USDA
United States Department of Agriculture

OFFICE OF INSPECTOR GENERAL

OIG reviewed FS' management and administration of the agency's Watershed Condition Framework.

WHAT OIG FOUND

The Forest Service (FS) issued the Watershed Condition Framework (Framework) in 2011 to create a cohesive strategy for prioritizing and performing restoration work on watersheds throughout the agency's forests and grasslands. However, Washington Office (WO) staff did not develop and implement management controls to adequately oversee Framework activities completed by field staff. Field staff developed and executed plans for restoration activities, but WO did not ensure those decisions were reviewed and approved appropriately, and they did not develop an official means for storing plans and approvals. In addition, WO did not develop methods to track activities and costs for completion or accuracy. Without sufficient management controls, FS cannot demonstrate that the Framework is implemented as intended. FS, therefore, does not have an appropriate level of assurance that the watersheds managed by the agency are efficiently maintained or improved.

Additionally, FS' methodology for measuring and reporting its performance towards watershed restoration in its Annual Performance Reports (APR) did not accurately portray the number of watersheds that actually moved into an improved condition class. Rather, FS counted the number of watersheds in which all restoration projects were completed, which is commendable. However, using this methodology does not communicate accurate data to stakeholders.

FS officials concurred with our findings and recommendations, and we accepted management decision on all seven recommendations.

OBJECTIVE

Our objective was to assess the Framework since its implementation in 2011. FS uses the Framework to evaluate the condition of watersheds and prioritize watersheds for restoration or maintenance. In addition, we evaluated FS' internal controls to ensure that watersheds were correctly identified and prioritized for restoration funding.

REVIEWED

We reviewed policies, internal control procedures, and reports for the Framework at WO and visited the Siuslaw National Forest. We conducted our fieldwork from February to November 2016.

RECOMMENDS

FS should develop and implement controls for reviewing and approving Framework plans and monitoring costs and projects' status. The agency should also obtain appropriate approval to revise the watershed key performance indicator to ensure accurate reports of restoration efforts and outcomes in APRs.

United States Department of Agriculture

Office of Inspector General

Washington, D.C. 20250

DATE: July 13, 2017

AUDIT
NUMBER: 08001-0001-21

TO: Thomas L. Tidwell
             Chief
             Forest Service

ATTN: Antoine Dixon
             Chief Financial Officer

FROM: Gil H. Harden
             Assistant Inspector General for Audit

SUBJECT: Forest Service Watershed Management

This report presents the results of the subject audit. Your written response to the official draft report, received on April 26, 2017, is included in its entirety at the end of this report. Your response and the Office of Inspector General's (OIG) position are incorporated into the relevant sections of the report. Based on your written response, we are accepting management decision for all audit recommendations in the report, and no further response to this office is necessary.

In accordance with Departmental Regulation 1720-1, final action needs to be taken within 1 year of each management decision to prevent being listed in the Department's annual Agency Financial Report. For agencies other than the Office of the Chief Financial Officer (OCFO), please follow your internal agency procedures in forwarding final action correspondence to OCFO.

We appreciate the courtesies and cooperation extended to us by members of your staff during our audit fieldwork and subsequent discussions. This report contains publicly available information and will be posted in its entirety to our website (http://www.usda.gov/oig) in the near future.

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Background and Objectives

Background

The Secretary of Agriculture has stated, "clean, healthy forests are vital to our efforts to protect America's freshwater supply," and "our nation's economic health, and the health of our citizens, depends on abundant, clean, and reliable sources of freshwater."[1] The Forest Service (FS), an agency within the Department of Agriculture (USDA), manages over 193 million acres of forests and grasslands, which encompass watersheds[2] that supply approximately 20 percent of the United States' clean water.[3] These watersheds provide water for domestic, agricultural, industrial, and recreational uses, and are a crucial habitat for threatened, endangered, and sensitive aquatic species.

In 2006, the Office of Management and Budget (OMB) reported, "FS lacked a nationally consistent approach to prioritizing watersheds for improvement" because its approach for evaluating and tracking the conditions of watersheds was vague and open to interpretation. OMB also noted that FS employed vague directions for tracking watersheds' condition class, which were open to varied interpretation, and were insufficient to consistently evaluate watershed condition or track how the condition changed over time.[4]

FS created the National Watershed Condition Team in response to that report. This team was charged with the responsibility to "develop a consistent, science-based approach, to classify the condition of all National Forest System (NFS) watersheds and to develop outcome-based performance measures for watershed restoration." As a result, in 2011, FS issued the Watershed Condition Framework (Framework) as its tool for enacting the comprehensive approach needed to proactively implement integrated restoration on priority watersheds on national forests and grasslands.[5]

The Framework supplied a means for FS to achieve its goal to protect NFS watersheds by implementing practices designed to maintain or improve watershed condition:

- Establish a systematic process for determining watershed condition class that all national forests could apply consistently,
- Foster integrated ecosystem-based approaches for managing watersheds and aquatic resources,

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[1] USDA News Release, *Agriculture Secretary Vilsack Introduces a Framework and Map to Improve the Health of America's Watersheds*, June 3, 2011.

