



IDEAS  
ACTION  
RESULTS

# Leveraging Outreach and Technical Assistance to Scale Natural Climate Solutions

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1 <https://bipartisanpolicy.org/farm-and-forest-carbon-solutions-task-force/>

# Overview

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The Bipartisan Policy Center’s [Farm and Forest Carbon Solutions Initiative](#) advances innovative climate and conservation policies that deliver economic and environmental benefits across rural America. This report identifies best practices, gaps, and opportunities for improvement in the outreach and technical assistance provided through USDA and other federal conservation programs. Although often overlooked in the context of leveraging nature to address climate change, outreach and technical assistance are critical tools to maximize the climate benefits of federal programs. Three key insights motivated our research in this area:

- Natural climate solutions (NCS) are practices that enhance carbon storage or avoid greenhouse gas emissions from natural and working lands. They are [key to meeting climate goals](#) and can deliver strong economic and environmental co-benefits for rural communities.
- Without more effective recruitment of private forest landowners, farmers, and ranchers, the United States will not be able to scale up implementation of NCS and realize these benefits.
- With improvement, existing conservation assistance programs offer an opportunity to scale up carbon removal and emission reduction practices.

With the benefit of supplemental information gathered through multiple informal stakeholder discussions, we identify four existing mechanisms for conducting outreach and providing technical assistance related to climate-friendly conservation practices for farms, ranches, and forests:

1. Word of mouth and “meeting people where they are”
2. Specialized government program support
3. Formal partnerships and third-party support
4. Social media and digital tools

Even with existing support and outreach mechanisms, producers and landowners still face challenges to participating in conservation programs and adopting NCS practices. We discuss barriers that limit the extent of services programs can provide and barriers that limit participation in conservation programs.

## **Programmatic Barriers**

- Funding and staffing levels
- Data access and sharing
- Lack of private sector engagement

## **Participation Barriers**

- Cultural and demographic factors
- Land ownership and land tenure issues
- Measurement and data limits
- Economic considerations
- Administrative hurdles

By providing a nonexhaustive list of possible opportunities for improvement, we hope to offer a starting point for future conversations around policy options to address these barriers.

# 1. Introduction

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The Bipartisan Policy Center launched its Farm & Forest Carbon Solutions Initiative to explore policy opportunities that incorporate agriculture and forestry as part of broader climate mitigation strategies while providing economic benefits to farmers, ranchers, and forest landowners (collectively, “producers and landowners” for purposes of this discussion). Natural climate solutions (NCS)—practices that increase carbon storage or avoid greenhouse gas emissions on natural and working lands—are vital for achieving economy-wide deep decarbonization. Examples of NCS include reforestation, improved forest management, conservation tillage, and rotational grazing.<sup>2</sup>

Implementing NCS at scale requires extensive outreach and recruitment of producers and landowners. Because many NCS align with existing conservation practices, they also require the effective deployment of technical assistance experts with deep knowledge of U.S. Department of Agriculture (USDA) conservation programs, practices, and tools for measuring and monitoring the impacts of NCS practices. The current federal-state-local technical assistance delivery system is well-established, with over 3,000 conservation districts,<sup>3</sup> state and federal field staff, extension service, local community groups, universities, private businesses, land trust organizations, and others operating at the local level to carry out natural resource management programs. Technical assistance can be provided in a variety of forms, and can include information sharing, technical expertise, and a delivery system to support conservation and natural resource management by producers and landowners.<sup>4</sup> This assistance is often centered around the development of personalized conservation and forest management plans that inform producer and landowner decision-making around natural resource management.<sup>5</sup>

Here, we provide an overview of best practices, gaps, and opportunities to improve existing mechanisms for providing conservation assistance to maximize the climate mitigation potential of U.S. agriculture and forestry.

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2 [https://bipartisanpolicy.org/download/?file=/wp-content/uploads/2020/07/BPC-Energy-Synthesis-Brief\\_.pdf](https://bipartisanpolicy.org/download/?file=/wp-content/uploads/2020/07/BPC-Energy-Synthesis-Brief_.pdf)

3 <https://www.nacdnet.org/wp-content/uploads/2017/10/NACD-The-Basics-of-Conservation-Delivery-10102017.pdf>

4 [https://www.everycrsreport.com/reports/RL34069.html#\\_Toc282421971](https://www.everycrsreport.com/reports/RL34069.html#_Toc282421971)

5 <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/technical/cta/?cid=stelprdb1049425>

## 2. Outreach and Technical Assistance: What Works?

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Numerous practices for conservation outreach and technical assistance have proven successful in the past, and these practices can be applied to support adoption of natural climate solutions on a wider scale. But it is important to understand who these “best practices” have worked for and where the gaps remain. We discuss existing gaps and barriers in [Section 3](#). Note that although we focus on producer and landowner participation in conservation programs, outreach and technical assistance also play a large role in the use of conservation practices outside these programs.

### **Word of Mouth and “Meeting People Where They Are”**

Word-of-mouth outreach tends to be particularly successful because it is built on trust: farmers, ranchers, and forest landowners are more likely to respond positively to information when it is relayed by people they know within their community. Forest landowners typically rely most heavily on state service and consulting foresters. Participants in conservation programs who have had positive experiences will be more likely to share information with their friends and neighbors.



Traditionally, information transfer through word of mouth occurs informally and requires little to no effort by programs or organizations. However, there are more formal outreach structures that capitalize on community connections such as peer-to-peer networks and organized workshops. Peer-to-peer networks coordinated at the national level can connect producers and landowners across

the country around common conservation goals. For example, the American Farmland Trust’s Women for the Land initiative connects women producers and landowners interested in land conservation.

Tribal conferences offer a key opportunity to “meet people where they are.” Both the Intertribal Agriculture Council and Intertribal Timber Council hold annual conferences that are well-attended by tribal members from across the country. In South Carolina, door-to-door outreach has proven successful in reaching African American producers and landowners who have never applied to a USDA conservation program. Although this type of outreach requires a significant amount of time and effort, it may be necessary to engage underserved producers and landowners who are unaware of USDA programs.

