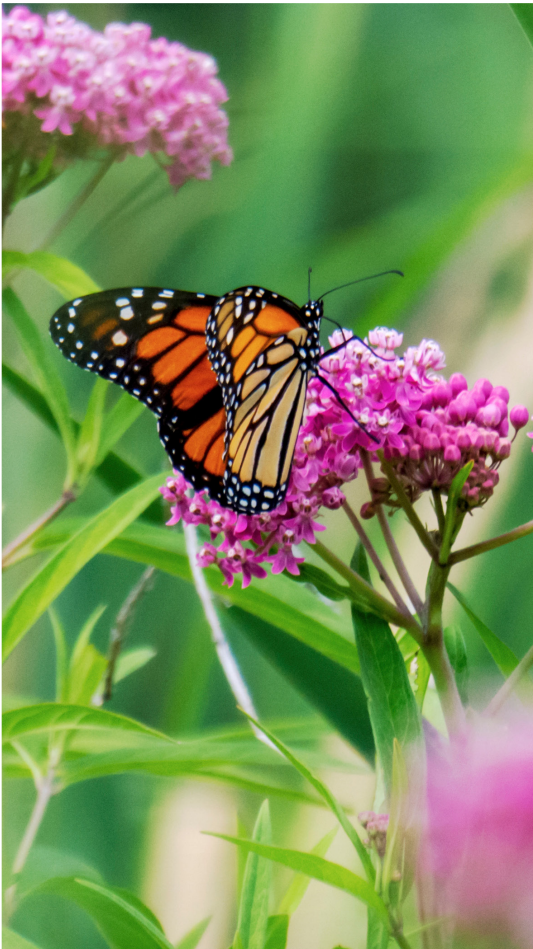




# CLIMATE CHANGE ADAPTATION PLAN

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July 2022





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## MESSAGE FROM NRCS CHIEF



**Terry Cosby**  
NRCS Chief

**“Together, we can lead the way with conservation solutions that improve the resilience, health, productivity, and profitability of the Nation’s agricultural operations, while also addressing the impacts and root causes of climate change.”**

### Dear Reader,

At NRCS, we have a long history of working with farmers, ranchers and landowners to identify and address the natural resource challenges they face. From controlling soil erosion to improving water and air quality, our agency was founded on helping people help the land through locally led conservation that leverages the passion and commitment of agricultural producers. We use the best available science and a comprehensive conservation planning process to provide producers with technical and financial assistance to meet their objectives. For nearly 90 years, we have continued to fulfill this conservation legacy, all while adapting to changing concerns and taking on new responsibilities to address current and future challenges.

Climate change is altering our Nation’s agricultural landscape as we know it, presenting new challenges and opportunities. In working one-on-one with America’s producers, we know that they are on the frontlines of climate change, experiencing impacts such as increased and more intense droughts and floods, as well as shifting weather patterns and growing seasons. These impacts threaten production as well as conservation efforts. More than ever, planning and decision-making need to account for the impacts of climate change, and we have a responsibility to provide relevant information, tools, resources, and assistance to support producers in these endeavors.

This Adaptation Plan lays out a framework for how we will continue to build on our expertise and ensure our tools and programs meet the demands of this changing agricultural landscape. It serves as a starting point for our National, State and local staff, together with partners and communities, to further develop necessary actions based on local impacts, experiences, and knowledge. But this is just the beginning. We know that we must continuously improve our programs and services to ensure we’re giving farmers, ranchers and landowners the best tools possible to conserve our natural resources. Together, we can lead the way with conservation solutions that improve the resilience, health, productivity, and profitability of the Nation’s agricultural operations, while also addressing the impacts and root causes of climate change.

Recognizing the urgency of the climate crisis, one of our top agency priorities this year is increasing assistance for climate-smart agriculture and forestry, including and alongside our commitment to ensure equity throughout program and service delivery as well as serve urban agricultural communities. These priorities will be integrated into all the work we do at NRCS to ensure the long-term sustainability and productivity of our Nation’s natural resources.

As we adapt to the demands of a changing climate, our mission to deliver conservation solutions will remain steadfast. In the months and years ahead, NRCS will continue to serve as a leader, using the best science, research, and conservation tools to assist producers and address climate change, while we do our part to support healthy landscapes and communities for generations to come.



## INTRODUCTION

The Natural Resources Conservation Service (NRCS) is the primary Federal conservation agency working cooperatively on private lands to preserve and enhance our Nation's natural resources.

**More than 70% of the land surface in the United States is privately owned. NRCS's mission is to deliver conservation solutions so agriculture producers can protect natural resources and feed a growing world. The agency's vision is a world of clean and abundant water, healthy soils, resilient landscapes, and thriving agriculture communities through voluntary conservation.**

NRCS helps farmers, ranchers, and forest landowners, and the communities in which they live, improve the long-term viability of their operations while protecting our natural resources.

The anticipated impacts of climate change will create both challenges and opportunities for NRCS and the clients and communities it serves. NRCS is committed to helping clients identify and implement the actions needed to adapt and become more resilient in the face of climate change. NRCS has a history of changing our operations to address emerging needs based on the best available science. The challenges and opportunities presented by climate change are no different. NRCS continues to work with diverse partners to implement locally led strategies to address soil degradation, landscape instability, extreme weather and climate events, increasing climate variability, natural disasters, and other issues. Through

the expansion of current activities and the development and implementation of innovative science, programs, activities, and practices, NRCS will continue to assist clients in identifying and applying contextually appropriate solutions to adapt to climate change and develop more resilient ecosystems. NRCS also will continue to build on existing and expanded activities that will enable clients to contribute to mitigation strategies that reduce present and future atmospheric greenhouse gas (GHG) concentrations. Providing clients with the information, recommendations, and assistance they need to address climate change represents a significant expansion of NRCS activities. As a consequence, this work will require substantial NRCS investments over the next decade.

A steering team, comprised of experts from across the agency, was assembled to review the agency's 2014 Climate Change Adaptation Plan and provide an updated assessment and recommendations for the agency. This effort builds upon earlier policy and strategic efforts to identify climate vulnerabilities and define necessary action that began more than a decade ago. This 2022 Climate Change Adaptation Plan ("Adaptation Plan") includes an evaluation of current vulnerabilities to NRCS's mission, operation, and infrastructure that may be affected by climate change impacts, as well as actions to address these vulnerabilities. The 2022 steering team assembled seven sub-teams focusing on each identified vulnerability. These teams included NRCS staff from deputy areas, divisions, centers, states offices, and Climate Hubs. The plan highlights seven areas identified as key agency vulnerabilities. It also includes a list of prioritized actions that can be taken to address the agency vulnerabilities. The details of the resulting plan are organized by the following action areas:

# 7 ACTION AREAS



Increase climate literacy and staffing capacity to deliver assistance that is reflective of climate change



Enhance science, research, and data for understanding, measuring, and tracking climate-related impacts and outcomes



Integrate climate information into current business procedures, assessments, and opportunities



Ensure current and future applied conservation investments are reflective of climate change needs



Assess and address disproportionate climate change impacts on vulnerable communities



Strengthen partnerships and collaboration to address climate change



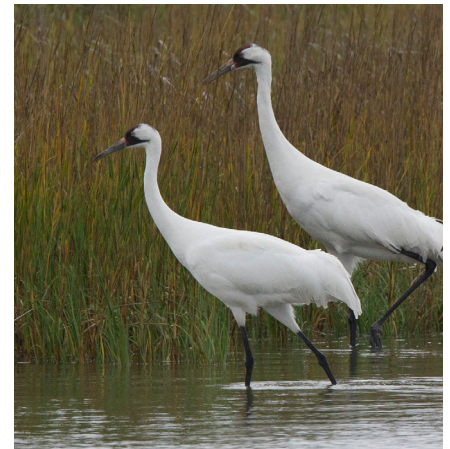
Address risks to agency infrastructure

This Adaptation Plan serves as a framework for the key actions that NRCS will take to research, develop, implement, and finance climate change adaptation activities at the agency. These proposed actions will guide national, state, and local decision-making to further identify priorities, implement actions, and work with farmers, ranchers, and forest landowners as they voluntarily apply conservation on their operations. Furthermore, these actions will complement other ongoing and proposed work targeted specifically towards climate change mitigation activities that provide opportunities to

voluntarily reduce GHG emissions and increase carbon sequestration, supporting USDA's wider climate-smart agriculture and forestry strategy as outlined initially in the [USDA Climate-Smart Agriculture and Forestry Strategy: 90 Day Progress Report](#). The framework also complements other Department-wide efforts to increase resilience across the sector, including options proposed within the [USDA Agri-Food Supply Chain Assessment: Program and Policy Options for Strengthening Resilience](#). Many of the actions in this plan encompass changes to overarching NRCS operations and procedures to better respond

to and incorporate climate change information, which support climate change mitigation as well as adaptation and resilience. Given the significant overlap that targeted climate investments provide for both mitigation and adaptation, implementation of this Adaptation Plan will support both critical efforts. As one of NRCS's identified priorities for FY22, targeting assistance for climate-smart agriculture and forestry to support producers in mitigating climate change and building resilience across their operations is an important focus area for the agency, alongside ensuring equity throughout NRCS programs services, supporting urban farmers and communities, and other FY22 priorities. All this work will contribute to the vision and goals laid out in [USDA's Strategic Plan Fiscal Years 2022-2026](#), in particular Strategic Goal 1 to Combat Climate Change to Support America's Working Lands, Natural Resources, and Communities.

Over the coming decades, NRCS technical and financial assistance will help transform vulnerable working lands to more healthy and resilient landscapes. NRCS is committed to being inclusive and equitable while delivering assistance to address current and emerging issues and natural resource concerns ranging from long-standing priorities such as soil erosion, water quality, air quality, and soil health to emerging issues such as pollinator habitat and invasive species control. NRCS strives to equitably serves farmers, ranchers, forest landowners and communities of all sizes, including Tribes and historically underserved populations, to help them manage their lands in ways that are more adaptable and resilient to future environmental changes.





