

**Forest Management and Stump-to-Forest Gate Chain-of-Custody
Certification Evaluation Report for the:**

**Indiana State Forests
under the
Management of the
INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY**

**Conducted under auspices of the SCS Forest Conservation Program
SCS is an FSC Accredited Certification Body**

**CERTIFICATION REGISTRATION NUMBER
SCS-FM/COC-00099N**

Submitted to:

**Indiana Division of Forestry
Indianapolis, IN**

Lead Author: Dave Wager

Date of Field Audit: October 30-November 3, 2006

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Certified: Date of Certificate

By:

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Organization of the Report

This report of the results of our evaluation is divided into two sections. Section A provides the public summary and background information that is required by the Forest Stewardship Council. This section is made available to the general public and is intended to provide an overview of the evaluation process, the management programs and policies applied to the forest, and the results of the evaluation. Section A will be posted on the SCS website (www.scs-certified.com) no less than 30 days after issue of the certificate. Section B contains more detailed results and information for the use of the Indiana Division of Forestry (DoF).

FOREWORD

Scientific Certification Systems, a certification body accredited by the Forest Stewardship Council (FSC), was retained by Indiana DNR Division of Forestry to conduct a certification evaluation of its State Forest Properties. Under the FSC/SCS certification system, forest management operations meeting international standards of forest stewardship can be certified as “well managed”, thereby enabling use of the FSC endorsement and logo in the marketplace.

In October 2006, an interdisciplinary team of natural resource specialists was empanelled by SCS to conduct the evaluation. The team collected and analyzed written materials, conducted interviews and completed a 4 day field and office audit of the subject property as part of the certification evaluation. Upon completion of the fact-finding phase of the evaluation, the team determined conformance to the 56 FSC Criteria in order to determine whether award of certification was warranted.

This report is issued in support of a recommendation to award FSC-endorsed certification to Indiana DoF for management of the Indiana State Forests. As detailed below, certain pre-conditions (also known as Major Corrective Action Requests) that were stipulated by the audit team upon completion of the field audit were adequately addressed by Indiana DoF and cleared by SCS prior to finalization of this report. In the event that a certificate is awarded, Scientific Certification Systems will post this public summary of the report on its web site (www.scs-certified.com).

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SECTION A- PUBLIC SUMMARY AND BACKGROUND INFORMATION

1.0 GENERAL INFORMATION

1.1 FSC Data Request

| | |
|---|---|
| Applicant entity | Indiana DNR, Division of Forestry |
| Contact person | John Seifert |
| Address | 402 W. Washington St, Rm W296 |
| Telephone | 317/232-4105 |
| Fax | 317/233-3863 |
| E-mail | |
| Certificate Number | |
| Certificate/Expiration Date | |
| Certificate Type | Single FMU |
| Number of FMU's <i>if applicable</i> | One |
| Location of certified forest area | State of Indiana |
| Latitude | W 86 degrees 10 minutes |
| Longitude | N 39 degrees 46 minutes |
| Forest zone | Temperate |
| Total forest area in scope of certificate which is: | |
| privately managed ¹ | 0 |
| state managed | 150,000 acres |
| community managed ² | 0 |
| Number of forest workers (including contractors) working in forest within scope of certificate | 30 |
| Area of forest and non-forest land protected from commercial harvesting of timber and managed primarily for conservation objectives | 2,018 |
| Area of forest protected from commercial harvesting of timber and managed primarily for the production of NTFPs or services | 0 |
| Area of forest classified as 'high conservation value forest' | 2,018 |
| List of high conservation values present ³ | HCV 1-6 |
| Chemical pesticides used | Copper Sulfate Copper chelate Metsulfaton methyl (Escort) Trichlopyr (Crossbow, Garlon 3a, Garlon 4) Picloram (Tordon K) Prometon (Pramitol) Glyphosate (Round-up, Rodeo, Aquapro, Eagre) |

¹ The category of 'private management' includes state owned forests that are leased to private companies for management, e.g. through a concession system.

² A community managed forest management unit is one in which the management and use of the forest and tree resources is controlled by local communities.

³ High conservation values should be classified following the numbering system given in the ProForest High Conservation Value Forest Toolkit (2003) available at www.ProForest.net

| | |
|--|---|
| | Imazapyr (Arsenal, Chopper and Stalker) 2,4-D Chlopyralid (Transline) Fluazifop-p (Fusilade) Sulfometuron methyl and metasulfuron methyl (Oust) Ammonium salt of Imazapic (Plateau) Fosamine ammonium (Krenite) |
| Total area of production forest (i.e. forest from which timber may be harvested) | 146,000 |
| Area of production forest classified as 'plantation' for the purpose of calculating the Annual Accreditation Fee (AAF) | 0 |
| Area of production forest regenerated primarily by replanting ⁴ | 0 |
| Area of production forest regenerated primarily by natural regeneration | 145,000 |
| List of main commercial timber and non-timber species included in scope of certificate (botanical name and common trade name) | Quercus rubra (White oak), Quercus rubra (Northern red oak), Quercus velutina (Black oak), Liriodendron tulipifera (yellow-poplar), Acer saccharum (Sugar maple), Carya spp (Hickory) |
| Approximate annual allowable cut (AAC) of commercial timber | 14 MMBF hardwoods and conifers |
| Approximate annual commercial production of non-timber forest products included in the scope of the certificate, by product type | 0 |
| List of product categories included in scope of joint FM/COC certificate and therefore available for sale as FSC-certified products (include basic description of product - e.g. round wood, pulp wood, sawn timber, kiln-dried sawn timber, chips, resin, non-timber forest products, etc.) | Roundwood, pulpwood, sawtimber, kiln dried lumber, chips, veneer, wood fiber, mulch, woody biomass |

Conversion Table English Units to Metric Units

Length Conversion Factors

| <u>To convert from</u> | <u>to</u> | <u>multiply by</u> |
|------------------------|----------------|--------------------|
| mile (US Statute) | kilometer (km) | 1.609347 |
| foot (ft) | meter (m) | 0.3048 |
| yard (yd) | meter (m) | 0.9144 |

Area Conversion Factors

| <u>To convert from</u> | <u>to</u> | <u>multiply by</u> |
|------------------------|---------------------|--------------------|
| square foot (sq ft) | square meter (sq m) | 0.09290304 |
| acre (ac) | hectare (ha) | 0.4047 |

Volume Conversion Factors

Volume

⁴ The area is the *total* area being regenerated primarily by planting, *not* the area which is replanted annually. NB this area may be different to the area defined as a 'plantation' for the purpose of calculating the Annual Accreditation Fee (AAF) or for other purposes.

| To convert from | to | multiply by |
|------------------------|--------------------|--------------------|
| cubic foot (cu ft) | cubic meter (cu m) | 0.02831685 |
| gallon (gal) | liter | 4.546 |

- 1 acre = 0.404686 hectares
- 1,000 acres = 404.686 hectares
- 1 board foot = 0.00348 cubic meters
- 1,000 board feet = 3.48 cubic meters
- 1 cubic foot = 0.028317 cubic meters
- 1,000 cubic feet = 28.317 cubic meters

Breast height = 1.4 meters, or 4 1/2 feet, above ground level

Although 1,000 board feet is theoretically equivalent to 2.36 cubic meters, this is true only when a board foot is actually a piece of wood with a volume 1/12 of cubic foot. The conversion given here, 3.48 cubic meters, is based on the cubic volume of a log 16 feet long and 15 inches in diameter inside bark at the small end.

1.2 Management Context

As a public land management enterprise located in the Central Hardwood Region of the United States, management of the Indiana State Forests is subject to a host of local, state and federal regulations. The principal regulations of greatest relevance to forest managers, within the Central Hardwood Region, are associated with the following statutes:

Pertinent Regulations at the Federal Level:

- Endangered Species Act
- Clean Water Act (Section 404 wetland protection)
- Occupational Safety and Health Act
- National Historic Preservation Act
- Archaeological and Historic Preservation Act
- Americans with Disabilities Act
- U.S. ratified treaties, including CITES and tribal treaties

Pertinent Regulations at State and Local Level:

Four state regulations exist that affect Division of Forestry management. **IC 14-23-4-1** Sec. 1. (a) states “It is the public policy of Indiana to protect and conserve the timber, water resources, wildlife, and topsoil in the forests owned and operated by the division of forestry for the equal enjoyment and guaranteed use of future generations. However, by the employment of good husbandry, timber that has a substantial commercial value may be removed in a manner that benefits the growth of saplings and other trees by thinnings, improvement cuttings, and harvest processes and at the same time provides a source of revenue to the state and counties and provides local markets with a further source of building material.”

IC25-36.5-1-2 establishes the registration of timber buyers, stating that “. . . no person shall engage in the business of timber buying in the state of Indiana without a registration certificate issued by the department. Application for Indiana registration to engage in the business of timber buying shall be filed with the department. Such application shall set forth

the name of the applicant, its principal officers if the applicant is a corporation, its managers and members if the applicant is a limited liability company, or the partners if the applicant is a partnership, the location of any principal office or place of business of the applicant, the counties in this state from which the applicant proposes to engage in the business of timber buying and such additional information as the department by regulation may require.

IC 14-32 declares “(1) That the land and water resources of Indiana are among the basic assets of Indiana and that the proper management of these resources is necessary to protect and promote the health, safety, and general welfare of the people of Indiana. (2) That improper land use practices and failure to control and use rainfall and runoff water cause and contribute to deterioration and waste of these resources of Indiana. (3) That the breaking of natural grass, plant, and forest cover has interfered with the natural factors of soil stabilization, causing loosening of soil and exhaustion of humus and developing a soil condition that favors excessive runoff and erosion, with the following results:

(A) The topsoil is being blown and washed out of the fields and pastures.

(B) There has been an accelerated washing of sloping fields.

(C) These processes of erosion by wind and water speed up with removal of the topsoil, exposing the less absorptive, less protective, less productive, and more erosive subsoil.” The code further establishes the policy to “. . . provide for the proper management of soil and water resources, the control and prevention of soil erosion, the prevention of flood water and sediment damage, the prevention of water quality impairment, and the conservation development, use, and disposal of water in the watersheds of Indiana . . .”

IC 32-30 defines forestry operations as an agricultural activity.

Regulatory Context for State and Local Regulations:

The Division of Forestry (DoF) is a unit of the Department of Natural Resources, a state agency within the executive branch of the Indiana state government.

1.2.1 Environmental Context

An excellent description of the environmental context related to the forests managed by the DoF is found in *The Habitat Conservation Plan for Indiana Bat and Grey Bat on Indiana State Forests v. Oct, 2006* (hereafter referred to as “HCP”). The HCP is further quoted in sections 1.3 and 1.4 of this report. The HCP provides the following discussion on the Indiana forests environmental context:

“The climate of Indiana is dependent on latitude, which ranges from 38°N to nearly 42°N. The monthly mean temperature in southern portions of the state is 54°F compared to 50°F in northern areas (Scheeringa 2002). Annual mean precipitation ranges from 37 inches in the north to 47 inches in the south (Scheeringa 2002), although portions of northern Indiana that border Lake Michigan receive high amounts of precipitation owing to the lake effect. Across the state, May is typically the wettest month and rainfall decreases as summer progresses. The growing season

in southern Indiana is approximately 180 to 200 days (Ponder 2004). Relative humidity is greater in the north than the south. Cloudiness is greater in winter than in autumn. The sun is visible approximately 65 percent of daylight hours in summer and 30 percent in winter. The northern part of the state, influenced by Lake Michigan, is generally cloudier in winter than the southern half of Indiana. The Gulf of Mexico also affects the climate of Indiana by supplying warm, moist air that often collides with cooler, drier air from Canada to produce precipitation (Scheeringa 2002).

Most lands administered by DoF are south of the southernmost boundary of the Illinoian and Wisconsinan glaciers. Retreat of the Wisconsin glacier set the stage for an extended transitional period for forests of Indiana. Forests of the region were molded by these past environmental influences and formed a mosaic of oak-hickory, mixed-, and western mesophytic communities (Braun 1950). Oak-hickory and beech-maple associations that followed the moisture gradients of local topography and physiography dominated climax community composition; mixed mesophytic forest communities were generally found on northerly slopes, and oak-hickory on drier slopes, ridges, and areas with a southerly aspect.

Today, Oak-hickory habitat is the largest component of forests of Indiana, comprising 59.3 percent of the state's total forest cover (Woodall et al. 2004). Oak ecosystems are also prominent across the country, covering 114 million acres (Jackson and Buckley 2004). Some upland oak communities are physiographic climax communities that are self-perpetuating along drier ridges. However, many oak communities are disturbance-dependent and much of the oak-dominated forest present today developed as a result of fires set by Native Americans and intensive agriculture that followed European settlement. These activities increased light availability, reduced competition, dried soils, and created conditions suitable for establishment and maintenance of oak communities.

Indiana's forest, like the majority of forested regions in the eastern United States, is second growth forest. Due to the ecological impact of European settlement on forests of Indiana, no virgin forest (forest that reached maturity uninfluenced by human activity) remains on lands administered by DoF. Over 85 percent of Indiana was covered by forest as recently as 200 years ago (Woodall et al. 2004). Indiana's population grew from approximately 20,000 in the 1700s to almost 1.5 million people in 1860. During this time, approximately half of the state's forests were lost and, by 1900, only 7 percent of Indiana's original forest-cover remained (Woodall et al. 2004). Indiana's forests today are composed of second-growth stands that bear little resemblance to original forest communities."

The Indiana state forest system, established in 1903, was one of the first in the country. The first lands acquired and incorporated into the state forest system were eroding farm fields, pasture, or cut-over timberland, and were generally of marginal economic value. Most woodlands had been high-graded and residual trees were often poor quality, low vigor trees with defects from forest fires and livestock grazing.

Many cropped areas had steep slopes or erodible soils and without modern conservation farming practices, the topsoil was quickly depleted and lost. The poorer subsoil was unable to support continued agriculture. The first management prescriptions emphasized erosion control and restoration of long-term productive potential of the land.

In the 1960s, timber management improved with the arrival of professional foresters and improved record-keeping on state forest properties. In the 1970s, the first timber management procedures were written and timber management activities increased. Today, timber management has developed into integrated forest resource management that involves the integration of ecosystem management and ecological classification concepts. The degraded, cut-over forest of a few decades ago is now characterized by stands of medium to large sawtimber (>11" dbh). Over 20 cover types, containing over 50 species of trees are represented on state forest land.

DoF lands support many natural habitat types throughout Indiana including barrens, upland forests, floodplain forests, and riparian corridors. Each habitat supports a diversity of wildlife species, some of which are unique. Currently 203 fish, 38 amphibian, 53 reptilian, 393 avian, and 57 mammalian species occur in Indiana (Simon et al. 2002).

Barrens occur where soils are thin and bedrock is exposed, usually on ridge tops. Post oak and blackjack oak are scattered in open areas dominated by grasses and forbs more commonly encountered on dry prairies. Wildlife species typical of barren communities include lark sparrow, black king snake, midland rat snake, and Allegheny woodrat.

Oak-hickory and mixed hardwood forests dominate DoF lands in Indiana. Ovenbird, summer tanager, rose-breasted grosbeak, white-tailed deer, and eastern box turtle are common in these deciduous forest communities. Populations of wild turkey, blue jay, eastern chipmunk, and fox, gray, and southern flying squirrels are dependent on acorns and other nuts in this forest community.

Cerulean warbler, yellow-throated warbler, and several species of amphibians are characteristic in floodplain forests, particularly oxbows, sloughs, and backwaters of southwestern Indiana. Seasonally inundated portions of floodplains are home to gray tree frog, wood frog, marbled and small-mouthed salamander, and other amphibians dependent on ephemeral pools in floodplain forests.

Riparian corridors are narrow strips of forested land along rivers or streams. Although they are a small percentage of DoF lands, they are important as buffers and act as ecological links between uplands and aquatic habitats. Because of their transitional nature in the landscape, riparian corridors support a rich diversity of wildlife. Several bird species, such as Louisiana water thrush, prothonotary warbler, belted kingfisher, red-shouldered hawk, and yellow and black-crowned night-heron

are dependent on wooded corridors for nesting and feeding. Riparian corridors are also foraging and dispersal areas for Indiana bat, river otter, weasel, and mink.”

1.2.2 Socioeconomic Context

According to the HCP (draft v. Oct 2006):

“The population of the State of Indiana in 2004 was 6,237,569, a 2.3 percent increase from population estimates in 2000 (IBRC 2005). Indiana’s population growth has averaged 0.6 percent over the past five years as compared to the national level of 1 percent. The highest population growth occurred in Marion County. Nine of 92 counties in Indiana make up nearly 45 percent of the state’s population. Approximately three-quarters of the land in Indiana is used for agriculture. Agriculture and food processing are an intrinsic part of the state’s economy, contributing \$17 million annually and supporting 500,000 jobs (Indiana Land Resources Council 2003). Indiana ranks 9th overall in the nation for crop production. Corn and soybeans were the leading source of income for Indiana farmers in 2004 and amounted to \$3.42 billion. Corn, soybeans, livestock production, dairy, and eggs accounted for over 90 percent of agricultural cash receipts in Indiana in 2004 (Indiana Agricultural Statistics Service 2005).

Approximately 20 percent of Indiana is forested. Of Indiana’s nearly 23 million acres, 4.5 million are forest land. Most forests are located in the southern half of the state, south of Indianapolis. Approximately 537,000 acres of Indiana forest land are publicly owned: 196,000 acres are held in national forests; 150,000 are in state forests and 191,000 are in other public ownerships, including military bases, fish and wildlife areas and state parks (Evergreen 1998

Indiana forest products industry is the 6th largest employer in Indiana. (Purdue University through data from Census of Manufacturers). Indiana forest products industry employees over 56,000 people with most of the industry concentrated in the southern half of the state (Evergreen 1998). Forest products manufacturing is a \$2.55 billion a year industry in Indiana (Evergreen 1998). Of 56,000 people working in Indiana’s timber industry, almost 86 percent work for secondary manufacturers, including furniture and cabinet makers and companies that manufacture flooring, doors, window frames, millwork, pallets and hundreds of other structural and decorative products made from hardwood. Indiana ranks 18th nationally in value added for all forest-based manufacturing industries and 1st nationally in value added manufacturing for both wood products and manufactured office furniture. Indiana’s economy is diverse and growing rapidly; but many southern counties are more than 50 percent dependent on revenues and wages generated by forest products manufacturers (Evergreen 1998). The 1997 Economic Census data determined there were 205 primary mills and 926 secondary manufacturing facilities in Indiana. Primary mills are those mills that use logs as their primary raw material to produce various forest products. Secondary manufacturing refers to the drying, cutting, and

assembly of lumber and other wood-based primary products into parts and finished products.”

1.3 Forest Management Enterprise

1.3.1 Land Use

As described in the HCP (draft v. Oct 2006):

“The state forests were initially created to restore eroded, worn-out land when small, subsistence farms were abandoned early in the century. Early state forest management focused on reforesting eroded areas, creating wildlife habitat, demonstrating good forest land management, providing public recreation, and conserving forest resources. Today, the state forests are managed for multiple uses and benefits (IDNR Strategic Plan 2005). Income from timber sales on state forest lands represents a small but growing portion of annual revenues for the state of Indiana. From 2003 to 2004, nearly 2500 acres of forest were harvested with over 3.4 million board feet sold, generating revenue of \$897,313 (IDNR Strategic Plan 2005). Fifteen percent of state forest timber sale revenue is returned to the counties in which the harvest occurred. The DoF Strategic Plan 2005-2007 proposes to increase revenue from state forest timber sales to \$3 – 5 million annually by increasing harvest on state forest lands to 10 – 17 million board feet (IDNR Strategic Plan 2005). The average annual growth on state forests is 24,788,950 board feet, so this will represent an annual harvest of about 40 – 69 percent of annual growth. Seventeen percent of the revenue from the increased timber sales will go into a cost-share assistance program to enhance the management of private forest lands, 15 percent will be used for payments to the counties, and the remaining 68 percent will be used for reinvestment, research, acquisition of land and improvement of state forests and preserves (IDNR Strategic Plan 2005).

Indiana’s state forests and recreation areas provide a variety of recreational opportunities for the public. Most recreational activities, such as hunting, fishing, primitive camping, backpacking, and edibles gathering, are dispersed and require minimal development. Modern facilities are necessary for swimming, boating, camping, and nature education on several state recreation areas, but are held to the least developed level possible. The annual number of visitors to DoF properties is estimated to be between 1 and 2 million (B. Hubbard, pers. comm. 2006).

There are 526 miles of hiking, mountain bike, and horse trails on DoF lands and campgrounds are available on 11 DoF-managed properties (Table 3-13; B. Hubbard pers. comm. 2005). Approximately 1840 recreation sites (campsites, picnic areas, boat ramps, parking units, etc.) are found on DoF properties (Table 3-13). Between 6000 and 7000 acres of DoF properties (about 4%) are identified as developed recreation areas (B. Hubbard, pers. comm. 2006).

Recreational activities involving wildlife are major attractions to Indiana state forests. Hunting, fishing, and trapping are permitted on Indiana state forests in designated areas and under the statutes and regulations developed for these activities (IDNR Specialist Report 2005). Hunting of whitetail deer, squirrel, fox, raccoon, rabbit, ruffed grouse, turkey, quail, woodcock, and dove is allowed within designated areas and seasons. A total of 125,526 deer was legally harvested in the state of Indiana during 2005 (IDNR 2006). Total deer harvest has increased annually since 2000 (IDNR 2006).”

1.3.2 Land Outside Scope of Certification

None, as the Indiana DoF has chosen to seek certification on all of its state forestland property.

1.4 Management Plan

1.4.1 Management Objectives

As described in the Properties Strategic Plan (1997), The objectives of the forest management operations are:

- *Indiana state forests are managed for all forest resources in an integrated and sustainable fashion that allows for both the long term integrity of the ecosystem and provides for timber production and watershed protection as well as consumptive and nonconsumptive use by the public. It is recognized that changing public demands, evolving resource management concepts, and a dynamic forest will require periodic adjustments in land use allocations and forest benefits.*
- *The philosophy of management of landholdings on state forests is to consolidate current landholdings where feasible to develop a more contiguous ownership pattern, to identify and monument all boundary lines, to resolve all encroachments in a fair manner and to provide public access to landholdings.*
- *The state forests will continue to provide consumptive and nonconsumptive outdoor recreational opportunities. Recreational development will not take precedence over natural resource conservation and protection, and will continue to be structured on the natural rather than the "built" environment.*
- *The state forests will strive to locate, evaluate, preserve, and where appropriate interpret and manage those natural resources which are deemed archaeologically, historically or ecologically significant. State forests will be surveyed for these resources in cooperation with the Division of Nature Preserves and the Division of Historic Preservation and Archaeology.*
- *All information and education programming will be directed toward providing the public with convenient access to accurate information on recreational opportunities and resource stewardship. Information and education programming will be directed at both on-property and off-property audiences.*

- *Fish and wildlife management will be an active and integral part of the overall state forest management direction. Habitat conservation and vegetation management will continue to be the major fish and wildlife management tools employed. Fish and wildlife management plans will be developed in cooperation with the Division of Fish and Wildlife for each state forest.*
- *Develop an organization that is effectively organized and allows for efficient and effective use of budget, equipment and personnel resources between and among properties and within the Division.”*

1.4.2 Forest Composition

The HCP (draft v. Oct 2006) states:

“Oak-hickory and mixed-hardwoods are the most common habitat types on Indiana state forests, comprising nearly 80 percent of SWI plots. The relative proportions of cover types on all state forests are mixed hardwoods (42.8 %), oak-hickory (37.1 %), pine (7.0 %), non-forested (4.5 %), bottomland hardwoods (4.2 %), beech-maple (4.0 %), undefined (0.5 %), and tree plantation (0.1 %).

Table 0-1. Cover types on 12 state forests based on percentage of sample plots assigned to each cover type in the INDOF 2005 System-wide Inventory.

| <i>State Forest</i> | <i>Forest Cover Type Percent¹</i> | | | | | | | |
|---------------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | <i>OH</i> | <i>BM</i> | <i>MH</i> | <i>BH</i> | <i>PI</i> | <i>NF</i> | <i>TP</i> | <i>UN</i> |
| <i>Clark</i> | 66.3 | 1.2 | 24.4 | 0.0 | 8.8 | 0.0 | 0.0 | 2.3 |
| <i>Ferdinand</i> | 42.0 | 8.0 | 23.0 | 0.0 | 27.0 | 0.0 | 0.0 | 0.0 |
| <i>Greene-Sullivan</i> | 2.3 | 2.3 | 49.4 | 5.7 | 6.9 | 32.2 | 1.0 | 0.0 |
| <i>Harrison-Crawford</i> | 42.5 | 1.0 | 42.5 | 1.0 | 10.3 | 2.0 | 0.0 | 0.0 |
| <i>Jackson-Washington</i> | 56.6 | 7.2 | 24.1 | 2.9 | 4.8 | 4.8 | 0.0 | 0.0 |
| <i>Martin</i> | 34.7 | 5.8 | 48.8 | 6.6 | 2.5 | 1.7 | 0.0 | 0.0 |
| <i>Morgan-Monroe</i> | 58.8 | 7.0 | 31.8 | 0.0 | 2.3 | 0.0 | 0.0 | 0.0 |
| <i>Owen-Putnam</i> | 24.3 | 5.4 | 60.8 | 2.7 | 6.8 | 0.0 | 0.0 | 0.0 |
| <i>Pike</i> | 21.9 | 6.8 | 39.7 | 26.0 | 5.5 | 0.0 | 0.0 | 0.0 |
| <i>Salamonie</i> | 5.6 | 4.2 | 63.4 | 0.0 | 21.1 | 5.6 | 0.0 | 0.0 |
| <i>Selmier</i> | 21.7 | 0.0 | 65.0 | 0.0 | 13.3 | 0.0 | 0.0 | 0.0 |
| <i>Yellowwood</i> | 60.0 | 1.2 | 30.6 | 1.2 | 3.5 | 1.2 | 0.0 | 2.6 |

¹ OH = oak-hickory, BM = beech-maple, MH = mixed hardwoods, BH = bottomland hardwoods, PI = pine and other conifer, NF = non-forested, TP = tree plantation/plantings, UN = undefined.

1.4.3 Silvicultural Systems

The DoF implements multiple silvicultural systems; the choice of silvicultural system is based on the management objectives for each state forest and objectives for individual forest tracts. The following silvicultural prescriptions are employed on DoF lands, as stated in the HCP (draft v. Oct 2006):

“Hardwood and Pine Group Selection Openings < 10 acres each

Prescriptions for group selection openings remove a small number of trees to create space for regeneration, establishment, and development of intermediate and shade intolerant tree species. To limit impacts to visual aesthetics, these openings are usually not larger than 5 acres, but can be up to 10 acres. There is no set rotation for group selection openings. Some tracts may receive multiple group selection openings over time; others may receive none.

The need to conduct a group selection opening is based on the composition or condition of existing trees, goals for the tract, and the end result of creating the opening. Group selection is implemented on tracts that are damaged (defective or decaying), have poor vigor, or where regeneration success is less than desirable or not possible without allowing for more sunlight to reach the forest floor.

Hardwood Singletree Improvement

Hardwood singletree improvement harvests are a type of uneven-aged harvesting done in conjunction with group selection openings. Singletree improvement harvests are implemented in areas within an uneven-aged stand that are between created openings. Individual trees are selected and removed throughout the stand approximately every 15 to 25 years. The treatments are conducted to modify or guide the development of the existing crop of trees, but not to replace it with a new one. These activities include selective removal of some vegetation to allow the expansion of remaining tree crowns and root systems. The decision to remove a singletree under this method is based on in-field evaluation of that individual stem for condition, vigor, species composition, and impact to neighboring existing trees.

Pine Clearcuts

All silvicultural pine clearcuts are even-aged stand regeneration actions. All the pines in the stand are cut and removed at the same time, and replaced with a new stand of small seedling/sapling hardwood trees on the entire area. Almost all existing pines on DoF lands are nonnative and the result of plantation plantings established on abandoned farmlands to stabilize and improve soils. Pine clearcuts are implemented to replace nonnative pines with native hardwoods. This method mimics hardwood regeneration that naturally occurs when openings are created.

Pine Thinning

Pine thinning is the removal of pines from pine stands or a partial cutting in even-aged aggregations of trees. Tree removal is done to improve future growth and vigor by regulating stand density. Thinning methods are of two different types: commercial thinning where some or all of the wood harvested is put to use, and thinning without utilization of wood harvested. The latter scenario is considered a pre-commercial thinning and can be equated to removal of undesirable trees. Most of the pine thinning on DoF properties is conducted as commercial thinning and is usually done only once during the life of the pine stand. A typical pine thinning prescription is 0.5 to 20 acres and approximately less than 50 percent of the trees present are removed from an even-aged stand. Without conducting pine thinning harvest production on pine stands would eventually be lost to suppression of trees.

Trees that are not harvested from overcrowded pine stands would die from lack of light and nutrients and their fiber value would be lost.

