DEPARTMENT OF THE INTERIOR

CLIMATE ADAPTATION AND RESILIENCE PLAN

Progress Report

2022

Secretary of the Interior

Climate Adaptation and Resilience Plan

2022 Progress Report

Agency	U.S. Department of the Interior
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Agency Climate Adaptation Webpage	https://www.doi.gov/priorities/tackling-climate-crisis

SECTION 1: UPDATES ON PRIORITY ACTIONS

1. Priority action progress summary

Priority Action Progress			
Action	**Current Status**	**Estimated date of completion**	**Brief Description of Progress**
Promote Climate-Resilient Lands, Waters, and Cultural Resources	In progress	Ongoing	The Department of the Interior (Department or DOI) is currently implementing strategies to foster resilience on lands, waters, and cultural resources. The Department continues to increase its understanding of climate science and potential impacts as demonstrated in Section 1.2.
Advance Climate Equity	In progress	Ongoing	The Department is currently implementing strategies to advance equity. The Department continues to increase its understanding of how climate change impacts disadvantaged communities, how the benefits of its investments flow toward disadvantaged communities, and how those investments might be adjusted to achieve the goals of the Justice40 Initiative as demonstrated in Section 1.2.
Transition to a Resilient Clean Energy Economy	In progress	Ongoing	The Department is currently implementing strategies to transition to a resilient clean energy economy. The Department continues to identify opportunities decarbonize the nation's economy and help communities transition to a clean energy future as demonstrated in Section 1.2.
Support Tribal and Insular Community Resilience	In progress	Ongoing	The Department is currently implementing strategies to support Tribal and Insular community resilience. The Department continues to increase its understanding of climate science, how climate change impacts Tribal and Insular communities, and Indigenous Traditional and Ecological Knowledge as demonstrated in Section 1.2.
Empower the Next Generation of Conservation and Resilience Workers	In progress	Ongoing	The Department is currently implementing strategies to empower the next generation of conservation and resilience workers. The Department continues to explore opportunities to employ and train future leaders on public lands within existing appropriations, the *Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Law*), and the *Great American Outdoors Act of 2020* as demonstrated in Section 1.2.