## CLIMATE CHANGE EFFECTS AND VULNERABILITIES

### Key climate change impacts on agriculture and natural resources

The effects of climate change on agriculture and natural resources are already apparent in the United States and throughout the world. These impacts to food, fuel, and fiber production, wildlife habitat, pollinators, native species composition, acceleration of invasive species establishment and proliferation, and wider ecosystem services are projected to increase. The Fourth National Climate Assessment (NCA4) identified many examples of likely climate change impacts on agriculture and natural resources. These include:

- ▶ Food and forage productivity decline in many regions experiencing temperature and moisture stress and more frequent and longer drought periods.
- ▶ Temperature and rainfall driven shifts in cropping and grazing systems to less-ideal areas for production where more inputs (e.g., irrigation, fertilizer, lime) are needed to maintain productivity.
- ▶ Increased risk of pest and disease pressure due to plant stress and the spread of invasive species into new areas.
- ▶ Increased risk of degradation of soil and water resources due to excessive runoff and associated erosion from more frequent and larger extreme events (e.g., floods, hurricanes).
- ▶ Increased challenges to maintaining livestock health and productivity under increased heat and potential water stress; and

- ▶ Increased occurrence and spread of wildfire driven by shifting precipitation frequency and patterns as well as species changes.

These largely physical and biological issues are compounded by economic and social issues faced by many of our clients and potential clients. Far too many individuals, families, and communities, especially members of historically underserved and vulnerable communities, have limited capacity to respond to climate change impacts due to poverty and resource limitations. In addition, community and individual infrastructure including communications, transportation, water, and sanitary facilities are vulnerable to climate-change related disruptions, especially extreme weather events.

These broad national trends—both the physical and biological issues, as well as the economic and social issues—were consolidated into four key vulnerabilities in the [USDA Action Plan for Climate Adaptation and Resilience \(2021\)](#):

- ▶ Decreased agriculture productivity
- ▶ Threats to water quality and quantity
- ▶ Disproportionate impacts on vulnerable communities
- ▶ Shocks due to extreme climate events

As the USDA agency charged with assisting farmers, ranchers, and forest landowners in addressing natural resource concerns on their properties to ensure the development and maintenance of resilient, productive, and sustainable managements systems, NRCS is already addressing these key risks. The agency remains committed to broadening and deepening the wide range of its work and services, including its technical and financial assistance programs and opportunities, to address and account for climate change through the actions described in this plan.

## Vulnerabilities to NRCS Mission and Operations

The impacts described above will affect farmers, ranchers, and forest landowners in different ways, depending on their local contexts, the impacts and stressors experienced and anticipated, and their existing capacities to respond. NRCS's approach to addressing climate change must be flexible to cover this wide range of impacts and accommodate a variety of adaptation options and strategies. Rather than focus on vulnerabilities tied to specific climate change impacts

and hazards, NRCS assessed how delivering its mission could be impacted by a variety of climate change impacts and how it could be improved by institutionalizing climate change data and information into everyday business processes across its deputy areas. NRCS identified seven key climate change vulnerabilities needing to be addressed to prepare the agency to effectively and appropriately continue delivering on its mission. Addressing these fundamental vulnerabilities will enable NRCS to in turn better support clients and communities in adapting and building their resilience to the specific climate change impacts they may face.

# 7

## VULNER- ABILITIES



Climate change preparedness depends on a climate literate and capable workforce



The pace and intensity of climate change impacts may exceed existing conservation science, knowledge, and data systems



Shifting climate trends and increasing variability require nimble and comprehensive business processes that support adaptive conservation



Climate change impacts threaten the viability and longevity of current and future applied conservation investments



Climate change disproportionately impacts vulnerable communities



The scale and complexity of climate change demands broad and diverse partnerships



Increasing frequency, severity, and extent of disturbances pose risks to current agency infrastructure





**Vulnerability 1: Climate change preparedness depends on a climate literate and capable workforce**

With over 9,000 staff at approximately 3,000 field offices and centers across the country and territories, NRCS risks the effectiveness of its operations if its employees are not climate literate. NRCS identifies the need to continually provide training and education to keep up with the latest climate science and to accommodate new hires. Staff education is essential to providing technical assistance and conservation planning that plans for a spectrum of future conditions and not just historical averages. Furthermore, because climate change impacts vary at regional to local scales, there is a strong need to build climate literacy at all levels of the agency, from field offices to national headquarters. Because NRCS provides one-on-one help to clients to evaluate and communicate risks on individual operations, it is imperative that every planner, and not just a limited number of agency experts, be knowledgeable about climate change impacts.

In addition to understanding the climate science and regional impacts, staff need to be trained in the use of planning tools that help them incorporate potential climate change impacts in their discussions and recommendations to clients. Staff need to build skills to help them communicate climate change risks to clients and to promote actions that will increase the resilience of their operations. Staff also need to be well versed on the range of opportunities, assistance, and resources NRCS has to offer to help clients address these impacts and implement climate solutions on their operations. Without increased climate literacy, conservation planning accounting for climate impacts is likely to be sporadic and less effective, and key tools and resources will remain underutilized. To meet these needs, NRCS must expand its methods of educating staff about global climate change and localized impacts through providing a variety of learning options that account for differences in access to materials, time availability, and learning styles. Training also must be equally accessible to all employees. This is necessary to account for the fact that people learn differently, have various needs and available time, and require different levels of knowledge for different positions.



**Vulnerability 2: The pace and intensity of climate change impacts may exceed existing conservation science, knowledge, and data systems**

As a science-based agency, another major vulnerability that NRCS faces is the increased need for improved and up-to-date science, research, and data for understanding, measuring, and tracking climate-related impacts and outcomes. Risks within this broader vulnerability include the inadequate management of climate information such that it is not available to inform conservation planning and other core agency business processes; changes in natural and managed environments that have not been seen before (sometimes called “novel ecosystems”) that require the development of new conservation guidance and tools beyond current processes; and knowledge gaps which continue to make it difficult to connect and coordinate voluntary field- and farm-scale actions to regional priorities and plans.

Although NRCS’s current operations and procedures aim to incorporate the most recent science related to the natural resources impacted by—and impacting—agricultural operations, NRCS currently lacks a systematic way to organize, analyze, synthesize, and curate climate information and relevant research at scales appropriate to our agency’s field and landscape level conservation planning model. Despite the amount of climate information available, individuals are often unable to determine the imminent climate change threats for a particular operation, especially when climate change information is provided at the regional scale, as it often is. Thus, there is a need to improve field-level data collection related to climate change impacts to better understand local impacts, support planning, and continue to refine model estimates. In addition, the emergence of novel ecosystems will present new challenges for how NRCS considers and plans for present and future conditions. Climate change, along with other ecosystem change driving forces, is creating novel agroecosystems that will require new conservation systems to stabilize and maintain them and the ecosystem services they provide. NRCS needs to actively address these issues to ensure that staff can provide the best possible information to our clients.

NRCS remains committed to the locally led conservation model that has served the agricultural community well for nearly 100 years. This will be a critical component to our ability to help farmers, ranchers, and forest landowners face globally known, but locally emerging issues, such as impacts to crops and grasslands from expanded ranges and impacts of invasive species or “ghost forests” resulting from sea level rise. The multiple-scale impacts of climate change, from site-specific to global, present a challenge for NRCS. As climate change accelerates, cumulative effects on ecosystem level processes are resulting in demonstrable large-scale opposing trends, especially in areas such as arid rangelands. In some cases, successful efforts to address the impacts of climate change will require coordination across multiple clients and multiple local jurisdictions. This presents challenges for local, state, and national staff and program managers.

NRCS takes a multi-scalar approach in several aspects of its work, communication structure, and organizing principles including through area-wide planning, targeted initiatives, and a distributed agency structure that consistently relays information between states, regions, centers, and national headquarters. Nonetheless, many current NRCS processes often do not always connect or articulate national or regional conservation priorities and needs to local activities, nor do they clearly describe how local activities and outcomes can be scaled-up to capture and project regional impacts. Improving these existing processes to better link field scale actions to landscape and regional outcomes will require up-to-date soil and landscape properties data, assessment, monitoring, and modelling at multiple geographic and temporal scales. The demand for these data and information products from a range of internal and external clients will also likely increase across a variety of potential reporting and monitoring scenarios.



**Vulnerability 3: Shifting climate trends and increasing variability require nimble and comprehensive business processes that support adaptive conservation**

NRCS staff follow a set of core business procedures including assessments to ensure consistent implementation of the agency’s conservation planning mission. Most of the current business procedures and assessments do not fully integrate climate change and weather variability impacts. This poses a risk to the agency’s abilities to design and deliver assistance to

clients. While Vulnerability 2 describes the need for continually updating and improving the underlying science and data that NRCS produces or works with, this vulnerability looks at the need to ensure that up-to-date science is in turn incorporated appropriately into necessary business procedures that in turn support the agency’s program and assistance delivery. Procedures associated with the conservation planning process, including the identification and evaluation of natural resource concerns, comprise a fundamental piece of NRCS’s conservation model. NRCS has identified a need to institutionalize and integrate climate data into NRCS core planning procedures, assessments that inform priority setting, short and long-range planning, and financial assistance eligibility and ranking.

NRCS also needs to improve its ability to quickly integrate the science of climate change into operational definitions and procedures including supporting documents such as handbooks, manuals, and technical guidance materials. Therefore, business processes need to be updated to efficiently and nimbly integrate emerging climate change science into the conservation planning process. Furthermore, NRCS assessments need to better assist landowners in making their operations adaptable and resilient to climate change. Capturing field level data on climate change impacts is needed so that NRCS planners can more effectively and efficiently evaluate the existing conditions and identify natural resource concerns, recommend and support the implementation of conservation practices, and monitor conservation practice effectiveness at the local level. In addition to improving the quality of the information and technical recommendations provided by staff, NRCS will continue to increase information on outcomes of implementing climate-smart agriculture and forestry (CSAF) practices. This will facilitate informed decisions on the cost and benefits of implementing these practices. Data and research created or used by NRCS must meet the highest standard for scientific integrity.