Hardwood Shelterwood

Shelterwood harvests are a method of even-aged regeneration. These harvests remove almost all trees in an existing stand, except the largest and most vigorous hardwood trees. Typically retained hardwood trees are 16 to 28" dbh. Harvested areas are then regenerated with a new stand of young hardwood seedling trees. The resulting natural regeneration is a mixture of hardwood species; as increasing amounts of sunlight reach the forest floor this allows oaks and hickories to compete with more shade tolerant species, and thus oaks and hickories will make up a large proportion of the regenerated stand. Harvesting the existing stand of trees is done in a series of cuttings to release the new seedling trees started under the old stand. The essential characteristic of the shelterwood method is that the new stand is established (naturally or artificially) before the last of the old hardwoods is removed. The final overstory removal in shelterwood harvests usually takes place within 10 years of the initial cutting.

Hardwood Clearcuts > 10 acres each

All silvicultural hardwood clearcuts are even-aged stand replacement actions on areas 10 acres or more in size. Usually clearcuts on DoF properties are between 10 and 25 acres. On rare occasion, larger areas may require a clearcut to manage the results of unforeseen events such as damage from wildfire, insects, storms, or disease. All trees in the stand are cut at the same time and replaced with a new stand of small hardwood trees on the entire area. Hardwood clearcuts on DoF lands are most often used in areas where an entire stand has been damaged by wildfire or storms or where, as a result of past activities, the stand composition is dominated by less desirable trees, exotics, or invasive plant species. The use of clearcut harvests provides the best opportunity for the establishment of new stands dominated by oaks and hickories as compared to uneven-aged harvests. Clearcuts also create openings for large continuous areas of early successional habitat."

1.4.4 Management Systems

The Indiana state forest system is made up of 12 properties ranging in size from 350 acres to 25,000 acres, totaling 148,650 acres. The DoF is responsible for managing the state forests, and does so using a combination of property level managers and field staff, central office administrators/specialists, and contractors. Each property is managed as its own independent unit.

1.4.5 Monitoring System

Division of Forestry employs a variety of monitoring techniques on State Forest lands. As described in the HCP (draft v. Oct 2006):

Tract level Inventory

Tract level inventory data provide short-term information on timber harvest prescriptions. The sampling method for a tract timber inventory is a systematic point sampling with a random start within the tract. The sampling intensity is usually one plot per two acres and may be more or less depending on site heterogeneity.

Information collected at the tract level is entered into an inventory program to guide forest management. Forest inventories can be used for planning management activities for up to seven years after completion of the inventory. A new tract inventory is needed after this time period. Tract inventories are not needed for activities that do not disturb trees or in situations of minimal disturbance such as TSI of regeneration openings for croptree release.

Tract-level inventory data measures how many trees in which size class were harvested in a given tract and provide an estimate of the number of trees remaining per acre at the tract level. A tract-level inventory is not completed again until 15 years after the initial harvest. New information is incorporated into the next decision-making process for harvest on the tracts. The DoF will conduct tract level forest resource inventory annually on an average of 10,000 to 15,000 acres.

System-wide Inventory (SWI)

A SWI also provides information on forest status and health. SWIs are planned approximately every seven to 10 years and provide long-term forest data. The DoF conducts a SWI of the entire state forest system to provide a “snapshot” of current forest conditions, to make strategic, system-wide decisions, and to measure trends over time. The SWI is composed of 1020 variable-radius plots positioned on DoF lands. Information and measurements on tree composition, canopy cover, slope, harvest history, and many other variables are recorded on each plot and added to a system-wide database for each state forest. Using the DoF’s 2005 SWI, the relative proportion of habitat cover types is obtained for each forest. The SWI is most effective at measuring landscape-level change, such as changes in forest composition and habitat cover types. The most recent SWI was in 2005. The next SWI is not anticipated to occur until 2011-2014.

Continuous Forest Inventory

The DoF anticipates that their processes and tracking system used for forest inventory will be updated in the next several years and enhanced to include a continuous forest inventory (CFI). CFI plots are already established and maintained on some state forest properties. They supply property-level information and model changes at specific sites over time. In CFI, permanent plots are established and the exact plots and trees are re-measured during the next inventory cycle, compared to random sampling where temporary new plots are established during each inventory

cycle. Tract-level inventory, SWI, and CFI all measure essentially the same type of forest resource parameters. CFI is the most costly to establish and maintain, but provides a more definitive measure of growth and stand change over time.

Components of Effectiveness Monitoring

The DoF has begun a long-term research initiative planned on 16,200 acres of research forests with the goal of determining impacts from implementation of different types, combinations, and sequences of silvicultural systems on wildlife, native plants, and oak communities. The first phase of this long-term research began in 2006 with a 4-year schedule of sampling and treatments outlined in a MOU. The DoF expects to design studies and gather on-site field data, aided by a research team comprised of institutional researchers, resource managers and graduate students, to help develop forest management prescriptions that target certain forest components and to identify potential positive and negative effects to certain species of concern .”

1.4.6 Estimate of Maximum Sustainable Yield

As described in the HCP (draft v. Oct 2006):

“Indiana DoF uses system-wide and tract level inventories to determine stocking, growth and yield of the state forests. In 2005, a State Forest SWI was conducted on the state forest system and was used to calculate maximum sustained yield. This new inventory was designed to be compatible with older CFI inventories done on individual state forests. Because Martin State Forest and Ferdinand State Forest each had an extensive system of permanent Continuous Forest Inventory (CFI) plots established more than 40 years ago it was decided that a re-measurement of the existing CFI plots and the establishment of new plots as needed would be used as the SWI method on these two state forests.

Building on the structure and parameters used in the CFI plots, a variable-radius point sampling inventory was designed to be used on the remaining state forests. This similarity of design, technique and parameters makes the CFI data and the point sample data comparable. Both plot descriptive data and individual tree data were collected.

Both the CFI inventory and the point sample inventory were designed with an intensity that allows the results to be statistically valid at the state forest level, which is appropriate for strategic decision making. A total of 232 CFI plots were taken at Martin and Ferdinand State Forests and a total of 788 variable-radius plots were taken on the remaining state forests. This made a grand total of 1020 plots for the 2005 System-Wide Inventory. The data for all of the plots was entered into Two Dog Inventory Software, which was the same software used by the state forests for tract level inventories.

The following tables represent a compilation of a the growth data of the total SWI:

INDIANA DIVISION OF FORESTRY
AVERAGE ANNUAL VOLUME GROWTH/ACRE BY STATE FOREST PROPERTY
From
2005 System-wide Inventory

| PROPERTY | AVERAGE ANNUAL BdFt. Volume Growth /Acre | APPROX. ACRES | AVERAGE ANNUAL BdFt Volume Growth/property |
|------------------------------|---|--------------------------|---|
| <i>Harrison-Crawford SF</i> | <i>146</i> | <i>24000</i> | <i>3,504,000</i> |
| <i>Greene-Sullivan SF</i> | <i>101</i> | <i>9000</i> | <i>909,000</i> |
| <i>Morgan-Monroe SF</i> | <i>192</i> | <i>24000</i> | <i>4,608,000</i> |
| <i>Yellowwood SF</i> | <i>159</i> | <i>23000</i> | <i>3,657,000</i> |
| <i>Selmier SF</i> | <i>267</i> | <i>350</i> | <i>93,450</i> |
| <i>Salamonie SF</i> | <i>140</i> | <i>900</i> | <i>126,000</i> |
| <i>Clark SF</i> | <i>140</i> | <i>25000</i> | <i>3,500,000</i> |
| <i>Pike SF</i> | <i>212</i> | <i>3100</i> | <i>657,200</i> |
| <i>Owen-Putnam SF</i> | <i>181</i> | <i>6300</i> | <i>1,140,300</i> |
| <i>Jackson-Washington SF</i> | <i>170</i> | <i>17000</i> | <i>2,890,000</i> |
| <i>Martin SF</i> | <i>175*</i> | <i>8000</i> | <i>1,400,000</i> |
| <i>Ferdinand SF</i> | <i>288*</i> | <i>8000</i> | <i>2,304,000</i> |
| <i>All</i> | <i>Average/acre=167 Bdft.</i> | <i>148,650 ac.</i> | <i>24,788,950</i> |

- *Annual per acre growth for Martin and Ferdinand State Forest determined from CFI Inventory by dividing the change in volume, per acre, divided by years between re-measurements*
- *All other property annual growth, per acre, calculated using the following formula: 4 x volume/acre divided by the average DBH x Average growth rings per radial inch (USFS Publication NA-UP-01-91)*
- *The calculated average annual volume growth per acre (167 BdFt) should be considered a conservative estimate based on information from properties where data was available (Jackson-Washington and Morgan-Monroe) showing the change in volume per acre in two successive inventories. The annual volume growth rate calculated from the successive inventory volume change was significantly higher than the growth which was derived from increment core measurement.”*

1.4.7 Estimated, Current and Projected Production

The DoF Strategic Plan 2005-2007 proposes to increase annual harvest levels on state forest lands to 10 million board feet to 17 million board feet (IDNR Strategic Plan 2005). The

average annual growth on state forests is 24.8 million board feet, so the higher harvest targets remain conservative representing an annual harvest of about 70 percent of annual growth.

1.4.8 Chemical Pesticide Use

The primary use of chemicals on forests administered by DoF is for vegetation control. Chemicals are used in conjunction with mechanical removal and prescribed fire. Chemical applications for vegetation control include:

- Herbicide applications to maintain wildlife openings
- non-routine instances of using herbicides to reduce competing vegetation and release plantings
- Use of herbicides to treat invasive plant species.

An additional chemical pesticide applications method is aerial spraying of biological control insecticide for Gypsy Moth.

All pesticides used on the state forestlands were reviewed by the auditors as to whether or not they are prohibited by FSC. The following pesticides are used by DoF:

Copper Sulfate
Copper chelate
Metsulfaton methyl (Escort)
Trichlopyr (Crossbow, Garlon 3a, Garlon 4)
Picloram (Tordon K)
Prometon (Pramitol)
Glyphosate (Round-up, Rodeo, Aquapro, Eagre)
Imazapyr (Arsenal, Chopper and Stalker)
2,4-D
Chlopyralid (Transline)
Fluazifop-p (Fusilade)
Sulfometuron methyl and metasulfuron methyl (Oust)
Ammonium salt of Imazapic (Plateau)
Fosamine ammonium (Krenite)

2.0 GUIDELINES/STANDARDS EMPLOYED

This certification evaluation was conducted against the FSC Lake States-Central Hardwood Regional Standard V. 3.0, which is available on the FSC-US web site, at: www.fscus.org. Notably, the Lake States-Central Hardwood Regional Standard was originally accredited in August 2002. At that time, the standard was written with the intent that non-conformance at the principle level would preclude certification. However, the working group identified several additional indicators and one criterion that would constitute a “fatal flaw” and also preclude certification. The FSC US continued to support this approach in February 2005, after the issuance of FSC-STD-002, when they stated that where accredited national/sub

national standards exist, submitted for accreditation BEFORE January 2005, the CB must follow the decision making procedures defined in the standard. Specifically, where the accredited national standard establishes major failure at principle level then the certification body must use this system to make a certification decision.

3.0 THE CERTIFICATION ASSESSMENT PROCESS

3.1 Assessment Dates

Preliminary Evaluation:

The scoping visit was conducted July 25-27, 2006. The draft scoping visit report was finalized on August 23, 2006.

Main Evaluation:

The main assessment was conducted on October 30-November 3, 2006.

3.2 Assessment Team

Dave Wager, M.Sc. Forestry- SCS Director Forest Management Certification

Role: FSC Team Leader, SFI Team Member

Mr. Wager is Director of Forest Management Certification for SCS. During his 4.5 years as Director, Dave has administered Forest Stewardship Council (FSC) endorsed assessments on over 20 million acres of forestland worldwide. As a Forest Certification practitioner, he has led and/or participated in assessments of over 20 forest management operations including MN DNR administered forests (4.9 million acres), Pennsylvania State Forests (2.2 million acres), Massachusetts State Forests (500,000 acres), and Wisconsin County Forests (2.1 million acres), as well as operations in Malaysia, Canada, Costa Rica, and Japan. In his role as Program Director, Dave oversees all first-time certification evaluations, annual audits, and contract renewal certifications on 65 active clients. In other natural resources work, Dave played a key role in the development of Starbucks CAFE Practices- a program to ensure procurement of sustainably grown and processed coffee. Dave has expertise in business and forest ecology (B.S. business, Skidmore College; M.S. Forest Resources, Utah State University) and utilizes both in his position with SCS. While studying forest ecology at Utah State University, Dave was awarded a NASA Graduate Student Research Fellowship to develop dendrochronological techniques to assess Douglas-fir growth reduction in Utah's Central Wasatch Mountains.

Mike Ferrucci, Master Forestry Yale University- Program Manager NSF

Role: SFI Team Leader, FSC Team Member

Mike Ferrucci is the SFI Program Manager for NSF – International Strategic Registrations and is responsible for all aspects of the firm's SFI Certification programs. Mike has led Sustainable Forest Initiative (SFI) certification and precertification reviews throughout the United States. He has also led joint SFI and Forest Stewardship Council (FSC) certification projects in Wisconsin, Michigan, Maryland, Maine, and Connecticut and a joint scoping or

precertification gap-analysis project on tribal lands throughout the United States. He is qualified as a RAB EMS Lead Auditor (ISO 14001 Environmental Management Systems), as an SFI Lead Auditor, as an FSC Team Leader, and as a Tree Farm Group Certification Lead Auditor.

Mike has 26 years of forest management experience. His expertise is in sustainable forest management planning; in certification of forests as sustainably managed, in the application of easements for large-scale working forests, and in the ecology, silviculture, and management of mixed species forests, with an emphasis on regeneration and management of native hardwood species. He has also developed expertise in the conservation of forest biodiversity at multiple spatial scales through his involvement in the founding and administration of The Conservation Forestry Network and through his work with the Northern Forest Protection Fund.

Mike has conducted or participated in assessments of forest management operations throughout the United States, with field experience in Maine, New Hampshire, New York, Massachusetts, Connecticut, Rhode Island, New Jersey, Pennsylvania, Maryland, West Virginia, Kentucky, Tennessee, Georgia, Alabama, Minnesota, Michigan, Wisconsin, Arizona, California, Oregon, and Washington. Mike is a 26-year member of the Society of American Foresters and is active in the Association of Consulting Foresters and the Connecticut, Massachusetts, and Rhode Island State Implementation Committee (SIC) for the Sustainable Forestry Initiative.

Mr. Sterling Griffin, B.S. Forestry- SCS Certification Forester

Team Member (Forest Management): Sterling Griffin is a Certification Forester with Scientific Certification Systems (SCS). He is a Registered Professional Forester in the State of California with professional experience in private and public land management. He is a graduate of Purdue University with a B.S in Forestry and has administered Forest Stewardship Council (FSC) endorsed assessments on over 4 million acres of forestland throughout the United States. As a forest certification practitioner, he has conducted certification assessments on public lands including Michigan DNR, Indiana Division of Forestry, and private operations in Oregon, Washington, and California. Prior to joining SCS, he was the founder of a private consulting firm in Northern California specializing in sustained yield management, fuel reduction, and forest health management. His professional career also includes conducting silvicultural and ecosystem research for the U.S. Forest Service. Areas of research activities included stand level response to vegetative competition and Long-Term Ecosystem Productivity (LTEP) in the Pacific Northwest.

Dr. David Capen, Independent Consultant

Team Member (Wildlife Biology and Ecology):

Dr. Capen is Research Professor, Rubenstein School of Environment and Natural Resources, University of Vermont. His research experiences and expertise are in the areas of wildlife habitat analysis, avian ecology, landscape ecology, biodiversity analysis, GIS and remote sensing, multivariate statistics, and conservation planning and reserve design. He holds the following degrees: B.S.F., University of Tennessee, 1969 (Forestry); M.S., University of Maine, 1972 (Wildlife Management); and Ph.D., Utah State University, 1977 (Wildlife

Science). Dr. Capen has participated in a variety of forest certification projects, including SFI and FSC projects on public lands in Massachusetts, Maine, and Minnesota, and private forest lands in Maine and New York.

**Fred Hadley, MFS Yale University- Independent Consultant
Team Member- Indiana Forester**

Fred is a forester/natural resource management specialist, and President of Multi-Resource Management, Inc., a consulting company dealing with forest and natural resource management. The firm offers complete forest, wildlife, and land management services including: timber marking and sales, timber inventories and appraisals, timber taxation consultations, forest and wildlife management plans, timber stand improvement and mechanical tree planting programs. Fred is a licensed category 2 commercial pesticide applicator.

Prior to starting a consulting firm Fred held a variety of positions in public, private, and academic sector forestry. In those positions Fred worked with researchers, public officials, and the general public.

Fred's academic training includes an MFS, Yale University, 1981- Forest Management, a BSF, Purdue University, 1979-Forest and Wildlife Management, and numerous continuing education courses dealing with a wide variety of natural resource management topics.

Fred has been active in a variety of professional and voluntary positions, including: National Association of Consulting Foresters, Past President Indiana Association of Consulting Foresters, President Woodland Steward Institute, Currently member of Board of Directors, Past member of Indiana Commissioner of Agriculture Working Group on Agriculture and Natural Resource Land Use Planning, Indiana Woodland Owners Association, Editor "Woodland Steward Quarterly", Member of Indiana Woodland Health Initiative working group, Class Secretary Yale Forestry and Environmental Studies Alumni, Purdue Alumni Association, Indiana Tree Farm Committee, Member Xi Sigma Pi National Honor Society. Fred has also written numerous publications and reports and participated in forestry research activities.

3.3 Assessment Process

Itinerary (the following activities comprised the field phase of the full certification evaluation):

Tuesday, October 31, 2006

| | |
|----------------|---|
| 8-11 am | Specialist interviews at Indiana Division of Forestry Central Offices |
| 11 am-12:30 pm | Drive to Morgan-Monroe State Forest (MMSF) |
| 12:30- 5 pm | Field audit MMSF |
| 6-7:30 pm | Stakeholder meeting Bloomington (Parks and Recreation Twin Lakes Conference Center) |

Wednesday, November 1, 2006

8 am- 5 pm Clark SF (2 team members)
8 am- 5 pm Jackson Washington SF (2 team members)
Evening team deliberations FSC & SFI synthesis and scoring

Thursday, November 2, 2006

8 am – 1 pm Harrison-Crawford SF
1 pm – 2 pm Stakeholder interview
2 pm – 6 pm Drive to Indianapolis area
Evening team deliberations FSC & SFI synthesis and scoring

Friday, November 3, 2006

8 am – 2 pm FSC & SFI Synthesis and Scoring
8 am – 2 pm phone availability of key Division of Forestry personnel
2 pm – 4 pm Travel to Indiana DNR Offices;
Lead Auditors Prepare for closing meeting
4 pm – 5 pm Closing Meeting, Audit Team and Indiana Division of Forestry

Prior to the main assessment, SCS conducted a scoping evaluation from July 25-27, 2006. The audit team conducted desk reviews of key documents describing the Indiana State Forest System. Itinerary (the following activities comprised the field phase of the scoping evaluation):

Tuesday July 25, Division of Forestry Office Indiana Gov. Center

8:30-9:00 am Opening meeting and introductions
9:30-11:30 am State Forest System Presentation
11:30- 1 pm Working Lunch – follow-up discussions
1-4:30 pm FSC Break-out session- detailed discussion of selected FSC topics

Wednesday July 26, Morgan-Monroe SF and DOF Office Indiana Gov. Center

7 am to 1 pm Field visit to Yellowwood SF
1-5 pm Audit planning session
3-5 pm Stakeholder meeting

Thursday July 27, Division of Forestry Office Indiana Gov. Center

8:30-11:30 am Specialist Interviews and Follow-up Questions
11:30-12:15 FSC Closing meeting

Following the on-site component of the assessment, the FSC lead auditor spent time reviewing DoF documents and preparing the assessment report.

3.3.2 Evaluation of Management System

The process by which Scientific Certification Systems evaluated the systems employed by DoF in managing the state forests entailed the following components:

- Empanelment of an interdisciplinary team with demonstrated credentials and expertise in forest certification, auditing protocols, forest management, wildlife management as well as a working knowledge of the forest types found on the Indiana State Forests and a general familiarity with the Indiana DoF
- Review of documents pertinent to the state forests, as are available on the DoF internet site, as well as that provided electronically, to the audit team members
- Extensive interviews with a broad cross-section of DoF personnel at the head office in Indianapolis and five state forest properties.
- Interviews and review of written comments from a broad cross-section of stakeholders external to the DNR.
- Field reconnaissance of a broad array of forest conditions and past and present management activities on the 4 State Forests that comprised the sample for the main assessment

3.3.3 Selection of FMU's to Evaluate

The forest management operation undergoing certification consists of a single Forest Management Unit, per FSC terminology. The audit team designed a field itinerary designed to obtain first-hand exposure to a representative cross section of individual properties within this single "forest management unit."

3.3.4 Sites Visited

Tuesday, October 31, 2006

8:00- 11:30 DNR Central Office-Indianapolis

- Interviews with DNR specialists

12:30- 5 pm Field Audit Morgan-Monroe and Yellowwood State Forest
North Tour (MF & DC)

- C06 Tract 7: 2004 selection harvest in mixed hardwoods, good BMPs, residual stand healthy and limited damage, no prescribed openings, but adjacent areas were damaged by 1991 tornado
- Disabled Hunters Route: logging road maintained for disabled hunters
- C04 Tracts 3 and 13: marked (prior to 2005-2007 Strategic Plan) hardwoods, conservative improvement thinning, discussed stand level retention

South Tour (DW, SG, FH)

- Unscheduled Harvest Unit Review: Recently harvested group and single tree selection unit, good retention and diameter distribution, moderate residual

- stand damage, slash (tops) left untreated in group opening, opening 2 acres with eastern exposure, aesthetics of concern, piles provide good wildlife cover
- C14 Tract 13: Selection harvest, mixed hardwoods in three units, unit C cut in 2005; B cut in 200, A cut in 2001. Good BMPs. Site used for logger training. Grazing Encroachment Area: Owner of adjacent inholding had placed electric fencing across corner of State land (<1/2acre), Forest Manager attempts informal resolution before moving to attorney general on these cases, State has purchased adjacent in-holdings and is seeking others to reduce this problem.
 - C03 Tract 1: Viewed unit two years following harvest, high value trees protected and left, discussed merits of various opening sizes, no openings visible in unit, waterbars installed along top of ridge on skid road where flagged by forester, good regeneration in single tree removal openings. Riparian area protected by sale boundary.

Wednesday, November 1, 2006

8 am- 5 pm Clark State Forest (DW, DC, SG)

- Hardwood Restoration Opening: 16 acre conversion of planted pine to hardwood done to take advantage of transitory pine market. Skid trail going through small wetland/seep area.
- C 09 Tract 1: Improvement cut and hardwood restoration. Viewed marked stand with large group opening to remove pine surrounded by hardwood improvement thinning, opening placed in largest concentration of pine, Good diversity of hardwood regeneration.
- C 11 Tract 1: View selection marking, openings placed to remove beech from stand, discussed watercourse crossing BMPs, viewed marking of cull trees (logger option to remove), older snags not marked, forester identified cultural site and had area flagged for protection
- Deam Lake blowdown area: Viewed salvage logging of tornado blowdown from 2005, discussed sale administration by forester, temporary waterbars placed on wet skid trails, discussed higher logging costs on state lands vs. private land due to complying with BMPs, viewed TSI on adjacent stand

8 am- 5 pm Jackson Washington State Forest (MF, FH)

- Skyline Drive Recreation Area: scenic drive, picnic areas, hiking trails
- C03, Tracts 10 and 11: reviewed planned selection treatments in a variety of stand types, including ridge top/upper slope chestnut oak, midslope mixed oak/hickory, and cove poplar
- C01, Tract 2: excellent quality and well-maintained access road, completed harvest 2005, good residual stand and BMPs, concerns about stand-level habitat retention guidelines
- Starve Hollow State Recreation Area: office and recreational facilities
- Shipley Acquisition: purchased to add to forest and provide access
- 2005-2006 Road Closure
- Active timber harvest, but logger not on site due to rainy weather

Thursday, November 2, 2006

8 am – 2 pm Harrison-Crawford State Forest (entire team)

- C19 Tract 03: completed typical selection harvest with a 2-acre opening that had large and small green tree retention (hickory) based on guidelines for Indiana bats
- C13 Tract 01: reviewed tract management guide, comparison of inventories at 16 year intervals shows 125 to 170 board foot per acre beyond mortality, completed sale 2005-2006, good retention and residuals, but somewhat more soil movement from skid trails due to requirement from “Voluntary Bat Guidelines” mandating harvest activities only between Nov. 16 and March 24
- Interview with TNC personnel

3.3.5 Stakeholder Consultation

Pursuant to SCS protocols and FSC requirements, consultations with key stakeholders were an integral component of the evaluation process. Consultation took place prior to, concurrent with, and following the field evaluation. The following were distinct purposes of the consultations:

- To solicit input from affected parties as to the strengths and weaknesses of Indiana DoF’s management, relative to the standard, and the nature of the interaction between the DoF and the surrounding communities.
- To solicit input on whether the forest management operation has consulted with stakeholders regarding identifying any high conservation value forests.

Principal stakeholder groups of relevance to this evaluation were identified based upon results from the scoping evaluation, lists of stakeholders from DoF, and additional stakeholder contacts from other sources (e.g., chair of the regional FSC working group). The following types of groups and individuals were determined to be principal stakeholders:

- DNR/DoF employees, including headquarters and field
- contractors
- adjacent property owners
- Members of the Lake States FSC Working Group/National Initiative
- FSC U.S. staff
- Local and regionally-based environmental organizations and conservationists
- Local and regionally-based social interest organizations
- Forest industry groups and organizations
- Purchasers of logs harvested on DoF forestlands
- Local, State and Federal regulatory agency personnel
- User groups, such as hikers
- Other relevant groups

The following stakeholder consultation activities were undertaken during the 2006 scoping visit and the 2006 main assessment:

- A two-hour focused stakeholder meeting was held in the DNR headquarters office during the Scoping Visit; approximately 15 individuals representing a full range of interests met with the co-team leaders, offered input, and received briefings on the process.
- Public notices to approx 150 stakeholders were distributed through email, and web-based announcements. A public notice was sent July 18, 2006, that announced the timing of the field component of the full evaluation; the notice solicited comments and informed interested parties as to the availability of the FSC dispute resolution process; the public notice also solicited comment on matters related to FSC Principle 9, High Conservation Value Forests. A second public notice was sent in mid-October that announced the date, time and location of the open public meeting that was held during the full evaluation, and again solicited comments.
- During the 1-week field component of the full evaluation, the audit team conducted stakeholder meetings in Indianapolis and Bloomington. Additionally, team members phoned stakeholders and had in-person meetings. Approximately 41 individuals representing a full range of interests met with the team, offered input, and received briefings on the process.
- The audit team received and considered written comments submitted by a broad cross-section of stakeholder groups.

3.3.5.1 Summary of Stakeholder Concerns and Perspectives and Responses from the Team Where Applicable

A summary of stakeholder comments received during the course of this evaluation is provided the following table. The left column lists the stakeholder’s comments and the right column lists SCS’ response, e.g., whether or not a Corrective Action Requests (CAR) or Recommendation was stipulated for that particular issue. The CARs and Recommendations can be found in section 5.2 of this report.