[2] A watershed is an area of land that catches rainfall and other precipitation and funnels it into a marsh, stream, river, lake, or groundwater. Watersheds include streams, lakes, and shallow aquifers that store and convey the water, as well as the land surfaces from which water drains and the aquatic ecosystems that they support.

[3] FS "By the Numbers," November 2013, http://www.fs.fed.us/about-agency/newsroom/by-the-numbers.

[4] Program Assessment, Forest Service: Watershed, Office of Management and Budget. http://www.whitehouse.gov/omb/expectmore/summary/10003029.2006.html. (August 4, 2010).

[5] *Watershed Condition Framework,* FS-977, May 2011.

- Strengthen the effectiveness of the FS to maintain and restore the productivity and resilience of watersheds and the associated aquatic systems on NFS lands,
- Improve the internal dialogue among disciplines[6] to focus and integrate programs of work to efficiently maintain and restore watersheds and aquatic ecosystems,
- Enable a coordinated and priority-based approach for allocating resources to restore watersheds,
- Enhance coordination with external agencies and partners[7] in watershed management and aquatic species recovery efforts, and
- Improve national-scale reporting of watershed condition.[8]

Prior to development of the Framework, FS focused its efforts to restore watersheds on narrow areas of treatment, such as cleaning stream segments. With the development of the Framework, FS officials currently focuses attention on prioritizing watersheds for restoration, then identifying and implementing processes that treat an entire watershed to completion before moving to the next watershed project. FS officials consider this approach a paradigm shift of agency policy regarding watershed restoration that will make it possible to reestablish the structure and function of an ecosystem to a close approximation of its original condition before human disturbance.

FS developed and implemented a six-step process to assess watershed conditions on NFS land. FS officials designed the process to determine the condition of watersheds, prioritize watershed restoration efforts, identify projects (and develop action plans) needed to improve class condition, implement the projects, verify the process, and monitor outcomes. The six-step process includes:

> **Step A:** Classify the condition of watersheds,
> **Step B:** Prioritize watersheds for restoration,
> **Step C:** Develop Watershed Restoration Action Plans (WRAPs),
> **Step D:** Implement integrated projects in priority watersheds,
> **Step E:** Track restoration accomplishments for performance accountability, and
> **Step F:** Verify accomplishment of project activities and monitor improvement of watershed conditions.[9]

"Watershed condition" refers to the state of the physical and biological characteristics and processes within a watershed that affect the soil and hydrologic functions supporting aquatic ecosystems. Properly functioning watersheds are referred to as "healthy watersheds."[10]

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[6] "Disciplines" refers to FS personnel who work on different aspects of watershed restoration.
[7] Partners can consist of State and local governments, nonprofit organizations, corporations, and special interest groups.
[8] *Watershed Condition Framework,* pg. 3, FS-977, May 2011.
[9] *Watershed Condition Framework,* pg. 5, FS-977, May 2011.
[10] *Watershed Condition Framework,* pg. 3, FS-977, May 2011.

FS, through the Framework, divided watershed conditions into three classes relating to the degree or level of watershed functionality or integrity:

> Class 1 (1.0–1.6) = Functioning Properly,
> Class 2 (1.7–2.2) = Functioning at Risk, and
> Class 3 (2.3–3.0) = Impaired Function.[11]

FS has assessed and classified over 15,000 watersheds in NFS. Agency staff used 12 core indicators (and associated attributes) to assess watershed conditions.[12] They entered the watersheds' attribute scores into the Watershed Classification and Assessment Tracking Tool (WCATT),[13] which categorized the watersheds into one of the three condition classes based on the assessment scores.

Since initial classification, FS has selected 356 watersheds as priority for restoration. Officials in the FS Washington Office (WO) assigned the task of identifying and selecting watersheds to be designated priority status for restoration to FS officials in each applicable national forest. The selection of priority watersheds was based on factors such as national and regional restoration strategies, costs of restoration, and non-Federal governmental partnership opportunities.

For each priority watershed, FS staff in the national forests develop a WRAP that identifies specific projects necessary to improve its condition. Teams at each national forest identify the essential projects to include in a WRAP, and FS officials review and approve them. Once approved, FS officials competitively select contractors, enter into partnership agreements,[14] and use other techniques to complete work on the projects listed in the WRAPs. According to the Framework, a watershed is considered moved "to an improved condition class when the essential projects listed in a WRAP are complete."[15]

FS does not receive funding specifically allocated for the Framework. Instead, the agency uses funds already available within multiple budget line items. The restoration of a watershed generally involves multiple national forest resources that interact with the watershed, such as vegetation, roads, the impact of climate change, timber, and wildlife. FS has developed budget line items for many programs, but it does not have one identified directly for watershed restoration efforts. Overall, FS uses funds from over 20 different budget line items to maintain and restore the condition of watersheds. In general, FS WO officials distribute funding to each regional office, which then allocates it to the individual national forests. Each individual forest then uses these funds as needed to complete projects, including those for the priority watersheds within its forest.

