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Department of
Agriculture

Forest
Service



Land and Resource Management Plan

Monitoring and Evaluation Report

Fiscal Year 2001

**Brown, Crawford, Dubois, Jackson, Lawrence,
Martin, Monroe, Orange, and Perry Counties,
Indiana**

Hoosier National Forest

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Responsible Official:
Kenneth G. Day, Forest Supervisor

For more information contact:
Teena Ligman, Public Affairs Specialist
Hoosier National Forest
811 Constitution Avenue
Bedford, IN 47421
Office: 812-275-5987
FAX: 812-279-3423
TDD: 812-275-7817
Website: www.fs.fed.us/r9/hoosier

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Introduction

The *Forest Plan*, as amended in 1991 provides guidance to ensure that National Forest System (NFS) lands in Indiana provide forest ecosystems that enhance biological diversity on a regional scale and provide high quality recreation opportunities. We are committed to forest activities that lie lightly on the landscape. Our mission is to allow people to enjoy the values and benefits the Forest provides through responsible resource management tailored to meet public desires.

Projects included here are the on-the-ground application of management practices and guidance to move toward the desired future condition identified in the *Forest Plan*. The final budget for any given year determines the annual program of work. This program lists the projects, along with the budgets necessary to accomplish those projects, based on site-specific environmental analysis. It also includes monitoring activities to help evaluate the quality of *Forest Plan* application.

Project monitoring determines how well we are carrying out the *Forest Plan*. It provides a check to review if *Forest Plan* guidance is realistic management direction. Monitoring also enables us to learn if we have achieved objectives identified in the *Forest Plan*. The National Forest Management Act [36 CFR 219.12(k)] requires monitoring and evaluation on an on-going basis. The attached narrative describes monitoring results for fiscal year 2001.

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PROGRAM ACCOMPLISHMENTS

Outputs [219.12(k)(1)] - Compare goods and services with those projected on pages 2-14 and 2-15 of the FEIS, Management Attainment Report (MAR) and Non-MAR Performance Measures.

TABLE 1. FISCAL YEAR 2001 MANAGEMENT ATTAINMENT REPORT - RESOURCE ACCOMPLISHMENTS

MAR Description	MAR Code	Regional Target	Forest Accomplishment
Watershed Assessment			
Assessments	EM-AS-WA		1
Land Management Planning			
Amendments	EM-AMEND		2
LRMP Monitoring and Evaluation Reports, Reports, FN	EM-LRMP-M&E	1	1
Social Profile, Community Scale, Reports	EM-SP-COM	1	1
Economic Profile, Community Scale, Reports	EM-EP-COM	1	1
Inventory and Monitoring			
Heritage Resource Inventories, Acres, FN	EM-HR-I	4,000	4,000
Terrestrial Fauna Inventories, Acres, FN	EM-TF-LPS	200	325
Aquatic Inventories - Streams and Rivers, Miles, FN	EM-AQBI-R	0	15
Aquatic Inventories - Lakes, Acres, FN	EM-AQBI-L	20	20
Soil Resource Monitoring, Acres, FN	EM-SRM-M	5	0
Water Resource Monitoring, Sites, FN	EM-WRM-M	3	3
Recreation, Wilderness and Heritage Resource Management			
Recreation Special Uses Administered, Permits, FN	RM-SU-ADMIN	17	11
Annual (wilderness) Education Contacts, Contacts, FN	RM-WLD-EC	1,300	1,500
Heritage Sites Evaluated, sites, FN	RM-HERT-EVAL	5	44
Heritage Sites Interpreted, sites, FN	RM-HERT-INTP	3	3
Heritage Sites Preserved and Protected, sites, FN	RM-HERT-P&P	6	4
Project Level Heritage Inventories, FN	RM-HERT-INV	350	734
Grazing and Rangeland Vegetation Management			
Noxious Weed Treatment, acres, FN	RG-NOX-WD-TR	45	Transferred to Mark Twain

MAR Description	MAR Code	Regional Target	Forest Accomplishment
Wildlife, Fisheries, TES Management			
Terrestrial Wildlife Habitat Restored or Enhanced, acres, FN	WL-THAB-RES	800	907
Terrestrial Wildlife Habitat Restored or Enhanced, acres, C	WL-THAB-RES	0	775
Inland Fish Lakes Restored or Enhanced, acres, FN	WL-IF-LAK-RE	0	30
TES Terrestrial Habitat Restored or Enhanced, acres, FN	WL-TES-HAB	20	20
Biological Assessments or Evaluations, tasks, FN	WL-BIO-A&E		35
Total Wildlife Structures, FN	WL-STRUCTURE	0	15
Soil, Water and Air Resources Management			
Soil and Water Resource Improvements, acres, FN	SW-RES-IMP	50	105
Real Estate Management, Landlines, Land Acquisition			
Special Use Applications Processed, permits, FN	LM-SU-APPL	36	33
Special Use Permits Administered to Standard, permits, FN	LM-SUP-STD	23	60
Land Line Maintenance, miles, FN	LM-LL-MAINT	3	3
New Boundary Marked to Standard, miles, FN	LM-LL-NEW	6	6
Ownership Adjustment Excluding Exchanges, acres, FN	LA-OWNER-ADJ	0	734
Land Exchange - Fee, acres, FN	LA-EXCH-FEE	0	89
Rights-of-Way Acquired, cases, FN	LA-ROW-ACQ	0	5
Special Use Permits Administered, FN	LM-SUP-TOT	0	188
Geologic Permits and Reports, FN/C	MG-GEO-PER	0	35
Fire Protection			
Hazardous Fuels Reduction, Appropriated, acres, FN	FP-FUELS-APP	69	351
Firefighting Production Capability, FN	FP-FFPC	22	50
Public Asset Management			
Trails Maintained, miles, FN	TR-MAINTN	95	95
Trail Construction and Reconstruction, miles, FN	CR-TR-CNST-R	5	5
Seasonal Capacity Available - Total, PAOT days, FN	RM-PAOTS-TOT	1,560,000	1,560,000
Human Resources			
Youth Conservation Corps, enrollee weeks, FN	HR-YCC-PART		48
Senior Community Service Employees, enrollee hours, FN	HR-SCSEP		29,259.5
Volunteers in National Forest Programs, enrollee years, FN	HR-VOLN-NF		2.15

The following table includes key indicators identified in the Final Environmental Impact Statement for the *Forest Plan* (p. 2-14 and 2-15).

TABLE 2. COMPARISON OF KEY INDICATORS

Key Indicator	Unit of Measure	Est. 1991-2001	1991 Output	1992 Output	1993 Output	1994 Output	1995 Output	1996 Output	1997 Output	1998 Output	1999 Output	2000 Output	2001 Output
Recreation Visitor Days (RVD)	MRVD	387				896	230	510	510	525	525	525	525
Trail Construction													
Hiking	Miles	99	0	0	0	0	0	0	0	0	0	0	0
Horse	Miles	40	20	0	0	0	0	0	0	0	0	0	0
Bike	Miles	0	0	0	0	0	0	0	0	0	0	0	0
Multiple-use	Miles	0	0	0	0	3	8.6	7.5	22	0	6.5	0	0
Trail Reconst. (all)	Miles	0	0	0	33.4	0	0	0	51.5	28.1	28.0	9	3.3
Vegetation maintained													
Forest Openings ¹	Acres	4,000	657	459	350	509	322	480	650	439	290	1,373	907
Barrens Maint.	Acres	1,131	18	40	140	40	60	0	83	0	0	20	0
Wetlands Construc													
Lakes/Ponds	Acres	120	0	5	0	0	0	0	0	0	0	0	0
Marsh/Waterhole	Acres	15	5	0	0	0	0	0	1	20	0	50	105
Vegetation Regen.													
Hardwood 0-9	Acres	4,853	0	0	0	57	0	0	150	44	76	0	0
Pine 0-9	Acres	94	0	0	0	0	0	0	0	0	0	0	0
Timber Harvested													
Sawtimber	MMBF	26	0	0.042	0.019	0.395	0.159	0.114	0.67	3.839	0.903	0	0
Roundwood	MMBF	17	0.025	0.078	0.040	0.706	0.127	0.066	1.13	1.839	0.373	.0091	.0028
Total	MMBF	43	0.025	0.120	0.059	1.101	0.286	0.180	1.89	5.728	1.322	.0091	.0028
Roads Const./Reconst.	Miles	140	0.25	3.50	1.00	0.10	0.60	7.90	10.90	1.0	1.0	7.43	6.85

¹ To prevent forest openings from converting to forest, we must maintain each forest opening on a cycle of 3 to 5 years. To carry out the Forest Plan objective of 4,000 acres of forest openings, we should maintain 800 to 1,300 acres of forest openings a year. The average annual accomplishment is 585 acres for the period of 1991 to 2001.

Costs [219.12(k)(3)]

Quantitatively compares actual cost of applying management practices with Forest Plan estimates.

As shown on line 16 of the following table entitled *Comparison of Forest Plan Costs with Fiscal Year 2001 Expenditures*, in fiscal year 2001 expenditures exceeded *Forest Plan* budget estimates. Our staff summarized over 70 budget line items into 15 program areas. *Forest Plan* cost estimates did not include land acquisition funds (\$975,256) or the Senior Community Service Program (\$249,696).

In 1990, the estimate of funds necessary to carry out the *Forest Plan* was \$4,934,648 (all figures have been adjusted for inflation based on Gross National Product Implicit Price Deflator index¹).

The mix of expenditures does not correspond to plan estimates. The Forest spent \$955,212 in forest planning, inventory, and monitoring. The interdisciplinary team did not estimate these expenditures in the 1991 *Forest Plan* cost estimates. In 1991, these expenditures were accounted in other program areas. Expenditures were less in recreation, fish and wildlife, timber, minerals, law enforcement, general administration than estimated in the 1991 *Forest Plan*. However, expenditures exceeded estimates in soil, water, and air; lands; engineering; and fire.

Our expenditures for recreation were about 60 percent of our *Forest Plan* estimate. The expenditures included:

- Hardin Ridge storage building upgrade
- Installation of accessible toilets,
- Dam mowing,
- Heavy maintenance of Hickory Ridge Trail,
- Heavy maintenance of Shirley Creek Trail,
- The beginning of construction of the Springs Valley Trail, and other general trail maintenance items.

Timber funding was about 17 percent of the *Forest Plan* estimate. The timber staff curtailed the timber program while consulting with the USDI Fish and Wildlife Service for federally listed species. In the interim, the timber staff uses these funds to conduct silvicultural examinations.

¹ The Bureau of Economic Analysis, an agency of the United States Department of Commerce, prepared the Gross National Product Implicit Price Deflator index. <http://www.bea.doc.gov/bea/dn/nipaweb/Index.htm>.

Congress funded the land acquisition program. Land acquisition costs were \$975,256 in 2000 to acquire 744 acres. The lands staff also completed environmental assessments for the Bye Land Exchange. The *Forest Plan* budget did not estimate land acquisition funds.

Engineering project expenditures included:

- Phase III rehabilitation project at Rickenbaugh House,
- Tell City Ranger District warehouse maintenance,
- Road paving within the Indian-Celina Lakes Recreation Area,
- Road rehabilitation within the Tipsaw Recreation Area,
- Tipsaw Lake Boat Ramp maintenance,
- Road reconstruction on the German Ridge Road,
- Beginning work on Shirley Creek Horse Camp Road rehabilitation,
- Final payments on the Saddle Lake Dam Rehabilitation Project,
- Final payments on the U-38 Dam Access Road project,
- Final payments on the Celina Lake Dam Access Road project, and general road maintenance.

TABLE 3. COMPARISON OF FOREST PLAN COSTS WITH FISCAL YEAR 2001 EXPENDITURES
(Shown in dollars)

Line Number	Summarized budget line item	Forest Plan Budget Estimate ¹ (2001 dollars)	Fiscal Year 2001 Expenditure ²	Difference (Expenditure - Estimate)	Expenditures as Percent of Forest Plan Budget Estimate
1					
2	Recreation	1,954,121	1,171,332	-782,789	60%
3	Wildlife and Fish	599,207	350,389	-248,818	58%
4	Range	0	0	0	
5	Planning and Inventory and Monitoring.	0	955,212	955,212	
6	Timber	854,399	143,525	-710,874	17%
7	Soil, Water & Air	135,350	190,213	54,862	141%
8	Minerals	32,428	14,835	-17,592	46%
9	Senior Citizens	0	249,696	249,696	
10	Lands ³	218,534	1,323,148	1,104,613	605%
11	Engineering	279,160	2,140,500	1,861,340	767%
12	Fire	105,742	658,693	552,950	623%
13	Law Enforcement	52,166	37,483	-14,683	72%
14	General Admin	703,540	364,382	-339,158	52%
15	Misc.	0	22,305	22,305	
16	Total All Funds	4,934,648	7,621,712	2,687,064	154%

¹ Inflation factor 1.410 based on Gross National Product Implicit Price Deflator Index, see web page: <http://www.bea.doc.gov/bea/dn/nipaweb/Index.htm>

² Expenditure/Revenue from Unit Fund Control By Program Statement (ALLOT ORG) - does not include unpaid obligations. FFIS report FCPA, run date of 11/26/01, period ending 15 2001-- September 2001 (Closed).

