

# An Exploratory Guide to the Work, Efficacy & Potential of the USDA-Natural Resources Conservation Service in Vermont through the Perspectives of NRCS Staff

**Ellen Friedrich**

University of Vermont  
M.S. Food Systems

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## TABLE OF CONTENTS

<b>PART ONE: Introduction to Report.....</b>	<b>4</b>
Abstract .....	4
Preface .....	4
Methods.....	7
Interviewee Demographics.....	8
Glossary of Terms & Acronyms .....	8
<b>Summary of Key Recommendations for NRCS .....</b>	<b>11</b>
<b>PART TWO: SWOT Analysis of NRCS-Vermont.....</b>	<b>13</b>
<b>Strengths .....</b>	<b>15</b>
<b>Weaknesses.....</b>	<b>17</b>
<b>Opportunities .....</b>	<b>20</b>
<b>Threats .....</b>	<b>22</b>
<b>SWOT Along Steps to Addressing Resource Concerns .....</b>	<b>25</b>
<b>PART THREE: Thematic Exploration of NRCS Work &amp; Function in Vermont .....</b>	<b>28</b>
<b>About the NRCS .....</b>	<b>28</b>
The Work of the NRCS .....	30
<b>Motivations of Staff .....</b>	<b>32</b>
Working with and Helping Farmers.....	33
Promoting Land Stewardship and Caring for Current & Future Generations .....	33
<b>Agri-Environmental Concerns in Vermont .....</b>	<b>35</b>
Water Quality .....	36
Climate Change.....	36
Soil Health.....	37
Invasive Species .....	37
Other Mentioned Concerns.....	37
<b>Cultural &amp; Socio-Economic Barriers to Sustainable Agriculture .....</b>	<b>38</b>
Financial & Economic Limitations.....	39
Difficulty of Changing Traditions & Practices .....	40
Limited Outreach & Education .....	40
Changing Farm Cultures & Economics.....	41
<b>NRCS Strengths .....</b>	<b>42</b>
Staff-Client Relationships .....	42
Technical Expertise of Staff & Standards .....	43
Financial Backing & Assistance .....	44
Conservation Planning Approach .....	44
Leveraging Partnerships .....	45
<b>NRCS Limitations and Challenges.....</b>	<b>46</b>
Shortage of Staff & Resources.....	46
Breadth & Complexity of NRCS Workload.....	47
High Workload Standards & Demands .....	47
Bureaucratic/Political Strings & Requirements .....	48

Slow Adoption of Technological & Agricultural Innovations.....	49
Limited Agency Visibility.....	49
<b>Perceptions of Client Experience .....</b>	<b>50</b>
Sources of Appreciation .....	51
Sources of Frustrations.....	53
<b>Underserved Demographics &amp; Farm Types.....</b>	<b>56</b>
Urban, Small-Acreage, & Community-Scale Farms .....	57
Controlled Environment Agriculture .....	59
‘High-Diversity’ Farms.....	59
Client Demographics.....	60
<b>NRCS Impact on Land Managers’ Conservation Mindsets .....</b>	<b>62</b>
<b>Ability to Create Change within NRCS .....</b>	<b>65</b>
Local/State Level.....	66
National Level .....	66
<b>Conservation Partnerships .....</b>	<b>67</b>
Valued Partnerships .....	68
Challenges Around Partnerships .....	70
<b>Programs to Scale Up in Vermont .....</b>	<b>72</b>
Environmental Quality Incentives Program (EQIP) .....	74
Conservation Stewardship Program (CSP) .....	75
Healthy Forest Reserve Program (HFRP).....	76
Regional Conservation Partnerships Program (RCPP).....	76
Agricultural Management Assistance Program (AMAP).....	77
<b><i>PART FOUR: Suggested Changes for the NRCS .....</i></b>	<b><i>77</i></b>
Hire More Staff .....	78
Streamline & Expedite the Workload .....	79
Incorporate More Local Influence & Input.....	83
Reach Missed Client/Farm Demographics .....	84
Increase Agency & Program Visibility.....	85
Improve Client Experiences.....	86
Other Suggestions .....	87
<b><i>PART FIVE: References .....</i></b>	<b><i>88</i></b>
<b>Appendix A: Background Reading .....</b>	<b>88</b>
Agriculture, the Environment & Ecosystem Services .....	88
Payment for Ecosystem Services & Conservation Incentives Programs .....	92
<b>Works Cited .....</b>	<b>93</b>

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## PART ONE: INTRODUCTION TO REPORT

### Abstract

The Natural Resources Conservation Service (NRCS), an agency of the United States Department of Agriculture (USDA), is the largest provider of conservation incentives payments in private agricultural working lands in the United States. This transdisciplinary and action-orientated report is an exploratory guide to the work, efficacy, and potential of the USDA-NRCS in the Vermont context through the perspectives of NRCS staff. The report is built around themes identified from semi-structured interviews conducted with seven NRCS-Vermont staff members. Interviews explored a variety of different topics including natural resource & environmental concerns in Vermont, barriers to conservation and sustainable agriculture, the strengths & weaknesses around NRCS function in Vermont, and suggestions for the improvement of agency function. This report includes 1) a SWOT analysis of NRCS-Vermont, 2) recommendations for the NRCS, and 3) summaries of research themes which include, but are not limited to, the work of the NRCS, administrative burdens, the value of conservation partnerships, farm types under-served by PES programing, and the things clients most value about NRCS assistance—all through the perspectives of NRCS-Vermont staff. Findings are interwoven with complementary background information from other published literature to help provide context for readers and to make the report accessible to a wide audience. This research will be informative to 1) those wishing to learn about the USDA-NRCS and 2) those interested in and/or working towards the effective design and use of NRCS and other agri-environmental and conservation programs in Vermont and beyond.

### Preface

This report was prepared for my M.S. Food Systems final project at the University of Vermont. It has been guided and informed by my interests in and own background with agri-environmental work & the NRCS. My roots are in Midwestern agriculture—both my parents grew up on family farms in Iowa. I grew up in rural northeast Iowa, amidst the rolling hills of the Driftless region. I knew the acronym NRCS (and the agency's work) from an unusually young age, as my dad worked as an engineer for the USDA's Natural Resources Conservation Service (NRCS). I knew that soil should be called 'soil,' not 'dirt.' I knew what to call what eventually happened after my brothers and I took a hose to our carefully constructed ponds, buildings, and dams in the sandpile—erosion. My parents instilled in me an appreciation for the joys & hardships of farming, a care for the environment, and love of community. And they gave

me a reason to feel superior to my childhood friends and classmates in one category— knowing of the meaning of a specific acronym (NRCS) which none of them knew. However, this small category was, unfortunately, not highly regarded by my peers.

I have been fortunate to work in a variety agricultural systems— including ones in the Midwest, Madagascar, and Vermont— and have come to recognize that our food and agricultural systems are foundational for both human and environmental wellbeing. I am deeply interested in supporting the realization of systems which are more ecologically-sound, economically-viable and just— especially through the use of sustainable agriculture and conservation. This interest lead me to work as NRCS partner staff in Iowa for two years.

During my time as NRCS partner staff, I began to critically grapple with questions around the efficacy of this agency which I knew since I was a little girl. The NRCS vision, “A world of clean and abundant water, healthy soils, resilient landscapes, and thriving agricultural communities through voluntary conservation” is a vision I share. But how effective were different aspects of NRCS programming and approaches in working towards that shared vision? Where and how did the agency fall short? Where and how was it creating meaningful change?

While attending graduate school in Vermont, I entered a rich conversation around payment for ecosystem (PES) and conservation incentives programs in agricultural working lands and how might additional investments in PES in Vermont be best directed. In participating in these conversations, I realized the importance of some of the questions I had been asking myself around the NRCS and that digging dipper into these questions would be valuable and informative to conversations around agriculturally-orientated PES programs in Vermont and beyond. I decided to make it the focus of my graduate research.