### **Specialized Government Program Support**

Government programs like extension programs and USDA Regional Climate Hubs can provide specialized government support by translating science-based research into tools and resources for producers, landowners, and technical assistance providers.

Land-grant universities and institutions provide vital extension services. They are often categorized by the year their status was designated (e.g., the 1862 public universities, the 1890 historically Black colleges, universities and Tuskegee University, and the 1994 tribal colleges and universities).<sup>6</sup> The Federally Recognized Tribes Extension Program (FRTEP) also funds extension programs on reservations and on tribal land; outreach for these programs is conducted by 1862 and 1890 land-grant institutions. The Cooperative Extension System partners with the National Institute of Food and Agriculture to communicate science-based research to producers and landowners.

Often, county-level extension agents provide outreach and technical assistance—plus valuable cultural and social support—where Natural Resources Conservation Service (NRCS) and Farm Service Agency (FSA) staff are unavailable or overburdened. County-level agents also provide specialized government support for historically underserved producers and landowners who have not historically benefited from USDA programs to the same extent as other producers and landowners, in part due to insufficient or inadequate outreach and technical assistance.<sup>7</sup> However, extension staff resources are limited, especially in the case of the 1994 and FRTEP agents who serve tribal communities and who often live and work in those communities. Scaling up extension programs to serve more producers and landowners, particularly those who have been underserved historically, would require increased federal funding.

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6 <https://nifa.usda.gov/land-grant-colleges-and-universities-partner-website-director-y?state=All&type=Extension>

7 [https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/people/outreach/slbfr/?cid=nrcsdev11\\_001040](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/people/outreach/slbfr/?cid=nrcsdev11_001040)

The 10 USDA Climate Hubs play an important role in delivering region-specific, science-based information and tools to outreach professionals and technical assistance providers from other USDA programs such as the NRCS and FSA. The Hubs respond to specific local and regional needs by collecting and simplifying USDA data into formats that are accessible to technical assistance providers and natural resource managers. They provide specialized support through education and outreach around climate-related risks, and work with technical assistance providers to ensure they have the most up-to-date, science-based information. The Climate Hubs are limited in what they can achieve at scale, however, due to staff and funding constraints. The fact that their funding is entirely dependent on contributions from other programs, in addition to fluctuations in annual appropriations, creates uncertainty around year-to-year funding levels.

### **Formal Partnerships and Third-Party Support**

Partnerships—defined here as formal agreements between organizations—are a key method for organizations to expand their outreach coverage. Government agencies can use cooperative agreements to partner with third parties—such as conservation groups, nonprofits, and local small and mid-sized private companies that are well-established in local communities—to organize outreach and education around government conservation programs. This approach can be especially beneficial in areas where government field staff is limited, or where past experiences with federal programs may have reduced the community’s level of trust. Notably, partnerships can support conservation practices outside of government programs. For example, the Black Family Land Trust has partnered with various 1890 land-grant institutions to undertake small farm outreach.

Partnerships can allow community organizations to act as a liaison between the federal government and African American producers and landowners, and can lend credibility to USDA agencies when there is an absence of trust. The Sustainable Forestry and African American Land Retention Network partners with USDA and state agencies to educate Black producers and landowners on their options and to increase their participation in conservation planning and programs. Third-party organizations are most effective when they remain connected with producers and landowners throughout the entire process—from initial education through the application process and the implementation of conservation practices.

### **Social Media and Digital Tools**

In a highly digital world, nonprofits, private companies, government agencies, and conservation organizations are increasingly relying on social media and digital tools to engage producers and landowners. Such tools can include applications, software such as geographical information systems (GIS), and remote sensing tools for data collection that streamline technical assistance. Many organizations also use social media posts and paid advertisements to expand their outreach.

We've found that online tools were more frequently used to undertake outreach to private forest landowners who may be less aware of existing conservation opportunities compared with farmers and ranchers who are typically familiar with USDA programs. For example, the free online WoodsCamp Tool was developed by the American Forest Foundation and its partners to match landowners with conservation projects that align with their goals.<sup>8</sup> Farmers and ranchers often rely on an intermediary advisor, like an agronomist, to input data and use digital tools. Although digital tools are increasingly important for outreach and technical assistance, they are most effective when paired with on-the-ground assistance.

## 3. Existing Barriers and Opportunities for Improvement

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BPC has identified two main categories of barriers that affect producer and landowner participation in conservation programs:

- **Programmatic barriers** that limit the provision or accessibility of outreach and technical assistance
- **Participation barriers** that inhibit uptake by producers and landowners of available conservation programs and technical assistance resources.

Reducing and removing these barriers will be necessary to increase producer and landowner adoption of conservation practices that provide climate benefits.

### 3.1 Programmatic Barriers

The USDA administers a range of programs that incentivize NCS by providing assistance to producers and agricultural landowners who adopt various conservation practices on their lands. Agricultural programs managed by NRCS and FSA are designed to protect soil, vegetation, water, wildlife, and other natural resources. The effectiveness of these programs depends in large part on reliable and robust funding and staffing resources, because having personnel in communities and on the land is essential to build trust and understand the unique needs and challenges of individual producers and landowners in geographical diverse regions of the country. Government officials who serve continuously in a regional office over many years are able to develop expertise that is highly relevant to the local environment and economy. This helps USDA meet the diverse needs and priorities of different communities and geographies.

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8 <https://www.forestfoundation.org/woodscamp>

Compared to the resources available to agricultural producers, NRCS plays a smaller role in offering direct technical assistance to forest landowners. For these landowners, education, outreach, and technical assistance is largely provided by state forestry agencies and through programs offered by the State and Private Forestry (S&PF) organization of the USDA Forest Service (USFS). Research by the American Forest Foundation has found that misalignment between NRCS and state forestry agencies is partially due to a lack of dedicated NRCS forestry positions, and therefore a lower prioritization of forestry compared to agriculture. Budgets for forestry outreach and technical assistance can also vary substantially between states; in addition, many of these programs are not designed to achieve outcomes, and focus instead on education and assistance.

