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# National Best Management Practices Monitoring Summary Report

## Fiscal Year 2013



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## **Fiscal Year 2013**

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Washington, DC

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**Cover photo:** *Taylor Fork Creek, Gallatin National Forest, near Big Sky, MT, by David Scovell, engineer; Rogue River-Siskiyou National Forest. Photo taken in August 2005 in the Madison Range, just west of Yellowstone National Park.*

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## Executive Summary

During fiscal year (FY) 2013, the U.S. Department of Agriculture (USDA), Forest Service monitored Best Management Practices (BMPs) on National Forest System (NFS) lands as part of the new National BMP Program. The agency applies BMPs to protect and maintain water quality on NFS lands. This report summarizes the national results from the first year of the 2-year phase-in period of national BMP monitoring.

In FY 2013, 82 administrative units reported a total of 220 completed evaluations in the interim National BMP Monitoring Database. Administrative units selected BMP sites either randomly for Washington Office and regional office targets or intentionally for other reasons specific to the reporting unit. Interdisciplinary teams comprised of hydrologists, soil scientists, engineers, recreation resource specialists, and other natural resource specialists performed more than half of the evaluations

in the recreation, road, and vegetation resource management areas. As part of the national BMP monitoring program, resource specialists also assessed BMPs for whether prescriptions were implemented as intended and effective in meeting water quality objectives.

Although there are some limitations, this report provides the first summary of results from BMP monitoring under the National BMP Program. Because the National BMP Program managers were still developing the rating system for BMP implementation and effectiveness in FY 2013, these ratings will not be available for reporting until FY 2014.

As a whole, these results demonstrate the agency's commitment to reaching full implementation of a national system of BMP monitoring by the end of the National BMP Program's phase-in period.



One of the interdisciplinary monitoring teams.



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## Introduction

This report reviews the monitoring results of the U.S. Department of Agriculture (USDA), Forest Service National Best Management Practices (BMP) Program conducted across the Nation in fiscal year (FY) 2013. The report also summarizes the findings from BMP monitoring conducted by each national forest and grassland and highlights some of the key findings.

FY 2013 marked the first year of BMP monitoring under the newly-established National BMP Program. With implementation of the National BMP Program in 2012, the Forest Service has reinforced its commitment to protect and maintain water quality and aquatic resources on National Forest System (NFS) lands across the country.

The Forest Service manages 193 million acres of national forests and grasslands, containing approximately 400,000 miles of streams, 3 million acres of lakes, and numerous aquifer systems that provide drinking water for approximately 124 million people (USDA Forest Service 2010). These waters also provide recreational opportunities and habitat for aquatic and riparian

wildlife. Water is a vital resource to the productivity and enjoyment of our national forests and grasslands. Maintaining water quality is a critical component of the Forest Service mission to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

The National BMP Program allows the Forest Service to protect the chemical, physical, and biological integrity of all water bodies on NFS lands. Monitoring and tracking BMPs using a consistent method across all NFS lands demonstrates an agencywide commitment to protect water quality and maintain aquatic resources on NFS lands.

This report provides an overview of the first year of the phase-in period of national BMP monitoring. Because this report is national in scope, it does not address all the monitoring results from specific sites. The report does show, however, where there may be opportunities to improve future BMP monitoring and adaptively manage at the local, regional, and national levels.



Forest Service personnel assess Best Management Practices for a hardened road crossing.



# Background

In an effort to improve efficiency and accountability in management of water quality and aquatic resources, the Forest Service developed the National BMP Program. Under this newly standardized agencywide program, BMPs are used to control nonpoint source pollution consistent with the requirements of the Clean Water Act (CWA) and the U.S. Environmental Protection Agency (EPA), State, tribal, and local water quality programs.

Under the CWA, States and tribes are required to develop a process to identify categories of nonpoint sources of pollution and set forth procedures and methods to control such sources. Every State has a Nonpoint Source Management Program and Plan that describes how BMPs can be used to control levels of nonpoint source pollution. BMPs are often the primary tool for State water quality management, though they may be voluntary or obligatory depending on State law. All national forests and grasslands have adopted BMP prescriptions consistent with or approved by State Nonpoint Source Management Programs (USDA Forest Service 2012(a), p. 7).

