U.S. Department of the Interior
FY 2022–2026 Learning Agenda
Annual Update FY 2023

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INTRODUCTION

BUILDING AND USING EVIDENCE AT THE DEPARTMENT OF THE INTERIOR

The U.S. Department of the Interior (Interior, Department) protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, Native Hawaiians, and affiliated island communities. To fulfill its mission in the most effective, efficient, and equitable manner, Interior recognizes the importance of building and using evidence as a tool in program design and delivery. The bureaus and offices that constitute the Department have a range of capacity for using and building evidence; as such, a number of new and existing activities will help move the Department forward, including program evaluations, program audits, internal control reviews, performance data analysis, policy analysis, and the wealth of scientific research and data visualization that the Department provides. This learning agenda is an initial look at how Interior's leadership can establish an evidence base to inform decision making by focusing on the highest priority and most challenging questions for the Department.

The Foundations for Evidence-Based Policymaking Act of 2018 (Evidence Act) P.L 115-435 requires federal agencies to establish and use a learning agenda for planned learning and evidence-building. The four-year learning agenda lays out a set of priority learning questions (PLQ) to begin Interior's process to build evidence, improve its use, and report progress made. The learning agenda aligns with and supports the Interior (Fiscal Years) FY 2022-2026 Strategic Plan. However, this learning agenda is a snapshot of key priority areas where the Department wants to put extra focus on learning needs. As Interior continues to learn and build evidence, and as new questions and priorities arise, the plans established in this learning agenda may change.

Learning agendas are essential to connecting goals to activities. To achieve its goals, Interior sets out to complete several specific objectives. Interior asks questions about what the organization needs to know in order to achieve those objectives and prioritizes these questions. The priority learning questions constitute the learning agenda. Aligning activities helps to answer questions in the learning agenda which then advances the mission by advancing the goals. The process isn't linear, but a cycle of learning and continuous improvement.

Interior's Evaluation Officer works closely with the Chief Data Officer and Statistical Official named as part of implementation of the Evidence Act. These three officials provide guidance, direction, and consultation, as well as technical assistance, to bureaus, Departmental offices, and regional and field level offices in building and using evidence. As evidence is built, the officials also ensure that the evidence is used for decision making, is equitable and transparent, and that the Department's maturity for evidence-building and use continues to improve.

FISCAL YEARS 2022 – 2026 INTERIOR STRATEGIC PLAN

The learning agenda is aligned with the FY 2022-2026 Interior Strategic Plan which provides the framework for identifying and pursuing priority learning questions for the Department. In the Strategic Plan, Interior lays out four strategic goals:

Goal 1
Promote well-being, equity, and justice for Tribes, American Indians, Alaska Natives, Native Hawaiians, and insular communities

Goal 2
Conserve, protect, manage, and restore natural and cultural resources in the face of climate change and other stressors

Goal 3
Sustainably balance the use of resources while supporting communities and the economy

Goal 4
Serve and honor the public trust

In pursuit of these strategic goals, the Department is also striving to address four intersecting challenges that President Biden has identified: COVID-19, economic recovery, racial equity, and climate change.

Interior approached the development of the FY 2022-2026 Learning Agenda to further leadership conversation and dialogue around Departmental initiatives that support specific, and span multiple, strategic goal areas. These include:

- Accelerating responsible development of renewable energy on public lands and waters;
- Strengthening the government-to-government relationship with Tribal nations;
- Making investments to support the Administration's goal of creating millions of family-supporting and union jobs;
- Working to conserve at least 30 percent each of lands and waters by the year 2030; and
- Centering equity and environmental justice.

As Interior stewards its public lands, increases environmental protections, pursues environmental justice, and honors the nation-to-nation relationship with Tribes, integration of strategic goals, Agency Priority Goals, learning questions, and enterprise risk mitigation strategies – and using this suite of program management tools in the most effective manner possible – is an intentional management objective. Interior's Learning Agenda presents priority learning questions in alignment with the Department's strategic goals, outlines

prior research that will inform the approach to answering a priority question, and provides information on initial plans to conduct evidence-building activities to address priority questions in the coming years.

STAKEHOLDER ENGAGEMENT

Interior engaged internal and external stakeholders in the process of developing the learning agenda. The Evaluation Officer, Statistical Official, and Chief Data Officer, along with other leaders in the Department, identified areas where evidence-building could help to accomplish Interior's mission and to support the Biden-Harris administration and the priorities of Secretary Haaland. The Department also held consultations with Tribes and Alaska Native Corporations, covering topics including climate impacts, equity, investments from the Bipartisan Infrastructure Law, government-to-government consultations, and the contents of and performance goals in Interior's FY 2022-2026 Strategic Plan. These consultations and the specific feedback Tribal leaders provided will be incorporated into performance and learning plans and Interior's priority learning questions.

GUIDANCE FOR NAVIGATING THE LEARNING AGENDA

The Interior FY 2022-2026 Learning Agenda is organized within the framework of the FY 2022-2026 Strategic Plan. The learning agenda is divided into sections for each of the strategic plan's four strategic goals. Each strategic goal section contains a brief overview of the strategic goal, followed by the strategic objectives that support the strategic goal; studies and research relating to priority learning questions within the strategic objective if relevant; evidence built recently, if appropriate; the priority learning questions; and planned activities for the next four years to answer priority learning questions. Where appropriate, the document notes contributing bureaus/offices for each question or activity.

A learning agenda is not a fixed plan, but a guide to identify the Department's learning needs and how evidence-building and learning will proceed. As Interior learns and builds evidence, the learning agenda will remain flexible and responsive to new information and data. The planned activities in each section identify how the Department will begin to build data and evidence to answer priority learning questions. As learning plans are adjusted, the Department will report progress in subsequent learning agenda updates and the Annual Performance Plan and Report (APP&R).

Interior will conduct foundational fact-finding, policy analysis, performance measurement and analysis, and program evaluations[1] to build evidence in response to priority learning questions. Specifically, Interior will prioritize increasing the use of formal program evaluation, a more rigorous form of evidence-building, and will publish planned program evaluations and results each year, per the Department's Evaluation Policy, in the Interior Annual Evaluation Plan.

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1   OMB M-19-23 (https://www.whitehouse.gov/wp-content/uploads/2019/07/m-19-23.pdf), page 13

Native American Heritage Month 2022 Photo by AS-IA OPA

STRATEGIC GOAL 1: PROMOTE WELL-BEING, EQUITY, AND JUSTICE FOR TRIBES, AMERICAN INDIANS, ALASKA NATIVES, NATIVE HAWAIIANS, AND INSULAR COMMUNITIES

The Department is a multi-faceted agency, and part of the Department's goals are to promote equity and justice for Tribes, American Indians, Alaska Natives, Native Hawaiians, and insular communities. The scope of the Department's responsibilities includes fulfilling fiduciary trust responsibilities, supporting Tribal self-governance and self-determination, and strengthening the government-to-government relationship between the Federal Government and Tribal nations. Additionally, the Department funds 33 Tribal colleges, universities, technical colleges, and post-secondary schools that provide quality education for students to equip them to meet the demands of the future. The Department also provides technical assistance through partnerships with Native Hawaiian and insular communities to efficiently and effectively secure and manage Federal funds through planning and program activities.

This strategic goal is supported by the following strategic objectives in the FY 2022-2026 Interior Strategic Plan:

- ▸ Tribes and the U.S. Department of the Interior have an effective government-to-government relationship and trust and treaty obligations are upheld
- ▸ Tribal, Native Hawaiian, and insular communities are safe and healthy
- ▸ Tribal, Native Hawaiian, and insular communities have economic security and growth
- ▸ Bureau of Indian Education students have the education necessary for future success

White House Tribal Summit 2022 Photo by AS-IA OPA

STRATEGIC OBJECTIVE 1.1

Tribes and the U.S. Department of the Interior have an effective government-to-government relationship and trust and treaty obligations are upheld

Evidence Built in FY 2022

In FY 2022, the Bureau of Indian Affairs (BIA) consulted with Tribes to determine how to update Tribal enrollment data. Enrollment data is used to improve funding and resource decisions and to equitably distribute supplemental funds. Interior entered consultation with the Tribes to discuss how to respect Tribal Data Sovereignty in this process. Armed with this information and initial success in conducting enrollment data updates, other Federal departments are potentially interested in using updated Tribal enrollment data for their funding allocations and improved program delivery.