It is my hope that this guide will:

- 1) *Help share lessons learned by USDA-NRCS staff in carrying out conservation incentives programs.* Conservation incentives and payment for ecosystem services (PES) programs are increasingly popping up in conversations in Vermont and around the world. Program designers and administrators can benefit from the lessons that other PES and conservation program practitioners have already learned and use those lessons to inform the development of more appropriate and effective PES program design going forward. I hope this report will help make some of the insights from NRCS staff in Vermont accessible to a larger audience.
- 2) *Help to optimize the work of NRCS, in Vermont and beyond.* The goals, structures, and approaches of institutional policies and programs matter, especially on the federal scale due to the amplification and extensive reach of their impacts, intended and unintended. The work and programming of NRCS has had far-reaching influence on the character, sustainability, impacts, and differential success of agricultural working land and farms across the United States and, in turn, the public good. There is a need to bring conservation practices to more farmers and acres, and the USDA-NRCS has been and, seemingly, will continue to be well-positioned to assist in this process. For the NRCS to more effectively and justly serve the public good going forward, programming needs to be critically and continuously evaluated and re-assessed, and adjustments made accordingly. This report

helps to elevate the perspectives and reflections of NRCS staff on strengths, challenges, and opportunities of NRCS programming, so that they can be considered in future adjustments and design decisions within higher policy and within the agency. Understanding NRCS staff programmatic perspectives is foundational for enabling programming to be improved and re-imagined to better and more effectively address natural resource, ecological, and socio-economic concerns.

- 3) *Start to fill in several gaps in the published literature* by 1) Looking at the internal perspectives of USDA-NRCS staff on NRCS programming and function. There is a lot of published literature on the NRCS and conservation programs, however, it is largely only published and written about in bits and pieces, and little has been published on the strengths and challenges of NRCS programming as internally perceived by NRCS staff. Most qualitative studies around the NRCS and conservation agriculture have focused on the behaviors and attitudes of farmers and landowners around the adoption of conservation and best management practices. And by, 2) creating an informational bridge (which is currently lacking) about NRCS function at a level of detail between the basic descriptions of NRCS assistance commonly used for public outreach and the much more technical and detailed information which is internally used by program practitioners carrying out program workload

This novel report will be of potential interest to a number of different audiences including: 1) those wanting to learn more about the work and efficacy of the NRCS, and 2) those interested in and/or working towards the effective design and use of NRCS and other agri-environmental and conservation programs. While this report is focused on the Vermont context, many findings may also be informative for and relevant to contexts outside of Vermont especially considering the national nature of the NRCS and the increasing pervasiveness of agri-environmental programs. This guide is designed to either be read straight through, or for readers to selectively look at sections or themes of interest.

This is by no means a definitive or comprehensive guide to NRCS function, strengths, and weaknesses. The report is guided the information shared by seven different NRCS staff in Vermont, most affiliated with the Vermont state leadership team. There are around 75 full time NRCS staff in Vermont, as well as other many other partner staff working in NRCS-Vermont offices (USDA, 2022). There nearly 10,000 NRCS staff in the entire country (Congressional Research Service, 2020). So, while the staff I spoke with have well over 100 years of NRCS experience between them and shared a wealth of knowledge, insights, and ideas in the time I talked with them— some of which I have tried to share in this report— this report captures only a fraction of information relevant to the complex organization, systems, and issues at hand. It is also important to note that the NRCS staff interviewed expressed varied, and sometimes conflicting opinions on different issues, evidencing the complexity surrounding these issues and that there are a range of different viewpoints. However, I still hope that this guide will help readers start to explore the variety of NRCS employee perspectives and grapple with the complexity of the issues at hand, in order for a more efficient, efficacious, and equitable PES and conservation incentives programs —NRCS and others— in Vermont and beyond, moving forward.

## Methods

This report is the product of transdisciplinary, action-orientated research around the efficacy and potential of NRCS and other conservation incentives programs. The content of this report is primarily derived from the findings from semi-structured, exploratory interviews conducted with seven key informants from NRCS-Vermont state and field office staff in the Fall of 2022.

NRCS-Vermont leadership was approached for permissions to interview NRCS-Vermont staff as a part of this study. After some discussion, NRCS-Vermont leadership gave their approval for the study and provided a list of individuals who could be approached and interviewed. Potential interviewees were individually emailed with information about the study, and asked if they would be willing to be interviewed. An interview time was scheduled for those who agreed to participate. Interviews with NRCS-Vermont staff were conducted in October and November of 2022.

Interview protocols and questions received UVM IRB approval under #STUDY00001466. All interviews were semi-structured and conducted virtually via Microsoft Teams, usually with both video and audio. Interviews were of a transdisciplinary and action-orientated nature. They explored a variety of different topics including natural resource & environmental concerns in Vermont, barriers to conservation and sustainable agriculture, the strengths & weaknesses around NRCS function in Vermont, and suggestions for the improvement of agency function.

Core interview questions were asked verbally, as well as entered in the chat for the interviewee to read. Efforts were made to try to provide consistent delivery of the core questions across all interviews. Depending on interviewee responses to questions, the interviewer sometimes verbally asked follow up questions for elaboration or clarification on the interviewees' response or perspective. These follow-up questions varied across the interviews.

Interview length ranged from 45- 80 minutes; average interview length was around 55 minutes. Conversations were audio-recorded with the use of an external recording device and transcribed using the "live transcription" feature built in on Microsoft Teams. Audio recordings were listened back on to by the researcher and used to manually update and correct the interview transcripts generated by Microsoft Teams.

Interview transcripts were coded in NVivo using a grounded theory approach. An initial codebook was developed based off the interview questions and topics planned to be discussed in the interviews. This codebook was refined, amended, and built upon throughout the interview and coding process to better capture and organize the interview themes identified by the researcher. The updated codebook was used to code all interview transcripts, so that every interview was, in the end, coded with the same codebook. All interviews were conducted and coded by the same researcher. The researcher took efforts to use consistent interview protocol and coding criteria across the interviews.

Themes and findings from the interviews that were identified in the coding process were summarized in written format. Summaries of these parent and child themes form part three

“Thematic Exploration of NRCS Work and Function in Vermont” and part four “Suggested Changes for the NRCS” of this report. A SWOT (strength, weaknesses, opportunities, threats) analysis framework was used to critically look at each theme discussed in part three of the report, and identify relevant strengths, weaknesses, opportunities, and threats around the NRCS, either directly identified or inferable based off interview results. These strengths, weaknesses, and opportunities, and threats are collectively weighed and summarized in part two of this report, “SWOT-Analysis of NRCS-Vermont.” A summary of key recommendations included in part one of the report is derived from findings in part two, three, and four of the report. Sections and topics in the report were clearly labeled and organized to provide navigational ease to selective readers.

In order to provide context for readers and help make the report accessible to a wide audience with varying levels of background knowledge, the author brought in additional white and grey literature to situate themes covered in the report in the context of other existing published literature and findings around the themes. This information is intended to supplement and complement findings from the interviews, and help readers better make sense of and position the significance of interview findings. Information derived from literature reviews are positioned in pale yellow boxes, so as to distinguish them from interview findings.

## Interviewee Demographics

All interviewees were experts and leaders within the NRCS in Vermont. Interviewees were selected based upon recommendations from members of NRCS-Vermont leadership. All interviewees were current employees of USDA-NRCS in Vermont at the time of being interviewed (October-November 2022). Numerous interviewees also had experience working with NRCS outside of Vermont, as well. Interviewed employees included both State Office staff and Field Office staff, most interviewees were affiliated with the NRCS-Vermont leadership team. Interviewees represented a range of different positions and areas of focus within the agency. They collectively had 100+ years’ experience working with the Natural Resources Conservation Service and were very well positioned to talk about the topics at hand.