Development of the Forest Service National BMP Program began in 2004 and involved numerous Forest Service resource personnel at all levels of the agency and across deputy areas, including NFS, State and Private Forestry, and Research and Development. A new Forest Service land management planning rule in 2012 required the Forest Service Chief to establish a National BMP Program (36 CFR 219.8(a)(4)). The Forest Service modeled the national program after the preexisting BMP Evaluation Program in the Pacific Southwest Region (USDA Forest Service 2012(a), p. v). In an April 2012 letter, the Deputy Chief for NFS initiated the implementation of the National BMP Program.

The Forest Service strategy for controlling nonpoint source pollution on NFS lands involves identifying necessary BMPs, applying locally appropriate BMP prescriptions, monitoring and assessing their implementation and effectiveness, and utilizing results to improve future management activities and adaptive management strategies. By establishing a uniform, objective, and adaptive process for monitoring BMPs, the Forest Service aims to protect water quality at national, regional, and forest and grassland scales. Moreover, consistency will allow data to be aggregated and compared at any of these levels.

The National BMP Program consists of four components: a national set of core BMPs, a guide for monitoring BMP implementation and effectiveness, a data management system,



Interdisciplinary monitoring team assesses Best Management Practices for road maintenance.

and corresponding national direction. The national core BMPs are grouped into 11 categories, 1 for planning and 10 covering resource categories (table 1), that are purposely general and nonprescriptive so that prescriptions can be tailored to meet site-specific needs, water quality protection, and local regulations. These core BMPs are not intended to replace preexisting State and tribal BMPs, but rather to support States and tribes by enhancing compliance with CWA requirements on NFS lands (USDA Forest Service 2012(a), p. vi).

Table 1.—The national core Best Management Practices and their activity-based protocols.

Resource Category	Number of BMP	Number of Protocols
General Planning	3	0
Aquatic Ecosystems	4	2
Chemical Use	6	3
Facilities and Nonrecreation Special Uses	10	4
Wildland Fire	4	2
Minerals	8	4
Rangeland/Grazing	3	1
Recreation	12	9
Road	11	9
Mechanical Vegetation	8	3
Water Uses	6	5
Total	75	42

There are 42 activity-based monitoring protocols in the 10 non-planning resource categories for evaluating the national core BMPs. The monitoring protocols include an implementation and effectiveness process for assessing whether the BMPs were implemented as planned and whether they were effective in meeting water quality management objectives.

The BMP program involves monitoring BMP implementation and effectiveness at randomly selected sites using the activity-based monitoring protocols. Every year, the Washington Office (WO) and regional office (RO) assign each NFS unit a certain number of evaluations to complete; these evaluations are required to meet national targets for randomized BMP monitoring.



Forest Service employee taking field notes during monitoring.

Because the Forest Service uses “programmatic monitoring,” BMPs are not monitored on every project or activity occurring on NFS lands but rather on a representative subset of projects (USDA Forest Service 2012).

The National Best Management Practices for Water Quality Management on National Forest System Lands, Volume 1: National Core BMP Technical Guide (FS-990a) contains the national core set of BMPs to be used as part of the Forest Service National BMP Program. It was published in 2012 as the first volume of guidance for the Forest Service BMP Program. The second volume of guidance (FS-990b), which contains the national BMP monitoring protocols, is currently being finalized. It is expected to be published in 2015.

Results from BMP monitoring are entered into the interim National BMP Monitoring Database. This system stores and retrieves data for both BMP monitoring completed to meet the National BMP monitoring target and BMP monitoring completed using the national BMP monitoring protocols for other forest, grassland, or regional monitoring needs. Data available from these reports are used to summarize the findings from FY 2013 BMP monitoring. Identified deficiencies from BMP implementation and effectiveness monitoring will be used to inform corrective action needs and adaptive manage strategies.