The USFS S&PF account funds programs to protect nonfederal forests from wildfires, diseases, insects, and invasive vegetation by providing assistance to landowners. By extending USFS resources beyond the national forests to also serve states, tribes, communities, and nonindustrial private landowners, S&PF delivers vital technical and financial assistance to managers and landowners as they work to maintain forests and grasslands, protect communities from wildland fires, and restore ecosystems. The program engages state agencies and other partners to build on existing state and private forest management capacities.

Funding provided by NRCS and S&PF, and supplemented by other USDA agencies not detailed here, supports salaries and expenses for staff, development of innovative technology, conservation system design, and grants to partners for expanded assistance. Although this report focuses on staffing within NRCS and USFS, barriers around staffing and funding exist across multiple USDA programs, state programs, and extension programs.

### **Funding and Staffing Levels**

USDA technical assistance for producers and landowners is provided through a network of federal staff located throughout the country. Most assistance for agricultural producers is provided by NRCS, with funding directed through the Conservation Technical Assistance (CTA) program within Conservation Operations (CO). Typically, the technical assistance provided in advance of a producer entering into a contract for financial assistance is paid through the CTA program. Once a contract is established for financial assistance, any technical resources provided to the producer are funded from the mandatory individual program, such as the Environmental Quality Incentives Program (EQIP), rather than CTA. Contract lengths can vary. For example, EQIP offers long-term contracts of up to a maximum of 10 years, although most contracts are only for one to three years. This individual program funding ceases once the contract is complete, and does not support ongoing assistance for maintaining conservation practices and activities. CO funding levels have decreased (in inflation-adjusted dollars) from approximately \$1 billion in 1999 to \$820 million in 2020.<sup>9</sup>

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<sup>9</sup> [https://www.everycrsreport.com/files/2021-03-19\\_R46728\\_f67197cb0d5cb1f492f313890dee3214db28902c.pdf](https://www.everycrsreport.com/files/2021-03-19_R46728_f67197cb0d5cb1f492f313890dee3214db28902c.pdf)

While NRCS staff is funded through a range of programs, more than half is supported through CO funding. This means that changes in CO funding greatly influence the total number of people on NRCS staff. Since 2000, the total number of permanent positions within NRCS that are supported by CO has declined, resulting in a staffing reduction that is exacerbated by a growing number of unfilled positions. Although other factors have contributed to this decline—including program reorganization—the changes in funding levels indicate that USDA's capacity to provide technical assistance has decreased. This issue is explored in greater detail in Appendix B.

Local staff turnover can have detrimental effects on the ability to build and maintain trust between local communities and technical assistance providers. For example, due to the competitive nature of the FRTEP and reduced FRTEP funding, South Dakota lost all of its FRTEP agents in one year.

Technical and financial assistance is provided to private, nonindustrial forest landowners through several programs supported by S&PF. Through grants or cost-sharing, these S&FP programs support forest restoration, urban forestry, forest protection from wildfires and other disturbances, and state and rural wildfire management.

### **Data Access and Sharing**

Challenges also exist around identifying and accessing key data sets, both among USDA staff in various agencies, as well as by external researchers, state agencies, and other entities. USDA personnel need access to information about staffing, funding, and enrolled acreage across the conservation programs operating out of different agencies to guide program administration and resource allocation.

From the perspective of producers and landowners, applying to federal conservation programs and compiling and submitting the necessary data can require significant time and effort. While some producers and landowners may have access to technical assistance providers or local networks, many work alone to navigate the array of program requirements and to determine their eligibility to participate. This can result in duplicative data submissions by producers and landowners who might be interested in participating in multiple programs, increasing the administrative burden for program applicants and USDA staff.

In the context of accessing tools and data, a broad range of scientific measurements is required to improve the quantification of natural carbon solutions. Advanced mapping and visualization tools can help producers and landowners assess their resources and develop land management plans. Although many USDA agencies have already developed suites of effective information management resources, prospective program applicants may be unaware of these tools and data sets. Such resources include GIS to identify and catalog land tracts and organized systems of *in situ* measurements that can be taken in the soil or in aboveground biomass.

## Lack of Private Sector Engagement

As described in [Section 2](#), formal partnerships and third-party support can help make outreach and technical assistance efforts much more successful. However, many programs—especially for forestry—are not set up to leverage private sector or third-party resources in any meaningful way. This includes both private providers of technical assistance, like forestry consultants, and private sources of funding. Although the Regional Conservation Partnership Program’s Alternative Funding Arrangements (AFA) supports public-private partnerships, NRCS may only award up to 15 AFA projects annually. This severely limits the scalability of these partnerships. Deploying NCS across the country will require tapping into private sector resources because the investment needed cannot be achieved through public funding alone.

USDA programs also use varying methods to enlist private sector and third-party technical assistance. NRCS approves third-party technical service providers (TSPs) who can provide assistance on behalf of NRCS. Historically, a majority of certified TSPs have been from the private sector.<sup>10</sup> State foresters and private forestry consultants provide most technical assistance to forest landowners, but state foresters do not automatically qualify as TSPs through NRCS. Individual agreements may be created on an ad hoc basis to permit state foresters or third parties to provide technical service on behalf of NRCS.