**Vulnerability 4: Climate change impacts threaten the viability and longevity of current and future applied conservation investments**

In addition to risks associated with not fully incorporating climate information into current business tools and procedures, NRCS recognizes the need to also make

its current investments adaptive to climate change as well. This includes planned and implemented practices on private lands that must be flexible enough to meet local climate conditions and client needs, as well as long-term conservation easements that require flexibility to accommodate habitat loss, species shifts, and changing resource conditions due to climate change. Disaster programs such as the Emergency Watershed Protection (EWP) Program may need adjustments to better support innovative climate change resilient engineering solutions and pre-disaster preparedness in the face of increasingly frequent natural disaster events. Structures constructed through the Watershed Protection and Flood Prevention Act (Public Law 566, PL-566) are experiencing challenges that may not have existed at the time of enrollment or construction. NRCS products, including conservation practice standards, technical directives, resource concern information sheets, and planning criteria, also will need to reflect current and anticipated conditions caused by climate change and provide the most up-to-date science-based conservation information.

NRCS must also identify measurements of baseline conditions and success to understand how and where investments are proving useful in making clients more resilient to climate change. Unlike climate change mitigation, for which methods exist to quantifiably estimate the greenhouse gas emission reductions or carbon sequestration benefits associated with certain practice installations, climate change adaptation and resilience do not lend easily to the same type of benefits analysis. Measuring adaptation is challenging as outcomes may not be evident in the short-term, effects are influenced by a variety of interacting physical and social factors, and there is often a lack of consensus around goals, which are subject to change given changing conditions and are defined differently by various stakeholders. Evaluating the impact and success of investments that support adaptation will therefore require a unique approach involving the analysis of existing science and outcome procedures, through the lens of the resilience goals of a particular region. Defining and measuring these successes could provide an opportunity to more clearly attribute, quantitatively or qualitatively, adaptation outcomes to our conservation programs and practices.

NRCS investments that address climate change must be dynamic and adaptive as local conditions change, whether the change happens gradually or catastrophically. Sea level rise, water availability, salinization of irrigated lands, changing habitat of threatened and endangered species, declines in pollinator availability, richness and diversity, and

invasive species control are all examples of climate change-related stressors that are now becoming challenges on lands and investments that NRCS provides assistance on or holds responsibilities over. Without action to acknowledge potential climate change impacts and add flexibilities to address them, current and future investments of the agency will not be suitable to endure the wide range of impacts expected to increase under climate change.



### **Vulnerability 5: Climate change disproportionately impacts vulnerable communities**

Vulnerable communities—including historically underserved, low-income, minority and rural populations as well as American Indians, Alaska Natives, and sovereign Tribal governments—are often subject to multiple, simultaneous stressors such as pollution, increased exposure to extreme weather events, poor air quality, environmental injustice, habitat fragmentation, and poverty. Because climate change can have a multiplier effect on these stressors it is necessary to assess impacts on these communities from a holistic perspective, with the aim to strengthen the weakest links first. Additional resources are needed to adequately address the composite threats faced by vulnerable communities and to assess tradeoffs among costs, benefits, and risks.

For NRCS, these disproportionate impacts result in several areas where the agency needs to improve its operations and services to meet the needs of vulnerable communities. This includes the need to understand, strengthen, measure, and evaluate ecosystem services specific to vulnerable communities that protect livelihoods and to support food production and associated conservation activities. NRCS must be able to assess and tailor responses to extreme weather events specific to vulnerable communities, increase competencies of NRCS staff and clients on equity and environmental justice issues, and develop ways to meaningfully engage with vulnerable communities. Lastly, NRCS should increase technical and financial assistance for vulnerable communities.

Several NRCS programs have special provisions or dedicated funding for historically underserved producers, who may be more vulnerable to impacts of climate change, alongside impacts of systemic discrimination and racial, economic, health and social disparities. Further integrating equity into existing program implementation, including how funding is provided,

will remove barriers to participation, establish trust, transparency, and accountability, identify opportunities for broader inclusivity, and better target education and outreach efforts. The risk of not accounting for the unique challenges faced by vulnerable communities may result in NRCS not being able to adequately diagnose natural resource concerns and implement conservation systems, and, in turn, to effectively serve its clients in improving their operations and contributing to thriving agriculture communities.



**Vulnerability 6:** The scale and complexity of climate change demands broad and diverse partnerships

NRCS has a long and productive history of collaboration with a wide-ranging group of partner organizations to help accomplish core mission objectives. These partnerships begin with the foundational relationship between NRCS and the Soil and Water Conservation Districts, and have expanded to include federal, state, and local agencies, educational institutions, producer and commodity groups, and non-profit and for-profit entities who share a commitment to improving the management of natural resources on private lands through voluntary locally led actions. This diversity of partners working on projects and initiatives at multiple scales creates a core vulnerability related to climate change adaptation planning and implementation at national to local levels. Efforts

to address climate change adaptation needs will only be successful if relationships with current partners are maintained and strengthened to build from areas of mutual agreement, if the information provided to clients by NRCS and our partners is consistent, and if NRCS continues to work with new partners as appropriate to reach new audiences including historically underserved and underrepresented individuals and vulnerable communities.



**Vulnerability 7:** Increasing frequency, severity, and extent of disturbances pose risks to current agency infrastructure

A key vulnerability for NRCS is the risks that increasing frequency and intensity of extreme weather events and other climate change impacts pose to current and future NRCS infrastructure. This infrastructure includes physical structures and facilities, communication systems, information technology (IT) systems and components, weather information gathering systems, watershed structures such as dams, and vehicles within the NRCS fleet. This also includes mission critical facilities, such as the Plant Materials Centers (PMC) and other sites with unique equipment and vehicle inventories. Much of the physical infrastructure will require a coordinated effort across other Farm Production and Conservation (FPAC) agencies, as well as coordination with partner organizations who share resources.





## CLIMATE CHANGE ADAPTATION ACTIONS

For NRCS to address these vulnerabilities and better support clients and partners in adapting to the specific climate change impacts they are and will continue to face, the agency proposes a number of priority actions. These priority actions are organized around seven action areas that seek to address the seven identified vulnerabilities.



**Action Area 1: Increase climate literacy and staffing capacity to deliver assistance that is reflective of climate change.**

**Vulnerability:** Climate change preparedness depends on a climate literate and capable workforce

### Key Actions

- ▶ Establish a comprehensive Communications Strategy that evaluates audiences, prioritizes actions, and assesses performance.
- ▶ Communicate with external clients to increase awareness of NRCS programs and services that support voluntary conservation efforts furthering climate-smart agriculture and forestry, and specifically those that build climate resilience, through targeted outreach.
- ▶ Develop a training curriculum to ensure NRCS staff continue to enhance their expertise and incorporate connections to climate within their area of responsibility; and to increase all NRCS staff ability to articulate the nexus of all conservation activities and practices with climate change.
- ▶ Develop a staffing plan to support climate change needs, including identifying future capacity and workload; recruitment, training and retention of diverse new staff; and internal and external staffing support options.

Building a workforce that is competent in understanding, communicating, and delivering assistance to address climate change will be key to the success of this entire plan. NRCS will take several actions to leverage the strengths of its staff to improve the organization's climate literacy and capacity. First, together with the FPAC Mission Area, NRCS will establish a comprehensive Communications Strategy that evaluates audiences, prioritizes actions, and assesses performance. The outcomes of this strategy include that (a) NRCS employees at all levels (especially field staff) are aware of terminology, basic climate change information, and the most likely impacts to agriculture and natural resources for their region/state/field office, (b) NRCS employees are aware of and understand how to utilize the USDA data sources for their local outreach, (c) NRCS employees understand what they can do to assist clients to mitigate risks and become more resilient, and (d) NRCS employees are able to articulate climate change information with their local partners and clients.

Building on and guided by the Communications Strategy, NRCS will communicate with external clients to increase awareness of NRCS programs and services that support voluntary conservation efforts furthering climate-smart agriculture and forestry, and specifically those that build climate resilience, across the nation's working lands. This will include targeted outreach, both to clients and partner groups at the local level to better support equitable delivery of NRCS programs and services supporting climate solutions, with an emphasis

on reaching historically underserved producers.

NRCS is currently made up of a myriad of technical professionals with a depth of knowledge of natural resources conservation. A training curriculum will be developed to ensure that these experts continue to enhance their expertise and incorporate connections to climate change within their areas of responsibility. NRCS employees will be aware of essential principles of climate science, how to assess the applicability of climate science, updated on recent trends and the most likely impacts for their region/state/field office, and will understand how to effectively communicate about climate change and use knowledge to inform the planning process. This will include identifying which clients face the most risk and what NRCS can do to assist them. Through improved and increased training opportunities, courses, and accessible resources, NRCS will implement this curriculum to increase its staff's ability to articulate the nexus of all conservation activities and practices with a changing climate.

Lastly, NRCS will develop a staffing plan to support its climate change work to ensure it has adequate and appropriate capacity for delivering high quality assistance to clients. This may include identifying future capacity and workload with consideration of climate change trends; recruitment, training and retention of diverse new staff, including technical discipline specialists and social scientists; and identifying internal and external staffing support options.

NRCS is already making initial strides in this action area. In 2021, NRCS, in partnership with the USDA Climate Hubs, began hosting a series of Climate Conversations across the country. These 1–2-hour training sessions are tailored to each state covering local climate changes and how climate-smart agriculture and forestry can help clients and partners adapt. Over the past year, trainings were given to 16 states and staff at the East National Technology Support Center and the Easements Program Division. NRCS has begun and continues to build out additional resources to be used for training and communication.



