

**Summary of Monitoring Changes**  
to  
**Chapter 4 Monitoring, Evaluation, and Research**  
of the  
**Land and Resource Management Plan**  
**Hoosier National Forest**

The Hoosier National Forest has updated our Forest Plan monitoring program to comply with the Forest Service's 2012 Planning Rule. The Forest also took the opportunity to review our existing monitoring program and has made some changes. The following is a summary of the changes that include new questions, questions that have been modified, and questions that were dropped.

**New Questions**

These questions were developed to address monitoring elements specified in the 2012 Planning Rule (36 CFR 219.12) and other items that were not addressed in our existing monitoring program. They will be added to Chapter 4 of the Forest Plan.

**Conservation of Threatened and Endangered Species Habitat**

- Are standards and guidelines for T&E species conservation implemented and effective?
- Are hibernacula conditions changing?

**Maintain and Restore Suitable Ecosystems**

- Are populations of species dependent on late seral habitats stable or increasing?
- Are climate stressors (drought, flooding and storm frequency and/or severity) affecting sustainability?
- Are sulfate and nitrate deposition affecting forest health?

**Maintain and Restore Watershed Health**

- Are roads degrading watershed health and function?

**Protect our Cultural Heritage**

- Are cultural resource sites being identified, evaluated, protected and interpreted?

**Provide for a Visually Pleasing Landscape**

- Are the existing scenic resources meeting or trending toward desired conditions?

**Provide for Recreation in Harmony with Natural Communities**

- Is trail user satisfaction trending up?
- What is the status and trend of visitor use and visitor satisfaction?

**Provide for Human and Community Development**

- Are management activities reducing the wildfire risk to communities?
- Is our conservation and interpretive program reaching a broad audience?

## Modified questions

A number of monitoring questions in the existing program have been modified. For each of the topic, the modified question is listed first, followed by the existing monitoring question. The modified questions will replace the questions currently in Chapter 4.

### Maintain and Restore Suitable Ecosystems

- Are Forest Plan goals for vegetation composition and age class being met?  
Modified from:
  - Is the right mix of even-aged and uneven-aged management being used and in the correct forest types to meet objectives?
- Are populations of species dependent on early successional habitat stable or increasing?  
Modified from:
  - Are even-aged management practices benefiting wildlife species?
  - What are the population trends of management indicator species?
- Are objectives being met through the use of prescribed fire?  
Modified from:
  - What level of prescribed fire should be used to maintain desired fuel levels or mimic natural processes, maintain and improve vegetative conditions, or restore natural processes and functions to ecosystems?
- Are NNIS affecting the sustainability of desired ecosystems?  
Modified from:
  - To what extent is Forest management contributing or responding to populations of terrestrial or aquatic non-native invasive species that threaten native ecosystems?
- Is the trend of undesirable occurrence of fire, insects, disease and other mortality increasing?  
Modified from:
  - Are insect and disease population levels compatible with objectives for restoring or maintaining healthy forest conditions?
- Are forest management systems substantially and permanently affecting the productivity of the land?  
Modified from:
  - Are the effects of Forest management resulting in significant changes to productivity of the land?
- Is ecosystem health maintained or improved?  
Modified from:
  - How will diversity be affected by various mixes of resource outputs and uses? Ensure that the diversity of plant and animal communities is at least as great as that which would be expected in a natural forest and that reductions in diversity are prescribed only where needed to meet overall multiple use objectives.

### Maintain and Restore Watershed Health

- Are priority watersheds functioning properly?  
Modified from:
  - To what extent is Forest management affecting water quality, quantity, flow timing, and the physical features of aquatic, riparian, or wetland ecosystems?

- Are standards and guidelines implemented and effective?  
Modified from:
  - Have the soil and water mitigation and protection measures been effective as applied to all management activities?

#### Protect our Cultural Heritage

- Are project design criteria and mitigation measures being followed during implementation?  
Modified from:
  - Are mitigation and protection measures correctly applied for ground disturbing activities?
- Are cultural resource sites being damaged?  
Modified from:
  - Are heritage resources being damaged by vandalism?