Supporting PLQ 1.1.1, the Bureau of Safety and Environmental Enforcement (BSEE) assessed the effectiveness of its consultation practices with Indian Tribes and Alaska Native Claims Settlement Act (ANCSA) Corporations. Specifically, the bureau assessed the extent to which BSEE implemented Interior and BSEE Tribal consultation policies and guidance as intended, and whether BSEE's Tribal consultation activities produced desired outcomes. The assessment found that BSEE was partially meeting Interior requirements for consultation, and that BSEE lacked a formal Tribal consultation program, which had created challenges for completing Tribal consultation activities. There were six recommendations in the final report, and BSEE's Director accepted these recommendations for action and implementation. Recommendations included creating a centralized consultation program, developing standards and protocols, and implementing suggestions from Tribal and ANCSA corporations.

The BSEE Director designated a Tribal Sprint Team to develop a plan of action and milestones to meet the recommendations from the assessment. The Tribal Sprint Team drafted a National Tribal Engagement Program policy and is currently drafting a Tribal Consultation Handbook with leading practices in consultation procedures. The Tribal Working Group has been chartered and roles and responsibilities were defined for appropriate bureau officials as members of the Tribal Working Group. A library was developed with Tribal consultation and engagement policies and procedures from other government agencies. The newly expanded National Tribal Engagement Program has been following and implementing the guidance found within leading practices in Federal Consultation from the Office of Regulatory and Collaborative Action. Several tribal consultations are scheduled to hear input from Tribal members and ANCSA Corporations regarding our Regulatory Agenda.

Priority Learning Questions

PLQ1.1.1 How can Interior improve in upholding the trust and treaty responsibilities and relationships with tribes and the Federal Government? (previously PLQ 1.4) (AS-IA)

PLQ1.1.2 What specific improvements need to be made in coordination among federal agencies, improving notice to tribes, and ensuring consistency and accountability in achieving meaningful consultations? (previously PLQ 1.4) (AS-IA, BIA, BLM, BSEE, NPS)

PLQ1.1.3 How can Interior support tribes to be successful in self-determination or self-governance? What factors influence the successful self-determination or self-governance of tribes? (previously PLQ 1.5) (AS-IA, BIA, OSMRE)

PLQ1.1.4 How does Interior include Indigenous Knowledge as part of the evidence base used in its decision-making? (previously PLQ 1.2) (AS-IA, BLM, FWS, NPS, OS/PMB/PEM/PPA, USBR, USGS)

PLQ1.1.5 What information is needed to best support and understand the success of voluntary community driven relocation (CDR) for CDR demonstration project tribes, in order to ensure long term sustainability? (AS-IA)

Planned Activities

- Consultation on Tribal data priorities through/with the Indian Country Data Working Group in FY 2024. (supporting PLQ 1.1.3) (AS-IA).

- Continued support from the Office of Surface Mining Reclamation and Enforcement (OSMRE) for the Navajo Nation, which enacted primacy legislation in December 2022, to regulate surface coal mining and reclamation operations on reservation land under the jurisdiction of the Tribe. OSMRE is working closely with Navajo Nation staff to administer the primacy approval process. A formal application is tentatively slated for submission in late FY 2024, after which OSMRE will launch the formal review and approval process. During this process, OSMRE will be proactively documenting successful approaches to working with the Tribe to apply the law and effectively employ technical assistance and training. (supporting PLQ 1.1.2) (OSMRE)

- Developing step-down guidance and training on how to include Indigenous Knowledge in Interior's work. The Department's Indigenous Knowledge Coordination Committee is working with subject matter experts from within and outside of government to explore this topic. (supporting PLQ 1.1.4) (AS-IA, BLM, FWS, NPS, USBR, USGS)

STRATEGIC OBJECTIVE 1.2

Tribal, Native Hawaiian, and insular communities are safe and healthy

Related Studies and Research

Land management explains major trends in forest structure and composition over the last millennium in California's Klamath Mountains (Knight et. al, 2022).[2] This study by the U.S. Geological Survey (USGS), the Yurok and Karuk Tribes, and others suggested that traditional ecological Indigenous practices to remove forest fuels in what is now northern California created healthier forests.

Evidence Built in FY 2022

Interior conducted assessments on water systems and facilities owned by the Bureau of Indian Affairs in order to identify water sanitation deficiencies impacting tribal communities (for more information, please see the description of this activity under Strategic Objective 3.3.)

Priority Learning Questions

PLQ1.2.1   What challenges are Tribes facing in their ability to reclaim remaining abandoned mine lands? (previously PLQ 1.3) (BLM, OSMRE)

PLQ1.2.2   How can the Department advance equity in Indian Country through programs and services provided to tribal communities? (AS-IA, BIA, BIE, BTFA)

PLQ1.2.3   What support do climate resiliency grants provide for the Native Hawaiian Community's ability to cope with the effects of climate change, maintain integrity and identity, and maintain capacity for adaptation, learning, and transformation? (OS/PMB/PEM/ONHR)

Planned Activities

- An evaluation of the outcomes achieved through climate resiliency grants provided to Native Hawaiian Community under the Inflation Reduction Act. (supporting PLQ 1.2.3) (OS/PMB/PEM/ONHR)

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2   https://www.pnas.org/doi/10.1073/pnas.2116264119

STRATEGIC OBJECTIVE 1.3

Tribal, Native Hawaiian, and insular communities have economic security and growth

Evidence Built in FY 2022

In FY 2022, the Bureau of Land Management (BLM) launched a pilot program partnering with the American Indian Alaska Native Tourism Association to support the Native Act and assist underrepresented communities to pilot and promote Tribal tourism along National Scenic and Historic Trails. The pilot focuses on 27 tribes in Nevada over a three-year, phased, exploratory outreach process. The pilot supports efforts directed under the Native Act to establish a more inclusive national travel and tourism strategy and has the potential to deliver significant benefits for tribes, including jobs creation, elevated living standards, and expanded economic opportunities that can provide security and growth all while sharing and conserving Indigenous heritage for present and future generations. In conjunction with this effort, the BLM partnered with Native Lands Digital, Conservation Legacy's Ancestral Lands program, and the U.S. Forest Service to create and recruit an AmeriCorps Indigenous Mapping and Research Project (IMRP) intern position. This position was filled by an Indigenous youth with tribal affiliation and experience, and the intern's work in the IMRP to develop a geographic information system Indigenous overlay for the National Trail System map will increase awareness and importance of Indigenous voices and perspectives through basic research and outreach along the entirety of the National Trail System.

Priority Learning Questions

PLQ1.3.1   How can Interior remove barriers to participation to the Department's contracting opportunities for Indian Economic Enterprises? (AS-IA, OS/PMB/BFGA/OSDBU)

PLQ1.3.2   What progress has been made and what gaps remain in improving experiences for beneficiaries of trust services? (BTFA)

Planned Activities

- Monitoring award performance against established goals. In FY 2023, the Department revised the Acquisition Regulations related to Buy Indian Act Contracting Procedures and updated internal policy establishing Interior-wide goals for the involvement of Indian Small Business Economic Enterprises in prime contracts. (supporting PLQ 1.3.2) (OS/PMB/BFGA/OSDBU)

STRATEGIC OBJECTIVE 1.4

Bureau of Indian Education students have the education necessary for future success

Related Studies and Research

Facility Improvements Still Needed at Pine Hill School (Interior OIG, 2021).[3] The OIG completed a follow-up inspection of Pine Hill School to determine whether the facility conditions had changed since the OIG's last review. The OIG found that BIA and the school implemented 9 of the 12 recommendations from the OIG's 2016 inspection and addressed a number of safety and health issues. However, some of the issues identified in the OIG's 2016 inspection remained unresolved—mainly the extensive water damage and mold in the library, kindergarten classroom, and the gymnasium, as well as general deficiencies that were present throughout the school. The OIG also identified additional safety, health, and security risks during this inspection not covered in the 2016 inspection.

Indian Education: Schools Need More Assistance to Provide Distance Learning (GAO, 2021).[4] This study examined the extent to which BIE had provided schools with guidance to develop and implement distance learning programs during the COVID-19 pandemic, and whether BIE students had the technology they needed to participate in such programs. GAO recommended that BIE provide comprehensive guidance to schools on distance learning and establish policies and procedures to ensure it has complete, accurate, and up-to-date information on schools' technology needs.