2. Priority Action Progress Examples

Action	Example 1	Example 2
Promote Climate-Resilient Lands, Waters, and Cultural Resources	The Department uses funding provided through the *Bipartisan Infrastructure Law* to strengthen the Nation's resilience to climate change. In Fiscal Year (FY) 2022, the Department provided over $68 million to fund 125 projects with Ecosystem Restoration Program dollars that advance climate adaptation and contribute to ecosystem resilience. As part of the America the Beautiful Challenge, the Department is contributing $375 million to conservation and restoration projects that improve ecosystem and community resilience to climate-related threats.	The National Park Service (NPS) released *Planning for a Changing Climate* to guide planners and managers in developing robust climate change adaptation strategies as a routine part of park planning and decisions. This guidance helps promote climate-resilient lands, waters, and cultural resources across the full range of NPS planning efforts.
Advance Climate Equity	In 2022, the Department invested $46 million from the *Bipartisan Infrastructure Law* and FY 2022 appropriations in Tribal communities to address the unique impacts of climate change in Indigenous communities. The funds also increased support for community-led relocation effort of Tribes, dedicating $130 million from 2022-2026 through the Bureau of Indian Affairs (BIA) efforts. The funding is available for projects and initiatives that address and strengthen climate resilience and adaptation; ocean and coastal management; community-driven relocation and protect-in-place activities; and internships and youth engagement.	The Department is leveraging its resources and *Bipartisan Infrastructure Law* funding to invest in rural and Tribal communities adversely affected by both climate change and pollution. In 2022, the Department invested $725 million in funding to 22 states and the Navajo Nation to create good-paying union jobs and catalyze economic opportunity by reclaiming abandoned mine lands (AML). The AML funding will address abandoned mines that are leaking methane—a key contributor to climate change. A total of $11.3 billion in AML funding will be allocated and distributed over 15 years to states and Tribes to protect the environment and invest in disadvantaged communities.
Transition to a Resilient Clean Energy Economy	The Department announced a new offshore wind leasing strategy, which includes potentially holding up to seven new offshore wind lease sales by 2025. The Bureau of Ocean Energy Management (BOEM) held two of those sales in January (New York Bight) and May (Carolina Long Bay) 2022. This strategy provides two crucial ingredients for success: (1) more certainty for industry and (2) transparency for our stakeholders and ocean users.	The Bureau of Land Management (BLM) is working to facilitate 25 gigawatts of renewable energy on public lands by 2025. In 2022, BLM released a policy to help screen and prioritize proposed solar and wind projects on public lands. The policy, an Instruction Memorandum entitled "Initial Screening and Prioritization for Solar and Wind Energy Applications and Nominations/ Expressions of Interests," will help accelerate clean energy development and conserve America's most valuable natural and cultural resources.
Support Tribal and Insular Community Resilience	The Department hosted five virtual listening sessions for Tribal Nations between October and December 2021 focused on climate change and barriers to accessing discretionary grants. This effort aligned with the implementation of Executive Order 13985, entitled "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government."	The BOEM is working with the Udall Foundation's National Center on Environmental Conflict Resolution to stand up Tribal working groups and develop new Tribal Cultural Landscape assessments near areas off the U.S. West Coast where leasing activities may occur.
Empower the Next Generation of Conservation and Resilience Workers	The BIA and the U.S. Fish and Wildlife Service (USFWS) collaborate with Federal, Tribal, and non-governmental organizations to offer an experiential, youth-driven conservation leadership training for Native high school and college-aged youth. The program's mission is to develop future conservation leaders with the skills, knowledge, and tools to address environmental change and conservation challenges to better serve their schools and home communities.	NPS's Scientists in Parks program places students and young professionals in park-defined internship positions between 12 and 52 weeks in length to address natural resource management issues, including climate change. Interns benefit from meaningful professional development programming and mentorship, fostering life-long connections to national parks. In FY 2021, 213 interns were placed in 117 park units nationwide, approximately 70 of which focused on climate change.

SECTION 2: UPDATES ON OTHER INITIAL PLAN TOPICS

1. Climate-Risk Reduction

Protecting the Department's natural, cultural, and built infrastructure is critical to the Department's mission. The Department's real property inventory is diverse and includes office buildings, visitor centers, schools, museums, scientific laboratories, dams, water delivery systems, fish hatcheries, roads, and trails. Many Department assets are vulnerable to climate-related hazards, including extreme weather events, floods, wildfire, and storm surges. In some cases, these assets are historic and include cultural resources that are irreplaceable due to their locations and construction materials.

Application of a structured method for assessing operating risk to climate-related hazards varies throughout the Department. The Department's Office of Emergency Management and the U.S. Geological Survey (USGS) have partnered to establish the Strategic Hazard Identification and Risk Assessment (SHIRA) Project. The SHIRA Project provides data, tools, and training exclusively for the Department for personnel to improve planning for realistic threats to Department assets, resources, and people. SHIRA strives to:

- Improve understanding of hazard-related risks posed to assets, resources, and people;
- Determine the data and tool needs to enable effective risk planning;
- Identify realistic threats and commonalities to enable multi-hazard planning;
- Curate and deliver the best available hazards and asset data;
- Characterize and effectively communicate the hazard exposure of assets;
- Develop tools to support unit and regional risk planning; and
- Build a risk community of practice to share best practices and to leverage limited resources.

The NPS's *Addressing Climate Change and Natural Hazards Handbook* guides national park personnel in planning and designing facilities that accommodate existing and projected climate change and other natural hazards. The NPS prepared vulnerability assessments for infrastructure in the southeastern coastal parks to identify exposure and sensitivity to sea level rise and storm surge. The USFWS is beginning to implement a Rapid Vulnerability and Risk Assessment Methodology for USFWS-managed infrastructure. The BIA's 2022 Annual Awards Program Request for Proposals includes funding for implementation for relocation, managed retreat, or protect-in-place actions, climate adaptation planning, and implementation for climate adaptation strategies. The Bureau of Reclamation (Reclamation) is working with water management partners to develop guidance on how to mainstream climate change into water and hydropower management.