Another important component of the National BMP Program is the National Directives System. Directives are needed to meet the requirements of the new planning rule (36 CFR 219.8(a)(4)) and mandate implementation of the National BMP Program. In May 2014, proposed directives, including a revised Water Quality Management manual (FSM 2532) and new BMP Program Handbook (FSH 2509.19), were published in the Federal Register for public review and comment. The public comment period closed in August 2014; comments will be addressed and the policy will soon be finalized. For current updates on the status of the proposed policy, visit the National BMP Program Internet site at <http://www.fs.fed.us/biology/watershed/BMP.html>.

The collected data from FY 2013 BMP monitoring demonstrate the Forest Service’s commitment to land stewardship and the integrity of the Nation’s waters located within or near the national forests and grasslands.

# Objectives

The primary objective of this report is to provide an overview of the first year of the phase-in period of national BMP monitoring. This summary will identify the successes of this first year of BMP monitoring and identify opportunities where BMP monitoring can be further improved.

With this report, the Forest Service intends to further build trust between the agency and its partners by showing transparency, accountability, and commitment to protection of water quality and aquatic resources through BMP monitoring.

Table 2.—Total evaluations completed by region. Best Management Practices sites were selected randomly for Washington Office and regional office targets or intentionally for other reasons specific to the unit.

Region	Total Administrative Units That Completed Monitoring	National Target Evaluations	Other Project Evaluations	Total Evaluations
Northern	6	8	1	9
Rocky Mountain	10	18	10	28
Southwest	9	15	1	16
Intermountain	9	18	0	18
Pacific Southwest	12	17	0	17
Pacific Northwest	15	58	16	74
Southern	11	21	0	21
Eastern	10	12	7	19
Alaska	2	5	13	18
Total	84	172	48	220



Forest Service employee assessing Best Management Practices implementation and effectiveness for ski run operation and maintenance.



# Results

The following results reflect the data reported in the interim National BMP Monitoring Database from FY 2013. The data include information about the number of evaluations completed based on project purpose (WO/RO target accomplishment or other reason), resource area, and type (implementation and effectiveness).

During FY 2013, 82 administrative units across the Nation completed BMP monitoring. These units reported their BMP monitoring into the database for 220 evaluations, 172 of which were for WO/RO targets and 48 were for other projects (table 2).

Table 3 displays the number of BMP evaluations completed for each of the 10 nonplanning resource areas. These resource areas encompass the 42 activity-based protocols covering one or more of the 75 national core BMPs. The most frequently used activity-based protocols are shown in table 4.

Table 3 also indicates the most commonly used activity-based protocols during FY 2013. These include road management, vegetation management, and recreation management. There were 43 evaluations for assessing recreation management, 50 for road management, and 48 for vegetation management. Figure 1 illustrates the percentages of BMP evaluations by

Table 3.—Number of evaluations completed during fiscal year 2013 for each of the 10 nonplanning resource areas.