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[11] *Watershed Condition Framework,* pg. 4, FS-977, May 2011.
[12] Indicators included attributes such as water quality, aquatic habitat, soils, and forest health to assess watershed conditions.
[13] The WCATT is an application that supports the Framework by providing a nationally consistent approach for recording watershed conditions.
[14] Partnership agreements are voluntary, mutually beneficial arrangements entered into with an individual or entity that desires to cooperate with FS on a project for accomplishing mutually agreed upon objective(s).
[15] *Watershed Condition Framework,* pg. 16, FS-977, May 2011.

The ability of FS to improve watershed condition is contingent on many factors, including the percentage of FS' ownership of the land,[16] ownership location, location and extent of restoration work that is needed, and the availability of nongovernmental partnerships to help facilitate projects. The size of the watershed is one important factor: the smaller the watershed, the more likely the progress of restoration projects will result in a change in watershed conditions. FS officials chose the sixth-level hydrologic unit[17] code as the base for tracking improvement to watershed conditions because those watersheds were, on average, 10,000 to 40,000 acres in size.[18] The next level code includes watersheds that could be up to 200,000 acres, which, due to size, require more resources, funding, and time to implement positive change to the condition of the watersheds and could involve a higher proportion of non-FS managed lands.

FS estimates that it takes 5 to 6 years on average to implement the set of essential projects needed to restore a complex watershed to an acceptable condition. The period of the restoration process starts from watershed analysis and ends upon completion of the action plan.[19] When FS staff complete an action plan for a watershed, they prepare an accomplishment report that describes the completed restoration efforts and enter the report into the WCATT system.

FS uses the Watershed Improvement Tracking (WIT) application to manage data, observations, and planning details about sites that need to be (or have been) restored or improved to the benefit of watershed and aquatic ecosystem health and function. The application tracks watershed restoration activity that addresses site conditions, administrative plans and actions, and outcomes. Biologists and hydrologists are the primary users of WIT, but reports from WIT provide raw or summarized information valuable for project leaders, program managers, and public relations staff.[20]

Achievement of USDA's strategic goals for watershed restoration relies on the Framework and a key performance indicator: the number of watersheds moved to an improved condition class. That goal says that USDA will "ensure our national forests and private working lands are conserved, restored, and made more resilient to climate change, while enhancing our water resources."[21] The restoration of watershed and forest health is a core management objective of the national forests and grasslands under the USDA Strategic Plan.[22] According to that plan, by 2018, 54 percent of national forest watersheds are to be functioning properly.[23] [24]

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[16] FS does not always own all the land where a watershed is located; many watersheds are located on State, tribal, or privately owned areas.

[17] A hydrologic unit is the source area of land contributing surface water, beginning upstream, to a specific outlet point on a river, stream, or similar surface waters. These are then divided and sub-divided into successively smaller hydrologic units, which are referred to as "levels."

[18] *Watershed Condition Framework,* pg. 11, FS-977, May 2011.

[19] *Watershed Condition Framework,* pg. 17, FS-977, May 2011.

[20] USDA Forest Service Natural Resource Manager, http://www.fs.fed.us/nrm/index.shtml, November 8, 2016.

[21] *United States Department of Agriculture (USDA) Strategic Plan FY 2014-2018*, pg. 16, Strategic Goal 2.

[22] *United States Department of Agriculture (USDA) Strategic Plan FY 2014-2018*, pg. 18, Strategic Goal 2; Objective 2.1.

[23] *United States Department of Agriculture (USDA) Strategic Plan FY 2014-2018*, pg. 16, Strategic Goal 2.

[24] As of the end FY 2015 (FS' most recent data), 52.2 percent of the national forest watersheds were functioning properly.

The Framework serves as a foundation and guide for identifying factors impacting a watershed's condition, determining the overall condition of a watershed, and identifying those priority watersheds on which to focus restoration efforts. The associated performance measure reflects not only work implemented within a given year, but represents the culmination of integrated, watershed-based work that started with implementation of the Framework and development of associated WRAPs.[25]

Objectives

Our objective was to assess the Framework since its implementation in 2011. FS uses this Framework to evaluate the condition of watersheds and prioritize watersheds for restoration or maintenance. In addition, we evaluated FS' internal controls to ensure that watersheds were correctly identified and prioritized for restoration funding.

We did not assess Step F of the Framework as part of this audit. Step F is a two-tiered approach to verify and monitor watershed conditions, which FS initiated in October 2015. Because Step F was initiated approximately just five months before fieldwork for this audit, we plan to review its implementation as part of a future audit.

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[25] *United States Department of Agriculture (USDA) Forest Service Fiscal Year 2017 Budget Justification* (February 2016), Section: Overview.

Section 1: FS' Management Controls and Oversight of the Framework

Finding 1: FS' Washington Office Lacked Management Controls over the Framework

Although the Framework has been issued since 2011, we concluded that FS WO officials had not developed and implemented management controls to adequately oversee Framework activities completed by FS field staff. Field staff made decisions about which watersheds to prioritize, but WO did not ensure those decisions were reviewed and approved appropriately and did not develop official means for documenting plans and approval. Methods for tracking activities and costs were not reviewed for completeness and accuracy. Without sufficient management controls, FS cannot demonstrate that the Framework is implemented as intended. FS, therefore, does not have an appropriate level of assurance that the watersheds managed by the agency (which supply 20 percent of the United States' clean water) are efficiently maintained or improved.

