United States Department of the Interior

FISH AND WILDLIFE SERVICE
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Memorandum

To: Service Directorate

From: Kenneth S. Taylor
Associate Chief Information Officer
Assistant Director of Information Resources and Technology Management

Subject: 5-Year Geospatial Services Strategic Plan for the Service - Fiscal Years 2018-2023

The 5-Year Geospatial Services Strategic Plan for the Service has completed the national review process and is hereby formally adopted. This new FY 2018 to 2023 plan replaces the Geospatial Services Strategic Plan that covered FY 2010 to 2014. It focuses on specific goals and objectives that will improve communication and coordination within the Service and with our partners in the area of geospatial science. A copy of the final plan is available on-line on the Service's GIS policy site (www.fws.gov/GIS/policy).

We have attached a document summarizing the comments that we received during the national review, which took place from March 5- April 19. The document describes how the GIS Steering Committee adjudicated each of those comments and incorporated the feedback received into the final version of the Plan.

Please distribute this memorandum to all Regional and Field Offices to ensure the staff members are aware of the new Geospatial Services Strategic Plan and its adoption by the Service. While the build of activities described in the plan will be conducted by GIS Steering Committee representatives and IRTM technical staff, all Service employees who use and manage geospatial resources (data, staff, and technology) are expected to provide the assistance needed to achieve these goals and objectives in support of the Service mission.

Questions and comments pertaining to the Geospatial Services Strategic Plan should be directed to Chris Lett, National GIS Coordinator, Branch of Geospatial Data Services, Office of Information Resources and Technology Management, via e-mail (chris_lett@fws.gov) or phone 303-275-2348.

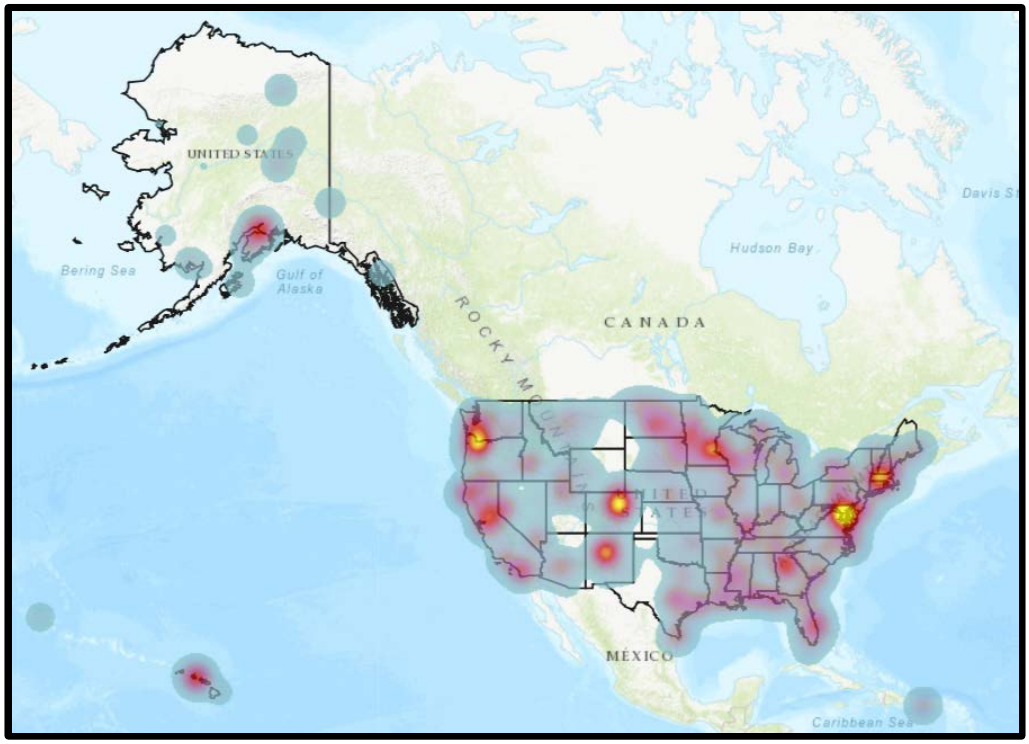
Attachments:
1. 5-Year Geospatial Services Strategic Plan- Fiscal Years 2018-2023
2. Strategic Plan Comment Adjudication Summary