#### Provide for Recreation in Harmony with Natural Communities

- Are forest trails meeting health, safety, accessibility, and maintenance requirements and achieving resource and social objectives?  
Modified from:
  - Is trail use planned and implemented to protect land and other resources, promote public safety, and minimize conflicts, with other users of the NFS lands?
- Are Forest recreation sites and facilities meeting health, safety, accessibility, and maintenance requirements and achieving resource and social objectives?  
Modified from:
  - Consideration of establishment of physical facilities, use regulations, and recreation opportunities responsive to current and anticipated user demands.
- Is wilderness moving toward desired future condition?  
Modified from:
  - Are we limiting and distributing visitor use in wilderness in accord with periodic estimates of the maximum levels of use that allow natural processes to operate freely and so as not to impair the values?

#### Provide a Usable Landbase

- Does public have adequate access to NFS lands?  
Modified from:
  - To what extent is the Forest, in coordination with other public agencies, providing safe, cost effective, minimum necessary road systems for administrative and public use?
- Are land adjustment activities reducing fragmentation?  
Modified from:
  - Does the Forest's land adjustment program support and enhance the Plan's desired conditions and goals and contribute to efficient and effective stewardship?

#### Provide for Human and Community Development

- Are forest product offerings meeting Forest Plan goals?  
Modified from:
  - Have output levels and mixes of goods and services demanded by society changed significantly when compared with those levels projected by the Forest Plan?

## Dropped Questions

The following monitoring questions have been dropped from the existing monitoring program for a number of reasons. Some questions are vague and difficult to determine how to monitor, some the Forest lacked the capacity to monitor in terms of expertise and available funding, some are redundant, and other questions are no longer relevant or provide useful information.

### Program Accomplishments

- Have objectives been met by a quantitative comparison of outputs and services with those projected by the Forest Plan?
- Determine research opportunities, identify State and Private Forestry (S&PF) support and coordinate needs.

### Conservation of Threatened and Endangered Species Habitat

- Monitor effects of management on critical habitat for threatened and endangered species and ensure compliance with recovery plan objectives.
- Monitor the extent Forest management is contributing to the conservation of threatened and endangered species and moving toward short term (10-20 years) and long term (100 years) objectives for their habitat conditions and population trends.
- In cooperation with the USDI Fish and Wildlife Service, track the status of Indiana bats on the Forest by monitoring:
  - Occupied hibernacula to assess changes in population numbers, changes in microclimate, and the effectiveness of protective structures currently in place
  - Habitat use at all sites where Indiana bats are documented on the Forest will be quantified at both the local and landscape level using GIS or comparative software
  - Annual incidental take
- Determine the number of suitable roost trees available on the Forest.

### Maintain and Restore Suitable Ecosystems

- Is this Forest complying with guidance outlined in Forest Plan?
- Has the land suitability classification changed since identified in the Forest Plan?
- To what extent is Forest management controlling undesirable occurrences of fire, insect, and disease outbreaks?
- To what extent is Forest management contributing or responding to air quality effects on ecosystems, human health, or human enjoyment?
- Are harvested lands adequately restocked within 5 years?
- Have there been changes in cave environments?
- Does location and shape of even-aged harvests blend with the natural terrain?
- To what extent are management, natural disturbances, and subsequent recovery processes changing the vegetation composition, special patterns, and structure? Are conditions moving toward short-term and long-term objectives?
- Are appropriate harvest methods, management intensity, and utilization standards being used?
- What is the status of oak and hickory on established regeneration plots dating to 1985 Purdue study?

### Provide for a Visually Pleasing Landscape

- Is the Forest evaluating the visual resource?

Provide a Usable Landbase

- Are temporary roads closed and revegetated within 10 years of contract or permit termination?

Provide for Human and Community Development

- Are there emerging issues, concerns, and opportunities?
- How do actual costs of carrying out planned management compare to cost estimates?
- Are timber sales meeting Forest Plan ASQ?