OMB Circular A-123 states that management is responsible for developing and maintaining effective internal control and establishing the organizational structure necessary to enable the entity to plan, execute, control and assess the organization in achieving its objectives. It also states that management must develop the overall responsibilities from the entity's objectives that enable the entity to achieve its objectives and address related risks. Finally, monitoring is one of the five standards of internal control and should occur in the normal course of business.[26]

The Framework is meant to help FS oversee activities connected with watershed health and restoration using a consistent, nationally unified approach. It describes six steps that standardize the process FS officials use to identify "priority" watersheds, implement action plans and restoration projects, track outcome-based program accomplishments, and monitor the implementation of the Framework and effectiveness of the improvement activities.[27]

We evaluated the implementation and functionality of the Framework and agency oversight of field staff actions.[28] The Framework allows the field staff at national forests to use discretion to make informed choices about which watersheds to prioritize for restoration. At the time of our fieldwork, FS had categorized 356 watersheds (out of over 15,000) as "priority" watersheds.[29] However, WO did not have management controls to assess and approve these field staff actions. Without these controls, FS cannot adequately assess the effectiveness and full impact of the Framework.

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[26] OMB, *Management's Responsibility for Internal Control*, Circular A-123 (Dec. 21, 2004).

[27] *Watershed Condition Framework,* pg. 1, FS-977, May 2011.

[28] We did not assess Step F of the Framework as part of this audit. Step F is a two-tiered approach to verify and monitor watershed conditions, which FS initiated in October 2015. We plan to review its implementation as part of a future audit.

[29] Watersheds are prioritized for restoration based on factors such as national and regional restoration strategies, costs of restoration, and nonfederal governmental partnership opportunities.

The Washington Office Did Not Ensure Framework Activities Were Approved

To ensure the Framework achieves its objectives, WO should have developed controls to assess and approve actions taken by field staff on prioritized watersheds. However, as we reviewed the 356 WRAPs and other documentation, we determined that field staff operated with plans that were not fully vetted from beginning to end. For example, WO did not establish a process for reviewing and approving the national forests' selections during the second step of the Framework (*Prioritize Watersheds for Restoration*). None of the 356 selections were reviewed by a higher FS official who could confirm the choices. Without an approval process and documented rationale, FS has limited assurance that the agency made appropriate choices when selecting watersheds for restoration.

Step 3 of the Framework requires the development of a restoration plan (*Develop Watershed Restoration Plans*). We found that at least 98 of 356 WRAPS[30] either did not have the signature of a reviewer, or the signatory had the title of the person who normally prepares the document. FS said that since WRAPs are not decision documents, official signatures are not needed.

According to the Framework, after essential projects have been identified, the "appropriate line officer"[31] should review the planning team's[32] project recommendations.[33] Because field staff did not document these reviews and WO did not monitor the process, FS cannot ensure that they were completed. This reduces assurance that selected restoration projects are appropriate for those watersheds and funds are used effectively.

When we reviewed the use of funds for watershed restoration projects, we found that WO did not fully track individual project costs. We reviewed reports generated by WIT (the system FS uses to store and analyze data about watershed restoration activities) and determined that financial data had not been entered into the system, even though WIT has the capability to track costs.[34]

FS officials said that they did not track costs because they focused on the end product (the number of watersheds moved to the "improved condition" class), and they did not think it was necessary to overburden field personnel with this additional responsibility. As a result of this decision, FS cannot accurately account for funding for Framework activities or perform a cost-benefit analysis to ensure activities are cost effective and funds are effectively used.

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[30] Not all 356 had a WRAP for our review, and some titles were illegible.
[31] Line officers may be national forest supervisors, unit supervisors, or district rangers.
[32] WRAP development teams are composed of national forest staff.
[33] *Watershed Condition Framework,* pg. 16, FS-977, May 2011.
[34] FS does not require the collection and storage of cost information to be placed in WIT.

In addition, we also found that FS officials did not require nor fully maintain documentation of the watershed assessment scores. As a result, they could not confirm all the attribute ratings used to calculate the condition class of each priority watershed. The ratings, which FS field personnel manually entered into WCATT, were not verified for accuracy. Without quality assurance checks, the classification numbers generated by WCATT could be inaccurate. Inaccurate watershed calculations can lead to a misrepresentation of the percentage of watersheds in condition Class 1 (functioning properly), which could impact FS' progress towards supporting USDA's Strategic Goal, which is to contribute to clean and abundant water by protecting and enhancing water resources on national forests and working lands (See Finding 2).

Framework Documents Had Missing or Incomplete Information

As we conducted our review of Framework documents, we found files with incomplete information and several instances where documents were missing altogether. For example, when reviewing the WRAPs, we found six instances where national forests had prioritized specific watersheds for restoration but did not provide the reasons for the selection.[35] In fact, we found that 55 out of 356 priority watersheds did not have a WRAP filed in WCATT. FS reported that seven of those watersheds had completed essential restoration projects, but the WRAP was not on file. Four of those seven did not have an accomplishment report in WCATT either.[36] We acknowledge that some of those missing WRAPs may still be in development (the planning phase can take over 3 years to complete), but we noted that 39 of the 55 missing WRAPs were identified as "priority" watersheds in 2013 or earlier.