Priority Learning Questions

PLQ1.4.1 How effectively is the Bureau of Indian Education (BIE) data being used to support improving student achievement? What organizational processes and data most affect education service delivery? What processes and data are being used for decisions impacting education service delivery and what are the outcomes? (previously PLQ 1.8) (BIE)

Planned Activities

- A process evaluation to identify what BIE processes and data exist and their connections to student outcomes. The result of this evaluation will inform providers and stakeholders of the connections with current decisions from data and the connection to program goals and objectives. Understanding this, the process evaluation method will identify the extent that program activities have been implemented based on previous data-informed decisions and results related to academic performance. (supporting PLQ 1.4.1) (BIE)

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3   https://www.doioig.gov/reports/inspection-evaluation/facility-improvements-still-needed-pine-hill-school
4   https://www.gao.gov/products/gao-21-492t

Ruby-throated Hummingbird Photo by USFWS

STRATEGIC GOAL 2: CONSERVE, PROTECT, MANAGE, AND RESTORE NATURAL AND CULTURAL RESOURCES IN THE FACE OF CLIMATE CHANGE AND OTHER STRESSORS

Interior is a steward of more than 480 million acres of public lands accounting for almost 20 percent of the Nation's land mass, and over 760 million acres of cooperatively managed marine areas comprising approximately 25 percent of U.S. waters. Interior ensures that America's natural endowment – the natural land and water resources of the United States– is conserved for the benefit, use, and enjoyment of current and future generations. In the face of climate change and other stressors, Interior uses the best available science, evidence-based natural resource management techniques, technology, engineering, and partnerships and alliances to guide stewardship of public lands and waters. The Department, in partnership with state, local, and Tribal governments, as well as agricultural and forest landowners, anglers, non-profit organizations, and other key stakeholders, is working to advance the goals of the America the Beautiful initiative to tackle climate change, stem the decline of biodiversity, and improve equitable access to nature. The Department will continue to support conservation and restoration in a manner that is faithful to its guiding principles—building a locally led movement that benefits people and the economy, is anchored in science, honors Tribal sovereignty, and respects private landowners.

This goal is supported by the following strategic objectives in the FY 2022-2026 Interior Strategic Plan:

▸ Lands, waters, and heritage are conserved for present and future generations

▸ Species, habitats, and ecosystems are protected, sustained, and healthy

▸ People find enjoyment and take pride in our lands, waters, and heritage

Kalaupapa National Historical Park Photo by NPS

STRATEGIC OBJECTIVE 2.1

Lands, waters, and heritage are conserved for present and future generations

Related Studies and Research

Keeping it Wild 2: An updated interagency strategy to monitor trends in wilderness character across the National Wilderness Preservation System (USDA Rocky Mountain Research Station, 2015).[5] Keeping It Wild 2 is an interagency strategy to monitor trends in selected attributes of wilderness character based on lessons learned from 15 years of developing and implementing wilderness character monitoring across the National Wilderness Preservation System.

Fourth National Climate Assessment (USGCRP, 2018).[6] Required by the Global Change Research Act of 1990, the U.S. Global Change Research Program provided the fourth National Climate Assessment to Congress and the President that, per the law, integrates, evaluates, and interprets the findings of the Program; analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; and analyzes current trends in global change, both human-induced and natural, and projects major trends for the subsequent 25 to 100 years.

Plan to Conserve Global Forests: Critical Carbon Sinks (US Department of State, 2021).[7] This report presents the USG approach to conserving critical global terrestrial carbon sinks, a plan to catalyze the global effort to conserve and restore the forests and other ecosystems that serve as critical carbon sinks.

Department of the Interior Climate Action Plan (Interior 2021).[8] This plan presents actions that Interior is currently or will undertake to address the impacts and threats from climate change. The plan identifies Interior's actions for adaptation and resiliency and its five primary vulnerabilities.

Department of the Interior Climate Adaption and Resilience Plan Progress Report (Interior 2022).[9] This plan outlines how the department is using a science-based approach to address and mitigate climate change risks, impacts, and vulnerabilities.

5   https://www.fs.usda.gov/rmrs/publications/keeping-it-wild-2-updated-interagency-strategy-monitor-trends-wilderness-character
6   https://nca2018.globalchange.gov/chapter/front-matter-about/
7   https://www.whitehouse.gov/wp-content/uploads/2021/11/Plan_to_Conserve_Global_Forests_final.pdf
8   https://www.doi.gov/sites/doi.gov/files/department-of-interior-climate-action-plan-final-signed-508-9.14.21.pdf
9   https://www.doi.gov/ppa/climate

Opportunities to Accelerate Nature-Based Solutions: A Roadmap for Climate Progress, Thriving Nature, Equity, & Prosperity. (White House Council on Environmental Quality, White House Office of Science and Technology Policy, White House Domestic Climate Policy Office, 2022).[10] This report outlines strategic recommendations to unlock the full potential of nature-based solutions to address climate change, nature loss, and inequity.

Climate Benefits, Co-benefits, and Trade-offs of Green Infrastructure: A systematic literature review (Journal of Environmental Management, 2021).[11] This research made recommendations for planning and design of green infrastructure to maximize multiple benefits and minimize trade-offs for climate benefits and co-benefits.

Operation and Maintenance of Passive Acid Mine Drainage Treatment Systems: A Framework for Watershed Groups (WV Department of Environmental Protection, 2014).[12] This report discussed the need for watershed groups to develop plans for the operation and maintenance (O&M) of all their projects, including passive treatment systems, and to gather resources to carry out those plans. Sections include institutional practices supporting O&M, O&M considerations through the project life cycle, common best management practices for AMD remediation and their maintenance needs, post construction inspection, monitoring, and operation, and postconstruction major maintenance.

Evidence Built in FY 2022

In FY 2022, the Bureau of Land Management continued its long-term monitoring program used to determine if the agency is preserving wilderness character among the areas designated as wilderness. The process collects information on 25 specific measures, usually on a five-year rolling basis. Although the initial baseline assessment for these wilderness areas is still underway and the agency does not yet have trend information to report, the knowledge gained by the program will be used by field staff and line officers to inform their decisions and prioritize management actions to preserve wilderness character.

The Bureau of Land Management also furthered its Inventory, Assessment, and Monitoring (IAM) Program for National Scenic and Historic Trails. Proactive inventory of the resources, values, qualities, and associated settings along the 6,000 miles of BLM-managed National Scenic and Historic Trails in 15 states can identify degraded, sustained, or improved resources along these congressionally designated linear features. The program has prioritized the inventory, assessment, and monitoring methodology and, in FY 2022, developed a training strategy, led the first workshop/course for BLM staff, updated GIS inventory for 2,400 miles of trail in Alaska, baselined remaining work for Nevada sites, and set up IAM work in New Mexico and Utah. This IAM work, and the associated corporate

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10 https://www.whitehouse.gov/wp-content/uploads/2022/11/Nature-Based-Solutions-Roadmap.pdf
11 https://www.sciencedirect.com/science/article/pii/S0301479721006459?via%3Dihub
12 https://dep.wv.gov/WWE/Programs/nonptsource/Documents/Projects/OM_Manual.pdf

database, will help inform management decisions that protect the scenic, natural, cultural/historic, and recreational use of these congressionally designated trails and result in protected ecosystems, increased habitat connectivity in corridors, and informed management plans.

In FY 2022, the Bureau of Land Management also furthered implementation of its strategic plan to broaden access of its museum collections to the public and Tribes. The Department is working to identify technological needs for online access to museum collections, staff and capacity needed to catalog and document those collections so they can be shared online, and consultation needs with Tribes to specify objects in collections and other items that may have traditional concerns for care, handling, and public dissemination. Following this work, BLM will pilot efforts to gather data and evaluate feasibility to make BLM museum collections "discoverable" to the broader public through online delivery at two BLM-managed units.

Priority Learning Questions

PLQ2.1.1 To what extent are vulnerability assessment frameworks from Interior's Climate Action Plan being used across the Department? To what extent are they successful at capturing vulnerabilities and risks of climate change, and in projecting vulnerability and risk into the future? (previously PLQ 2.1) (BLM, BSEE)

PLQ2.1.2 What metrics, indicators, and evidence will Interior use to assess the costs and benefits of specific, nature-based solution (NbS) strategies? Where should Interior and its partners prioritize deployment of NbS to maximize benefits? What are the ecological, economic, engineering, and social costs and benefits of Interior's NbS strategies? What factors should guide Interior's prioritization of NbS deployment? (previously PLQ 2.2) (BLM, FWS)

PLQ2.1.3 What is the best approach to leveraging IT systems, including the Recreation And Permit Tracking Online Reporting (RAPTOR) system, the Potential Fossil Yield Classification (PFYC) system, the National Cultural Resource Information Management System (NCRIMS), and the Interior Collections Management System (ICMS), to ensure heritage resources are managed for long-term resilience and stability? (previously PLQ 2.3) (BLM, NPS)

PLQ2.1.4 To what extent are various restoration techniques effective at restoring habitat in the long-term? (previously PLQ 2.6) (BLM)

PLQ2.1.5   What maintenance is required, and with what frequency, to ensure that passive treatment systems constructed to address water pollution discharges from abandoned mine lands continue to be effective? (previously PLQ 2.7) (OSMRE)

