may take between over 100 years to reestablish because of a lack of seed source. Shallow water forested wetlands would not be restored because some reconstruction and enhancement of natural levees would be required. This alternative does not respond to Forest Plan direction to restore natural riparian vegetation and to restore natural wetlands.

Alternative C (Tree Planting but No Wetlands)

This alternative does not implement the proposed riparian restoration project. Rendering ineffective the drainage ditches and field drainage tile would not occur. Shallow water forested wetlands would not be restored because some reconstruction and enhancement of natural levees would be required. This alternative does not respond to Forest Plan direction to restore natural wetlands.

Alternatives not considered in detail

One alternative considered was to restore or enhance a shallow water wetland in the area adjacent to and northeast of the Crawford county bridge that crosses the Little Blue River. The county road that runs through the proposed riparian restoration project is constructed a few feet below the grade of the bridge deck. This particular county road is prone to flooding whenever the Little Blue River overtops its banks. Floodwaters regularly flow over the county road for several hundred feet on either side of the bridge. The county has “High Water” signs that local residents set up whenever the road is flooded. These signs are stored in the adjacent ditch until they are needed again. The interdisciplinary team decided not to restore or enhance any wetlands in this area because they did not want to add to the potential of routing floodwaters on to the county road.

Environmental Effects

This section presents the environmental effects of implementing each alternative. The effects are presented in response to the issues and concerns identified earlier. Knowing the environmental consequences of proposed activities gives the decision maker a basis for selecting which actions to implement. The need for an environmental impact statement is based on what environmental effects are expected from the proposed actions. The following effects are discussed because they are related to the major issue: health and function of riparian and upland ecosystems along the

Little Blue River. Effects to threatened and endangered species and management indicator species is also discussed. The economic effects are shown because we have a responsibility to be cost effective. The effects on heritage resources are shown to document compliance with the National Historic Preservation Act and other acts that protect heritage resources.

The proposed treatment is to restore the natural hydrology, repair natural levees and reestablish and enhance shallow water wetlands, and provide the natural vegetative diversity for bottomland and upland hardwood forests by planting longer-lived species.

Riparian Resources

Issues

There is a concern that the loss of upland hardwood forests and bottomland hardwood forests with associated shallow water wetlands is negatively affecting the health and function of the riparian ecosystems and upland ecosystems along the Little Blue River.

Affected Environment

The project area occurs on approximately 145 acres of upland ecosystem and 158 acres of riparian ecosystem of the Little Blue River watershed. The vegetation results from past practices of draining, farming, and pasturing the land. The site is dominated by the grass/forb community established during pasturing with some encroachment of woody shrubs and trees occurring since pasturing was discontinued. The project area in the upland ecosystem occurs on soils formed in loess and in the underlying material weathered from sandstone, siltstone, and shale. The upland project area occurs on the Dry Ridges and Dry Slopes ecological landtypes (Van Kley et. al. 1994). The project area on the riparian ecosystems occurs on floodplains in soils formed in silty alluvium. The riparian project area occurs on Bottomlands ecological landtypes (Van Kley et. al.). Characteristics of soils in the project area are described in the Crawford County Soil Survey Report (USDA Soil Conservation Service 1975). Dry-mesic and mesic associates are predominant while wet-mesic and wet associates would require further restoration of the natural hydrology.

Effect of Proposed Action (Alternative A)

The direct effects of rendering drainage ditches and drainage tile ineffective will be the exposure of about 50 square feet of bare mineral soil in several places throughout the 158 acres depending on the amount of tile in each shallow water wetland area. There will also be six areas a little over one third of an acre each that will have bare mineral soil once the construction of the low level dikes has been completed. The indirect effects to the riparian resource would be increased soil erosion and sediment being washed into the Little Blue River. Since the construction areas will be at least 25 feet from the stream, the grass/forb community will act as a buffer strip to trap and mitigate any soil that may erode during the construction activity. Also seeding and mulching of the exposed soil will occur as soon as the low level dike is finished. Monitoring past similar activity indicates that the seed mixture will germinate within two weeks. During that time the

mulch will minimize (mitigate) any soil erosion or sedimentation that may occur. The short term effects of the proposed action would be the exposure of bare mineral soil during construction activity for up to two weeks. The long-term effects of the proposed action will allow the normal hydrologic functions of this floodplain to operate. The restoration of the natural levees and the construction of low-level dikes along with the planting of trees and shrubs will expedite the recovery of a diverse bottomland hardwood forest. Additional beneficial effects would be improved water quality, the storage of storm and floodwater, improved riparian wildlife habitat and improved fish and other aquatic life habitat. Planting shrub and longer-lived tree species in the uplands will expedite the recovery of a diverse upland hardwood forest.