The Department has not developed a method for assessing fiscal risk exposure due to climate change; however, DOI Bureaus are taking proactive measures to reduce that exposure. The NPS developed a facility investment strategy that specifically directs project proponents to consider and include climate adaptation. NPS units must consider risks based on the facility location and any need to incorporate sustainable design and construction when rehabilitating. If the unit moves forward with recapitalization, it must incorporate climate resilient infrastructure resulting in improvements to facilities or operations that prepare for and adapt to changing climate conditions. As demonstrated in the *Wildfire Risk Five-Year, Monitoring, Maintenance, and Treatment Plan*, the Department is implementing fuel treatments to reduce wildfire risks and is identifying additional priority treatment areas. The Office of Wildland Fire (OWF) is using funding to further develop a Wildfire Risk Geospatial Mitigation Planning Tool that will help identify shared priorities and work collaboratively with multiple partners and stakeholders to address wildfire risk across landscapes.

2. Climate Vulnerability Assessments

Climate Change Vulnerabilities

- **Vulnerability #1: People, Communities, and Cultural Resources**
- **Vulnerability #2: Healthy Watersheds and Water Supplies**
- **Vulnerability #3: Biodiversity and Ecosystems**
- **Vulnerability #4: Coastal and Marine Resources**
- **Vulnerability #5: Infrastructure and Facilities**

Climate change vulnerability assessments present vulnerability as the difference between the adaptive capacity of a resource and the potential impact of climate change upon it. To assess vulnerabilities associated with the impact of climate change, consideration of both the resource's sensitivity to change and the exposure to change are necessary. Because the Department's vulnerabilities vary across its Bureaus' and Offices' mission areas and responsibilities, it has not had an agency-wide, overarching vulnerability assessment. Instead, the Department's Bureaus and Offices develop vulnerability assessments based on their individual missions and responsibilities.

For each of the *Climate Action Plan's* five vulnerability areas, DOI Bureaus and Offices are evaluating impacts of climate change to demographic groups and/or resources. For example:

- The NPS requires managers to identify vulnerabilities to infrastructure on their managed property. Forty NPS units have completed Resource Stewardship Strategies incorporating climate change adaptation based on climate change projections, and eight more are currently underway. Eighty parks receiving Great America Outdoors Act funding are using climate vulnerability information in their infrastructure plans. The NPS completed a *Strategic Analysis of Climate Vulnerability of National Park Resources and Values* that informs their goal of conducting multiple vulnerability assessments (based on need and funds) at each of the 423 units.
- Reclamation has funded 27 basin studies assessing climate change impacts on water supplies, demands, and strategies to adapt water management since 2009. These studies informed Reclamation SECURE[1] reports to Congress on water reliability in the Western U.S.

The Department continues to explore opportunities to develop a department-wide, science-based, rapid vulnerability assessment framework to provide a more efficient mechanism to prepare assessments.

3. Climate Literacy

The Department is dedicated to institutionalizing the use and consideration of climate science into its decision-making process. The Department recognizes that climate science information is complicated and voluminous. To ensure a climate-literate workforce that is empowered to bolster resilience and tackle the climate crisis, the Department is working to provide its employees with consistent messaging and training on best practices to make climate-informed decisions.

The Department developed a Climate Training Working Group (CTWG) with representation from curriculum managers and training specialists across multiple bureaus. The CTWG's goal is to produce:

- Department-wide, broad-scale climate change training for all Department employees; and
- Tailorable training frameworks that will inform natural resource decision-making with the most current and appropriate climate science, intended for natural resource managers at the Department.

To foster a culture of knowledge and practice, the Department hosts a monthly Policy Seminar Series open to all Department employees and to the public. These seminars bring experts across the Department and beyond to highlight important work that is being done related directly to the Department's mission,

[1] PL 111-11, Title IX, Subtitle F

such as climate adaptation and resilience. Recent seminars have highlighted topics such as renewable energy on the Outer Continental Shelf, science and decision-making, wildfire and invasive species, and drought affecting the Colorado River.