2018-2022

5- Year Geospatial Services Strategic Plan

U.S. Fish and Wildlife Service

Department of the Interior



2018 Concentration of Service ArcMap GIS software users (heat map).

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EXECUTIVE SUMMARY

Managers, researchers, and policymakers recognize that geospatial data and services are critical elements needed to meet the mission of the U.S. Fish and Wildlife Service (FWS or Service). Practitioners in the Service use geospatial science (Geographic Information Systems (GIS), remote sensing, Global Positioning Systems (GPS) and related technologies) to create, analyze, maintain, communicate, and distribute geospatial data and information. Mapping or spatial analysis plays a vital role in all of the Service's long-term goals and in analyzing and quantifying the Service Operational Plan measures. Nationally coordinated support for geospatial science, along with Regional support and infrastructure, promotes cost savings in geospatial data collection, analysis, and application support through information management and increased accuracy and productivity. The Service Geospatial Services Strategic Plan (GSSP) ensures the Service is effective in managing geospatial data resources and technology in order to deliver geospatial science in support of the Service's mission.

Corporate management and analysis of geospatial data is essential for addressing natural resource management decisions and conservation at national and regional landscape levels. Currently, millions of dollars are invested in geospatial technology and geospatial science projects in the Service each year supporting natural resource management and conservation decision support activities. These national strategy and coordination efforts enable the Service to optimize its investments in geospatial science by facilitating coordination and collaboration among programs and partners, and reducing costs through shared resources, data, software, hardware, and support services.

This plan supports a geospatial services initiative that will increase the value of geospatial investments for the Service. Five major goals are outlined in this plan that support other key Service (and government-wide) strategic planning efforts, including the National Wildlife Refuge System Inventory and Monitoring program, Data Management, and efforts at the Federal, DOI, and bureau levels. The plan identifies the following goals: Governance, Business Processes, Data Architecture, Application and Technology Architecture, and Education and Outreach. Implementing the strategic goals and objectives of this plan will deliver geospatial services that provide coordinated discovery, acquisition, and management, that are faster, easier, and less costly for the Service's lines of business to access and utilize.

As a framework for geospatial services in the Service, this plan identifies roles and responsibilities, establishes priorities, and provides a governance structure for securing approvals from management that will lead to the Service's commitment of resources to enable implementation of this plan.

PART ONE – Mission and Background

1.0 Introduction

Geospatial science, data, and technology, combined with their associated practitioners, are essential components of most of the Service programs. Practitioners in the Service use geospatial science to create, analyze, maintain, and distribute geospatial data and information. Mapping and spatial analyses play a vital role in achieving the Service's long-term goals and in analyzing and quantifying the Service Operational Plan measures. Substantial investments have been and continue to be made in geospatial science in the Service each year to support natural resource management activities, inventory and monitoring, and other mission needs. Unlike many of our other enterprise technologies, geospatial technology is used by a wide range of employees, with varying skill levels, throughout the Service for many essential functions, including landscape conservation and assessment, habitat connectivity, species distribution modeling, asset management, land acquisition, critical habitat designations, and wetland inventories. The Service currently invests over $1,000,000 a year on geospatial software to support over 2000 GIS users, including hundreds of full time users.

Given the accessibility and utility of these technologies, managers, researchers, and policymakers recognize that geospatial data and services are critical to meet the Service mission. The GIS Steering Committee was established by the Director in 1991 to coordinate and develop policies and plans for the implementation of a Service-wide GIS program. This committee has assisted with managing geospatial science across the Service. The Department of the Interior (DOI) supports the development and continuation of this committee. Members serve a critical role in the organization through, among other things, the dissemination of information on the latest technologies, and identifying and sharing best practices. It also serves as a bridge between the Information Technology (IT) community and programs, which helps programs best leverage the technology while also informing IT service providers of unique requirements posed in maintaining and improving geospatial technology and infrastructure across the Service.

Enterprise management and analysis of geospatial data is essential for addressing natural resource management decisions and conservation at national and regional landscape levels. Nationally coordinated support for geospatial science, along with Regional support and infrastructure, has been proven to enable efficiencies and cost savings in geospatial data collection, analysis, and application support. It enables the Service to optimize investments in geospatial science by facilitating coordination, collaboration, and communication among Service mission areas, DOI, and other agencies and partners through the use of shared resources, data, software, hardware, and support services. This can lead to improved Service-wide decision making, increased transparency, and other related efficiencies.