Effect of Alternative B (No Action)

The effects of no action would be to slow the return of native vegetative diversity. This would be true due to a lack of seed source for some of the longer-lived species. Tree roots would eventually grow into any drainage tile, which would cause it to not function. Once the drainage tile was ineffective the normal hydrologic functions would recover. The drainage ditches that were dug could remain in operation for several years. The existing bottomland species may or may not eventually convert naturally to a more appropriate bottomland hardwood forest. Shallow water forested wetlands would not be restored because some reconstruction and enhancement of natural levees would not occur. The upland forest ecosystems would convert naturally over time but it would not have as much species diversity.

Effect of Alternative C (Tree Planting No Wetlands)

The planting of tree and shrub species will expedite the recovery of a diverse bottomland hardwood forest. Additional beneficial effects would be improved water quality, short-term storage of storm and floodwater, improved riparian wildlife habitat and improved fish and other aquatic life habitat. Planting shrub and longer-lived tree species in the uplands will expedite the recovery of a diverse upland hardwood forest.

Cumulative Effects

The area of consideration for cumulative effects includes the riparian and aquatic ecosystems within two miles downstream of the proposed action.

In the past about 250 acres of riparian ecosystem existed along the Little Blue River, which included bottomland hardwood forests and associated shallow water wetlands. Currently about 25 acres (10 percent) remains in bottomland hardwood forest while 225 acres is in agriculture production. The proposed action would restore 158 acres of riparian ecosystem bringing the total acreage of riparian ecosystem to 185 acres or about 74 percent within the 2-mile area of consideration. It is unlikely that additional riparian areas in agricultural production along this corridor will be restored to riparian ecosystems.

Therefore we conclude that cumulative effects to the environment from the incremental impact of the proposed action is positive when added to other past, present, and reasonably foreseeable future actions.

Threatened and Endangered Species

Affected Environment

The project area occurs on approximately 158 acres of riparian area and 145 acres of upland habitat within the Little Blue River watershed. The vegetation results from past practices of draining, farming, and pasturing the land. The site is dominated by the grass/forbs community established during pasturing with some encroachment of woody shrubs and trees' occurring since pasturing was discontinued. Dry-mesic and mesic associates are predominant with wet-mesic and wet associates in the periodically wet depressions. Increasing the wet and aquatic associates would require further restoration of the natural hydrology.

Effect of Proposed Action (Alternative A)

The Hoosier National Forest entered into formal consultation with the USDI Fish and Wildlife Service under Section 7 of the Endangered Species Act during forest planning. The USDI Fish and Wildlife Service identified two Federally listed species with part of their range on the Hoosier National Forest (U.S. Department of Agriculture Forest Service 1995). These species are the endangered Indiana bat (*Myotis sodalis*) and the threatened bald eagle (*Haliaeetus leucocephalus*). Additionally the endangered fanshell mussel (*Cyprogenia stegaria*) and the endangered gray bat (*Myotis grisescens*) are believed to occur within the boundary of the Hoosier National Forest.

There are no known federally threatened or endangered species in the project area. There is no critical habitat for these species in the low-level dike construction areas. There is no risk of taking Indiana bats, bald eagles, fanshell, or gray bats.

A biological evaluation of the proposed action concluded that the Otter Creek Riparian Restoration project would have insignificant (cannot meaningfully be measured) or discountable (unlikely to occur) effects to federally endangered Indiana bat. Combined with past, present, and reasonably foreseeable future activities in the area, there is no appreciable cumulative effect. There will be no effect on bald eagle, fanshell, and gray bat (Olson 2001).