Additionally, individual Bureaus developed training programs to meet the needs of their workforce.

- The BIA partners with the Institute of Tribal Environmental Professionals on courses, such as *Climate Change Adaptation 101*, and in trainings, such as the *Tribal Hazard Mitigation Planning Cohort*.
- Reclamation established a Reclamation Climate Change Community of Practice (CoP) to engage all staff who have a role in addressing climate change and build climate resilience within Reclamation's mission.
- The BLM's National Science Committee is set to launch a *Lunch and Learn* program as outreach on climate science.
- The USFWS's National Conservation Training Center (NCTC) currently offers seven climate change courses and workshops open to all Department employees.
- The NPS compiled a suite of training opportunities that include baseline orientation to climate change considerations suitable for all employees; and in-depth training for priority occupational series that promote on-the ground climate change efforts.
- The OWF supports regional consortiums that provide an interface between fire-related climate science and Federal, Tribal, state, and local land managers through the Joint Fire Science Program.
- The USGS's Climate Adaptation Science Centers (CASCs) developed trainings across their networks and are working with NCTC to integrate climate adaptation into various aspects of their climate training.

The Department recognizes that more work is needed to develop a climate-literate workforce. Not all DOI Bureaus have institutionalized the consistent use and consideration of climate science and adaptation into decisions. Additionally, there is a need to identify at a high-level what climate tools, data, and information DOI Bureaus should use. Training for staff and decision-makers on the use of climate data and how to rely on the information to inform decision analyses will be important to ensure it is being considered throughout the Department.

4. Tribal and Insular Engagement

The Department is the primary Federal agency charged with carrying out the United States' trust responsibility to American Indian and Alaska Native people, maintaining the Nation-to-Nation relationships with 574 federally recognized Indian Tribes and promoting and supporting Tribal self-determination. The Department also effectuates and implements the United States' special legal relationship with the Native Hawaiian people and has administrative responsibilities for coordinating Federal policy for the communities in the Insular areas. One of the institutional approaches identified in the Department's *Climate Action Plan* is to consider traditional knowledge in decision-making. As part of the *Climate Adaptation and Resilience Plan* implementation, the Department will continue to consider trust obligations, Tribal Treaty Rights, and Indigenous Traditional Ecological Knowledge (ITEK).

The Department participates in the White House Council for Native American Affairs and is committed to protecting Tribal treaty rights in agency policymaking and regulatory processes. The Memorandum of Understanding (MOU), entitled "Interagency Coordination and Collaboration for the Protection of Tribal Treaty Rights and Reserved Rights," affirms the Department's commitment to enhancing interagency coordination and collaboration to protect treaty rights and to fully implement Federal Government treaty obligations. Tribal Nations entered into treaties, in part, to protect their way of life and inherent rights to natural resources of cultural, economic, and subsistence importance. It is the Department's obligation to

honor these treaty rights and incorporate Tribal interests into decision-making, so that Tribal rights regarding everything from hunting and fishing to health care and education are protected.

NPS Policy Memo 14-02, entitled "Climate Change and Stewardship of Cultural Resources," requires consultation with Native American and other traditionally associated people to inform the determination of significance of cultural resources as one element of developing climate adaption options. In FY 2021, NPS's *Native Nations and Climate Change Webinar Series* brought together tribal representatives, agency tribal liaisons, and DOI Bureau leads to facilitate and inform collaborative climate adaptation efforts.

The USGS is expanding a program that uses Alaska Natives' monitoring of wild berry crops to track what is happening to the underlying permafrost. In April 2022, USGS published a Federal Register Notice for public comment on collecting narrative information regarding knowledge and observations of permafrost dynamics in communities in the Yukon River Basin in Alaska. Narrative information will be collected via semi-structured interviews with active land users in specific communities as well as relevant city, Tribal council, and village corporation staff. This information will allow for a greater understanding of permafrost dynamics in the region, inform future permafrost monitoring efforts, and be provided to communities for adaptation planning.