## 3.2 Participant Barriers

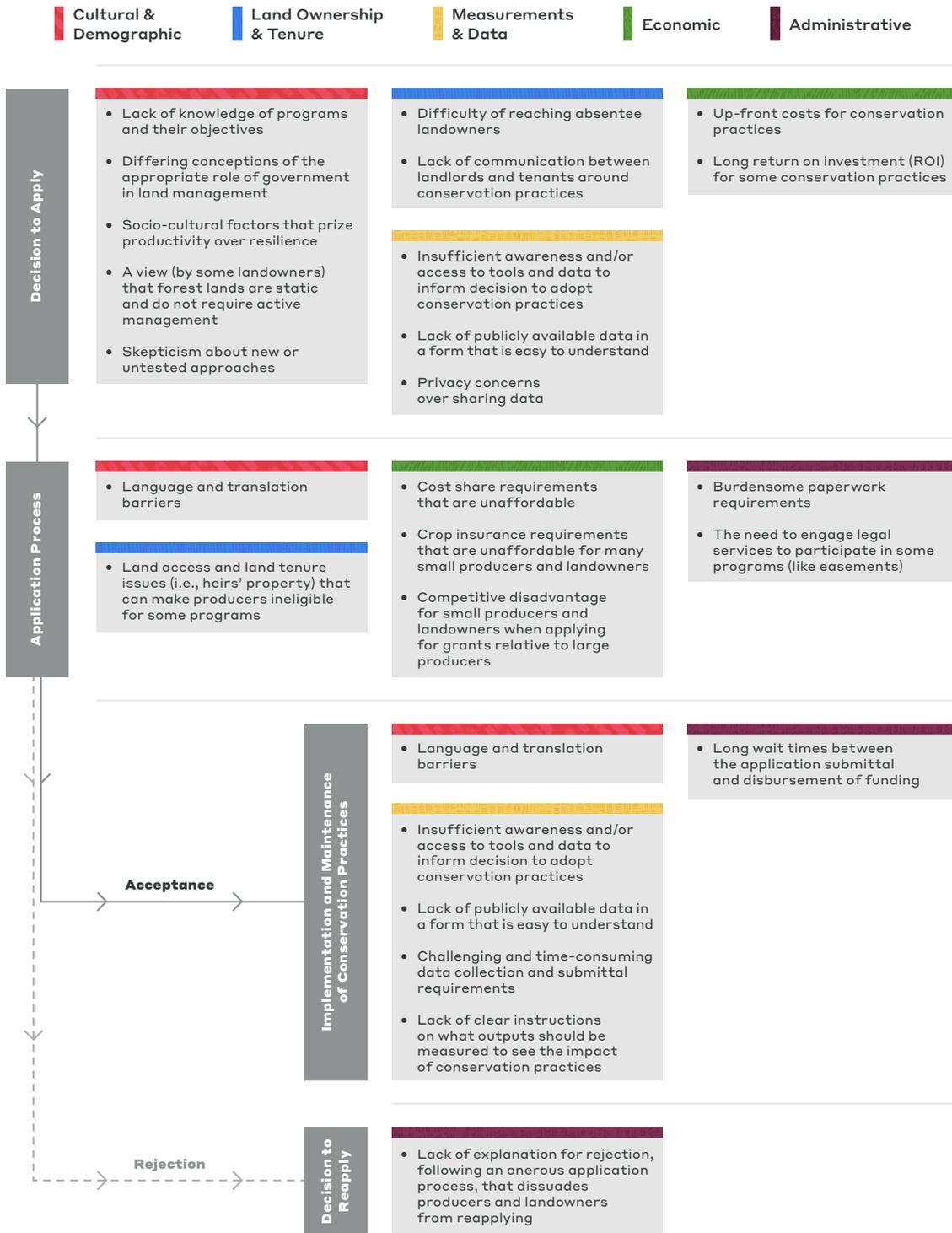
A range of challenges influences producers’ and landowners’ interest in conservation practices and ability to participate in conservation programs. Of these challenges, we identify barriers in five primary categories: 1) cultural and demographic; 2) land ownership and land tenure; 3) measurement and data; 4) economic; and 5) administrative. These barriers can vary across the conservation program timeline (Figure 1). We also explore the unique barriers that discourage participation in conservation programs by tribal and African American landowners and producers.

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10 [https://www.everycrsreport.com/files/20110107\\_RL34069\\_e09143786a5e4f3f8a5f7cb31018ce2496d4e173.pdf](https://www.everycrsreport.com/files/20110107_RL34069_e09143786a5e4f3f8a5f7cb31018ce2496d4e173.pdf)

**Figure 1. Participant barriers over the conservation program timeline from the decision to apply to the implementation and maintenance of conservation practices**

### Timeline of Barriers to Producer and Landowner Participation in Conservation Programs



## Cultural and Demographic Factors

Cultural and demographic challenges are often the first hurdle to increased participation in government conservation programs. Some examples are listed below, though it is important to note that not all of these barriers apply to all producers and landowners who, as individuals, hold a wide range of diverse beliefs and attitudes:

- Varying conceptions of the appropriate role of government in land management
- Socio-cultural factors that prize productivity over resilience
- A view of forest lands as static systems that do not require management
- Language barriers and translation issues
- Misunderstandings due to a lack of expectation-setting around the yield impacts of conservation practices

Finally, many farmers, ranchers, and forester landowners are unaware of existing programs that might be relevant to them and beneficial to their operations. Without this knowledge, it is difficult for producers and landowners to prioritize decision-making around conservation. How conservation is “messed” is critical to overcoming cultural and demographic barriers.

## Land Ownership and Land Tenure Issues

Land ownership and land tenure have important implications for participation in conservation programs. According to the 2017 Census of Agriculture, nearly 40% of all U.S. farmland is rented or leased.<sup>11</sup> In forestry, absentee landowners are often the hardest group to reach since many of them live in suburban and urban areas far from their forested land. These landowners account for 117 million acres of private forestland in the U.S., and engaging them will be critical for scaling up forest conservation practices.<sup>12</sup>

Research suggests that tenant farmers may be less inclined to adopt conservation practices compared to owner-operators.<sup>13</sup> Renters have thinner margins to implement practices that have upfront costs because they pay rent by the acre. And financial gains from implementing conservation practices may not be realized until after the rental agreement expires, thereby undercutting any incentive among renters to accept upfront costs. In some instances, landlords may not allow their tenants to implement these practices, while in other instances, landlords may be the ones advocating for conservation. Often, there is no discussion of these issues between tenants and landowners. There is also the potential for soil health management practices to improve land values.

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11 [https://www.nass.usda.gov/Publications/AgCensus/2017/Full\\_Report/Volume\\_1,\\_Chapter\\_1\\_US/st99\\_1\\_0077\\_0077.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_US/st99_1_0077_0077.pdf)

12 [https://www.fs.fed.us/nrs/pubs/jrnl/2020/nrs\\_2020\\_snyder\\_001.pdf](https://www.fs.fed.us/nrs/pubs/jrnl/2020/nrs_2020_snyder_001.pdf)

13 <https://www.mdpi.com/2077-0472/9/3/53>

This could backfire for renters if it causes landlords to increase rents.