No short term or long term impacts are predicted for Regional Forester's sensitive species that would lead to reduced viability within the Forest planning area. Past activities in and around this project include farming, grazing, timber harvest, and wildfire. There are no appreciable cumulative effects of this activity when added to other impacts from past, present, and reasonably foreseeable future activities that would lead to reduced viability within the Forest planning area (Olson 2001).

The Forest species of concern (FSOC) memorandum documents that there should be no adverse impacts on any of the Forest species of concern within the project area (Olson 2001).

Effect of Alternative B (No Action)

Effects of the no action alternative: Since no action would be taken, there will be no effect on threatened or endangered species, Regional Forester's sensitive species, or Forest species of concern.

Cumulative effects

Since no action would be taken, there will be no cumulative effect on threatened or endangered species, Regional Forester's sensitive species, or Forest species of concern.

Effect of Alternative C (Tree Planting No Wetlands)

There are no known federally threatened or endangered species in the project area. There is no critical habitat for these species in the drainage ditch or field tile areas. There is no risk of taking Indiana bats, bald eagles, fanshell, or gray bats.

Tree planting would have a insignificant (cannot meaningfully be measured) or discountable (unlikely to occur) effects to federally endangered Indiana bat. Combined with past, present, and reasonably foreseeable future activities in the area, there is no appreciable cumulative effect. There will be no effect on bald eagle, fanshell, and gray bat (Olson 2001).

No short term or long term impacts are predicted for Regional Forester's sensitive species that would lead to reduced viability within the Forest planning area. Past activities in and around this project include farming, grazing, timber harvest, and wildfire. In the future, it is likely that other wetlands nearby will be restored. There are no appreciable cumulative effects of this activity when added to other impacts from past, present, and reasonably foreseeable future activities that would lead to reduced viability within the Forest planning area (Olson 2001).

The FSOC memorandum found that there should be no adverse impacts on any of the Forest Species of Concern within the project area (Olson 2001).

Management Indicator Species

Effects of the proposed action, the no action alternative, and tree planting but no wetland alternative are discussed in detail in Appendix C of this document. Table 2 below presents a summary of those effects.

Table 2: Summary of Effects on Management Indicator Species

Species	Proposed Action (Alternative A)	No Action (Alternative B)	Tree Planting but No Wetlands (Alternative C)
Wood duck (<i>Aix sponsa</i>)	Positive	No effect	No effect
American woodcock (<i>Scolopax minor</i>)	Positive	Negative	No effect

Species	Proposed Action (Alternative A)	No Action (Alternative B)	Tree Planting but No Wetlands (Alternative C)
Wild turkey (<i>Meleagris gallopavo</i>)	No effect	No effect	No effect
Ruffed grouse (<i>Bonasa umbellus</i>)	Positive	Positive	Positive
Broad-winged hawk (<i>Buteo platypterus</i>)	No effect	No effect	No effect
Pileated woodpecker (<i>Dryocopus pileatus</i>)	Positive	Positive	Positive
Acadian flycatcher (<i>Empidonax vireescens</i>)	Positive	Positive	Positive
Scarlet tanager (<i>Piranga olivacea</i>)	Positive	Positive	Positive
Louisiana waterthrush (<i>Seiurus motacilla</i>)	No effect	No effect	No effect
Wood thrush (<i>Hylocichla mustelina</i>)	Positive	Positive	Positive
Black-and-white warbler (<i>Mniotilta varia</i>)	Positive	Positive	Positive
Worm eating warbler (<i>Helmitheros vermivorus</i>)	Positive	Positive	Positive
Prairie warbler (<i>Dendroica discolor</i>)	Positive then Negative	Positive then Negative	Positive then Negative
Pine warbler (<i>Dendroica pinus</i>)	No effect	No effect	No effect
Yellow-breasted chat (<i>Icteria virens</i>)	Positive then Negative	Positive then Negative	Positive then Negative
Cliff plant associations	No effect	No effect	No effect
Barrens/glades	No effect	No effect	No effect
Raccoon (<i>Procyon lotor</i>)	No effect	No effect	No effect
Bobcat (<i>Felis rufus</i>)	No effect	No effect	No effect
Gray squirrel (<i>Sciurus carolinensis</i>)	Positive	Positive	Positive
Largemouth bass (<i>Micropterus salmoides</i>)	Positive	Positive	Positive
Smallmouth bass (<i>Micropterus dolomieu</i>)	Positive	Positive	Positive
Southern redbelly dace (<i>Phoxinus erythrogaster</i>)	No effect	No effect	No effect
Rock bass (<i>Ambloplites rupestris</i>)	Positive	Positive	Positive
Bluegill (<i>Lepomis macrochirus</i>)	Positive	Positive	Positive