³ Lands includes \$975,256 in land acquisition funds.

Research [36 CFR 219.28(a)]

Review and update research activities on the Forest. Find out if the needs in the Forest Plan (pages 3-4 to 3-7) are being addressed, and are still appropriate. Identify additional research needs based on monitoring and evaluation and on changing societal needs.

Listed below are research needs addressed in FY 2001 (*Forest Plan*, pp. 3-4 to 3-7). Published research conducted in other years may be found on the Hoosier National Forest webpage at www.fs.fed.us/r9/hoosier. Most research needs recognized in the *Forest Plan* are being addressed, many through partnerships with other entities. Several research studies are still in progress and work continues.

Hoosier National Forest Research Activities:

Need: Native Plant and Animal Community Research

Hedge, Cloyce; Homoya, Mike; and Scott, Perry. 2001. Interim Report. Endangered, threatened, and rare plant species on the Hoosier National Forest. 6 pages. FOUO. On file with: Forest Supervisor, Hoosier National Forest, 811 Constitution Avenue, Bedford, IN 47421.

Hedge, Cloyce. 2002. Inventory and control recommendations for invasive plant species on selected areas of the Hoosier National Forest. 13 pages. On file with: Forest Supervisor, Hoosier National Forest, 811 Constitution Avenue, Bedford, IN 47421.

FY 2001 Site Specific Project Decisions

TABLE 4. DECISION MATRIX

Decision	Date	County
Special Area Amendment #5	11/22/00	Brown, Crawford, Jackson, Lawrence, Martin, Orange, and Perry Counties
Springs Valley Trail	02/15/01	Orange
Orange County REMC Powerline ROW	03/14/01	Orange
Tree Planting Project	03/20/01	Perry, Crawford
Patoka Lake Regional Water	04/09/01	Crawford
Southern Indiana REC Line Replacement	04/09/01	Perry
Davies Martin County REMC Line	04/11/01	Martin
Brown Small Tract Act	04/22/01	Perry
Vogel Road Access	05/30/01	Jackson
Southern Indiana REC Line Replacement	06/01/01	Perry
Bye Land Exchange	06/07/01	Crawford
Charles C. Deam Wilderness Trail Relocation Project	06/20/01	Monroe and Jackson
Hensell Road Access	07/11/01	Perry
Carpenter Private Road	07/11/01	Perry
Grant Road Access	07/16/01	Crawford
Otter Creek Riparian Restoration and Plan Amendment #6	09/13/01	Crawford

Adjacent Lands [36 CFR 219.7(f)]

Consider effects of National Forest planned management on land, resources, and communities adjacent or near the National Forest and conversely, the effects on National Forest management from activities on nearby lands managed by other public land agencies or under the jurisdiction of local government. To be addressed from a perspective of current and emerging issues.

The interrelationship between the effects of National Forest management on nearby privately owned lands and vice versa is particularly true in south central Indiana, where NFS land is interspersed with private or other public lands.

Because of the limited amount of public land in Indiana, there are many demands for its use. According to the Indiana Statewide Comprehensive Outdoor Recreation Plan (SCORP) only 3 percent of the state is in public ownership and but a fraction of an acre is available per capita of public land for recreation. Of the public ownership in Indiana, 31 percent is within the Hoosier NF. The impact of this concentration of visitors obviously affects adjacent lands as well as providing quality of life benefits and opportunities to our neighbors.

Not only Indiana residents use the forest, but the proximity of the forest to Kentucky results in a high level of use by residents across the river to the southern part of the forest. The Hoosier is by far the closest large block of public land for residents of Louisville and Owensboro, Kentucky.

Current demands that affect National Forest management on adjacent lands include: trail use, land prices, trespass, small forest products, other special uses, community development, debris burning, and flood control.



Trail use – In concert with the *Forest Plan*, demand for special use trails and permits to conduct events on NFS lands remains high. Most trail riding requests are for horse-riding events, but we have also received requests for mountain bike events. A recreation fee demonstration program went into effect in 1998. On the Hoosier NF this program requires a trail use permit for all horse and bike riders on forest trails. The permits are available as daily tags or as an annual trail use tag. Twenty-five local vendors sell tags in addition to

Forest offices. In 2001, the forest sold 1,364 annual tags and 7,469 daily tags. The fee demonstration project netted \$22,323 for projects.

Trail use has a positive impact on the local economy and the businesses that cater to these users. Horse camps in the northern portion of the forest are booked to capacity most weekends during the recreation season. There are several trail permits issued to link private horse camps to NFS trails. These permits include: Midwest Trail Rides, Mr. Hildebrand has two on the Hickory Ridge trail system and in 2001 we received an application from Manes Trails for a new permit on the Springs Valley trail system once completed.

We estimate that 21,438 horse and bike riders visited the forest in 2001 (based on tags sold and 12 percent of users being 16 years of age or younger and not required to have tags.) Random surveys showed bike use was down from previous years but horse use and hiking was up. Because of the monies received from the permit program we were able to fund a trail technician year-round to assist visitors, make contacts, and maintain trails. We also began construction on the Springs Valley Trail system.



Land Prices and Real Estate – Most realtors when advertising private land for sale mention if the land borders NFS land. People usually consider locating adjacent to NFS land to be desirable.

Trespass – Trespass from NFS land to private land occurs both inadvertently and purposefully on a continual basis. Only about 25 percent of the National Forest boundaries are marked and identifiable. As a result, people using the forest often wander onto private lands without realizing that they have trespassed. Local landowners complain about an increasing apathy on the part of these trespassers for attention to boundaries and a wanton disrespect for private landowner rights.

There is also the potential for private landowners to trespass with land practices onto NFS land. As the numbers of neighbors increase through parcel subdivision, the likelihood of trespass also increases. Some of these cases can be resolved using the Small Tracts Act authority. The cases thus resolved vary from someone's garden or yard to substantial improvements such as homes. In FY 2001, there was one Small Tract Act case to resolve these kinds of trespasses. Resources permitting, we address these trespasses on a case-by-case basis.

Off-road vehicle use continues to be a problem as adjacent landowners illegally ride from their property onto NFS land. Efforts to apprehend these trespassers are rarely productive since they do not access the Forest by public points, however, the damage they do to the forest resource can be substantial. Horseback riders also often ride onto the forest from private lands and create their own trails, resulting in further resource impacts.

Dumping of trash, old appliances, and tires is also an ongoing problem on the forest. The forest is actively working with community recycling and solid waste districts to promote responsible waste disposal. The forest has one site under special use to the Orange County Solid Waste Disposal District. This site provides for recycling containers and household trash collection.

Small forest products – Frequent requests for small forest products include plant collection, grapevine collection, house logs, fence posts, and other miscellaneous products. These are normally denied unless the request corresponds with a project which has dutifully been approved through the National Environmental Policy Act (NEPA) process. Requests for other products, though rarely approved, may be allowed under certain circumstances if they fit into *Forest Plan* guidance. Resource specialists determine the best locations and impose restrictions. As appropriate, permittees pay a fee for the small forest products, commensurate with their value.

Other special uses – Occasionally private enterprises are authorized to use NFS land. One example is the concessionaire permit for Hardin Ridge, Indian/Celina Lakes and Tipsaw Lake Recreation Areas. These permits provide jobs and income to local people as well as services to NFS visitors in a cost-efficient manner.

Other examples of recreation-related special uses on the forest are Iron Man contests. JL Kinetics does Iron Man contests under a recreation event permit. He gave the government 3 percent of gross receipts for the three events held in 2001. Greg Arnold also has a permit for an Iron Man contest and pays 5 percent of his gross receipts for one event.

Another unique permit the Forest has issued annually is for a Native American Sun Dance. The event has been held every summer for several years and attracts Native Americans from across the country who fast, pray, dance, and celebrate this ancient ritual. Local people are invited to watch, although several conditions are placed on anyone who visits the site such as no cameras and menstruating women are forbidden.

Other examples are private drives to access in-holdings or utility rights-of-way to develop rural areas. Permittees uphold permit requirements and pay a fee to the United States for the use of NFS land. They are granted non-exclusive use of the land. An Orange County REMC, Davies Martin County REMC, and a segment of Southern Indiana REC power lines were moved from a cross-country ROW route to a road corridor in accordance with *Forest Plan* guidance to consolidate utility lines along road corridors.

Community development – Community development and private land management also affects the National Forest. Development and subdivision of private parcels increases the number of people adjacent to NFS land, thus increasing the potential for direct use by neighbors. Louisville, Kentucky and Bloomington, Indiana are two large cities that continue to expand. Commuters, preferring to live in a more rural area and buy land at lower costs, are creating a demand for more home construction in the forest area. Economic development, primarily in the Tell City Ranger District, has the potential to greatly change the demographics of Perry and Crawford Counties.



Ohio River Scenic Byway – This 981-mile route, of which only a portion crosses NFS lands in three states, was nominated as a National Scenic Byway in 1996. It continues to evolve into a growing tourist attraction. Brochures are now available with loop tours off the byway through the Hoosier NF as well as other rural communities. Signage along the route was completed in 2001, and an interpretive plan is nearing completion that will include the construction of kiosks and additional opportunities. Indiana is working in partnership with the states of Ohio and Illinois to extend the route at each end through its neighboring states. Key to the route's attraction is the rolling hills and scenic overlooks on the Hoosier NF. The Forest has assisted with some funding, design, and contracting work on reconstruction portions of the route through the Hoosier National Forest.

Branchville Prison – The Branchville Training Center is across Highway 37 from the Tipsaw Recreation Area. Visitors to the inmates at the center are likely to use the Tipsaw area.



Indiana Historic Pathways – Thirty-seven counties are involved in this effort to designate, develop and market three historic pathways. The effort pulls the three routes together: US Hwy 50, US 150, and the Buffalo Trace. The preliminary work has been done and the route has been nominated and is awaiting approval. U.S. Highway 50 crosses the state as part of one of the earliest coast-to-coast highways. Through Indiana, the highway route parallels the railroad that also has historic routes in the area. The Buffalo Trace predates all other routes, as the route migrating buffalo used to cross from wintering grounds in the Kentucky Bluegrass Region to the plains of the Midwest, crossing at the falls of the Ohio River (now Louisville, KY and Jeffersonville, IN). The route angles across the southern part of the state to Vincennes where the buffalo crossed the Wabash River and spread out onto the Illinois prairies. Later stagecoaches, travelers, and even the military used the trace as the easiest access across southern Indiana. Part of its route was paved and became Highway 150. Highway 150 and the original buffalo trace both cross the National Forest, and some of the last remnants of the unpaved portions of the trace remain on National Forest System lands. The Hoosier is an active part of the committee working toward recognition of these byways.

Steel plants – AK Steel constructed a major steel mill in Spencer County, near the Tell City unit. The Wopaka Foundry in Perry County near Troy, IN now employs a significant number of people. The impact of these plants on the National Forest continues to grow.



New Ohio River Bridge – A new bridge is being constructed across the Ohio River to Owensboro, Kentucky. This will allow additional expansion of industry into southern Indiana.



Holiday World and Splashing Safari – This growing amusement park is the oldest theme park in continuous operation in the nation. In recent years, the park has undergone a major renovation. Its popularity has grown as the park has put significant money into expansion and construction. Each year they have opened a major new ride and the number of visitors continues to spiral upwards. Hotels, restaurants, and other tourist accommodations are springing up to accommodate these visitors. Many of these tourists also camp on the Forest or visit other Forest areas during their trip to the amusement park.



West Baden Hotel Renovation – The West Baden Springs Hotel has long been of interest to people from around the world. It was an architectural wonder when constructed in 1902. Cook, Inc. funded most of the 30 million dollar renovations for the hotel’s current owner, Historic Landmarks Foundation. Historic Landmarks Foundation sponsors tours of the site including the ongoing renovations and the restoration of the hotel grounds. The restoration

effort of the hotel has sparked similar renovations throughout the town of West Baden and French Lick. Other bed and breakfasts, rooming houses, and restaurants have been restored. A “promenade” is being designed to link the two towns and showcase some of the area’s history. West Baden and French Lick were once popular resorts known for their hot springs and extravagant accommodations. A major fire and the 1930 depression played roles in the demise of this once famous landmark. With current renovations and the hope of future gambling developments - the area hopes to once again become a prominent destination landmark for tourists.



Rickenbaugh House – The Hoosier NF, in conjunction with local partners, is continuing renovation of the historic Rickenbaugh House, shown here with its new windows, doors and porch. Local partners are now giving tours to school groups and hope to further develop the property as an education center. In 2001, the Hoosier won an award from Historic Southern Indiana for a school curriculum developed around the stone house. A group of teachers and Forest Service employees developed the curriculum based on the USDI National Park Service’s “Teaching with Historic Places” model. A

grant from the Eastern National Forest Interpretive Association (ENFIA) paid for compiling the books. The curriculum was sent to 70 teachers in local schools (6-8th grade levels). One teacher used the theme for a class project that involved students interviewing local people and Forest Service employees, and developing a documentary video of the house.