### **Measurement and Data Limits**

Significant challenges exist around data access, sharing, and measurements for producers and landowners. Regarding access, even if data is publicly available, producers and landowners may be unaware of its existence, or it may not be available in a form that is easily understood and accessed. In some cases, information is available only through complex government websites that link across programs, databases, and even connect to archived sites. Farmers, ranchers, and forester landowners may also lack access to visualization and mapping tools like GIS that can provide clear, useable information on the value of their land and resources.

Producers and landowners may reasonably resist sharing information with government program offices or third-party verifiers due to privacy and proprietary concerns. And collecting and submitting the data required to participate in conservation programs can be difficult and time-consuming even if the applicant is willing to provide it. A better ability to connect environmental data to agronomic outputs is also needed. Many producers and landowners lack clear instruction concerning which outputs they should be measuring to see the impact of implementing a particular conservation practice.

### **Economic Considerations**

Many producers and landowners face economic barriers that prevent them from adopting conservation practices, which typically incur upfront costs. Often payments from conservation programs are structured as reimbursements, and thus do not help with these upfront costs. Producers and landowners can also struggle to afford the cost-share required for most programs. And many producers and landowners lack a clear understanding of the costs and benefits of conservation practices, especially with respect to practices that may have a longer return on investment. Producers and landowners with short-term planning horizons are often unwilling or unable to invest in such practices. Additionally, many small producers and landowners can't afford crop insurance, which can affect their ability to qualify for conservation programs; conversely, crop insurance policies that do not prioritize conservation can themselves create barriers to participation.

Many small producers and landowners also lack access to carbon markets and struggle to compete for conservation grants against industrial and large-scale applicants. For those who can access carbon markets, high upfront costs—including costs to conduct forest inventories, take soil measurements, and monitor and verify carbon benefits—may still deter participation. Additionally, the current average price for carbon credits in the market is too low to make most

smaller projects “pencil out,” especially for small producers and landowners.

### **Administrative Hurdles**

Application requirements and program reporting requirements place an administrative burden on program participants. Each government program typically requires a separate application, and the application process can be especially daunting for first-time applicants. Applying for conservation programs takes time; a producer could lose their business in the amount of time it takes to apply for a program if they are relying on money from the program to survive. The easement process can be onerous, and may require legal services for deed and title work that make it harder for small producers and landowners to participate. Unsuccessful applicants can be dissuaded from reapplying if they put a significant amount of time and effort into the application process and get rejected without receiving constructive feedback.

### **Unique Barriers to Tribal and Indigenous Participation**

Tribal and Indigenous communities are among those historically underserved producers and landowners who have not benefited from USDA programs to the same extent as others. USDA has acknowledged that tribes face greater barriers to participation by designating American Indians and Alaskan Natives as socially disadvantaged under its 2501 program, which provides grants for outreach and assistance to socially disadvantaged producers and landowners. Trust is a significant barrier to tribal and Indigenous participation in conservation programs, and many tribal members choose not to take advantage of federal programs that they qualify for. Their reasons vary, but tribal members have expressed a belief that their likelihood of receiving a grant is low and that the grant writing process is daunting. Deadlines can also be a challenge for tribal applicants given the sovereign government process they are often required to go through when applying for USDA conservation programs.

- Tribal members also face greater barriers surrounding land ownership and tenure. These include:
- Tribal allotments with divided ownership are difficult to use for conservation purposes because a required percentage of individual owners must agree on any decision.<sup>14</sup>
- Termed leases for allotted land can impact the implementation of conservation practices if the lease length is too short to make economic sense to the lessee.
- Every tribe has a limited number of leases, so it is difficult to get new farmers who may be more open to conservation practices.

The Department of Interior’s Land Buy-Back Program for Tribal Nations attempts to address the first barrier by having the federal government purchase fractional interests in trust or restricted fee land and immediately restoring the

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<sup>14</sup> <https://www.doi.gov/buybackprogram/FAQ>

land to tribal trust ownership. BPC will continue to explore land tenure policy issues as part of a later paper to inform task force members.

Barriers to tribal participation in carbon markets include the 100-year-or-more time frame associated with carbon credits (depending on the crediting protocol); the limited waiver of sovereign immunity that prevents lawsuits by the tribe; and the perception that carbon offsets allow polluters to continue business as usual.

### **Unique Barriers to African American Participation**

African Americans have been historically underserved by USDA and, like tribal and indigenous members, are designated as socially disadvantaged under USDA's 2501 program. Policies that have caused the number of African American farmers to decrease by 93% between 1940 and 1974<sup>15</sup> have also contributed to a lack of trust in the federal government on the part of Black producers and landowners. Another significant barrier is the fact that disadvantaged producers and landowners have historically lacked access to information on the various USDA programs as well as state and local opportunities. Potentially biased compliance enforcement is an additional deterrent.

Land ownership issues surrounding heirs' properties can create challenges for Black landowners who might be interested in participating in conservation programs. If ownership of the subject property is divided, a farmer could risk a partition sale or the loss of land to tax default as a result of participating in a conservation program. Notably, the 2018 Farm Bill relaxed requirements for heirs' property to apply for FSA and NRCS programs, but these requirements are subject to interpretation by individual states and counties. States that have enacted the Uniform Partition of Heirs Property Act (UPHPA) have a gateway to document individuals as landowners of heirs' property. However, states that have not enacted UPHPA may have fewer options, and the interpretation of the 2018 Farm Bill update on heirs' property may be left up to county-level offices.

African American producers and landowners may also lack access to the capital needed to implement conservation practices. Socially disadvantaged producers and landowners can qualify for advancements that cover up to 90% of costs for programs like EQIP, but the remaining 10% can still be a hurdle. Additionally, many Black producers and landowners have struggled to access markets for carbon credits. Historically, there has also been no USDA funding specifically directed to address heirs' property issues. However, the American Rescue Plan Act of 2021 included \$50.5 million to improve land access for socially disadvantaged producers and landowners, including issues related to heirs' property, through grants and loans.<sup>16</sup>

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15 <https://uncpress.org/book/9781469622071/dispossession/>

16 <https://bipartisanpolicy.org/blog/arp-2021-agriculture/>

### 3.3 Opportunities for Improvement

Table 1 lists potential opportunities to address each of the above-described barriers to participation in conservation programs. The table is far from exhaustive, and the actions described are not meant to be prescriptive; rather, they are offered as a starting point for future discussions on how to lower barriers and increase the adoption of NCS practices across the country.