Species	Proposed Action (Alternative A)	No Action (Alternative B)	Tree Planting but No Wetlands (Alternative C)
Grass pickerel (<i>Esox americanus</i>)	Positive	Positive	Positive
Pugnose minnow (<i>Opsopoeodus emiliae</i>)	No effect	No effect	No effect
Redfin shiner (<i>Lythrurus umbratilis</i>)	No effect	No effect	No effect
Stream invertebrates	Positive	Positive	Positive
Cave invertebrates	No effect	No effect	No effect
Wetlands	Positive	Negative	Negative

Economic Analysis

Affected Environment

In the proposed action, no action alternative, and tree planting but wetlands alternative the economic differences are incremental, so the analysis included only variable costs. Indirect costs do not change among alternatives; therefore, they are not included. Costs included in this analysis are only those expected to be incurred by the USDA Forest Service and the partners in this project. Costs estimates are based on historical costs for similar projects on the Hoosier National Forest.

Environmental Effects of Alternatives

Alternative A (Proposed Action)

The direct cost associated with restoring the riparian ecosystem and tree planting as discussed in the proposed action on pages 3-4 is estimated to be about \$226,000.

Alternative B (No Action)

No direct costs are associated with this alternative.

Alternative C (Tree Planting No Wetlands)

The direct cost associated with tree planting in the upland and riparian ecosystems is estimated to be about \$170,000.

Heritage Resources

Affected Environment

Riparian ecosystem area –

A complete surface survey of the 158-acre riparian area was completed. All of the five new sites have been determined not eligible for listing to the National Register of Historic Places so do not require protection during the restoration activities (Krieger 2001).

Upland ecosystem area -

The surface survey of the 145-acre upland project area is complete at this time. A determination of eligibility for inclusion to the National Register of Historic Places for the newly recorded sites has not been made at this time. The Forest Service is in consultation with the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology about the findings on the historic or prehistoric properties within the upland ecosystem area.

USDA Forest Service Participants

Kim Earney, Civil Engineering Tech

A.A. Drafting Technology, Chadron State College, 1976

Keno Kohl, Civil Engineer

B.S., Civil Engineering, Southern Illinois Univ., 1974

Angie Krieger - Forest Archaeologist, Heritage Resources Specialist.

B.A. Anthropology, Univ. Of Minnesota, 1985

Pat Merchant - Soil Scientist, Soils and Watershed Specialist.

B.S., Agronomy - Soils, Iowa State Univ., 1968

Steve Olson – Natural Resource Specialist.

B.A., Zoology, Southern Illinois Univ., 1982

Kelle Reynolds – Wildlife Biologist/Karst Coordinator.

B.S., Wildlife Science, Purdue Univ. 1989

Regis Terney - Forest Planning Specialist. Planning and NEPA Specialist.

B.S., Forest Science, Penn State Univ., 1974

Tom Thake, - Forest Silviculturist.

B.S., Forest Management, Univ. of Wisconsin, 1973.

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Appendix A

Public Comments from Initial Scoping

The ID team categorized each response received during the scoping process to identify specific comments, issues, and concerns. These comments were identified and sorted. Following each comment is a summary of how the comment was addressed in the analysis.

In the following pages, we group comments by issues. There is also a "general comments, opportunities and alternatives for consideration" heading which lists non-specific issue comments. "C" indicates a comment. "R" indicates the USDA Forest Service response. Direct quotes are within quotation marks. Paraphrased comments are without quotation marks. In parentheses we list the comment source code (response number - comment number). When we list several comment source codes the quote is from the first comment source code, however, the ID team believes the quote represents the additional comments.