Public Input and Related Concerns

| Comments/Concerns | SCS Response |
|---|---|
| DNR “open houses” are scheduled on workdays and end before 5 p.m., so this severely limits the opportunity for citizens to comment on activities. | We found this comment to be factually inaccurate. Open houses are typically held on the weekend. However, we have issued CAR 2006.3 to improve communication with stakeholders. |

| Comments/Concerns | SCS Response |
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| The DOF drafted and enacted a new Division Strategic Plan in complete secrecy, there was no attempt to involve the public. | See Major CAR 2006.2 |
| Neither the Friends of Yellowwood nor the Yellowwood Lake Watershed Planning Group were offered opportunity for input on the Division plan nor were they on the stakeholder list given to FSC/SCS. | See Major CAR 2006.2 and CAR 2006.3. We have added Friends of Yellowwood to our SCS stakeholder contact list. |
| A veneer of receiving input is applied, but I don’t believe they are listening to more than a small group of stakeholders. | See CAR 2006.3 |
| Only select groups with a vested interest in State Forest management were invited to closed-door meetings to help draft the Division Strategic Plan. | See Major CAR 2006.2 |
| DOF should involve the public in an open and inclusive conversation about how to move forward on a forest protection agenda that includes additional acquisition of public land and funding for research. | Major CAR 2006.2 will improve stakeholder consultations; however, legislative mandates for state forests are multi-use not “protection”, which typically refers to no harvest. |
| DOF does not provide adequate notice of proposed actions and meaningful opportunities for public comment or review. | See CAR 2006.3 |
| Management of Indiana State Forests by the DNR does not provide a formal appeals process for concerned citizens. | An appeal process is available through the Natural Resources Commission. See section B.1.4 of report for conformance evaluation for more details. |
| Open house meetings don’t cover site specific activities or provide maps of proposed actions. | See CAR 2006.3 |
| The new Division Strategic Plan was prepared in just three weeks without any attempt to involve the public. | See Major CAR 2006.2 |

Management Planning and Related Concerns

| Comments/Concerns | SCS Response |
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| The only science used in the new forest plan in deciding which trees to manage is the science of economics. | See Conformance Table Section B.1.7 |
| Allowance has not been made in the new state plan for the needs for threatened and endangered species or for species of special concern, either state or federally listed. | The DOF procedures manual requires consideration of flora and fauna species, including all rare, threatened, and endangered species. |
| Strategic plans lack landscape level analysis including successional stages (e.g., old growth), influence of disturbance regimes, fragmentation, and habitat connectivity. | The Strategic Plan appears to address these issues by relying on an analysis of habitat needs presented in the paper titled “Increasing Wildlife Habitat Diversity on Forest Lands Managed by IN DNR”. Additionally, the Draft HCP provides extensive |

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| | landscape level analysis. |
| Maintaining the appropriate diversity of forest dependent species should be the goal. Only species that have evolved in forest systems of all age classes should be considered, not just those dependent upon “early successional” habitat. | The Strategic Plan appears to address these issues by relying on an analysis of habitat needs presented in the paper titled “Increasing Wildlife Habitat Diversity on Forest Lands Managed by IN DNR”. Additionally, the Draft HCP provides substantial guidance on this topic. |
| Sensitive songbird species like the cerulean warbler require unbroken canopy forests to survive. Populations of migratory songbirds continue to decline, in large part due to lack of intact forests. | The Strategic Plan appears to address these issues by relying on an analysis of habitat needs presented in the paper titled “Increasing Wildlife Habitat Diversity on Forest Lands Managed by IN DNR” |
| There is no mention (in the new Strategic Plan) of soil erosion, invasive exotic species, harm to water quality, destruction of habitat for wildlife or other readily anticipatable effects of a five fold increase in state forest logging. | The Strategic Plan address these issues by relying on an analysis of habitat needs presented in the paper titled “Increasing Wildlife Habitat Diversity on Forest Lands Managed by IN DNR” and “Forest Management and Water Quality in Indiana” |
| No serious attempt was made to assess the potential harms associated with the dramatic increase in logging, the road building, and other disturbances required to implement this substantial departure from past practice. | The DOF procedures manual requires consideration of potential impacts associated with harvesting to be addressed in the Management Guide developed prior to operations. Post harvest BMP monitoring will continue. State forests already have a well established road network as most of the state forests have been harvested at least once. |
| The Strategic Plan for the Division of Forestry fails to take into account the findings of the Yellowwood Watershed Group, and, in fact, would accelerate some process that are degrading Yellowwood Lake and its watershed. | See Major CAR 2006.2 |
| The plan to harvest up to 80% of the annual growth is based upon a system wide assessment without any apparent allowance for the wide variety of individual stand conditions. This level of timber harvest allows no room for error in their analysis. | According to the plan, 69% of growth will be harvested. The Inventory procedures used for calculations meet acceptable standards. To provide for error, 31% of growth will be retained. |
| Considering the rarity of old growth in Indiana and the proposed aggressive timber harvesting schedule, the new plan should have allowed for large tracts of old growth to compensate for the increase in logging. | See CAR 2006.8 |
| “Old Forest” designations, designed to mimic old growth conditions, have been eliminated. | “Old forest” designation have not been eliminated. Management has been modified, but still seeks to maintain old growth conditions. |
| The state should strive to maintain areas set aside to undergo natural processes. | See CAR 2006.5 |
| The new state plan does not take into account the High Conservation Value Forests located with the network of state forests. | See CAR 2006.8 and Section B.1.9 |
| Much of the land within the state forest system in Indiana should be considered as High Conservation Value Forests. | See CAR 2006.8 and Section B.1.9 |
| The management of Indiana State Forests by the DOF does not comply with the requirements or the standards or High Conservation Value Forests. | See CAR 2006.8 and Section B.1.9 |
| The new state plan has no provisions for monitoring the forest except as in necessary to determine where to conduct timber harvesting. | Audit team found evidence to the contrary. The CFI system to be implemented covers both timber and non-timber forest conditions. Additionally, |

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| | monitoring plans detailed in the Draft IN Bat HCP are comprehensive. . See conformance table section B.1.8 for more detail. |
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Concerns over Multiple Use of Forests

| Comments/Concerns | FSC Response |
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| Non timber products are not promoted in the Strategic Plan. Hunting and timber interests are the only uses that benefit. | The Strategic Plan also proposes increases in recreation expenditures. Also, Major CAR 2006.2 issued |
| It is obvious that logging at any cost has superceded all the other watershed uses, values and efforts. | Comment noted. This stakeholder perspective helped to inform the assessment process and the audit team’s dialogue with DoF |
| Changes in staffing within the Yellowwood Lake management structure indicate a serious weakening of support for non-extractive uses of the state forest and the watershed in particular. | The audit team did not find evidence of weakening support for non-extractive uses (e.g., recreation, watershed values) of the forest |
| Current logging prescriptions in the Yellowwood Lake watershed will increase sedimentation into the lake and degrade the experience of multiple users, including fisherman, boaters, and birders. | Mandatory BMPs and monitoring address soil erosion and sedimentation. There is no evidence that logging of state forests is significantly contributing to sedimentation of Yellowwood Lake. |
| The state’s public forests should be managed to supply public benefits not readily available from private land, including watershed protection, habitat for forest wildlife, recreation, and other non-destructive public uses. | Indeed, DOF has a multiple use mandate. |
| Indiana forest’s timber resource should be more utilized. | The new Strategic Plan proposes increased timber harvesting, specific recreational opportunities, and habitat diversity. |
| The increase in logging volume in the strategic plan will destroy the aesthetic and recreational experience for visitors and subsequently damage local economic diversity by favoring commercial timber extraction. | The Strategic Plan proposes increased recreational opportunities. Monitoring will be needed to determine management effects. Improved public participation procedures are addressed in CAR 2006.3 |
| The DNR strategic plan proposes logging the watersheds around reservoirs that provide drinking water for large numbers of Hoosiers. | Comment noted. Mandatory BMPs and monitoring address soil erosion and sedimentation that would affect drinking water. There is no evidence that logging of state forests will impact water quality of Yellowwood. |

Concerns over Harvesting Impacts

| Comments/Concerns | SCS Response |
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| The Indiana BMPs are the bare minimum that should be required of loggers and must be enforced on all logging operations. | Mandatory BMP compliance and monitoring will continue under new strategic plan |
| The new state plan will be “managing” the forests so frequently that impairment of forest soils is inevitable. | Mandatory BMPs address soil compaction. See CAR 2006.4 for additional discussion of downed woody debris |
| Riparian zones need to be explicitly protected from almost all management activities. | Mandatory BMPs address riparian management zones. |

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| The Yellowwood watershed contains flash-flood-prone streams. Increased logging of 400% with clearcuts up to 30 acres will endanger this fragile ecosystem and its function as a catch basin for the lake. | Riparian zone management and stream crossings are covered in BMP field guide. Additionally, soils are assessed in Management Guides for each compartment. |
| Logging roads create runoff, erosion, and compacts the soil. | Roads, erosion, and soil compaction are addressed in BMP guide. |
| It is obvious that stilt grass is a problem in Yellowwood, Morgan Monroe, and Harrison Crawford State Forest. | Comment noted. See Section B.1.6 (Criterion 6.9) |
| No collection of data regarding changes in flora and fauna, and other environmental impacts of harvesting trees is being performed or being made public. | Assessments are being conducted. CAR 2006.3 requires improved presentation of this information. |

Indiana Bat Protections

| Comments/Concerns | SCS Response |
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| The Indiana State Forests are in the middle of a process to obtain an incidental take permit and develop a habitat conservation plan for the endangered Indiana Bat. Logging in these forests should not be permitted until the process is complete. | As with other DNR activities, harvesting of trees must follow applicable laws and/or treaties. SCS is aware of no such laws or treaties that are being violated by harvesting activities. |
| Development of a HCP for the purpose of securing an incidental take permit should be a prima facie basis for denying certification | This point of view has been addressed long ago in the FSC. Several FSC-certified operations have HCPs/ITPs. In fact, a duly approved HCP provides a demonstration of compliance with the Federal Endangered Species Act. |
| The newly proposed large timber sale in Harrison-Crawford State Forest will have a damaging impact on the maternal roost habitat. | Harvesting in Harrison-Crawford meets voluntary guidelines established by DOF in cooperation with US Fish and Wildlife Service. |
| The new strategic plan shows an incredible bias against species that require late successional forests as habitat. For example, the Indiana Bat requires late successional hardwood forests including older hickory, white oak, and even sugar maple. | The Strategic Plan appears to address these issues by relying on an analysis of habitat needs presented in the paper titled "Increasing Wildlife Habitat Diversity on Forest Lands Managed by IN DNR". Additionally, this is addressed in the Draft Indiana Bat HCP. |
| The only area in which Indiana Bat populations are increasing in numbers is in the state of Indiana, and forest protection advocates point to the elimination of timber extraction in the Hoosier National Forest as the reason for the reproductive success of the species locally. | Comment noted. |
| In October 27, 2005, the DNR sold timber from an environmentally fragile area in Harrison Crawford State Forest that was close to an Indiana Bat hibernacula. | Harvesting in Harrison-Crawford meets voluntary guidelines established by DOF in cooperation with US Fish and Wildlife Service. |

Miscellaneous Comments

| Comments/Concerns | FSC Response |
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| Bird nesting delays were also eliminated, so logging will have a damaging impact on the reproduction of | Audit team confirmed that the no-harvest period for bird nesting has not been eliminated on the Morgan |

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| migratory songbirds. | Monroe and Yellowwood properties, which are the only forests where this no-harvest period was in place. None of the other ~15 publicly managed forests (state, federal, county) across the U.S. that have been assessed by SCS have such a protection mechanism in place. As such, this demonstrates exceptionally sensitive forestry practices. |
| There is inadequate scientific evidence to prove that logging provides early successional habitat for species that require this habitat type. | The overwhelming majority of peer reviewed scientific research concludes that logging does provide early successional habitat. Evidence indicates species requiring early successional habitat utilize recently logged (<10 years) area. |
| DOF does not comply with the Indiana Environmental Protection Act that requires all state agencies to ensure unquantified environmental amenities are given appropriate consideration in decision making along with economic and technical considerations. | DOF has become legally exempt from IEPA requirements. Prior to their legal exemption, they had submitted a document that met IEPA. FSC standards require consideration of full range of benefits provided by forests. See Section B.1.6 (Criterion 6.1) |
| Concerned DOF has taken advantage of loophole to get around the law. | Prior to legal exemption, DoF had addressed IEPA. |
| Siviculture as the DOF practices it, is to log the best healthiest trees. This ensures they are selecting for slow-growing, diseased or substandard trees. | Observations made during the audit do not support this comment. |
| The state forest boundaries are often poorly marked and infrequently policed. This situation has lead to some abuses. Providing for better and more regular law enforcement within the budget is sorely needed. | Comment noted. |
| The certification standards should include climate issues such as carbon sequestration and global warming | SCS is obligated to audit against the accredited regional standard, and these issues are not incorporated into the regional standard. Such comments should be submitted to FSC U.S.- see www.fscus.org for details. |
| Certification of public lands is opposed and, as such, all public lands certification projects are considered to be shams. | FSC certification of public lands has been occurring for many years throughout the U.S. and, even more extensively, throughout the world. |
| DOF relies too much on the court system for dispute resolution. | Comment noted. |
| A recent study by researchers from Purdue University found that 55.9% of respondents oppose logging on public lands. | Comment noted. Major CAR 2006.2 and CAR 2006.3 relate to improved public participation. |

3.4 Total Time Spent on audit

Approximately 9 auditor days of review, interviews, and reporting was spent during the Scoping Visit in July 2006. For the main assessment in October/November 2006, approximately 16 auditor days were expended in field work, 4 auditor days in document review prior to the field work, 3 auditor days in advanced and follow-up stakeholder consultation, and 6 auditor days in writing the draft report.

3.5 Process of Determining Conformance

Consistent with SCS Forest Conservation Program evaluation protocols, for scoring purposes the team collectively assigned weights of relative importance to the Criteria within each of the ten Principles of the FSC Lake States and Central Hardwood Regional Standard. Scores were assigned to each Criterion at the completion of the field phase and importance-weighted means (average scores) were calculated for each Principle. Scoring takes place on a 100-point scale, using a consensus process amongst all members of the evaluation team. Scores less than 80 points connote performance in which there is discernible non-conformance to the breadth of a Criterion. For any Criterion for which the team assigns a score below 80 points, the team is required to specify one or more Corrective Action Requests (CARs), also known as “conditions.” If the weighted average score of any Principle is less than 80, certification cannot be awarded and, instead, the evaluation team must stipulate one or more Major Corrective Action Requests (Major CARs), also known as “pre-conditions.” The evaluation team also retains the option to specify “discretionary CARs” even when the score for the pertinent Criterion is above 80 points. This may occur when, overall, the Criterion was highly scored but there are issues within the scope of a Criterion where important improvements are, in the judgment of the team, necessary even though these deficiencies are not severe enough to move the score below 80 for the totality of the Criterion. For certification to be awarded, the importance-weighted average score for each of the 10 FSC Principles must be 80 points or higher.

Interpretations of Preconditions (Major CARs), CARs and Recommendations

Preconditions/Major CARs: These are corrective actions that must be resolved or closed out prior to award of the certificate. These arise when the importance-weighted average score for a Principle is less than 80 points or where there is observed non-compliance with a “pre-emptive” indicator (e.g., use of GMOs is a “fatal flaw” that precludes award of certification regardless of the strength of the overall management program).

CARs: Corrective actions must be closed out within a specified time period of award of the certificate. Certification is contingent on the certified operations response to the CAR within the stipulated time frame.

Recommendations: These are suggestions that the audit team concludes would help the company move even further towards exemplary status. Action on the recommendations is voluntary and does not affect the maintenance of the certificate. Recommendations can be changed to CARs if performance with respect to the criterion triggering the recommendation falls into non-compliance.

4.0 RESULTS OF THE EVALUATION

Table 4.1 below, contains the evaluation team’s findings as to the strengths and weaknesses of the subject forest management operation relative to the FSC Principles of forest stewardship. The table also presents the corrective action request (car) numbers related to each principle.

Table 4.1 Notable strengths and weaknesses of the forest management enterprise relative to the FSC Principles &Criteria.

| Principle/Subject Area | Strengths Relative to the Standard | Weaknesses Relative to the Standard | CAR/REC #s |
|---|--|---|-------------------|
| P1: FSC Commitment and Legal Compliance | <p>There have been no regulatory violations in the previous 30 years</p> <p>Division of Forestry (DoF) has a solid program for assuring BMPs are followed, especially relative to other state program reviewed by SCS.</p> <p>DoF has made a formal commitment to manage the state forests in conformance with the FSC Principles & Criteria.</p> | <p>The majority of property DoF managers and field staff are not familiar with the FSC standard.</p> <p>Six years ago, a lawsuit was filed against DoF for their failure to comply with the Indiana Environmental Protection Act (IEPA) requiring an environmental assessment. This case has yet to be resolved; however, due to recent state legislative action, DoF has become exempt from IEPA requirements.</p> | <p>CAR 2006.1</p> |
| P2: Tenure & Use Rights & Responsibilities | <p>Unlike other regions of the world, and particularly so for publicly-owned forestland, there is no question as to the tenure status of the Indiana state forest system</p> <p>Customary recreational uses are accommodated and managed in an exemplary manner.</p> <p>DoF maintains an open door policy both at the level of the central office and each state forest.</p> | <p>No significant weaknesses noted</p> | |
| P3: Indigenous Peoples' Rights | <p>Consultation is done with the Division of Historic Preservations and Archaeology prior to major activities. State lands are open for hunting, fishing and other compatible uses</p> <p>DoF received an archeological award for their service at protecting both historic and pre-historic sites. Confidentiality of sites is maintained</p> | <p>DoF has not attempted to contact the non-recognized Indian Tribes currently residing in Indiana; The Indiana Native American Council, or federally recognized Tribes in adjacent states.</p> | <p>CAR 2006.2</p> |

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| <p>P4: Community Relations & Workers' Rights</p> | <p>The State of Indiana purchasing program preferences Indiana businesses. Most service providers are local or regionally based.</p> <p>Most timber sales are purchased by contractors within 95 miles of sale units.</p> <p>DoF clearly has a program for soliciting viewpoints from groups directly affected by forest management, e.g., open houses, user survey forms, notifying adjacent landowners of timber harvests of upcoming activities, semi-annual Forest Stewardship Committee meetings. Efforts are made to provide good recreation opportunities on state lands.</p> <p>Contracts require liability insurance. All contractors (timber purchasers) must have worker's comp and liability insurance</p> | <p>Numerous stakeholders have expressed concern that the DoF public involvement approach is inadequate.</p> <p>Of particular concern, is the lack of involvement, both internal (DoF staff) and external (outside stakeholders), in developing the Strategic Plan 2005-2007.</p> | <p>Major CAR 2006.2 (Closed) CAR 2006.3</p> |
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| <p>P5: Benefits from the Forest</p> | <p>Clearly, DoF is a long term manager of a state forest system that will remain in state ownership. Necessary investment to support long-term forest management (e.g., TSI, inventory, research and monitoring, acquisition) is planned.</p> <p>Hardwood conversion of pine stands is undertaken when markets appear for these marginally desired species. Local mills are the purchasers of these sales.</p> <p>BMPs, contract terms, and timber sale oversight by field personnel collectively result in operations taking place well within reasonable limits for residual stand damage.</p> <p>There is an exemplary level of diversity of forest uses associated with the Indiana state forests including outdoor recreation, timber production, watersheds, research, and leases.</p> <p>Calculation of the sustainability of harvests is derived from the 2005 system-wide inventory, growth rates based on increment analysis, site index models, and truthing these estimates with actual growth data from FIA and CFI data for two state forests.</p> | <p>DoF is attempting to increase harvest levels by a factor of 3 to 4 with the same number of staff.</p> <p>Additionally, lack of pulp markets results in an increase in woody debris being left in the woods. However, there are no set guidelines or targets for levels of coarse woody debris.</p> | <p>Rec 2006.2</p> |
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| <p>P6: Environmental Impact</p> | <p>Assessments of current conditions are completed primarily through:</p> <ul style="list-style-type: none"> ▪ Management Guide, timber sale process, and wildlife review checklist- considers habitat types and other factors within 2.5 mile radius of sale ▪ State-wide forest inventory- includes assessments of soils, erosion, wildlife, rare species, invasives. ▪ Natural heritage surveys ▪ Nature Preserve inventory of state forests <p>Clearly, management of the state forests is undertaken by professionals employing scientifically sound methods and relying upon a large body of empirical and research-based information.</p> <p>DoF has a good track record of conforming with BMPs. The most recent BMP monitoring report in Indiana reports a rate of 89% compliance on state forest timber sales, which means that 89% of the 58 BMP specifications on 97 timber sales met the requirements of the BMP guidelines.</p> | <p>There are no specific guidelines for retention of trees, snags, and woody debris during salvage operations.</p> <p>Some disturbance regimes, such as wind driven events, and their contribution to successional stage diversity have not been thoroughly investigated.</p> <p>DoF mainly addresses habitat connectivity by reviewing adjacent forest within a 2.5 mile buffer of each tract. However, a more complete landscape-level analysis would enhance these efforts.</p> <p>It is unclear if the current network of Nature Preserves, in conjunction with other protected forests (National Forests, TNC properties, etc), covers the full complex of representative forest types and communities found on State Forest lands</p> | <p>Major CAR 2006.1 (Closed) CAR 2006.4 CAR 2006.5 Rec 2006.3 Rec 2006.4 Rec 2006.5 Rec 2006.6 Rec 2006.7 Rec 2006.8 Rec 2006.9</p> |
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| P7: Management Plan | <p>The Properties Strategic Plan includes detailed management goals and objectives. The Strategic Plan gives overall guidance to property activities and is implemented through the DoF Procedures Manual. The Procedures Manual requires that Management Guides be developed for individual tracts and gives direction on operations procedures</p> <p>Tract-level Management Guides are completed and updated prior to any major activity except those considered routine maintenance</p> <p>Management guides include a Wildlife Review Checklist that includes results of Natural Heritage Database queries and requires that habitat analysis be done prior to operations</p> | <p>The team identified some gaps in training of forestry staff in managing species of concern, landscape level planning, knowledge of disturbance regimes and successional pathways, and other requirements of the FSC standard.</p> <p>Discussions of desired future conditions (DFC) for the State Forests are found only in the Silvicultural Guidelines within the Procedures Manual. This description; however, is brief without quantitative descriptions.</p> <p>Overall socioeconomic impacts of State Forest management are not thoroughly documented in planning documents either at strategic or tactical level.</p> | <p>CAR 2006.6</p> |
| P8: Monitoring & Assessment | <p>A system wide inventory was conducted in 2005. The inventory followed procedures as described in the Resource Inventory section of the Procedures Manual. Monitoring is conducted as scheduled.</p> <p>Other inventories/monitoring on DoF properties includes Natural Areas inventory, fish population monitoring, cultural/archeological resource inventory.</p> <p>DoF is exemplary with respect to BMP monitoring through its internal and external BMP monitoring. Public participation process such as open houses, comment cards, and public outreach, provides feedback to managers regarding public perception of management activities.</p> | <p>Social effects are not presently being monitored</p> <p>Documentation of non-timber resources monitoring is not apparent.</p> <p>DoF has yet to develop a procedure for ensuring chain-of-custody of FSC certified logs</p> | <p>CAR 2006.7 CAR 2006.3</p> |

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| P9: Maintenance of High Conservation Value Forest | <p>The audit team found that DoF management systems have worked to identify and conserve HCVF. The DoF has stated that on “Indiana State Forests, HCVF are designated as Dedicated State Nature Preserves, areas containing critical habitat for endangered species, Important Bird Areas, and areas that contribute directly to ecological values of Focal Areas as designated by The Nature Conservancy.”</p> | <p>In order to communicate DoF’s actions at identifying and maintaining HCVF, a list of specific sites and areas must be developed. Additionally, DoF must establish/clarify the process by which they monitor for new HCVF</p> <p>DoF needs more explicit and formal processes for consulting with stakeholders on HCVF</p> | <p>CAR 2006.8</p> |
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4.2 Major Corrective Action Requests (Preconditions)

Major Corrective Action Requests (Major CARs) are issued when the assessment reveals major nonconformities in a forest management operation relative to the certification standard. Major CARs preclude the award of certification until responsive actions have either eliminated the major non-conformity or reduced it to the level of a minor non-conformity.

The following Major CARs were stipulated as a result of the main evaluation and conveyed to DoF shortly after completing of the field audits. Subsequent to that point in time and prior to issuance of this report, DoF took corrective actions that enabled the Major CARs to be either closed or downgraded to Minor CAR status.

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| Observation: The FSC-prohibited chemicals diquat dibromide is permitted for use on DoF administered forests. | |
| Major CAR 2006.1 | Prior to award of certification, DoF must provide evidence that the use of diquat dibromide will not occur on State Forests (unless a derogation has first been granted by the FSC). |
| Deadline | Prior to award of certification |
| Reference | <i>FSC Criterion/Indicator 6.6.a</i> |
| Auditor Response - 6/5/2007 | DOF has submitted to SCS a copy of the memo dated January 24, 2007 that informed all field staff that the use of diquat is restricted. |
| Status | <i>Closed</i> |

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| Observation: The recent change in direction for the management of Indiana State Forests, as outlined in the Strategic Plan (2005-2007), occurred without adequate internal (DoF staff) and external (outside stakeholders) stakeholder involvement. DOF has prepared a document entitled: a <i>Commitment to an Improved Process for Detailing Strategic Operational Plans</i> that outlines the approach for internal and external involvement for completing the next Strategic Plan. However, at the time of the main assessment this process had not begun, and DoF was unable to demonstrate that strategic planning is being done with an adequate level of stakeholder involvement. | |
| Major CAR 2006.2 | <p>The following Major CAR has two phases, both of which need to be completed prior to award of certification. Upon completion of these Major CAR phases, a minor CAR will be issued that requires completion and implementation of the next Strategic Operational Plan.</p> <p>Phase I: Provide a timeline and further details for completing “<i>Commitment to an Improved Process for Detailing Strategic Operational Plans</i>”, particularly steps 1-4.</p> <p>Phase II: Complete steps 1-3 of the improved process: Step 1) Issues Determination: Stakeholders (both internal to IDNR and external) will be provided opportunities to provide input to assist the DNR in determining the issues that should be addressed by the strategic plan.</p> <p>Step 2) Inter-disciplinary teams from within the DNR will create draft goals, objectives and actions for each designated issue.</p> |

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| | Step 3) All stakeholders will be provided with opportunities to comment on all of the draft goals, objectives and actions proposed. |
| Deadline | Prior to award of certification |
| Reference | <i>FSC Criterion 4.4; fatal flaw indicator 4.4.e.</i> |
| DOF Response | <p>“We have identified 10 specific actions needed to complete Steps 1-3 identified in our “Commitment to an Improved Process for Detailing Strategic and Operational Plans”. We have held internal and external stakeholder input sessions in the form of meetings and open houses. These sessions included a planning session with all the properties section professional staff on March 8 and an issues development planning session for our Forest Stewardship Committee on December 15. We summarized the issues developed and returned to the stakeholder groups for review and comment; each day we receive comments on the issues. The 9 open houses were held March 1 through May 12; all property neighbors were invited to attend via property newsletters, and the open houses were announced through a statewide news release. We have met with our sister Divisions and developed goals which are currently being addressed in the form of draft objectives. Those meetings were conducted on January 30 with staff from the Division of Nature Preserves and on April 26 with staff from the Division of Fish and Wildlife. We have issued a statewide news release announcing the strategic plan for 2008 – 2012 and have asked for public input. That same news release announced the three upcoming public meetings, one each in the north (Salamonie State Park Interpretive Center), central (Indiana Government Center in Indianapolis) and south (Patoka Lake Visitor Center). In these sessions citizens will hear our accomplishments through the previous plan and our current draft goals and objectives. Attendees will also be given the opportunity to ask questions and provide ideas or comments on the next plan. Those three sessions are scheduled for May 29, 30 and 31.”</p> |
| Auditors Comments – 6/5/2007 | <p>SCS has received and reviewed documents related to the internal and external consultations held to determine issues and draft new goals and objectives as well as meetings with other agencies within DNR to develop the goals and objectives for the new Strategic Plan as required under Steps 1 and 2. The first draft of the new plan that was presented to stakeholders during the meetings required under step 3 has been received. The auditor confirmed the meetings were well attended and provided for open dialog between interested stakeholders and DNR staff working to finalize the new Strategic Plan. Based upon successful resolution of Phase I and II, steps 1-3, this CAR has been closed and replaced with minor CAR 2007.1</p> |
| Status | <i>Closed</i> |

5.0 CERTIFICATION DECISION

5.1 Certification Recommendation

Major CAR 2006.1 and Major CAR 2006.2 must be adequately addressed before certification can be

recommended. (Update: as of June 5, 2007, the audit team closed the two Major CARs on the basis of corrective actions undertaken by DoF.)

5.2 Initial Corrective Action Requests and Recommendations

Minor CARs:

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| Background/Justification: The majority of property managers were not familiar with the FSC Lake States and Central Hardwood Regional Standard. In order to make a genuine commitment to manage in accordance with FSC Principles and Criteria, as required under Criterion 1.6, managers need to first understand the applicable standard. | |
| CAR 2006.1 | By the 2007 surveillance audit, at least one staff member per state forest property must demonstrate an understanding of the P&C as elaborated by the Lake States and Central Hardwood Regional Standard. |
| Deadline | 2007 surveillance audit |
| Reference | <i>FSC Criterion 1.6</i> |

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| Background/Justification: We realize that there are no federally recognized tribes residing in Indiana. However, there are tribes outside of Indiana, that once inhabited forests in Indiana, and that may remain interested in the management and protection of their cultural and archeological sites that may still occur within the Indiana state forest system. Additionally there are at least two non-federally recognized Tribes in Indiana: Miami Nation of Indiana, Peru, IN (http://www.miamiindians.org/) Upper Kispoko Band of the Shawnee Nation, Kokomo, IN. DoF has not attempted to contact the non-federally recognized Indian Tribes, the Indiana Native American Council, or the federally recognized Tribes in adjacent states. | |
| CAR 2006.2 | By the 2007 surveillance audit, DoF must contact non-federally recognized Indian Tribes currently residing in Indiana, the Indiana Native American Council, and federally recognized Tribes in adjacent states. DoF must invite their participation in planning processes for state forests, particularly planning related to identification and protection of Tribal resources, including cultural and archaeological sites. |
| Deadline | 2007 surveillance audit |
| Reference | Criterion 3.2 and 3.3 |

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| Background/Justification: The audit team observed an adequate process, through annual open houses, for public involvement at the individual state forest level. However, many DoF opponents still criticized this process as being too restrictive or not accessible. It is possible that some of the concern expressed by stakeholders is due to a misunderstanding of the DoF public participation protocols. On a related issue, there is a need to improve public access to DoF plans, guidance documents, monitoring results, and other key planning documents. CAR 2006.3 addresses these findings. | |
| CAR 2006.3 | By December 31, 2007, DoF must provide the public with easy access (e.g., via the DNR website) to a clear description of the DoF protocols for public involvement, how comments are considered, and |

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| | available dispute resolution processes. Additionally, DoF must make its planning, monitoring results, and other key documents readily available to the public. Per FSC Criterion 7.4 and 8.5, respectively, these documents must include a public summary of the management plan and the results of monitoring activities. |
| Deadline | December 31, 2007 |
| Reference | <i>FSC Criterion 4.4, 7.4, 8.5</i> |

Background/Justification: In the course of examining marked and harvested stands, the audit team observed variation across forest units and among individual foresters with respect to stand-level wildlife habitat elements (e.g., snags; green tree retention in clearcuts; den, nest, declining, and mast trees; downed woody debris). Attention to snags and mast trees was strong; however, there are no standards for other stand-level wildlife habitat elements.