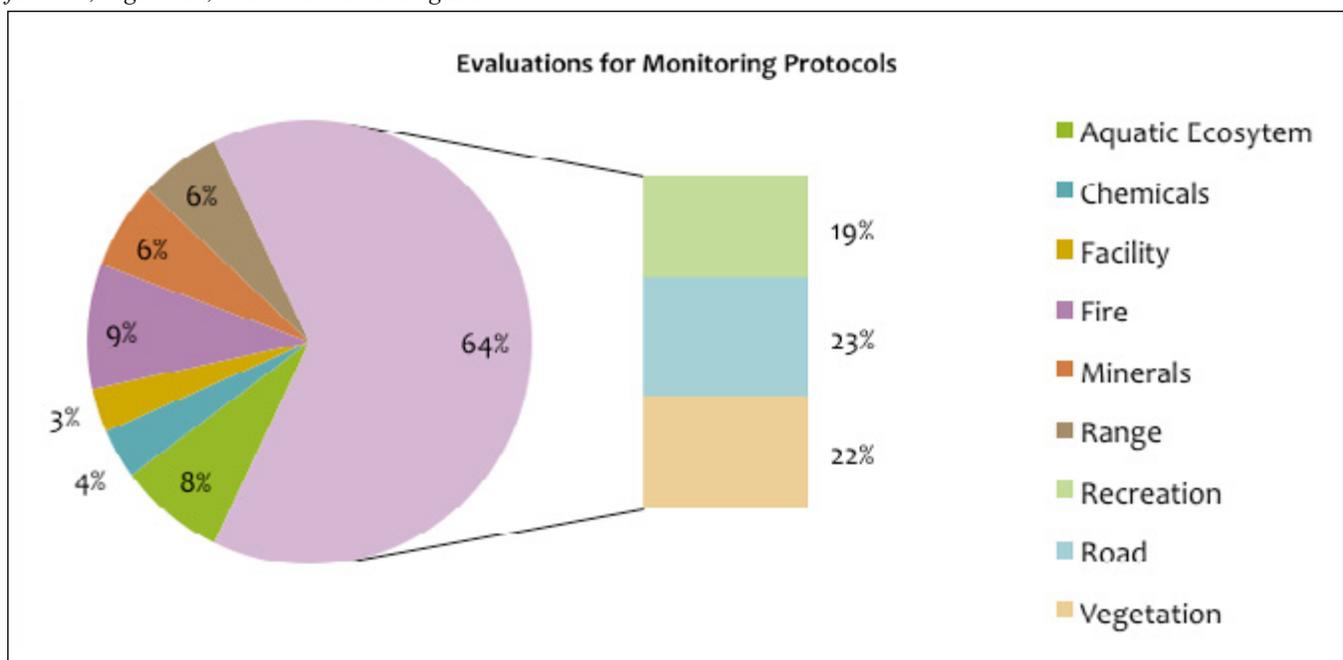
Resource Area	Number of Evaluations
Aquatic Ecosystem	17
Chemicals	8
Facility	7
Fire	20
Minerals	14
Range	13
Recreation*	43
Road*	50
Vegetation*	48
Water Uses	0
Total	220

\* Most evaluated resource.

Table 4.—Most frequently used activity-based protocols.

Type of Protocol	Number of Evaluations	Description
Veg-A	37	Ground-based skidding and harvesting
Road-D	14	Maintenance level 1; stored roads
Fire-A	13	Use of prescribed fires
Range-A	13	Grazing and livestock management

Figure 1.—Percentage of evaluations completed by resource area. Of all resource areas, the majority of evaluations were completed for road, vegetation, and recreation management.



resource area and shows the number of evaluations for these three resource areas, representing well over half of the evaluations.

The BMP Monitoring Database also includes the number of evaluations completed for implementation and effectiveness. The available data indicate that there were 28 evaluations for implementation only, 18 for effectiveness only, and 192 for both implementation and effectiveness (table 5). Units monitored a total of 238 land and resource management activities. The inconsistency between this total and the total number of evaluations in table 2 and table 3 is explained by incomplete evaluations entered into the database in this first phase-in year of monitoring and reporting.

As previously noted, 2013 was part of the phase-in period of the National BMP Program. As such, information in the BMP monitoring database reflected a need to improve data collection

and input. National BMP Program leadership therefore provided training to field resource specialists throughout the country on BMP assessment protocols, forms and data entry in FY 2014. Additionally, BMP monitoring protocols and forms were revised to include clarifying language based on input from field resource specialists who have been conducting BMP monitoring during the phase-in period. A rating system was added to the interim National BMP Monitoring Database as a tool for evaluating whether BMPs were properly implemented and how well the applied BMPs protected water and aquatic resources on a national, regional, or forest and grassland scale. Since the new rating system is not compatible with the previous versions of BMP monitoring forms, the Forest Service cannot fully determine the success of BMP implementation and effectiveness during the FY 2013 phase-in period. As a result, neither the rating scores nor the corrective action evaluations are included in this report. Overall, the reporting of 220 evaluations during the phase-in period of the National BMP Program demonstrates the agency’s continuing efforts to monitor BMPs using nationally standardized protocols.

Finally, a National BMP Program Interim Database User’s Guide was created to guide users through the data input and querying functions. This is expected to improve data reliability.

Table 5.—Types of Best Management Practices monitored.