Approximately 1,260 groups, individuals, and neighbors were contacted regarding the proposed project. The following lists those who responded during the public scoping process. A complete listing of the individuals contacted can be found in the project file.

The public was also provided an opportunity to comment on the proposed action in the following issues of the Hoosier Quarterly: May 2001 and August 2001.

There have been no comments received in response to the proposed action described in the Hoosier Quarterly.

The Hoosier Quarterly is mailed to about 300 individuals and organizations so that they are received during the first or the second week of the month.

Name	Organization	Response #
Adams, William R		07
Ash, Paul T		03
Eisfelder, Carl		08
Garrett, William R.		04
Hopkins, Art		05
Leblanc, David C.		02
Matthew, Antonia		06
Warner, Barbara H.		01

General Comments, Alternatives for Consideration

**General Comments, Otter Creek Riparian Restoration and
Plan Amendment 6**

G-1 Support riparian restoration project

C. All comments expressed support of the project. (01, 02, 03, 04, 05, 06, 07, and 08)
Comments included: “I strongly support this project,” “It sounds like a great idea,” “I support the project to restore several shallow water wetlands,” “My comments on the project, as you might expect, is go for it.”

R. Comments acknowledged. Thank you.

G-2 Question about efforts to introduce mammals and birds

C. “Will your efforts include introduction of mammals, birds and/or rodents to the area to hasten the repopulation of the area with its normal types animals?” (04)

R. Experience has demonstrated that as the habitat of the areas recovers the animals and birds that use that type of habitat will repopulate the area.

Appendix B

Mitigation Measures

Forest Plan guidance for mitigating potential adverse effects of management activities applies to all alternatives. Management Area 2.4 guidance is noted in the Forest Plan on pages 2-28. Forestwide guidance applicable to all forest lands is found in Forest Plan Appendix K (U.S. Department of Agriculture Forest Service 1991b). Mitigation measures created in response to issues and concerns associated with the proposed action and alternatives are contained in this Appendix.

Standard mitigation measures applicable to road reconstruction will be used (U.S. Department of Agriculture Forest Service 1991b, Appendix K) to protect soil and water quality. Best management practices will be used.

Management of streamside management zones will occur in accordance with direction in the Forest Plan Appendix J (U.S. Department of Agriculture Forest Service 1991b).

Appendix C

Introduction

The USDA 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 (USDA Forest Service 1991b) and the Planning Directives (USDA Forest Service 1991a). 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" (USDA Forest Service 1991b, 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" (USDA Forest Service 1991b, 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 (USDA Forest Service 1991a, 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" (USDA Forest Service 1991a, 1922.15(13)).

The Forest Plan forest-wide guidance for managing vegetation to provide diverse ecosystems states that "habitat objectives and capability for MIS will be considered in Forest management as appropriate. MIS are monitored on the National Forest System land to determine population

trends and to evaluate effects of management activities on selected species" (USDA Forest Service 1991c, pp. 2-6).

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 is an analysis of the effects of the proposed Otter Creek Riparian Restoration on management indicator species on the Hoosier National Forest. Effects are also discussed for a no action alternative and the tree planting but no wetland alternative. Effects on these species are indicative of those on other plants and animals using similar habitats.

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 ducks nest 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. The proposed restoration would improve suitable habitat for this species. No action and Alternative C – Tree Planting Without Wetland Construction, would be unfavorable for wood ducks since the fields would remain drained and riparian vegetation restoration would be limited. 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, Hartman 1998a, Hartman 1998b).