## Action Area 2: Enhance science, research, and data for understanding, organizing, measuring, and tracking climate-related impacts and outcomes

**Vulnerability:** The pace and intensity of climate change impacts may exceed existing conservation science, knowledge, and data systems

### Key Actions

- ▶ Improve climate information management, including capturing, organizing, and integrating climate information and relevant research at appropriate scales
- ▶ Better understand and address novel ecosystems and emerging issues, including by integrating new technology, evaluating and targeting plant materials, and developing regional priorities for new conservation systems, with a concerted effort on at-risk ecosystems
- ▶ Establish multi-disciplinary climate change technical expertise team and strategies to evaluate and determine climate change requirements and guidance for conservation planning, implementation, assessment, research/demonstration, and investments
- ▶ Maintain, strengthen, and enhance climate-related SWAPA+HE-associated databases, information platforms, and datasets (including soil and vegetative information), as well as ongoing data collection, measurement, and modeling efforts

Within this action area, NRCS will take several steps to enhance its science and data processes and assets, organized around four broad priority actions. The first is to improve climate change data and information management, including capturing, organizing, and integrating climate information and relevant research at appropriate scales. This may involve reviewing and improving data collection related to measurement of climate change impacts and outcomes, along with continued research to develop new ways of describing and integrating climate attributes. This will also include enhanced management of basic soil and vegetation information used by NRCS modeling efforts, as well as the basis for collaboration with other agencies and organizations. NRCS will act to better understand and address novel

ecosystems. As part of this action, NRCS will work with partners to identify threats and develop priorities at the regional level for the development and application of new multi-year conservation systems to address emerging novel ecosystems. NRCS's Plant Materials Center program, which has developed its own [Climate-Smart Agriculture Action Plan](#), will play a leading role in this action, including through its ongoing work to target conservation plant selection efforts to increase adaptability, document changes in the adaptation of conservation plants, provide guidance to conservation planners on appropriate plant materials as ecosystems change, and evaluate establishment technologies and management strategies for plant materials subject to climate change.

The third broad action seeks to establish climate change technical expertise and strategies to evaluate and determine climate change requirements and guidance for conservation planning, implementation, assessment, research/demonstration, and investments. This will include assembling a national level multi-disciplinary climate change technical team that evaluates climate-related requirements for the agency's planning and delivery processes. The action will also include developing climate-smart research and demonstration strategies that identify knowledge gaps and on-farm research needs to help guide investments, including through the Regional Conservation Partnership Program (RCPP) and Conservation Innovation Grants (CIG) program.

NRCS will maintain, strengthen, and enhance its climate-related databases, as well as ongoing data collection, monitoring, measurement, and modeling efforts. NRCS manages a wide range of information platforms, datasets and databases, as well as data collection and modelling efforts. NRCS will continue to maintain and expand existing databases and information platforms, such as the National Soils Information System (NASIS), Ecosystem Dynamics Interpretive Tool (EDIT) and Plant List of Acceptable Nomenclature, Taxonomy and Synonyms (PLANTS), as well as ongoing data collection and inventory programs including the National Cooperative Soil Survey (NCSS), National Resources Inventory (NRI), Snow Survey and Water Supply Forecasts (SSWSF), the Soil Climate Analysis Network (SCAN), and the Tribal Soil Climate Analysis Network (TSCAN). These data collection activities and associated databases systems provide the fundamental, geo-referenced, soil, vegetation, and weather data and information needed to understand climate change impacts and develop responses. In addition, NRCS will expand existing efforts to support the collaborative improvement of current models and tools like the Conservation Effects

Assessment Program (CEAP) and the CarbOn Management Evaluation Tool (COMET) and the development of new models based on rapidly emerging climate change science. As part of this action, NRCS will take steps to maintain the integrity of these programs and improve upon them where possible, including through periodically reviewing data needs to ensure necessary climate data are timely and up to date, and further developing methods for measuring and evaluating climate change adaptation benefits. NRCS will also build upon the ongoing Department-wide partnership to enhance and scale up soil carbon monitoring efforts, including through Conservation Evaluation and Monitoring Activities (CEMA), which will enable the agency to provide more and better data on the impacts of management practices on soil health properties, including those that may contribute to resilience.



### **Action Area 3: Integrate climate information into current business procedures, assessments, and opportunities**

**Vulnerability:** Shifting climate trends and increasing variability require nimble and comprehensive business processes

#### **Key Actions**

- ▶ Identify and prioritize climate change-related resource concerns and provide climate-smart opportunities based on producer needs/desires/goals
- ▶ Address existing gaps in NRCS assessments for evaluating climate change impacts, including through integration of climate trends information into conservation planning process and IT applications such as business tools.
- ▶ Provide support to make climate-smart practices economically feasible for the producer in order to make their operation adaptable and resilient to climate change.

Leveraging the science and expertise available internally and through partners, NRCS will take steps to integrate climate information fully into current business procedures and assessments. NRCS proposes to evaluate current natural resource concerns and how they may be impacted by stressors identified in the current National Climate Assessment. Through this evaluation and input from NRCS clients, partners, and the public, NRCS will identify gaps and capture new or emerging natural resource concerns.

The results of the analysis and input will enable NRCS to prioritize opportunities and increase assistance for CSAF while meeting the needs of their clients, including through targeted program opportunities and initiatives.

Key to NRCS's mission is the three-phase, nine-step conservation planning process. The latest science and technology behind that process is critical to NRCS providing the best services and assistance to farmers, ranchers, and forest landowners and the lands they manage. Integrating precipitation, drought, wildfire, and wildlife resiliency evaluations that reflect current weather and climatic trends into business tools using geospatial data is a key piece in NRCS's adaptation to changing conditions. This necessitates consistent understanding and application of weather and climatic trends NRCS-wide so that strategies can be implemented that would include the review of existing natural resource concerns, how they are inventoried and evaluated, and how weather and climatic trends will impact natural resource concerns on various land uses in urban and rural landscapes.

NRCS is acutely aware that their client's bottom line is critical to implementing climate-smart practices. NRCS will develop a process to assess and quantify economic impacts of conservation practices that support climate change adaptation, mitigation, or both. The assessment of these impacts will include specific conservation measures that are scalable at the practice, field, and farm level. Additionally, NRCS will identify economic constraints to climate-smart conservation measures that affect all communities, with special emphasis on vulnerable communities.

NRCS has already begun work in this area, including initial work to correlate climate change stressors identified in the 4th National Climate Assessment with the agency's identified natural resource concerns for conservation planning. NRCS has also initiated several targeted program opportunities such as the EQIP WaterSMART Initiative (WSI) in collaboration with the Bureau of Reclamation (BOR) to help farmers and ranchers conserve water and build drought resilience in their communities, and the EQIP Conservation Incentive Contracts pilot targeted at drought-impacted states to help alleviate the immediate impacts of drought and other natural resource challenges on working lands.



**Action Area 4: Ensure current and future applied conservation investments are reflective of climate change needs.**

**Vulnerability:** Climate change impacts threaten the viability and longevity of current and future applied conservation investments.

### Key Actions

- ▶ Increase the presence of climate change information in professional certifications and provide examples of applying climate change information to conservation planning on agricultural lands under a variety of scenarios.
- ▶ Integrate the science and understandings of climate change impacts to agriculture into the discussions and framework of NRCS's State Technical Committees.
- ▶ Clarify policies that serve to evaluate the benefits of a long-term investment to be sure that climate change impacts and opportunities are addressed in addition to traditional ecological benefits.
- ▶ Maximize the impact of NRCS funding investments by identifying areas of need that overlap for the priorities of environmental justice, climate adaptation needs, and vulnerable populations.
- ▶ Maximize local flexibility for using Conservation Practices to address natural resource issues by sharing examples, integrating new technologies, and prioritizing national review of practices that will have the most impact helping producers adapt to climate changes.
- ▶ Develop criteria and data that can be used to describe and evaluate the success of NRCS investments in supporting adaptation to the general public.

To address the vulnerabilities associated with the exposure of NRCS's current and future investments to climate change, several actions have been proposed. First is to increase the presence of climate change information in professional certifications and provide examples of applying climate change information to conservation planning on agricultural lands under a variety of scenarios. This may include examples where it is appropriate to use future conditions as the planning objective for programs such as restoring habitat in coastal wetlands or designing



infrastructure to meet future hazards. NRCS also will seek to integrate the science and understandings of climate change impacts to agriculture into the discussions and framework of NRCS's State Technical Committees and local work groups in a way that considers regional variation and agricultural production systems.

NRCS will review and make necessary adjustments to policy as possible. This would aim to clarify policies that serve to evaluate the benefits of long-term investments to ensure that climate change impacts and opportunities are addressed in addition to traditional ecological benefits. This could include policy and guidance for stewardship of perpetual easements that includes an evaluation of local climate change impacts and projections.

To maximize the impact of its funding investments, NRCS will identify opportunities to incorporate climate change data targeting adaptation and disaster response needs (e.g., drought) into annual allocation planning to better target funding nationwide. This will require identifying areas of need that overlap for the priorities of environmental justice, climate adaptation needs, and vulnerable populations to direct resources toward areas of greatest needs for natural resources, producers, and communities.

Conservation practice standards, along with the conservation planning process, are the foundation of NRCS's technical assistance program and are used by local, state, and Federal government agencies as well as by non-governmental organizations engaged in working lands conservation. To respond to climate change, NRCS will take actions to maximize local flexibility for using these practices to address natural resource issues. This will entail developing an "actual cost" database that can be used to provide more accurate and accessible cost estimates, developing additional practice implementation flexibility examples of how to use practice standard flexibilities to address adaptation needs and local variabilities, integrating new technologies, and prioritizing national review of practices that will have the greatest impact helping clients adapt to climate changes. This may include continued work to improve measurement of field level data and refining practice standards, practice implementation, and program outreach accordingly.

Lastly, NRCS will develop criteria and data that can be used to evaluate and communicate the success of NRCS investments in adapting to climate change. Ecological benefits from NRCS activities are complex and interact at a variety of scales, from farm to landscape. Defining where and how they are successful in the context of climate adaptation will require establishing baseline resource

conditions and linking data and information in new ways, including across temporal and spatial scales. This work would complement NRCS's ongoing efforts to evaluate the mitigation outcomes of its practices and investments.