While the value of geospatial science to support business across the Service continues to be demonstrated, several issues related to lack of resources and capacity limit the Service's ability to optimize investments that have already been made. The major limitations include lack of capacity, bandwidth, training, data management, ongoing IT security compliance issues, cultural challenges, and the decentralized organization of the Service.

This strategic plan addresses these challenges and ensures the Service is effective in managing geospatial data resources and technology to successfully deliver geospatial services in support of the Service's mission. In addition to informing the Service's management practices, the Service GIS Steering Committee's strategic planning efforts are widely used to support the DOI Geospatial Advisory Committee.

1.1 Mission

To improve the effectiveness and cost efficiency of the use of geospatial science in support of the Service's mission and improve conservation outcomes.

1.2 Vision

Spatially enable business practices and facilitate effective decision making in support of the Service's mission.

1.3 Current Status

National GIS coordination activities in the Service have always emphasized data sharing and standards, communication, and support to end-users. Meeting these goals has been a difficult challenge due to the decentralized organization of the Service and the tendency of field offices to develop GIS capabilities on their own to meet individual office needs.

In April 2005, the Service's GIS Steering Committee was revitalized with a new charter signed by the Director in direct response to the many changes in technology and organizational structure that had already occurred. All eight regions and several programs are represented on the Steering Committee; however, the funding, support, and organizational position of the representatives varies widely. Currently, the committee includes 4 full-time regional GIS coordinators and 1 full-time program coordinator, with all others participating as collateral duties as assigned. The Steering Committee was charged with providing coordination and direction on geospatial science and activities within the Service in accordance with the approved strategy.

Another challenge to effective coordination of GIS activities is the composition of the GIS-user community. The Office of Management and Budget (OMB) classifies GIS as an IT activity.

Looking at the advanced technologies used by GIS practitioners including relational database models, internet portals, web mapping and modeling, it is easy to understand why GIS is classified within IT; however, it is more of a science than an IT investment or software management. Additionally, a large majority of the GIS users in the Service are not located in the Information Resources Technology Management (IRTM) program nor are they classified as IT professionals. Rather, they are biologists, refuge managers, administrative staff and interpretive specialists – the end users whose day-to-day work actually supports the Service's mission. They need the infrastructure support of the IT functions, but are not knowledgeable about what is required to maintain this infrastructure. It is important to provide support to these end users without diverting them from their mission activities.

This plan focuses on improving communication and collaboration within the Service and with its partners in using geospatial science, making more effective use of all geospatial resources (data, staff, technology), and more fully integrating GIS into all business areas.

This plan is intended to guide future management of geospatial services in the Service to ensure that this vision is fulfilled to the maximum extent possible. This plan attempts to:

- implement GIS technologies, as appropriate, to improve efficiency and accuracy in achieving the Service's mission;
- maintain as much local flexibility and creativity as possible while leveraging potential efficiencies of standardization and consolidation;
- focus on customer service, employee needs, and education while complying with external requirements and directions (e.g., laws, regulations, and DOI policies);
- reduce the total cost of doing business while providing the best services possible; and
- minimize the burden of administrative processes while ensuring adequate management controls and accountability.

1.4 Policy and Guidance

Federal laws, regulations, and guidelines mandate active participation by all government agencies in geospatial data management. Geospatial services identified in the GSSP should support the missions of the Service and the Federal government. Users of geospatial data and technology must act in accordance with Service, Federal, and DOI policies and missions.

Policies related to Service geospatial science including the GSSP and annual action items can be found on the Service Geospatial Services website: https://www.fws.gov/gis/policy

1.4.1 FWS GIS Steering Committee Charter

https://www.fws.gov/gis/policy/2012StComCharter.pdf

The GIS Steering Committee Charter was approved by the Director on April 27, 2005. The charter "refines the Committee's purpose, goals, authority, and scope of activities and enables

its members to make a greater contribution towards improved management of the GIS resources within the Service." This GSSP sets the strategy for accomplishing the charter goals and objectives. To ensure the goals and objectives are achieved, the GIS Steering Committee administers Specific, Measurable, Achievable, Relevant, and Time Bound (S.M.A.R.T.) action items that are assessed, reviewed and updated on a yearly basis.