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. The restoration would provide excellent nesting areas on the margins of the wetlands especially considering suitable courtship areas for this species are found on nearby uplands. Both the no action alternative and Alternative C would not allow that habitat to be developed and would be negative for this bird. Alternative C, however, does provide the old-field habitat needed for courtship. The 11-year trend for this species is downward about five percent annually (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. Since suitable habitat is available under all alternatives, there would be no effect on this species. 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 are consumed throughout the year. The proposed restoration would reduce potential habitat for this species in the areas that would be flooded, however, the planting of tree seedlings would result in the production of suitable habitat for the species in uplands and other non-flooded riparian areas. The no action alternative would allow for gradual succession and produce good habitat once dense young forest becomes established on portions of the fields not subject to flooding. Alternative C would also result in the production of suitable habitat for the grouse due to tree planting. The population trend for this species indicates significant declines since a peak in the 1970's (Backs 1998b).

Broad-winged hawk (*Buteo platypterus*) - These hawks tend to nest in extensive woodlands or larger woodlots. They typically require a large foraging area that includes forest, edges and open land. This species takes primarily small mammals, reptiles and insects as food. This restoration will have no effect on this species since all alternatives would produce foraging areas in the short term and potential nesting habitat as forest cover is restored. 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 that requires large snags and large woody debris on the forest floor. Nesting begins in early May. Insects and larvae provide most of this bird's 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. The habitat for this bird will improve under all alternatives as forest cover expands. Populations have shown a significant annual increase since 1966 (Castrale *et al.* 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. All alternatives would favor this species as the floodplain becomes wooded. This would occur more rapidly under the proposed restoration and Alternative C. Population trends for this species have not shown significant changes since 1966 (Castrale *et al.* 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. All three alternatives would favor this species as the floodplain becomes wooded. This would occur more rapidly under the proposed restoration and Alternative C. This species has shown 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. None of the alternatives would affect this species

since ephemeral streams would be affected. The population of this species has increased significantly since 1966 (Castrale *et al.* 1998).

Wood thrush (*Hylocichla 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. All three alternatives would favor this species as these large fields become wooded. This would occur sooner under the proposed restoration and Alternative C. 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, where forest openings have been managed for some time. (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 of this species' food. These are taken from the trunk and lower branches of large trees. All three alternatives would allow for forest development and positively affect this species. 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 are taken mostly from the ground. All three alternatives would positively affect this species through restoration of forest cover. This would occur more rapidly under the proposed restoration and Alternative C. 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. All three alternatives would provide some habitat during the early stages of succession but would eventually result in forest cover unfavorable to this species. Favorable old-field conditions would last longer under the no action alternative than under the proposed restoration and Alternative C. 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. None of the alternatives would affect this species since there are no pine stands on the site. 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 and occur from May to July. Insects and larvae provide most of this species food. All three alternatives would provide some habitat during the early stages of succession but would eventually result in forest cover unfavorable to this species. Favorable old-field conditions would last longer under the no action alternative than under the proposed restoration and Alternative C. 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 that occur on sandstone cliffs. They may be moist or dry, or have species characteristic of both depending on their height and aspect. There will be no effect on cliff plant associations for any of the alternatives as there are no cliffs on the site. Monitoring of these associations on the Forest indicates they are healthy and have not been disturbed (USDA 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. Prairie herbs dominate both communities. There will be no effect on barrens or glades for any of the alternatives as there are no barrens or glades on the site. 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. None of the alternatives would have an effect on this species. 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. None of the alternatives would affect this species since both current and future habitat conditions would be favorable. Although populations remain low, numbers of this species are apparently increasing with sightings tripling since 1992 (Lehman and Weaver 1998).

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. All three alternatives would increase habitat for gray squirrels by restoring forest cover. 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. The proposed restoration would positively affect this species by improving organic matter inputs and developing riparian woodlands to contribute large woody material. These effects would be delayed under the no action alternative and Alternative C but would eventually result through forest succession.

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. The proposed restoration would positively affect this species by improving organic matter inputs and developing riparian woodlands to contribute large woody material. These effects would be delayed under the no action alternative and Alternative C but would eventually result through forest succession.

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. There is no habitat for this species so there would be no effect from any of the alternatives.

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. The proposed restoration would positively affect this species by improving organic matter inputs and developing riparian woodlands to contribute large woody material. These effects would be delayed under the no action alternative and Alternative C but would eventually result through forest succession.

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. The proposed restoration would positively affect this species by improving organic matter inputs and developing riparian woodlands to contribute large woody material. These effects would be delayed under the no action alternative and Alternative C but would eventually result through forest succession.