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| CAR 2006.4 | By the 2007 surveillance audit, DoF must develop and implement a comprehensive set of guidelines to provide stand-level wildlife habitat elements. |
| Deadline | 2007 surveillance audit |
| Reference | <i>FSC Criterion 6.3.b and 6.3.c</i> |

Background/Justification: The team recognizes that the Division of Nature Preserves, in cooperation with DoF, has done considerable work establishing nature preserves on state forests. However, it is unclear if the current network of Nature Preserves, in conjunction with other protected forests (National Forests, TNC properties, etc), covers the full complex of representative forest types and communities found on State Forest lands (as required by Criterion 6.4)

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| CAR 2006.5 | By the 2008 surveillance audit, DoF must (working with partners, if possible) complete a gap analysis to identify needs for samples of representative ecosystems found on state forest lands. Upon completion of the gap analysis, DoF must determine through an interdisciplinary approach what, if any, opportunities there may be to establish representative samples on state forests. Between now and 2008, if there arise known opportunities on state forests to contribute to known gaps of representative samples, DoF must begin the process to establish active designations. |
| Reference | <i>Criterion 6.4</i> |
| Deadline | Year 2 surveillance audit |

Background/Justification: The team identified some gaps in training of forestry staff in managing species of concern, landscape level planning, knowledge of disturbance regimes and successional pathways, and other requirements of the FSC standard.

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| CAR.2006.6 | By the 2007 surveillance audit, DOF must assess the effectiveness of current staffing and training opportunities at providing the necessary expertise to address gaps identified in the FSC report (both CARs and RECs). Prepare an action plan that details how gaps in training and/or expertise will be filled. |
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| Reference | <i>Criterion 7.3</i> |
| Deadline | 2007 surveillance audit |

Background/Justification: DoF has yet to develop a procedure for ensuring chain-of-custody of FSC certified logs. For an entity selling only standing timber, the chain-of-custody obligations include:

- Effectively notifying all purchasers of state forest timber sales that maintaining the FSC-certified status of the procured products requires each owner of the product, from severance at the stump onward, to hold valid FSC-endorsed chain-of-custody certificates;
- Including IN DoF's FSC FM/COC registration number on timber sale contracts and sale prospectus;
- Upon request from SCS, making available the following timber sale information: purchaser's name and contact information, species and volume sold, date of sale;
- Notifying SCS and/or the FSC of any instances when a purchaser of state forest timber (not holding a valid FSC-endorsed chain-of-custody certificate) uses the FSC logo;
- Maintaining timber sale records for at least 5 years

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| CAR 2006.7 | Prior to selling wood as FSC certified, DoF must develop and implement a procedure covering the FSC CoC requirements. |
| Reference | <i>Criterion 8.3</i> |
| Deadline | Prior to sale of wood as FSC certified |
| DoF Response | DNR has made a commitment to include the FSC FM/COC registration number on timber sale notices and contracts. Within 2 years, DoF will explore opportunities to encourage purchasers to acquire valid FSC-endorsed-chain-of-custody certification. DoF will continue to maintain timber sale records for at least 5 years, and will notify SCS if any purchaser improperly uses the FSC logo. |
| Status | The response is sufficient to allow DoF to sell wood as FSC certified. At the Nov 2007 surveillance audit, SCS will review the implementation of this. Continued- due at 2008 surveillance audit. |

Background/Justification: The audit team found that DoF managers, employing management systems, have worked to identify and conserve areas possessing High Conservation Value Forests. The DoF has stated that on *Indiana State Forests, HCVF are designated as Dedicated State Nature Preserves, areas containing critical habitat for endangered species, Important Bird Areas, and areas that contribute directly to ecological values of Focal Areas as designated by The Nature Conservancy.* In order to communicate DoF's actions at identifying and maintaining HCVF, a list of specific sites and areas must be developed.

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| CAR 2006.8 | By the 2007 surveillance audit, DoF must compile the list of specific sites and areas classified as HCVF- per the scope of the assessment required by Criterion 9.1. Additionally per Criterion 9.2, DoF must provide explicit opportunities to the public to offer input on identifying, designating, and managing HCVF. Thus, DoF must demonstrate what opportunities have and will occur for the public to nominate HCVF. |
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| Reference | <i>Principle 9</i> |
| Deadline | 2007 surveillance audit |

Background/Justification: The recent change in direction for the management of Indiana State Forests, as outlined in the Strategic Plan (2005-2007), occurred without adequate internal (DoF staff) and external (outside stakeholders) stakeholder involvement. The 2005-2007 Strategic Plan will be replaced by a strategic plan developed during 2007 to cover activities from 2008-2013. DoF has prepared a document entitled: a *Commitment to an Improved Process for Detailing Strategic Operational Plans* that outlines the approach for internal and external involvement for completing the next Strategic Plan. Development of that replacement plan will consist of the following broad steps:

Step 1) Issues Determination: Stakeholders (both internal to IDNR and external) will be provided opportunities to provide input to assist the DNR in determining the issues that should be addressed by the strategic plan.

Step 2) Inter-disciplinary teams from within the DNR will create draft goals, objectives and actions for each designated issue.

Step 3) All stakeholders will be provided with opportunities to comment on all of the draft goals, objectives and actions proposed.

Step 4) Finalize the Plan: The DNR will then use those comments to finalize the Strategic Plan for 2008-2013.

DoF has submitted documentation to demonstrate completion of step 1-3. DoF has not yet completed step 4. This step is required in order to complete the process and fully integrate the public comments into development of the next Strategic Plan.

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| CAR 2007.1 | DoF must complete Step 4 (Finalize the Plan: The DNR will then use those comments to finalize the Strategic Plan for 2008-2013) of the document entitled <i>Commitment to an Improved Process for Detailing Strategic Operational Plans</i> . |
| Deadline | 12/31/2007 |
| Reference | <i>FSC Criterion 4.4</i> |

Recommendations:

Background/Justification: DoF should readily provide SCS within information regarding significant unresolved disputes at each surveillance audit.

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| REC 2006.1 | At the time of each surveillance audit, DoF should provide SCS a summary/status report of current unresolved disputes. |
| Reference | <i>FSC Indicator 2.3.b</i> |

Background/Justification: There are no set guidelines or target levels for coarse woody debris.

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| REC 2006.2 | DoF should develop standards for coarse woody debris retention ensuring sufficient levels in a diversity of size classes are retained. |
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| Reference | <i>FSC Criterion 5.3</i> |
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| Background/Justification: Disturbance regimes, such as wind driven events, and their contribution to a diversity of successional stages have not been thoroughly investigated and incorporated into management of state forests | |
| REC 2006.3 | DoF should emphasize continuing education and/or acquiring additional expertise on forest ecology including disturbance regimes and pathways and flora and fauna communities. |
| Reference | <i>FSC Criterion 6.1</i> |

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| Background/Justification: There is lack of understanding and documentation of habitat needs and management considerations pertaining to species of concern, as defined by the Natural Heritage Element Occurrence Record dataset | |
| REC 2006.4 | DoF should improve the presentation and distribution of information describing habitat and best management practices for species of concern. |
| Reference | <i>FSC Criterion 6.2</i> |

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| Background/Justification: Ecological characteristics of adjacent forested stands are not consistently considered. Although each management guide looks within a 2.5 mile radius of the tract- this rarely results in any new information or alteration to the proposed treatment. | |
| REC 2006.5 | DoF should improve the process for considering ecological characteristics of adjacent forested stands |
| Reference | <i>FSC Criterion 6.3</i> |

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| Background/Justification: There is an opportunity to use more prescribed fire | |
| REC 2006.6 | DoF should make a commitment to using prescribed fire when possible, and prepare an operating procedure that guides when and how prescribed fire should be used. |
| Reference | <i>FSC Criterion 6.3</i> |

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| Background/Justification: Although the vast majority of chemical use follows a written prescription, occasionally DoF staff will treat invasive exotic species without first preparing a written strategy. | |
| REC 2006.7 | DoF should ensure that every herbicide application is done in accordance with a written prescription |
| Reference | <i>FSC Criterion 6.6</i> |

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| Background/Justification: IN BMP's require operators to carry spill kits; however DoF is not consistently enforcing this requirement. | |
| REC 2006.8 | DoF should ensure that all equipment operators carry spill kits, and |

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| | are properly trained in containment and clean-up procedures. |
| Reference | <i>FSC Criterion 6.7</i> |

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| Background/Justification: DoF has an active program and strategies for treating invasive exotic plants; however, these were not communicated in the 2005-2007 Strategic Plan. Due to the recent increases in harvesting, plans and actions to address invasive exotic plants should be clearly communicated in the Strategic Plan. | |
| REC 2006.9 | DoF should prepare a section in the strategic plan that details their programs for controlling invasive exotic plants, specifically how invasive species control will be enhanced to be commensurate with the increase in harvesting. |
| Reference | <i>FSC Criterion 6.9</i> |

6.0 SURVEILLANCE EVALUATIONS

If certification is awarded, surveillance evaluations will take place at least annually to monitor the status of any open corrective action requests and review the continued conformance of DoF to the Lake States Standard. Public summaries of surveillance evaluations will be posted separately on the SCS website (www.scsertified.com).

7.0 SUMMARY OF SCS COMPLAINT AND APPEAL INVESTIGATION PROCEDURE

The following is a summary of the SCS Complaint and Appeal Investigation Procedures, the full versions of the procedures are available from SCS upon request. The SCS Complaint and Appeal Investigation Procedures are designed for and available to any individual or organization that perceives a stake in the affairs of the SCS Forest Conservation Program and that/who has reason to question either the actions of SCS itself or the actions of a SCS certificate holder.

A **complaint** is a written expression of dissatisfaction, other than **appeal**, by any person or organization, to a certification body, relating to the activities of staff of the SCS Forest Conservation Program and/or representatives of a company or entity holding either a forest management (FM) or chain-of-custody (CoC) certificate issued by SCS and duly endorsed by FSC, where a response is expected (ISO/IEC 17011:2004 (E)). The SCS Complaint Investigation Procedure functions as a first-stage mechanism for resolving complaints and avoiding the need to involve FSC.

An “**appeal**” is a request by a certificate holder or a certification applicant for formal reconsideration of any adverse decision made by the certification body related to its desired certification status. A certificate holder or applicant may formally lodge an appeal with SCS against any adverse certification decision taken by SCS, within thirty (30) days after notification of the decision.

The written Complaint or Appeal must:

- Identify and provide contact information for the complainant or appellant

- Clearly identify the basis of the aggrieved action (date, place, nature of action) and which parties or individuals are associated with the action
- Explain how the action is alleged to violate an SCS or FSC requirement, being as specific as possible with respect to the applicable SCS or FSC requirement
- In the case of complaints against the actions of a certificate holder, rather than SCS itself, the complainant must also describe efforts taken to resolve the matter directly with the certificate holder
- Propose what actions would, in the opinion of the complainant or appellant, rectify the matter.

Written complaints and appeals should be submitted to:

Dr. Robert J. Hrubes

Senior Vice-President

Scientific Certification Systems

2200 Powell Street, Suite 725

Emeryville, California, USA94608

Email: rhrubes@scscertified.com

As detailed in the *SCS-FCP Certification Manual*, investigation of the complaint or appeal will be confidentially conducted in a timely manner. As appropriate, corrective and preventive action and resolution of any deficiencies found in products or services shall be taken and documented.

SECTION B DETAILED RESULTS OF THE FULL EVALUATION

1.0 DETAILED EVALUATION OF CONFORMANCE

The findings and observations of the evaluation team are presented in this section, structured according to the 9 applicable FSC Principles. To follow are brief descriptions of each Principle, Criterion, and Indicator and the team's findings and judgments at the Criterion and Indicator level.

1.1 PRINCIPLE #1: COMPLIANCE WITH LAWS & FSC PRINCIPLES

Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.

This FSC Principle is elaborated through a set of 6 Criteria that focus on issues such as conformance to all applicable national and local laws and regulations, payment of legally prescribed fees, taxes and royalties, protections against illegal harvesting and other unauthorized activities, and demonstrating a long-term commitment to adhere to the FSC Principles & Criteria.

| Standard | Score | Comments |
|---|-----------|---|
| C1.1 Forest management shall respect all national and local laws and administrative requirements. | 85 | The audit team has determined there is clear overall conformance with this Criterion. |
| 1.1.a. Forest management plans and operations comply with applicable Federal, state, county, tribal, and municipal laws, rules, and regulations. | | There have been no regulatory violations in the previous 30 years. Six years ago, a lawsuit was filed against DoF for their failure to comply with the Indiana Environmental Protection Act (IEPA) requiring an environmental assessment. This case has yet to be resolved; however, due to recent state legislative action, DoF has become exempt from IEPA requirements. Any shortcomings in the prior environmental assessment (EA) will be compensated for by the EA carried out as part of the Habitat Conservation Plan for Indiana and Gray Bats on Indiana State Forests. Also see relevant discussion in Section A. 3.3.5.1. |
| 1.1.b. Forest management plans and operations comply with state Best Management Practices (BMPs) (see Appendix for references) and other government forest management guidelines applicable to the forest, both voluntary and regulatory (see also Criterion 6.5) | | Division of Forestry (DoF) has a robust program for assuring BMPs are followed, especially relative to other state program reviewed by SCS. Site visits during the assessment confirmed that BMP's are being followed. Many stakeholders (including DoF critics) lauded the DoF for their BMP implementation. Some stakeholders shared a concern that DoF was reducing its intensity of BMP monitoring. The plan to reduce BMP monitoring has been abandoned and inspections will continue as previously practiced. |
| 1.1.c. Forest management plans and operations meet or exceed all applicable laws and administrative requirements with respect to sharing public information, opening records to the public, and following procedures for public participation. | | Evidence of conformance includes: <ul style="list-style-type: none"> • The 2005-2007 strategic plan is available on the DoF website; • Tract plans are available upon request; • DoF appears to follow their established protocols for public participation; |

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| | | <ul style="list-style-type: none"> • Semi-annual meetings of State Forest Stewardship Committee. <p>Numerous stakeholders have expressed concern that DoF public involvement approach is inadequate- see related findings under Section B.1.4 (Criterion 4.4) and in Section A.3.3.5.1.</p> |
| C1.2. All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid. | 85 | The audit team has determined there is clear overall conformance with this Criterion. |
| 1.2.a. Taxes on forest land and timber, as well as other fees related to forest management, are paid in a timely manner and in accordance with state and local laws. | | There is no evidence that payments are not made on a timely basis. 15% of the timber revenue from increased harvesting will go to counties |
| C1.3. In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected. | 85 | The audit team has determined there is clear overall conformance with this Criterion. |
| 1.3.a. Forest management operations comply with all binding treaties or other agreements to which the U.S. is a party, including treaties with American Indian tribes. | | As with most forestland managers in the U.S., it is doubtful if DoF is fully knowledgeable about all potentially applicable treaties and conventions. ITTA is not relevant but ILO could be. This potential lack of full awareness notwithstanding, we have seen no evidence to suggest that DoF would be considered to be in non-conformance to this Indicator and Criterion. |
| C1.4. Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and by the involved or affected parties. | N/A | |
| 1.4.a. Where conflicts between laws and FSC Principles and Criteria occur, they are referred to the appropriate FSC body. | | This is an advisory note, rather than an indicator. IF DoF were certified, there is an expectation that they will raise any conflicts between laws and FSC Principles to SCS. |
| C1.5. Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities. | 95 | The audit team has determined there is outstanding overall conformance with this Criterion. |
| 1.5.a. Forest owners or managers implement measures to prevent illegal and unauthorized activities in the forest. | | <p>By periodically (5 years) painting all property boundaries, DoF is taking significant actions to reduce the risk of unauthorized activities. Notably, SCS is unaware of other public land managers in the Lake States/Central hardwood Region that actively paint all property boundaries.</p> <p>Off highway vehicles and ATVs are flat out prohibited on State Forests, thus reducing exposure to riders that abuse public lands, a common problem across the U.S. No ATV activity was observed during the assessment.</p> <p>Other factors contributing to strong conformance with this Criterion include:</p> <ul style="list-style-type: none"> • DoF is purchasing in-holdings in order to have a more contiguous ownership that is easier to manage • DoF gates access roads • DoF maintains a “good neighbor database” and invites the |

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| | | <p>public to yearly open houses. It appears forest managers have good rapport with the public and attempt informal resolution when conflicts arise.</p> <ul style="list-style-type: none"> • Law Enforcement Officers patrol areas where unwanted activities occur. |
| C1.6. Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria. | 78 | The audit team determined that there is marginal non-conformance with this Criterion (CAR 2006.1) |
| 1.6.a. Forest owners or managers provide written statements of commitment to the FSC Principles and Criteria. The commitment is stated in the management plan [see 7.1], a document prepared for the certification process, or another official document. | | <p>DoF has made a formal commitment to manage the state forests in conformance with the FSC Principles & Criteria.</p> <p>Although there is strong commitment among DoF staff to pursue FSC certification, the majority of property managers and field staff are not familiar with the FSC standard (CAR 2006.1).</p> |
| 1.6.b Forest owners or managers document the reasons for seeking partial certification. | | DoF is seeking certification for all state properties. |
| 1.6.c Forest owners or managers document strategies and silvicultural treatments for several harvest entries that meet the FSC Principles and Criteria (see Principle 7). | | <p>Long-term silvicultural strategies appear consistent with the FSC P&C. See 5.6 for more detail.</p> <p>Harvest strategies to maintain the oak hickory component are very much consistent with FSC Principles and Criteria.</p> |

Importance Weighted Aggregate Score for Principle 1:

Employing the PAIRWISE algorithm, the evaluation team assigned weights of relative importance for each of the 6 Criteria in this Principle. Under SCS' accredited protocols, assignment of weights of relative importance is one means by which certification evaluations recognize and incorporate regional and sub-regional circumstances. In this case, the weights were designed to reflect the regional context in which the subject forest management unit is located:

| FSC Principle #1: Compliance with Laws and FSC Principles | Normalized Relative Importance Weights | Performance Scores | Weighted Average Score |
|--|---|-----------------------|------------------------|
| 1.1 | .32 | 85 | 85.37 |
| 1.2 | .11 | 85 | |
| 1.3 | .06 | 85 | |
| 1.4 | n/a | n/a | |
| 1.5 | .23 | 95 | |
| 1.6 | .28 | 78 | |
| | | | |

Applying the normalized weights of relative importance to the 5 assigned performance scores, and rounding to the nearest integer, leads to a weighted average score for the Principle of:

85

Per SCS protocols, and as this weighted average score is in excess of 80 points, acceptable overall conformance to this FSC Principle is confirmed.

Corrective Action Requests and/or Recommendations

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| Background/Justification: The majority of property managers were not familiar with the FSC Lake States and Central Hardwood Regional Standard. In order to make a genuine commitment to manage in accordance with FSC Principles and Criteria, as required under Criterion 1.6, managers need to first understand the applicable standard. | |
| CAR 2006.1 | By the 2007 surveillance audit, at least one staff member per state forest property must demonstrate an understanding of the P&C as elaborated by the Lake States and Central Hardwood Regional Standard. |
| Deadline | 2007 surveillance audit |
| Reference | <i>FSC Criterion 1.6</i> |

1.2 PRINCIPLE #2: TENURE AND USE RIGHTS/RESPONSIBILITIES

Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.

This FSC Principle, detailed through 3 Criteria, focuses on the long-term tenure and use rights to the land that is undergoing the certification evaluation. Forest managers seeking FSC-endorsed certification must establish clear and legal ownership or right to manage the defined forest area that is being evaluated. Customary use rights, if clearly demonstrated, must be appropriately honored.

| Standard | Score | Comments |
|---|--------------|--|
| C2.1. Clear evidence of long-term forest use rights to the land (e.g., land title, customary rights, or lease agreements) shall be demonstrated. | 90 | The audit team has determined there is outstanding overall conformance with this Criterion. |
| 2.1.a. Forest owners or managers document the legal and customary rights associated with the forest. These rights include both those held by the party seeking certification and those held by other parties. | | Unlike other regions of the world, and particularly so for publicly-owned forestland, there is no question as to the tenure status of the Indiana state forest system. |
| 2.1.b. Affected land boundaries are clearly identified on the ground by the forest owner or manager prior to commencement of management activities. | | DoF has a strong program for ensuring property boundaries are well marked. Numerous boundary markings were observed during the full assessment. Each forest visited possessed a map with the status of each property corner. A land surveyor is on staff at Clark S.F. When needed, managers will contract for professional surveying services.. |
| C2.2. Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to | 88 | DoF is in clear conformance with this Criterion. |

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| other agencies. | | |
| 2.2.a. The forest owner or manager allows legal and customary rights to the extent that they are consistent with the conservation of the forest resource and the objectives stated in the management plan. | | Customary recreational uses are accommodated and managed in an exemplary manner. Access to in-holding properties appears to be properly managed. Relatives are allowed to fence gravesites within the forest boundaries. |
| 2.2.b. On ownerships where customary use rights or traditional and cultural areas/sites exist, forest owners or managers consult with concerned groups in the planning and implementation of forest management activities. | | The primary mechanism for consulting with concerned and affected stakeholders is an annual open house. Considerable efforts are made to get attendance at the open house, such as raffles, free food, free firewood, and education. Neighboring property owners are notified of upcoming timber harvests, and signs with DoF contact information are posted at entry points. Additionally, meetings with concerned and affected stakeholders occur on an as requested basis. |
| C2.3. Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified. | 90 | DoF demonstrated outstanding conformance with this Criterion. |
| 2.3.a. The forest owner or manager maintains relations with community stakeholders to identify disputes while still in their early stages. If disputes arise, the forest owner or manager initially attempts to resolve them through open communication, negotiation, and/or mediation. If negotiation fails, existing local, state, Federal, and tribal laws are employed to resolve claims of land tenure (see Glossary). | | DoF maintains an open door policy both at the level of the central office and each state forest. SCS was informed the strategy is to listen to the complaint, make accommodations and resolve the issue if possible, or explain the reason for not being able to accommodate the concern. If concerns can not be resolved at the individual state forest level, or the central office, concerned stakeholders are informed that they can raise their complaints to the Natural Resources Commission (NRC) - which meets monthly. Following the NRC, the U.S. court system is an option. |
| 2.3.b. The forest owner or manager provides information to the certification body regarding unresolved and/or ongoing disputes over tenure and use-rights. | | Such a protocol has yet to be developed. Providing a summary/status report as part of the annual surveillance audit is sufficient. DoF should exercise discretion in determining if SCS should be informed about any single case prior to the next surveillance audit, but generally only highly visible and controversial circumstances would warrant informing SCS prior to the surveillance audit (Recommendation 2006.1) |

Importance Weighted Aggregate Score for Principle 2:

Employing the PAIRWISE algorithm, the evaluation team assigned weights of relative importance for each of the 3 Criteria in this Principle. Under SCS' accredited protocols, assignment of weights of relative importance is one means by which certification evaluations recognize and incorporate regional and sub-regional circumstances. In this case, the weights were designed to reflect the regional context in which the subject forest management unit is located

| FSC Principle #2 | Normalized Relative | Performance Scores | Weighted Average Score |
|------------------|---------------------|--------------------|------------------------|
|------------------|---------------------|--------------------|------------------------|

| <i>Tenure and Use Rights and Responsibilities</i> | Importance Weights | | |
|---|--------------------|----|-------|
| 2.1 | .54 | 90 | 89.67 |
| 2.2 | .16 | 88 | |
| 2.3 | .30 | 90 | |

Applying the normalized weights of relative importance to the 3 assigned performance scores, and rounding to the nearest integer, leads to a weighted average score for the Principle of:

90

Per SCS protocols, and as this weighted average score is in excess of 80 points, acceptable overall conformance to this FSC Principle is confirmed.

Recommendations

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| Background/Justification: DoF should readily provide SCS within information regarding significant unresolved disputes at each surveillance audit. | |
| REC 2006.1 | At the time of each surveillance audit, DoF should provide SCS a summary/status report of current unresolved disputes. |
| Reference | <i>FSC Indicator 2.3.b</i> |

1.3 PRINCIPLE #3: INDIGENOUS PEOPLES' RIGHTS

The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.

This FSC principle is concerned about the rights of indigenous peoples to own, use and manage their lands and territories. The Criteria focus on issues such as tenure rights of indigenous people, protection of cultural sites, and compensation for traditional knowledge.

| Standard | Score | Comments |
|---|-------|---|
| C3.1. Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies. | N/A | |
| 3.1.a. On tribal lands, forest management and planning includes a process for input by tribal members in accordance with their laws and customs. | | The state forestlands are not tribal lands. |
| 3.1.b. Forest management on tribal lands is delegated or implemented by an authorized tribal governing body. | NA | |
| C3.2. Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples. | 81 | The audit team has determined there is marginal overall conformance with this Criterion. There is strong conformance with Indicator 3.2.b, but DoF is not in conformance with Indicator 3.2.a. Addressing CAR 2006.2 will bring DoF into clear conformance. |
| 3.2.a. Forest owners or managers identify and contact American Indian groups that have customary use rights or other legal rights to the management area and | | There are federally recognized tribes outside of Indiana, that once inhabited forests in Indiana, and that may remain interested in DoF management and protection of cultural and archeological |

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| <p>invite their participation in the forest planning processes, appropriate to the scale and intensity of the operation. (see also Criterion 4.4.)</p> | <p>sites. Additionally there are at least two non-federally recognized Tribes in Indiana: Miami Nation of Indiana, Peru, IN (http://www.miamiindians.org/) Upper Kispoko Band of the Shawnee Nation, Kokomo, IN.</p> <p>DoF has not attempted to contact the non-recognized Indian Tribes currently residing in Indiana; Indiana Native American Council, or federally recognized Tribes in adjacent states.</p> <p>In consultation with the Division of Historic Preservation and Archaeology, DoF has prepared a list of tribes to be consulted regarding management and conservation of the natural and cultural resources located on state land. CAR 2006.2 requires follow-through with this consultation.</p> | |
| <p>3.2.b. Steps are taken during the forest management planning process and implementation to protect tribal resources that may be directly affected by certified operations such as adjacent lands, bodies of water, critical habitats, and riparian corridors as well as other resource uses such as rights to hunt, fish, or gather.</p> | <p>All proposed ground disturbing activities are checked for potential impacts to historical or pre-historical archeological sites. Some field staff have received archaeological training. Auditors observed cultural sites, identified by the forester, being protected during operations. State lands are open for hunting, fishing and other compatible uses.</p> | |
| <p>C3.3. Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.</p> | <p>82</p> | <p>The audit team has determined there is marginal overall conformance with this Criterion. DoF protocols for protecting archeological resources meet the intent of this Criterion; however outreach to Tribes is required for there to be clear conformance. (CAR 2006.2)</p> |
| <p>3.3.a. Forest owners or managers make systematic efforts to identify areas of cultural, historical, and/or religious significance. They invite participation of tribal representatives (or other appropriate persons, where tribal entities are lacking) in the identification of current or traditionally significant sites within the forest proposed for certification.</p> | <p>DoF timber harvest activities are exempt from reporting though SHIPO office because of its classification as an agricultural activity; other activities, such as road building do require SHIPO office clearance. However, DoF exceeds requirements of the agricultural exemption because they employ a staff archeologist with clearly defined protocol for screening all ground disturbing activities for historic and pre-historic sites. The database is searched, and sites with high potential, based on characteristics of the tract, are surveyed.</p> <p>Evidence of conformance includes:</p> <ul style="list-style-type: none"> • DoF received an archeological award for their service at protecting both historic and pre-historic sites. • All foresters have had training on completing forms, and some foresters have had on-site training with the archeologist. | |
| <p>3.3.b. Forest owners and managers consult with tribal leaders (or other appropriate persons, where tribal entities are lacking) to develop mechanisms that ensure forest management operations protect from damage or interference those areas described in 3.3.a. and incorporate these special places into forest management and operational plans.</p> | <p>In the absence of Tribal leader contacts, DoF consults with archeologists. See CAR 2006.2</p> | |
| <p>3.3.c. Confidentiality of disclosures is maintained in</p> | <p>Confidentiality of sites is maintained</p> | |

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| keeping with applicable laws and the requirements of tribal representatives. | | |
| C3.4. Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence. | N/A | |
| 3.4.a. Forest owners or managers respect the confidentiality of tribal knowledge and assist in the protection of tribal intellectual property rights. | DoF does not believe nor does any tribe assert, as far as the auditors are aware, that the department is utilizing tribal intellectual property rights in the course of managing the state forests. | |
| 3.4.b. A written agreement is reached with individual American Indians and/or tribes prior to commercialization of their indigenous intellectual property, traditional knowledge, and/or forest resources. The individuals and/or tribes are compensated when such commercialization takes place. | Not Applicable | |

Importance Weighted Aggregate Score for Principle 3:

Employing the PAIRWISE algorithm, the evaluation team assigned weights of relative importance for each of the 4 Criteria in this Principle. Under SCS’ accredited protocols, assignment of weights of relative importance is one means by which certification evaluations recognize and incorporate regional and sub-regional circumstances. In this case, the weights were designed to reflect the regional context in which the subject forest management unit is located.

| FSC Principle #3 Indigenous Peoples' Rights | Normalized Relative Importance Weights | Performance Scores | Weighted Average Score |
|--|--|--------------------|------------------------|
| 3.1 | n/a | n/a | 81 |
| 3.2 | .5 | 81 | |
| 3.3 | .5 | 82 | |
| 3.4 | n/a | n/a | |

Applying the normalized weights to the 2 assigned performance scores, and rounding to the nearest integer, leads to a single weighted average score for this Principle of:

81

Per SCS protocols, and as this weighted average score is in excess of 80 points, acceptable overall conformance to this FSC Principle is confirmed.