The Office of Insular Affairs (OIA) held a *Territorial Climate and Infrastructure Workshop* in March 2022, which helped elevate climate and infrastructure support opportunities for U.S. Territories provided by the *Bipartisan Infrastructure Law*. The OIA is working closely with Federal agencies and other partners to help fund and implement Territorial projects eligible for this funding.

Other efforts to increase the consideration of ITEK include:

- The BIA's 2022 Tribal Climate Resilience Awards Program includes an International ITEK Virtual Exchange Category of Funding.
- The BLM is producing a series of short videos on how ITEK can be integrated into operations and decision-making including authorities for the use of ITEK, application of cooperating agency status, and resource inventory and monitoring.
- The BOEM hosted *The Tribal Ocean Summit* in 2022 to enable a mutual exchange of information and learning to improve working relationships and meaningful consultation practices going forward.
- The OWF is working with the Joint Fire Science Program, Tribes, and The Nature Conservancy on an effort to increase the use of ITEK on Tribal and Bureau-managed lands.

5. Environmental Justice

The Department is integrating issues of environmental justice and inequity into decision-making to ensure adaptation efforts are sustainable and account for the impacts on all populations, including low-income communities, communities of color, Insular areas, and Tribes. For example, the Department is working to make screening and analyzing Justice40 covered programs easier and more consistent by developing geospatial approaches that may include creating a geographic information system environment that leverages several screening tools and the Department-managed GeoPlatform. The Department is also developing a toolkit on best practices for local community engagement to show how involving communities and local students can help develop location specific knowledge and approaches. This effort is in partnership with the NPS Stewardship Institute and leverages partnerships with Historically Black Colleges and Universities, Tribal universities, and other academic institutions. The Department hosted its first *Environmental Justice Symposium* in May 2022, which featured a session on climate justice with special emphasis on urban, Tribal, and Insular communities. The symposium will contribute to a series of new trainings and provide feedback on the *Environmental Justice Strategic Goals and Action Plan*.

6. Partnerships

The Department is committed to working with other Federal agencies, Tribes, Insular areas, Native Hawaiian people, States, local communities, and other public and private partners, domestically and abroad, to prepare for and respond to the impacts of climate change. Because climate change spans jurisdictions, borders, and mission areas, the Department is committed to growing these partnerships to establish a whole-of-government approach to tackle the climate crisis.

For example, DOI Bureaus and Offices continue to implement the *National Seed Strategy* with the Department of Agriculture, Department of Defense, as well as Tribes, States, and private sector partners in the Plant Conservation Alliance. The *National Seed Strategy* was included in the *Bipartisan Infrastructure Law* and will significantly increase the diversity and quantities of commercially available native seed for resilient restoration across Federal and non-Federal lands.

Other current partnership efforts include:

- The Department is prioritizing invasive species management activities that boost climate adaptation, resilience, and mitigation in collaboration with other Federal agencies, Tribes, Territories, and States. This work includes a focus on wildfire and invasive species, islands and invasive species, and a national early detection and rapid response framework.
- The USGS is assisting other bureaus with climate change scenario planning through its CASCs, including a new Midwest CASC that focuses on climate impacts and adaptation science support in the Great Lakes States.
- The OWF is participating in the Wildland Fire Mitigation and Management Commission to lead additional interagency efforts and new partnerships to implement recommendations on wildfire management and actions to mitigate and adapt to climate change.
- BIA's Tribal Climate Resilience Program partnered with other Federal and State agencies, educational institutions, and researchers for community-led relocation, managed retreat, and protect in place pilot demonstration projects.
- Reclamation's West-Wide Climate Risks Assessment Team will implement a climate adaptation program to assess the risks and impacts from climate change to a range of activities, from the delivery of water and power to maintaining ecological resilience. The Team includes members from across Reclamation with technical expertise in climate change science and planning and representatives from a host of Federal agencies whose missions have a nexus to water resources.
- The NPS issued *Guidelines on Flood Adaptation for Rehabilitating Historic Buildings* to inform public and private property managers on how to adapt historic buildings to be more resilient to flooding risk while also meeting the Secretary of the Interior's Standards for Rehabilitation.