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. The proposed restoration would positively affect this species by improving organic matter inputs and developing riparian woodlands to contribute large woody material. These effects would be delayed under the no action alternative and Alternative C but would eventually result through forest succession.

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. There is no habitat for this species so there would be no effect from any of the alternatives.

Redfin shiner (*Lythrurus umbratilis*) - This species is found in pools in smaller streams. Their food habits are essentially unknown. There is no habitat for this species so there would be no effect from any of the alternatives.

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. The proposed restoration would positively affect these species by improving organic matter inputs and developing riparian woodlands to contribute large woody material. These effects would be delayed under the no action alternative and Alternative C but would eventually result through forest succession.

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. There are no caves located in the project area, so there will be no effect on these species. 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).

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. The proposed action would have a positive effect by increasing the amount of wetland habitat. The no action alternative and Alternative C would not provide for wetland restoration, so they would have negative effects. 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 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, 1996, Andrews and Pearson 1983, Ayers 1978, Ball 1973, Ball and Schoenung 1996, Burch 1987a, 1987b, 1987c, 1988a, 1988b, 1988c, Burch and Glander 1987, 1988, 1989, Carnahan 1993, 1995, 1997, Carnahan and Stevanavage 1995, Clarke et. al. 1998, Ewing 1989, 1993, 1997, Flatt and James 1981, Glander 1984a, 1984b, 1984c, 1984d, 1985, 1986, 1987a, 1987b, 1988, 1989a, 1989b, Gulish 1968, Hottell 1980, Jones and Pfister 1992, Keller 1971a, 1971b, Lehman 1989, 1990a, 1990b, 1990c, 1996, Ridenour and Johnson 1974, Simon 1995, Stefanavage 1993a, 1993b, Thomas 1986, Wenzel 1989a and 1989b).

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Appendix D

Public Comments on the (July 10, 2001) Pre-decisional EA

The ID team categorized each response received during the 30-day comment period to identify specific comments, issues, and concerns. These comments were identified and sorted. Following each comment is a summary of how the comment was addressed in the analysis.

In the following pages, we group comments by issues. There is also a "general comments, opportunities and alternatives for consideration" heading which lists non-specific issue comments. "C" indicates a comment. "R" indicates the USDA Forest Service response. Direct quotes are within quotation marks. Paraphrased comments are without quotation marks. In parentheses we list the comment source code (response number - comment number). When we list several comment source codes the quote is from the first comment source code, however, the ID team believes the quote represents the additional comments.

Approximately 1,278 groups, individuals, and neighbors were contacted regarding the proposed project. The following table lists those who responded during the comment period. A complete listing of the individuals contacted can be found in the project file.

Name	Organization	Response #
Adams, William R		05
Eisfelder, Carl	Indiana Sportsmens Roundtable	07
Garrett, William R.		02
Gilliatt, Marie		04
Hammond, Don		01
Matthew, Antonia		03
Paprocki, Doug		06

General Comments, Otter Creek Riparian Restoration and Plan Amendment 6

G-1 Support riparian restoration project

C. “Furthermore, I agree with and support the decision to implement Alternative A (Proposed Action).” (01, 02, 03, 04, 05, 06, and 07)

R. Comments acknowledged.

G-2 Encourage permanent water regimes of 6 – 24 inches

C. “These shallow water systems have the most abundant and diverse aquatic plants and wetland associated wildlife including amphibians, shorebirds, waterfowl and furbearers.” (07)

R. We agree and that is one of the goals.

G-3 Ruffed grouse is being negatively affected.

C. “Alternative A seems good. The only question I had was about the ruffed grouse – the only creature to be negatively affected.” (03)

R. Wetlands will be restored in the areas that currently flood. These areas do not provide good habitat for the ruffed grouse. Portions of the adjacent uplands and the fields not restored to wetlands will be planted to trees. As the trees grow, a dense young forest will become established. These areas will provide habitat for the ruffed grouse until they grow into a more mature stand. The portions of the uplands that are not planted will be maintained in forest openings, which will also provide habitat for the ruffed grouse.