## Glossary of Terms & Acronyms

### **Terms Used to Indicate Number of Interviewees Being Referenced:**

- All interviewees: 7 (or however many were asked the question, if not all 7 interviewees)
- Most or many interviewees: 5+
- Numerous or several interviewees: 3-4
- Two Interviews: 2
- One interviewee: 1



- **Agricultural Working Lands:** Agricultural working lands include cropland, grassland, prairie land, improved pasture, and range land, as well as forested land which is associated with an agricultural operation
- **AMA:** Agricultural Management Assistance, a USDA program
- **AMS:** Agricultural Marketing Service, an agency of the USDA
- **Best Management Practices:** The methods which have been determined to be the most effective and practical means of preventing or reducing non-point source pollution
- **BIPOC:** Black, indigenous, or persons of color
- **CART:** Conservation Assessment and Ranking Tool; tool used by NRCS staff to rank conservation applications
- **CIG:** Conservation Innovation Grants; research grants given to third parties through NRCS EQIP funds
- **Community Scale Agriculture:** NRCS-Vermont uses the term ‘community-scale agriculture’ to encompass urban agriculture—the cultivation, processing, and distribution of agricultural products in urban and suburban areas including community gardens, rooftop farms, hydroponic, aeroponic and aquaponic facilities, and vertical production — and similarly scaled agricultural production in other areas even if they aren’t necessarily ‘urban.’
- **Conservation Incentives Programs:** Programs incentivizing the use of conservation practices and/or management practices
- **CSP:** Conservation Stewardship Program, a USDA-NRCS program
- **Ecosystem Services:** the benefits and value that humans derive and receive from ecosystems and the environment.
- **EQIP:** Environmental Quality Incentives Program, a USDA-NRCS program
- **Farm Bill:** Omnibus, multi-year legislation on agricultural and nutritional programs in US through which most of NRCS funds are allocated
- **FEMA:** Federal Emergency Management Agency, an agency of the US Department of Homeland Security
- **FSA:** Farm Service Agency, an agency of the USDA; county USDA service centers generally include a FSA and NRCS office; member of the FPAC branch of USDA, alongside NRCS
- **HFRP:** Healthy Forest Reserve Program, a USDA-NRCS program
- **IRA:** Inflation Reduction Act
- **LGBTQIA+:** Those who identify as lesbian, gay, bi-sexual, trans, queer, intersex, asexual, or as having other ‘non-traditional’ sexual and/or gender identities
- **NACD:** National Association of Conservation Districts
- **NEPA:** National Environmental Protections Act
- **NR:** Natural resources
- **NRCS:** Natural Resources Conservation Service, an agency of the USDA
- **PES Programs:** A market-based conservation program which facilitates voluntary transactions between a service user(s) and service provider(s), conditional on the provision of some agreed upon natural resource management or environmental service
- **PES:** Payment for ecosystem services
- **Producer:** A term commonly used by NRCS staff to refer to farmers, foresters, and agriculturists
- **RCPP:** Regional Conservation Partnership Program; conservation program formed through a partnership between NRCS and another public or private organization

- **Resource Concern:** NRCS defines resource concerns as “an expected degradation of the soil, water, air, plant, or animal resource base to an extent the sustainability or intended use of the resource is impaired.”
- **RMA:** Risk Management Agency, an agency of the USDA
- **SCS:** Soil Conservation Service (former name for Natural Resources Conservation Service)
- **Soil Health:** NRCS defines soil health as “the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans.”
- **Transaction Costs:** the expenses incurred in the process of providing a good or service i.e., staff time, administrative costs, cost of verifications
- **Urban Agriculture:** According the USDA, “Urban agriculture includes the cultivation, processing, and distribution of agricultural products in urban and suburban area. Community gardens, rooftop farms, hydroponic, aeroponic, and aquaponic facilities, and vertical production are all examples of urban agriculture. Tribal communities and small towns may also be included.
- **USDA:** United States Department of Agriculture
- **VAAF:** Vermont Agency of Agriculture, Food & Markets
- **VNRCD:** Vermont Natural Resources Conservation Districts

## Summary of Key Recommendations for NRCS

This is a short summary of some of the key recommendations for the NRCS. It is derived from interviewees' identification of agency strengths and weaknesses, as well as their suggestions and ideas for improvement.

### Continue to...

**Provide Financial Assistance:** The funding funneled through NRCS and the financial assistance NRCS offers to clients is foundational to the success of agency work, and its ability realize the implementation of conservation solutions on the ground. The financial assistance provided by NRCS is highly valued and appreciated by clients.

**Provide Individualized & Attentive Service:** Individualized service is critical for giving meaningful and helpful technical advice to clients which is appropriate for their context and circumstances. Staff identified that attentive and open communication throughout the conservation process is highly valued by clients.

**Promote Trust & Respect in Staff-Client Relationships:** Having trust and respect between clients and field office staff is critical for the successful and meaningful implementation of conservation. Interviewees identified this trust and respect often occurs at the field office level, and is one of the agency's greatest strengths.

**Provide High-Quality Technical Assistance:** Most interviewees highly valued the quality of the technical expertise that the agency holds and avails to clients. The strengths within standards and specifications which NRCS uses in practice design and implementation, as well as the technical expertise found in staff across the agency was frequently identified as one of the agency's greatest strengths.

**Give, Listen to, and Incorporate Feedback:** Interviewees recognized NRCS-Vermont's efforts to continuously work to improve agency function, by giving, listening to, and incorporating staff and client feedback when possible and appropriate. Feedback from staff and clients is critical for guiding agency improvements.

### Work to...

**Hire More Staff:** Nearly all interviewed staff recognized that there was a shortage of staff in the agency. Under current workloads and administrative requirements, field offices need more NRCS and/or partner staff to effectively carry out their workload and mission. Staff was widely viewed as a major agency asset, and the shortage of staff was identified as the largest limitation

for the NRCS in Vermont. Staffing shortages within NRCS-Vermont can and has led to staff burnout, slower project turnaround, and, sometimes, lowered quality of assistance.

**Streamline & Expedite the Workload:** Most interviewees suggested it would be beneficial to streamline and/or expedite workloads, particularly on the administrative side. Some thought that streamlining the process was sufficient; others thought that additional trimming in the conservation process workload would potentially be beneficial. Interviewees shared a wide variety of different ideas for how to do this including through the adoption of more efficient technology, minimizing paperwork burdens, simplifying and/or consolidating programs, and scaling back some NRCS stringencies.

**Incorporate More Local Flexibility, Influence, & Input into NRCS Programming:** Numerous staff mentioned a desire for greater local input and influence on where NRCS focuses its effort and money in locales. Currently there is limited space for local influence and input on NRCS programming and priorities.

**Improve and Strengthen Partnerships:** Interviewees generally valued the role and potential of partnerships in working towards shared missions. Interviewees expressed room for the growth and improvement of these partnerships, especially with the natural resources conservation districts (NRCD). Staff mention the importance of limiting the confusion of overlapping programs and allowing flexibility within the work of the partnerships.

**Reach Under-served Demographics:** Most interviewees recognized that NRCS has historically served certain farm types over others, and that efforts need to be taken to better reach different missed audiences and demographics, especially small-acreage, community-scale farms. Interviewees suggested that this needs to be done through outreach and education (to client and staff), as well as through programmatic changes which better allow programs to be accessible and beneficial to these producers.

**Increase Agency & Program Visibility:** Several interviewees mentioned the general need for wider public awareness of the NRCS and NRCS programs, so that eligible individuals can take advantage of the NRCS resources and assistance that might be available to them, and more conservation can go on the ground.

**Improve Client Experiences:** All interviewees were already very attuned to and interested in providing as positive of client experiences as possible. Interviewees had numerous suggestions for helping to support positive client service including providing clear and timely communication, making everything as easy to understand as possible, minimizing paperwork burdens, providing quick project turnarounds, and ensuring programs design are appropriate for client needs and circumstances.

**Embrace/Support More Innovation:** NRCS impact may benefit by adopting and incorporating more innovative technologies and practices, and/or providing space and assistance for clients interested in being innovative on their farms or land.