Corrective Action Requests and/or Recommendations:

Background/Justification: We realize that there are no federally recognized tribes residing in Indiana. However, there are tribes outside of Indiana, that once inhabited forests in Indiana, and that may remain interested in the management and protection of

their cultural and archeological sites that may still occur within the Indiana state forest system. Additionally there are at least two non-federally recognized Tribes in Indiana: Miami Nation of Indiana, Peru, IN (<http://www.miamiindians.org/>) Upper Kispoko Band of the Shawnee Nation, Kokomo, IN.

DoF has not attempted to contact the non-federally recognized Indian Tribes, the Indiana Native American Council, or the federally recognized Tribes in adjacent states.

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| CAR 2006.2 | By the 2007 surveillance audit, DoF must contact non-federally recognized Indian Tribes currently residing in Indiana, the Indiana Native American Council, and federally recognized Tribes in adjacent states. DoF must invite their participation in planning processes for state forests, particularly planning related to identification and protection of Tribal resources, including cultural and archaeological sites. |
| Deadline | 2007 surveillance audit |
| Reference | Criterion 3.2 and 3.3 |

1.4 PRINCIPLE #4: COMMUNITY RELATIONS & WORKERS' RIGHTS

Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.

This FSC Principle, elaborated through 5 Criteria, addresses the effects of forest management on the well being of forest workers and local communities. The Criteria focus on issues such as: preferences for local employment, compliance with employee health and safety regulations, rights of workers to organize, completion of social impact assessments, and employee grievance resolution mechanisms. In short, this principle expresses the position that exemplary forest management must include a conscious sensitivity to the interests of the most directly impacted stakeholders: employees, contractors and local communities.

| Standard | Score | Comments |
|---|-------|--|
| C4.1. The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services. | 90 | DoF is in clear conformance with this Criterion. |
| 4.1.a. Opportunities for employment, contracting, procurement, processing, and training are as good for non-local service providers as they are for local service providers doing similar work. | | Evidence of conformance includes: <ul style="list-style-type: none"> • DoF predominately hires locally trained people; • The State of Indiana purchasing program preferences Indiana businesses. Most service providers are local or regionally based. • Stakeholders who have purchased timber sales state that the size and scope of sales are very appropriately suited to their size of operation. Managers are very aware of the advantages of maintaining the competitiveness of small local contractors. • Most sales are purchased by contractors with 95 miles of sale units. |
| 4.1.b. Forest work is packaged and offered in ways that create quality work opportunities for employees, contractors, and their workers. | | State employment packages certainly conform to this indicator. The average employee tenure is quite long compared to private industry; job security is a bigger draw than salary. DoF |

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| | employees typically are assigned a diversity of tasks. | |
| 4.1.c. Forest owners or managers contribute to public education about forestry practices. | DoF makes significant contributions to the public education, such as: <ul style="list-style-type: none"> • Active participation in local Project Learning Tree programs; • hosting numerous logger training sessions; • DoF is working to establish forestry research/demonstration areas. | |
| 4.1.d. Forest owners or managers participate and invest in the local economy and civic activities. | Indiana DoF makes substantial contributions to the local economy. Payments in Lieu of Taxes (set at 17% of timber sales) is an important source of revenue for many towns. Additionally, property managers make attempts to purchase goods and services locally, such as servicing vehicles locally or purchasing materials from local businesses. Furthermore, the state forests provide a number of excellent recreation opportunities. Recreation constitutes a significant portion of economic activity during certain times of the year in many small rural communities. | |
| 4.1.e. Employee compensation and hiring practices meet or exceed the prevailing local norms for work within the forest industry that requires equivalent education, skills, and experience. | Pay is similar to the private sector; however, there appears to be a lower ceiling on salary levels. Job security and benefits are strong, which helps offset the lower pay scale relative to industry. Unfortunately, there has been an extended period of relatively flat salaries for DoF employees. | |
| 4.1.f. Forest owners or managers assure that contractors, subcontractors, intermediaries, and persons hired by them are covered and protected by all state and Federal labor laws regarding discrimination, wages, benefits, and other conditions of employment. | <p>Contracts require liability insurance. All contractors (timber purchasers) must have worker’s comp and liability insurance. Additionally, the standard timber sale contract includes the following clauses demonstrating conformance: <i>“The Purchaser further agrees to comply with all applicable federal, state and local laws, rules, regulations or ordinances, and all provisions required thereby to be included herein are hereby incorporated by reference.</i></p> <p><i>Purchaser shall comply with OSHA General Industry safety standards.</i></p> <p><i>Purchaser shall not discriminate against any employee or applicant for employment, to be employed in the performance of this agreement, with respect to his/her hire, tenure, terms, conditions, or privileges of employment or any matter directly or indirectly related to employment, because of his/her race, color, religion, sex, disability, national origin or ancestry. Breach of this covenant, may be regarded as a material breach of this agreement.”</i></p> | |
| C4.2. Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families. | 85 | DoF is in clear conformance with this Criterion. |
| 4.2.a. The forest owner or manager and their contractors develop and implement safety programs and procedures. | DoF takes active steps to ensure safety, such as: <ul style="list-style-type: none"> ○ safety inspections from Indiana Human Resources occur at each state forest; ○ safety meetings take place once per month; ○ safety training classes are offered, e.g., chainsaw safety for DoF employees; ○ DoF provides insect sprays and safety boots for staff; | |

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| | <ul style="list-style-type: none"> ○ The DoF is an active support of logger education in Indiana. <p>There are always opportunities to improve on safety issues. During the 2006 audit we observed one employee operating a chainsaw without chaps.</p> | |
| <p>4.3 The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labour Organization (ILO).</p> | 85 | DoF is in clear conformance with this Criterion. |
| <p>4.3.a. Forest workers are free to associate with other workers for the purpose of advocating for their own employment interests.</p> | The right to freely associate and unionize is clearly protected by U.S. law. | |
| <p>4.3.b. Forest owners or managers and their contractors develop effective and culturally sensitive mechanisms to resolve disputes between workers and management.</p> | <p>Effective and culturally sensitive mechanisms are available to DoF employees through the State of Indiana.</p> <p>With respect to contractors, DoF does not get directly involved in these types of matters. Contractors are required to agree “<i>to comply with all applicable federal, state and local laws, rules, regulations or ordinances, and all provisions required thereby to be included herein are hereby incorporated by reference.</i>” However, there is no language that specifically speaks to mechanisms for dispute resolution.</p> | |
| <p>4.4. Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups directly affected by management operations.</p> | <p>NC (Score as of 6/5/07: 80)</p> | <p>Indicator 4.4.e is a fatal flaw in the Lake States Standard. Because the audit team determined there were non-conformances with Indicator 4.4.e, this Criterion was not scored. Once the Major CARs is addressed, a score will be provided for Criterion 4.4.</p> <p>6/5/2007 Update: Major CAR 2006.2 is now closed (see discussion below).</p> |
| <p>4.4.a. On lands with multiple owners, a process is provided that assures the opportunity for fair and reasonable input from the landowners and/or shareholders.</p> | <p>Numerous stakeholders expressed concerns that DoF public involvement approach is inadequate. The FSC standard does not specify a set approach that needs to be followed to conform with public involvement requirements. Because of this lack of specificity as to what constitutes “fair and reasonable” public involvement, one of the measures of an adequate public involvement process is feedback from stakeholders on the adequacy of the process. This does not mean that if a few stakeholders are unsatisfied with the public involvement process, then non-conformances would automatically be raised.</p> <p>In assessing conformance with this indicator, SCS considered the DoF public involvement approach on its own merit, DoF’s adherence to that approach, as well as input from a representative sample of DoF stakeholders.</p> <p>Of particular concern, was the lack of involvement, both internal (DoF staff) and external (outside stakeholders), in developing the Strategic Plan 2005-2007. Although select individual members of the State Forest Stewardship Committee were consulted during the development of the Strategic Plan, there was no formal</p> | |

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| | <p>process of involving the committee as a whole early on in the process. DoF property managers and field staff were also not involved in the development of the Strategic Plan. (Major CAR 2006.2)</p> <p>The audit team found other aspects of the DoF public involvement strategy more inclusive; however these were also criticized by some stakeholders as being too restrictive. We believe some of this concern stems from lack of stakeholder understanding as to the specific public participation protocols for DoF. DoF will improve its standing with respect to this criterion, by providing the public easy access (e.g., DNR website) to a clear description of the DoF protocols for public involvement and how comments are considered. Additionally, there is an opportunity to improve upon the public availability of DoF plans and the ease of mechanisms for commenting on DoF plans (CAR 2006.3).</p> |
| <p>4.4.b. Input is sought in identifying significant sites of archeological, cultural, historical, or community importance, that are to be designated as special management zones or otherwise protected during operations.</p> | <p>One of the objectives of the annual open house at each property is to solicit input on potential cultural, heritage, and archeological sites within the forest.</p> <p>DoF employs an archeologist that serves as a liaison to the SHIPO. Also see 3.2.a for more discussion.</p> |
| <p>4.4.c. Viewpoints and feedback are solicited from people and groups directly affected by forest management operations and its associated environmental and aesthetic effects (e.g., logging, burning, spraying, and traffic). Significant concerns are addressed in management policies and plans.</p> | <p>DoF clearly has a program for soliciting viewpoints from groups directly affected by forest management, e.g., open houses, user survey forms, notifying adjacent landowners of timber harvests of upcoming activities, semi-annual Forest Stewardship Committee meetings, and a willingness to meet with stakeholders upon request.</p> <p>Some clear examples of DoF responding to public concerns include:</p> <ul style="list-style-type: none"> ○ the Morgon Monroe State Forest has restricted harvesting from May 1 to July 10 to minimize migratory nesting bird disruption in response to stakeholder concerns. SCS is not aware of any other certified forest in the U.S. that takes this level precaution for migratory birds. ○ design, implementation, and monitoring of BMP's was shaped in part by stakeholder feedback ○ the down payment requirement for purchasing state forest timber sales was reduced in response to feedback from timber purchasers ○ DoF alter/restrict logging operations to mitigate recreation impacts. <p>Also see 4.4.a. for related points.</p> |
| <p>4.4.d. Forest owners or managers of large and mid-sized (see Glossary) forests provide opportunities for people directly affected by management operations to provide input into management planning.</p> | <p>See above discussions under 4.4.a and 4.4.c.</p> |
| <p>4.4.e. For public forests, consultation will include the following components:</p> | <p>Indicator 4.4.e is a fatal flaw indicator in the Lake States Standard. The standard requires each sub-indicator to be scored</p> |

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| | <p>separately. SCS' approach to scoring sub-indicators is a simple conformance/non-conformance decision. The audit team found DNR to be in overall non-conformance with Indicator 4.4.e, and stipulated Major CAR 2006.2.</p> |
| <p>1. Legislative and historical mandates are included in the plan, and provisions are made for their accomplishment.</p> | <p>Conformance</p> <p>Legislative and historical mandates are included in the procedures manual. The founding legislative direction stated "<i>It is the declared public policy of this state to protect and conserve the timber, water resources, wildlife and top soil in the state forests for the equal enjoyment and guaranteed use of future generations. It is recognized, however, that by the employment of good husbandry, timber which has a substantial commercial value may be removed in such manner as to benefit the growth of saplings and other trees by thinnings, improvement cuttings, and harvest process and at the same time provide a source of revenue to the state and local counties and provide local markets with a further source of building material.</i>"</p> <p>We are not aware of any legislative or historical mandate that the DoF is failing to accomplish.</p> |
| <p>2. Clearly defined and accessible methods for public participation are provided in both the strategic (long-range) and tactical (short-range) planning processes, including initial adoption and subsequent amendments.</p> | <p>Non-conformance</p> <p>(6/5/2007 Update results in a finding of conformance for this Criterion)</p> <p>There exist accessible methods for public participation for tactical (short-range) planning processes. However, accessible methods for public participation in strategic (long-range) planning process are lacking.</p> <p>Planning at the property or landscape level is also lacking, thus making it difficult to have a workable approach to considering input from the public on landscape-level decisions. (Major CAR 2006.1)</p> <p>6/5/2007 Update – SCS has reviewed the steps taken by DoF to respond to Major CAR 2006.2 and its' emphasis on increased public involvement in management planning. Given, these new activities it is apparent the DNR has taken a new, broad approach to public involvement in strategic planning activities. The process currently being used provides the public early opportunities for involvement in developing issues, goals, and objectives. Following the drafting of management goals and objectives, the public is provided opportunities to comment on the draft before the new strategic plan is finalized.</p> |
| <p>3. Public notification is sufficient to allow interested citizens of the affected jurisdiction and/or other people and groups directly affected by management operations the chance to learn of upcoming opportunities for public review and/or comment on the proposed management.</p> | <p>Conformance</p> <p>The audit team observed an adequate process, through annual open houses, for public involvement at the individual state forest level. However, many DoF opponents still criticized this process as being too restrictive or not accessible. See CAR 2006.3.</p> |

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| 4. The final planning decisions are based on legal mandate, public input, credible scientific analysis, and the productive capacity of the land and are made by professional employees, hired by the public, or other legally authorized parties. | Conformance Legal mandates, public input, science, and productive capacity of the land all factor into final planning decisions. As with most public agencies, DoF has its share of conflicts among competing interests. See 4.4.a for more detail on public input and how comments are considered. |
| 5. An accessible and affordable appeals process to planning decisions is available. | Conformance Individuals or groups can take their complaints to the Natural Resources Commission. The Commission conducts administrative review (more commonly called "appeals") as the "ultimate authority" for the Department of Natural Resources. |
| C4.5. Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage. | 85 DoF is in clear conformance with this Criterion. |
| 4.5.a. The forest owner or manager attempts to resolve grievances and mitigate damage resulting from forest management activities through open communication and negotiation prior to legal action. | DoF's notification to adjacent landowners of upcoming activities, open door policies, annual open houses, and State Forest Stewardship Committee meetings are avenues for resolving grievances prior to legal action. Also, DoF's active boundary marking is evidence of an effort to outright avoid a common type of grievance. |
| 4.5.b. Forest owners or managers and their contractors have adequate liability insurance. | Workers compensation and liability insurance is a mandatory requirement for all contractors. |

Importance Weighted Aggregate Score for Principle 4:

Employing the PAIRWISE algorithm, the evaluation team assigned weights of relative importance for each of the 6 Criteria in this Principle. Under SCS' accredited protocols, assignment of weights of relative importance is one means by which certification evaluations recognize and incorporate regional and sub-regional circumstances. In this case, the weights were designed to reflect the regional context in which the subject forest management unit is located

| FSC Principle #4 Community Relations and Worker's Rights | Normalized Relative Importance Weights | Performance Scores | Weighted Average Score |
|---|---|--------------------|------------------------|
| 4.1 | .25 | 90 | |
| 4.2 | .25 | 85 | |
| 4.3 | .11 | 85 | |
| 4.4 | .22 | 80 | |
| 4.5 | .17 | 85 | |
| | | | 85.15 |

Applying the normalized weights of relative importance to the 6 assigned performance scores, and rounding to the nearest integer, leads to a weighted average score for the Principle of:

85

Per SCS protocols, and as this weighted average score is in excess of 80 points, acceptable overall conformance to this FSC Principle is confirmed.

Corrective Action Requests and/or Recommendations

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| <p>Observation: The recent change in direction for the management of Indiana State Forests, as outlined in the Strategic Plan (2005-2007), occurred without adequate internal (DoF staff) and external (outside stakeholders) stakeholder involvement. DOF has prepared a document entitled: a <i>Commitment to an Improved Process for Detailing Strategic Operational Plans</i> that outlines the approach for internal and external involvement for completing the next Strategic Plan. However, at the time of the main assessment this process had not begun, and DoF was unable to demonstrate that strategic planning is being done with an adequate level of stakeholder involvement.</p> | |
| <p>Major CAR 2006.2</p> | <p>The following Major CAR has two phases, both of which need to be completed prior to award of certification. Upon completion of these Major CAR phases, a minor CAR will be issued that requires completion and implementation of the next Strategic Operational Plan.</p> <p>Phase I: Provide a timeline and further details for completing “<i>Commitment to an Improved Process for Detailing Strategic Operational Plans</i>”, particularly steps 1-4.</p> <p>Phase II: Complete steps 1-3 of the improved process: Step 1) Issues Determination: Stakeholders (both internal to IDNR and external) will be provided opportunities to provide input to assist the DNR in determining the issues that should be addressed by the strategic plan.</p> <p>Step 2) Inter-disciplinary teams from within the DNR will create draft goals, objectives and actions for each designated issue.</p> <p>Step 3) All stakeholders will be provided with opportunities to comment on all of the draft goals, objectives and actions proposed.</p> |
| <p>Deadline</p> | <p>Prior to award of certification</p> |
| <p>Reference</p> | <p><i>FSC Criterion 4.4; fatal flaw indicator 4.4.e.</i></p> |
| <p>DOF Response</p> | <p>We have identified 10 specific actions needed to complete Steps 1-3 identified in our “<i>Commitment to an Improved Process for Detailing Strategic and Operational Plans</i>”. We have held internal and external stakeholder input sessions in the form of meetings and open houses. These sessions included a planning session with all the properties section professional staff on March 8 and an issues development planning session</p> |

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| | <p>for our Forest Stewardship Committee on December 15. We summarized the issues developed and returned to the stakeholder groups for review and comment; each day we receive comments on the issues. The 9 open houses were held March 1 through May 12; all property neighbors were invited to attend via property newsletters, and the open houses were announced through a statewide news release. We have met with our sister Divisions and developed goals which are currently being addressed in the form of draft objectives. Those meetings were conducted on January 30 with staff from the Division of Nature Preserves and on April 26 with staff from the Division of Fish and Wildlife. We have issued a statewide news release announcing the strategic plan for 2008 – 2012 and have asked for public input. That same news release announced the three upcoming public meetings, one each in the north (Salamonie State Park Interpretive Center), central (Indiana Government Center in Indianapolis) and south (Patoka Lake Visitor Center). In these sessions citizens will hear our accomplishments through the previous plan and our current draft goals and objectives. Attendees will also be given the opportunity to ask questions and provide ideas or comments on the next plan. Those three sessions are scheduled for May 29, 30 and 31.</p> |
| Auditors Comments – 6/5/2007 | <p>SCS has received and reviewed documents related to the internal and external consultations held to determine issues and draft new goals and objectives as well as meetings with other agencies within DNR to develop the goals and objectives for the new Strategic Plan as required under Steps 1 and 2. The first draft of the new plan that was presented to stakeholders during the meetings required under step 3 has been received. The auditor confirmed the meetings were well attended and provided for open dialogue between interested stakeholders and DNR staff working to finalize the new Strategic Plan. Based upon successful resolution of Phase I and II, steps 1-3, this CAR has been closed and replaced with minor CAR 2007.1</p> |
| Status | <i>Closed</i> |

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| <p>Background/Justification: The audit team observed an adequate process, through annual open houses, for public involvement at the individual state forest level. However, many DoF opponents still criticized this process as being too restrictive or not accessible. It is possible that some of the concern expressed by stakeholders is due to a misunderstanding of the DoF public participation protocols. On a related issue, there is a need to improve public access to DoF plans, guidance documents, monitoring results, and other key planning documents. CAR 2006.3 addresses these findings.</p> | |
| CAR 2006.3 | <p>By December 31, 2007, DoF must provide the public with easy access (e.g., via the DNR website) to a clear description of the DoF protocols for public involvement, how comments are considered, and available dispute resolution processes. Additionally, DoF must make its planning, monitoring results, and other key documents readily available to the public. Per FSC Criterion 7.4 and 8.5, respectively, these documents must include a public summary of the management plan and the results of monitoring activities.</p> |
| Deadline | December 31, 2007 |

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| Reference | <i>FSC Criterion 4.4, 7.4, 8.5</i> |
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Background/Justification: The recent change in direction for the management of Indiana State Forests, as outlined in the Strategic Plan (2005-2007), occurred without adequate internal (DoF staff) and external (outside stakeholders) stakeholder involvement. The 2005-2007 Strategic Plan will be replaced by a strategic plan developed during 2007 to cover activities from 2008-2013. DOF has prepared a document entitled: a *Commitment to an Improved Process for Detailing Strategic Operational Plans* that outlines the approach for internal and external involvement for completing the next Strategic Plan. Development of that replacement plan will consist of the following broad steps:

Step 1) Issues Determination: Stakeholders (both internal to IDNR and external) will be provided opportunities to provide input to assist the DNR in determining the issues that should be addressed by the strategic plan.

Step 2) Inter-disciplinary teams from within the DNR will create draft goals, objectives and actions for each designated issue.

Step 3) All stakeholders will be provided with opportunities to comment on all of the draft goals, objectives and actions proposed.

Step 4) Finalize the Plan: The DNR will then use those comments to finalize the Strategic Plan for 2008-2013.

DOF has submitted documentation to demonstrate completion of step 1-3. DOF has not yet completed step 4. This step is required in order to complete the process and fully integrate the public comments into development of the next Strategic Plan.

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| CAR 2007.1 | DOF must complete Step 4 (Finalize the Plan: The DNR will then use those comments to finalize the Strategic Plan for 2008-2013) of the document entitled <i>Commitment to an Improved Process for Detailing Strategic Operational Plans</i> . |
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| Deadline | 12/31/2007 |
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| Reference | <i>FSC Criterion 4.4</i> |
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1.5 PRINCIPLE #5: BENEFITS FROM THE FOREST

Forest management operations shall encourage the efficient use of the forest’s multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

This FSC Principle addresses several loosely related issues such as efficiency in the use of forest products, financial viability of the forest management operation, and diversity of environmental and social benefits from forest management. Principle 5 is elaborated through 6 Criteria. Of note, Criterion 5.6 requires that the rate of harvest not exceed levels that can be permanently sustained, perhaps one of the most focused and specific requirements found throughout the P&C. The other 5 Criteria within this principle address matters such as balancing financial objectives with full cost accounting (including environmental costs), optimal use of

harvested products and local processing, minimization of waste and residual stand damage, diversification of products from the forest, and protection of forest services such as watershed functions and fisheries values.

| Standard | Score | Comments |
|--|-------|--|
| C5.1. Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest. | 90 | The DoF is in clear conformance with this Criterion. |
| 5.1.a. The forest owner or manager is willing and able to support long-term forest management (i.e., decades rather than quarter-years or years), such as planning, inventory, resource protection, and post-harvest management activities. | | <p>Clearly, DoF is a long term manager of a state forest system that will remain in state ownership. Necessary investment to support long-term forest management (e.g., TSI, inventory, research and monitoring, acquisition) is planned. The increase in harvest levels will bring additional revenue to the division.</p> <p>DoF is attempting to increase harvest levels by a factor of 3 to 4 with the same number of staff. This does not trigger an immediate non-conformance because 1) DoF has not yet attained the target level of harvest 2) this issue must be assessed on an outcome basis, i.e., DoF is given the opportunity to demonstrate that the increased harvesting can occur while maintaining the level of quality control and ecological safeguards necessary to maintain FSC certification. This topic will receive more attention during subsequent annual audits, should DoF be certified.</p> |
| 5.1.b. Responses (such as increases in harvests or debt load) to short-term financial factors (such as market fluctuations and sawmill supply requirements) are limited to levels that enable fulfillment of the management plan. | | The current and planned increases in harvest levels are consistent with the long-term sustained-yield, and fulfillment of the management plan objectives. |
| 5.1.c. Investment and/or reinvestment in forest management are sufficient to fulfill management objectives and maintain and/or restore forest health and productivity. | | <p>DoF has a dedicated fund for its revenue. DoF will dedicate 100% of increased timber sale revenues to forestland management, as follows:</p> <ul style="list-style-type: none"> • 15% - TSI, Tree Planting, Trail Maintenance • 15% - Establishment of forestry research and demonstration areas (including long-term ecological studies) • 38% - State Forest land acquisition. • 17% - State Cost Share Assistance Program for private lands. • 15% - Payment to Counties. <p>Based on this retained revenue and allocations, it is clear that the increase in harvest is not an effort to raise money for the state coffers.</p> <p>Two major investment uncertainties with respect to fulfilling management objectives are:</p> <ul style="list-style-type: none"> • whether increased work load can be carried out without hiring new staff • whether labor and resources are available to accomplish the large volume of TSI work. |
| C5.2. Forest management and marketing | 90 | DoF is in clear conformance with this Criterion. |

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| operations should encourage the optimal use and local processing of the forest's diversity of products. | | |
| 5.2.a. Opportunities are given to local, financially competitive, value-added processing and manufacturing facilities. | | <p>While DoF does not have a policy or program designed to give preference to local processing and manufacturing facilities, the fact is that most wood is purchased by local/regionally based contractors who, in turn, sell the harvested logs to processing facilities in the region.</p> <p>Other observations of DoF relative to this indicator include:</p> <ul style="list-style-type: none"> • A range of sale sizes are carried out in an attempt to allow successful competition by different sized operations; • Hardwood conversion of pine stands is undertaken when markets appear for these marginally desired species. Local mills are the purchasers of these sales. |
| 5.2.b. When non-timber products are harvested, the management and use of those products is incorporated into the management plan. | | <p>Non-timber resource utilization is covered in the Procedures Manual. DoF prohibits harvest of ginseng and goldenseal. Gold panning is permitted with permits. Other NTFP's (mushrooms, nuts, and berries) are not believed to be harvested at levels that would impact their viability or the ecosystem function.</p> |
| 5.2.c. New markets are explored for products from common but underutilized forest species. | | <p>There doesn't appear to be an active effort at exploring/developing new markets for underutilized species; however, DoF does attempt to take advantage of these markets when they do occur.</p> <p>Observations of DoF relative to this indicator include:</p> <ul style="list-style-type: none"> • Pulp markets are not widely available across state properties, and when available are at times intermittent; • A large percentage of wood is going to pallet manufacturing; • DoF is exploring biomass markets for small diameter trees produced during hardwood thinning operations. |
| C5.3. Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources. | 85 | DoF is in clear conformance with this Criterion. |
| 5.3.a. Adequate quantities and a diversity of size classes of woody debris (considered a reinvestment of biological capital under this criterion—not an economic waste) are left on the forest floor to maintain ecosystem functions, wildlife habitats, and future forest productivity. | | <p>By following bat habitat management guidelines, DoF has a strong program for reserving snag trees. Additionally, the lack of a pulp market results in large amounts of woody debris being left on state forest properties. However, there are no set guidelines or targets for levels for coarse woody debris. (Recommendation 2006.2).</p> |
| 5.3.b. The loss and/or waste of merchantable forest products is minimized. | | <p>The loss and/or waste of merchantable forest products is consistent with other publicly managed forests lacking consistent pulp markets.</p> |
| 5.3.c. Harvest practices minimize residual stand damage. | | <p>BMPs, contract terms, and timber sale oversight by field personnel collectively result in operations taking place well within reasonable limits for residual stand damage.</p> <p>Some residual stand damage was observed at harvest sites visited</p> |

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| | during the on-site assessment. Because many high value trees are utilized as veneer, foresters are sensitive to harvesting damage that would preclude this use if it occurred. | |
| C5.4. Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product. | 95 | DoF demonstrated outstanding conformance with this Criterion. |
| 5.4.a. Forest management diversifies forest uses and products, while maintaining forest composition, structures, and functions. | Considering DoF's efforts to manage for outdoor recreation, the production of timber products, wildlife habitat, watershed health, and biodiversity, there is excellent conformance with this indicator. Specific observations include: <ul style="list-style-type: none"> • All areas visited sold a broad range of products including veneer, sawtimber, and some non timber forest products; • Forest recreation opportunities on DoF administered forests are exceptional; | |
| C5.5. Forest management operations shall recognize, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries. | 85 | DoF policies are clearly oriented towards maintaining and enhancing the full suite of forest services and resources such as watersheds and fisheries. The careful attention to BMP's is an example of efforts to maintain forest services. Of concern, an increase in harvest levels by a factor of 3 or 4 could impact other forest services. The care taken in implementing the increased cut is critical to protecting other forest services. |
| C5.6. The rate of harvest of forest products shall not exceed levels that can be permanently sustained. | 85 | DoF is in clear conformance with this Criterion. |
| 5.6.a. The sustainability of harvest levels is based on growth and regeneration data, site index models, soil classification, and/or desired future conditions. The required level of documentation is determined by the scale and intensity of the operation. | Calculation of the sustainability of harvests is derived from the 2005 system-wide inventory, growth rates based on increment analysis, site index models, and ground truthing these estimates with actual growth data from FIA and CFI data for two state forests. See sections A.1.4, A.1.5, A.1.6 for more detail. | |
| 5.6.b. After the species composition and the age-class (see Glossary) distribution commensurate with long-term sustainability have been achieved, harvest and growth records demonstrate that the volume harvested during any 10-year span is less than the net growth accumulated over that same period. Exceptions to this constraint may be granted to forest owners or managers whose periodic cycle of re-entry is longer than 10 years. In such cases, allowable harvest is determined by examining the volume of re-growth and removal since the previous harvest and the forest owner or manager's commitment to allow an equivalent amount of re-growth before additional harvests. | DoF is in the process of increasing timber harvests from 3.4 mmbf (1994-2003) to 14 mmbf by 2008. Based on a 2005 system-wide inventory, this approx 4 time increase in harvest levels is still only harvesting ~60% of the growth (estimated to be 24 mmbf). | |
| 5.6.c. If rates of harvest are temporarily accelerated to compensate for or prevent unacceptable mortality, or in cases of salvage operations (see Indicator 6.3.c.4), the rate of future harvest is recalculated accordingly to meet desired future conditions, and the adjusted rate of | Because DoF is proposing to cut less than 70% of estimated growth, there is room to allow additional salvage operations without cutting beyond sustainable levels. Actual harvesting levels will be monitored and compared with projections through time. Cutting levels can be adjusted accordingly. | |

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| harvest is implemented within three years of the temporary acceleration. | |
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Importance Weighted Aggregate Score for Principle 5:

Employing the PAIRWISE algorithm, the evaluation team assigned weights of relative importance for each of the 6 Criteria in this Principle. Under SCS’ accredited protocols, assignment of weights of relative importance is one means by which certification evaluations recognize and incorporate regional and sub-regional circumstances. In this case, the weights were designed to reflect the regional context in which the subject forest management unit is located

| FSC Principle #5 Benefits from the Forest | Normalized Relative Importance Weights | Performance Scores | Weighted Average Score |
|--|--|--------------------|------------------------|
| 5.1 | .21 | 90 | 87.72 |
| 5.2 | .11 | 90 | |
| 5.3 | .07 | 85 | |
| 5.4 | .11 | 95 | |
| 5.5 | .20 | 85 | |
| 5.6 | .30 | 85 | |

Applying the normalized weights of relative importance to the 6 assigned performance scores, and rounding to the nearest integer, leads to a weighted average score for the Principle of:

88

Per SCS protocols, and as this weighted average score is in excess of 80 points, acceptable overall conformance to this FSC Principle is confirmed.