NRCS has already begun making progress in this area through several initial steps. These include allocations conversations for climate mitigation that can be leveraged for climate adaptation and resilience, as well as ongoing work with the Easement Division to strengthen the narrative describing environmental benefits of the NRCS easement portfolio. NRCS also has ongoing work to incorporate geospatial climate change information, such as drought data, into planning and decision-making tools and dashboards. Additionally, with initial funding provided through the Bipartisan Infrastructure Law, NRCS is working with local communities to invest in new dam and flood prevention projects and in repairs on existing watershed infrastructure through the Watershed and Flood Prevention Operations (WFPO) Program, Watershed Rehabilitation Program (REHAB) and Emergency Watershed Protection (EWP) Program, with initial priority to communities heavily impacted by drought and other natural disasters as well as historically underserved and limited resource communities.



#### **Action Area 5: Assess and address disproportionate climate change impacts on vulnerable communities through intentional engagement, planning, and assistance**

**Vulnerability:** Assess and address disproportionate climate change impacts on vulnerable communities through intentional engagement, planning, and assistance

#### **Key Actions**

- ▶ Understand, strengthen, measure, and evaluate ecosystem services specific to vulnerable communities to protect livelihoods
- ▶ Support food production and associated conservation activities in vulnerable communities
- ▶ Assess and tailor responses to extreme weather events specific to vulnerable communities
- ▶ Increase awareness, skills, and abilities of NRCS staff and clients on equity and environmental justice issues

- ▶ Ensure outreach and meaningful engagement with vulnerable communities and that recommendations they provide are used to update and revise policy where possible.
- ▶ Increase technical and financial assistance for vulnerable communities

Climate change planning provides the opportunity to take immediate and long-term action to strengthen and build resilience in ecosystem services, food production, conservation, and emergency responses in the most vulnerable communities, who are often disproportionately impacted by climate change. These actions include understanding ecosystem services specific to vulnerable communities and assessing and developing responses that are tailored to the unique climate change impacts they are experiencing. Actions will also include supporting food production and associated conservation activities in these communities, including strengthened urban agriculture efforts. Increasing NRCS’s internal awareness, skills, and abilities on equity and environmental justice issues and ensuring outreach and meaningful engagement with vulnerable communities will be essential to the success of NRCS’s efforts in this area. This will include learning from traditional ecological knowledge and other experiences and conservation approaches unique to Tribes and other communities and integrating that learning into NRCS’s work. NRCS will also increase technical and financial assistance for vulnerable communities, integrating the feedback gained through engagement. Several actions in this area intentionally overlap with actions proposed in other areas because the needs of this vulnerability touch nearly every aspect of NRCS’s operations. As such, NRCS will work across the organization to ensure these actions are coordinated and implemented in collaborative and complementary ways.

Within these broader actions, some proposed steps include creating direct and indirect connections between conservation practices and increased health benefits to promote urban and small-scale production for vulnerable communities. NRCS can support adaptation and mitigation actions for conservation practices and enhancements to maintain cultural food gathering traditions, which could be lost as a result of climate change. NRCS can also build upon needs already identified by vulnerable communities such as soil testing and soil remediation for urban and small-scale production and conservation. NRCS can collaborate with the US Forest Service’s Burned Area Emergency Response (BAER) teams to create multistate or multiarea teams to rapidly deploy to any community,

including vulnerable communities. NRCS can also establish subcommittees as part of the State Technical Committees to focus on urban and vulnerable communities.

Work in this action area is already underway. In FY21, NRCS invested \$50 million in 118 partnerships to expand access to conservation assistance for climate-smart agriculture and forestry. Through the Office of Urban Agriculture and Innovative Production, NRCS updated the evaluation criteria on its funding opportunities to include climate, equity, and environmental justice considerations. NRCS purchased multiple portable X-ray fluorescence devices to conduct technical soil services in urban areas for food production and conservation considerations and detailed soil survey data is currently available for urban areas, including the cities of Baltimore, Chicago, Cincinnati, Detroit, Los Angeles, New York, San Diego, San Jose, St. Louis, Washington, D.C., and surrounding suburban areas.

In FY22, NRCS has taken several actions to advance equity and support historically underserved communities and areas. These actions include policy changes and waiver options to allow more overall flexibility in program implementation and to streamline application and contracting processes, including through Alternative Funding Arrangements for EQIP and CSP. NRCS has also taken steps to prioritize selection and funding of historically underserved applicants within its programs, including through the Wetland Reserve Enhancement Partnership program in which \$17 million was obligated for four projects with specific ties to historically underserved communities in the first year. Lastly, NRCS has made additional improvements to better serve Limited English Proficient customers and address barriers and access to program information, including through the translation of critical contract and other key program documents.



### Action Area 6: Strengthen partnerships and collaboration to address climate change

**Vulnerability:** The scale and complexity of climate change demands broad and diverse partnerships

### Key Actions

- ▶ Increase familiarity with the state/local climate change “landscape” in order to design and implement more effective and efficient programs and facilitate improved, targeted, communication.

- ▶ Expand existing partnerships and build new and essential partnerships to integrate all aspects of socio-economic and natural resource considerations into the agencies approach to addressing climate change.

NRCS will take several steps to ensure its partnerships, and the way it engages with them, are sufficient to meet the demands created by climate change. NRCS will work to become familiar with the local climate change “landscapes” of states and other partners to design and implement more effective and efficient programs that are responsive to climate change. This will also allow NRCS to facilitate improved, targeted communication with these partners. To do this, NRCS will work through its regional and state offices to build and strengthen partnerships with state, Tribal, and community partners to ensure strategies are locally led.

NRCS will prioritize the expansion of existing partnerships and building new and essential partnerships to integrate socio-economic and natural resource considerations into the agency’s approach to addressing climate change. This may include leveraging existing capacity and partners to engage with underserved and new partners and working to overcome potential language or cultural barriers with new partners. New or enhanced outreach and partnership efforts will seek to include climate messaging around the unique impacts of climate change on historically underserved producers, Tribes, and vulnerable communities. NRCS will also seek to incorporate climate change considerations into its work on all emerging efforts around other USDA priorities including equity and urban agriculture.

In addition to these priority actions, NRCS also will work to maintain connections with and continue providing information and assistance to existing partners even if approaches, understanding, and priorities around climate change are not in complete alignment. NRCS will further coordinate with partners to reduce duplicative activities in order to allow for more actions and broaden the collective impact. As a leader on several interagency groups and coalitions, including the National Drought Resilience Partnership and the Coastal Resilience Interagency Working Group, NRCS will continue to work with other agencies and partners to ensure its climate change work is coordinated and strategically aligned with efforts across the federal government.



## Action Area 7: Address risks to agency infrastructure

**Vulnerability:** Increasing frequency, severity, and extent of disturbances pose risks to current agency infrastructure

### Key Actions

- ▶ Explore alternative communication systems to have multiple forms available.
- ▶ Ensure national and regional datasets used in identification and assessment of climate change impacts are protected from loss.
- ▶ Work with Homeland Security Division and FPAC-BC to ensure one FPAC resilience portfolio to provide a unified mission area framework for tracking, evaluating, and managing risks to facilities and accessibility, including via COOP plans.
- ▶ Increase resilience of data collection and monitoring sites through additional sites and various measurement sensors, enhanced equipment, and functional redundancy in physical IT infrastructure
- ▶ Continually update DamWatch dam monitoring tool as new climate data becomes available and enable watershed project sponsors to monitor their small watershed dams
- ▶ Support fleet resilience through improved tracking of utilization standards, service center enhancements, use of mobile workstations, and improved fuel efficiency and procurement.

Critical to NRCS’s continued effectiveness in responding to client conservation needs is the infrastructure necessary for a geographically diverse workforce. Whereas existing infrastructure may be taken for granted on a day-to-day basis, emergency circumstances tend to highlight how vulnerable they are, especially when needed to respond to those emergencies. Much of this infrastructure has shared needs by NRCS’s FPAC sister agencies (Farm Service Agency and Risk Management Agency), as well as partners, such as Soil and Water Conservation Districts.

Many of these recommendations will require a coordinated effort with Farm Service Agency, Risk Management Agency, FPAC Business Center, and Office of the Chief Information Officer, and may rely on guidance from the Office of Contracting and Procurement and Office of Property and Environmental Management, where applicable. Although NRCS recommends several actions

in this area, they recognize that they may not be the lead implementing agency for several of these actions. NRCS will assist and participate in activities that would be more appropriately handled by the FPAC Business Center.

NRCS identified various aspects of infrastructure that need to adapt to reduce ongoing and future vulnerabilities caused by climate change. Paramount to this is the need to maintain communication. NRCS proposes to review and identify alternative communication methods, as well as systems where redundancy can support the maintenance of communication in the event of disruptions. For instance, if cellular communication is compromised, NRCS must ensure that staff can continue communications with higher authorities via other means.

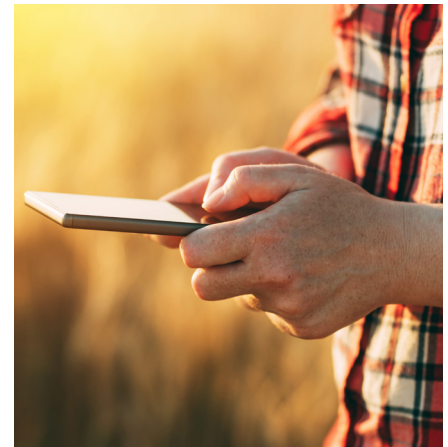
NRCS maintains many sources of data housed within IT systems, including geospatial data, tabular data used in calculations, and historical data used for soils databases, among others. Additionally, NRCS has agreements with entities outside of our current IT systems that may be the main repository for similar data. NRCS's action here is twofold. Data, regardless of format, needs to be updated regularly to keep pace with climate change. For NRCS IT business tools to remain up to date, these data must also be updated by data stewards outside of NRCS. The second part of this is protection of the data such that if there are events that are local, regional, or national in scope, there is no loss of data. This will require internal updates and continued protections, as well as coordination with partners and other outside entities to make sure the same level of data protection is consistently applied.