Since WRAP information is available to the public, FS must keep WCATT updated with plans and accomplishments. Without up-to-date information, FS also does not have accurate documentation of successful restoration projects and completion status.

When we identified the lack of management controls across the Framework, FS officials stated they consider the Framework as a guideline. Instead of monitoring Framework activities, they focused on the final results (the number of watersheds moved to an improved condition). However, we maintain that the absence of sufficient management controls limits FS' ability to demonstrate that the Framework has been implemented as intended and that watersheds are efficiently maintained or improved. Therefore, we believe that FS needs to increase its oversight of the Framework by reviewing and approving selection of priority watersheds, monitoring costs for completing watershed projects, ensuring WRAPs are reviewed and approved, and developing a methodology to ensure that scores used to generate the condition class for priority watersheds are accurate.

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[35] We did not assess the rationale for selection in this audit, but focused on management controls for the Framework itself. We plan to review the prioritization of specific watersheds for restoration by national forests as part of a future audit.

[36] Accomplishment reports describe outcomes and results of completed watershed restoration projects.

Recommendation 1

Develop and implement policy to review the approval and selection of priority watersheds, and the Watershed Restoration Action Plans (WRAPs) associated with them, to ensure an appropriate watershed selection process was followed, and that all necessary essential projects are listed.

Agency Response

In its April 26, 2017, response, FS concurred with this recommendation. A letter will be sent from the Chief's Office emphasizing the need and importance of documenting new priority watershed selection rationale in WCATT. The letter will also include new guidance that Forest Supervisors should sign new WRAPs. The Forest Supervisor signature signifies approval of the priority watershed and the validity of the planned essential projects. In addition, the verification of this process step will be included as part of annual WCF Tier 1 (Implementation) Monitoring performed by the WO. The estimated completion date is October 1, 2017.

OIG Position

We accept management decision for this recommendation.

Recommendation 2

Review and approve all priority watersheds identified by the national forests, and the associated WRAPs, to verify that the watersheds were appropriately selected and that the essential projects included in the WRAPs were appropriate.

Agency Response

In its April 26, 2017, response, FS concurred with this recommendation. A letter will be sent from the Chief's Office emphasizing the need and importance of documenting existing priority watershed selection rationale in WCATT. The letter will also include new guidance that for active priority watersheds with WRAPs that are not already signed by the Forest Supervisor, the Forest Supervisor will review and sign the WRAPs. The Forest Supervisors signature signifies approval of the priority watershed and the validity of the planned essential projects. The letter will note that this process step will be validated by the WO and Regional Offices during the verification of annual reporting. The estimated completion date is October 1, 2017.

OIG Position

We accept management decision for this recommendation.

Recommendation 3

Develop and implement a policy for field staff, at least on a quarterly basis, to report to WO, through the Watershed Improvement Tracking (WIT) application or another process, on the completion of each WRAP in the unit and the associated costs for completing each essential project within the capability of the existing FS financial systems. WO should monitor these reports to ensure that field staff are maintaining or improving priority watersheds in its unit in an efficient manner.

Agency Response

In its April 26, 2017, response, FS concurred with this recommendation. The agency noted existing policy requiring that all accomplishments be recorded in the authoritative data source when completed, but not less than quarterly. A letter will be sent from the Chief's Office reinforcing this reporting requirement. The costs associated with completing each essential project will also be reported within the capacity of the existing FS financial system and that the WO will routinely monitor appropriate database reports. The estimated completion date is October 1, 2017.

OIG Position

We accept management decision for this recommendation.

Recommendation 4

Require that WRAPs are contained in Watershed Classification and Assessment Tracking Tools (WCATT) for all priority watersheds that have been or are actively in the process of being improved. In addition, for those priority watersheds in the planning phase, ensure there is a record of an approval in WCATT of the essential projects.

Agency Response

In its April 26, 2017, response, FS concurred with this recommendation. A letter will be sent from the Chief's Office, reinforcing the need to include WRAPs in WCATT for all active priority watersheds. The Forest Supervisor signature signifies approval and validity of the planned essential projects. In addition, the verification of this process step will be included as part of annual WCF Tier 1 (Implementation) Monitoring performed by the WO. The estimated completion date is October 1, 2017.

OIG Position

We accept management decision for this recommendation.

Recommendation 5

Develop and implement a procedure to require and verify that information contained in WRAPs for any new priority watershed approved for restoration is entered timely into WCATT.

Agency Response

In its April 26, 2017, response, FS concurred with this recommendation. A letter will be sent from the Chief's Office, reinforcing the need for the four WRAP items (Date of WRAP, Estimated Completion Date, Essential Project Count, and Essential Project Estimated Cost) to be entered into the WCATT database in the same year as the WRAP is finalized. The WRAP template will be modified to include a reminder on these items and the Washington Office will ask the regional offices to provide oversight for the timely implementation of these actions. The estimated completion date is October 1, 2017.

OIG Position

We accept management decision for this recommendation.

Recommendation 6

Develop a methodology to ensure the accuracy of ratings entered into WCATT that are used to generate the condition class score for priority watersheds.