Recommendations

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| Background/Justification: There are no set guidelines or target levels for coarse woody debris. | |
| REC 2006.2 | DoF should develop standards for coarse woody debris retention ensuring sufficient levels in a diversity of size classes are retained. |
| Reference | <i>FSC Criterion 5.3</i> |

1.6 PRINCIPLE #6: ENVIRONMENTAL IMPACT

Forest Management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest

This FSC Principle is elaborated by a set of 10 Criteria that focus on issues such as impact assessments, protection of listed species, biodiversity, reserve areas, streamside and wetlands buffers, erosion control, exotic species, chemical use, high conservation value forests, and forest conversions. Of all the FSC Principles, this one is the most expansive in scope, with an associated high level of emphasis on data and information collection and analysis. Collectively, the thrust of this principle encourages the maintenance and restoration of natural forest conditions.

| Standard | Score | Comments |
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| <p>C6.1. Assessments of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.</p> | 82 | <p>The audit team concluded that DoF is in marginally adequate conformance with this Criterion.</p> |
| <p>6.1.a. Using credible scientific analyses and local expertise, an assessment of current conditions is completed to include:</p> <ul style="list-style-type: none"> • Disturbance regimes and successional pathways; • Unique, vulnerable, rare, and threatened communities; • Common plants, animals, and their habitats; • Sensitive, threatened, and endangered species and their habitats; • Water resources; and • Soil resources (see also Indicators 7.1.a and b). | | <p>DoF reviews environmental impacts using a combination of approaches, including:</p> <ul style="list-style-type: none"> • Management Guide, timber sale process, and a wildlife review checklist that considers habitat types and other factors within 2.5 mile radius of a given harvest • State-wide forest inventory includes assessments of soils, erosion, wildlife, rare species, invasives, and other information • Division of Nature Preserves inventories state forests for rare habitats • DoF carries out a pre-harvest assessment for soil, water, T&E species (through Natural Heritage Database surveys), and historic and pre-historic sites. <p>Disturbance regimes, such as wind driven events, and their contribution to successional stages have not been thoroughly investigated and incorporated into management of state forests. There is an opportunity for DoF to emphasize continuing education and/or acquiring additional expertise on forest ecology including disturbance regimes and pathways and flora and fauna communities. (Recommendation 2006.3).</p> |
| <p>6.1.b. Using available science and local expertise, the current ecological conditions are compared to both the historical conditions and desired future conditions within the landscape context. This comparison is done by employing the baseline factors identified in 6.1.a.</p> | | <p>The current Strategic Plan emphasizes the need to make decisions based on the best scientific evidence available; however, the document only references two white papers and does not clearly demonstrate how these considerations are incorporated into the Strategic Plan. The HCP (draft v. Oct 2006) does provide this analysis and the desired future conditions. By addressing Major CAR 2006.2 (and its follow-up minor CAR) DoF will conform with this Indicator.</p> |
| <p>6.1.c. Prior to the commencement of management activities, potential short-term environmental impacts and their cumulative effects are evaluated.</p> | | <p>DoF undertakes or has undertaken the following activities that constitute an environmental impact assessment prior to management activities:</p> <ul style="list-style-type: none"> • A comprehensive forest wide Environmental Assessment (EA) has been done through the HCP • Statewide environmental assessment of timber harvest according to Indiana Environmental Protection Act |

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| | <p>(IEPA). This is a rather coarse filter review and is a very general environmental assessment. Although this review is rather cursory, the analysis did conform with IEPA requirements. In the late 1980's all of DNR was made exempt from IEPA. However, DoF still decided to address the requirements, and prepared the assessment. The assessment report was delivered to the Indiana Department of Environmental Management (IDEM) where it was simply put in the files because IDEM had no review process under the IEPA legislation.</p> <ul style="list-style-type: none"> • When Tract Plans (Management Guides) are developed the tracts are screened against the cultural and heritage databases for any sensitive resources that may be impacted by management within that tract • A Wildlife Review assesses potential impacts to habitat and water within 2.5 mile radius of the tract. • Harvest sites are screened for potential impact to plants, animals, springs, streams, cultural sites, and other unique resources • Implementation and monitoring of BMP's for Water Quality | |
| <p>6.1.d. Using assessments derived from the above information, management options are developed and implemented to achieve the long-term desired future conditions and ecological functions of the forest (see also Criterion 7.1).</p> | <p>While the long-term desired future conditions are currently not well defined in Management Guides or the 2005-2007 Strategic Plan, DoF has made it clear that maintaining the oak/hickory community is the top priority for desired future forest condition. The HCP does an excellent job at communicating the desired future forest condition; however it is still in draft form. DoF's response to Major CAR 2006.2 will improve DoF's communication of their desired future forest condition.</p> | |
| <p>C 6.2. Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping, and collecting shall be controlled.</p> | <p>85</p> | <p>DoF is in clear conformance with this Criterion.</p> |
| <p>6.2.a. Although species that are state and/or Federally listed as threatened, endangered, of special concern, or sensitive, and their habitats are identified, their specific locations remain confidential.</p> | <p>Divisions of Forestry and Nature Preserves avoid freely passing out sensitive information. Specific locations are not provided to state forestry staff, rather only the general area of the site is provided.</p> | |
| <p>6.2.b. If scientific data indicate the likely presence of state and/or Federally listed as threatened, endangered, of special concern, or sensitive populations, either new surveys are carried out before field-management activities begin or the forest owner or manager assumes their presence and makes appropriate modifications in forest management.</p> | <p>There are numerous examples of DoF's conformance with this Indicator:</p> <ul style="list-style-type: none"> • Surveys are conducted for species listed by the Natural Heritage Program when there is uncertainty about impacts to the species; • For several decades, DoF has been actively participating in the study and protection of its bat hibernacula; and the overall population of hibernating bats in Indiana caves has increased | |

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| | <p>since 1980 while the range-wide population has shown a dramatic decline;</p> <ul style="list-style-type: none"> • State forests also work closely with the Non-game Section of the Division of Fish and Wildlife regarding rare fauna. • During the on-site portion of the assessment, the auditors observed a large area that had been avoided during harvesting activities due to the possible occurrence of a special status plant species. <p>The main weakness noted during the assessment was a lack of understanding and documentation of habitat needs and management considerations pertaining to species of concern, as defined by the Natural Heritage Element Occurrence Record dataset (Recommendation 2006.4)</p> |
| <p>6.2.c. For management planning purposes, forest owners or managers of publicly owned and large privately owned forests use, participate in, or carry out on-the-ground assessments for the occurrence of state and/or Federally listed as threatened, endangered, of special concern, or sensitive species.</p> | <p>There are numerous examples of DoF's conformance with this Indicator:</p> <ul style="list-style-type: none"> • IN Natural Heritage information is maintained by the Division of Nature Preserves, and appears to be a well populated database with careful control of content based on quality of data and qualification of the person reporting the information; • Division of Forestry participates in on the ground assessments for Indiana Bat and Wood rat; • Surveys for potential natural areas include assessments for species of concern; • Some of the 5-year fish and wildlife operational plans include presence or absence surveys for species of concern; • DoF permits/facilitates a number of research projects, conducted by outside parties, which occur on state forests; at times, these cover species of concern. |
| <p>6.2.d. Where they have been identified, state and/or Federally listed as threatened, endangered, of special concern, or sensitive species and their habitats are maintained and/or restored. Multiple-use management activities are acceptable, where the law allows, in these species' habitat areas to the extent that they are compatible with maintenance and restoration of the species.</p> | <p>Development of the HCP and establishment of Nature Preserves for valuable habitat are two examples of DoF's conformance with this indicator.</p> <p>As noted above, there is an opportunity to improve the presentation and distribution of information describing habitat and best management practices for species of concern.</p> |
| <p>6.2.e. If a state and/or Federally listed as threatened, endangered, of special concern, or sensitive species is determined to be present, its location is reported to the manager of the species' database.</p> | <p>DoF reports discovery of new species to Nature Preserve, typically there are several entries per year. Additionally, the HCP summarizes the status, distribution, habitat, and causes for decline of 12 animals and 31 plants listed as species of management concern on DoF lands. With improved training on species of concern, field staff would invariably be reporting more occurrences of such species.</p> |
| <p>C6.3. Ecological functions and values shall be</p> | <p>83⁵ DoF demonstrated marginally adequate conformance</p> |

⁵ The score of 83 was derived by averaging the scores assigned to the three sub-criteria

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| <p>maintained intact, enhanced, or restored, including: a) Forest regeneration and succession. b) Genetic, species, and ecosystem diversity. c) Natural cycles that affect the productivity of the forest ecosystem.</p> | | <p>with this Criterion. Addressing Recommendation 2006.5 and CAR 2006.4 will improve conformance.</p> |
| <p>C6.3.a. Forest regeneration and succession</p> | <p>85</p> | |
| <p>6.3.a.1. Forest owners or managers make management decisions using credible scientific information (e.g., site classification) and information on landscape patterns (e.g., land use/land cover, non-forest uses, habitat types); ecological characteristics of adjacent forested stands (e.g., age, productivity, health); species' requirements; and frequency, distribution, and intensity of natural disturbances.</p> | | <p>Clearly, management of the state forests is undertaken by professionals employing scientifically sound methods and relying upon a large body of empirical and research-based information.</p> <p>There is an opportunity to improve the extent that DoF considers ecological characteristics of adjacent lands. See Recommendation 2006.5</p> |
| <p>6.3.a.2. Silvicultural practices encourage regeneration that moves the forest toward a desired future condition, consistent with information gathered in 6.3.a.1.</p> | | <p>The desired future condition on state forests is to maintain much of the oak/hickory component (across a 30 year period) and regenerate the remainder of forests to a diversity of central hardwood species.</p> <p>Considerable research and monitoring is planned to determine the best silviculture to regenerate oak/hickory as well as to monitor progress toward their goals.</p> <p>Monitoring and other information sources that will be used include:</p> <ul style="list-style-type: none"> • A CFI system that will assess regeneration at each plot • 20-year statewide forest inventory • Information gleaned through the research forest that is being established. This research forest will focus on regeneration and other pertinent topics • Information learned from other forest managers (e.g., Hoosier National Forest) that have been conducting oak/hickory silviculture research <p>Due to the difficulty in regenerating oak/ hickory on some sites, monitoring efforts must validate that silvicultural practices are indeed moving the forest toward the desired condition.</p> |
| <p>6.3.a.3. Measures are taken to ensure the retention of endemic and difficult-to-regenerate species.</p> | | <p>DoF takes active steps to retain and where needed regenerate such species, for example their efforts to retain shagbark hickory and regenerate oak.</p> |
| <p>6.3.a.4. Across the forest, or the landscape in which it is located, management actions lead to a distribution of successional stages, age classes, and community types appropriate to the scale and intensity of the operation and desired future conditions.</p> | | <p>Currently, Indiana state forests lack early and late successional habitat. The new management direction will improve this through patches of even-aged management. Nature preserves, old forest areas, watercourse protections found in BMPs will allow late successional development.</p> |
| <p>6.3.a.5. When even-aged management (see Glossary) is employed, live trees and native vegetation are retained within the harvest unit in a proportion and configuration that is consistent with the characteristic natural disturbance regime in each community type (see Glossary). Exceptions may be allowed when retention at a lower level is necessary for purposes of forest restoration and/or rehabilitation or to maintain</p> | | <p>Historically DoF has not practiced even-aged forestry. However, under the new management direction, DoF is planning some regeneration harvests large enough to be considered even-aged management. DoF lacks guidelines for retention in even-aged management treatments (CAR 2006.4).</p> |

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| community types that exist on the site (e.g., oak-hickory, jack pine). The level of retention increases proportionally to the size of the harvest unit. | | |
| C6.3.b. Genetic, species, and ecosystem diversity | 85 | |
| 6.3.b.1. Forest management conserves native plant and animal communities and species. | DoF exclusively manages for native species on appropriate sites, and does not introduce exotic plantation species; in fact DoF is working to eliminate Virginia pine a non-native species on most of the state forests. Any artificial regeneration done on state forests uses locally adapted seed and seedlings. Management guidelines for the Indiana Bat have raised staff sensitivity to maintaining declining and snag trees, at least for species preferred by bats. We observed some cavity and den trees marked as cull, to be felled at logger discretion. | |
| 6.3.b.2. The forest owner or manager cooperates with local, state, and Federal agencies to protect and manage native plant and animal communities and species. | DoF has voluntarily chosen to prepare a Habitat Conservation Plan for the Indiana and Gray Bat. This plan is being developed in cooperation with the US Fish and Wildlife Service. Results from interviews with other division and agency representatives suggest DoF is cooperating well on such issues. | |
| 6.3.b.3. There is a consistent scientific method for selecting trees to plant, harvest and retain in order to preserve and/or enhance broad genetic and species diversity. | The method for selecting trees to plant, harvest, retain is defined in a set of DoF procedures including silvicultural guidelines, Strategy for Indiana Bat, BMP's for Water Quality. During the field assessment we observed failure to recognize wildlife value of large beech trees for their cavity and mast production as numerous large beech were marked (CAR 2006.4) | |
| 6.3.b.4. Forest owners or managers maximize habitat connectivity to the extent possible at the landscape level (e.g., through an ecological classification system, at the subsection or land-type association level). | DoF mainly addresses this by reviewing ecological characteristics (e.g., unique forest types, wildlife, water) within a 2.5 mile buffer of each tract. However, these were reviewed during the audit for a number of tracts and rarely did they present any useful information. On a positive note, DoF is aggressively working to buy in-holdings, which will maximize habitat connectivity. | |
| C6.3.c. Natural cycles that affect the productivity of the forest ecosystem | 80 | |
| 6.3.c.1. Biological legacies of the forest community are retained at the forest and stand levels, consistent with the objectives of the management plan, including but not limited to: large live and declining trees, coarse dead wood, logs, snags, den trees, and soil organic matter. | In the course of examining marked and harvested stands, the audit team observed variation across forests and among individual foresters in consideration of stand-level wildlife habitat elements (e.g., snags; green tree retention in clearcuts; den, nest, declining, and mast trees; downed woody debris). Attention to snags and mast trees was strong; however, there are no standards for other stand-level wildlife habitat elements. Many biological legacies are retained due to unrelated circumstances and it is unclear if there is adequate scientific understanding of the functions these structures provide (CAR 2006.4). | |
| 6.3.c.2. Forest management practices maintain soil fertility and organic matter, especially in the A horizon, while minimizing soil erosion and compaction. If degradation of soil quality occurs, as indicated by declining fertility or forest health, forest owners or managers modify soil management | State BMP's and monitoring of those BMP's adequately address soil fertility. | |

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| techniques. | | |
| 6.3.c.3. Forest management practices maintain or restore aquatic ecosystems, wetlands (including peatlands, bogs, and vernal pools), and forested riparian areas (see also Criterion 6.5). | | State BMP's and monitoring of those BMP's adequately address maintenance of aquatic resources. |
| 6.3.c.4. Responses (such as salvage) to catastrophic events (such as wildfire, blowdown, and epidemics) are limited by ecological constraints. | | DoF does very little in the way of salvage operations. Salvage operations undergo a similar level of environmental review, e.g., Natural Heritage review, as other sales. However, we are not aware of any salvage specific guidelines for retention of trees, snags, and woody debris. |
| C6.4. Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources. | 80 | The audit team found DoF to be only in marginally adequate conformance with this Criterion. While DoF has developed a network of reserves, they have not completed the analysis to determine how representative the network is. DoF response to CAR 2006.5 will improve their standing relative to this Criterion. |
| 6.4.a. Forest owners and managers protect and reserve ecologically viable representative areas that are appropriate to the scale and intensity of the operation. | | DoF's tools for protecting representative samples of existing ecosystems include Nature Preserves (1900 acres), Control Plots (3600 acres), Old Forest Areas (5706 acres), and Natural Heritage sites. Nature Preserves is the land allocation that best addresses Criterion 6.4. In cooperation with the Division of Nature Preserves, all state forests are reviewed for potential Natural Areas. Unique communities and features are identified using past records, aerial surveys, and uncommon or abrupt topographic features. Areas of significance are proposed for dedication as Natural Areas or special management areas. There has only been one occurrence where Nature Preserves recommended a designation that DoF did not follow through with. Nature Preserves cover over 1900 acres of state forests. Finally, the effort to regenerate more and larger areas of state forests addresses the current gap in representing in early successional forest. |
| 6.4.b Where existing protected areas within the landscape are not of adequate size and configuration to serve as representative samples of commonly occurring forest types as defined above, owners or managers of mid-sized and large forests, whose properties are conducive to the establishment of such areas, designates ecologically viable areas to serve these purposes. | | The team recognizes that the Division of Nature Preserves, in cooperation with DoF, has done considerable work establishing nature preserves on state forests. However, it is unclear if the current network of Nature Preserves, in conjunction with other protected forests (National Forests, TNC properties, etc), covers the full complex of representative forest types and communities found on State Forest lands, as required by Criterion 6.4. (CAR 2006.5) |
| 6.4.c. The size and arrangement and time scale of on-site representative sample areas are designated and justified using assessment methods and sources of up-to-date information described in 6.1. | | See discussion above under Indicator 6.4.b and CAR 2006.5 |
| 6.4.d. Unless exceptional circumstances can be documented, known areas of intact old-growth forests are designated as representative sample areas under | | There are no known areas of intact old-growth on state forests. Any areas closely approximating intact old-growth have been protected. |

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| <p>purpose 3. (See Applicability Note under 6.4 above) and are reviewed for designation as High Conservation Value Forests (HCVF- see also Applicability note under 6.3). Known areas of unentered stands of old-growth are carefully reviewed, screened for uniqueness, and considered as potential representative sample areas prior to undertaking any active management within them (see Applicability Note under 6.4). Old growth stands not designated as either a HCVF or a representative sample area are, at a minimum, managed to maintain their old-growth structure, composition, and ecological functions under purpose 3.</p> | | |
| <p>6.4.e. The size and extent of representative samples on public lands being considered for certification is determined through a transparent planning process that not only utilizes scientifically credible analyses and expertise but is also accessible and responsive to the public.</p> | <p>The goal of Criterion 6.4 is to achieve a system of protected representative samples of existing ecosystems found on state forests. This may be accomplished by the establishment of a system of protected areas within a single ownership, or through a combination of ownerships (e.g., county, federal, other). A fairly sophisticated level of analysis is needed to determine if existing protected areas and working forests are sufficient to meet 6.4, and if not what are the current gaps and where are the best opportunities to fill those gaps. DoF's response to CAR 2006.5 must be transparent and responsive to the public.</p> | |
| <p>6.4.f. The process and rationale used to determine the size and extent of representative samples are explicitly described in the public summary.</p> | <p>This has yet to be done- See CAR 2006.5.</p> | |
| <p>6.4.g. Managers of large, contiguous public forests (>50,000 acres) create and maintain representative protected areas within the forest area, sufficient in size to encompass the scale and pattern of expected natural disturbances while maintaining the full range of forest types and successional stages resulting from the natural disturbance regime.</p> | <p>The Indiana State Forest system does not contain large contiguous forests > 50,000 acres in size.</p> | |
| <p>C6.5. Written guidelines shall be prepared and implemented to control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and to protect water resources.</p> | <p>90</p> | <p>DoF is in clear conformance with this Criterion.</p> |
| <p>6.5.a. A set of forestry best management practices (BMPs), approved by the state forestry agency or otherwise appropriate jurisdiction (e.g., BIA), that address water quality and soil erosion is adhered to (see also 1.1.b). These guidelines may include provisions on riparian management zones (RMZs), skidding, access roads, site preparation, log landings, stream crossings, disturbance of sensitive sites, and wetlands.</p> | <p>Indiana Logging and Forestry BMP's adequately cover water quality, soil erosion, riparian management zones, and other BMP issues.</p> | |
| <p>6.5.b. At a minimum, implementation of BMPs and other resource protection measures will result in the following:</p> | <p>DoF has a good track record of conforming with BMPs The most recent BMP monitoring report in Indiana reports a rate of 89% compliance on state forest timber sales, which means that 89% of the 58 BMP specifications on 97 timber sales met the</p> | |

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| | requirements of the BMP guidelines. |
| <p><u>Logging and Site Preparation</u> Logging operations and construction of roads and skid trails are conducted only during periods of weather when soil is least susceptible to compaction, surface erosion, or sediment transport into streams and other bodies of water.</p> | Covered in Indiana Logging and Forestry BMPs |
| Logging damage to regeneration and residual trees is minimized during harvest operations. | Covered in contract with purchaser, and we found that foresters pay close attention to residual stand damage. The audit team observed levels of residual damage to be well within acceptable limits. |
| Silvicultural techniques and logging equipment vary with slope, erosion hazard rating, and/or soil instability with the goal of minimizing soil disturbance. Areas that exhibit an extreme risk of landslide are excluded from management activities that may precipitate landslides. | Covered in Indiana Logging and Forestry BMPs, and the audit team observed excellent overall conformance. |
| Plans for site preparation specify the following mitigations to minimize impacts to the forest resources: 1) Slash is concentrated only as much as necessary to achieve the goals of site preparation and the reduction of fuels to moderate or low levels of fire hazard. 2) Top soil disturbance and scarification of soils is limited to the minimum necessary to achieve successful regeneration of desired species. | BMP's adequately address site preparation. The audit team noted proper implementation of BMP's. |
| <p><u>Transportation System (including permanent and temporary haul roads, skid trails, and landings)</u> The transportation system is designed, constructed, maintained, and/or reconstructed to minimize the extent of the road network and its potential cumulative adverse effects.</p> | Covered in Indiana Logging and Forestry BMPs, and the audit team observed excellent overall conformance. |
| Access to temporary and permanent roads is controlled to minimize significant adverse impacts to soil and biota while allowing legitimate access, as addressed by Principles 3 and 4 and identified in the management plan. | Covered in Indiana Logging and Forestry BMPs, and the audit team observed excellent overall conformance. The fact that ATV's/OHV's are prohibited from all state forests improves DoF's ability to conform with this indicator. |
| Failed drainage structures or other areas of active erosion caused by roads and skid trails are identified, and measures are taken to correct the drainage problems and stabilize erosion. | Covered in Indiana Logging and Forestry BMPs, and the audit team observed excellent overall conformance. |
| <p><u>Stream and Water Quality Protection</u> Stream crossings are located and constructed in a way that minimizes fragmentation of aquatic habitat (see Glossary) and protects water quality.</p> | Covered in Indiana Logging and Forestry BMPs, and the audit team observed excellent overall conformance. |
| <p><u>Visual and Aesthetic Considerations</u> Forest owners or managers limit and/or reduce negative impacts on visual quality caused by forest management operations.</p> | The current shift to more regeneration openings is requiring DoF to pay more attention to aesthetics. The audit team observed good overall conformance, e.g., regeneration openings are sheltered from roads with a buffer zone where only selection harvest occurs. Visual and aesthetic considerations are covered in the Indiana Logging and Forestry BMPs. |
| C6.6. Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management | 80 The audit team has determined there will be marginal overall conformance with this criterion (once Major CAR 2006.1 is addressed). See Section 1.4.8 for a |

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| <p>and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.</p> | <p>description of chemicals in use on DNR forests.</p> <p>Note: Major CAR 2006.1 has been closed.</p> |
| <p>6.6.a. Forest owners and managers demonstrate compliance with FSC Policy paper: “Chemical Pesticides in Certified Forests, Interpretation of the FSC Principles and Criteria, July 2002” (available at http://www.fsc.org/en/whats_new/documents/Docs_cent/2) and comply with prohibitions and/or restrictions on World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement.</p> | <p>In general, chemical use on DoF forests is limited and consistent with FSC policies to minimize chemical use. DoF chemical use has been modified to ensure that they comply with FSC’s 2002 Chemical Pesticide Policy. On January 27, 2007 a memo was sent to DoF staff prohibiting use of diquat and simazine.</p> <p>The following other aspects of DoF herbicide/pesticide applications provide evidence of a judicious program consistent with FSC policies:</p> <ul style="list-style-type: none"> • DoF does not practice aerial spraying; • There is very little broadcast spraying; • Typical application method is single tree treatments. |
| <p>6.6.b. Forest owners or managers employ silvicultural systems, integrated pest management, and strategies for controlling vegetation that minimize negative environmental effects. Non-chemical techniques are preferred in the implementation of these strategies.</p> | <p>DoF’s pest & pathogen strategies follow integrated pest management. Silviculture promotes healthy and resilient stands, and chemical treatments are a last resort. However, the team did note an opportunity for more prescribed fire use as an alternative to herbicide application. (Recommendation 2006.6)</p> |
| <p>6.6.c. Forest owners or managers develop written strategies for the control of pests as a component of the management plan (see Criterion 7.1).</p> | <p>Tract plans include strategies for controlling pests and pathogens.</p> |
| <p>6.6.d. If chemicals are applied, the most environmentally safe and efficacious chemicals are used. Chemicals are narrowly targeted, and minimize effects on non-target species.</p> | <p>The Indiana regulatory process for licensed chemical applicators is very comprehensive and helps ensure efficacious chemicals are applied in an environmentally safe manner. Interviews with DoF staff confirmed conformance.</p> |
| <p>6.6.e. Chemicals are used only where they pose no threat to supplies of domestic water, aquatic habitats, or Rare species or plant community types.</p> | <p>All chemical projects undergo a natural heritage database review and are carried out in a way that avoids threats to water supplies.</p> |
| <p>6.6.f. If chemicals are used, a written prescription is prepared that describes the risks and benefits of their use and the precautions that workers will employ.</p> | <p>Chemical applications require a written prescription. Chemical pesticide application is a licensed practice requiring training for the proper use and distribution in Indiana in which all applicators must recertify on a regular basis under Indiana Administrative Code 357 (Indiana Legislative Services Agency, 2005b).</p> <p>However, some staff use of chemicals to treat invasive species occurs on a somewhat ad-hoc basis, and is done without written strategies (Recommendation 2006.7)</p> |
| <p>6.6.g. If chemicals are used, the effects are monitored</p> | <p>DoF employs forest health specialists and conducts annual forest</p> |