**Table 1 Potential opportunities for improvement for barriers we identified.**

	Barrier	Potential Opportunities for Improvement
Programmatic Barriers	Funding and Staffing Levels	<ul style="list-style-type: none"> <li>• Robust, reliable funding for federal technical assistance programs</li> <li>• Long-term funding for full-time technical assistant positions</li> <li>• An increase in staff years across agencies and programs to ensure long-term presence at offices to build trust, relationships, and knowledge</li> </ul>
	Data Access and Sharing	<ul style="list-style-type: none"> <li>• Internal coordination of program information and associated land-based measurements organized as a central clearing house of data across USDA</li> <li>• Updated, modernized data collection system that enables greater data sharing among agencies, transparency, and simplified public access to programs, measurements, and resources</li> <li>• Simplified public access to advanced mapping and data visualization tools</li> <li>• On-ramp for new conservation practices and technologies to become eligible for program funding and enhance continued innovation</li> <li>• Expansion of observational data to improve tools used to estimate environmental and economic outcomes, including the COMET program</li> <li>• Enhanced funding for the development of models and analytical tools to help producers, ranchers, and forest landowners estimate potential changes in soil health, carbon sequestration and storage, and other related environmental characteristics as a result of adopting climate-beneficial practices (e.g., COMET-Farm, COMET-Planner, Rangeland Analysis Platform, etc.)</li> <li>• Universal data standards and a comprehensive data trust model to standardize data collection, share interoperable data between mission areas, and promote a culture of interagency collaboration around data</li> <li>• Efforts to promote the adoption and use of advanced data collection tools, such as remote sensing</li> <li>• Engagement of farmers and ranchers through novel data sharing incentives and support for ecosystem service market development to add value to farm and forest operations</li> <li>• Funding for an environmental claims clearinghouse and technical assistance to farmers and ranchers</li> </ul>
	Lack of Private Sector Engagement	<ul style="list-style-type: none"> <li>• Reforms to allow experts outside USDA to qualify as technical assistance providers for relevant practices (i.e., state foresters for forest management practices)</li> <li>• Improved communication and coordination of resources and staff between federal programs, state departments, and local organizations</li> </ul>
Participant Barriers	Cultural and Demographic	<ul style="list-style-type: none"> <li>• Partnerships with community and nonprofit organizations that work on a local level, especially using peer-to-peer and network-based approaches</li> <li>• Messaging tailored to the audience, community models, and decision-making motivations</li> <li>• Expanded education on programs and clearer program descriptions</li> <li>• Expectation setting to support informed decision making</li> <li>• Education of technical assistance providers on all conservation opportunities including cost-share programs, easements, and private carbon markets</li> </ul>

	<b>Barrier</b>	<b>Potential Opportunities for Improvement</b>
<b>Participant Barriers</b>	<b>Land Ownership and Tenure</b>	<ul style="list-style-type: none"> <li>• Broader outreach to target absentee landowners in suburban and urban areas</li> <li>• Greater communication between land operators and landowners around conservation priorities</li> <li>• Greater flexibility in allowing renters to qualify for programs</li> <li>• More programs that formalize arrangements between tenants and landowners around the implementation of conservation practices, including conservation leasing support and women landowner programs</li> </ul>
	<b>Measurements and Data</b>	<ul style="list-style-type: none"> <li>• Greater support for programs that translate scientific data into formats that are easily understood by landowners and land operators</li> <li>• A clearer and more specific framework for identifying the data that farmers, ranchers, and forest landowners need to provide</li> <li>• Broadband deployment to support GIS mapping and data collection</li> </ul>
	<b>Economic</b>	<ul style="list-style-type: none"> <li>• Benefit “stacking” to allow funding support to reflect multiple co-benefits of conservation practices, such as improved water quality and carbon storage, and the creation of a tool to model funding support for co-benefits</li> <li>• Reforms to allow “stacking” of federal and state funds for conservation practices</li> <li>• Greater cost-share percentages for underserved communities.</li> <li>• Expansion of advance payment options</li> <li>• Research and education on the economics of conservation practices, including quantifying the value of benefits to soil health and resilience, and other conservation outcomes</li> <li>• Project aggregation and the formation of cooperatives to expand small producers’ and landowners’ access to carbon markets and share associated costs</li> <li>• Creation of an Office of Small Farms at USDA to ensure small farmers have equal access to programs</li> <li>• Alternative funding arrangements between USDA and private organizations</li> <li>• Development of adjusted ranking criteria for conservation funding to increase funding opportunities for small operations</li> </ul>
	<b>Administrative</b>	<ul style="list-style-type: none"> <li>• Revised application requirements for small producers and landowners who may be unable to afford legal services and grant writing assistance</li> <li>• Modernized reporting requirements for multiple USDA programs</li> <li>• Greater funding and support for local organizations that service producers and landowners</li> <li>• Expanded broadband service and/or paper application options for individuals in areas that lack internet access</li> </ul>
	<b>Tribal</b>	<ul style="list-style-type: none"> <li>• Greater funding and support for tribal extension programs to ensure all tribes that would like access to an extension agent have that access</li> <li>• Relaxed application deadlines for tribal applicants who are required to go through an intertribal process</li> <li>• Expansion and/or extension of the DOI Land Buy-Back Program for Tribal Nations</li> <li>• Greater funding for USDA programs to support community organizations that perform outreach to socially disadvantaged producers and landowners (i.e., the 2501 program)</li> </ul>
	<b>African American</b>	<ul style="list-style-type: none"> <li>• Uniform implementation of future Farm Bill provisions around heirs’ property issues</li> <li>• State enactment of the Uniform Partition of Heirs Protection Act</li> <li>• USDA funding specifically directed to address heirs’ property issues</li> <li>• Greater funding for USDA programs to support community organizations that perform outreach to socially disadvantaged producers and landowners (i.e., the 2501 program)</li> <li>• Better maintenance of existing funding pools dedicated for socially disadvantaged producers and landowners, and the creation of new funding pools in states that do not currently have them</li> <li>• Review of enforcement policies and practices to identify systemic bias and assure equity in compliance</li> </ul>