Agency Response

In its April 26, 2017, response, FS concurred with this recommendation. A quality assurance/quality control step will be added to the WRAP approval process to ensure that watershed condition class attribute ratings that are entered into WCATT accurately reflect the assessment results. The WRAP template will be modified to include this validation step. The estimated completion date is October 1, 2017.

OIG Position

We accept management decision for this recommendation.

Finding 2: FS Overstated Its Accomplishments toward Watershed Improvement in Annual Performance Reports

FS reports accomplishments towards watershed restoration in its Annual Performance Reports (APR), but its method for measuring those accomplishments does not accurately represent watershed improvements. This occurred because the methodology used to measure performance did not align with the performance measure as stated in the APR. FS counted the number of watersheds that accomplished all of their projects described in the WRAP instead of measuring improvements in the watersheds' condition. The consequences of this action negatively affect the information provided to stakeholders, such as members of Congress and the public, and distort the progress USDA is making towards its strategic goal for ensuring a clean water supply for the Nation.

According to FS Manual 1490, analyzing the performance accountability of activities involves the identification of key measures that provide meaningful performance data or results, and using that information establishes appropriate performance expectations for the organization.[37] To accomplish this analysis, program managers should clearly define and measure the data needed and ensure efficient and accurate reporting of that data. Additionally, for APR information, OMB Circular A-11 states that, when developing APRs, the performance data must be appropriately accurate and reliable for intended use in order to assess progress towards the achievement of performance goals.[38]

FS' APRs include a performance measure that assesses the "number of watersheds moved to an improved condition class." The APRs show the agency has improved the condition class of 53 watersheds since 2011. However, we reviewed records for all 53 watersheds and compared the original assessments and condition class to the April 2016 assessments and condition class. We found that 39 watersheds are still in their original condition class since the Framework's implementation.

FS' working definition of this performance measure states priority watersheds that have completed all of the essential projects listed in each watershed's corresponding WRAP can be counted as "moved to an improved condition class." The projects are identified as "essential" by subject-matter technical experts working in the forest to achieve specific ecological goals. While restoration projects can be completed in one or two year timeframes, the ecological results are often not realized until years later, creating a challenge for reporting on an annual measure. However, we determined that the completion of all essential projects listed in a WRAP did not always improve a watershed's condition to the point where it could be moved to an improved class (as the APRs currently demonstrate). For instance, the WRAP for one watershed we reviewed listed two essential projects. FS officials ensured that those two projects were actually completed, but the completion of those projects only improved the watershed's condition score from 2.0 to 1.9, which is not enough to move the watershed from Class 2 to Class 1. Thus, while there was an improvement in the condition of the watershed, it was not sufficient to move it to an improved class and was misreported in the APR.

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[37] USDA FS, *Manual*, "Performance Accountability" 1490 (June 2007).
[38] OMB, *Annual Performance Reporting*, Circular A-11, Section 260 (July 1, 2016).

When asked about their application of the performance measure, WO staff stated that the original definition for achievement had been reviewed and agreed upon by OMB during the development of the Framework. However, after the Framework came into use, FS found that many restoration projects kept the watersheds in the same condition class (i.e., the projects helped the watersheds maintain stasis and prevented deterioration) instead of improving them to the point where they could be rated into a higher class. In addition, the results of a completed project may not be immediately measureable—FS officials said that, even if the project improvements were completed for a watershed, it might be 10 years or more before a watershed matures into an improved condition class. Despite these considerations, FS did not modify its methodology for measuring and reporting watershed restoration efforts for the APR.

The Department has set a goal that 54 percent of FS watersheds will be rated as Class 1, "functioning properly," by 2018.[39] Achievement of this goal relies on the use of the Framework and the key performance indicator: the number of watersheds moved to an improved condition class.

To reach the goal of 54 percent, FS would need 8,144 watersheds in Class 1. FS reported in the last APR that, as of the end of FY 2015, the agency had 52.2 percent of all watersheds (7,878) in Class 1.[40] However, because the number of watersheds moved to an improved condition class has been calculated based on completed projects instead of measuring improvements in watershed condition, the APRs overstate the actual progress towards this goal.

FS' methodology for measuring and reporting its performance towards watershed restoration in the APRs did not accurately portray the number of watersheds that actually moved into an improved condition class. Instead, it demonstrated that FS took action to improve those 53 watersheds, which is commendable. However, using this methodology does not communicate accurate data to stakeholders. FS needs to obtain appropriate approval to revise the watershed key performance indicator and put into practice a methodology that accurately depicts the Framework's restoration outcomes and efforts in the APR.

Recommendation 7

Obtain appropriate approval to revise the watershed key performance indicator to include only the "number of watersheds moved to an improved condition." This will ensure that the methodology used to measure watershed performance is aligned with the performance measure stated in the FS' APR.

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[39] *USDA Strategic Plan FY 2014-2018*, pg. 16, Strategic Goal 2.
[40] These were the latest results reported by FS.

Agency Response

In its April 26, 2017, response, FS concurred with this recommendation. FS will revise the watershed key performance indicator to ensure that the methodology used to measure watershed performance aligns with the performance measure stated in the APR. The estimated completion date is February 1, 2018.