PLQ2.1.6   What is the best approach to identify and document orphaned wells on federal, Tribal, state, and private land, what stakeholders are involved, and how can Interior integrate and leverage this data with other information to enable a full sight picture of legacy pollution remediation requirements and priorities nationwide? (BLM, OS/PMB/PEM/OWPO, USGS)

PLQ2.1.7   What are the potential long-term benefits of the Abandoned Mine Land Bipartisan Infrastructure Law program for communities and the environment in coal-mining regions and how can OSMRE accurately quantify and track these benefits? How can Interior ensure that coalfield communities have a voice in the design and implementation of this program, and that the program addresses their needs and priorities for revitalization? (OSMRE)

Planned Activities

■ A formative evaluation that will assess the Department's vulnerability assessment frameworks and their impact on vulnerability reduction efforts in programs and activities as it is being planned and implemented. The evaluation will include consulting and engaging with Tribes and affected communities to assess improvements in climate conditions. The evaluation will develop a baseline for subsequent monitoring. Under the direction of Interior's Climate Task Force, surveys, interviews, and focus group discussions among program stakeholders will be conducted. The evaluation will seek to understand the need for the assessment and what improvements should be considered. (supporting PLQ 2.1.1) (OS/PMB/PEM/PPA)

■ A survey of state abandoned mine land programs and engagement with OSMRE personnel involved in AMDTreat to estimate potential costs to help operate, maintain, and rehabilitate passive treatment systems of various types and sizes. The review will increase Interior's knowledge of passive treatment system maintenance requirements. (supporting PLQ 2.1.5) (OSMRE)

STRATEGIC OBJECTIVE 2.2

Species, habitats, and ecosystems are protected, sustained, and healthy

Related Studies and Research

State of the Birds (USFWS, USGS, NPS, USFS, AFWA, and 24 other partners in the U.S. Committee of the North American Bird Conservation Initiative).[13] This report calls attention to drastic declines of some the most common birds in our nation's forests, grasslands, coastlines, and other habitats. A consortium of bird conservation organizations and wildlife agencies released the 2022 State of the Birds report in October 2022. The consortium and report may be a model for reviewing the condition of fish and wildlife habitats and populations more broadly as part of the America the Beautiful campaign.

Seeds of Success: A conservation and restoration investment in the future of U.S. lands (Barga et al, 2020).[14] The researchers identified 662 fires at 631 sites from the Seeds of Success program which have burned since collection. If fire continues at the pace observed since 2011, an estimated 14% of collection sites will burn by 2050 and over 24% by 2080, putting genetic diversity at risk in areas where fire is linked with invasion. Analysis of 14 native forb species from the western United States found that many collections were from the warmest and driest portions of their range or from areas at the highest risk of wildfire, subsequent invasion, and local extinction.

Seed storage: maintaining seed viability and vigor for restoration use (De Vitis et al., 2020).[15] This paper provided an overview of the key concepts in seed storage and the steps to take for effective storage of native seeds for restoration use.

An Assessment of Native Seed Needs and the Capacity for their Supply (National Academies of Science, Engineering, and Medicine, 2023).[16] This investigation, commissioned by the BLM, identifies obstacles and opportunities in building a robust native seed supply chain.

What is the evidence that counter-wildlife crime interventions are effective for conserving African, Asian and Latin American wildlife directly threatened by exploitation? A systematic map protocol (Rytwinski et al., 2021).[17] This paper is a pre-registered report for a systematic mapping protocol to assess the evidence that counter-wildlife crime interventions are effective at protecting targeted species. Systematic maps are a form of evidence synthesis that aims to provide an accurate

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13 https://www.stateofthebirds.org/
14 https://www.fs.usda.gov/treesearch/pubs/59993
15 https://onlinelibrary.wiley.com/doi/full/10.1111/rec.13174
16 https://nap.nationalacademies.org/catalog/26618/an-assessment-of-native-seed-needs-and-the-capacity-for-their-supply
17 https://besjournals.onlinelibrary.wiley.com/doi/10.1002/2688-8319.12104

description of the evidence base relating to a particular question. To our knowledge, this is the first systematic evidence review commissioned by USFWS, and findings are expected to be published as a scientific article in 2023.

Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction (Ceballos, Ehrlich, & Raven, 2020).[18] This paper discusses impacts of the sixth mass extinction, suggesting thousands of populations of critically endangered vertebrate animal species have been lost in a century due to human numbers and consumption rates.

Recovery Report to Congress (FWS).[19] Published on a biennial schedule, the Recovery Report to Congress provides an update on the progress toward recovery of all domestic threatened and endangered species protected under the Endangered Species Act (ESA) for which the U.S. Fish and Wildlife Service has lead responsibility.

Obtaining a Balanced Area Sample for the Bureau of Land Management Rangeland Survey (Yu, Li, Karl, & Krueger, 2020).[20] This study describes a sampling procedure that is designed to obtain spatially balanced area samples that are also representative probability samples in the presence of auxiliary variables.

Funding evidence-based conservation (Parks et al. 2022).[21] This paper describes several practical approaches for conservation grant-making programs to incorporate evidence into their application process. The primary message of the letter, co-authored by conservationists from 25 different organizations including USFWS, is the importance of demonstrating conservation project proposals are based on the best available evidence. Supplementary materials include guidance for funders on assessing evidence use in conservation applications.

Transforming Conservation: A Practical Guide to Evidence and Decision Making (Sutherland ed. 2022).[22] This Open Access scholarly work describes how evidence-based decision making is changing and improving nature conservation. The primary purposes of the edited volume, including chapter contributors from USFWS, is to provide practical solutions on how to rethink how evidence is assessed, combined, communicated, and used in decision-making; how to use effective methods for asking experts to make judgements; and how to use a structured process for making decisions that incorporate the evidence and having effective processes for learning from actions.

18 https://www.pnas.org/doi/10.1073/pnas.1922686117
19 https://fws.gov/library/collections/recovery-reports-congress
20 https://link.springer.com/article/10.1007/s13253-020-00392-5
21 https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/cobi.13991
22 https://www.openbookpublishers.com/books/10.11647/obp.0321

Evidence Built in FY 2022

Supporting PLQ 2.2.2, the U.S. Fish and Wildlife Service (USFW) is in the midst of a systematic evidence review to evaluate the effectiveness of the Department's assistance for foreign species conservation. In FY 2022, a systematic mapping protocol was used to collate the existing body of literature on counter-wildlife crime interventions which will result in

1. a written synthesis published in the peer-reviewed scientific literature based on a preregistered report, and

2. a searchable, coded database (MS-Excel) for use by agency programs. Preliminary findings have identified several gaps in the existing evidence base and at least one area for further analysis of effectiveness.

The Central Utah Project Completion Act office continued monitoring efforts to assess recovery of the June sucker. In 2020, the June sucker was successfully downlisted from Endangered to Threatened status as a result of the Provo River Delta Restoration Project and acquisition of water needed for its habitat. Interior works with the Utah State University to maintain the June Sucker Recovery Database and track research and monitoring efforts.

In FY 2022, the Bureau of Land Management developed new Assessment, Inventory, and Monitoring (AIM) Strategy performance metrics using the most scientifically defensible data. AIM programs provide data and analysis products that address the health of upland rangelands (terrestrial), rivers and streams (lotic), and wetlands and riparian areas.

The ecosystem health performance measures will be used to inform Bipartisan Infrastructure Law and Inflation Reduction Act restoration investments to improve the resistance, resilience, and adaptability of BLM-managed lands and waters to climate change. The Department is in the process of writing a report that will provide additional documentation of methodology and results that will be publicly available.