Flood Control – Other than streams, creeks, and rivers, there are few natural bodies of water within the boundary of the Hoosier National Forest. Most of the existing lakes and ponds were designed primarily for flood control with recreation as a secondary use. Many of the dams are located above private lands. It is critical that these structures are sound and within guidelines to ensure safety to those who live below the structures. Floods and storm damage resulted in higher risk situations, and in June of 1997, \$2.4 million were received to renovate dams including: Springs Valley, Celina, Saddle Lake, and U-38 dam, all located on the Tell City Ranger District. The work has been ongoing through 1998, 1999, and 2001, including new valves for Celina Lake, spillway for Saddle Lake, and earthwork to stabilize the structures. Work is also planned for German Ridge Lake.

Demand [36 CFR 219.10(g)]

The Forest Supervisor shall review the conditions on the land covered by the plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.

With the *Forest Plan* in 1991, many demands for the National Forest were emphasized. Demand for National Forest System resources was displayed and discussed in depth in the Draft Environmental Impact Statement, Appendix B (p. 4-4 to 4-5), and in the *Forest Plan* (p. 3-3 to 3-4). The interdisciplinary team (ID team) estimated demands for dispersed recreation, developed recreation, timber, young forest, openings and shrubland, core areas, backcountry, and natural-appearing forest. Demand was estimated to address the management challenges of land ownership patterns, recreation use, oil and gas exploration, and biological diversity. The following demand and supply table shows the *Forest Plan* estimates for 1995 (an approximate midpoint of the Plan life), and for the year 2005 to show future demand trends.

TABLE 5. FOREST PLAN DEMAND AND SUPPLY

Benefit	Projected Demand For 1995	Projected Demand For 2005	Projected Supply From Forest Plan
Dispersed Recreation (Recreation Visitor Days - RVDs)	272,000	347,502	267,000
Developed Recreation (RVDs)	120,000	168,315	120,000
Timber (Million Board Feet)	19.0	22.4	4.4
Young Forest (Acres of 0-19 hardwood, 0-9 pine, or reverting openings)	23,400	23,400	14,100
Openings and Shrubland (Acres of maintained openings, redcedar, barrens, & utility corridors)	6,300	6,300	5,800
Core Areas (Acres)	96,000	96,000	32,000
Backcountry (Acres)	78,000	78,000	53,000
Natural-appearing Forest (Acres)	185,000	185,000	96,000

As reported earlier in this report, recreation visitor days exceeded our expectations in 2000 (525,000 actual versus 387,500 projected in the Forest Plan Environmental Impact Statement, page 2-19). Demand for other benefits has not changed appreciably since the *Forest Plan* estimates.

During FY 2001, the Notice of Intent for Forest Plan Revision was published. Forest personnel hosted several open houses and public meetings to gather comments on this notice of intent. Meetings were also held to gather comments on wildlife viability analysis and on revising the Hoosier NF trail program.

From the public meetings held regarding Hoosier NF trails, it is obvious that there is still a demand for motorized recreation use of the national forest, and those advocating this use come with documented use figures, economic impacts, and projected visitor numbers. There is also a determined group of hikers who continue to advocate the need for more hiking-only trails. As a result of the workshop, no trails will be closed. A new multiple use trail at Springs Valley will be constructed and portions of the Deam Wilderness trails will be rerouted. The Fork Ridge and Buzzard Roost hiking trails will be reopened and a hiking trail will be constructed at Pate Hollow.

Interpretive signage will be designed and installed on the Twin Oaks interpretive trail and on the Springs Valley trail. A parking lot has been proposed at the Pioneer Mothers hiking trail, and a stock water tank at German Ridge. Continuous fine-tuning of the trail plan will keep the public involved in trail development and allow for us to adjust to changing demand.

Some people believe that controversy about national forest decisions demonstrate changes in demand. As stated in the April 8, 1991 Record of Decision (ROD) public concerns could not be completely resolved. Some forest users will continue to be dissatisfied with management direction (ROD, p. 17).

As evidence of this, in 2001 the Forest received two appeals on projects, coincidentally, both appeals were on the same project. The project was the Wilderness trail relocation project, a project which had been earlier appealed in 2000. The appellants were: Hoosier Hikers Council and Donald Winslow.

The issues raised in these appeals included banning horseback use in the wilderness, planning process issues such as National Forest Management Act, the Wilderness Act, range of alternatives, cumulative effects, and public involvement, as well as on-the-ground concerns such as soil erosion and trail maintenance, violating the character of wilderness, fragmentation of habitat, and potential impacts on reptiles, turtles, and herps. The FY 2000 project decision was reversed by the Regional Forester. Additional analysis and documentation was completed on this project, and the decision re-issued as five separate decisions in 2001. The two appellants appealed the project again.

The Regional Forester affirmed the FY 2001 decision in September 2001.

Protect and Manage Ecosystems

Restocked Lands [36 CFR 219.12(k)(5)(i)]

Assure lands are adequately restocked as specified in the Forest Plan (App. B, B-11 to B-13)

Reference: Annual National Forest Management Act (NFMA) Stocking Report.

Methodology: Certification for hardwood stands involved going to the particular stands and doing a walk through, observing the predominant species in the stand, and recording the percent stocked. Hardwood stand certification is based on a walk through and visual observation, no plots are taken. Seedling counts are taken on 1/750-acre plots at about one plot per acre.

Criteria for judging acceptability: We base management decisions on the information collected.

Results: For fiscal year 2001, the area called “Roland Wetland” was the only area that needed a stocking survey. The wetland consists of 100 acres. Fifty acres were developed into a wetland and 50 acres remained in an upland condition and planted with a variety of tree species (swamp white oak, swamp chestnut oak, walnut, white oak, red oak, and hickory).

Area school children and Americorps volunteers planted Roland wetland in FY 2000, planting 2000 seedlings in the 50 acres. The purpose of the planting was to reintroduce species that were likely to have been present in the area before it was farmed since natural regeneration was not likely to occur. The planting spacing was kept at 50 feet to allow for natural seeding to occur between rows and provide an assortment of species; some planted and others naturally seedling into the area.

Tom Thake, Forest Silviculturist, inspected the planted area in the summer of 2001 and calculated the survival rate at 75 percent. He made a visual inspection of the area again in late October 2001. He found the survival rate to be slightly lower based on observations but both surveys concur that the area is adequately stocked.

Thake speculates the survival rate may have dropped slightly based on some additional flooding that occurred in the fall resulting in some seedlings and shelters now being located in standing water. A future project will be to pull the shelters off the seedlings in the flooded area.

The third year stocking survey will be performed in 2003 at which time the final survival count and certification will be completed.

The wetland construction was a success with numerous wood ducks, kingfishers, heron, and other shore birds present. One modification to the existing planting procedure will be to have a more accurate description/map as to where the flooding will occur so that site preparation and planting will occur only in areas which will not later be flooded.

Forest Plan met: Yes.

Insects and Disease [36 CFR 219.12(k)(5)(iv)]

Discover, report, and evaluate areas of infestations

Methodology: Coordinate with State and Private Forestry (S&PF) and appropriate state agencies. Introduced sawfly outbreaks were first observed in 1996. Since that time, stands have been monitored throughout the forest for further signs of the sawfly. Visual observations are made regularly in these pine stands.

Results: In 2001, the white pine in the campgrounds, the most recent area for sawfly outbreaks, were monitored without any occurrence of this pest noted.

Forest Plan met: Yes.

Recommendations: Continue to monitor pine stands since additional insect outbreaks are possible. Currently this insect is not a problem.

Monitor storm damaged stands for insect and disease infestations

Methodology: Silviculturist monitored areas of damage by walk through. The areas monitored include those damaged in a March 19, 1996 storm and an April 19, 1996 tornado.

Results: This area was not checked in 2001.

Forest Plan met: Yes.

Recommendations: Additional informal monitoring will be done in FY 2002.

Soil and Water [36 CFR 219.27(a)(1)(2)(4),(b)(5),(e),(f)] ***Forest Plan Appendix J and K.***

Monitor to ensure implementation and effectiveness of soil mitigation and protection measures

Reference to relevant laws and handbooks: 36 CFR 219.27(a) (1) & 2 (f).

Forest Service Handbook (FHS) 2309.18 section 3.12b – Exhibit 02.

FSH 2509.18 Soil Management Handbook.

R9 Supplement, FSH 2509.22, Soil and Water Conservation handbook

Draft R9 Supplement, FSH 2509.18, Chapter 2, Soil Quality Monitoring

Methodology: The trail monitored this year was the Oriole Trail, specifically the segment in Happy Hollow; T3S, R1W Sections 3, 4, 33 and 34. This trail was monitored to determine implementation and effectiveness of cross drains which includes waterbars, drainage dips, built-in grade roll, and natural drains, to protect the soil productivity from significant or permanent impairment. A clinometer was used to determine the grade or percent slope of the trail. Pacing was used to measure the distance between waterbars. If the cross-drains were implemented correctly, visual observations

were also made to see if mitigation measures were effective in diverting water from the trail before soil erosion occurred.

Criteria for being acceptable: Compliance for cross-drains or waterbar spacing recommendations are found in FSH 2309.18 and FSH 2509.22.

Results: The portions of this trail that had been graveled were in good shape. Waterbar spacings were further apart than standards but with the gravel trail surface the spacing was adequate. Some of the waterbars need to be reestablished. Portions of the trail that had not been graveled had some erosion. Those portions of the trail that occurred in the Happy Hollow drainage and along Stinking Fork were muddy and wet.

Forest Plan: The majority of this trail meets the Forest Plan requirement and provides adequate protection of the soil resource. Those portions of the trail that are not graveled or that occur in the drainages are not being damaged at this time, but if not corrected in the future, there could be a detrimental impact.

Recommendations: Those portions of the trail not graveled in the bottoms should be scheduled for trail maintenance within the next year.

Caves and Karst [36 CFR 219]

Conduct surveys for development of cave management plans

Legal or Regulation Reference: Federal Cave Resources Protection Act of 1988 (FCRPA), 36 CFR 290, *Forest Plan* Appendix I

Methodology: A large percentage of this program depends on caver volunteers. Members of the Indiana Karst Conservancy conduct the actual base level inventories and cave mapping. Twenty-eight Hoosier National Forest/Indiana Karst Conservancy Karst Inventory Committee members donated 572 hours of volunteer time.

Results: The volunteers were involved in a number of activities including:

- Writing cave management plans – Four plans have been drafted.
- Attending HNF/IKC Karst Inventory Committee meetings – Meetings are held every other month to discuss items of interest on the Hoosier National Forest and to discuss cave and karst issues.
- Performing Values Team activities, which include: identifying the archaeological, biological, cultural, educational, geological, hydrological, mineralogical, recreational, and scientific resources within a number of caves.
- Locating seven new caves and relocating three caves that had poor location information.
- Providing input on Hoosier projects including the Forest Plan Revision, trails projects, and land acquisitions.

- Assisting with the Take Pride in America program – twelve individuals spent a day of ridge-walking to locate new cave locations and pick up trash.

In addition the Forest continued a contract throughout FY 2001, for a biota inventory conducted by Dr. Julian Lewis of the caves on the Hoosier National Forest. Several members of the HNF/IKC committee assisted Dr. Lewis in his work.

Dr. John Whitaker from Indiana State University conducted bat surveys at the South Gardner Kaolinite Mine Entrance and two other mine entrances.

Forest Plan met: Yes. We continue to work on acquiring locations, mapping interiors, listing resource values, and writing individual management plans (*Forest Plan* Appendix I).

Recommendations: Caves recommended for significance are required to be verified. When verification is complete, those caves that meet the significance criteria will be nominated.

Vegetative Management [36 CFR 219.15 and 219.27(b)]

Evaluate vegetative component on new forest acquisitions

Methodology: A silvicultural examination was done on all new land acquisitions. Plots were inventoried on each tract to determine the site capabilities, vegetative components, and make recommendations for management activities. The silviculturist also conducted examinations on other forest areas to update the data base or document information for future management prescriptions.

Results: A total of 9,350.5 acres were inventoried and examined on the Forest. For each area examined, we prepared a silvicultural report and made recommendations for future treatments.

Forest Plan met: Yes

Recommendations: Continue to inventory vegetative components on new acquisitions and other forest areas as time allows.

Monitor forest openings and warm season grass maintenance

Methodology: Actual project work is done cooperatively with Indiana Department of Natural Resources (IDNR), Division of Fish and Wildlife. Monitoring is done in field visits by the ecosystem team staff. The assistant fire management officer monitored weather conditions for each burn.

Results: In FY 2001 119 acres of forest openings were burned. IDNR assisted in fireline construction. The objectives for burning these openings were to reset succession, reduce encroachment by woody vegetation, and maintain or enhance grass and forb dominated plant and animal habitats. These areas will require repeat burning at intervals of 2 – 5 years to achieve these objectives on a continual basis.

The table below lists the date, time, size, and location of each burn as well as environmental conditions during the burn period.