## PART TWO: SWOT ANALYSIS OF NRCS-VERMONT

Strengths, Weaknesses, Opportunities, and Threats, (SWOT)

A strengths, weaknesses, opportunities, and threats(SWOT) analysis is a framework commonly used by organizations and businesses as a strategic planning tool. The following section provides a SWOT analysis for the NRCS in Vermont, summarizing the strengths and weaknesses around NRCS function and workload in Vermont, as well as the threats and opportunities, guided by the perspectives of NRCS-Vermont staff. This section serves as summary of the content covered in subsequent parts of the report

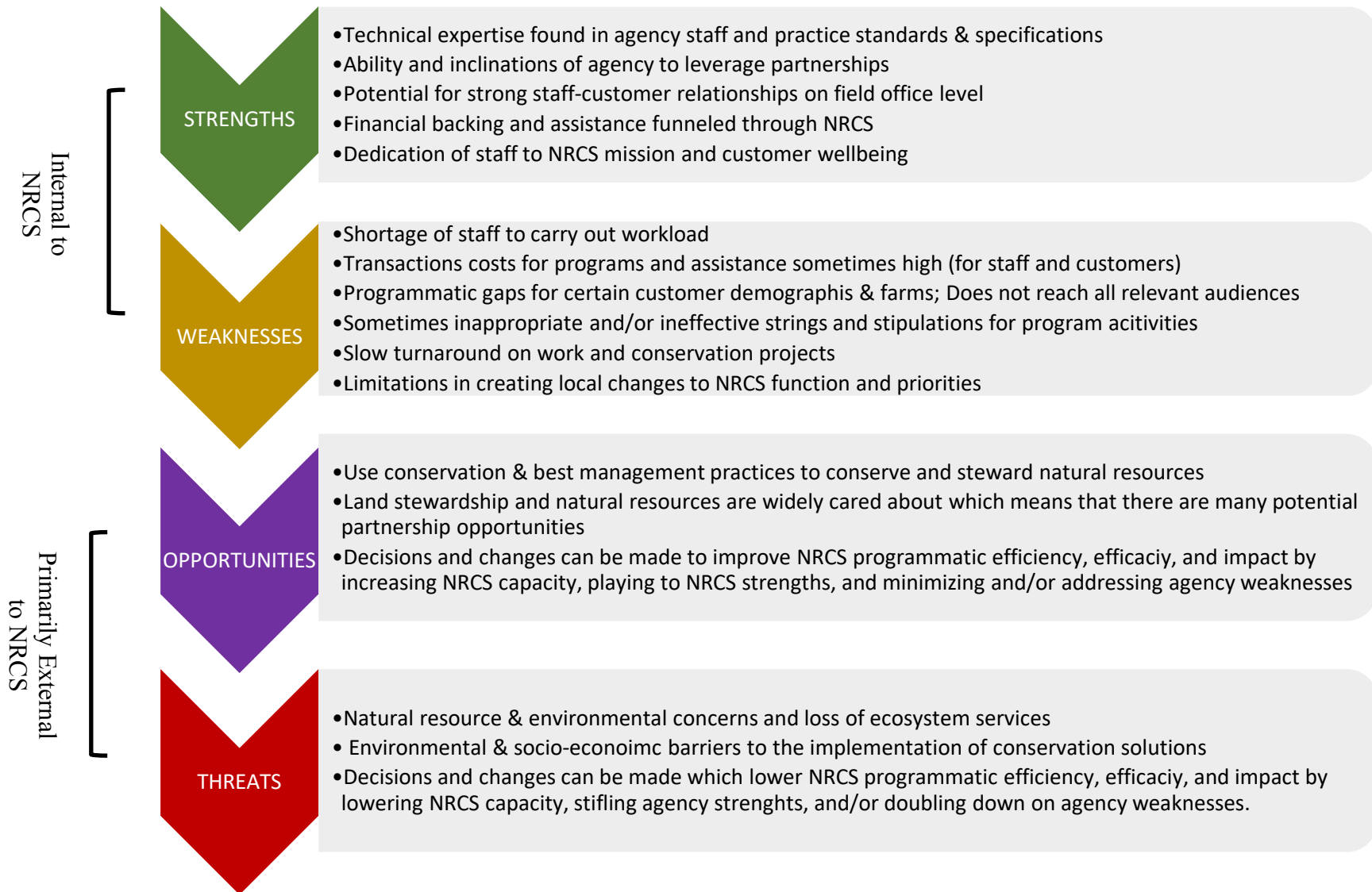
**Strengths** include internal characteristics and aspects of the NRCS organization or function that are very helpful or effective in advancing the NRCS mission to conserve natural resources on private US lands.

**Weaknesses** include the internal characteristics and aspects of NRCS organization or function that limit the ability of NRCS to effectively carry out its mission.

**Opportunities** include 1) the key external opportunities for the NRCS to help conserve natural resources, and 2) the opportunities which internally improve and maximize the NRCS's efficacy in its work and mission.

**Threats** include the 1) the key external threats which NRCS is tasked with addressing and minimizing, 2) the external threats which represents challenges to addressing the key external threats, and 3) threats which internally diminish or limit the NRCS's efficacy in addressing the external threats and carrying out its mission.

Figure 1. Summary figure of NRCS threats, opportunities weaknesses, & strengths



## Strengths

**Strengths** include internal characteristics and aspects of the NRCS organization or function that are helpful or effective in advancing the NRCS mission to conserve natural resources on private US lands. Throughout the conversations interviewees identified numerous strengths of the NRCS. These strengths are outlined in the table below, sorted by the number of interviews in which the strength was mentioned.

*Table 1. List of NRCS strengths explored in report*

Strengths of NRCS	
<b>Mentioned in 5+ Interviews</b>	<ul style="list-style-type: none"> <li>- Funding &amp; financial assistance</li> <li>- One-on-one, individualized service</li> <li>- Dedicated staff</li> <li>- Staff-client relationships</li> <li>- Technical expertise, standards, &amp; assistance</li> <li>- Try their best to incorporate local feedback</li> </ul>
<b>Mentioned in 3-4 Interviews</b>	<ul style="list-style-type: none"> <li>- Leveraging partnerships</li> <li>- Working with large-scale, commodity crop producers</li> </ul>
<b>Mentioned in 1-2 Interviews</b>	<ul style="list-style-type: none"> <li>- Conservation planning process</li> <li>- Education of clients</li> </ul>

### **Strengths with 5+ Mentions:**

- **Funding & financial assistance:** The funding funneled through NRCS and the financial assistance NRCS offers to clients is foundational to the success of agency work and its ability to help implement conservation solutions on the ground. Interviewees identified the financial assistance offered to clients as one of the primary aspects that clients appreciate about the NRCS.
- **One-on-one, individualized service:** The one-on-one, individualized support and responsive communication that field office staff try to provide is highly valued. It was identified as foundational for the development of technically-sound & contextually-appropriate assistance and good client relationships.

- **Dedicated Staff:** Most staff genuinely cared about the mission of the agency, land stewardship, and the wellbeing and experience of the clients with whom they work. Staff largely seemed to be dedicated to and invested in their work.
- **Field office staff-client relationships:** The on-the-ground relationship between staff and clients is foundational to the implementation of conservation practices and solutions. Local field office staff and clients work with each other face to face, which gives an opportunity for trust and respect to develop between them which is critical for enabling the successful and effective implementation of conservation solutions. This relationship was interviewees' most cited agency strength. The voluntary nature on the agency was identified as an important factor in enabling positive working relationships.
- **Technical expertise, standards, & assistance:** The standards and specifications which NRCS uses in practice design and implementation, and the technical expertise of NRCS staff was widely valued by interviewees. Several raised up the technical strength of the agency found its staff, practice standards, and design specifications as the agency's greatest strength.
- **Staff tries to listen to and incorporate feedback:** It was generally thought that feedback from local staff and clients was sought and incorporated as best as it could, and whenever possible. Interviewees shared that they and other NRCS-Vermont leadership cared about improving agency efficacy and efficiency, and were generally receptive to feedback.

#### **Strengths with 3-4 Mentions:**

- **Leveraging partnerships:** NRCS's capacity ability to leverage and facilitate conservation partnerships was identified as a strength. It was widely recognized that NRCS alone was not able to meet conservation goals and needs. Relationships with partner agencies were highly valued, particularly with the NRCDs and VAAFAM.
- **Working with large-scale, commodity crop producers:** Numerous interviewees mentioned that NRCS programs are optimized to benefit large-acreage operations which grow or produce certain types of products (i.e., corn or soybeans). NRCS programs can work really well for certain types of operations.

#### **Strengths with 1-2 Mentions:**

- **Conservation planning process:** NRCS's conservation planning approach is, at its best, designed to look at resource concerns using a relatively holistic view which considers the whole farm context, rather than just reactively dealing with one problem in isolation.
- **Providing Education about NR Conservation:** Interactions with NRCS resources and programs can help clients better recognize resource concerns, and ways in which they might address or reduce such resource concerns. NRCS education and assistance can help clients better understand connections between agricultural practices and environmental



outcomes, which can allow clients to be better conservationists. It can also help producers see potential economic benefits from practicing conservation.