Evaluation Type	Number of Evaluations
Implementation	28
Effectiveness	18
Both	192
Total	238



Interdisciplinary monitoring team conducting Best Management Practices implementation and effectiveness monitoring for a recently installed footbridge.

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## Discussion

Although BMP monitoring is not new to the Forest Service, prior to adoption of the national program, each Forest Service region monitored BMPs using separate methods and techniques. In addition, there was little consistency between the ways each administrative unit documented its BMP monitoring on NFS lands. The National BMP Program has addressed this issue by providing a foundation for water quality protection on NFS lands and facilitating a systematic approach to BMP monitoring (USDA Forest Service 2012(a), p. 2).

The National BMP Program is still under development. In FY 2013, the national forests monitored BMPs using consistent methods; however, the rating system for implementation and effectiveness was still in draft form. Thus, the results from

FY 2013 demonstrate progress implementing standardized BMP monitoring protocols across management areas. Future results will demonstrate how well the agency implemented BMPs and how effective the agency was at protecting water quality and aquatic resources. The current results show that the Forest Service is committed to improving: (1) monitoring and documentation of BMP implementation and effectiveness; (2) water quality and aquatic resources; (3) relationships with EPA, States, and the public; (4) the agency's ability to demonstrate results in watershed management; (5) the agency's ability to use adaptive management in resource planning and project implementation; and (6) National Environmental Policy (NEPA) analyses and compliance with other Federal laws (USDA Forest Service 2012(a), p. v).



Interdisciplinary monitoring team conducting Best Management Practices implementation and effectiveness monitoring for a commercial timber sale.

Results from FY 2013 BMP monitoring show that the Forest Service is actively working to provide consistent data through the National BMP Program. These data indicate that the agency is starting to use the national core BMPs. Moreover, BMP monitoring data can now be aggregated and compared on a national, regional, or forest and grassland scale.

A national overview indicates that of the 220 total evaluations submitted into the database, most were for recreation, road, and vegetation management (table 3). The most frequently used

activity-based protocol forms were for ground-based skidding and harvesting, road maintenance level one, use of prescribed fires, and grazing and livestock management (table 4). These three resource areas and four protocols are likely to be emphasized in the future as they are among the most common activities undertaken on NFS lands.

Despite the lack of conclusive information from FY 2013 BMP monitoring, there is enough data to conclude that the National BMP Program is on its way to meeting its objectives.



Best Management Practices implementation and effectiveness monitoring of a vegetation management project.

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## Conclusion

During FY 2013, the Forest Service initiated implementation of BMP monitoring under its new National BMP Program. The results from this first year of BMP monitoring demonstrated outcomes expected of a program's phase-in period. There were some inconsistencies in data reporting that may not reflect the accurate totals of completed evaluations. The small differences between these figures, however, are not significant in recognizing the accomplishment of adopting a new, nationally consistent approach to BMP monitoring.

The first year of monitoring has shown the agency where program implementation can be improved in the future. Currently, the Forest Service is addressing deficiencies in data reporting from FY 2013. As previously noted, protocols and rule sets for assessing project implementation and effectiveness have been refined based on input from resource specialists and monitoring results. Furthermore, additional training in the form of videos and guided sessions are being provided to improve BMP monitoring procedures.

The use of a national core set of BMPs and monitoring protocols has allowed the data from the interim National BMP Monitoring Database to be aggregated into the national, regional, and unit levels used for this report. The results reveal that the agency is capable of implementing and monitoring BMPs using a national program. In the past, BMP monitoring focused on timber sales and associated roads (USDA Forest Service 2012(a), p10). But, now with the inclusion of other activities, the Forest Service can consistently monitor BMPs for most ground-disturbing activities on NFS lands.

It is important that the Forest Service continues to monitor the implementation and effectiveness of BMPs. With sustained monitoring, the agency can ensure long-term protection of water quality and aquatic resources. The phase-in period of the National BMP Program is a new chapter in the Forest Service's commitment to water stewardship.

For more information, visit the National BMP Program Internet site at <http://www.fs.fed.us/biology/watershed/BMP.html>.



Interdisciplinary monitoring team discussing Best Management Practices implementation and effectiveness of a recently constructed trail bridge and approach.



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