TABLE 6. FY 2001 PRESCRIBED FIRE PROGRAM

Date	Time	Location	Temp	RH%	FSM%	Wind Speed (Direction)	Acres
3/19	1155 1300 1320	Hemlock #1 Completed	54 52	42 40	8	2-6 E 4-7 E	52
	1500 1650	Clover Lick #5 Completed	60	33	9	4-6 E	22
	1600 1610	Clover Lick #4 Completed	60	36	7	0-7 NE	14
	1620 1640	Clover Lick #3 Completed	60	36	7	3-7 NE	20
	1630 1645	Clover Lick #1 Completed	60	30	7	2-4 N	5
	1657 1709	Clover Lick #2 Completed	55	33	6	2-4 N	6
		Total Acres					119

RH = Relative Humidity
 FSM = Fuel Stick Moisture

Forest Plan Met: Yes

Recommendation: A review is recommended of some of the warm season grasses areas and forest that were treated once the vegetation has had a chance to develop. This could occur as part of the *Forest Plan* monitoring trip in the fall of 2002. This review would look at how the site has responded in comparison to our desired future condition and treatment objectives. Some variation in vegetative response may be affected by environmental conditions at the time of burn that in turn affected burn intensities.

Garlic mustard monitoring in the Deam Wilderness

Methodology: Roads in the Deam Wilderness area were inventoried for the sixth year for populations of garlic mustard.

Results: In FY 2001, garlic mustard sites in the vicinity of Blackwell Horse Camp were examined and 20 plants were pulled.

Forest Plan met: Yes

Recommendations: The sites will continue to be monitored in FY2002 to determine if the plant is still present.

Research Natural Areas (RNA's) and Special Areas (SA's) and Potential Candidates [36 CFR 219.25]

Monitor rare and exotic plant populations

Methodology: The Hoosier National Forest had an agreement with the Indiana Department of Natural Resources, Division of Nature Preserves to conduct a survey of rare and exotic plants in special areas. They began with a search of listed plant species in the Natural Heritage Data Base. The search yielded 54 listed plant species with location data.

Field workers attempted to locate these listed species during the growing seasons of 2000 and 2001. When located, the species name, GPS location, date, habitat, associated species, and other data was collected.

Results: As a result of the study there are now 62 taxa of endangered, threatened and rare plants documented on the Hoosier National Forest (Table 7). Only 36 of the original 54 listed species were confirmed, 10 species were not seen but are presumed to be still present, 8 taxa were not seen and are presumed to be absent, and 8 taxa were seen for the first time and are new to the Forest. In addition, *Sparganium androcladum*, having been earlier reported, is no longer considered a documented species on the Forest. The total number of species now considered to have extant populations on the Forest is 54.

Several species were found to have most of their known occurrences in Indiana on the Hoosier National Forest:

<i>Aconitum uncinatum</i>	<i>Eupatorium album</i>	<i>Pachysandra procumbens</i>
<i>Cirsium carolinianum</i>	<i>Hypericum denticulatum</i>	<i>Scutellaria saxatilis</i>
<i>Desmodium humifusum</i>	<i>Magnolia tripetala</i>	<i>Verbesina virginica</i>
<i>Dodecatheon frenchii</i>	<i>Oxydendrum arboretum</i>	

The eight new species were:

Buchnera americana – Bluehearts -- found at three locations. Species grows in barrens on open, sunny sites, usually south or southwest facing. Last reported in southern Indiana in 1835.

Juncus articulatus – Jointed rush – found in one location. Species grows in wetland areas. Never previously documented in southern Indiana.

Linum sulcatum – Grooved yellow flax -- found at one location – grows on barrens in full sun, prefers south facing slopes.

Oenothera perennis – Small sundrops – found in one location - grows in open fields.

Sagittaria australis – Longbeak arrowhead -- found at one location. Species grows in wetlands.

Scirpus purshianus – Weakstalk bulrush -- found in two small ponds. A wetland species.

Selaginella apoda – Meadow spike-moss – found in one location. This species is found

in most sandstone areas.

Verbesina virginica – White crownbeard -- found for the first time in Indiana. The species grows in young forest habitat.

TABLE 7. OTHER ENDANGERED, THREATENED AND RARE PLANT SPECIES FOUND ON THE HOOSIER NATIONAL FOREST

Scientific Name	Common Name	G Rank	State Status	Statewide Occurrences	Forest Occurrences
<i>Aconitum uncinatum</i>	Blue monkshood	G4	SE	5	4
<i>Bacopa rotundifolia</i>	Roundleaf water-hyssop	G5	SE	13	1
<i>Buchnera americana</i>	Bluehearts	G5?	SE	11	3
<i>Carex bushii</i>	Bush's sedge	G4	SE	10	1
<i>Carex eburnean</i>	Ebony sedge	G5	SR	18	1
<i>Cheilanthes lanosa</i>	Hairy lipfern	G5	SR	14	7
<i>Cirsium carolinianum</i>	Carolina thistle	G5	SR	14	12
<i>Crataegus intricate</i>	A hawthorn	G5	SR	2	1
<i>Desmodium humifusum</i>	Tick trefoil	G1G2Q	SE	1	1
<i>Dodecatheon frenchii</i>	French's shootingstar	G3	SR	27	23
<i>Eupatorium album</i>	White thoroughwort	G5	SE	6	4
<i>Eupatorium incarnatum</i>	Pink thoroughwort	G5	ST	13	1
<i>Festuca paradoxa</i>	Cluster fescue	G5	SE	7	1
<i>Gentiana alba</i>	Yellow gentian	G4	SR	19	5
<i>Gonolobus obliquus</i>	Angle pod	G4?	SR	20	6
<i>Hypericum denticulatum</i>	Coppery St. John's-wort	G5	ST	13	7
<i>Isoetes engelmannii</i>	Appalachian quillwort	G4	SE	10	1
<i>Juncus articulatus</i>	Jointed rush	G5	SE	3	1
<i>Juncus secundus</i>	Secund rush	G5?	SE	4	1
<i>Lechea racemulosa</i>	Illinois pinweed	G5	SE	8	1
<i>Lilium canadense</i>	Canada lily	G5	SR	10	4
<i>Linum sulcatum</i>	Grooved yellow flax	G5	SR	14	1
<i>Ludwigia decurrens</i>	Primrose willow	G5	SR	17	3
<i>Magnolia tripetala</i>	Umbrella magnolia	G5	SE	8	8
<i>Northoscordum bivalve</i>	Crow-poison	G4	SR	10	1
<i>Oenothera perennis</i>	Small sundrops	G5	ST	21	1
<i>Ophioglossum englemannii</i>	Limestone adder's tongue	G5	SR	13	4
<i>Oxalis illinoensis</i>	Illinois woodsorrel	G2G3Q	SR	26	18
<i>Oxydendrum arboreum</i>	Sourwood	G5	ST	15	10
<i>Pachysandra procumbens</i>	Allegheny spurge	G4G5	SE	4	3

Scientific Name	Common Name	G Rank	State Status	Statewide Occurrences	Forest Occurrences
<i>Panicum bicknellii</i>	A panic-grass	GUQ	SE	7	1
<i>Panicum verrucosum</i>	Warty panic-grass	G4	ST	11	1
<i>Panicum yadkinense</i>	A panic-grass	G?	ST	8	5
<i>Phlox amplifolia</i>	Large-leaved phlox	G3G5	ST	19	5
<i>Ploypodium polypodioides</i>	Resurrection fern	G5	SR	11	6
<i>Polytaenia nuttallii</i>	Prairie parsley	G5	SE	10	1
<i>Prenanthes aspera</i>	Rough rattlesnake-root	G4?	SR	29	10
<i>Rhynchospora c. interior</i>	Short-bristle horned-rush	G5T?	ST	11	1
<i>Rubus centralis</i>	Illinois blackberry	G2?Q	SE	9	4
<i>Rubus deamii</i>	Deam dewberry	G4?	SX	8	2
<i>Rubus enslenii</i>	Southern dewberry	G4G5	SE	7	3
<i>Rudbeckia f. fulgida</i>	Orange coneflower	G5T4?	SR	35	18
<i>Rudbeckia f. umbrosa</i>	Coneflower	G5T?	SE	6	2
<i>Sagittaria australis</i>	Longbeak arrowhead	G5	SR	10	1
<i>Sanicula smallii</i>	Small's snakeroot	G5	SR	6	3
<i>Saxifraga virginensis</i>	Virginia saxifrage	G5	SR	28	13
<i>Scirpus purshianus</i>	Weakstalk bulrush	G4G5	SE	13	2
<i>Scutellaria p. australis</i>	Southern scullcap	G4T?	SR	36	19
<i>Scutellaria saxatilis</i>	Rock scullcap	G4?	SE	2	1
<i>Sedum telephioides</i>	Allegheny stonecrop	G4	ST	18	1
<i>Selaginella apoda</i>	Meadow spike-moss	G5	SE	11	1
<i>Setaria geniculata</i>	Bristly foxtail	G5	SE	1	1
<i>Spiranthes ochroleuca</i>	Yellow nodding ladies-tresses	G4	ST	11	1
<i>Spiranthes vernalis</i>	Grassleaf ladies-tresses	G5	SR	12	6
<i>Stenanthium gramineum</i>	Eastern featherbells	G4G5	SE	14	2
<i>Tragia cordata</i>	Heart-leaved noseburn	G4	SR	28	10
<i>Trichomanes boschianum</i>	Filmy fern	G4	SE	4	2
<i>Verbesina virginica</i>	White crownbeard	G5?	SE	1	1
<i>Vittaria appalachiana</i>	Appalachian vittaria	G4	SR	6	6
<i>Waldstenia fragarioides</i>	Barren strawberry	G5	SR	21	2
<i>Woodwardia areolata</i>	Netted chainfern	G5	SR	18	5
<i>Zizia aptera</i>	Golden alexanders	G5	SR	21	10
Total:				788	281

Global ranks are indicated as follows:

- G5-species considered demonstrably secure globally;
- G4-species considered apparently secure globally;
- G3-species considered vulnerable globally;
- G2-species considered imperiled globally;
- G1-species considered critically imperiled globally.

In addition, there are global rank modifiers, as follows: U-unranked; Q-taxonomic question; ? - rank is best estimate; and T-sub-specific rank applying to subspecies or varieties.

Note also that some global ranks are combinations; for example, G4G5, which indicates a range, based on best available data.

State ranks are as follows:

- SE – endangered species known from 1-5 occurrences within Indiana;
- ST – threatened species known from 6-10 occurrences within Indiana;
- SR – rare species known from 11-20 occurrences within Indian

Invasive species in special areas and selected sites of concern

Methodology: The Indiana Department of Natural Resources, Division of Nature Preserves identified invasive plants in several areas on the Forest. The sites inventoried include special areas, the Deam Wilderness, selected tornado damaged areas, and selected trail systems. The tornado areas and trail systems were included because they provide avenues for invasive plant species to enter the forest.

Hoosier NF botanists and IDNR biologists collectively developed a list of 33 invasive species. These were the species searched for in the survey. Field surveys were done throughout the summer months to identify plants that appeared at different times of the season. When plants were found data was collected with a GPS location.

Results: Invasive plant species were found in all areas surveyed. The degree of risk from invasive populations to native biological diversity was determined for each area.

TABLE 8. AREA LISTED WITH DEGREE OF RISK

Area Name	Degree of Risk	Invasive Species
Browning Hill	Medium	Bush honeysuckle, moneywort, Japanese honeysuckle, sweet clover, garlic mustard, stilt grass
Buzzard Roost	Medium	garlic mustard, Lespedeza, Japanese honeysuckle, bush honeysuckle, sweet clover, stilt grass
Carnes Mill	High	Japanese honeysuckle, ground ivy, moneywort, stilt grass
Deam Wilderness	High	autumn olive, garlic mustard, Hosta, Japanese honeysuckle, crown vetch, Lespedeza sp., moneywort, stilt grass, multiflora rose, myrtle, sweet clover

Area Name	Degree of Risk	Invasive Species
Fork Ridge	Medium	Stilt grass, tall fescue
German Ridge	Medium	Stilt grass
Hemlock Cliffs	High	Bush honeysuckle, crown vetch, potato vine, autumn olive, Japanese honeysuckle, moneywort, sweet clover, multiflora rose, stilt grass,
Hickory Ridge	Medium	Sweet clover, garlic mustard
Mogan Ridge (Includes Clover Lick)	High	Crown vetch, autumn olive, bush honeysuckle, crown vetch, day lily, Japanese honeysuckle, stilt grass, potato vine, sweet clover, Lespedeza sp., Johnson grass, garlic mustard
Pipeline	Medium	Ground ivy, tall fescue, stilt grass
Rockhouse Hollow	High	autumn olive, bush honeysuckle, Japanese honeysuckle, potato vine, tall fescue, Lespedeza sp., stilt grass
Salt Creek	Low	Sericea lespedeza, potato vine, myrtle,
Shirley Creek	Medium	Sweet clover, stilt grass, bush honeysuckle,
Starnes	Low	Japanese honeysuckle, crown vetch, tall fescue, autumn olive, Lespedeza striata
Tincher	Medium	Lespedeza, bush honeysuckle, Japanese honeysuckle, sweet clover, garlic mustard, stilt grass

IDNR, Division of Nature Preserves also separated the invasive plants into three categories: high threat; medium threat; and low threat, as follows:

High -- bush honeysuckles, crown vetch, garlic mustard, Japanese honeysuckle, stilt grass, potato vine, and sweet clover

Medium -- autumn olive, tall fescue, ground ivy, Eurasian and Chinese lespedezas, and moneywort

Low -- day lily, Hosta, Japanese lespedeza, Johnson grass, multiflora rose, and periwinkle

Forest Plan met: Yes

Recommendations: Eradicating invasive plant species is considered impossible on an area as large as the Hoosier NF. Invasive plants invade via “disturbance corridors”: roads, trails, and streams. Effectively controlling their spread using an integrated approach of prevention, monitoring, and control measures was recommended by the study.