## Weaknesses

**Weaknesses** include the internal characteristics and aspects of NRCS organization or function that limit the ability of NRCS to effectively carry out its mission to conserve natural resources on private US lands. Throughout the conversations interviewees identified numerous weaknesses of the NRCS. These weaknesses are outlined in the table below, sorted by the number of interviews in which the weakness was mentioned.

*Table 2. NRCS weakness explored in report*

Weaknesses of the NRCS	
<b>Mentioned in 5+ Interviews</b>	<ul style="list-style-type: none"> <li>- Shortage of staff</li> <li>- Slow turnaround on workload</li> <li>- High paperwork burdens</li> </ul>
<b>Mentioned in 3-4 Interviews</b>	<ul style="list-style-type: none"> <li>- Slow adoption of technological and agricultural innovations</li> <li>- Bureaucratic &amp; political strings attached to funding</li> <li>- Programs &amp; processes can be too complex</li> <li>- Under-served demographics &amp; farm types</li> </ul>
<b>Mentioned in 1-2 Interviews</b>	<ul style="list-style-type: none"> <li>- Aspects of workload can diminish staff satisfaction</li> <li>- Limited agency visibility</li> <li>- Limited local influence on programs and assistance</li> <li>- Limited flexibility in partnerships</li> <li>- Limited funds</li> <li>- Limited impacts on clients' conservation ethics &amp; behavior</li> <li>- Limited staff knowledge</li> </ul>

### Weaknesses with 5+ Mentions:

- **Shortage of staff and staff capacity:** There is a general shortage of staff and staff capacity to carry out agency workloads, which limits the quality and quantity of the work which NRCS can do. Shortage of staff was the most frequently cited limited for the NRCS, particularly in field offices.

- **Slow turnaround of workload:** A combination of the complexity and requirements within planning, contracting, and obligation processes—coupled with limited staff time and capacity— means it can take a long time to get through workload and for clients to be able to move forward on projects. This sometimes-slow process to get contracts and complete projects was something that numerous staff identified as a source of frustration for both staff and clients. Slow turnaround on projects was seen to limit the amount that NRCS can help clients get conservation on the ground.
- **High paperwork burdens:** High paperwork burdens can sometimes discourage potential clients, tie up staff time, and add to program transaction costs. High paperwork burdens was the most cited perceived source of frustration for clients.

### **Weaknesses with 3-4 Mentions:**

- **Bureaucratic & political strings attached to funding:** In the allocation of public funds to the NRCS, certain strings and stipulations are attached for both the use of money and for associated administrative/reporting requirements. Some of the strings and requirements attached to agency funding may not make sense depending on the locale and/or may detrimentally impact the efficiency of the agency in getting work done. Numerous interviewees expressed frustrations with and questioned the value of some of these strings and requirements, wishing that some of them could be loosened or cut.
- **Slow adoption of technological and agricultural innovations:** Numerous interviewees spoke of how the agency is sometimes limited by the technology and practices they use and promote. Several staff acknowledged need for the NRCS to update up some of its technology, especially in the interests of making office work more efficient. Several interviewees also recognized that NRCS is often slow to adopt, incorporate, and include positive agri-environmental innovations in its programs and assistance.
- **Programs & processes can be too complex:** The complexity and steps involved in NRCS programs and practices can make it challenging for both clients (and sometimes staff) to understand all the technical particulars of the process and function. This complexity coupled with a wide range of different programs and practices, can make it difficult for staff to understand and effectively carry out all the workload. This, in turn, can make it difficult for clients to understand and take advantage of resources available to them through the agency. These complexities can feed into program inefficiencies and client & staff frustrations.
- **Under-served demographics & farm types:** Different client demographics and farm types have been historically under-served and under-helped by NRCS assistance, compared to others. Staff identified numerous farm types which are under-served by NRCS programs in Vermont including small acreage & community scale farms, controlled environment agriculture, and high-diversity farms. They also mentioned some client demographics which NRCS might better serve going forward including BIPOC producers, resource-limited

producers, women & LGBTQI+ producers, and producers of different cultural & linguistic backgrounds. The under-service of these audiences was attributed to a combination of failed outreach and aspects of program & practice design.

### **Weaknesses with 1-2 Mentions:**

- **Aspects of workload can diminish staff satisfaction:** Certain aspects of workload (often tied to administrative burdens) which are not perceived to be valuable or productive by staff, can feed into to employee to frustration and dissatisfaction with work which in turn may lead to employee turnover and lowered efforts.
- **Limited agency visibility:** Limited public awareness of the NRCS and NRCS programs, prevents individuals from taking advantage of NRCS resources and assistance, and getting more conservation on the ground.
- **Limited amount of local influence on programs and assistance:** Most staff felt they had limited influence on the many of the decisions, laws, and policies which shape NRCS function. Numerous staff indicated that many aspects of NRCS practices and policies are largely beyond their direct control, and that they generally just have to go along with the decisions, policies, and rules coming down from Congress and/or the national level of NRCS regardless of whether they were viewed as optimal or not. While there is some room for tiering to locally identified priorities, local influence on programming is somewhat limited.
- **Limited flexibility in partnerships:** Several interviewees perceived working agreement partnerships to sometime be overly burdensome, placing requirements on partner agencies which restricts the flexibility and innovations of partner agency, thus limiting the potential benefits that come from the partnerships.
- **Limited funds:** Funds are finite. Funds are dispersed competitively, meaning that not all clients are necessarily able to access the financial assistance that they need to get projects done and practices implemented. Additionally, financial assistance rates may not always be sufficiently high to enable or motivate the adoption of conservation practices for some individuals. Limited funds limit the amount of work that NRCS can get done, and can be a source of frustration for clients whose applications go unfunded.
- **Limited impacts on conservation ethics & behavior:** NRCS does not always seem well-equipped to instill stewardship ethics in clients, who do not otherwise have those values. Interactions with the agency do not necessarily lead to long term changes in behavior or mindsets around conservation. NRCS assistance generally does not seem to drastically change value systems or perspectives on conservation for those who are not already interested in or open to conservation.
- **Limited staff knowledge:** The complexity and breadth of NRCS programs and work likely means that local staff may not have immediate answers to every question about programs and practices that clients might have. This limited knowledge may be frustrating for clients, and

may require additional follow-up time for staff and clients to get answers on questions from other agency staff.

## Opportunities

**Opportunities** include 1) the key external opportunities for the NRCS to help conserve natural resources, and 2) the opportunities which internally improve and maximize the NRCS’s efficacy in its work and mission.

Table 3. List of NRCS opportunities explored in report

Opportunities	
<b>External</b>	<p><b>Opportunities to Conserve Natural Resources</b></p> <ul style="list-style-type: none"> <li>- Many key threats and concerns are already identified</li> <li>- Managements practices can address resource concerns</li> <li>- Land stewardship &amp; conservation is widely cared about</li> <li>- The socioeconomic barriers to the implementation of conservation solutions are not insurmountable</li> </ul>
<b>Internal</b>	<p><b>Opportunities for NRCS Improvement</b></p> <ul style="list-style-type: none"> <li>- Incorporate improvements in NRCS programming                             <ul style="list-style-type: none"> <li>o Play to and strengthen agency strengths</li> <li>o Minimize or address agency weaknesses</li> </ul> </li> <li>- Use local input to optimize programming and impact</li> </ul>

### Opportunities to Conserve Natural Resources

The overarching mission of the NRCS is to conserve and protect natural resources for future generations, while still meeting the needs of today. Promise of this opportunity to conserve natural resources lies in so far that:

- **Many Threats and Concerns are Already Identified:** There is a wealth of collected data and knowledge which can be and has been used to identify threats and concerns around natural resources. Identification of concerns is foundational for the opportunity to optimally direct activities and resources towards addressing identified concerns. The NRCS recognizes these threats as resource concerns.
- **Managements Practices Can Address Resource Concerns:** There are management decisions and practices which limit or reduce the threats to the supply and health of our natural resources (i.e., management practices can help soils to hold more water and reduce flooding risks, or smart nutrient management can reduce negative water quality

impacts.) The NRCS recognizes these practices in their practice standards and design specifications. These practices provide the means to address resource concerns.