1.4.2 FWS Geographic Information Systems Manual (270 FW 8)

http://www.fws.gov/policy/270fw8.html

The GIS Manual Chapter outlines the objectives of the Service spatial data management program and how the Service implements geospatial science. It describes the roles and responsibilities of Service employees managing and implementing GIS and describes the general authorities under which the GIS program operates. The GSSP will work to support and provide input to all Service Manual Chapters related to GIS, remote sensing, GPS, mobile data collection, and other related IT policies.

1.4.3 FWS Printing and Publishing Program

https://www.fws.gov/external-affairs/marketing-communications/printing-and-publishing

In June 1997, the Directorate approved the graphic standards for the Service's publications in an effort to create a unifying image when communicating with the public. All publications and printing projects must adhere to established design standards and approval processes as outlined in the USFWS Graphic Standards 07-01. The GSSP will work to support existing policies regarding the development, review, approval, printing, and distribution of Service funded or sponsored map publications.

1.4.4 U.S. Fish and Wildlife Service Mission and Operational Plan

https://www.fws.gov/info/pocketguide/fundamentals.html
https://www.fws.gov/planning/performance.html

The Service mission is "*working with others to conserve, protect and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people*." Geospatial science play a vital role in all of the Service's long-term goals. Furthermore, geospatial science plays a large part in analyzing and quantifying the FWS Operational Plan measures and most of the Service programs rely heavily on mapping.
Without geospatial science both the Service's long-term goals and the Service Operational Plan measures would not be easily tracked or met.

Geospatial science is widely used to achieve the Service mission priorities:

- National Wildlife Refuge System: Conserving Our Lands and Resources
- Landscape Conservation: Working With Others
- Migratory Birds: Conservation and Management
- Threatened and Endangered Species: Achieving Recovery and Preventing Extinction

- Aquatic Species: National Fish Habitat Action Plan and Trust Species
- Connecting People With Nature: Ensuring the Future of Conservation

1.4.5 Department of the Interior Strategic Plan

https://www.doi.gov/performance/strategic-planning

DOI's Strategic Plan serves as the agency's roadmap for near term actions. Interior's strategic plan frames organizational responsibilities and operational assumptions, and converts them into expectations for performance and accomplishment. It establishes measurable performance targets in each defined mission area along with targets for Departmental management initiatives. Most of the outcome goals of the mission framework that identify the Service as contributing to the accomplishment of the measures will rely heavily on geospatial science to achieve them.

1.4.6 OMB Circular A-16 and Executive Order 12906

https://www.fgdc.gov/policyandplanning/a-16/index_html

Executive Order 12906 established the National Spatial Data Infrastructure to "Coordinate Geographic Data Acquisition and Access". The Executive Order states "the National Performance Review has recommended that the executive branch develop, in cooperation with State, local, and tribal governments, and the private sector, a coordinated National Spatial Data Infrastructure to support public and private sector applications of geospatial data in such areas as transportation, community development, agriculture, emergency response, environmental management, and information technology."

Circular A-16, revised August 19, 2002, was created to address the "Coordination of Geographic Information and Related Spatial Data Activities." "The Circular provides direction for federal agencies that produce, maintain, or use spatial data either directly or indirectly in the fulfillment of their mission. The Circular establishes a coordinated approach to electronically develop the National Spatial Data Infrastructure and establishes the Federal Geographic Data Committee (FGDC)."

The Service GSSP supports the OMB A-16 and Executive Order 12906. It complies with all policy and guidance, and promotes involvement and coordination with Federal agencies and partners in compliance with these directives.

1.4.7 DOI Data Resource Management (378 DM 1)

in draft

The DOI Data Resource Management (DRM) chapter provides policy and describes the DRM program. The DRM program is the development and execution of architectures, policies, practices, and procedures that enable proper management of the full data lifecycle

requirements of the DOI and its bureaus/offices. It is DOI policy to implement DRM across bureaus/offices in a consistent and sustainable manner. Geospatial science promotes data management best practices and compliments the Service data management efforts.

The Service worked on a Strategy to implement data management in the Service called "Data are a Trust Resource" and in 2018 will create a data management policy. The Service GSSP supports 378 DM1 and the Service data management efforts by promoting data standards, data sharing and best practices in managing geospatial data through the full lifecycle.