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| <p>and the results are used for adaptive management. Records are kept of pest occurrences, control measures, and incidences of worker exposure to chemicals.</p> | <p>health surveys.</p> <p>Monitoring of chemical applications is conducted through continued forest health surveys, or through regeneration monitoring in the case of herbicides for site preparation.</p> <p>Records of chemicals and applied rates are kept for all applications.</p> | |
| <p>C6.7. Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.</p> | <p>85</p> | <p>The audit team has determined that there is clear overall conformance with the criterion. However, addressing the weaknesses observed with one or more of the indicators will strengthen overall conformance. See related recommendation, below.</p> |
| <p>6.7.a. In the event of a spill of hazardous material, forest owners or managers immediately contain the material, report the spill as required by applicable regulations, and engage qualified personnel to perform the appropriate removal and remediation.</p> | <p>Per the requirements of IN BMP's, equipment operators must carry spill kits and follow proper containment and clean-up practices. However, DoF could improve enforcement of the requirement to carry spill kits (Rec 2006.8.).</p> | |
| <p>6.7.b. Waste lubricants, anti-freeze, containers, and related trash are stored in a leakproof container until they are transported to an approved off-site disposal site.</p> | <p>Required under IN BMP's, and Timber sale contracts require operators to properly dispose of waste. SCS auditors observed conformance at all harvest sites visited.</p> | |
| <p>6.7.c. Broken or leaking equipment and parts are repaired or removed from the forest.</p> | <p>Required under IN BMP's. SCS auditors observed conformance at all harvest sites visited.</p> | |
| <p>6.7.d. Equipment is parked away from riparian management zones, sinkholes, or supplies of ground water.</p> | <p>Required under IN BMP's. SCS auditors observed conformance at all harvest sites visited.</p> | |
| <p>C6.8. Use of biological control agents shall be documented, minimized, monitored, and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.</p> | <p>90</p> | <p>The audit team has determined there is clear conformance with the criterion.</p> |
| <p>6.8.a. Exotic (i.e., non-indigenous), non-invasive predators or biological control agents are used only as part of a pest management strategy for the control of exotic species of plants, pathogens (see Glossary), insects, or other animals when other pest control methods are, or can reasonably be expected to prove, ineffective. Such use is contingent upon peer-reviewed scientific evidence that the agents in question are non-invasive and are safe for indigenous species because, for example, exotic species can host pathogens that might diminish biodiversity in the forest.</p> | <p>DoF does not use genetically modified organisms. When biological control agents, e.g., purple loosestrife beetle, are used, they are done so in a manner consistent with 6.8.a. Use of biological control agents can be a risky endeavor, even when an agent has passed USDA screens. Thus, it would be a good idea for DoF to develop its own formal policy on the use of biological control agents on IN state forests.</p> | |
| <p>C6.9. The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.</p> | <p>90</p> | <p>The audit team has determined there is clear conformance with the criterion. Actions taken to address Recommendation 2006.9 will further improve the level of conformance.</p> |
| <p>6.9.a. Except on plantation sites (see also Criterion</p> | <p>Exotic tree species are not planted on state forests. DoF has an</p> | |

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| 10.4), the use of exotic tree species is permitted only in the first successional stages or other short-term stages for the purposes of restoring degraded ecosystems. | active program to control exotic tree species, e.g., ailanthus and Virginia pine that have colonized the state forests. | |
| 6.9.b. The use of exotic species (see Glossary) is contingent on peer-reviewed scientific evidence that the species in question is non-invasive and will not diminish biodiversity. If non-invasive exotic species are used, the provenance and location of use are documented, and their ecological effects are actively monitored. | Exotic species are not used by IN DoF. | |
| 6.9.c. Written documentation is maintained for the use of exotic species. | N/A | |
| 6.9.d. Forest owners or managers develop and implement control measures for invasive exotic species. | DoF does have an active program for controlling invasive exotic species. DoF field foresters demonstrated a solid understanding and awareness of invasive plants. During the audit, we observed effective control measures being implemented. Opportunities for improvement include better planning for invasive species control. The Strategic Plan lacked details on the statewide effort for controlling invasives (Rec 2006.9). | |
| 6.10. Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion: a) Entails a very limited portion of the forest management unit; and b) Does not occur on High Conservation Value Forest areas; and c) Will enable clear, substantial, additional, secure, long-term conservation benefits across the forest management unit. | 95 | DoF demonstrated outstanding conformance with this Criterion. |
| 6.10.a. Over the life of the ownership, forest to non-forest conversions are limited to the threshold of 1% of the forest area or 100 acres, whichever is smaller, except that a parcel up to two acres in size may be converted for residential use by the forest owner or manager. | Any conversions that may have occurred on DoF managed properties would be well below the 1% threshold. Additionally, DoF has converted some pine plantations back to native forest. | |
| 6.10.b. When private forest lands are sold, a portion of the proceeds of the sale is reinvested in additional forest lands and/or forest stewardship. | N/A | |

Importance Weighted Aggregate Score for Principle 6:

Employing the PAIRWISE algorithm, the evaluation team assigned weights of relative importance for each of the 10 Criteria in this Principle. Under SCS’ accredited protocols, assignment of weights of relative importance is one means by which certification evaluations recognize and incorporate regional and sub-regional circumstances. In this case, the weights were designed to reflect the regional context in which the subject forest management unit is located

| FSC Principle #6 <i>Environmental Impact</i> | Normalized Relative Importance Weights | Performance Scores | Weighted Average Score |
|--|--|--------------------|------------------------|
| 6.1 | .15 | 82 | |

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| 6.2 | .11 | 85 | 86.61 |
| 6.3 | .18 | 83 | |
| 6.4 | .10 | 80 | |
| 6.5 | .07 | 90 | |
| 6.6 | .09 | 80 (pending Response to Major CAR 2006.1) | |
| 6.7 | .04 | 85 | |
| 6.8 | .05 | 90 | |
| 6.9 | .06 | 90 | |
| 6.10 | .16 | 95 | |
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Applying the normalized weights of relative importance to the 10 assigned performance scores, and rounding to the nearest integer, leads to a weighted average score for the Principle of:

87

Per SCS protocols, and as this weighted average score is in excess of 80 points, acceptable overall conformance to this FSC Principle is confirmed.

Corrective Action Requests and Recommendations:

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| Observation: The FSC-prohibited chemicals diquat dibromide is permitted for use on DoF administered forests. | |
| Major CAR 2006.1 | Prior to award of certification, DoF must provide evidence that the use of diquat dibromide will not occur on State Forests (unless a derogation has first been granted by the FSC). |
| Deadline | Prior to award of certification |
| Reference | <i>FSC Criterion/Indicator 6.6.a</i> |
| Auditor Response - 6/5/2007 | <i>DOF has submitted to SCS a copy of the memo dated January 24, 2007 that informed all field staff that the use of diquat is restricted.</i> |
| Status | Closed |

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| Background/Justification: In the course of examining marked and harvested stands, the audit team observed variation across forest units and among individual foresters with respect to stand-level wildlife habitat elements (e.g., snags; green tree retention in clearcuts; den, nest, declining, and mast trees; downed woody debris). Attention to snags and mast trees was strong; however, there are no standards for other stand-level wildlife habitat elements. | |
| CAR 2006.4 | By the 2007 surveillance audit, DoF must develop and implement a comprehensive set of guidelines to provide stand-level wildlife habitat elements. |
| Deadline | 2007 surveillance audit |
| Reference | <i>FSC Criterion 6.3.b and 6.3.c</i> |

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| Background/Justification: The team recognizes that the Division of Nature Preserves, in cooperation with DoF, has done considerable work establishing nature preserves on | |
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| state forests. However, it is unclear if the current network of Nature Preserves, in conjunction with other protected forests (National Forests, TNC properties, etc), covers the full complex of representative forest types and communities found on State Forest lands (as required by Criterion 6.4) | |
| CAR 2006.5 | By the 2008 surveillance audit, DoF must (working with partners, if possible) complete a gap analysis to identify needs for samples of representative ecosystems found on state forest lands. Upon completion of the gap analysis, DoF must determine through an interdisciplinary approach what, if any, opportunities there may be to establish representative samples on state forests. Between now and 2008, if there arise known opportunities on state forests to contribute to known gaps of representative samples, DoF must begin the process to establish active designations. |
| Reference | <i>Criterion 6.4</i> |
| Deadline | Year 2 surveillance audit |

Recommendations

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| Background/Justification: Disturbance regimes, such as wind driven events, and their contribution to a diversity of successional stages have not been thoroughly investigated and incorporated into management of state forests | |
| REC 2006.3 | DoF should emphasize continuing education and/or acquiring additional expertise on forest ecology including disturbance regimes and pathways and flora and fauna communities. |
| Reference | <i>FSC Criterion 6.1</i> |

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| Background/Justification: There is lack of understanding and documentation of habitat needs and management considerations pertaining to species of concern, as defined by the Natural Heritage Element Occurrence Record dataset | |
| REC 2006.4 | DoF should improve the presentation and distribution of information describing habitat and best management practices for species of concern. |
| Reference | FSC Criterion 6.2 |

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| Background/Justification: Ecological characteristics of adjacent forested stands are not consistently considered. Although each management guide looks within a 2.5 mile radius of the tract- this rarely results in any new information or alteration to the proposed treatment. | |
| REC 2006.5 | DoF should improve the process for considering ecological characteristics of adjacent forested stands |
| Reference | <i>FSC Criterion 6.3</i> |

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| Background/Justification: There is an opportunity to use more prescribed fire | |
| REC 2006.6 | DoF should make a commitment to using prescribed fire when possible, and prepare an operating procedure that guides when and |

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| | how prescribed fire should be used. |
| Reference | <i>FSC Criterion 6.3</i> |

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| Background/Justification: Although the vast majority of chemical use follows a written prescription, occasionally DoF staff will treat invasive exotic species without first preparing a written strategy. | |
| REC 2006.7 | DoF should ensure that every herbicide application is done in accordance with a written prescription |
| Reference | <i>FSC Criterion 6.6</i> |

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| Background/Justification: IN BMP's require operators to carry spill kits; however DoF is not consistently enforcing this requirement. | |
| REC 2006.8 | DoF should ensure that all equipment operators carry spill kits, and are properly trained in containment and clean-up procedures. |
| Reference | <i>FSC Criterion 6.7</i> |

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| Background/Justification: DoF has an active program and strategies for treating invasive exotic plants; however, these were not communicated in the 2005-2007 Strategic Plan. Due to the recent increases in harvesting, plans and actions to address invasive exotic plants should be clearly communicated in the Strategic Plan. | |
| REC 2006.9 | DoF should prepare a section in the strategic plan that details their programs for controlling invasive exotic plants, specifically how invasive species control will be enhanced to be commensurate with the increase in harvesting. |
| Reference | FSC Criterion 6.9 |

1.7 PRINCIPLE #7: MANAGEMENT PLAN

A management plan-appropriate to the scale and intensity of the operations-shall be written, implemented, and kept up to date. The long-term objectives of management, and the means of achieving them, shall be clearly stated.

This Principle is elaborated through 4 Criteria, which collectively call for a very high level of commitment to management planning.

| Standard | Score | Comments |
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| 7.1. The management plan and supporting documents shall provide: a) Management objectives. b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic | 86 | The audit team concludes that DNR is in clear conformance with this Criterion. |

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| <p>conditions, and a profile of adjacent lands.</p> <p>c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.</p> <p>d) Rationale for rate of annual harvest and species selection.</p> <p>e) Provisions for monitoring of forest growth and dynamics.</p> <p>f) Environmental safeguards based on environmental assessments.</p> <p>g) Plans for the identification and protection of rare, threatened and endangered species.</p> <p>h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.</p> <p>i) Description and justification of harvesting techniques and equipment to be used.</p> | | |
| <p>7.1.a. Management objectives</p> | | |
| <p>7.1.a.1. A written management plan is prepared that includes the landowner's short-term and long-term goals and objectives (ecological, social, and economic). The objectives are specific, achievable, and measurable.</p> | | <p>The Properties Strategic Plan includes detailed management goals and objectives; however, these goals lack quantitative descriptions that can be easily applied at the tract level. The 2005-2007 Strategic Plan gives overall guidance to property activities and is implemented through the DoF Procedures Manual. The Procedures Manual directs that Management Guides be developed for individual tracts and gives general direction on operations procedures. The result is that foresters have a general indication of which resources should be emphasized and how to proceed with operations, but are not given meaningful guidance on how tract level management may fit into statewide objectives</p> |
| <p>7.1.a.2. The management plan describes desired future conditions that will meet the long-term goals and objectives and that determine the silvicultural system(s) and management activities to be used.</p> | | <p>Discussions of desired future conditions (DFC) are found in the Silvicultural Guidelines with the Procedures Manual. However, this description is brief and lacks quantitative information. A much more comprehensive analysis and presentation of desired future forest conditions is found in the HCP (draft v. Oct 2006). Once the HCP is finalized and implemented, DoF will demonstrate strong conformance with this indicator.</p> |
| <p>7.1.b. Description of forest resources to be managed, environmental limitations, land use and ownership status, socioeconomic conditions, and profile of adjacent lands</p> | | <p>Tract level Management Guides cover most of these items; however, socioeconomic conditions and profile of adjacent lands are limited to a 2.5 mile radius. A much more comprehensive discussion of adjacent lands and socioeconomic conditions can be found in the draft Indiana HCP. Once the HCP is finalized and implemented, DoF will be in strong conformance with this indicator.</p> |
| <p>7.1.b.1. The management plan describes the timber, fish and wildlife, harvested non-timber forest products, soils, and non-economic forest resources.</p> | | <p>Tract level Management Guides address these topics. The Management Guides are completed and updated prior to any major activity except for those activities considered routine maintenance.</p> |
| <p>7.1.b.2. The management plan includes descriptions of special management areas; sensitive, rare, threatened, and endangered species and their habitats; and other</p> | | <p>Management guides include a Wildlife Review Checklist that includes results of Natural Heritage Database queries and requires that habitat analysis be done prior to operations. The Natural</p> |

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| ecologically sensitive features in the forest. | Areas, Wildlife Considerations, Strategy for Indiana Bat, and other Procedures are evidence of conformance with this Indicator. The HCP once implemented and finalized will further improve conformance. |
| 7.1.b.3. The management plan includes a description of past land uses and incorporates this information into the vision, goals, and objectives. | Strategic Plans and Management Guides do an excellent job covering past land use. Management Guides include the entire history of treatments on a given tract. |
| 7.1.b.4. The management plan identifies the legal status of the forest and its resources (e.g., ownership, usufruct rights (see Glossary), treaty rights, easements, deed restrictions, and leasing arrangements). | Procedures manual covers legal status, treaty rights, easements, deed restrictions, and leasing of the forest and its resources. |
| 7.1.b.5. The management plan identifies relevant cultural and socioeconomic issues (e.g., traditional and customary rights of use, access, recreational uses, and employment), conditions (e.g., composition of the workforce, stability of employment, and changes in forest ownership and tenure), and areas of special significance (e.g., ceremonial and archeological sites). | Management Guides include documentation of project review by the Division of Historic Preservation and Archaeology. Roads/access and recreational uses are also covered in the Management Guide. Overall socioeconomic impacts of State Forest management are not thoroughly documented in planning documents either at the strategic or tactical level. The suite of management planning documents address most of the pertinent cultural and socioeconomic topics described in 7.1.b.5. The HCP (draft v. Oct 2006) once finalized and implemented will ensure full conformance with this Indicator. |
| 7.1.b.6. The management plan incorporates landscape-level considerations within the ownership and among adjacent and nearby lands, including major bodies of water, critical habitats, and riparian corridors shared with adjacent ownerships. | Landscape-level considerations, such as bodies of water and habitat considerations, are addressed in the Management Guide, but only extend 2.5 miles beyond project boundaries. As discussed in 7.1, landscape level considerations and Desired Future Condition of the State Forest properties are not described in clear quantitative terms- except within the Draft HCP (V. Oct 2006). The HCP once implemented and finalized will ensure full conformance with this Indicator. |
| 7.1.c. Description of silvicultural and/or other management system | |
| 7.1.c.1. Silvicultural system(s) and prescriptions are based on the integration of ecological and economic characteristics (e.g., successional processes, soil characteristics, existing species composition and structures, desired future conditions, and market conditions). (see also sub-Criterion 6.3.a) | Silvicultural prescriptions in Management Guides address all of these parameters, with the exception of how a particular treatment relates to the overall DFC of the property or landscape. As detailed in the document “ <i>Commitment to an Improved Process for Detailing Strategic Operational Plans</i> ”, DoF is committed to producing plans that tie silvicultural prescriptions to system wide DFC’s. |
| 7.1.c.2. Prescriptions are prepared prior to harvesting, site preparation, pest control, burning, and planting and are available to people who implement the prescriptions. | Prescriptions are prepared and are available. |
| 7.1.d. Rationale for the rate of annual harvest and species selection | |
| 7.1.d.1. Calculations for the harvests of both timber and non-timber products are detailed or referenced in the management plan and are based on net growth, | Management planning documents rely on the statewide inventory completed in 2005. Annual allowable cut calculations were derived from this extensive inventory. |

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| yield, stocking, and regeneration data. (see also 5.6.b) | |
| 7.1.d.2. Species selection meets the social and economic goals and objectives of the forest owner or manager and leads to the desired future conditions while maintaining or improving the ecological composition, structures, and functions of the forest. | A main focus of management is to maintain the oak/hickory component of the Central Hardwoods. Species selection is also driven by the Indiana Bat guidelines. DoF strives to maintain a varied species composition, forest structure, and tree size to provide habitat diversity and aesthetic integrity within a contiguous-canopy forest context. Harvest units examined during the full assessment confirmed that stands are being treated to achieve these goals and objectives. |
| 7.1.d.3. The management plan addresses potentially disruptive effects of pests, storms, droughts, and fires as they relate to allowable cut. | DoF has a strong program for monitoring pest and pathogen activity. Such disturbances are addressed and provisions are made to amend Management Guides when necessary. |
| 7.1.e. Provisions for monitoring forest growth and dynamics (see also Principle 8) | |
| 7.1.e.1. The management plan includes a description of procedures to monitor the forest. | Procedures to monitor the forest are described in the Procedures Manual. DoF is making significant upgrades to its monitoring by adding a new CFI system. Continuous monitoring efforts include tract-level inventories. |
| 7.1.f. Environmental safeguards based on environmental assessments (see also Criterion 6.1.) | The Procedures Manual describes provisions for environmental safeguards. |
| 7.1.g. Plans for the identification and protection of rare, threatened, and endangered species. (see also Criterion 6.3.) | The Procedures Manual provides for these protections and the documentation is included in the Management Guides. |
| 7.1.h. Maps describing the forest resource base including protected areas, planned management activities, and land ownership. | |
| 7.1.h.1. The management plan includes maps of such forest characteristics as: relevant landscape-level factors; property boundaries; roads; areas of timber production; forest types by age class; topography; soils; riparian zones; springs and wetlands; archaeological sites; areas of cultural and customary use; locations of sensitive, rare, threatened, and/or endangered species and their habitats; and designated High Conservation Value Forests. | All state properties have a functioning GIS |
| 7.1.i. Description and justification of harvesting techniques and equipment to be used. (see also Criterion 6.5) | |
| 7.1.i.1. Harvesting machinery and techniques are discussed in the management or harvest plan and are specifically matched to forest conditions in order to minimize damage. | Harvesting machinery and techniques are included in the tract plans, timber sale document, and/or timber contract as needed. Foresters are well-trained regarding harvesting machinery and techniques; experienced foresters supervise all harvests. |
| 7.1.i.2. Conditions for each timber sale are established | Conditions are covered in written plans and/or contracts. |

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| by a timber sale contract or written harvest prescription and accompanying timber sale map. | | |
| C7.2. The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances. | 80 | DoF is only in marginally adequate conformance with this Criterion. |
| 7.2.a. Operational components of the management plan are reviewed and revised as necessary or at least every 5 years. Components of the long-term (strategic) management plan are revised and updated at the end of the planning period or when other changes in the management require it. (see also Criterion 8.4) | | Management Guides are updated prior to any major activity except those considered routine maintenance. If no operations are planned, tract plans are updated approximately every 20 years or when new inventory information becomes available. Strategic Plans were last updated in 1997 and 2005. Further, revisions to the Strategic Plan are set to occur in 2007. Other components of the management plan are updated on an as needed basis, e.g., new information becomes available. |
| C7.3. Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plans. | 78 | The audit team has determined there is marginal non-conformance with this Criterion. |
| 7.3.a. The forest owner or manager assures that workers are qualified to implement the management plan (see also Criterion 4.2). | | Although DoF staff are highly qualified professionals, the team identified some gaps in training of forestry staff in managing species of concern, landscape level planning, knowledge of disturbance regimes and successional pathways, and other requirements of the FSC standard (CAR 2006.6) |
| 7.3.b. The management plan is understandable, comprehensive, and readily available to field personnel. | | Field staff demonstrated the ability to implement existing management plans. As DoF begins implementing their HCP and/or other landscape level planning efforts, field staff will likely need additional training. |
| C7.4. While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1. | 85 | The audit team determined that there is clear conformance with this Criterion. |
| 7.4.a. A management plan summary that outlines management objectives (from sub-Criterion 7.1.a.), whether on private lands or the land pool under a resource manager, is available to the public at a reasonable fee. Additional elements of the plan may be excluded, to protect the security of environmentally sensitive and/or proprietary information. | | As a state agency operating under the freedom of information statutes, there is a high degree of transparency and public access to pertinent documents and data. DoF actions in response to CAR 2006.3 will further improve the availability and transparency of information. |
| 7.4.b. Managers of public forests make forestry-related information easily accessible (e.g., available on websites) for public review, including that required by Criterion 7.1. | | Many documents, e.g., Strategic Plan, BMP's, are available on the website. Other documents such as the DoF procedures are not readily available. See CAR 2006.3. |

Importance Weighted Aggregate Score for Principle 7:

Employing the PAIRWISE algorithm, the evaluation team assigned weights of relative importance for each of the 4 Criteria in this Principle. Under SCS' accredited protocols, assignment of weights of relative importance is one means by which certification evaluations recognize and incorporate regional and sub-regional circumstances. In this case, the weights were designed to reflect the regional context in which the subject forest management unit is located

| FSC Principle #7 Management Plan | Normalized Relative Importance Weights | Performance Scores | Weighted Average Score |
|---|--|--------------------|------------------------|
| 7.1 | .44 | 86 | 86.64 |
| 7.2 | .17 | 80 | |
| 7.3 | .28 | 78 | |
| 7.4 | .11 | 85 | |

Applying the normalized weights of relative importance to the 4 assigned performance scores, and rounding to the nearest integer, leads to a weighted average score for the Principle of:

87

Per SCS protocols, and as this weighted average score is in excess of 80 points, acceptable overall conformance to this FSC Principle is confirmed.

Corrective Action Requests and/or Recommendations

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|--|---|
| Background/Justification: The team identified some gaps in training of forestry staff in managing species of concern, landscape level planning, knowledge of disturbance regimes and successional pathways, and other requirements of the FSC standard. | |
| CAR.2006.6 | By the 2007 surveillance audit, DOF must assess the effectiveness of current staffing and training opportunities at providing the necessary expertise to address gaps identified in the FSC report (both CARs and OFI's). Prepare an action plan that details how gaps in training and/or expertise will be filled. |
| Reference | <i>Criterion 7.3</i> |
| Deadline | 2007 surveillance audit |

1.8 PRINCIPLE #8: MONITORING AND ASSESSMENT

Monitoring shall be conducted-appropriate to the scale and intensity of forest management-to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.

As a conceptual and thematic companion to Principle 7, this Principle (elaborated through 5 Criteria) requires certified operations to engage in an aggressive and formal program of periodic monitoring of the impacts of management operations, focusing upon both bio-physical and socio-economic impacts as well as the extent of plan compliance.

| Standard | Score | Comments |
|--|-------|---|
| C8.1. The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations, as well as, the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change. | 85 | DoF demonstrated it is in clear conformance with this criterion |
| 8.1.a. The frequency of monitoring activities follows the schedule outlined in the management plan. | | <p>A system wide inventory was conducted in 2005. The inventory followed procedures as described in the Resource Inventory section of the Procedures Manual. Additionally, DoF is directed by many different planning documents, and each has different monitoring strategies:</p> <ul style="list-style-type: none"> • Forest Health Protection monitors various insect and disease levels annually; • Division of Fish and Wildlife has various monitoring routines from annual surveys to more periodic surveys; • Division of Forestry monitoring program includes typical weekly inspections of active timber sales, annual 2nd-party monitoring of BMPs, 20-year monitoring of the inventory, and 5-year statewide permanent plot inventory analysis through FIA; • Other inventories/monitoring on DoF properties includes Natural Areas inventory, fish population monitoring, cultural/archeological resource inventory. |
| 8.1.b. Monitoring is carried out to assess: <ul style="list-style-type: none"> • The degree to which management goals and objectives have been achieved; • Deviations from the management plan; • Unexpected effects of management activities; • Social (see Criterion 4.4) and environmental (see Criterion 6.1) effects of management activities. | | DoF in cooperation with other DNR divisions engages in a wide variety of monitoring activities that address the majority of bullet items under 8.1.b. DoF is in the process of installing a comprehensive CFI system that will allow for better assessment of deviations from the management plan and unexpected effects of management. There is an opportunity to improve monitoring of the social effects of management activities. |
| 8.1.c. Public and large, private land owners or managers take the lead in identifying, initiating, and supporting research efforts to address pertinent ecological questions. Small and medium private land owners or managers use information that has been developed by researchers and other managers. | | DoF is leading or participating in numerous initiatives to answer pertinent ecological questions such as Indiana bat habitat monitoring, a climate change cooperative research program with Indiana University, silvicultural research on oak/hickory regeneration. |
| 8.2. Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: <ol style="list-style-type: none"> a) Yield of all forest products harvested. b) Growth rates, regeneration and condition of the forest. c) Composition and observed changes in the flora and fauna. d) Environmental and social impacts of harvesting and other operations e) Cost, productivity, and efficiency of forest management | 85 | DoF is in clear conformance with this Criterion. |
| 8.2.a. Yield of all forest products harvested | | |
| 8.2.a.1. The forest owner or manager maintains records of standing inventories of timber and harvest volumes of timber and non-timber species (quality and quantity). | | DoF meets this Indicator through its periodic system-wide inventory and CFI system. |

| | | |
|---|----|---|
| 8.2.b. Growth rates, regeneration, and condition of the forest | | |
| 8.2.b.1. An inventory system is established and records are maintained for: <ol style="list-style-type: none"> 1) Timber growth and mortality (for volume control systems); 2) Stocking, and regeneration; 3) Stand-level and forest-level composition and structure (e.g., by use of tools, such as ecological classification systems); 4) Abundance, regeneration, and habitat conditions of non-timber forest products; 5) Terrestrial and aquatic features; 6) Soil characteristics (e.g., texture, drainage, existing erosion); 7) Pest conditions. | | DoF meets the breadth of this Indicator through its periodic system-wide inventory, CFI system, pest monitoring, and Division of Fish and Wildlife monitoring. Monitoring required as part of the HCP will further improve conformance with this Indicator. |
| 8.2.c. Composition and observed changes in the flora and fauna | | |
| 8.2.c.1. Forest owners or managers periodically monitor the forest for changes in major habitat elements and in the occurrence of sensitive, rare, threatened, or endangered species or communities. | | Evidence of conformance with this Indicator includes: <ul style="list-style-type: none"> • Inventory of Nature Preserves for special habitat on state properties; • Observations of wildlife and habitat during system-wide inventory, such as snags, occurrence of rock outcrops, fire evidence, vertical structure; • Wildlife and rare plant population monitoring carried out by Divisions of Fish and Wildlife and Nature Preserves. The level of habitat monitoring will be greatly enhanced upon implementation of the HCP. |
| 8.2.d. Environmental and social impacts of harvesting and other operations | | |
| 8.2.d.1. The environmental effects of site-disturbing activities are assessed (e.g., road construction and repair, harvesting, and site preparation). | | DoF is exemplary with respect to BMP monitoring. |
| 8.2.d.2. Creation or maintenance of local jobs and public responses to management activities are monitored. | | The Strategic Plan does discuss increased job creation from the increase in harvest levels. However, there is an opportunity for more formalized monitoring of creation or maintenance of local jobs supported by activities on the state forests. Public participation processes such as open houses, comment cards, and public outreach, provides feedback to managers regarding public perception of management activities. |
| 8.2.d.3. Sites of special significance to American Indians are monitored in consultation with tribal representatives (see also Principle 3). | | Sites of special significance are monitored, though there is no consultation with tribal representatives. See CAR 2006.2. |
| 8.2.e. Cost, productivity, and efficiency of forest management | | |
| 8.2.e.1. Forest owners or managers monitor the cost and revenues of management in order to assess productivity and efficiency. | | DoF is exemplary at monitoring costs and revenues of management. Progress on property performance goals is monitored. |
| C8.3. Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the "chain of custody." | 75 | DoF has yet to develop a procedure for ensuring chain-of-custody of FSC certified logs (CAR 2006.7) |

| | | |
|---|----|---|
| C8.4. The results of monitoring shall be incorporated into the implementation and revision of the management plan. | 85 | DoF is in clear conformance with this Criterion. |
| 8.4.a. Discrepancies between the results of management activities or natural events (i.e. yields, growth, ecological changes) and expectations (i.e. plans, forecasts, anticipated impacts) are appraised and taken into account in the subsequent management plan. | | DoF demonstrated that monitoring results are incorporated into revised plans. For example, the 2005-2007 Strategic Plan addresses loss of oak/hickory habitat. The 2005 system-wide inventory was incorporated into the 2005-2007 Strategic Plan. Tract level plans incorporate new inventory or monitoring (e.g., forest health surveys) information. On the negative side, the lack of a quantitative description of desired future condition (DFC) makes it impossible to monitor progress toward the DFC- a critical management objective. The next strategic planning effort will address this. |
| C8.5. While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2. | 75 | DoF is in clear non-conformance with this Criterion (CAR 2006.3). |
| 8.5.a. A summary outlining the results of monitoring is available to the public at a reasonable fee, whether on private lands or a land pool under a resource manager or group certification. | | Such a summary does not currently exist. See CAR 2006.3. |
| 8.5.b. Managers of public forests make information related to monitoring easily accessible (e.g., available on websites) for public review. | | Results of BMP monitoring and forest inventory are available to the public upon request. |

| FSC Principle #8 Monitoring and Assessment | Normalized Relative Importance Weights | Performance Scores | Weighted Average Score |
|---|---|--------------------|------------------------|
| 8.1 | .15 | 85 | 82.85 |
| 8.2 | .26 | 85 | |
| 8.3 | .08 | 75 | |
| 8.4 | .38 | 85 | |
| 8.5 | .14 | 75 | |
| | | | 82.85 |

Applying the normalized weights of relative importance to the 5 assigned performance scores, and rounding to the nearest integer, leads to a weighted average score for the Principle of:

83

Per SCS protocols, and as this weighted average score is in excess of 80 points, acceptable overall conformance to this FSC Principle is confirmed.