SECTION 3: NEW TOPICS FROM E.O. 14057

1. Policy Review

A review of agency policies to ensure climate-resilient investment and remove maladaptive policies and programs is occurring throughout the Department. Several Departmental Manual chapters are under review, including 522-DM-1 *Adaptive Management*, 523 DM-1 *Climate Change Policy*, 526 DM-1 *Assessing Climate Impacts*, 600 DM-6 *Implementing Mitigation as the Landscape-scale*, and 604_DM-1 *Implementing Landscape-Level Approaches to Resource Management*.

Bureau-level evaluations include:

- The USFWS is revising their manual chapter 056 FW 1 *Climate Adaptation*.
- The Office of Surface Mining Reclamation and Enforcement (OSMRE) reviewed and revised its federally owned fleet vehicle procurement policies. In FY 2022, OSMRE will begin procuring

Zero Emission Vehicles (ZEV) aligned with the Department's overall ZEV procurement strategy, which includes annual targets to meet FY 2027 and FY 2035 ZEV targets.

- The BLM is reviewing IM 2021-036 *Orphaned Well Identification, Prioritization, and Plugging and Reclamation* to be consistent with the *Bipartisan Infrastructure Law* direction to reduce emissions of toxic substances and greenhouse gases from existing and abandoned infrastructure.

2. Climate Scenario Analysis

At present, climate data is developed and used at the Bureau-level and the Department has not provided guidance on a consistent methodology for climate scenario analysis or for use of climate information such as data, models, and timeframes in decision-making. DOI Bureaus would benefit from a department-wide policy that identifies which future climate projections should be considered during decision-making. The USGS develops datasets that present future projections of temperature and precipitation using a combination of global climate models, emissions scenarios, downscaling techniques, and training data. These downscaled datasets use smaller spatial scales, such as a single watershed, which can be better used by regional and local stakeholders. These tools need to be broadly shared between DOI Bureaus which will require the assistance and capacity to access these downscaled climate projections, model vegetation and hydrology changes, and conduct analyses to inform decisions. Training for staff and decision-makers on the use of that data and analyses will be important to ensure they are being used appropriately.

The Department is updating the policy entitled 526 DM-1 *Assessing Climate Impacts*, on the use of climate adaptation science approaches, including model and scenario outputs in management, regulatory and policy decisions. This will be accompanied by several actions including:

- A risk management framework that outlines approaches to incorporating climate futures into management choice, focused on environmental analyses and planning decisions,
- A guidebook on approaches to using climate futures approaches (including model and scenario output),
- An online resource that provides access to the latest climate futures science and information and expertise to guide users in accessing information, and
- Training in use of climate data and information as part of a larger Department training effort.

Examples of how the Department is incorporating climate data and information into decision-making are outlined below:

- The USGS develops datasets that present future projections of temperature and precipitation using a combination of global climate models, emissions scenarios, downscaling techniques, and training data. These downscaled datasets use smaller spatial scales, such as a single watershed, which can be better used by regional and local stakeholders.
- NPS's 2021 guidance *Planning for a Changing Climate* describes a 6-step adaptation planning cycle, including developing forward-looking goals that consider future climatic conditions and considering more than one scenario of the future, with the goal of incorporating climate adaptation into existing planning processes. The NPS's Climate Change Scenario Planning Showcase provides reports, guides, and examples of the use of climate projections in scenario planning. The Climate Change Response Program also provides training for NPS staff and partners. Along with partners, including USGS, NPS Climate Change Response Program staff has co-authored several publications that advance the science and practice of incorporating climate projections into decision-making.
- The USFWS is using the Resist-Accept-Direct (RAD) framework to respond to ecological transformation, especially to new unexperienced conditions. RAD is a decision framework applied across the landscape to respond to ecological transformation for the purpose of fish and wildlife management. Management often incorporates two or three RAD elements rather than just

one discrete use. For example, change might be resisted in the short-term (10-20 years) to provide habitat until it can be changed into a desired type. Change may need to be accepted in some locations due to environmental, economic, or social constraints, but then use the resist and direct option in other locations.

- Reclamation is compiling FY 2022 case studies on how to best incorporate climate change information into various types of decision-support efforts, including water resources planning, ecosystem management, and dam safety. Results will inform guidance on operationalizing climate change in decision-making throughout Reclamation's mission.