Priority Learning Questions

PLQ2.2.1   How can Interior achieve a sustainable native seed development program that enhances future storage capacity and limits external seed purchasing? What are the most effective strategies to increase native seed availability for restoring public lands to combat climate change and repair landscapes after wildfires or wildland fires? (previously PLQ 2.4) (BLM)

PLQ2.2.2   What is the impact of U.S. Fish and Wildlife Service's international species conservation assistance, and what evidence is needed to improve its effectiveness? (previously PLQ 2.8) (FWS)

PLQ2.2.3   To what extent are personnel and methodologies effective in assessing whether invasive plant and animals are under control on Interior-managed lands and waters? (previously PLQ 2.9) (BLM, FWS, NPS, OS/PMB/PEM/PPA)

PLQ2.2.4   How can collaborative conservation and locally-led efforts support the condition of fish and wildlife habitats and populations? (previously PLQ 2.11) (FWS)

PLQ2.2.5   How effective is Interior in leveraging IT systems to ensure biological information is available for coordination and protection of imperiled species and prevention of further extinctions? (FWS)

PLQ2.2.6   What frameworks are needed for assessing the effectiveness of co-stewardship of lands? (AS-IA, OS/PMB/PEM/PPP)

Planned Activities

- A multi-year USFWS contract is underway with the Canadian Centre for Evidence-Based Conservation to systematically assess the effectiveness of interventions funded by USFWS grants in foreign countries, including efforts to counter wildlife crime for species targeted by the agency's international assistance. In partnership with Conservation Evidence (Cambridge, UK), this effort is also intended to establish a public baseline for a new performance measure: the percentage of funding awarded to projects implementing at least one action with evidence of effectiveness. As resources allow, USFWS is also building upon pilot efforts to model the return-on-investment of its financial assistance, and conducting program planning and design (e.g., logic modeling) for each USFWS International Affairs financial assistance listing, in alignment with grantmaking regulation 2 CFR §200.202. (supporting PLQ 2.2.2) (FWS)

- An invasive species program review to include field level surveys and interviews; program design/logic model(s) to describe operations on the ground; data gathering and analysis of Bureau invasive species data management processes and results from annual reporting of GPRAMA performance measures for invasive species control over time; assessment of monitoring techniques (post-treatment effectiveness, population

suppression, meeting resource management objectives); and policy review (as it pertains to control, data management, monitoring, and associated training). (supporting PLQ 2.2.3) (OS/PMB/PEM/PPA)

- Updated data and analysis that addresses the health of upland rangelands (terrestrial), rivers and streams (lotic), and wetlands and riparian areas. Over the next two years, additional indicators will estimate the national condition and trend of stream and rivers, enhancing available public land statistics. (BLM)

- A collaboration with an academic partner to conduct a literature review on co-stewardship of lands, outline relevant theoretical frameworks, and design a rubric for performance monitoring and evaluation of effective co-stewardship agreements in successfully managing natural and cultural resources. (supporting PLQ 2.2.6) (AS-IA, OS/PMB/PEM/PPP)

STRATEGIC OBJECTIVE 2.3

People find enjoyment and take pride in our lands, waters, and heritage

Evidence Built in FY 2022

The National Park Service (NPS) and the Bureau of Land Management are working collaboratively with the Federal Interagency Volunteer Team and the Volunteer.gov Business User Group to pilot and implement a volunteer reporting system, projected to be available in the spring of FY 2023. This system will support the Department in more efficiently and consistently tracking volunteer contributions to public lands. Annual volunteer data can provide trend information on number of individual volunteers, total number of hours contributed, value of service, and benefitting program areas. Volunteer program data collection allows the Department to communicate the important role volunteers play as stewards of public lands and presents a cogent, agency-wide picture of volunteer contributions to internal and external stakeholders.

Priority Learning Questions

PLQ2.3.1   How effective is Interior at improving customer experiences via select High Impact Service Provider programs? (previously PLQ 2.5) (NPS)

PLQ2.3.2   What improvements are necessary for public-facing online tools in order to streamline user experiences for volunteers? (NPS)

PLQ2.3.3   What barriers do units face in implementing long-term solutions to local issues with broadband access and cellular service, and how may units mitigate these issues in the near term? (NPS)

PLQ2.3.4   What does visitation look like across lands and waters managed by Interior? Who is and is not visiting? To what extent do barriers impact different populations? (BLM, FWS, NPS, OS/PMB/PEM/PPA)

PLQ2.3.5   How can the Department improve experiences for LGBTQIA+ people when visiting public lands? (BLM, FWS, NPS)

Planned Activities

Plans for evidence-building are under development. Interior will strive to leverage existing work underway while expanding the Department's ability to track and use evidence for decisions.

Oil spill twisting shapes Photo by BSEE

STRATEGIC GOAL 3: SUSTAINABLY BALANCE THE USE OF RESOURCES WHILE SUPPORTING COMMUNITIES AND THE ECONOMY

As manager of one-fifth of the Nation's mineral and energy resources, including almost 2.5 billion acres of the Outer Continental Shelf (OCS), Interior plays a critical role in meeting America's energy needs and moving the Nation toward a clean energy future. The Department's lands and waters play an important role in contributing to the Nation's energy production. From oil and natural gas to renewable geothermal, hydroelectric, solar, and wind power, a comprehensive energy strategy ensures responsible energy development. Projects on Interior-managed lands are producing affordable energy to power homes, vehicles, and businesses; creating jobs; and providing on average more than $10 billion in annual revenue supporting federal, state, local, and Tribal economies. The Department is committed to responsible energy and mineral development and resource use. As a steward of the Nation's natural resources, Interior strives for careful planning of conventional energy development projects, a transition to clean technologies to meet the energy needs of the future, and science-informed decisions on resource distribution to support communities in need. In carrying out these activities, Interior will contribute to solutions to address climate change, strengthen and decarbonize the nation's economy, and help communities transition to a clean energy future.

This goal is supported by the following strategic objectives in the FY 2022-2026 Interior Strategic Plan:

- ▶ Future energy needs will be increasingly met through renewable and sustainable sources
- ▶ Current energy needs are met through balanced resource use
- ▶ Land, water, and non-energy mineral resources support the diverse needs of communities

Oregon Lime Wind Energy Photo by BLM

STRATEGIC OBJECTIVE 3.1

Future energy needs will be increasingly met through renewable and sustainable sources

Evidence Built in FY 2022

Supporting PLQ 3.1.2, the Bureau of Ocean Energy Management (BOEM), in consultation with the National Marine Fisheries Service (NMFS) and affected coastal states, developed draft guidance for the mitigation of impacts from offshore wind energy projects on commercial and recreational fishing communities. BOEM developed the draft guidance to provide greater consistency between projects in mitigating impacts and for equitable treatment of commercial and recreational fisheries regardless of home or landing port. Through issuance of a Request for Information and stakeholder workshops, BOEM and NMFS gained key information from stakeholders, such as:

1. mitigation is needed for both fisherman and processors that support the fishing business;

2. guidelines need to be transparent, adaptive, and evidence based;

3. it is important for lessees to engage with commercial and recreational fishing communities prior to engaging in any activity on the lease;

4. pre-activity engagement should be respectful of the views of the fishing communities consulted;

5. a publicly available document describing the nature of the engagement and how the lessee has or has not adopted measures identified by the fishing communities to mitigate the impacts of the proposed activity is highly desired and;

6. fisheries science and identification of past, current, and future fishing activity in the northeast are highly dynamic and influenced by several factors, including but not limited to fisheries management, market conditions, potential biological impacts from offshore wind development, and changing conditions brought about by climate change.

BOEM will use the information received during the comment period of the Draft Fisheries Mitigation Guidelines to finalize the guidance document.

Priority Learning Questions

PLQ3.1.1   What are the critical processes to establish or revise in order to effectively build Interior's offshore wind energy capabilities? (previously PLQ 3.1) (BOEM, BSEE)

PLQ3.1.2   What are the environmental impacts associated with the construction and initial operations of the first tranche of offshore windfarms in federal waters, and what mitigation strategies can be undertaken to allow for long term sustainability and mutual co-existence of offshore wind with commercial and recreational fisheries? (previously PLQ 3.8) (BOEM, BSEE)

Planned Activities

- A multi-year monitoring and data collection effort, called the Realtime Opportunity for Development Environmental Observations (RODEO), to understand the environmental impacts of offshore wind development and operations. The purpose of the RODEO study is to make direct, real-time measurements of the nature, intensity, and duration of potential stressors during the construction and initial operations of selected offshore wind facilities. The purpose also includes recording direct observations during the testing of different types of equipment that may be used during future offshore development to measure or monitor activities and their impact-producing factors. (supporting priority question 3.1.2) (BOEM)

- A foundational fact-finding exercise to apply the information gained from a Request for Information, stakeholder meetings, and public comments on draft guidance to inform plans and environmental reviews for mitigating impacts from offshore wind projects on fisheries. The Bureau of Ocean Energy Management is finalizing Fisheries Mitigation Guidance for Offshore Wind Development and continuing work to support the development of overarching federal guidance for fisheries mitigation for offshore wind development. At the state level, some state regulatory authorities have required offshore wind developers to establish compensatory funds to offset potential impacts to the fishing industry, to fund research programs aimed at better understanding those potential impacts, and to provide navigation enhancements and safety training; however, mitigation has differed from project to project, and state by state. To standardize mitigation approaches and find effective strategies, BOEM is working in consultation with the National Marine Fisheries Service and affected coastal states. (supporting priority question 3.1.2) (BOEM)

STRATEGIC OBJECTIVE 3.2

Current energy needs are met through balanced resource use

Related Studies and Research

Federal Lands Snapshot: Hardrock Mining Systems (GAO, 2021).[23] This study described the systems used to manage mining on federal lands. It also provided examples of the challenges and opportunities for improvement related to managing such mining, particularly in the areas of environmental stewardship, governance and transparency, and administrative resources.