A balanced approach to monitoring is recommended in which the degree of threat from particular species is weighed against the susceptibility of a particular natural community. Normally a quick annual survey is recommended for special areas. If an invasive is found, immediate control can be implemented with follow up to ensure control measures have been successful.

TABLE 9. SUMMARY OF CONTROL PRIORITIES

Carnes Mill	ground ivy	herbicide when natives dormant
	stilt grass	cut or mow before seed sets
Hemlock Cliffs	moneywort	prescribed burn or herbicide
	stilt grass	cut or mow before seed sets
Tincher	garlic mustard	cut or mow before seed sets
	stilt grass	cut or mow before seed sets
Deam Wilderness	garlic mustard	hand pull before seed sets
	stilt grass	cut or mow before seed sets
	myrtle	herbicide when natives dormant
Fork Ridge	stilt grass	cut or mow before seed set
Pipeline	stilt grass	cut or mow before seed set
Morgan Ridge		
Cloverlick	crown vetch	herbicide
	autumn olive	cut and herbicide
	lespedeza sp.	late spring prescribed burn
	sweet clover	late spring prescribed burn
	garlic mustard	hand pull before seed sets
Rockhouse Hollow	stilt grass	prescribed burn, cut or mow before seed sets
Shirley Creek	stilt grass	cut or mow before seed sets
German Ridge	stilt grass	cut or mow before seed sets
Hickory Ridge	garlic mustard	hand pull or mow before seed sets

Population of French's shootingstar in Peter Cave Hollow

Methodology: In preparation of an archaeological investigation in Peter Cave Hollow (T4S, R1W, Sec 6), the forest botanist visited the known sites for French's shootingstar (*Dodecatheon frenchii*) on July 2, 2001.

Results: Six populations were found and recommendations were made to avoid significant disturbance to them.

The first population consisted of 12 plants. A flag pin was placed in the center of the group and it was recommended that activity stay one foot away from the pin.

The second site had between 75 and 100 plants. A flag pin was placed at the base of the cliff at

one end of the population, a second pin was in the center of the population, and a third pin was at the other end of the area. The suggestion was made to keep one foot away from the line connecting the first and second pins, then keep one and a half feet away from the second and third pins.

The third population had about 50 plants. One flag pin was placed in the center of this population with a recommendation to keep out of an area six feet to each side and three feet to the front and back of the pin.

The fourth population also had about 50 plants. It was marked in the same way as the previous population with the same suggested restrictions.

The fifth site had about 200 plants. A flag pin was placed in the center of the population. It was recommended that the area not be disturbed 12 feet to each side and three feet from front to back.

The last site had 25 plants. A flag pin was placed at the front edge of the population. It was recommended that a three foot semi-circle behind the pin not be disturbed.

Forest Plan met: Yes

Recommendations: This area should be monitored every three years to check on populations and if the recommendations noted above for each site need to be modified.

Boone Creek Special Area

Methodology: Approximately 100 herbaceous vegetation monitoring plots were established in the Boone Creek Special Area (T4S, R1W, Sec. 25). Starting from Onido Road at a large white oak (parking area for the “out-the-ridge” site), 43 points are in a line to the south at 30 meter intervals down the slope to Mount Pleasant Road. A transect crossing this area at the fifth point south of Onido Road runs east to west and contains another 40 points mostly toward the east. There is a second east-west line at the tenth point south of Onido Road. These points were established from late February through early April. The area was visited four times during the growing season. At each point, herbaceous vegetation was identified within a meter-square circular plot. Estimated ground cover, bare soil, and exposed rock were also recorded. Shrub and canopy species information was recorded on every plot. Structural characteristics of the area was recorded on every tenth plot.

Results: The following tables list the species and dates recorded got FY2001. Plot data is on file.

TABLE 10. TREES AND SHRUBS.

Species	25 Feb 01	8 Apr 01	22 Apr 01	17 June 01
<i>Acer rubrum</i>		X	X	X
<i>Acer saccharum</i>	X	X	X	X
<i>Amelanchier arborea</i>		X	X	
<i>Aralia spinosa</i>	X	X	X	X
<i>Carya glabra</i>	X			
<i>Carya ovata</i>	X	X		
<i>Celtis occidentalis</i>			X	X
<i>Cercis canadensis</i>	X	X	X	X
<i>Cornus florida</i>	X	X	X	X
<i>Diospyros virginiana</i>				X
<i>Fagus grandifolia</i>	X	X		
<i>Fraxinus americana</i>		X	X	X
<i>Juniperus virginiana</i>	X	X	X	X
<i>Lindera benzoin</i>		X		
<i>Liriodendron tulipifera</i>	X		X	X
<i>Nyssa sylvatica</i>			X	X
<i>Ostrya virginiana</i>	X	X	X	X
<i>Pinus strobus</i>	X			
<i>Prunus serotina</i>	X	X	X	X
<i>Quercus alba</i>	X	X	X	X
<i>Quercus coccinea</i>		X		
<i>Quercus marilandica</i>	X	X	X	
<i>Quercus muhlenbergii</i>		X	X	
<i>Quercus prinus</i>	X	X		
<i>Quercus rubra</i>			X	
<i>Quercus shumardii</i>	X			
<i>Quercus stellata</i>	X	X	X	
<i>Quercus velutina</i>	X	X	X	X
<i>Rhamnus caroliniana</i>			X	X
<i>Rhus copallinum</i>	X	X	X	
<i>Sassafras albidum</i>	X	X	X	X
<i>Ulmus alata</i>	X	X	X	X
<i>Vaccinium arboreum</i>	X		X	X
<i>Vaccinium stamineum</i>			X	X
<i>Vaccinium vacillans</i>	X	X	X	X
<i>Viburnum rufidulum</i>		X	X	X

TABLE 11. HERBACEOUS PLANTS AND WOODY VINES.

Species	25 Feb 01	8 Apr 01	22 Apr 01	17 June 01
<i>Agrimonia rostellata</i>			X	X
<i>Agrostis perennans</i>		X		
<i>Allium canadense</i>		X		
<i>Allium vineale</i>		X		
<i>Amphicarpaea bracteata</i>				X
<i>Andropogon gerardii</i>		X		
<i>Anemone virginiana</i>		X		
<i>Anemonella thalictroides</i>		X	X	X
<i>Antennaria plantaginifolia</i>		X	X	X
<i>Arabis laevigatus</i>		X		
<i>Aristolochia serpentaria</i>			X	X
<i>Asplenium platyneuron</i>		X		
<i>Aster shortii</i>				X
<i>Aster solidagineus</i>				X
<i>Aster undulatus</i>				X
<i>Botrychium virginianum</i>			X	X
<i>Brachyelytrum erectum</i>				X
<i>Bromus purgans</i>		X		X
<i>Cardamine angustata</i>		X		
<i>Cardamine concatenata</i>		X	X	
<i>Cardamine douglassii</i>		X		
<i>Carex albicans</i>	X	X	X	X
<i>Carex complanata</i>				X
<i>Carex glaucodea</i>	X			
<i>Carex meadia</i>			X	X
<i>Carex rosea</i>			X	
<i>Carex umbellata</i>		X	X	
<i>Carex willdenowii</i>				X
<i>Ceanothus americana</i>	X	X	X	
<i>Chaerophyllum procumbens</i>			X	
<i>Chamaecrista nictitans</i>				X
<i>Claytonia virginica</i>		X		
<i>Coreopsis tripteris</i>				X
<i>Cunila origanoides</i>	X	X	X	X
<i>Cynoglossum virginianum</i>		X	X	
<i>Cystopteris fragilis</i>		X		
<i>Danthonia spicata</i>	X	X	X	X
<i>Delphinium tricornes</i>		X	X	
<i>Desmodium glutinosum</i>			X	

Species	25 Feb 01	8 Apr 01	22 Apr 01	17 June 01
<i>Desmodium rotundifolium</i>				X
<i>Dioscorea villosa</i>			X	X
<i>Elymus hystrix</i>		X		
<i>Eryngium yuccifolium</i>		X		
<i>Erythronium americanum</i>		X		
<i>Eupatorium rugosum</i>			X	X
<i>Frasera caroliniensis</i>		X	X	
<i>Galactea volubilis</i>				X
<i>Galium circaezans</i>			X	X
<i>Galium concinnum</i>		X		
<i>Galium triflorum</i>		X	X	X
<i>Helianthus divaricatus</i>	X		X	X
<i>Helianthus hirsutus</i>				X
<i>Hieraceum gronovii</i>	X	X		
<i>Houstonia purpurea</i>				X
<i>Hydrangea arborescens</i>		X		
<i>Hypericum hypericoides</i>		X		
<i>Hypoxis hirsutus</i>			X	
<i>Iris cristata</i>		X		
<i>Krigia biflora</i>		X	X	
<i>Lactuca floridana</i>			X	
<i>Lespedeza intermedia</i>				X
<i>Lespedeza procumbens</i>				X
<i>Lespedeza violacea</i>				X
<i>Liatris spicata</i>				X
<i>Lonicera japonica</i>	X		X	X
<i>Luzula multiflora</i>	X	X	X	X
<i>Obolaria virginica</i>		X		
<i>Orbexilum pedunculatum</i>			X	
<i>Oxalis stricta</i>			X	X
<i>Oxalis violacea</i>		X	X	
<i>Panicum boscii</i>	X		X	X
<i>Panicum dichotomum</i>				X
<i>Panicum microcarpon</i>				X
<i>Parthenocissus quinquefolia</i>			X	X
<i>Pedicularis canadensis</i>		X		
<i>Phlox divaricatus</i>		X		
<i>Phlox pilosa</i>			X	
<i>Podophyllum peltatum</i>		X	X	
<i>Polemonium reptans</i>		X		

Species	25 Feb 01	8 Apr 01	22 Apr 01	17 June 01
<i>Polystichum acrostichoides</i>		X		
<i>Porteranthus stipulatus</i>				X
<i>Potentilla simplex</i>	X	X	X	X
<i>Prenanthes altissima</i>		X	X	
<i>Prenanthes aspera</i>			X	
<i>Pycnanthemum tenuifolium</i>				X
<i>Ranunculus hispidus</i>		X	X	
<i>Ratibida pinnata</i>		X		
<i>Rhus radicans</i>	X	X	X	X
<i>Rosa setigera</i>			X	
<i>Rubus flagellaris</i>	X		X	X
<i>Rubus occidentalis</i>				X
<i>Salvia lyrata</i>			X	X
<i>Sanguinaria canadensis</i>		X		
<i>Sanicula canadensis</i>				X
<i>Sanicula gregaria</i>				X
<i>Schizachyrium scoparium</i>	X	X	X	X
<i>Scleria oligantha</i>	X	X	X	X
<i>Scutellaria nervosa</i>				X
<i>Smilacina racemosa</i>		X	X	X
<i>Smilax glauca</i>	X	X	X	X
<i>Smilax rotundifolia</i>	X	X	X	X
<i>Solidago erecta</i>	X			
<i>Solidago ulmifolia</i>			X	X
<i>Stellaria pubera</i>		X	X	
<i>Symphoricarpos orbiculatus</i>		X		
<i>Trillium recurvatum</i>		X		
<i>Verbesina helianthoides</i>			X	X
<i>Viola sororia</i>		X	X	
<i>Viola triloba</i>			X	X
<i>Vitis cinerea</i>	X		X	X

Forest Plan met: Yes

Recommendations: Continue to monitor this area.

Management Indicator, Federal Threatened, Endangered, and Regionally Sensitive Species of Concern [36 CFR 219.9]

Monitor bald eagle activities near Lake Monroe

Methodology: The Brownstown District initiated informal consultation with the USFWS in 1993 to ensure protection of nesting bald eagles on NFS lands near Lake Monroe. One known nesting site has been located. The Forest issued a closure order to protect the area surrounding the nest and monitored the area to determine the effectiveness of the closure.

Results: IDNR – Division of Fish and Wildlife coordinates monitoring of bald eagle nests. In 2001, bald eagles were observed incubating at the nest on the Hoosier National Forest. The nest was checked 3 times during the year (March, April, June) by helicopter to determine how many chicks were produced. Despite the eagles appearance of incubating eggs, no chicks were fledged.

Forest Plan met: Yes

Recommendations: Continue monitoring work through IDNR.

Monitor populations of butternut

Methodology: All live butternut trees (*Juglans cinerea*), a Regional Forester's sensitive species, are to be monitored using the butternut monitoring form: dbh, percent of live crown, and fruits produced.

Results: A total of thirty-four butternut trees are known to occur on the forest, seven of which are dead. Information was collected on ten of the live trees.

Forest Plan met: Yes

Recommendations: Continue monitoring these trees.

Fish and Wildlife [36 CFR 219.19]

Monitor fish populations in selected waters

Methodology: Through a Memorandum of Understanding (MOU) the Indiana Department of Natural Resources (IDNR) manages the fish populations within designated select water within the Hoosier National Forest. In 2001 the IDNR completed reports for Saddle and Deer Creek Lakes. Survey methods employed by the IDNR include electrofishing, gill nets, and trap nets. The IDNR collects water chemistry and physical habitat data as well (for detail results see Carnahan 2001).