PART TWO – Strategic Goals and Objectives

2.0 Service Geospatial Services Strategic Plan Goals and Objectives

This plan supports a geospatial services initiative that will increase the value of geospatial science investments for the Service. Implementing the strategic goals and objectives of this plan will deliver geospatial services that provide coordinated data discovery, acquisition, and management; and are faster, easier, and less costly for the Service's mission areas to access and utilize these services.

As a framework for geospatial science in the Service, this plan identifies roles and responsibilities, establishes priorities, and provides a governance structure for securing approvals from management that will lead to the Service's commitment of resources to enable implementation of this plan. The GSSP identifies future objectives that will require yearly reviews and updates to identify the activities and timetables required to reach the stated goals.

Effective strategic plans include mechanisms for implementing the plan and monitoring progress towards achieving goals and objectives. The steps identified below describe how and when the GIS SC will implement the strategic plan and monitor progress over the next five years:

- The goals and objectives identified in the GSSP will facilitate the creation of annual Specific, Measurable, Achievable, Relevant, Time-bound (S.M.A.R.T) priority action items.
- The GIS Steering Committee will consult with the GIS community and other stakeholders as action items are developed and implemented by the GIS SC members and/or ad-hoc task groups.
- Sequencing of action items will be determined by the GIS SC during annual in-person meetings and may be adjusted to align with opportunities.
- The GIS SC will periodically review the strategic plan to determine and record progress as well as identify next action items

Yearly updated action items can be found on the main Geospatial Services policy page: https://www.fws.gov/gis/policy

Goal 1: Governance

Provide leadership and direction regarding the use of geospatial science to accomplish the Service mission. Identify and prioritize geospatial needs, align Service and Departmental strategies and activities, and provide policy and oversight to ensure progress in achieving geospatial services goals.

Objective 1.1 Update the Service Geospatial Services Strategic Plan every 5 years.

Objective 1.2 Implement the GSSP by reviewing and updating the Service Geospatial Services Strategic Plan S.M.A.R.T. actions items annually.

Objective 1.3 Participate in and coordinate with Department of the Interior geospatial committees.

Objective 1.4 Coordinate and collaborate on geospatial science activities at a national level.

Goal 2: Business Processes

Ensure common, unified, geospatial processes are integrated into priority Service activities and support improved decision making.

Objective 2.1 Ensure improved geospatial processes are integrated with high priority Service activities. Identify and prioritize high priority FWS business activities with leadership and encourage geospatial analysis in the development and implementation of project plans.

Objective 2.2 Encourage Service's new Data Management Team and Regional Data Management Workgroups to develop data management strategies with adequate geospatial representation to improve and complement both data science and geospatial science.

Goal 3: Data Architecture

Provide Service staff, partners, and the public with the standardized geospatial information needed to carry out Service business processes, partner conservation needs, and/or make informed decisions.

Objective 3.1 Promote best practices in geospatial data resource management as identified in 378 DM 1 (DOI Data Resource Management Policy).

Objective 3.2 Identify and make available all actively maintained, complete enterprise datasets with compliant FGDC metadata and comprehensive database documentation.

Goal 4: Application and Technology Architecture

Provide Service staff and partners with recommended standardized geospatial infrastructure, applications and web mapping solutions. Enable the technology to collect, maintain, use, and publish geospatial data in support of the Service mission and business requirements. Support enterprise efforts that enable the design and implementation of a standard, enterprise-wide technical architecture.

Objective 4.1 Achieve efficiencies and cost savings by centralizing Service geospatial technology and applications where appropriate.

Objective 4.2 Manage and consolidate national geospatial software to reduce costs and duplication of effort.

Objective 4.3 Provide technical support to Service end users on software use, technology, and architecture.

Objective 4.4 Foster compliance with Information Technology policies, directives and bulletins.

Objective 4.5 Coordinate GPS and mobile activities to enable technology, hardware, software and infrastructure to support the Service mission and business processes.

Goal 5: Education, Promotion and Application

Promote the education and effective application of geospatial science across all programs and applicable conservation efforts within the Service.

Objective 5.1 Build support for Geospatial science at all levels (management and staff) of the organization.

Objective 5.2 Increase capabilities of Service workforce to effectively use and apply geospatial science.