Oil and Gas: Interior Should Strengthen Management of Key Data Systems Used to Oversee Development on Federal Lands (GAO, 2021).[24] This study reviewed the data systems Interior uses to oversee oil and gas development on federal lands and waters. GAO recommended that Interior develop a plan to improve data sharing among its key data systems and that Interior update its guidance for developing new data systems to address how program offices are to implement agile development.

2020 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends (Interior BLM, 2020).[25] This report estimated greenhouse gas emissions from coal, oil, and gas development that is occurring, and is projected to occur, on the federal onshore mineral estate. This information supports evaluation of the cumulative impacts of GHG emissions from fossil fuel energy leasing and development authorizations.

2021 Assessment of Undiscovered Oil and Gas Resources of the Nation's Outer Continental Shelf (BOEM, 2021).[26] This report assessed undiscovered oil and gas resources for the U.S. Outer Continental Shelf (OCS). The 2021 assessment considered relevant data and information available as of January 1, 2019, and builds upon previous OCS resource assessments. This assessment provided an estimate of undiscovered, technically, and economically recoverable oil and natural gas resources outside of known oil and gas fields on the OCS considering recent geophysical, geological, technological, and economic information.

Report on the Federal Oil and Gas Leasing Program (Interior, 2021).[27] Prepared in response to Executive Order 14008, this Interior report identified significant reforms that should be made to ensure onshore and offshore oil and gas programs provide a fair return to taxpayers, discourage speculation, hold operators responsible for remediation, and more fully include communities and Tribal, state, and local governments in decision-making.

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23 https://www.gao.gov/products/gao-22-105438
24 https://www.gao.gov/products/gao-21-209
25 https://www.blm.gov/content/ghg/
26 https://www.boem.gov/2021-assessment-undiscovered-oil-and-gas-resources-nations-outer
27 https://www.doi.gov/sites/doi.gov/files/report-on-the-federal-oil-and-gas-leasing-program-doi-eo-14008.pdf

Evidence Built in FY 2022

In FY 2022, the Bureau of Reclamation (Reclamation) continued its ongoing evidence building activities pursued in coordination with internal and external partners, to include continued evaluation of automated data collection and archiving systems (i.e., data infrastructure) with facility partners and complementary data analysis resources (e.g., data science tools and service providers) for its hydropower program. Plans are in place to begin piloting predictive analytics tools at Reclamation project sites, which will help inform data collection and monitoring approaches. This ongoing work supports Departmental learning under PLQ 3.2.3.

The Bureau of Energy Ocean Management Alaska Region in FY 2022 completed a comprehensive account of the socioeconomic characteristics of the Kenai Peninsula Borough (KPB) over a thirteen-year period between 2008 and 2020.[28] The objective of the study was to provide BOEM with information on the population, economy, and the institutions of the KPB and its diverse communities over this timeframe, including identifying important trends and drivers. For BOEM, the information in this report provides a baseline for evaluating future potential socioeconomic effects of oil and gas or renewable energy development in the Cook Inlet Outer Continental Shelf (OCS) Planning Area. Future studies of the socioeconomic effects of projects, plans, or events on the KPB can rely upon the information in this study to characterize the baseline socioeconomic environment. The study additionally advises on key data sources to pursue further analysis of economic activities and industries in the region and highlights gaps in information that may benefit from future study.

In FY 2022, BOEM also developed evaluation questions and engaged a committee of the National Academies of Sciences, Engineering, and Medicine to organize workshops and write a short report, the results of which were published in a letter report entitled Attributes of a First-in-Class Environmental Program: A Letter Report Prepared for the Bureau of Ocean Energy Management |The National Academies Press.[29] The report provides a framework that BOEM can use to evaluate its Environmental Studies Program, which is focused on developing quality science and whose priorities, outcomes, and impacts are driven by the larger needs of BOEM's comprehensive environmental program, particularly its environmental assessments. The guidance contained within the report is a starting point upon which BOEM can build more a more effective and efficient comprehensive environmental program. BOEM's environmental program plans to apply the report findings to inform an environmental program objective and strategy geared towards its first-in-class aspirations. BOEM plans to work both internally and under the advice of the National Academies' Committee on Offshore Science and Assessment to determine the most impactful next steps.

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28 Cuyno, L., Schug. (Northern Economics, Inc. Anchorage, AK), Flight M., Bhattacharya A., and Horsch E. (Industrial Economics, Inc. Cambridge, MA). 2022. Kenai Peninsula Borough Economy, 2008 to 2020. Anchorage, AK: U.S. Department of the Interior, Bureau of Ocean Energy Management. 271 p. Report No.: OCS Study BOEM 2022-053. Contract No.: 140M0121F0003.
29 https://doi.org/10.17226/26368

The Bureau of Land Management completed a review of the federal coal program, assessing whether the current regulatory framework should be changed to provide better mechanisms to decide which coal resources should be made available, how the leasing process should work, and when and where to lease. The results of the comment period that informed the report, and the report itself, will be used to guide the Department on public desire for further coal program reviews.

Priority Learning Questions

PLQ3.2.1　　How can Interior identify and document an increase in carbon sequestration in net carbon budgets with a majority of projects or decisions (pairing development projects with conservation)?
(previously PLQ 3.3) (BLM)

PLQ3.2.2　　How can Interior strengthen understanding of the carbon sequestration process and roles to ensure an appropriate oversight program for activities on the Outer Continental Shelf? (BSEE, BOEM)

PLQ3.2.3　　What is an effective approach to build corporate-level dataset monitoring and diagnostic resources and data science tools that could improve hydropower power program efficiency and effectiveness to allow Interior to better assess and refine asset management strategies and implementation? What is an effective way to share and aggregate high-resolution datasets for the hydropower program in a secure, timely manner? (previously PLQ 3.4) (USBR)

Planned Activities

- Pilot projects in collaboration with federal and industry partners to look into corporate-level dataset monitoring and diagnostic resources and data science tools for USBR's hydropower program. (supporting PLQ 3.2.3) (USBR)

**STRATEGIC
OBJECTIVE
3.3**

Land, water, and non-energy mineral resources support the diverse needs of communities

Evidence Built in FY 2022

In FY 2022, the Bureau of Ocean Energy Management conducted a review of its Marine Minerals Information System (MMIS) to address system effectiveness for internal and external users. The review highlighted that the MMIS continues to grow as a trusted source for valuable data about the marine mineral resources on the Outer Continental Shelf. The need for the MMIS and Marine Minerals Program's contributions to the National Offshore Sand Inventory are likely to grow as local, state, and federal partners increasingly look to source sediment from the OCS. The MMIS enables users to access extant information and avoid spending extra effort searching for and assessing the presence or viability of sediment resources for coastal resilience projects and multiple use planning. BOEM is using the results of the review to inform future investment and change management of MMIS in terms of its people, processes, data assets, and technology.

Annually, the Bureau of Land Management estimates the economic contributions associated with activities on BLM-managed lands and BLM expenditures annually. Starting in FY 2022, this analysis included results for each BLM Field Office, in addition to the State Office and National results produced in previous years. Results include estimates of direct and total jobs, output, and labor income supported by oil and gas, coal, non-energy minerals, renewable energy, grazing, timber, and recreation activity for each BLM Field Office. For each BLM State Office, results also include economic contributions associated with BLM expenditures and payments to states and counties. This data is available to all BLM staff to use in communication, National Environmental Policy Act (NEPA) analysis, and to improve decision making.

In FY 2022, the Bureau of Land Management also launched a study on the use of socioeconomic and environmental justice information in land use planning decisions, as required by statute, regulation, and Executive Order. This contracted study will provide a baseline assessment of how the BLM currently uses this information and analysis in NEPA documents. When available, results will inform forthcoming strategic planning and development of policy, tools, and resources to improve NEPA documentation and analysis of socioeconomic and environmental justice considerations to support the multiple ways human populations interact with, are impacted by, and value public lands.

In FY 2022, Reclamation conducted the Upper Missouri Basin Impacts Assessment and Missouri Headwaters Basin Study to develop and evaluate strategies for addressing water resource challenges under a range of potential future conditions, including population growth, changes in future water supply and demand related to climate change, and supply conditions based on a broad range of historical conditions drawn from paleohydrology analysis.

The modeling will support planning, mitigation, and project implementation in eight watersheds in the Missouri Headwaters to help prepare for and manage drought when it occurs, as well as to incorporate and adapt to changing drought characteristics in the future.