Figure 1 identifies the flow of climate information and guidance through the Department.
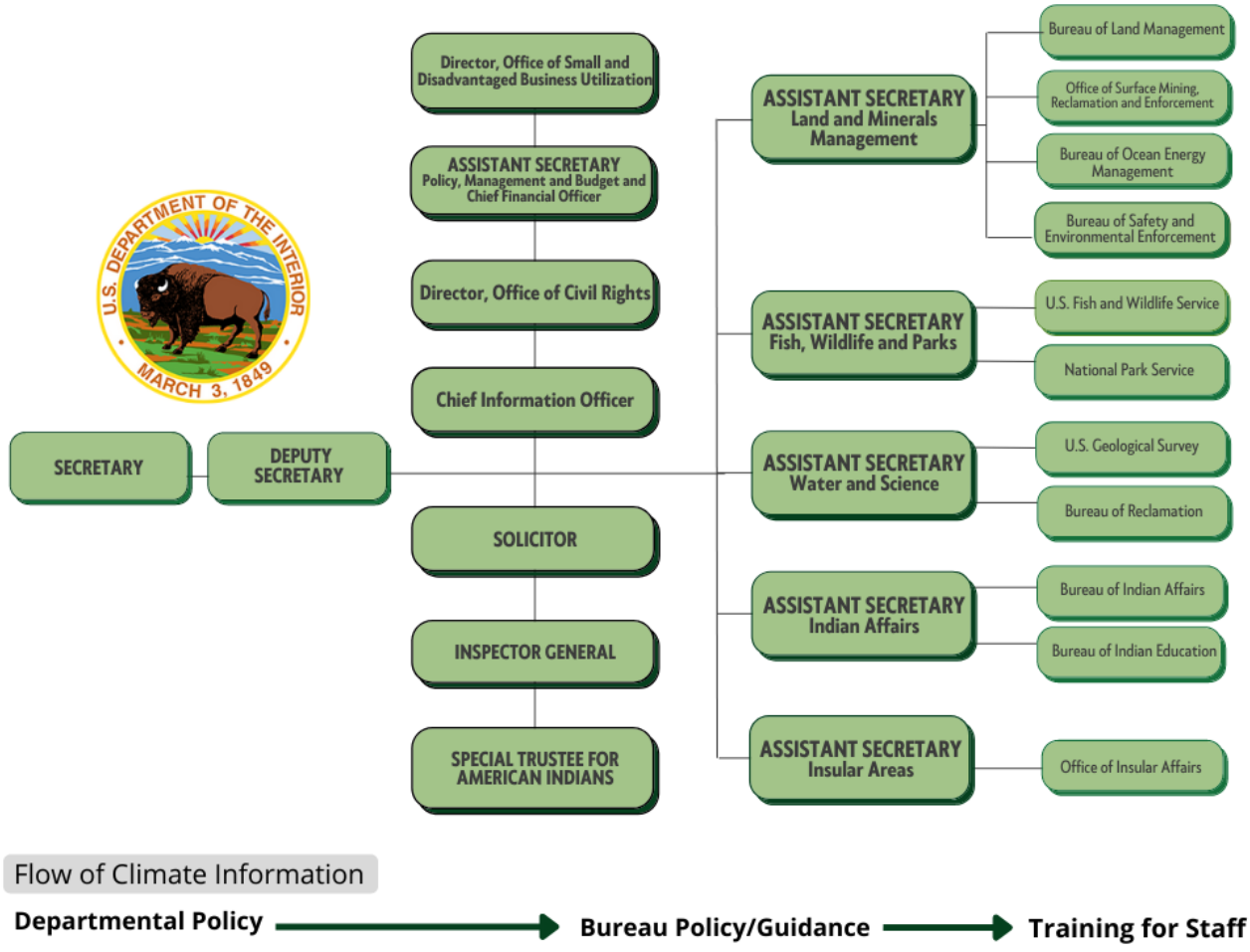
Figure 1. Flow of Climate Information and Guidance in the Department of the Interior