Relevant laws and regulations: 36 CFR 219.9, 36 CFR 219.27

Results: *Saddle Lake* is a 41-acre impoundment north of Tell City, Indiana. Active management of the lake has been conducted by the IDNR since 1968. Recent survey results suggest that the panfish (bluegill and redear) populations within the lake are increasing in size with redear sunfish exhibiting excellent growth rates. The largemouth bass population of the lake is comprised mostly of bass less than 14 inches in length, and the channel catfish population has declined since 1997.

Hoosier National Forest personnel conducted fish, reptile, and amphibian surveys at Saddle Lake in August of 2001. Sampling methods included seining and search and seizure techniques. The objective of these surveys was to develop baseline presence or absence data for forest lakes. One species of amphibian (green frog) and four species of fish (largemouth bass, bluegill, mosquito fish, and blackspotted topminnow) were collected. No reptiles were collected, however aquatic turtles were observed.

Deer Creek Lake is a 39-acre impoundment located northeast of Tell City, Indiana. Active fish population management of the lake has been conducted by the IDNR since 1980. Survey results indicate that largemouth bass and panfish currently provide the best fishing opportunities within the reservoir. The IDNR identified a problem with the presence of excessive aquatic plants in Deer Creek Lake. Excessive aquatic vegetation makes it difficult to fish from the bank and provides cover for small fish enabling them to evade predators. The Forest is presently developing plans to reduce the amount of aquatic vegetation within the lake.



Male and female long-eared sunfish.

Forest Plan met: Yes

Recommendations: Continue to support the IDNR in the monitoring of fish populations. Develop plans and viable methods to contain and control nuisance aquatic plants and animals. Support and possibly augment state stocking programs.

Monitor fisheries in the Oil Creek Watershed

Methodology: The fisheries staff of the Hoosier National Forest conducted intensive surveys within the Oil Creek watershed. The objectives of these surveys were to: (1) inventory and document fish, mussel, amphibians, reptiles, and crayfish populations. (2) define and measure current physical habitat conditions; and (3) identify adjunct or unstable populations.



Oil
Creek

Relevant laws and regulations: 36 CFR 219.9, 36 CFR 219.27, 36 CFR 219.19

Results: Seventeen sites were surveyed within Oil Creek basin yielding over 30 species of fish. Seven species of amphibians and reptiles (five-lined skink, fence lizard, eastern box turtle, southern leopard frog, green frog, bullfrog, and longtail salamander) were recorded during these surveys. A point of interest was that no water snakes (*Nerodia*) of any type were observed during the two-week sampling period. Mussel populations relative to surveys conducted on the Hoosier National Forest in 1998 (Clarke et al 1999) seem to be stable. However, mussel survey design varied between 1999 and 2001 making it difficult to compare results. Crayfish populations seem to be healthy within the Oil Creek basin. To classify and characterize stream segments habitat composition was measured, and corresponding water chemistry collected from the seventeen sample sites (Table 12).

TABLE 12. PHYSICAL AND CHEMICAL RESULTS FROM OIL CREEK BASIN AUGUST 2001

Oil Creek Habitat Values	Range: Low-High¹
Water Temperature (Celsius)	22.8 - 30.9
pH	7.34 - 8.48
Conductivity (uS/cm)	199 - 411
Turbidity (NTU)	0 - 110
Canopy Cover (%)	0 - 100
Air Temperature (Celsius)	25.5 - 33.3

¹Range data summarized from 17 sites distributed throughout the basin.

One spring was sampled within the Oil Creek watershed. Longtail salamanders (*Eurycea longicauda*), commonly associated with springs, were the only species encountered. The spring's discharge had a pH of 9.70. Levels of pH this high can have a negative impact on aquatic systems, however the flow was so low from this spring (0.149 Cu meters/sec) that no impact would occur to the nearby main stem of Oil Creek.

The large number of new fish species documented by the 2001 surveys suggests that the Hoosier National Forest stream and spring systems have historically been under studied. Some of these species are shown here:



Golden
Redhorse



Pirate Perch

Forest Plan met: Yes

Recommendation: The effective management of an environment relies on the amount and accuracy of available baseline information. Continued support in monitoring and inventorying the aquatic ecosystems on the Hoosier National Forest would enable the forest to better manage its aquatic resources.

Other fisheries monitoring – Hoosier Riverwatch

Hoosier Riverwatch is a volunteer program designed to promote stewardship of Indiana's waterways through stream monitoring and water quality education. Riverwatch is supported by the Indiana Department of Natural Resources, Division of Soil Conservation in cooperation with Purdue University. One of the main objectives of the watch program is to recognize and monitor long term trends and shifts in water quality using physical, chemical, and biological indicators.

Methodology: Macroinvertebrate populations are collected and counted at each riverwatch site and a biotic index developed from this data. Results of this type of sampling provide an average tolerance value for invertebrates collected. This value can then be related to the collection site, thus relating species diversity directly to site health. Physical and chemical data is collected at each riverwatch site building baseline site information for comparison with other sites.

Relevant laws and regulations: 36 CFR 219.27, 36 CFR 219.23

Results: Hoosier National Forest personnel took part in the Hoosier Riverwatch program in 2001, collecting data from three sites within the Hoosier National Forest.

Forest Plan met: Yes

Recommendation: The continued long term monitoring of Riverwatch sites within the Hoosier National Forest would provide valuable and temporarily significant information in the effective management of forest streams and rivers.

Monitor populations of selected species of wildlife

Methodology: IDNR biologists collect information on several game and non-game species in the state. The south-central Indiana region contains all the counties in the Hoosier National Forest area, as well as an additional four counties. For general purposes the south-central region has been used synonymously with the Hoosier NF area. Game populations within this region can be used as barometers of the health of other wildlife.

Results: IDNR biologists have collected the following information by species.

White-tailed deer harvest information

There are no numbers specifically on deer harvested from National Forest System land, but harvest from counties with National Forest may be of interest. In general the harvest was down 1 percent between 1999 and 2000, and up 4 percent in 2001. Several counties with high percentages of farmland reported higher harvests than any of the nine counties with National Forest System land.

Sixty-nine percent of the deer harvested were male. The following chart shows harvest by county in the Hoosier NF area, and the percent change over the 1996-2000 time frame in deer harvested.

TABLE 13. WHITE-TAILED DEER HARVEST IN SOUTH-CENTRAL INDIANA

County	Antlered	Anterless	Total 2000	% Change 1996-00	Total 2001
Brown	524	353	877	-27	957
Crawford	711	604	1,315	-18	1,474
Dubois	653	811	1,463	+3	1,486
Jackson	736	1,111	1,847	+4	2,164
Lawrence	744	705	1,449	-2	1,657
Martin	648	795	1,443	+41	1,037
Monroe	574	794	1,368	-14	1,514
Orange	817	1,119	1,936	-3	1,978
Perry	920	466	1,386	-16	1,826
Total	6,327	6,758	13,084		14,093

Raccoon counts

Conservation officers gather information on each road-killed raccoon they see during the months of March, July, and August. The sex of the animal is recorded and the approximate age. The indices for road-killed raccoons is measured in number of raccoons/10,000 miles driven by the conservation officers in the assigned timeframes.

Numbers of raccoons seen increased in all regions of the state except for the southwest and south-central region. The south-central region decreased by 21 percent since the previous year. The number of raccoons found in 1999 was 28/10,000 miles; in 2000 the number was 22/10,000. The ratio of male to female animals found was 100 males: 81 females. The number of juvenile animals was down from past years.

Furbearing animals

The total number of pelts purchased increased 34 percent and the total value of the 2000-2001 fur harvest was 147 percent greater than in the previous fur season. The value of the average pelt increased by 85 percent. Raccoon pelt values have long driven the fur market in Indiana, and their values increased 134 percent to around \$6 /pelt in 2000-01. Mink was the only furbearing animal whose pelt value decreased in the 2001 season.

The south-central region containing the Hoosier National Forest purchased the lowest number of pelts in the state. Of the five licensed furbuyers in the south-central area, only one purchased furs which resulted in this year's figures dropping drastically. Direct out-of-state sales of pelts is increasing.

TABLE 14. FURBEARING PELT INFORMATION

Season	Number of Pelts											Percent collected Statewide
	Total Sold	Muskrat	Raccoon	Red Fox	Gray Fox	Mink	Opossum	Skunk	Beaver	Coyote	Weasel	
1996-97	10,212	1,763	7,580	99	93	124	394	8	112	39	0	4.61
1997-98	7,485	1,052	6,213	42	51	34	39	0	46	8	0	2.53
1999-2000	3,377	212	2,954	39	50	23	25	1	59	13	1	3.95
2000-01	263	6	250	1	0	6	0	0	0	0	0	0.23

Wild turkey information

A general trend in turkey populations can be estimated by the spring harvest of gobblers. IDNR records 2001 as the 19th consecutive year for an increase in harvest numbers. The 2001 harvest was a 28 percent increase over the previous year. Orange, Perry, and Crawford Counties were among the state's highest in turkeys harvested. A mean of 1.38 birds were harvested / square mile of forestland.

TABLE 15. TURKEY HARVEST INFORMATION

County	2000 Reported Harvest	Percent of Harvest	2001 Reported Harvest	Percent of Statewide Harvest
Brown	197	2.5%	260	2.6%
Crawford	277	3.5%	353	3.5%
Dubois	142	1.8%	174	1.7%
Jackson	165	2.1%	191	1.9%
Lawrence	195	2.5%	290	2.9%
Martin	204	2.6%	239	2.4%
Monroe	145	1.9%	202	2.0%
Orange	327	4.2%	414	4.2%
Perry	349	4.5%	379	3.8%

The trends in harvest variables are influenced by the poor summer production from 1995-1998 and countered by increases in the available hunting range. The overall indication is a general maturation or leveling off of population growth following restoration. Turkey populations are still growing in most areas. The following table showing the age of the birds harvested is helpful in providing a sample of the size and age range in the state's turkey population.

TABLE 16. AGE AND WEIGHT DATA OF TURKEYS HARVESTED

Year	Reported Harvest	% 1 Year old	Avg. Weight	% 2 Year old	Avg. Weight	% 3+ Years	Avg. Weight
1988	905	45	15.4	39	20.7	16	21.8
1989	1,359	20	15.5	63	20.7	17	22.2
1990	1,505	31	15.2	41	21.0	28	21.9
1991	2,318	25	15.5	53	21.1	22	22.2
1992	2,531	38	15.1	43	20.8	19	22.2
1993	3,500	18	15.9	60	20.9	22	22.4
1994	3,741	41	15.2	37	21.2	22	22.4
1995	4,706	28	15.6	55	20.6	18	22.1
1996	4,859	24	15.6	53	21.6	23	22.7
1997	5,790	21	15.7	56	21.5	24	22.7
1998	6,384	22	15.5	51	21.1	28	22.5
1999	6,548	25	15.5	49	21.1	26	22.6
2000	7,822	27	15.2	44	20.7	28	21.9
2001	9,975	26	15.7	50	20.1	24	22.1

Roadside gobbling counts are conducted by IDNR, Division of Fish and Wildlife along certain roads on NFS lands. The results are shown below for routes on NFS land. The 2000 brood production index decreased to 3.1 poults per hen, down from 4.2 in 1999. Each route was driven twice with 15 stops along the route from April 1-21, 2001.

TABLE 17. ROADSIDE GOBBLER COUNTS

County/Area	1998 Total Turkeys Heard/ Seen	Total Heard per stop in 1998	1999 Total Turkeys Heard/ Seen	Total Heard per stop in 1999	2000 Total Turkeys Heard/ Seen	Total Heard per stop in 2000	2001 Total Turkeys Heard/ Seen	Total Heard per stop in 2001
Jackson, Brown, Monroe/ <i>Hickory Ridge Area</i>	32/8	1.40	22/0	0.80	11/2	0.60	19/2	0.73
Perry County/ <i>Oriole - St Croix Area</i>	13/0	0.47	13/0	0.47	16/0	0.53	17/0	0.53
Lawrence and Orange/ <i>Lost River East Area</i>	18/2	0.60	31/0	1.27	26/0	1.27	20/0	0.67
Martin and Orange/ <i>Lost River West Area</i>	13/5	0.53	47/1	2.53	12/0	0.47	17/3	0.73
Orange County/ <i>Lick Creek Area</i>	7/1	0.27	23/0	0.87	29/0	1.33	26/4	0.93

Ruffed grouse counts

IDNR, Division of Fish and Wildlife conducts drumming counts along certain roads on NFS lands. The results are shown below for routes on NFS land. Grouse populations have declined fairly steadily since a peak in 1979. The count in 2001 is only 7 percent of the 1979 population. The primary reason for the decline is due to habitat changes from advancing forest succession. The decreasing grouse population parallels the decline in the proportion of seedling/ sapling/ pole-timber size class timber. Parallel declines are expected in other early forest successional birds such as woodcock and rufous-sided towhees. Grouse numbers are at their lowest level in over 2 decades across their range in Indiana.

Each route was driven twice with 30 stops along the route from April 2-20, 2001.