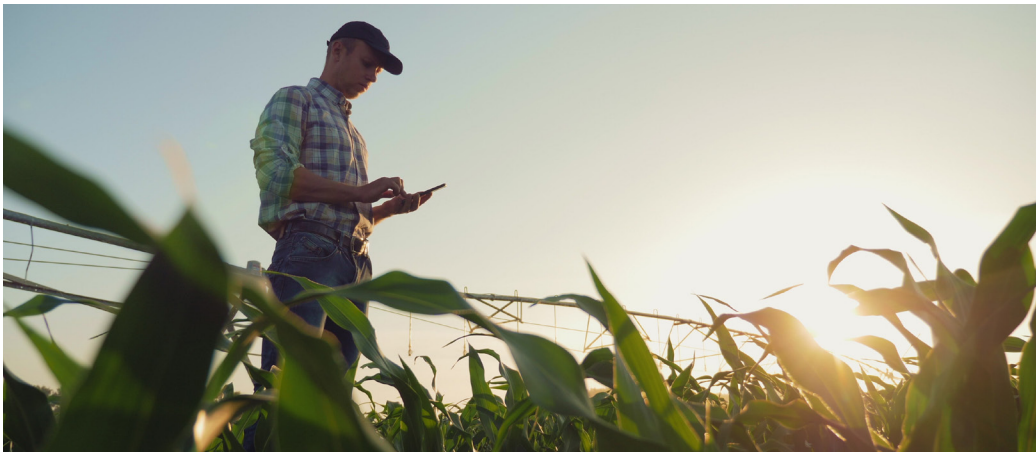
NRCS proposes that physical structures, including offices and facilities such as PMC, be evaluated through a dashboard to identify vulnerabilities and what can be

done to adapt. This will also include keeping an up-to-date Continuity of Operations Plan (COOP). Currently, the COOP is required to be reviewed annually. NRCS recommends that sections of the COOP be identified that may need a more frequent cadence of review and update, such as points of contact. Like physical structures, vehicles are a large portion of NRCS's property portfolio that can be improved upon. This may include purchase of alternative energy vehicles, and careful consideration of other forms of transportation such as all-terrain vehicles, boats, snowmachines, mobile workstations, and emergency backup generators.

NRCS provides leadership and management to the Snow Survey and Water Supply Forecasting Program (SSWSF) and the Soil Climate Analysis Network (SCAN) programs which provide data that is instrumental in predicting available water critical to drinking water supplies, irrigations of crops, and aquatic habitat resources, particularly to vulnerable communities. The current programs rely on a set of nationally dispersed monitoring stations. NRCS will work to maximize the utilization and capacity of these programs to address limitations in the number, distribution and functionality of sites as increasingly common extreme events (storms, floods, wildfires) damage monitoring stations.

Lastly, NRCS monitors over 11,000 small dams across the United States using software called DamWatch. DamWatch is critical in ensuring communities remain safe during extreme events. NRCS is recommending the underlying data, used within the DamWatch system, is updated regularly as new weather and climate data becomes available.





## CROSS-CUTTING ADAPTATION ISSUES AND CONSIDERATIONS

### Environmental Justice

Pursuing equity and environmental justice is paramount at NRCS. As such, NRCS is currently developing an agency-wide Equity Plan making equity and environmental justice awareness mainstream across the agency and hiring staff that reflects the diversity of the communities the agency serves, including vulnerable communities. The Equity Plan will include building upon certified training programs to include the intersections between climate, equity, and environmental justice. It will also entail creating partner and stakeholder awareness of a clear and consistent vision of racial equity and inclusion in programs.

In line with this agency priority, equity and environmental justice were considered and embedded throughout this entire plan. Disproportionate impacts on vulnerable communities were elevated as its own vulnerability and action area, with several corresponding actions to explicitly address the identified challenges and risks to vulnerability communities. Each of the other action areas also include activities that specifically target vulnerable communities, including historically underserved groups and urban settings. Actions within this plan will also support and be in alignment with NRCS's contributions to the Justice40 Initiative, a whole-of-government effort to deliver at least 40 percent of the overall benefits from Federal investments in climate and clean energy to disadvantaged communities.

### Workforce Climate Literacy

Workforce climate literacy is a key priority for NRCS and is highlighted as its own agency vulnerability with several identified actions. Adequate climate literacy and

capacity among staff underpins much of the work of this plan and is essential to many of the identified actions. NRCS continues to build out actions to ensure its staff have the training, education, and resources to effectively meet the climate-related needs while working together with the Department to provide additional opportunities related to shared climate literacy needs across agencies.

### USDA Climate Hubs

Since their inception in 2014, the USDA Climate Hubs (Hubs) have developed and delivered science-based, region-specific information and tools that support climate-smart agriculture and forestry, including adaptation and mitigation efforts. The ten Regional Hubs are a unique interagency program leveraging the best science and resources across USDA and providing usable resources to American farmers, ranchers, forest landowners, land managers, and rural communities in preparing for and responding to climate-related risks and vulnerabilities. In addition, Hubs serve as a central source of connection, communication, information, tools, applied climate and weather-related information and technical assistance helping farmers, ranchers, forest managers, land operators and rural communities.

NRCS is named as one of the three co-lead agencies for the Hubs in the original charter. Although NRCS is not the lead administrative agency for any of the Hubs, the agency has maintained close connections with the Hubs and continues to be involved in all aspects of Hub governance and to support the collaborative development and dissemination of climate-related information and resources.

## NRCS support and collaboration with the Climate Hubs

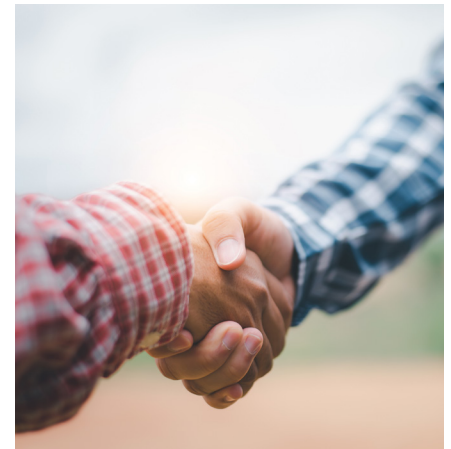
NRCS supports Climate Hubs through many means. NRCS provides support through representation on the Climate Hubs Executive Committee. There is also an NRCS national representative to the Climate Hubs who works collaboratively with the Climate Hubs National Lead and representatives from ARS and USFS to provide national-level coordination of Hub activities. Select NRCS senior technical staff are designated as co-leads for each Regional Hub and members of the Regional Hub governing board. Some NRCS staff are assigned to a specific Hub or multiple Hubs on one-year details to conduct specific projects of mutual interest to the Agency and the Climate Hubs. A total of eighteen staff members have participated in this program since its inception in 2016.

NRCS has contributed direct financial support for Hub operations since the creation of the Hubs. NRCS has provided funding to the Hubs for projects that provide information, resources and tools that support NRCS priority needs. In FY21, NRCS provided a total of \$550,000 for five projects.

NRCS has partnered with the Hubs on several recent projects that support NRCS's efforts around climate change adaptation, including:

- ▶ Adaptation Resources for Agriculture and the Climate Adaptation Workbook
- ▶ Training materials for employees related to climate change (these are currently being updated to reflect the best available information and current Agency and Departmental Priorities)
- ▶ Climate Conversations: short (1-1.5 hour) meetings that provide high-level climate information (USDA approved sources) focused on Resiliency/Adaptation.
- ▶ Identification, Mitigation, and Adaptation to Salinization on Working Lands in the U. S. Southeast (Manual for producers developed by the SE Hub, NRCS detailees were co-authors)
- ▶ Irrigation Pays in Protecting Crop Revenues (NE Climate Hub case study)
- ▶ Southern Plains Podcast providing timely information to landowners and other interested groups and individuals (<https://www.climatehubs.usda.gov/hubs/topic/southern-plains-podcast>)

NRCS will continue to seek ways to leverage and contribute to the Hubs to advance its climate change work, including several actions outlined in this plan such as providing additional resources for climate literacy, providing updates to certifications and curriculum, identifying and communicating appropriate science, and supporting expansions of partnerships.