- **Land Stewardship is Widely Cared About:** Many individuals already care about stewarding their land and, if given the means and opportunity, will try to care for their, natural resources, land, and community. Many organizations and entities also care about land stewardship and can partner with or work in complement to the NRCS to promote good stewardship of the land. Stewardship of natural resources is a unifying and base issues which matters to many people; therefore it is an issue around which partnerships can develop.
- **The Socioeconomic Barriers to the Implementation of Conservation Practices are not Insurmountable:** While there are many socioeconomic barriers to the implementation of conservation practices and solutions (i.e., financial limitations which prevent investment in conservation, difficulty in changing traditions & practices, limited outreach & education around conservation) many of these barriers can be overcome and/or reduced with the strategic investment of time, efforts, and resources.

#### *Opportunities for NRCS Improvement*

- **Incorporate Improvements in NRCS Programming:** Improvements to NRCS programming can be made which can enable the agency to work more effectively and efficiently. Staff have some ability to incorporate some changes on local levels to improve program function. However, the brunt of opportunities for improvement is on national levels (i.e., Congress or national NRCS). Opportunities for the implementation of changes can be used to minimize and address identified weaknesses, maximize identified strengths to improve NRCS efficacy, efficiency, and impact.
  - **Raise Up Agency Strengths:** The strength and efficacy of the NRCS, and client's receptivity to NRCS, could be improved by centering on and strengthening the role of the identified strengths and aspects valued by staff or clients in NRCS workload. This might include continuing to promote trust-filled staff-client relationships or centering work around high-quality technical assistance.
  - **Minimize or Address Agency Weaknesses:** Minimizing or addressing internal agency weaknesses and the aspects of NRCS process which are seen as frustrating or of limited value may allow for improvement in the efficacy of NRCS and advancement of the agency mission. Addressing agency weaknesses might include hiring more staff or reaching missed farm types.
  - **Provide Local Input & Feedback:** While staff currently have limited input on directives coming from Congress and/or the National level— augmenting the risk that said directives are not appropriate or optimal for the local context— local input can and should be used to make NRCS programming more locally effective, both through short term decisions, and through the provision of feedback and suggestions to those

at higher levels of decision making which may be incorporated or considered in future design decisions.

## Threats

**Threats** include the 1) the key external threats which NRCS is tasked with addressing and minimizing, 2) the external threats which represents challenges to addressing the key external threats, and 3) threats which internally diminish or limit the NRCS's efficacy in addressing the external threats and carrying out its mission.

Table 4. List of internal & external NRCS threats explored in report

Threats	
<b>External</b>	<p><b>Threats which NRCS Seeks to Address</b></p> <ul style="list-style-type: none"> <li>- Loss/Diminishment of Productivity</li> <li>- Loss/Diminishment of Natural Resources &amp; Ecosystem Services</li> <li>- Natural Resource &amp; Environmental Concerns               <ul style="list-style-type: none"> <li>o Water quality</li> <li>o Climate change</li> <li>o Invasive species</li> <li>o Soil health</li> </ul> </li> </ul>
<b>External</b>	<p><b>Challenges Around Addressing Threats</b></p> <ul style="list-style-type: none"> <li>- Challenging to identify of concerns &amp; solutions</li> <li>- Barriers to the implementation of conservation solutions               <ul style="list-style-type: none"> <li>o Financial barriers to implement conservation</li> <li>o Difficult to change traditions &amp; mindsets</li> <li>o Limited outreach &amp; education around conservation</li> <li>o Changing farm cultures &amp; economies</li> <li>o Wide diversity of audiences, circumstances, and environments</li> </ul> </li> </ul>
<b>Internal</b>	<p><b>Threats to the Efficacy and Impact of the NRCS</b></p> <ul style="list-style-type: none"> <li>- Reductions in agency efficacy and impact               <ul style="list-style-type: none"> <li>o Diminishment of agency strengths</li> <li>o Augmenting or ignoring agency weaknesses</li> <li>o Limited local input</li> </ul> </li> </ul>

### *Threats which NRCS Seeks to Address*

- **Diminishment/Loss of Productivity, Natural Resources, & Ecosystem Services:**  
Agricultural and land management/use decisions can lead to the loss of ecosystem services,

degradation of natural resources, and the production negative externalities (e.g., habitat homogenization, biodiversity loss, and nutrient pollution in water bodies), often fueled by cultural and/or socio-economic pressures. The diminishment of natural resources and ecosystem services which underly the future supply of the natural resources upon which humans— and many other species and ecosystem functions— rely are a threat to human wellbeing, the stability of modern societies, and the future of the human species, as well as of that of many other life forms on the planet.

In 1930s the US saw the acute realization of this threat in the form of the Dust Bowl, the worst man-made natural disaster in American history, the result of a infamous combination of severe environmental conditions and poor agricultural practices which left soil vulnerable to erosion. The man-made tragedy resulted in severe short and long term environmental and economic impacts.

The United States Department of Agriculture’s Soil Conservation Services (now called the Natural Resources Conservation Service) was formed in response the Dust Bowl. It was meant to counter the potential threat in which human consumption of and pressure on natural resources and ecosystem services result in the loss of & diminished of natural resources and ecosystem services and, ultimately, to prevent a Dust Bowl-like event from ever reoccurring on American land. Hugh Hammond Bennet, the first head of the NRCS, summarized this threat which the agency rallied to respond to saying, “Productive land is neither limitless nor inexhaustible.”

Numerous threats to agricultural productivity, and/or human or environmental health, which NRCS recognizes and terms as ‘resource concerns’, are present in Vermont today. There are close to 50 resources currently recognized by NRCS in Vermont. The top resource and environmental concerns in Vermont identified by interviewees included:

- **Water quality:** Water quality was the top identified resource concern of note in Vermont, particularly in the Lake Champlain basin and the Connecticut River watershed. Water quality issues were seen as directly tied with agricultural activities. Poor manure & nutrient management, nutrient runoff, and soil erosion were cited as major potential agricultural contributors to these water quality issues.
- **Climate change:** The impacts of climate change in Vermont are predicted to include increased heavy precipitation events, short-term droughts, warmer winters, increased pest pressures, a longer growing season, and increased frost date variability (Dunnington, 2010) which will bring new challenges to Vermont farmers and agriculture. It may also put different consumption and production pressures on Vermont, as other places may become unsuitable for agriculture and living. Climate change was seen to be the biggest up and coming environmental concern for Vermont.
- **Invasive species:** Several staff identified invasive species as one of the preeminent natural resource concerns in Vermont working lands, referring to species like Japanese knotweed and buckthorn.

- **Soil health:** Soil health — the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans— was mentioned by most staff as a resource concern that warranted more consideration and focus because of its ties to agricultural productivity and other ecosystem services.

### *Challenges Around Addressing Threats*

- **Challenges to Identification of Concerns & Solutions:** Working in complex systems can make it difficult to accurately identify and quantify the seriousness of concerns, and to then identify appropriate management practices and solutions which address the concerns in different contexts.
- **Barriers to the Implementation of Conservation Solutions:** The major potential threats to productivity and the supply of natural resources are largely a result of aggregated socio-economic and cultural practices and pressures which do not optimize productivity and the conservation of resources. These socio-economic and cultural barriers to conservation are a threat to the potential implementation of conservation. The following factors were identified as feeding into threats to the conservation of natural resources and productivity on private Vermont agricultural working lands.
  - **Financial Barriers:** Financial limitations were seen as a large barrier to practicing conservation and implementing best management practices. Conservation often requires financial investments which individuals may not always be able to afford.
  - **Difficulty to Change Traditions & Mindsets:** Not all farming traditions and practices align with current understanding of how to best conserve and protect natural resources in agricultural systems. However, it can be very difficult for farmers to change certain existing mindsets and/or ‘traditional’ practices to more environmentally responsible ones.
  - **Limited Outreach & Education Around Conservation:** A lack of education or understanding about conservation and best management practices can be a barrier to their implementation.
  - **Changing Farm Cultures & Economies:** Changes in market pressures and economies over time have changed farm cultures and have changed the potential impacts of farms on natural resources, as well as sometimes pushed out conservation.
  - **Wide Diversity of Audiences, Circumstances, And Environments:** There is a wide diversity of different audiences who must implement conservation solutions in a variety of different circumstance and environments in order to meaningfully address threats. This environmental and circumstantial diversity makes it difficult to implement ‘conservation solutions’ in the wide amount and diversity of contexts necessary and limits the potential efficacy of cookie cutter conservation. A variety of



dynamic strategies and practices must be used to work with diversity of audience and circumstances.