TABLE 18. RUFFED GROUSE DRUMMING COUNTS – HOOSIER NF AREA

County/Area	1998 Grouse Heard/ Seen	1998 Total Drums	1999 Grouse Heard/ Seen	1999 Total Drums	2000 Grouse Heard/ Seen	2000 Total Drums	2001 Grouse Heard/ Seen	2001 Total Drums
Jackson, Brown, Monroe/Hickory Ridge	6/0	13	1/0	2	2/0	5	1/0	2
Perry County/ Oriole - St Croix Area	0/0	0	1/0	2	0/0	0	2/0	3
Lawrence and Orange/ Lost River Area	14/2	29	8/0	16	4/0	13	4/0	4
Martin and Orange/ Lost River Area	4/0	6	24/0	41	2/0	2	2/0	2
Orange County/ Lick Creek Area	2/0	2	0/0	0	2/0	5	4/0	4

TABLE 19. TRENDS FROM DRUMMING COUNT INDICES - Grouse heard per stop per year

Year	Jackson, Brown, Monroe/Hickory Ridge Area	Perry County/ Oriole - St Croix Area	Lawrence and Orange/ Lost River Area	Orange County/ Lick Creek Area
1979	1.00	--	Data incomplete for 1976-1986	
1980	1.27	0.60		
1981	1.33	0.60		
1982	0.73	0.20		
1983	0.53	0.33		
1984	0.93	0.33		
1985	1.00	0.20		
1986	1.00	0.13		
1987	0.40	0.20	0.27	0.33
1988	0.33	0.07	0.33	0.47
1989	0.67	0.21	0.27	0.73
1990	0.47	0.13	0.37	0.47
1991	0.13	0.07	0.40	0.53
1992	0.13	0.13	0.27	0.40
1993	0.07	0.13	0.33	0.40
1994	0.20	0.07	0.40	0.40
1995	0.13	0.07	0.47	0.40
1996	0.13	0.07	0.33	0.20
1997	0.20	0.07	0.53	0.07
1998	0.27	0.00	0.53	0.07
1999	0.07	0.07	0.40	0.00
2000	0.13	0.00	0.27	0.13
2001	0.07	0.07	0.13	0.13

Bobwhite quail counts

Survey routes are run throughout the state listening for quail from mid-June through mid-July. In the south-central part of the state there were nine paired routes. In 2000, there were 0.69 birds heard per stop. In 2001, there were 1.15 birds heard per survey stop. Statewide the average was 0.62 birds/stop. This was an increase in 66.7 percent.

Bobcat trapping

Eight bobcats were captured nine times from mid-November 2000 until late March 2001 in Lawrence, Martin, and Greene counties. Three previously marked individuals were captured and fitted with radio-transmitters. Five new captures were fitted with radio-transmitters. The capture rates (bobcat/100 trap-nights) is increasing over time for both types of traps commonly used:

TABLE 20. BOBCAT TRAPPING RESULTS

Type Trap	1998-1999	1999-2000	2000-2001
Welded-Wire Box Trap	0.24	1.51	0.30
Soft Catch Food-hold Trap	0.05	0.15	0.53

Protect our Cultural Resources

Cultural and Heritage Resources [36 CFR 219.24]

Ensure mitigation and protection measures are correctly applied for ground disturbing activities

Legal/Regulations Reference: Antiquities Act of 1906; National Historic Preservation Act of 1966 as amended; Executive Order 11593; Archaeological Resources Protection Act of 1979; 36 CFR 219, 296, and 800.

Methodology: Monitor to determine if new resource damage occurs and if vandalism increases, i.e. deterioration/collapse of significant buildings is avoided and rockshelters are not actively looted or inadvertently damaged by recreation users. Take steps to protect sites through public education, signing, and law enforcement activities.

Acceptable Criteria: Project areas are inspected for the presence of historic and prehistoric properties prior to project implementation. Significant and potentially significant properties are protected. Any discovery of unrecorded resources is brought to the attention of the forest archaeologist.

Results: No projects were implemented this fiscal year that required protection of significant or potentially significant heritage resources. So project monitoring was not conducted.

Forest Plan Met: Yes

Recommendations: Continue to monitor projects in the vicinity of eligible or potentially eligible properties to ensure protection measures are implemented.

Monitor national register-listed sites and potentially significant sites

Legal/Regulations Reference: Antiquities Act of 1906; National Historic Preservation Act of 1966 as amended; Executive Order 11593; Archaeological Resources Protection Act of 1979; 36 CFR 219, 296, and 800.

Methodology: Methods include literature reviews, field inspections, and surface and subsurface investigations. Original site forms and associated sketch maps are used to determine change and assess current site condition. All changes are noted in these permanent records. Develop, recommend, and implement protection or mitigation measures, if applicable.

Acceptable Criteria: New resource damage does not occur and vandalism does not increase, i.e. deterioration/collapse of significant buildings is avoided and rockshelters are not actively looted or inadvertently damaged by recreation users. Steps are taken to protect sites through public education, signing, and law enforcement activities.

Results: A total of five sites were monitored and their condition assessed during FY 2001.

- The National Register of Historic Places listed Rickenbaugh House (12 Pe 0784) was monitored frequently during Phase III of the rehabilitation.
- The Roll Petroglyph (12 Cr 0175) was monitored several times during the year in preparation for the photogrammetric recording conducted in September by C Dimensions (Cultural Resource Reconnaissance Report No. 09-12-04-0207). This site is eligible to the National Register of Historic Places. See pictures below.



- Two standing building complexes (12 Or 0579 Brooks Barn and 12 Cr 0482 Schmidt Barn) were revisited and condition assessments prepared for deferred maintenance (Cultural Resource Reconnaissance Report No. 09-12-04-0207).
- During the Otter Creek Upland Restoration Project (Cultural Resource Reconnaissance Report No. 09-12-04-0203) one potentially eligible prehistoric site (12 Cr 176/214) was resurveyed.

Forest Plan Met: Yes

Recommendations: Continue to monitor significant and potentially significant sites throughout the forest to ensure their protection.

Provide for a Visually Pleasing Landscape

Visual Quality Objectives [36 CFR 219.21]

Monitor project design and execution to ensure visual quality objectives (VQO's) are met

Legal/Regulation Reference: 36 CFR 219.21 (f), *Forest Plan* (p.2-15 to 2-16)

Methodology: Inspect projects that affect landform, water, vegetation, and structures; furthermore, compare effects to *Forest Plan* criteria. Projects that potentially affect the VQO's include soil and water improvements, wildlife opening maintenance, prescribed burns, trail maintenance, trail construction, and recreation construction.

Acceptable Criteria: Meet the VQO's stated in the *Forest Plan*

Results: Two projects were inspected in 2001; the Spring's Valley Trail construction and installation of new SSTs at North Face Campground within the Indian-Celina Lakes Recreation Area, and German Ridge Campground. All projects inspected in 2001 met the assigned VQO.

Forest Plan met: Yes

Recommendations: Continue to follow VQO principles on all projects and coordinate with the forest VQO coordinator.

Provide for Recreation in Harmony with Natural Communities

Wilderness Management [36 CFR 219.18]

Monitor wilderness resources according to Wilderness Implementation Schedule (WIS)

Legal or Regulation Reference: 36 CFR 219.18, Forest Service Manual (FSM) 2320, FSH 2309.19 R9 Supplement 1, Forest Plan (pp 2-36 through 2-39).

Methodology: Visual observation of limits of acceptable change (LAC) indicators per the WIS monitoring schedule.

Acceptable Criteria: Limits of acceptable change standards as developed for the Charles C. Deam Wilderness (see WIS and following information).

Results: All areas were monitored according to monitoring plan for the Charles C. Deam Wilderness. The monitoring plan will be updated in 2002 to include new monitoring information such as use of trail counters, Frissell and Cole campsite inventories, and trail condition surveys.

1. Campsite Impact and Inventory: No campsites were monitored in 2001.
2. Trail Social Encounters: Three infrared trail counters were tested in the Charles C. Deam Wilderness during July, August, and September. One counter was placed on the Grubb Ridge Loop Trail, west of Blackwell Campground. A second counter was placed on Terrill Ridge. The third counter was placed on Sycamore Trail. Some problems were encountered during the summer, such as foliage growing and blocking the infrared eye. Problems have been resolved and more information will be collected during FY 2002.

Counter Results:

- Sycamore Trail – no accurate data collected.
- Grubb Ridge Loop – between July 7, 2001 and September 9, 2001, the counter collected 36 days of data. During the 36 days, 543 counts were recorded.
- Terrill Ridge - between July 7, 2001 and September 9, 2001, the counter collected nine days of data. During the nine days, 174 counts were recorded.

Trails in the Charles C. Deam Wilderness (CCDW) were patrolled by Wilderness Ranger Rod Fahl, Fee Demo Ranger Jason Haberberger, and Wilderness Manager Eric Sandeno. Social encounters were documented on 41 days during FY2001. A total of 261 hikers and 196 horse riders were observed during the 41 days. On the days patrolled, a total of 6.4 hikers per day were observed and 4.8 horseback riders were observed.

TABLE 21. USER COUNTS IN CHARLES C. DEAM WILDERNESS

Trail	Days Patrolled	Hikers Observed	Horse Riders Observed
Axson Branch	2	3	4
Grubb Ridge	14	125	71
Peninsula Trail	1	22	9
Terrill Ridge	8	74	23
Hayes Trail	3	15	2
Sycamore Trail	3	14	0
Cope Hollow	6	1	80
Martin Hollow	2	0	4
Lake Patrol	1	2	3
Tower Trailhead	1	5	0
TOTAL	41	261	196

Based on information collected, it is difficult to determine overall use in the Charles C. Deam Wilderness. Trail counters will be placed at all access points during FY2002 and other monitoring efforts will be utilized to determine use.

3. Trail Social Impact: The amount of garbage on or along the trails and in campsites was minimal. However, garbage at trailheads and off-trail areas has a social impact to wilderness visitors as much as garbage along trails. Garbage continues to be a problem at the Hickory Ridge Fire Tower. Most garbage is a result of Friday and Saturday night parties by local residents. Law Enforcement is aware of the problem and has been working with local authorities to develop a solution.

A significant amount of garbage washes onto the shore of the Charles C. Deam Wilderness along Monroe Lake. Every May, the Hoosier National Forest sponsors Take Pride in America, a day for people to complete volunteer work projects on the forest. A popular project has been cleaning the shoreline in the wilderness. This annual clean up prevents large amounts of garbage from accumulating.

Another concern area is the northeast side of the Charles C. Deam Wilderness adjacent to the Middle Fork Salt Creek. Middle Fork Salt Creek itself is managed by the Army Corps of Engineers, but garbage is collecting along the wilderness boundary. This is a potential location for work projects.

4. Trail Tread Condition: Problem erosion units were not inventoried, as identified in the Charles. C. Deam Wilderness monitoring plan. Specific muddy areas or areas draining poorly were identified and corrective action taken on several sections of trail. Using problem erosion units as an indicator in monitoring will be reviewed during FY2002 to determine if a more accurate method of monitoring can be used.

Waterbars were cleaned and improved throughout the spring and summer. The Hoosier Horsemen and the Monroe County YMCA provided a total of 38 volunteers on four separate workdays.

The Hoosier Horsemen had three volunteer workdays during the summer to improve drainage on the trails and eliminate muddy sections. Adding gravel, re-contouring trails, and constructing drains were the primary projects completed during the year.

All trails in the Charles C. Deam Wilderness were cleared of down trees using minimum- tool methods during February 2001.

5. Access Trail and Impact: Minimal trash was collected at Hayes, Blackwell, and Grubb Ridge Trailheads. As stated above, garbage at the Hickory Ridge Fire Tower, especially alcohol containers picked up on Saturday and Sunday mornings, is steadily getting worse.

Information and education is listed in the Wilderness Implementation Schedule as an issue and concern (Appendix B), but does not have a category in the Monitoring Plan. There appears to be a lack of awareness of why the Charles C. Deam Wilderness is unique and why management direction in wilderness is different. When the Charles C. Deam Wilderness monitoring plan is updated in 2002, information and education will be included as a monitoring category. Results of information and education efforts in 2001 are:

- a. Weekly Leave No Trace demonstrations were provided at Maumee Boy Scout Camp. Approximately 200 Boy Scouts attended these programs.
- b. Leave No Trace demonstrations were provided to individual Boy Scout Troops during the year. Three programs were presented to approximately 100 Boy Scouts.
- c. A volunteer staffed Brooks Cabin every Sunday during the summer and fall. The volunteer provided wilderness information to approximately 350 people.
- d. Two lectures were given discussing wilderness management on the Hoosier National Forest at an Indiana University SPEA class. A total of approximately 100 people attended the two lectures.
- e. Presentations were given at Midwest Trail Rides regarding the use of forest trails and wilderness management.

In accordance to Forest Service Manual 2320 and EM-7100-15, Sign and Poster Guidelines for the Forest Service, trail junction signs were replaced in May 2001. Carsonite posts were removed and routed wood signs were placed at all the junctions. Some reassurance markers

were also removed during the year. Wilderness boundary signs were installed at the major trailheads.

Forest Plan Met? Yes

Recommendations: Improve monitoring program for Deam Wilderness and review Wilderness Implementation Schedule for possible changes.