# TABLE 1: NRCS ADAPTATION ACTIONS TO ADDRESS CLIMATE CHANGE

VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 1: Climate change preparedness depends on a climate literate and capable workforce	Establish a comprehensive Communications Strategy that evaluates audiences, prioritizes actions, and assesses performance.	Proposed and ongoing	Agency Climate Lead, All Deputy Areas, FPAC-BC Communications	2022 and continuous	All agency wide, with partnerships, cross walked with other USDA agencies,	Plan Developed, Action Items to be tracked	Strategy has been developed and will be continuously reviewed and improved
	Communicate with external clients to increase awareness of NRCS programs and services that support voluntary conservation efforts furthering climate-smart agriculture and forestry, and specifically those that build climate resilience, including through targeted outreach	Proposed and ongoing	Agency Climate Lead, All Deputy Areas and RC's, FPAC-BC Communications	2022 and continuous	All agency wide, with partnerships, cross walked with other USDA agencies	Communications toolkit will be developed and utilized by Sr. Leaders, STC and all NRCS Employees. Farmers.Gov will include climate adaptation and resilience information	Toolkit in progress
	Develop training curriculum to ensure NRCS staff continue to enhance their expertise and incorporate connections to climate within their area of responsibility; and to increase all NRCS staff ability to articulate the nexus of all conservation activities and practices with climate change.	Proposed and ongoing	Agency Climate Lead, All Deputy Areas, RC's	2022 with expansion in 2023-2025	USDA-NRCS Deputy areas, SSRA, S&T and RC's office; All agency wide, with partnerships, cross walked with other USDA agencies	Training plan will be developed, and training reviewed and updated. NRCS will collaborate with Climate Hubs on existing Climate information	Climate Hubs have already developed Climate Conversations. NRCS has delivered to multiple states

VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 1: Climate change preparedness depends on a climate literate and capable workforce	Develop a staffing plan to support climate change needs, including identifying future capacity and workload; recruitment, training and retention of diverse new staff; and internal and external staffing support options.	Proposed	Agency Climate Lead, All Deputy Areas, FPAC-BC Communications	2023 with action in 2023-2025	USDA-NRCS Deputy areas, SSRA, S&T and RC's office; All agency wide, with partnerships, cross walked with other USDA agencies	Staffing plan to be Developed September 1, 2023	Existing staffing plan team may be leveraged for this action
Vulnerability 2: The pace and intensity of climate change impacts may exceed existing conservation science, knowledge, and data systems	Improve climate information management, including capturing, organizing, and integrating climate information and relevant research at appropriate scales	Ongoing and proposed	SSRA, S&T (NDLs in particular), CPPD (Programs and Planning in particular)	Begin in FY22/23 and then ongoing	Climate Hubs, REE (especially ARS); DOI (USGS, BLM, FWS), NOAA, DOE, EPA	Various, including emerging issues identified; literature reviews conducted, datasets and practices reviewed, geographic coverage evaluated	Initial work has begun through Climate Stressors and Climate Resilience Quick Reference projects, as well as existing Edge of field monitoring activities and revised Conservation Evaluation and Monitoring Activities
	Better understand and address novel ecosystems, including by integrating new technology, evaluating and targeting plant materials, and developing regional priorities for new conservation systems, with a concerted effort on at-risk ecosystems	Ongoing and proposed	SSRA, S&T (including PMC in particular), CPPD	Some actions have already begun but will be accelerate and updated in FY22/23; Others begin FY22/FY23, and then ongoing	Climate Hubs, REE (especially ARS), USFS; DOI (USGS, BLM, FWS), NOAA	Reginal threats and priorities identified, new conservation plants released, and state needs completed via PMC needs assessment process	PMCs have long history of selecting conservation plants for unique environments, including those that may support adaptation
	Establish multi-disciplinary climate change technical expertise team and strategies to evaluate and determine climate requirements and guidance for conservation planning, implementation, assessment, research/ demonstration, and investments	Proposed	SSRA, S&T, CPPD (including Projects branch in particular)	FY22-23	REE	Establishment of technical team and strategic plans; partnerships and projects supported with CSAF focus and outcomes and dollars invested	Cross-agency consultation for CIG climate priorities has begun.



VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 2: The pace and intensity of climate change impacts may exceed existing conservation science, knowledge, and data systems	Maintain, strengthen, and enhance climate-related SWAPA+HE-associated databases, information platforms, and datasets (including soil and vegetative information), as well as ongoing data collection, measurement, and modeling efforts	Ongoing and proposed	SSRA, S&T, CPPD	Begin in FY22-24 then ongoing	OEEP and REE (especially ERS) for some actions	Periodic review of programs and databases; adaptation benefit method developed, and benefits captured	Ongoing effort
Vulnerability 3: Shifting climate trends and increasing variability require nimble and comprehensive business processes that support adaptive conservation	Identify and prioritize climate change-related resource concerns and provide climate-smart opportunities based on producer needs/desires/ goals	Ongoing and Proposed (with additional resources)	CPTAD, SSRA, S&T	2022-2024, then ongoing with certain steps tied to NCA releases	Climate Hubs, ARS; NOAA, NWS, and other Federal agencies contributing to NCA, NRCS Partners including Local Work Groups and State Technical Guide Committee	Climate stressors identified and correlated with NRCS resource concerns; Number of engagement opportunities completed; Updates to planning implementation and processes have been made	Initial review of 4th NCA was done to correlate stressors to NRCS resource concerns.
	Address existing gaps in NRCS assessments for evaluating climate change impacts, including through integration of climate trends information into planning process and IT applications such as business tools.	Some initial activities ongoing, but mostly proposed	CPTAD, S&T (NDLs, Economists), SSRA (RIAD)	2022-2024, then ongoing	Climate Hubs, USFS, ERS, RMA, NASS; Land Grant Universities, NOAA, NWS, DOI, FWS, Army Corps, and other agencies involved with environmental compliance, National Laboratories/ DOE, Tribes, Urban Centers	Assessment methodologies have been developed, evaluated and adapted; Number of trainings delivered; Planning process and related tools have been updated to incorporate identified data	Initial improvements have been made to the Conservation Practices Date Entry System to enable future CSAF modifications; Software development has begun to incorporate COMET into Conservation Assessment and Ranking Tool and Conservation Desktop

VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 3: Shifting climate trends and increasing variability require nimble and comprehensive business processes that support adaptive conservation	Provide support to make climate-smart practices economically feasible for the producer in order to make their operation adaptable and resilient to climate change.	Ongoing and Proposed	CPTAD (inc. Local Conservation Planners and Trainers), S&T (inc. NDLs, Economists), M&S, Environmental Markets	2023-2024, then ongoing	Climate Hubs, USFS, ARS, ERS; Land Grant Universities, NOAA, NWS, DOI, FWS, Army Corps, and other agencies involved with environmental compliance, National Laboratories/ DOE, Tribes, Urban Centers	Processes or assessment methodologies have been developed; Number of trainings delivered at the field level	Initial long-term conservation practice effects have been evaluated in relation to Available Water Capacity, Carbon Storage, and Soil Organic Matter, which can inform economic analyses
Vulnerability 4: Climate change impacts threaten the viability and longevity of current and future applied conservation investments	Increase the presence of climate change information in professional certifications and provide examples of applying climate change information to conservation planning on agricultural lands under a variety of scenarios.	Proposed	All Deputy Areas, with CPPD, S&T, SSRA in the lead for certain actions	1-5 years	Climate Hubs, ARS and Forest Service; technical federal agencies including NOAA, NASA, USGS, EPA	Number of certifications/trainings/ planning scenarios developed or reviewed with current climate information and resources, percent completion of multiple-benefit (whole system) plans with long term scenarios that include environmental benefits for climate adaptation	Proposed action not yet initiated
	Integrate the science and understandings of climate change impacts to agriculture into the discussions and framework of NRCS's State Technical Committees.	Proposed	Regional Conservationists	1-2 years	FSA, federal agency State Technical Committee members	Engagement with all states and needs assessed	Proposed action not yet initiated

VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 4: Climate change impacts threaten the viability and longevity of current and future applied conservation investments	Clarify policies that serve to evaluate the benefits of a long-term investment to be sure that climate change impacts and opportunities are addressed in addition to traditional ecological benefits.	Proposed	All Deputy Areas, with CPPD, S&T in the lead for certain actions	FY 22-FY23	ARS, FS as needed; coordination w/ federal land management agencies approach for local coordination as applicable.	Updates to all relevant policy will be completed	Proposed action not yet initiated
	Maximize the impact of NRCS funding investments by identifying areas of need that overlap for the priorities of environmental justice, climate adaptation needs, and vulnerable populations.	Proposed	CPPD, M&S, S&T, SSRA	FY23 for initial metrics and incorporation into EQIP/ WRE allocations; ongoing work for multiple years	Climate Hubs, USFS, ARS; technical expertise and data from federal agencies including NOAA, NASA, USGS, EPA	Number of metrics incorporated into allocations	Allocation conversations and integration into EQIP allocation recommendations have already begun for climate mitigation, which can be leveraged for climate adaptation/ resilience
	Maximize local flexibility for using Conservation Practices to address natural resource issues by sharing examples, integrating new technologies, and prioritizing national review of practices that will have the most impact helping producers adapt to climate changes.	Planned and Proposed	CPPD, S&T including NDLS/ SDLs, M&S, Hub liaisons	Fy22-FY26, with certain actions completed by FY23	FSA, OCE, ARS, RMA; External coordination through existing venues (State Technical Committee, State and local governments, universities)	Percentage of practices reviewed and revised to include climate adaptation and resiliency information.	An initial GIS extension has been developed which overlays planned practices with the current Drought Monitor Map.
	Develop criteria and data that can be used to describe and evaluate the success of NRCS investments to the general public.	Ongoing and proposed	SSRA, S&T, CPPD	2-4 years, FY 22-23	Climate Hubs, USFS, ARS; coordination w/ federal land management agencies approach for local coordination as applicable.	Investment successes defined at both farm and landscape scales; completion of easement benefits annual report.	Investment successes defined at both farm and landscape scales; completion of easement benefits annual report.

VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 5: Climate change disproportionately impacts vulnerable communities	Understand, strengthen, measure, and evaluate ecosystem services specific to vulnerable communities to protect livelihoods	Ongoing, Proposed, and Planned	SSRA, FPAC-BC, S&T, PMC, NWCC, Programs, and RCs.	Starting immediately through 2025	FPAC-BC, ARS, NASS, FS, FSA, ERS, FAS, RMA, NIFA, Office of Tribal Relations, HUD, EPA, SBA, USGS/BLM, local NGO groups, universities, community colleges	Progress metrics include establishment and tracking of goals contracts, agreements, obligations, urban Ecological Site Descriptions (ESDs) created, acres treated, urban soil surveys completed, and other data as necessary according to annual goals/KPMs	NRCS has provided proof of concept by creating several urban ESDs. Detailed soil survey data is available for urban areas, including the cities of Baltimore, Chicago, Cincinnati, Detroit, Los Angeles, New York, San Diego, San Jose, St. Louis, Washington, D.C., and surrounding suburban areas.
	Support food production and associated conservation activities in vulnerable communities	Ongoing and Proposed	Chief's Office, RC, States, S&T, SSRA, and Programs.	Starting immediately through 2025	FPAC-BC, ARS, NASS, FS, FSA, ERS, FAS, RMA, NIFA, Office of Tribal Relations, NOAA	Progress can be measured by partnerships developed to promote protection of natural resources and importance of conservation practices to human health	NRCS has purchased multiple portable X-ray Fluorescence devices to conduct technical soil services in urban areas for food production and conservation considerations.
	Assess and tailor responses to extreme weather events specific to vulnerable communities	Ongoing and Proposed	Chief's Office, RC, States, S&T, SSRA, and Programs.	Starting immediately through 2025	FS, RD, FEMA, BIA, BOR, ACOE, State Forestry departments and Tribes – Tribal Historic Preservation Office (THPO) and State Historic Preservation Offices (SHPO).	Progress metrics include number of watershed projects contracted and implemented, measurements from the BAER report such as soil burn severity, engineering assessment for flood potential / landslides, cultural resources affected, forestry / tree damage report, other report metrics as needed.	NRCS invested \$10 million to Support Climate-Smart Agriculture and Forestry through Voluntary Conservation including resources targeted to ensure equity and historically underserved producers. NRCS invested \$50 million in 118 partnerships to expand access to conservation assistance for climate-smart agriculture and forestry.

VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 5: Climate change disproportionately impacts vulnerable communities	Increase awareness, skills, and abilities of NRCS staff and clients on equity and environmental justice issues.	Ongoing and Proposed	Chiefs Office, FBC, States, M&S, and S&T	Starting immediately through 2023	FSA, ARS, NIFA, DOI, EPA, WHEJAC	Possible metrics include tracking number of employees taking training, number of producers signed up for soil testing, and percentage of states with urban ag or vulnerable sub-committees.	NRCS has made the USDA Climate, Agriculture, and Forestry Seminar Series available to key staff. Topics include Climate Justice, Food Systems, Food Security, and Global Linkages, and Complex Socio-Ecological-Economic System.
	Ensure outreach and meaningful engagement with vulnerable communities and that recommendations they provide are used to update and revise policy where possible.	Ongoing and Proposed	Chief's Office, M&S, and S&T	Starting immediately through 2023	FSA, RMA	Progress metrics include number of additional outreach coordinators, number of consultations with vulnerable communities, outreach campaign roll outs, and documented recommendations from targeted communities incorporated into policy.	NRCS, through the Office of Urban Agriculture and Innovative Production has updated the evaluation criteria on its Notice of Funding Opportunities to include climate, equity, and environmental justice considerations. An Outreach Coordinator has been designated for all States and the 2 Territorial Areas. Environmental Justice - GIS Map Layers have been added for States to target underserved or disadvantaged communities.

VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 5: Climate change disproportionately impacts vulnerable communities	Increase technical and financial assistance for vulnerable communities	Ongoing and Proposed	Chief's Office, SSRA, S&T	Starting immediately through 2024	Primarily internal to NRCS	Progress metrics include number of additional outreach coordinators, number of consultations with vulnerable communities, outreach campaign roll outs, and documented recommendations from targeted communities incorporated into policy.	NRCS has created national risk and gap maps for historically underserved, urban, and climate analysis to inform the allocation process. SRA strategic budgeting tool will allow states to align resource concerns and target LRA or HU communities using a locally led component key tool to link targeted work with funding needs. STCs will be provided direction to consider underserved communities when deciding how to distribute their state allocation of funds as request for underserved communities will be a priority for funding
Vulnerability 6: The scale and complexity of climate change demands broad and diverse partnerships	Increase familiarity with the state/local climate change "landscape" in order to design and implement more effective and efficient programs and facilitate improved, targeted, communication.	Ongoing/ proposed (depending on the state)	State Conservationist / Area Director	Within first 90 days	Information could be collected in collaboration with other USDA agencies and shared	Number of state-level reports submitted	Ongoing effort
	Expand existing partnerships and build new and essential partnerships to integrate all aspects of socio-economic and natural resource considerations into the agencies approach to addressing climate change.	Ongoing/ planned/ proposed	Climate office, STCs, PAS, National Priority Leads, allowance holders	Ongoing - can start immediately	Ongoing - can start immediately	Examples of actions taken to expand and build partnerships	Ongoing effort

VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 7: Increasing frequency, severity, and extent of disturbances pose risks to current agency infrastructure	Explore alternative communication systems to have multiple forms available.	Proposed and ongoing	M&S, FPAC	2022/23	FPAC; DoD, FCC	Once current forms of communication are inventoried by location, identify gaps in redundant systems, consult with other agencies on possible alternatives, purchase and train staff.	Ongoing effort
	Ensure national and regional datasets used in identification and assessment of climate change impacts are protected from loss.	Proposed and ongoing	M&S, FPAC	2022/23, ongoing	FPAC, OCIO	Consult with FPAC	Ongoing effort
	Work with HSD and FPAC-BC to ensure one FPAC resilience portfolio to provide a unified mission area framework for tracking, evaluating, and managing risks to facilities and accessibility, including via COOP plans.	Proposed and ongoing	M&S, NCGC, FPAC, Chief, RC's, STC's	2022-2024, then ongoing for many actions; Some action timelines contingent on FPAC	FPAC	Consult with FPAC	Ongoing effort
	Increase resilience of data collection and monitoring sites through additional sites and various measurement sensors, enhanced equipment, and functional redundancy in physical IT infrastructure	Ongoing, planned, proposed	NWMC, SSWSF, SCAN	2023	N/A	Identify locations of greatest need, secure additional funds and implement.	Ongoing effort

VULNERABILITY	ACTION TITLE/ DESCRIPTION	TYPE OF ACTIVITY	LEAD OFFICE	TIMEFRAME	COORDINATION	PROGRESS METRICS	ACCOMPLISHMENTS TO DATE
Vulnerability 7: Increasing frequency, severity, and extent of disturbances pose risks to current agency infrastructure	Continually update Dam Watch dam monitoring tool as new climate data becomes available and enable watershed project sponsors to monitor their small watershed dams	Ongoing	CPPD (Watershed Planning)	2023	N/A	Secure additional funds and implement	Ongoing effort
	Support fleet resilience through improved tracking of utilization standards, service center enhancements, use of mobile workstations, and improved fuel efficiency and procurement.	Ongoing, planned, proposed	M&S, FPAC	2022/23, ongoing	FPAC	FPAC Vehicles Dashboard data and related policy	Ongoing effort



# ACRONYM DEFINITIONS

ACRONYM	DEFENITION
<b>ACOE</b>	Army Corps of Engineers
<b>ARS</b>	Agricultural Research Service
<b>BAER</b>	Burned Area Emergency Response
<b>BIA</b>	Bureau of Indian Affairs
<b>BOR</b>	Bureau of Reclamation
<b>CIG</b>	Conservation Innovation Grants
<b>COOP</b>	Continuity of Operations Plan
<b>CPPD</b>	Conservation Planning and Program Delivery (Programs) Deputy Area
<b>CPTAD</b>	Conservation Planning and Technical Assistance Division
<b>CSAF</b>	Climate Smart Agriculture and Forestry
<b>DOD</b>	Department of Defense
<b>DOE</b>	Department of Energy
<b>DOI</b>	Department of Interior
<b>EPA</b>	Environmental Protection Agency
<b>EQIP</b>	Environmental Quality Incentive Program
<b>ERS</b>	Economic Research Service
<b>ESD</b>	Ecological Site Description
<b>FCC</b>	Federal Communications Commission
<b>FEMA</b>	Federal Emergency Management Agency
<b>FPAC</b>	Farm Production and Conservation Mission Area
<b>FPAC-BC</b>	Farm Production and Conservation Business Center
<b>FS/USFS</b>	United States Forest Service

ACRONYM	DEFENITION
<b>FSA</b>	Farm Service Agency
<b>FWS</b>	US Fish and Wildlife Service
<b>HSD</b>	Homeland Security Division
<b>HU</b>	Historically Underserved
<b>HUD</b>	Housing and Urban Development
<b>M&amp;S</b>	Management and Strategy Deputy Area
<b>NASA</b>	National Aeronautics and Space Administration
<b>NASS</b>	National Agricultural Statistics Service
<b>NCA</b>	National Climate Assessment
<b>NDL</b>	National Discipline Lead
<b>NGCE</b>	National Geospatial Center of Excellence
<b>NIFA</b>	National Institute of Food and Agriculture
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NWCC</b>	National Water and Climate Center
<b>NWMC</b>	National Water Management Center
<b>NWS</b>	National Weather Service
<b>OCE</b>	Office of the Chief Economist
<b>OEEP</b>	Office of Energy and Environmental Policy
<b>OCIO</b>	Office of the Chief Information Officer
<b>OUAIP</b>	Office of Urban Agriculture and Innovative Production
<b>PMC</b>	Plant Materials Centers
<b>RC</b>	Regional Conservationists

ACRONYM	DEFENITION
<b>RD</b>	Rural Development
<b>REE</b>	Research, Education and Economics Mission Area
<b>RIAD</b>	Resource Inventory and Assessment Division
<b>RMA</b>	Risk Management Agency
<b>S&amp;T</b>	Science and Technology Deputy Area
<b>SBA</b>	Small Business Administration
<b>SCAN</b>	Soil Climate Analysis Network
<b>SDL</b>	State Discipline Lead
<b>SHPO</b>	State Historic Preservation Offices
<b>SPSD</b>	Soil and Plant Science Division
<b>SRA</b>	State Resource Assessment
<b>SSRA</b>	Soil Science and Resource Assessment Deputy Area
<b>SSWSF</b>	Snow Survey and Water Supply Forecasting
<b>STC</b>	State Conservationists
<b>SWAPA+HE</b>	Soil Water Air Plants Animals + Humans Energy resources
<b>THPO</b>	Tribal Historic Preservation Office
<b>USGS</b>	United States Geological Survey
<b>WHEJAC</b>	White House Environmental Justice Advisory Committee
<b>WRE</b>	Wetland Reserve Easements



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