### *Threats to the Efficacy and Impact of the NRCS*

- **Reductions in Efficacy and Impact of NRCS:** Decisions which impact NRCS function and structure occur at many different junctures internally and externally of the NRCS. Decisions at any of these levels can lead to impacts which result in the reduced efficacy and/or efficiency of NRCS programs, with decisions at the higher political levels (i.e., Congress) having greater potential for widespread repercussions than local level decisions. Leaning into and/or failing to address identified agency weaknesses or external threats, and not taking advantage of, or diminishing, identified agency strengths may detrimentally impact NRCS efficacy, efficiency, and impact.
  - **Diminishment of Agency Strengths:** The strength and efficacy of the NRCS, and clients receptivity to NRCS, could be undermined by the diminished role of identified strengths and aspects valued by staff or clients. This might include taking away the financial assistance or the one-on-one and individualized service offered to clients.
  - **Augmenting or Ignoring Agency Weaknesses:** Doubling down on agency weaknesses, failing to address agency weaknesses, or heightened burdens around aspects which are seen as frustrating may lead to diminished ability for NRCS to get conservation on the ground. This might include increasing workload while failing to address the staffing shortage or failing to better offer assistance to under-served audiences.
  - **Limited Local Input:** Staff have limited input on directives coming from Congress and/or the National level, which allows for the risk that said directives are not appropriate or optimal for the local context. However, local input can create changes within NRCS-Vermont, and from there can potentially inform decisions at the national level. The failure to appropriately share, consider, and incorporate local feedback and suggestions reduces the chances for locally effective NRCS programming.

### SWOT Along Steps to Addressing Resource Concerns

To effectively address resource concerns and carry out its mission, the NRCS must successfully and efficaciously complete the following three steps:

- 1) **Identify concerns & threats around natural resources and/or productivity.** Identification of concerns & threats is foundational for taking action to mitigate or reduce them. The NRCS uses data and research to identify and gauge threats to productivity/

natural resources in different contexts. NRCS formally recognizes these threats by designating them as ‘resource concerns.’

- 2) **Identify solutions to concerns.** Once a threat has been identified, rigorous scientific research needs be conducted or referred to for ways to efficaciously and efficiently address identified concerns which are contextually appropriate. These solutions are recognized in and laid out NRCS practice standards and technical specifications.
- 3) **Implement solutions to address identified concerns.** Identified practices and solutions must be implemented. This requires overcoming ecological, socio-cultural, and economic barriers to the implementation of identified practices and solutions. The NRCS largely seeks to do this by providing technical and financial assistance to private land managers to implement the ‘solutions.’

*Figure 2. Steps to addressing resource concerns*



The quality of each step is foundational for the potential quality of activities in the subsequent steps, and successful completion of all the steps are necessary in order to meaningfully address resource concerns. For example, it is difficult to identify solutions for a concern which you don’t know exists or have misidentified. Or maybe you know exactly what the concern is and know the solutions, but you can’t implement the solutions. In either scenario, the resource concern is not meaningfully addressed. All steps must be successfully completed to address resource concerns.

However, there are many barriers to and challenges along each of these steps— socio-cultural, ecological, and economic— which can make it very difficult to achieve that final goal of addressing resource concerns. Different agency strengths, weaknesses, opportunities, and threats (SWOT) discussed in this report relate to aspects along each of these steps. This three-steps framework is used in this SWOT analysis to offer additional structure and show where the general pinch points are and spaces where more work needs to be done along these steps. Most weaknesses and opportunities for improvement which interviewees spoke of were within the ‘Implement Solutions’ step. The table below shows a summary of the SWOT analysis for the Vermont NRCS along these three steps.

Table 5. Overall summary of SWOT analysis for Vermont NRCS along steps to addressing resource concerns

Phases	Identify Threats/Concerns	Identify Solutions	Implement Solutions
<b>NRCS's Approach</b>	<ul style="list-style-type: none"> <li>- Uses data and research to identify relevant threats for productivity/natural resources in context</li> <li>- NRCS formally recognizes these threats by designating them as 'resource concerns'</li> </ul>	<ul style="list-style-type: none"> <li>- Use research and scientific inquiry to identify practices which efficaciously reduce or address the recognized resource concerns in different contexts</li> <li>- Identified solutions are recognized in and laid out NRCS practice standards and technical specifications</li> </ul>	<ul style="list-style-type: none"> <li>- Provides technical and financial assistance to implement identified practices/solutions using practice standards and specifications which are identified as addressing resource concerns in the context</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>- Complex systems can make it difficult to accurately identify and quantify the seriousness of concerns</li> </ul>	<ul style="list-style-type: none"> <li>- Complex systems can make it difficult to accurately identify and quantify the impact of different management decisions and practices on concerns in different contexts, and identify appropriate solutions</li> </ul>	<ul style="list-style-type: none"> <li>- Financial barriers</li> <li>- Difficult to change traditions &amp; mindsets</li> <li>- Limited Outreach &amp; Education</li> <li>- Pressures from farm cultures &amp; economies</li> <li>- Wide diversity of audiences and circumstances need to be reached and worked with</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>- There is a wealth of collected data and knowledge which can be and has been used to identify and evaluate threats/concerns</li> </ul>	<ul style="list-style-type: none"> <li>- There is a wealth of collected data and knowledge which can be used to identify practices to address concerns/threats</li> <li>- There are many already identified and vetted practices and management strategies which address concerns</li> </ul>	<ul style="list-style-type: none"> <li>- Land stewardship is widely cared about by people; people are generally receptive to 'solutions'</li> <li>- Socioeconomic barriers to the implementation of conservation practices can be hurdled</li> </ul>
<b>Strengths of NRCS</b>	<ul style="list-style-type: none"> <li>- Identified resource concerns are usually sound and well-substantiated</li> </ul>	<ul style="list-style-type: none"> <li>- Technical expertise, advice, and standards found in and used by agency are generally high quality and scientifically- sound</li> </ul>	<ul style="list-style-type: none"> <li>- Technical &amp; financial assistance</li> <li>- Good staff-client relationships</li> <li>- Ability to leverage and use conservation partnerships</li> <li>- Can provide conservation education</li> </ul>
<b>Weaknesses of NRCS</b>	<ul style="list-style-type: none"> <li>- Does not always quantitatively connect resource concerns directly with ecosystem services or outcomes</li> <li>- Sometimes overlooks some resource &amp; environmental concerns</li> </ul>	<ul style="list-style-type: none"> <li>- Slow to adopt new or innovative practices and technologies</li> <li>- Requirements for practices &amp; standards may sometimes potentially be too stringent</li> <li>- Focus on solutions for particular areas and farming systems of research over others</li> </ul>	<ul style="list-style-type: none"> <li>- High transaction costs for programs</li> <li>- Limited capacity (staff time and financial resources)</li> <li>- Slow turn around on projects</li> <li>- Many factors outside NRCS control</li> <li>- Difficult to understand and carry out programs and practices</li> <li>- Underserves some demographics and farm types</li> <li>- Limited capacity to incorporate local input in program implementation &amp; priorities</li> </ul>

## PART THREE: THEMATIC EXPLORATION OF NRCS WORK & FUNCTION IN VERMONT

This part of the report includes an exploration of some of the themes of the interviews. Some background content (placed in pale yellow boxes) has been strategically interspersed throughout to provide some information that readers may find helpful to understanding the discussed themes and topics.

At the end of most sections, a SWOT table is included which summarizes the strengths, weaknesses, opportunities, and threats around the topics discussed in the associated section. Directly discussed SWOTs are noted in regular type, SWOTs which were inferred are in italics. These identified SWOTs form the basis of the SWOT analysis included in part two of this report.

### About the NRCS

**About the NRCS:** An agency of the United States Department of Agriculture (USDA), the Natural Resources Conservation Service (NRCS) is the largest provider of conservation incentives and payment for ecosystem services in private agricultural working lands in the United States. NRCS provides technical and financial assistance to land managers who are wanting to make conservation improvements on their land. (U.S. Department of Agriculture Natural Resources Conservation Service, 2022).