## 4. Areas for Further Investigation

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This paper has focused primarily on outreach and technical assistance provided by federal programs, environmental nonprofits, conservation groups, and state governments. Further exploring the outreach and technical assistance methods used by land trust organizations and local governments would provide a broader perspective on the range of approaches that is being employed. Here, we have examined barriers facing three USDA-designated socially disadvantaged groups: African Americans, American Indians, and Alaskan Natives. Further research on other USDA-designated socially disadvantaged groups—including Asians, Hispanics, and women, as well as beginning farmers and limited-resource farm households—is needed to identify opportunities to better serve these groups through outreach and technical assistance.

Another important factor to consider is the overall efficacy of existing conservation programs. Before implementing changes to increase participation, policymakers should first understand which of these programs, if any, may be ineffective in their current form. A current USDA project, the Conservation Effects Assessment Project (CEAP), could be adapted to conduct this program efficacy evaluation. A USDA multi-agency effort, CEAP seeks to quantify the environmental effects of conservation programs. However, a U.S. Government Accountability Office (GAO) report on EQIP found that CEAP has not typically considered practical constraints.<sup>17</sup> To address this gap, the Congressional Research Service or the GAO could assess existing conservation programs for efficacy in promoting various conservation objectives and for their potential to promote new goals associated with NCS.

USDA could also provide coordination and alignment between existing and planned research on several relevant topics, including soil health, effects of management practices in specific agricultural contexts, and novel soil organic and inorganic carbon quantification tools, including data needs for calibration and modeling. This could be done in different ways, and there is value in considering a framework in which USDA doesn't necessarily lead technology and tool development, but rather supports public-private partnerships. A partnership approach could be especially useful for developing products and services that collect data from key stakeholders—including farmers, agronomists, offset project developers, verifiers, registries, and researchers—and make data widely accessible.

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<sup>17</sup> <https://www.gao.gov/products/gao-17-225>

Funding for agricultural research could also be expanded to include renewed and increased investment in the USDA NRCS soil surveys. If expanded, the surveys could be used to develop a foundational open-source database that enables accurate and affordable soil carbon measurement at scale.

## 5. Conclusion

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Effectively engaging private producers and landowners will be essential for wide-scale deployment of NCS across the U.S. to meet mid-century climate goals. Many practices that are incentivized through conservation programs provide carbon sequestration or greenhouse gas emission reduction benefits and can be labeled as NCS. The existing programmatic structure for outreach and technical assistance around conservation programs offers an opportunity to promote producer and landowner implementation of NCS at scale. However, current programs are not structured to acknowledge or incentivize carbon outcomes, and programmatic changes may be necessary to optimize programs for NCS deployment.

The main aim of this paper has been to identify best practices, gaps, and opportunities for improvement in the outreach and technical assistance provided through USDA conservation programs. This information is vital for understanding what is working about current programs, who is benefiting from these programs, and how existing barriers can be lowered to increase participation, especially for historically underserved groups. Producer acceptance of practices that sequester carbon and reduce greenhouse gas emissions will be essential to achieve meaningful and lasting climate mitigation through our natural and working lands.



# List of Abbreviations

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<b>AFA</b>	Alternative Funding Arrangements
<b>BPC</b>	Bipartisan Policy Center
<b>CEAP</b>	Conservation Effects Assessment Project
<b>CO</b>	Conservation Operations
<b>CTA</b>	Conservation Technical Assistance
<b>EQIP</b>	Environmental Quality Incentives Program
<b>FRTEP</b>	Federally Recognized Tribes Extension Program
<b>FSA</b>	Farm Service Agency
<b>GAO</b>	Government Accountability Office
<b>GIS</b>	Geographic Information System
<b>NCS</b>	Natural Climate Solutions
<b>NRCS</b>	Natural Resources Conservation Service
<b>S&amp;PF</b>	State and Private Forestry
<b>TSP</b>	Technical Service Provider
<b>UPHPA</b>	Uniform Partition of Heirs Property Act
<b>USDA</b>	United States Department of Agriculture

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# Appendices

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## APPENDIX A – EXISTING CONSERVATION PROGRAMS

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### Technical Assistance Provided by USDA Conservation Programs

There are a range of conservation programs administered by the USDA and supported by mandatory government spending and congressional appropriations. We describe these briefly here to outline the context of their experiences, and to illustrate the wide array of options available to potential participants.

Many USDA agencies provide support for rural economies by helping private producers and landowners protect the natural resources on the lands they manage.<sup>18</sup> This support often comes in the form of technical assistance provided by agencies to producers and forest landowners, supplying innovative tools and timely information for conserving and restoring these resources. Additionally, financial assistance helps partially offset upfront investments to install conservation practices that improve wildlife habitat, advance ecosystem resilience, and safeguard natural resources.

### Conservation Operations: Conservation Technical Assistance and Soil Survey Program

The CTA Program assists land managers in the development of conservation plans to limit soil erosion, improve air and water quality, enhance water conservation and management, help manage agricultural waste, and support effective private lands management. The SSP generates public information on key soil properties, capabilities, and conservation treatment needs through comprehensive land mapping and measurement analyses. These soil surveys support informed land management and resource management decision-making by local, state, and federal government officials and communities.

### Environmental Quality Incentives Program

EQIP supports voluntary application of conservation practices that advance agricultural production, forest management, and environmental quality. These practices assist producer efforts to improve soil health, water and air quality, and conserve natural resources, and provide robust technical assistance to solve implementation challenges in a cost-effective way.

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## Conservation Stewardship Program

The CSP incentivizes agricultural and forestry producers and landowners to continue ongoing conservation activities and to adopt additional ones on their operations. This is accomplished by helping producers and landowners identify natural resource problems in their operation and providing technical and financial assistance to solve those problems in an environmentally beneficial and cost-effective manner.