Corrective Action Requests

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|--|---|
| Background/Justification: DoF has yet to develop a procedure for ensuring chain-of-custody of FSC certified logs. For an entity selling only standing timber, the chain-of-custody obligations include: | |
| <ul style="list-style-type: none"> Effectively notifying all purchasers of state forest timber sales that maintaining the FSC-certified status of the procured products requires each owner of the product, from severance at the stump onward, to hold valid FSC-endorsed chain-of-custody certificates; Including IN DoF's FSC FM/COC registration number on timber sale contracts and sale prospectus; Upon request from SCS, making available the following timber sale information: purchaser's name and contact information, species and volume sold, date of sale; Notifying SCS and/or the FSC of any instances when a purchaser of state forest timber (not holding a valid FSC-endorsed chain-of-custody certificate) uses the FSC logo; Maintaining timber sale records for at least 5 years | |
| CAR 2006.7 | Prior to selling wood as FSC certified, DoF must develop and implement a procedure covering the FSC CoC requirements. |
| Reference | <i>Criterion 8.3</i> |
| Deadline | Prior to sale of wood as FSC certified |

1.9 PRINCIPLE #9: MAINTENANCE OF HIGH CONSERVATION VALUE FORESTS

Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

This FSC Principle is elaborated through 4 Criteria that collectively focus on the identification and appropriate management of areas within the defined forest area(s) that possess notable attributes meriting conservation. Such attributes may be ecological or social, in nature. Areas of high conservation value are to be managed so that the defining attributes are maintained or enhanced; focused monitoring must be undertaken with respect to efficacy of HCVF management strategies.

| Standard | Score | Comments |
|--|-------|---|
| C9.1. Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management. | 90 | DoF is in clear conformance with this Criterion. |
| 9.1.a. Attributes and locations of High Conservation Value Forests are determined by: 1) Globally rare, threatened, or endangered features, habitats, or ecosystems that may be present in the forest (suggested sources of information are: The Nature Conservancy, World Wildlife Fund, Conservation International, World Resources Institute); 2) Regionally and locally rare, threatened, or endangered features, habitats, or ecosystems that may be present in the forest; culturally and tribally significant areas; or municipal watersheds that may be present in the landscape and/or certified forest (suggested sources of information include natural and cultural heritage agencies); 3) Appropriate consultations with local and regional scientists and other stakeholders; 4) Public review of proposed HCVF attributes and areas on large-scale and public ownerships (see also 7.4, 4.4.e., 4.4.f.); 5) Integration of information from consultations and public review into proposed HCVF delineation; 6) Delineation by maps and habitat descriptions | | The audit team found that DoF management systems have worked to identify and conserve HCVF. The DoF has stated that on <i>“Indiana State Forests, HCVF are designated as Dedicated State Nature Preserves, areas containing critical habitat for endangered species, Important Bird Areas, and areas that contribute directly to ecological values of Focal Areas as designated by The Nature Conservancy.”</i> In order to communicate DoF’s actions at identifying and maintaining HCVF, a list of specific sites and areas must be developed. Additionally, DoF must establish/clarify the process by which they monitor for new HCVF (CAR 2006.8) |
| C9.2. The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof. <i>Note: At the time that the Lake States Regional Standard was developed, it was the working group understands that this Criterion pertained only to the certifiers and the conduct of the certification</i> | 75 | The state forest open house process and individual consultations, e.g., working with TNC, provide some opportunities for input and review of appropriate information by stakeholders, scientists, and topical experts. However, a more explicit and formal process that focuses on HCVF is necessary. (CAR 2006.8) |

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| <p><i>evaluation. Subsequently, however, FSC issued written guidance in which it was made clear that the certification applicant also has an obligation to engage/consult stakeholders in the definition and identification of what constitutes “high conservation values” in the regional context as well as in the development of management strategies designed to maintain these high conservation values within the working forest.</i></p> | | |
| <p>C9.3. The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.</p> | 85 | DoF is in clear conformance with this Criterion. |
| <p>9.3.a. Forest management plans and activities are appropriate for maintaining, enhancing and/or restoring attributes that make the area an HCVF.</p> | | DoF’s management follows the precautionary approach for areas that qualify as HCVF. We are not aware of activities being taken by DoF that are threatening HCVF. Tract plans and Nature Preserve plans detail management approaches related to Natural Heritage Sites, Natural Areas, cultural sites, and other unique areas. Examples of management actions taken by DoF to maintain HCVF include identification and control of invasive exotics in Natural Areas (in cooperation with Nature Preserve) and protection of Indiana Bat habitat. The Procedure for Natural Areas provides additional guidance for management of these areas. |
| <p>9.3.b. Active management in HCVFs is allowed only when it maintains or enhances high conservation values.</p> | | Management activities ensure that HCVF attributes are maintained. |
| <p>9.3.c. The management-plan summary includes information about HCVF management without compromising either the confidentiality of the forest owner or manager or environmentally and culturally sensitive features (see also sub-Criterion 7.1.f).</p> | | All DoF management documents are publicly available. Management guides for tracts that include HCVF contain information on maintaining that value. Additionally, documents are available that describe management of Nature Preserves. |
| <p>9.3.d. Forest owners or managers of HCVFs (forests and/or stands) coordinate conservation efforts with forest owners or managers of other HCVFs in the landscape.</p> | | DoF is engaged in collaboration with the U.S. Forest Service, U.S. Fish and Wildlife Service, and The Nature Conservancy on HCVF issues. Indiana DNR works cooperatively with both the Blue River Project and the Brown County Hills Project of The Nature conservancy in identifying and acquiring/protecting the ecological values of HCVF located in the TNC Focal areas. |
| <p>C9.4. Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.</p> | 85 | DoF is in clear conformance with this Criterion. |
| <p>9.4.a. Forest owners or managers of small forests may</p> | | Not Applicable |

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| satisfy this requirement with informal observations (see 8.1 and 8.2.). When observations detect changes, the changes are documented. | |
| 9.4.b. Forest owners or managers of mid-sized and large forests monitor activities within and adjacent to HCVPs that may affect HCVP attributes (see Criteria 7.2, 8.1 and 8.2). Monitoring is adequate to track changes in HCV attributes, and may include informal observations. When monitoring detects changes to HCV attributes, the changes are documented. | 20-year tract-level inventories of state forest properties include all lands, both actively and passively managed. A Continuous Forest Inventory system will be established in 2007-9 to continuously monitor forest and non-forest attributes and trends. Expanded monitoring of information designated in criteria and indicators is being developed as part of a Habitat Conservation Plan for Indiana Bat and Grey Bat on Indiana State Forests which is expected to be implemented in 2007. |

Importance Weighted Aggregate Score for Principle 9:

Employing the PAIRWISE algorithm, the evaluation team assigned weights of relative importance for each of the 4 Criteria in this Principle. Under SCS’ accredited protocols, assignment of weights of relative importance is one means by which certification evaluations recognize and incorporate regional and sub-regional circumstances. In this case, the weights were designed to reflect the regional context in which the subject forest management unit is located.

| FSC Principle #9 Maintenance of High Conservation Value Forests | Normalized Relative Importance Weights | Performance Scores | Weighted Average Score |
|--|---|--------------------|------------------------|
| 9.1 | .35 | 90 | 85.66 |
| 9.2 | .11 | 75 | |
| 9.3 | .35 | 85 | |
| 9.4 | .19 | 85 | |

Applying the normalized weights of relative importance to the 4 assigned performance scores, and rounding to the nearest integer, leads to a weighted average score for the Principle of:

86

Per SCS protocols, and as this weighted average score is in excess of 80 points, acceptable overall conformance to this FSC Principle is confirmed.

Corrective Action Requests and/or Recommendations:

Background/Justification: The audit team found that DoF managers, employing management systems, have worked to identify and conserve areas possessing High Conservation Value Forests. The DoF has stated that on *Indiana State Forests*, HCVP are designated as *Dedicated State Nature Preserves, areas containing critical habitat for endangered species, Important Bird Areas, and areas that contribute directly to ecological values of Focal Areas as designated by The Nature Conservancy*. In order to communicate DoF’s actions at identifying and maintaining HCVP, a list of specific sites

| | |
|------------------------------|--|
| and areas must be developed. | |
| CAR 2006.8 | By the 2007 surveillance audit, DoF must compile the list of specific sites and areas classified as HCVF- per the scope of the assessment required by Criterion 9.1. Additionally per Criterion 9.2, DoF must provide explicit opportunities to the public to offer input on identifying, designating, and managing HCVF. Thus, DoF must demonstrate what opportunities have and will occur for the public to nominate HCVF. |
| Reference | <i>Principle 9</i> |
| Deadline | 2007 surveillance audit |

1.11 Controversial Issues

The lack of consultation on developing the 2005-2007 Strategic Plan was highly controversial. See Section B.1.4 (Criterion 4.4) for a detailed discussion on this subject.

2.0 TRACKING, TRACING AND IDENTIFICATION OF FOREST PRODUCTS

At the request of the certification applicant, SCS conducted a joint forest management and chain-of-custody certification evaluation of the defined forest area. Chain-of-custody certification is required throughout the supply chain if downstream purchasers and processors wish to carry forward the certified status of wood products sourced from the DoF. With respect to DoF-administered forests, the chain-of-custody focus is quite narrow, as DoF exclusively sells standing timber. That is, DoF does not have control of the flow of wood products from their forests once the trees have been severed from the stump, by the successful bidder.

In the case of its management of the chain-of-custody obligations will include:

- Effectively notifying all purchasers of DoF-administered timber sales that maintaining the FSC-certified status of the procured products requires each owner of the product, from severance at the stump onward, to hold valid FSC-endorsed chain-of-custody certificates
- Upon request from SCS making available the following DoF timber sale information: purchaser's name and contact information, species and volume sold, date of sale
- Notifying SCS and/or the FSC of any instances when a purchaser of DoF timber (not holding a valid FSC-endorsed chain-of-custody certificate) uses the FSC logo
- Maintaining timber sale records for at least 5 years

2.1 Evaluation of Risks of Mixing Certified and Un-Certified Product

DoF sells timber through an open bid process. DoF needs to explicitly state that timber sold from state forests is FSC certified and include the DoF's FSC registration number on prospectus and timber sale contracts. Once logs are sold, the purchaser of the timber assumes responsibility for the chain-of-custody. The risk of DoF mixing certified and un-certified produce is extremely low.

2.2 Description of the Log Control System

DoF's responsibility for a control system is limited to keeping accurate records of the volumes (by species) of timber/logs sold: purchaser names, locations of timber, date of sale, and certification number of purchaser (if

available). DoF has an affirmative obligation to inform purchasers that they must hold a valid FSC CoC certificate if the wood products are to remain certified.

2.3 End Point of Chain of Custody

DoF's end point for its direct responsibility for controlling the integrity of the certified supply chain is when the trees are severed from the stump, as essentially all timber sales are structured such that the purchaser is responsible for harvesting and removing the trees (in log and chip form) from the forest.

2.4 Visual Identification at End Point of Chain of Custody

Forest FM COC registration number should be added to the timber sale contract and/or sale prospectus. Inclusion of the registration number on trip tickets will also facilitate the downstream chain of custody.

Appendix 1 - Acronyms Used in Report

| | |
|--------|---|
| ATV | All Terrain Vehicle |
| BMP | Best Management Practices |
| CAR | Corrective Action Request |
| CFI | Continuous Forest Inventory |
| CITIES | Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| COC | Chain of Custody |
| DBH | Diameter Breast Height |
| DFC | Desired Future Condition |
| DOF | Division of Forestry |
| FIA | Forest Inventory and Analysis |
| GIS | Geographic Information System |
| HCP | Habitat Conservation Plan |
| HCVF | High Conservation Value Forest |
| IDEM | Indiana Department of Environmental Management |
| IDNR | Indiana Department of Natural Resources |
| IEPA | Indiana Environmental Protection Act |
| ITP | Incidental Take Permit |
| MOU | Memorandum of Understanding |
| NRC | Natural Resource Commission |
| NTFP | Non-Timber Forest Product |
| REC | Recommendation |
| SCS | Scientific Certification Systems |
| SHIPO | State Office of Historic Preservation |
| SWI | State Wide Inventory |
| TNC | The Nature Conservancy |
| TSI | Timber Stand Improvement |
| USDA | United States Department of Agriculture |

Appendix 2 Peer Review Comments & Responses

Peer Reviewer: Stephen R. Shifley, Ph.D.

Research Forester, U.S. Department of Agriculture, Forest Service, Northern Research Station, Columbia, Missouri.

Date of Review: 27 March 2007

I have reviewed the 96-page draft certification evaluation report, *Indiana State Forests Under the Management of INDIANA DNR DIVISION OF FORESTRY* prepared by Scientific Certification Systems, dated December 29, 2006. The draft certification report was based on a scoping meeting July 25-27, 2006, and a field audit conducted October 30-November 3, 2006. The audit team was comprised of Dave Wagner, Michael Ferrucci, Sterling Griffin, Dave Capen, and Fred Hadley. Collectively, the members of the review team had substantial prior experience with FSC certification nationally and internationally; technical expertise in forestry, wildlife, and ecology; and experience with local forest conditions. In preparation for my review of the draft certification report I also reviewed the 58-page “Revised Final Regional Forest Stewardship Standard for the Lake States-Central Hardwoods Region (USA)”, Version LS V3.0 dated February 10, 2005. I have 28 years of research experience related to growth, management, silviculture, ecology, and sustainability of forests in the Central Hardwood Region, including forests in Indiana. I have authored or co-authored more than 100 scientific and technical publications in those areas of forestry.

My review of the draft certification report addresses three areas of emphasis: (1) clarity of the report: how the evaluation was conducted, criteria employed; and data collected; (2) adequacy of the report in clearly conveying the basis for scoring decisions; and (3) appropriateness of the Review Team’s scoring recommendations.

Clarity of the report

The report is well organized, with the public summary (Section A) presented first, followed by details of the assessment and findings (Section B) for use by the Indiana Division of Forestry (DoF). In general, both sections of the report were well written and easy to follow. However, the following changes would improve the clarity of the report.

1. Acronyms are used freely throughout the report and not always consistently. Provide a glossary or appendix defining all acronyms and abbreviations used in the report.

SCS Response: A table of acronyms used has been added in Appendix 1.

2. It is not clear that the “Revised Final Regional Forest Stewardship Standard for the Lake States-Central Hardwoods Region (USA)” will be included with the public portion of the certification report, Section A. That seems to be an essential document to understand and interpret the findings in the report and to evaluate future compliance with FSC standards.

SCS Response: The standard is included as part of the Report in Section B – Detailed Evaluation of Conformance.

3. The draft certification report directly quotes large sections of text from the *Habitat Conservation Plan for Indiana Bat and Grey Bat on Indiana State Forests* to describe the current management context and the management plan (Sections 1.2.1 through 1.4.5) Some of those quotes run over multiple pages and should be offset, italicized or otherwise marked to more readily indicate the extent of the quoted material.

SCS Response: The report has been modified to italicize the text quoted from the HCP.

4. There is no list of literature cited in my copy.

SCS Response: The cited literature is located within the HCP.

5. Figure 3-1 is referenced in the text but not included in my copy.

SCS Response: The reference has been deleted.

6. In the list of Silvicultural Systems (Section 1.4.3) it seems unnecessarily complicated to split pre-commercial from commercial pine thinnings. They share the same management objective. Moreover, whether or not the operation generates income and what constitutes a “commercial” sale will vary over time as markets change. Other silvicultural treatments are not described as commercial or noncommercial.

SCS Response: Comment noted.

7. In the list of Silvicultural Systems (Section 1.4.3) clarify when natural regeneration and/or when artificial regeneration will be used. Presumably the vast majority will be natural regeneration, and that should be clarified to readers, particularly in Section A.

SCS Response: DOF uses both natural and artificial regeneration depending on site conditions and stand management objectives. It is not possible to categorically state which method will be used for each system.

8. I found the tabular summary of stakeholder concerns and SCS responses well organized and easy to follow. Cross links to CARs and other actions were particularly helpful. This added substantial clarity to the numerous and wide ranging stakeholder comments and SCS responses. It is an excellent presentation of complex material.

SCS Response: Comment noted.

9. I was initially confused by the fact that CARs and Major CARs have identical numbers (e.g., 2006.1) and that Major CARs are sometimes referred to as Preconditions. Why not simply refer to the Major CARs as Preconditions in all cases?

SCS Response: Major CARs/Preconditions must be closed before certification is awarded. Other CARs are issued with specific deadlines. Major CARs are identified as such throughout the report.

I offered a number of other editorial suggestions that may improve the clarity of the report through suggested rewordings. I also appended other minor comments directly to the relevant text of the draft report. These can be viewed on the electronic copy of the draft report with “track changes” feature.

Adequacy of the report in conveying basis for scoring decisions

I was not previously familiar with the SCS pairwise weighting scheme and scoring matrices. I think that more reference material on scoring (perhaps external to the report or in an appendix) would be in order. For example, it is unclear to me how the normalized relative weights for a given Principle are determined to 2 digits (e.g., why 0.11 rather than 0.1); it implies a great deal of precision. More information on the grading scale used for performance scores would be helpful, too. For example, it is stated that scoring is on a 100 point scale, but a score less than 80 requires a corrective action. Why is a score of 85 (e.g., C5.6, pg 67) in “clear conformance with this Criterion” and a score of 82 (e.g., C6.1, pg 69) in “marginally adequate conformance with this Criterion”? Virtually all scores in this evaluation were 75 or higher. The grading system comes across like an academic grading system with 80 percent equivalent to C-level work and a C or better required to pass. Is that the intent?

SCS Response: Per SCS protocols, a weighted average score in excess of 80 points demonstrates acceptable overall conformance to the FSC Principle.

I found myself relying primarily on the experience and judgment of the evaluation team because many of the interpretations are subjective. The information on their credentials that was included in the report was essential in helping me understand the experiential basis from which they were scoring this case.

Appropriateness of scoring recommendations

Scores and recommendations for each of the ten principles appear reasonable and appropriate based on my understanding that scores of 80 or higher are indicative of satisfactory achievement. From the material in the report and from my own observations of Indiana DoF relative to other states in the Midwest, Indiana DoF appears to be a conscientious steward of forest resources and generally very conservative in its approach to forest management. The new strategic plan and commitment to FSC certification indicates a well reasoned transition into more active timber management with the strongest possible commitment to sustainable practices. The recommendation for certification subject to the indicated corrective actions appears to be well founded.

The Major CARs, the CARs, and the Recommendations seem appropriate, but I think they need some additional clarification in a few cases. Phase II of Major CAR 2006.2 (pg 43) is not detailed enough to allow me (and presumably others) to understand what is required. For example, Phase II, step 3, could be interpreted as open-ended stake holder input on all proposed DoF actions. Given the wide range of public and professional opinion about DoF management activities, I think it prudent to clarify that Phase II, step 3 refers specifically to stake holder input on the Strategic Plan, assuming that is in fact the intent of Major CAR 2006.2. Major CAR 2006.2 further indicates that upon satisfaction of the listed requirements a minor CAR will be issued that requires completion and implementation of the next Strategic Operational Plan. The CAR description should indicate the

approximate time frame for completing and implementing the next Strategic Operational Plan. Strategic plans are usually long term documents that endure for perhaps 5 or 10 years before being replaced. To avoid any misunderstanding by the DoF or the public, the time frame within which the new Strategic Operational Plan will be required must be clearly specified.

SCS Response: While Phase II, step 3 of Major CAR 2006.2 relates to the development of the new strategic plan, DOF does in fact continuously take public input on management activities. The new minor CAR does contain the time frame for completing and implementing the next Strategic Operational Plan.

Minor CAR 2006.5 stipulates that, “By the 2008 surveillance audit, DoF must (working with partners, if possible) complete a gap analysis to identify needs for samples of representative ecosystems found on state forest lands. ...” That seems like an unreasonably short period of time to do a thorough gap analysis, particularly if coordinated with other agencies and nongovernmental organizations. It makes more sense to (1) require establishment of an approach for that gap analysis and (2) demonstration of reasonable progress in conjunction with other partners by the date of the 2008 FSC review. Doing a thorough gap analysis once while coordinating with multiple partners is complicated, but it is a better approach to conservation of these sites than a rushed approach on DoF properties alone.

SCS Response: Comment noted. DOF has committed to accomplishing this action by 2008 for inclusion in the new 2008-2013 Strategic Plan.

Recommendation 2006.3 states, “DoF should develop standards for coarse woody debris retention ensuring sufficient levels in a diversity of size classes are retained.” Section 5.3a (pg 66) further stipulates, “Adequate quantities and a diversity of size classes of woody debris (considered a reinvestment of biological capital under this criterion—not an economic waste) are left on the forest floor to maintain ecosystem functions, wildlife habitats, and future forest productivity.” That guidance is so vague that it appears to be of little value to those expected to write the standards. For example, it is hard for me to envision that anything contemplated in the current strategic plan would fail to be in compliance with any reasonable standard for coarse woody debris retention. Surely, it is not contemplated that merchantable boles would be routinely left in the woods to ensure coarse woody debris in “sufficient levels in a diversity of size classes are retained.” Recommendation 2006.3 should (a) be linked more explicitly to tangible goals or guidelines; (b) explicitly note the known temporal patterns in coarse woody debris accumulation through sequential stages of stand development following harvest; and (c) take into account the ongoing additions to coarse woody debris from retained snags, from self-thinning of well stocked forests, and from severe weather.

SCS Response: SCS has not issued explicit guidelines to DOF, but rather suggests that DOF create these guidelines and that they be conformance with the FSC standards while taking into consideration the appropriate stand dynamics that influence the development of coarse woody debris.

Recommendation 2006.6 states, “DoF should make a commitment to using prescribed fire when possible, and prepare an operating procedure that guides when and how prescribed fire should be used.” Why, specifically, does the team think DoF should use more prescribed fire? Prescribed fire can provide numerous benefits; for clarity this recommendation needs a stated management or conservation goal that provides a basis for recommending the use more prescribed fire.

SCS Response: It is widely accepted that the use of fire has dramatically influenced the development of the forests found in the Central Hardwood Region. The assessment team is recommending that DOF prepare operating procedures and describe how prescribed fire should be used. The goal of the recommendation is to ensure that fire is used in appropriate ways to accomplish stated conservation goals and objectives.

Peer Review

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May 31, 2007

I am a professor in the Dept. of Forestry and Natural Resources at Purdue University and was contracted by Scientific Certification Systems to conduct a peer-review of the “Forest Management and Stump-to-Forest Gate Chain of Custody Certification Evaluation Report” dated December 29, 2006. The report, prepared by the assessment team,

was based on a preliminary scoping evaluation in July of 2006 and a main evaluation conducted in October/November of 2006. The assessment team was comprised of FSC team leader, Dave Wager, Director of Forest Management Certification for Scientific Certification Systems, Mike Ferrucci, SFI Team Leader and SFI Program Manager for NSF, Sterling Griffin, Certification Forester for Scientific Certification Systems, David Capen, Wildlife Biology and Ecology Research Professor, and Fred Hadley, President of Multi-Resource Management, Inc. In conducting the peer review, I consulted the Regional Forest Stewardship Standard for the Lake States-Central Hardwood Region. As per the reviewer guidelines, the peer review is focused on clarity of the report, adequacy of the report, and appropriateness of the scoring recommendations.

Clarity and Adequacy of Report

The report began with background information on the management context, the forest management enterprise, and the management plan. This portion of the report sufficiently reported background information necessary to understand the context for the certification. Suggestions for these sections are indicated below:

- The land use section of the report (1.3.1 on page 14) contains information on harvesting, timber sale revenue, and recreation. The recreation data would be better suited in the socioeconomic context section of the report and the harvesting and timber sale data could become part of the environmental context.

SCS Response: Comment noted.

- There are numerous citations throughout the report but no reference list is provided. This should be added as an appendix.

SCS Response: The cited literature is located within the HCP.

- In terms of writing style, there were many instances of the phrase “The HCP states...” being used which became repetitive and was often an awkward way to begin many sentences (see p. 9, p. 10, p. 13, p. 14). There is no problem with relevant background information coming from the Habitat

Conservation Plan, but the writing would be clearer and more direct if the HCP was cited parenthetically as the source of that information rather than beginning the sentence with the phrase.

SCS Response: The report has been modified to italicize the text quoted from the HCP.

Next, the report described the certification assessment process, including assessment dates, assessment team, assessment process, results of the evaluation, the certification decision, surveillance evaluations, and a summary of the SCS complaint and appeal investigation procedure.

- For stakeholder consultation (p. 29), it would be helpful to know who facilitated the stakeholder meeting.

SCS Response: As indicated, the entire team conducted the stakeholder meetings. These meetings were not guided by any one particular facilitator.

- The report indicates how many public notices were distributed (p. 30), but it is not clear how many people actually participated in the public meeting held during the full evaluation. It is also not clear whether the public meeting was a group discussion format or how feedback was solicited from those that attended the meeting.

SCS Response: The information has been added to the report.

- It would be useful to know how many people submitted comments as part of the stakeholder process. Participant numbers are only provided for the two-hour focused stakeholder meeting.

SCS Response: This information has been added.

- It was very helpful to have the detailed information on forest tracts visited during the site visits.
- In the “Results of the Evaluation” section of the report (p. 36), should the Major CARS (2006.1 and 2006.2) be listed in Table 4.1?

SCS Response: The Major CARs have been added to Table 4.1.

- For Major CAR 2006.2 which addresses the fatal flaw Indicator 4.4e, a stakeholder input process should be identified in terms of how DoF will ensure broad stakeholder input and how they will utilize information from stakeholders in decisions. (i.e. once input is solicited, how will that input be used in the decision-making process, particularly if there is disagreement among stakeholders or among stakeholders and DoF? Will DoF use a consensus process? A majority process? By what process will the comments be incorporated into the planning process). A well designed and executed stakeholder involvement process is critical in relation to Principle #4. By having clearly defined procedures and educating the public on the specifics related to DoF protocols and procedures for public participation, this issue should be remedied.

SCS Response: DOF has presented the *Commitment to an Improved Process for Detailing Strategic Operational Plans* that outlines the approach for internal and external involvement. This paper describes how DOF will utilize stakeholder input.

The report concludes with detailed results of the full evaluation and tracking and identification of forest products.

- The “Detailed Evaluation of Conformance” section of the report sufficiently explained the standards and the results of the evaluation of DoF.
- Formatting of tables:
 - The formatting of the tables beginning on p. 65, Principle #5 is not consistent with the formatting of the tables preceding. Also, the tables should have the same width.
 - Sometimes table headings were cut off on the page preceding, which made reading some tables difficult.

Appropriateness of Scoring Recommendations

The scores and recommendations for the 10 Principles are sufficiently explained and justified. The major weaknesses related to certification were in relation to stakeholder input and pesticide use (Diquat dibromide). The Major CARS that must be addressed prior to the certification decision are reasonable and necessary based on the information presented in the report. Once the CARS are addressed, there is ample evidence to warrant certification. The DoF has a productive and ecologically rich system of state forests in Indiana and their case for certification under the Forest Stewardship is founded in their performance on the FSC Principles.