OIG Position

We accept management decision for this recommendation.

Section 2: Natural Resource Manager Information System

Finding 3: The Agency's System Security Plan was Incomplete

FS did not list all applications related to the Natural Resource Manager (NRM) information system in its System Security Plan (SSP), as required by Federal information technology guidelines. FS officials developed the WCATT and WIT applications separately from the NRM system, but did not include them in SSP for the general support system (NRM). While the two applications are classified as minor systems (which do not require separate security plans), they are still required to be listed in the general support system plan. The applications need to be included in SSP to supply a complete overview of the security requirements of the NRM information system and ensure that FS can accurately view its entire network.

The National Institute of Standards and Technology (NIST) *Guide for Developing Security Plans for Federal Information Systems* states that a minor application is not required to have a security plan. However, the guide says that the minor application should be briefly described in a general support system plan that either has a common physical location or is supported by the same organization.[41]

The agency's SSP for the NRM information system was dated January 29, 2016. SSP did not list the WCATT and WIT applications. The NRM Information System Security Officer said the applications were not listed because that office did not develop the applications, and FS management did not request that the officer update SSP to include the two applications. Agency management did not realize it needed to do so.

FS provided us with an updated SSP dated August 15, 2016. We confirmed that the updated SSP included WCATT and WIT as NRM information system applications and considered the NRM information system SPP to be in compliance with NIST guidance in this area. Therefore, we are not making any recommendations on this matter.

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[41] NIST 800-18, *Guide for Developing Security Plans for Federal Information Systems, Section: 1.5 Major Applications, General Support Systems, and Minor Applications*, dated February 2006.

Scope and Methodology

We conducted our audit at FS' Washington Office in Washington, D.C. We also contacted FS officials in Region 6, which is located in Portland, Oregon, and visited the Siuslaw National Forest located in Oregon. We assessed the Framework that FS officials developed and implemented in 2011, and conducted fieldwork from February through November 2016.

We non-statistically selected one national forest to visit located within the boundaries of one regional office. To identify this region, we first determined all the regions that had completed the most restoration work on priority watersheds and selected this national forest because FS officials had completed restoration work on multiple priority watersheds. We also factored weather conditions into our decision process. We planned fieldwork for April 2016, which, due to inclement weather, limited physical access to watersheds in many FS regions. We determined that Region 6, and the Siuslaw National Forest, met all of the above criteria for our desired selection and were accessible for physical observation in April 2016.

To accomplish our objectives, we performed the following procedures:

At the FS WO we:

- Identified and reviewed pertinent laws, regulations, policies, and internal control procedures for identifying, prioritizing, implementing, monitoring, and reporting activities related to the agency's Framework;

- Interviewed FS WO officials to gain an understanding of their roles and responsibilities, as well as an overall understanding of the Framework classifications, rankings, selections, monitoring and tracking, and performance measures;

- Determined the total number of watersheds and the total number of priority watersheds (15,081 and 356, respectively);

- Reviewed WRAPs for completeness and approval; and

- Ascertained and assessed the impact of the Framework on watershed restoration.

For the Region 6 and Siuslaw National Forest offices, we:

- Informed Region 6 officials about our objectives and the nature of our work;

- Interviewed Region 6 and national forest personnel to determine the processes, policies, and any internal control procedures they followed to restore watersheds in accordance with the Framework; and

- Observed, while accompanied and guided by a Region 6 official and Siuslaw National Forest staff, watershed conditions and confirmed that restoration work had been completed, as stated in the documentation on two completed watersheds.

During the course of our audit, we identified and assessed all information technology systems employed by FS that were applicable to our audit to determine if any had policies, procedures, or controls related to our objective of assessing FS' Framework. We also interviewed FS officials to obtain additional clarification regarding the implementation and use of information technology systems. We used FS data to perform our analysis of watersheds moved to an improved condition, as well as for our review of what was housed in WCATT and the calculations generated by the application. Our efforts focused on providing reasonable assurance that FS data did not contain significant errors, which would undermine the credibility of our analyses and conclusions. However, we did not review, analyze, or verify the system's general and application controls.

We conducted our audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

Abbreviations

APR .... Annual Performance Report
Framework .... Watershed Condition Framework
FS .... Forest Service
FY .... fiscal year
NFS .... National Forest System
NIST .... National Institute of Standards and Technology
NRM .... Natural Resource Manager
OIG .... Office of Inspector General
OMB .... Office of Management and Budget
SSP .... System Security Plan
USDA .... Department of Agriculture
U.S. .... United States
WCATT .... Watershed Classification and Assessment Tracking Tool
WIT .... Watershed Improvement Tracking
WO .... Washington Office
WRAP .... Watershed Restoration Action Plan

USDA'S
FOREST SERVICE
RESPONSE TO AUDIT REPORT

| **File Code:** | 1430 | **Date:** | April 26, 2017 |

| **Subject:** | FS Response to Office of Inspector General Report No. 08001-0001-21, "Forest Service Watershed Management" |

| **To:** | Gil H. Harden, Assistant Inspector General for Audit, Office of Inspector General |

Thank you for the opportunity to review and comment on Office of Inspector General (OIG)

Draft Report Number 08001-0001-21. The Forest Service concurs with the findings and

recommendations and appreciates the time and effort that went into the report. The agency's

response to the audit recommendations is enclosed. Please contact Antoine L. Dixon, Chief

Financial Officer, at (202) 205-0429 or aldixon@fs.fed.us with any questions.