In FY 2022, Interior conducted assessments on water systems and facilities owned by the Bureau of Indian Affairs in order to identify water sanitation deficiencies. Deliverables included an inventory of lead service lines to identify lead fixtures that need replacement and a sampling of BIA-owned water sources for per- and polyfluoroalkyl substances – known as PFAS to the public. Assessments identified systems that need funding, some of which qualify for funding under the Bipartisan Infrastructure Law. Knowledge gained from this assessment will be used to make data-informed decisions regarding resource distribution and prioritization to achieve the greatest benefit to health and reduction in violation vulnerability.

Priority Learning Questions

PLQ3.3.1 How can Interior improve analysis of NEPA decision documents to incorporate merits, drawbacks, analysis of impacts, and mitigation measures of Interior's actions to people, including through socioeconomic and environmental justice analyses? (previously PLQ 3.2) (BLM, OSMRE)

PLQ3.3.2 How effective are Interior's processes for reviewing and approving feasibility studies for water reclamation and reuse projects? (previously PLQ 3.5) (USBR)

PLQ3.3.3 To what extent are non-energy mineral resources appropriately sourced from public lands in order to maintain balanced use if other domestic sources are not adequate? To what extent is sufficient economic data available on an appropriate level of domestic production on public land by commodity/mineral? (previously PLQ 3.6) (BLM)

Planned Activities

- An assessment of a sample of water reclamation and reuse projects to determine to what extent the review process for associated feasibility studies followed established procedures and to what extent the process was impacted positively or negatively by timeframes set by statute. Efficiently managing the feasibility study review process helps to increase the number of eligible projects which, in turn, benefits water conservation capacity to address drought. This evaluation will be used to ensure that Title XVI feasibility studies are reviewed as effectively as possible to advance the development of new projects under the program. The evaluation lead will select a representative sample of Title XVI feasibility studies and determine if Reclamation currently meets the time frames identified in the established process for reviewing and approving feasibility studies. Results of the review will be shared internally with the Title XVI Program Coordinator and Title XVI Standing Workgroup so that any revisions to program procedures can be developed. (supporting PLQ 3.3.2) (USBR)

Old Spanish National Historic Trail, California Photo by BLM

STRATEGIC GOAL 4: SERVE AND HONOR THE PUBLIC TRUST

Trust and confidence are cornerstones of Interior's unique and expansive mission, which includes a geographically distributed workforce, a vast set of management responsibilities, and diverse stakeholders with varying needs and responsibilities. The American people have entrusted Interior with the sustained use of critical natural resources, the preservation of iconic places, and the science to ensure robust decision making, all of which require assurance and fairness at the highest levels. This includes promoting a culture of ethical and inclusive decision-making grounded in the best available science to ensure that Departmental operations are safe, effective, and optimized for the changing environment. Beginning with a workforce that mirrors the diversity of the Nation that it serves, Interior will prioritize service delivery and performance improvement to redress inequities and systemic barriers to environmental justice and participation in Interior's programs and activities. This includes actively seeking ways to create opportunities for traditionally underserved communities to enjoy increased access to and benefits of public lands and waters, resources, and opportunities.

This goal is supported by the following strategic objectives:

▸ People, communities and organizations benefit from Interior data, science, and information

▸ Access to opportunities, services, and resources is equitable and just

▸ The Interior workforce is diverse, safe, engaged, and committed to the Interior mission

▸ There is confidence and satisfaction in the U.S. Department of the Interior

Ah-shi-sle-pah Wilderness Photo by BLM

STRATEGIC OBJECTIVE 4.1

People, communities and organizations benefit from Interior data, science, and information

Related Studies and Research

Tapwater Exposures, Effects Potential, and Residential Risk Management in Northern Plains Nations (ACS EST Water 2022).[30] This study assessed point-of-use tap water in three northern plains Tribal Nations. The results indicated that simultaneous exposures to co-occurring tap water contaminants are common.

Evidence Built in FY 2022

In FY 2022, the USGS investigated tap water exposures, potential for adverse effects, and residential risk management for safeguarding drinking water resources with a focus on underserved communities. Scientists discovered that precautionary, health-based, screening levels in tap water were exceeded frequently, due to inorganics in private supplies and chlorine-based disinfection byproducts in public supplies. The results indicated that simultaneous exposures to co-occurring tap water contaminants are common, warranting consideration of expanded source, point-of-entry, or point-of-use treatment(s). This study illustrates the importance of increased monitoring of private-well tap water, employing a broad, environmentally informative analytical scope, to reduce the risks of unrecognized contaminant exposures. This evidence will specifically increase knowledge of tap water contaminants in rural and remote locations that rely on private wells and will further Departmental learning under PLQ 4.1.1.

The Bureau of Land Management compiled research and development activities performed across its units and subsequently shared with organizations or persons including state and local governments, educational institutions, the private sector, nonprofit organizations, and/or the public at large. In FY 2022, the BLM attempted to solicit these technology transfer activities from across all programs for the purpose of more accurately and fully reporting on evidence shared outside the federal government and to support internal performance measurement.

The Bureau of Land Management also piloted an expanded use of the Recreation And Permit Tracking Online Reporting (RAPTOR) system. The pilot project uses the RAPTOR science module to approve, track, and report on applications for authorization to conduct scientific research on public lands. The historical lack of a centralized or coordinated process for issuing, tracking, and reporting on scientific research on public lands has led to a wide variety of existing approaches across the BLM which may incrementally be integrated into RAPTOR. The centralized nature of the system will allow a level of 'inventory' of scientific

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30 https://pubs.acs.org/doi/full/10.1021/acsestwater.2c00293

values not previously possible and facilitate preservation and protection of public lands in their natural condition. The initial pilot project began in 2022 and focused on select units of BLM's National Conservation Lands. The BLM plans to continue expansion in 2023 and beyond.

In FY 2022, the Office of Surface Mining Reclamation and Enforcement expanded availability of high-resolution satellite imagery for partners and stakeholders, allowing them to observe changes at mine sites over time that ranged from tracking the extent of current mining to viewing the progression of mining reclamation and re-vegetation success leading up to bond releases. The bureau observed more than 100,000 views/downloads of remotely sensed imagery across the United States. Using photogrammetry software to create fully rendered surface models taken from satellites, manned aircraft, unmanned aircraft, and ground-based imagery allows for states, Tribes, and federal programs to make better and more accurate decisions and assessments on protecting and restoring land.

Priority Learning Questions

PLQ4.1.1   How can Interior improve the public benefit of the Department's data, science, and information resources, especially among vulnerable communities? (previously PLQ 4.1) (USBR, USGS)

PLQ4.1.2   How can Interior achieve better data and science equity, and increase the use of evidence and data in Interior's decision making? (previously PLQ 4.2) (NPS, USBR, USGS)

PLQ4.1.3   How can Interior improve and expand the co-production of scientific or other knowledge to meet customer needs? (FWS, USBR, USGS)

PLQ4.1.4   How can Interior improve transparency and accessibility of data? How can Interior maximize data use for the public? (OS/OCIO)

Planned Activities

- An evaluation to identify current and potential "use cases" for Earth Mapping Resources Initiative (MRI) data and products, using both internal subject matter expert input and selected stakeholder input. For current use cases, interviews and surveys will focus on identifying what Earth MRI products are being used, how beneficial that information is, and whether different types of data or products that the program could produce would be more useful. For potential use cases, where scientists or stakeholders believe Earth MRI data should be useful but it is not yet being used, interviews and surveys will focus more on "bottom-up" descriptions of what data would be helpful for those use cases. Stakeholder groups will be interviewed or surveyed using standard social science methods and following appropriate guidance for collection of data from human subjects. (supporting PLQ 4.1.1) (USGS)

- Increased support and coordination to expand the Reclamation GIS Data Manager Framework to meet growing needs for standardized, accurate, well maintained, and easily accessible geospatial data. GIS Data Managers are responsible for developing the workflows required to integrate, maintain, and document local data and expertise in bureau-wide resources, such as the Enterprise Asset Registry – an inventory of Reclamation's dams, reservoirs, roads, trails, canals, recreation areas, boat ramps, and other assets. The workflow process enables data exploration throughout Reclamation and will improve public access to information about recreation opportunities and more through publication in the Reclamation Information Sharing Environment (RISE) and Interior GeoPlatform. The GIS Program is currently supporting Reclamation's Asset Management Division's efforts to build their asset inventories. Once they are completed, it would be relatively easy to combine them with demographic data, Census data, or additional information from other entities in a GIS program. For example, this information could be used to increase access to recreation amenities for vulnerable communities. (supporting PLQ 4.1.1) (USBR)