1. Campsite inventory utilizing either Frissell or Cole method will be a priority for 2002.
2. Continue to use trail counters to determine use on trails.
3. Collect trail encounter information on a more consistent basis. Trail encounter forms have been created for forest staff to complete while patrolling the Deam Wilderness.
4. Improve trail condition inventory/survey information.

Recreation Facilities [36 CFR 219.21(C)]

Monitor public feedback

Legal or Regulation Reference: 36 CFR 219.21(c), FSM 2300, Forest Plan (pages 2-17 and 2-18)

Methodology: Public comment is obtained from phone-ins, letters, Congressional inquiries, the "Serving People" customer survey cards, concessionaire customer response forms, e-mails to the forest website, scoping responses for project proposals, and personal contacts at forest offices and in the field. Comments are also occasionally found on bulletin boards or in the form of graffiti. Feedback on trailheads, campgrounds, signs, restroom designs and function, and accessibility issues are requested.

Acceptable Criteria: There is no standard regarding this type of public feedback. However, each comment is evaluated and action taken if warranted.

Results: Forty-six Forest Service Customer Comment Cards were forwarded from the Washington Office, 174 visitor comment forms were forwarded to the forest by the concessionaire, and numerous comments were noted from a variety of scoping efforts and informal contacts with staff. The majority of the responses indicated very favorable feedback, particularly in regard to good service by the staff, be it Forest Service or concessionaire. In instances where a complaint was voiced, the problem was addressed on the spot by the front liner if it was a routine issue. If it constituted a more significant issue, the program manager was notified and handled the issue accordingly. Suggestions and comments (internal and external) were also reviewed and action taken when possible and appropriate. For example, one common thread emerged regarding the Hardin Ridge campground shower buildings, when visitors stated they wanted benches and hooks for clothes. Approximately half of the showers have had hooks and benches installed and plans are underway to complete the job. Another issue was a weed problem at Tipsaw Lake. Forest staff is working with IDNR officials on the possible use of grass carp. Other comments centered on desire for water hookups, concern about fees, and concern about trail tread as well as general statements about having a great time and liking the facilities.

Forest Plan met: Partially. As a result of scarce resources, the recreation program is not functioning at full level. Most notably, there is a backlog regarding replacement or rehabilitation of aging facilities, non-accessible facilities, recreation area roads, and degraded trails.

Recommendations: Continue to strictly enforce concessionaire requirements, emphasize customer service, and continue to pursue capital investment funds and other resources to address the facility backlog situation.

Trails [36 CFR 219.21(G)]

Monitor trail use on selected trails by type and amount of use

Legal or Regulation Reference: 36 CFR 219.21

Methodology: On multiple use trails, we are able to estimate use by comparing the number of trail permits sold with field observations. The methodology and results are documented in a memorandum to file dated January 22, 2002 titled Methodology for estimating horse and bike use for CY2001, file code 2350, authored by Les Wadzinski.

A trail counter was installed and stolen so it yielded no useable data.

The recreation staff visited a photo point on the Peninsula Trail (T7N, R1E, Section 2, NW ¼ SE ¼) that was very degraded during the summer of 1992. That segment of trail was closed in 1994, and an alternate route installed in a more suitable location. Photos were taken of the same location in October 2001 to determine how well it had healed and whether or not users were staying off the closed trail. As indicated by the photos the trail has healed nicely and users have abided by the closure.



Peninsula Trail, Charles C. Deam Wilderness, Summer 1992



Peninsula Trail closed segment, Charles C. Deam Wilderness, Fall, 2001

Acceptable Criteria: For trails in the Charles C. Deam Wilderness, acceptable use criteria is based on limits of acceptable change (LAC) social indicators for trails (see Wilderness Management monitoring report in this document). For forest-wide trails, we have no formal specific use criteria, however, we use the following general guidelines: use must be high enough to justify keeping the trail on the system, yet not so high that severe resource damage occurs or undue user conflict occurs. These guidelines are influenced by site-specific conditions such as soil types, topography, weather, season, and use type.

Results: It is estimated that 4,369 bike riders and 16,895 horse riders used the trails in 2001. About $\frac{3}{4}$ of this use likely occurred on the Pleasant Run Unit based on permit sales in that area. It is more difficult to draw conclusions about hikers because they are not required to buy a trail permit. However, hikers accounted for 31 percent of the users observed. There are also additional hikers using hiking-only trails such as the Two Lakes Loop and Hardin Ridge trails, although exact numbers are unknown. There is evidence of some illegal use of trails by ATVs, most notably in the Tell City District.

Forest Plan met: Yes. Generally, forest trail use is within moderate levels, with sporadic high use periods at some locations. Trail conditions have now been upgraded in most areas where work was needed to sustain the levels of use and to provide environmental protection.

Recommendations: Continue using the trail permit program to determine use. Install trail counters at locations where more specific data is needed and research methods to prevent theft and vandalism.

Provide for a Useable Landbase

Report land status changes by County, District, and Management Area

TABLE 22. LAND ADJUSTMENT BY MANAGEMENT AREA

Management Area	2001 Acreage Adjusted	Total NFS land Acres (9/30/01)
2.4	70	17,225
2.8	311	101,184
5.1	0	12,953
6.2	32	20,386
6.4	264	25,164
7.1	0	6,205
8.1	0	88
8.2	67	13,297
8.3	0	630
9.2	0	1,586
Total	744	198,718

TABLE 23. LAND ACQUISITION BY COUNTY AND DISTRICT

County	District	Acreage	Value (\$)	Management Area
Crawford	Tell City	27	29,250	8.2
Jackson	Brownstown	117	145,000	6.2, 6.4
Martin	Brownstown	180	165,700	2.8
Orange	BT and TC	370	488,000	2.4, 2.8, 6.4
	<i>Brownstown</i>	<i>245</i>	<i>331,000</i>	<i>2.8, 6.4</i>
	<i>Tell City</i>	<i>125</i>	<i>157,000</i>	<i>2.4, 2.8</i>
Perry	Tell City	40	44,000	8.2

TABLE 24. LAND ADJUSTMENTS BY COUNTY AND DISTRICT

County	District	Acreage	Value (\$)	Management Area
Crawford	Tell City	-80	108,000 ¹	2.8
Jackson	Brownstown	89	114,000 ²	6.4
Orange	Brownstown	0	1,000 ³	6.4

¹ Land Exchange – 80 acres of federal land in Crawford County, valued at \$108,000 plus cash equalization of \$6,000, exchanged for 89 acres of private land in Jackson County, valued at \$114,000

² Land Exchange – see footnote 1 above

³ Small Tract Act (exchange) – resolved error in survey; equal land (0.50 acre) and equal value (\$500)

Provide for Human and Community Development

Special Uses and Outstanding Rights

Methodology: The special uses team monitored rights-of-way (ROW) width changes from outstanding rights by comparing current ROW width with the width at time of land acquisition by the Forest Service. Often, there were no land records in the acquisition file with ROW widths for roads, powerlines or other ROW cleared land features. In these cases, the team made comparisons to old aerial photos and made assumptions on width. Some records did indicate a narrow width that has been widened to meet the new ROW. An example is an old single-phase line required a 20-foot ROW clearing which was increased to a 40-foot ROW clearing for a three-phase line. Most rights-of-way are cleared 40 feet wide regardless of single or three phase line. The permits were all reviewed before renewal and those with increased widths were reviewed for heritage and threatened and endangered (T&E) species clearance for the wider clearing limits.

Results: No impacts were found for either cultural or T&E resources and the permits were renewed with the appropriate width. There were only two permits to fall in this category in FY 2001 and both were on state roads.

Forest Plan Met: Yes

Recommendations: Record the width of ROW clearings on new property acquisitions for outstanding rights. Monitor width change over time for compliance and encroachment and administer appropriately.

Monitoring of earth disturbing permit activities

Methodology: The special uses team monitored earth disturbing activity associated with new permit rights-of-way for compliance with forest plan guidance in Appendix K and mitigation measures now included in each permit.

Results: No impacts were found to soil and water resources on the Patoka Lake Regional waterline project in Crawford County. Mitigation measures to possible impacts to soil and water resources followed installation. An example of these measures was that when trees were cut and removed, tops were chipped and exposed soil was seeded and mulched.

Forest Plan Met: Yes

Recommendations: Work done during the summer often results in conditions that are too hot and dry for grasses to catch without mulch. Its best to require mulch to hold the seed in place until rain finally arrives to sprout the seed.

Monitor special uses for compliance with nondiscrimination

Legal or Regulation Reference: Civil Rights Act of 1964 Title VI prohibits discrimination on the basis of race, color, religion, sex, or national origin.

Methodology: Permittees are subject to pre-award nondiscrimination reviews anytime a permit involves public use. The permittee is also notified of their responsibility. Assurance statements (Form 1700-1) are signed by all new "direct service" providers. Permittees must agree to comply; otherwise, we do not issue permit. The Federally Assisted Program Manager monitored the recreation areas under concession and trail permittees who have large programs for compliance with Title VI by visiting with permittees at the start of the season.

Results: All permittees agreed to sign assurance statements. Civil Rights/Nondiscrimination issues are discussed annually with all recreation type permittees. The "Simple Justice" video is shown and basic hospitality training is provided for all concessionaires each spring before the recreation season begins. All permittees visited were in compliance and no complaints were received on the forest.

Forest Plan met: Yes.

Recommendations: Continue to monitor recreation permittees and send reminders of compliance requirements to other permittees according to the schedule.

Pesticide use on permitted lands

Methodology: The special uses team monitored pesticide use in Jackson County on outstanding rights-of-way for accomplishment of objectives to control woody stems in the ROW and prevent damage to non-target organisms or soil and water.

Results: No impacts were found to soil and water or non-target organisms in the ROW on both Jackson County REMC and PSI Energy (now CINERGY) powerline ROW.

Forest Plan Met: Yes

Recommendations: Jackson County REMC uses their own employees to apply herbicides. They believe they have better results. Continue to coordinate with both companies for treatment of vegetation on outstanding rights. Incidentally, there was more exposed soil on the permit ROW segments where no herbicide was used and maintenance relied on mechanical treatment. The recommendation is to use herbicide on all properties rather than just outstanding rights to lessen soil impacts.

Air Quality [36 CFR 219.27(a)(12)]

Monitor prescribed burns for adequacy of smoke management practices

Methodology: Record any comments or calls received.

Results: The Hoosier NF completed seven prescribed burns for 351 acres in 2001. Post monitoring was completed on the burns to determine if objectives were met for ecological purposes. All burns were monitored for smoke management and were in compliance with no negative comments or calls received.

Forest Plan met: Yes

Recommendations: Continue to monitor future burns, and accompany each burn with an aggressive public outreach to assure that people are aware of the plans to burn and know where to call if smoke is a problem.

Health and Safety

Monitor the effluent discharge at the Hardin Ridge Recreation Area

Legal or Regulation Reference: National Pollution Discharge Elimination System (NPDES), State of Indiana, and Monroe County

Methodology: Licensed operator collects and tests as required by NPDES permit.

Acceptable Criteria: Pass NPDES requirements.

Results: All NPDES requirements were met.

Forest Plan met: Yes

Recommendations: During FY2002 continue working closely with concessionaire and monitor to meet NPDES permit requirements.

Check bacteria levels at public swimming beaches

Legal or Regulation Reference: 36 CFR 219.21(c)

Methodology: Check five times each 30-day period and once each week for two weeks before beach is open to public, per state standards.

Acceptable Criteria: Meet state standards for bacteria.

Results: State standards were met.

Forest Plan met: Yes

Recommendations: Continue testing to meet state standards.

Handle hazardous material spills properly

Methodology: Have people on the forest trained in recognizing and dealing properly with hazardous material spills.

Results: There were no known incidents in FY2001.

Forest Plan Met: Yes

Recommendations: Continue to monitor for hazardous material concerns.

Conclusion

We carried out the fiscal year 2001 Monitoring and Evaluation Program to learn if our project activities and other resource uses are consistent with *Forest Plan* guidance. This program also provided an opportunity to evaluate if that guidance meets the goals and objectives established in the *Forest Plan*.

Meeting *Forest Plan* objectives is dependent on the level of funding allocated to the Hoosier National Forest. It is our responsibility, within this allocation and congressional direction, to emphasize a balanced mix of projects that are environmentally sound and provide benefits to people. We developed many projects in partnerships with individuals and organizations.

I have reviewed this Monitoring and Evaluation Report for the Hoosier National Forest for Fiscal Year 2001. Our deficiencies are noted. We will ensure that corrective action is taken where appropriate. I am satisfied that management activities accomplished during Fiscal Year 2001 were consistent with *Forest Plan* guidance, except where noted, and that the guidance provides solid direction in meeting the goals and objectives set forth in the *Forest Plan*.

This report documents our review of the conditions of Hoosier National Forest System lands. Since we replaced the plan in 1991, I have not observed any significant changes in conditions or demands. Therefore, I recommend that we continue the current course of carrying out the *Forest Plan* as we work toward plan revision.

This meets the intent of both the *Forest Plan* (Chapter 5) and the National Forest Management Act planning regulations (36 CFR 219).

/s/ Kenneth G. Day

September 27, 2002

KENNETH G. DAY
Forest Supervisor

Date