/s/ Thomas L. Tidwell
THOMAS L. TIDWELL
Chief

Enclosure

Office of Inspector General (OIG) Official Draft Audit Report No. 08001-0001-21
Forest Service Watershed Management – Watershed Condition Framework
Official Draft Issued April 3, 2017

Response to the Official Draft Report / Management Decision Request

Recommendation 1: Develop and implement policy to review the approval and selection of priority watersheds, and the Watershed Restoration Action Plans (WRAPs) associated with them, to ensure an appropriate watershed selection process was followed, and that all necessary essential projects are listed.

FS Response:

The Forest Service concurs with this recommendation. A letter will be sent from the Chief's Office emphasizing the need and importance of documenting new priority watershed selection rationale in WCATT. The letter will also include new guidance that Forest Supervisors should sign new WRAPs. The Forest Supervisor signature signifies approval of the priority watershed and the validity of the planned essential projects. In addition, the verification of this process step will be included as part of annual WCF Tier 1 (Implementation) Monitoring performed by the Washington Office.

Estimated Completion Date: October 1, 2017

Recommendation 2: Review and approve all priority watersheds identified by the national forests, and the associated WRAPs, to verify that the watersheds were appropriately selected and that the essential projects included in the WRAPs were appropriate.

FS Response:

The Forest Service concurs with this recommendation. A letter will be sent from the Chief's Office emphasizing the need and importance of documenting existing priority watershed selection rationale in WCATT. The letter will also include new guidance that for active priority watersheds with WRAPs that are not already signed by the Forest Supervisor, the Forest Supervisor will review and sign the WRAPs. The Forest Supervisors signature signifies approval of the priority watershed and the validity of the planned essential projects. The letter will note that this process step will be validated by the WO and Regional Offices during the verification of annual reporting.

Estimated Completion Date: October 1, 2017

Recommendation 3: Develop and implement a policy for field staff, at least on a quarterly basis, to report to Washington office, through the Watershed Improvement Tracking (WIT) application or another process, on the completion of each WRAP in the unit and the associated costs for completing each essential project within the capability of the existing FS financial systems. The Washington office should monitor these reports to ensure that field staff are maintaining or improving priority watersheds in its unit in an efficient manner.

FS Response:

The Forest Service concurs with this recommendation. The agency has existing policy requiring that all accomplishments be recorded in the authoritative data source when completed, but not less than quarterly (FSH 1909.13 Chapter 51.2). A letter will be sent from the Chief's Office reinforcing this reporting requirement. The costs associated with completing each essential project will also be reported within the capacity of the existing FS financial system. The Washington Office will routinely monitor appropriate database reports.

Estimated Completion Date: October 1, 2017

Recommendation 4: Require that WRAPs are contained in Watershed Classification and Assessment Tracking Tools (WCATT) for all priority watersheds that have been or are actively in the process of being improved. In addition, for those priority watersheds in the planning phase, ensure there is a record of an approval in WCATT of the essential projects.

FS Response:

The Forest Service concurs with this recommendation. A letter will be sent from the Chief's Office, reinforcing the need to include WRAPs in WCATT for all active priority watersheds. The Forest Supervisor signature signifies approval and validity of the planned essential projects. In addition, the verification of this process step will be included as part of annual WCF Tier 1 (Implementation) Monitoring performed by the Washington Office.

Estimated Completion Date: October 1, 2017

Recommendation 5: Develop and implement a procedure to require and verify that information contained in WRAPs for any new priority watershed approved for restoration is entered timely into WCATT.

FS Response:

The Forest Service concurs with this recommendation. A letter will be sent from the Chief's Office, reinforcing the need for the four WRAP items (Date of WRAP, Estimated Completion Date, Essential Project Count, and Essential Project Estimated Cost) to be entered into the WCATT database in the same year as the WRAP is finalized. The WRAP template will be modified to include a reminder on these items and the Washington Office will ask the regional offices to provide oversight for the timely implementation of these actions.

Estimated Completion Date: October 1, 2017

Recommendation 6: Develop a methodology to ensure the accuracy of ratings entered into WCATT that are used to generate the condition class score for priority watersheds.

FS Response:

The Forest Service concurs with this recommendation. A quality assurance/quality control step will be added to the WRAP approval process to ensure that WCC attribute ratings that were entered into WCATT accurately reflect the assessment results. The WRAP template will be modified to include this validation step.

Estimated Completion Date: October 1, 2017

Recommendation 7: Obtain appropriate approval to revise the watershed key performance indicator to include only the "number of watersheds moved to an improved condition". This will ensure that the methodology used to measure watershed performance is aligned with the performance measure stated in the FS' Annual Performance Report (APR).

FS Response:

The Forest Service concurs with this recommendation. The Forest Service will revise the watershed key performance indicator to ensure that the methodology used to measure watershed performance aligns with the performance measure stated in the APR.

Estimated Completion Date: February 1, 2018

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