- Development of the Reclamation Information Sharing Environment (RISE) and addition of datasets to RISE to improve public access to Reclamation's mission-related data, including ongoing monitoring and research results related to water operations, hydropower, water quality, endangered and invasive species, and infrastructure. Work will include engagement with stakeholders to understand data access needs. (supporting PLQ 4.1.1) (USBR)

- Development of a new Reclamation Manual Directive and Standard that provides guidance and standards for a Reclamation Data Inventory (DAT-001-01). This will help data and system owners improve the discoverability of bureau data assets and ensure that data is more easily identified and accessible as evidence for use in Interior's decision making. Making data easier to find and access will also facilitate public use of data for science and information. Development of a Reclamation Data Inventory will facilitate harvesting of data into the Department Enterprise Data Inventory and into data.gov for open use and public benefits. (supporting PLQs 4.1.1 and 4.1.2) (USBR)

STRATEGIC OBJECTIVE 4.2

Access to opportunities, services, and resources is equitable and just

Evidence Built in FY 2022

In FY 2022, Interior conducted foundational fact finding, including research and data collection to develop the Minority-Serving Institutions (MSI) Dashboard and enable essential funding analysis and data modeling needed to assess barriers to achieve the Interior's equity outcomes. Interior utilized the Department of Education's MSI datasets to create various MSI Dashboards to initiate the analysis of Interior financial assistance and procurement funding to Minority Serving Institutions. As the Department continues efforts to assess how Interior's policies and programs may perpetuate barriers for underserved communities, data collected through the MSI Dashboard is expected to support additional analysis to shape strategy development to ensure Interior's programs and policies yield equitable outcomes for all Americans, including underserved communities.

Priority Learning Questions

PLQ4.2.1 How can Interior assess and remove barriers to participation and ensure equitable access to the Department's grant and contracting opportunities for historically underrepresented populations? (previously PLQ 4.3) (OS/PMB/BFGA/OSDBU, OS/PMB/BFGA/PGM)

PLQ4.2.2 What does Interior know, and need to know, about baseline conditions of environmental justice and opportunities, services, and resources for underserved communities? (OS/PMB/HC, OS/PMB/PEM)

Planned Activities

■ An initial evaluation to include data collection and analysis related to awards, applications, and determining whether a specific step in the process of grant award and management process demonstrates a statistically significant disparity of underrepresented groups. This evaluation will also explore whether a specific step in the process demonstrates a statistically significant disparity increase. Interior will conduct extensive stakeholder outreach, surveys, and other data gathering. (supporting PLQ 4.2.1) (OS/PMB/HC/OHC)

■ An assessment of the results of three OMB Customer Experience Information Collection Surveys developed and deployed by the Department in FY 2023 used to better understand small business vendors. The information collected will be used to refine service delivery, including communication materials, supporting reference materials, and digital products associated with the Interior's Small Business Program. (supporting PLQ 4.2.1) (OS/PMB/BFGA/OSDBU)

STRATEGIC OBJECTIVE 4.3

The Interior workforce is diverse, safe, engaged, and committed to the mission

Related Studies and Research

Department of the Interior Strategic Plan to Advance Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce (Interior, 2022).[31] This plan presents Interior's strategy to identify funding and resources to build capacity and deploy actions that advance equity across the Department, both for the workforce that delivers the missions and for all Americans who are beneficiaries of those missions.

Evidence Built in FY 2022

In FY 2022, Interior's Office of Aviation Services developed its report on aviation safety. This report provided a synopsis of the previous year's aircraft mishaps and is used as a learning mechanism to prevent mishaps. The report contains representative aircraft mishaps and lessons learned; the data collection and analysis of aircraft mishaps enabled managers to recognize program deficiencies, design corrective actions, monitor program enhancements, and share proven practices across bureau aviation programs.

Interior's Office of Wildland Fire continued workforce assessments to address risks for Interior being able to effectively conduct activities before, during, and after wildfire events to ensure the protection of life and property, and to sustain and aid the recovery of ecosystems. Addressing wildland firefighter recruitment and retention issues is central to the Department's ability to respond to fires, conduct fuels management activities, and rehabilitate burned areas. Workforce assessments identified pay/compensation and fatigue as factors contributing to Interior's ability to retain its firefighting workforce. The evidence gathered will assist managers in developing long-term solutions and strategies to meet Departmental firefighting needs.

Priority Learning Questions

PLQ4.3.1 To what extent are the Department's recruitment and hiring practices adequate to attract and retain a diverse and highly skilled workforce? (previously PLQ 4.5) (BLM, NPS, USBR)

PLQ4.3.2 To what extent are recruitment and hiring practices adequate to maintain a workforce that can sustainably address wildland fire management? (BLM, NPS, OS/PMB/PRE/OWF)

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31   https://www.doi.gov/ppa/equity

PLQ4.3.3   What are the primary challenges to retaining an engaged, diverse, highly skilled workforce capable of delivering the Department's mission? (previously PLQ 4.6) (BLM, NPS, USBR)

PLQ4.3.4   How can the Department advance equity within the workforce? (BLM, NPS, OS/PMB/HC, USBR)

PLQ4.3.5   What investments are needed to support and improve behavioral health and wellbeing services for first responders across the Department? (OS/PMB/PRE)

Planned Activities

- Using existing demographics data from the different points in the employee life cycle to establish a baseline for Department-level and organization-level performance in workforce diversity. Interior's DEIA Council will review performance of other Federal agencies and National and state-level census information to benchmark the relative success of Interior in attracting, hiring, promoting, and retaining talent. Using this information, Interior decision makers can identify gaps and opportunities to improve diversity, with appropriate outcomes based on differences in mission area, geography, and other factors. Data insights will inform requirements for more in-depth analysis, identification of potential barriers, and need for immediate corrective action. Interior will also assess effective models in promoting Federal workforce diversity, consult with subject matter experts in academia and industry, and use findings to identify promising strategies for the Department. (supporting PLQs 4.3.1 and 4.3.3)

- An Office of Wildland Fire evaluation to include surveying human resources staff at multiple organization levels; surveying fire managers and supervisors at multiple organization levels; surveying applicants and new hires; analyzing data from staffing databases and other systems which support recruitment and onboarding; conducting focus group follow-up based on outcomes of surveys and data analysis; reviewing relevant research findings regarding effective best practices for recruitment; consolidating findings; making recommendations for actions needed; and presenting report and briefing fire management leadership on findings and recommendations. (supporting PLQ 4.3.2) (OS/PMB/PRE/OWF)

STRATEGIC OBJECTIVE 4.4

There is confidence and satisfaction in the U.S. Department of the Interior

Related Studies and Research

OMB Memorandum 22-09 Moving the U.S. Government Toward Zero Trust Cybersecurity Principles (OMB, 2022).[32] This OMB memo discusses and sets forth a Federal zero trust architecture strategy, requiring agencies to meet specific cybersecurity standards and objectives by the end of Fiscal Year 2024 in order to reinforce the Government's defenses against increasingly sophisticated and persistent threat campaigns.

Natural Hazard Mitigation Saves: 2019 Report (National Institute of Building Sciences, 2019).[33] This report provided a benefit-cost analysis of natural hazard mitigation, from adopting up-to-date building codes and exceeding codes to addressing the retrofit of existing buildings and utility and transportation infrastructure.

Evidence Built in FY 2022

In FY 2022, Interior's Office of the Chief Information Officer conducted a series of pilot projects to support modernizing Interior's wide area network and network security through implementation of a mature Zero Trust Architecture. The pilot projects enabled Interior to investigate needed cloud-based security architectures, such as Secure Access Service Edge, to enable end users to securely access any Interior resource from any Interior location. The findings of the pilot projects gave senior leadership the opportunity to determine an appropriate path forward, including determining how to fund the implementation effort across Interior's enterprise to respond to Executive Order 14028 and OMB direction in M-22-09. This work supports Interior's adoption and use of modern technology and security practices, while avoiding disruption by malicious cyber campaigns.

Priority Learning Questions

PLQ4.4.1   How can the Department's Office of Law Enforcement and Security advance equity with respect to law enforcement interactions with the public? (NPS, OS/PMB/PRE/OLES)

PLQ4.4.2   Where and how can Interior better use evidence in administrative functions and business decisions to improve organizational health and performance? (OS/OCIO, OS/PMB/HC, OS/PMB/PEM/PPP)

Planned Activities

Plans for evidence-building are under development. Interior will strive to leverage existing work underway while expanding the Department's ability to track and use evidence for decisions.

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32   https://www.whitehouse.gov/wp-content/uploads/2022/01/M-22-09.pdf
33   https://www.nibs.org/reports/natural-hazard-mitigation-saves-2019-report

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