## Agricultural Conservation Easement Program

The ACEP is a voluntary program that provides financial and technical assistance to help conserve agricultural lands and wetlands. The program achieves this by directly acquiring or funding the acquisition of conservation easements on private or tribal lands. ACEP helps ranchers and farmers keep their land as working lands and protects grazing by conserving grasslands.

## Regional Conservation Partnership Program

RCPP advances conservation, restoration, and sustainable use of soil, water, wildlife, and related natural resources. The program incentivizes this by offering new opportunities for USDA staff to work with partners and promote locally driven innovation in voluntary, private-lands conservation.

## Healthy Forests Reserve Program

HFRP helps producers and landowners restore, protect, and enhance forest ecosystems to advance several key priorities: promote threatened and endangered species recovery; support biodiversity; and enhance carbon sequestration.

## Technical Service Provider Assistance

The TSP certifies individuals or entities to help producers and landowners implement conservation practices on their land. Certification is conducted by NRCS. TSPs expand the capacity for NRCS to apply conservation practices to enhance, conserve, and restore water, soil, and related natural resources.

## State and Private Forestry Program

The S&PF program aims to support state and private forests by providing resources to keep working forests intact. This stewardship applies to lands across all ownerships and entails coordinated management, forest protection efforts, and conservation education.

## APPENDIX B – CHANGES IN FUNDING AND STAFFING LEVELS

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Technical assistance is provided to producers and forest landowners through a network of federal staff located throughout the country. Much of this assistance is provided by NRCS, with funding directed through the Conservation Technical Assistance program within Conservation Operations. NRCS staff is funded through a range of programs, but primarily through CO funding. Therefore, changes in CO funding impact the total number of NRCS staff. Since 2000, the total number of permanent positions within NRCS that are supported by CO has decreased, a staffing reduction that is exacerbated by a growing number of unfilled positions. Although there are other factors that contribute to budget and staffing decreases—including program reorganization—the changes in funding levels indicate that USDA’s capacity to provide technical assistance has decreased.

At the end of September 2019, NRCS employed 8,796 full-time staff with permanent appointments; 8,623 full-time staff worked outside of the Washington, D.C. area. During fiscal year 2019, NRCS maintained 2,540 offices across the U.S., including state offices, field offices, and research centers. Co-located with many of these offices are NRCS Centers, where technical assistance and guidance is provided. Centers include the Information Technology Center; National Water Management Center; National Employee Development Center; National Design Construction and Soil Mechanics Center; National Soil Survey Center; National Water and Climate Center; National Geospatial Center of Excellence; National Agroforestry Center; East, Central and West National Technology Support Centers.

From 2004 to 2018, NRCS staffing has decreased by 19%. Within CO, staff years have declined from more than 8,000 in 2000 to fewer than 5,000 in 2019, where a staff year is equivalent to one full-time person working for one year. It is important to note that these trends are observed across other USDA agencies.

Technical assistance is provided to forest landowners through a range of programs, especially the Working Forest Lands (previously Forest Stewardship) program, which focuses on supporting active management and conservation. The program helps private forest landowners develop effective forest management plans and make use of government tools and resources. WFL participants can also access USDA conservation programs, forest certification programs, tax incentives, and ecosystem service markets. A significant portion of technical assistance provided to forest landowners is also delivered through the USFS State and Private Forestry program to help sustain these landscapes and keep working forests intact. In this way, the SPF program facilitates stewardship of forest ecosystems across all owners.

Table 2 shows budget authority and staff years for several federal conservation programs during 2010, 2015, and 2020, as well as the budget request for 2021. Values are shown for Conservation Technical Assistance, Soil Survey, Environmental Quality Incentives Program, Conservation Reserve Program, Working Forest Lands, and the State and Private Forestry program.

**Table 2. Example of USDA NRCS and Forest Service program funding levels and staff years, via Appropriations or Mandatory spending. Budget authority amounts are dollars in thousands.**

Program or Activity	2010 Actual		2015 Actual		2020 Enacted		2021 Budget Request		Percent Change 2010 and 2020	
	Budget Authority	Staff Years	BA	SY	BA	SY	BA	SY	BA	SY
CTA	\$762,906	5,274	\$742,272	4,772	\$730,160	3,066	\$729,476	3,017	4.3% decrease	41.9% decrease
Soil Survey	\$93,939	676	\$80,000	462	\$74,987	419	\$80,014	419	20.2% decrease	38.0% decrease
EQIP	\$1,174,039	2,407	\$1,483,200	2,217	\$1,750,000	2,600	\$1,800,000	2,601	49.1% increase	8.0% increase
CRP	\$59,563	529	\$85,040	656	*\$95,115	*637	*\$95,115	*637	59.7% increase	20.4% increase
FSP**	\$29,369	58	\$23,036	87	\$21,000	50	\$20,656	47	28.5% decrease	13.8% decrease
S&PF	\$308,061	590	\$232,653	565	\$346,990	551	\$217,443	432	12.6% increase	6.6% decrease

BA = Budget Authority; SY = Staff Years

\*For technical assistance within this program only

\*\* Forest Stewardship Program renamed Working Forest Lands

CTA, Soil Survey, and FSP/WFL experienced decreased funding and staffing during the last decade. In the case of CTA, while funding was reduced by less than 5%, the number of full-time equivalents decreased by more than 40%.

Inversely, resources made available to EQIP and CRP increased between 2010 and 2020. However, for these two conservation programs, gains in staff levels were not commensurate with the boosts in funding. The S&PF received an increase in budget authority between 2010 and 2020, while also experiencing a decrease in staff years supported. Notably, the budget request for FY2021 is a significant drop in budget authority and staff years compared to 2010.

Table 2 provides a glimpse into the various conservation programs administered by the USDA, and is not meant to be a comprehensive assessment of changes in funding or staffing. The sample programs examined, however, suggest that when resources declined for a program, staff reductions bore the brunt of these changes; when resources increased, hiring may have been infeasible or deprioritized.



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