The USDA-NRCS (then called the Soil Conservation Service) was formed in 1933 under the first term of Franklin Delano Roosevelt's presidency, as a federal response to the Dust Bowl. With the formation of the agency, congress declared that "the wastage of soil and moisture resources on farm, grazing, and forest lands... is a menace to the national welfare" (U.S. Department of Agriculture Natural Resources Conservation Service, 2022), capturing the increasingly recognized reality that society and farmers need to conserve and protect their natural resources in order to survive and be sustainable.

The Soil Conservation Service (now NRCS), with Hugh Hammond Bennett the "Father of Soil Conservation" at the helm, was tasked with reducing and preventing soil erosion and future Dust Bowl-like events, as well as working to ensure the sustainability of agriculture productivity

through conservation of the soil, as well the promotion of other ecosystem services. SCS helped people to plant trees, install waterways and terraces, and reduce tillage throughout the United States (U.S. Department of Agriculture Natural Resources Conservation Service., 2022) In 1994, the Soil Conservation Service was renamed the Natural Resources Conservation Service.

NRCS has largely stayed in line with its foundational spirit and mission, though the agency and its programs have evolved and changed according to a wide variety of factors like political influences, emerging environmental issues, scientific findings, new technologies & practices, agri-environmental perceptions, funding allocations and perceived needs in the agricultural community (Brevik et al., 2016; McFadden & Hoppe, 2017; Phillips et al., 2013). Agency work and programs continue to be guided by a varyingly balanced combination of scientific data, political machinations, client and administrative feedback on program, and bureaucratic/public accountability obligations. Despite the many changes over decades, much as it did at its inception, the agency continues to be centered around working with private land managers and owners to promote the voluntary adoptions of conservation practices which address resource concerns around soil, water, air, plants, animals, and energy (U.S. Department of Agriculture Natural Resources Conservation Service., 2022). While federal policy is largely consistent across all states, there is some variability in program availability, goals, and outputs depending on the locale, present resource concerns, and partnerships (Reimer & Prokopy, 2014).

Interviewees were asked to describe the goals and the work of the NRCS. Many referenced the current and previous iterations of the official agency mission, vision, and tagline in their responses:

**NRCS Mission:** “We deliver conservation solutions so agricultural producers can protect natural resources and feed a growing world.”

**NRCS Vision:** “A world of clean and abundant water, healthy soils, resilient landscapes, and thriving agricultural communities through voluntary conservation.”

**NRCS Tagline** (no longer official, but still cited): “Helping People Help the Land.”

However, interviewees also offered additional insights and descriptions beyond the well-internalized agency mottos. Several employees summarized it all by saying the NRCS works to address natural resource concerns on private lands.

Our primary goal is to work with private landowners — not necessarily agricultural producers but including them too— to address resource concerns. Basically that's it, to address resource concerns on private land.

While NRCS was acknowledged to be working with all sorts of private land managers and landowners, most of the work was done with farmers and/or on agricultural land. Numerous employees highlighted the non-regulatory function of the agency, emphasizing that the agency

works for voluntary rather than forced conservation. “Everything we do is voluntary,” one interviewed asserted. Interviewees suggested that this voluntary nature was critical in allowing for productive and healthy relationships between NRCS staff and clients.

### The Work of the NRCS

Our [the NRCS] business model really centers around three key areas. First and foremost is providing individualized, one-on-one technical assistance.... The second one is then investing in operations through various means of financial assistance. And then the third one is we collect data for public and policymakers to make informed decisions about natural resources.

Staff described a variety of different ways through which NRCS works to carry out its purported mission of delivering conservation solutions to private lands, primarily through technical and financial assistance. Interviewees identified three primary functions of the NRCS:

- Provide Technical & Financial Assistance
- Conduct Research & Collect Data
- Maintain Public Accountability

### *Technical & Financial Assistance*

**About NRCS Technical & Financial Assistance:** The Natural Resources Conservation Service provides free technical and financial assistance to private landowners & managers in the United States. There is a USDA Service Center/ NRCS Field Office located in most counties. Field offices are usually comprised of a varying number of NRCS staff, as well as partner staff. Land managers/owners may approach their local field office for technical and/or financial assistance for resource concerns on their land. NRCS technical staff will assess the land and resource concern and make technical recommendations to address the concern, as well as other potential concerns they noted based off the site visit and collected data.

Technical recommendations usually include the implementation of conservation practices and/or structures which NRCS recognizes as addressing the concern in question. Nationally, the NRCS has a list of nearly 170 practice standards and 140 enhancements which outline the general definitions and requirements for funded and/or supported practices that address recognized resource concerns. These practices and enhancements form the basis for the range of recommended and cost-share eligible practices in the different programs provided through the agency (USDA-NRCS, 2022b). The top funded practices in Vermont include waste storage

facilities, cover crops, pasture and hay planting, heavy use area protection, and high tunnel system.

Depending on the client and the resource concern of interest, the client may be eligible for financial assistance to follow through on the technical recommendation. NRCS provides financial assistance to eligible clients to address certain resource concerns with the NRCS approved technical recommendation & practice standards. Funding is offered on a competitive basis—there are typically pools of money dedicated to different programs, practices, and client demographics. Eligible clients work with NRCS staff to complete an application. Applications go into a pool which compete against each other based on calculations of the positive resource impact per federal dollar spent. If clients are awarded funding, a contract is then signed, and clients will receive ‘cost share’, usually after the practice is carried out in accordance with NRCS standards. Cost share rates are usually based of a percentage of costs to carry out the practice or put in the infrastructure.

Most employees viewed technical and financial assistance as the central work of the NRCS, and the means through which the agency works towards its mission and vision.

The primary means that the work ends up happening is through the programs with the financial assistance going to the producer to implement one of the practices, and the technical assistance being provided by us for them to be able to do that [the practices].

Numerous interviewees brought up how the work that NRCS does and the resource concern(s) that are focused on widely varies with context. The work in Vermont may be quite different to agency work in other states because of differences in identified natural resource concerns, agri-environmental systems, and client demographics in the respective contexts.

The work is so different throughout the country. Because Vermont is such a dairy-based state, our focus is on a lot on waste management practices...Out West, it's more concerned about water quantity. ‘How can we irrigate this water more efficiently and not waste so much water?’.... [In] California, they're doing everything they can to improve air quality from agricultural operations... It's really amazing the diversity of the work that we do from state to state.

There's such a wide variation within NRCS and how the programs are implemented. I know from talking with other people in other parts of the country [there are places] where they'll only work on corn and soybeans— that's like the only kind of contracts that they have and they do. They don't really do anything else besides that. Coming from [another Eastern state], I would work on literally somebody's backyard.

Several staff briefly spoke of NRCS's role in conducting and funding research and collecting data to feed into future policy, strategies, and priorities for the agency.

**About NRCS Research:** The NRCS also carries out research and collects data which is used to feed back into future program & practice design and to inform future policy decisions around natural resource management. The NRCS assists in assessing the impacts of NRCS and USDA programming, and the state of natural resources in the US. Some of this research is done through the Conservation Effects Assessment Project (CEAP) (USDA-NRCS, 2022a), a Natural Resources Inventory (NRI) (U.S. Department of Agriculture, 2020), and the Soil and Water Resources Conservation Act (RCA) (USDA-NRCS, 2022d).

NRCS funds original on-farm research led by partners through Conservation Innovation Grants (CIG). These grants explore questions of interest to the NRCS. There is currently a Soil Health Demonstration Conservation Innovation Grant active in Vermont being carried out in partnership with University of Vermont, Vermont Land Trust, and Biological Capital which is looking at ecological and socio-economic impacts of soil health management practices in pastures. NRCS also directly conducts original research such as through the NRCS Plant Materials Program which is tasked with developing vegetative solutions to natural resource concerns of issues. The Plant Materials Program has released 580+ conservation plants to the public, alongside technical guidance for their use (USDA-NRCS, 2022c).

### *Public Accountability*

While technical assistance and financial assistance were the most frequently hit upon facets of the NRCS work, several interviewees also highlighted how NRCS must carry out all its work in ways which maintain accountability to Congress and the taxpayers. NRCS is a governmental agency, a bureaucracy, and all expenditure of money and resources needs to be auditable, defensible, and in accordance with all stipulations and requirements. The NRCS is also increasingly tasked with carrying its services in a way which is equitable and helps to address persisting civil rights issues. The need to maintain and ensure public accountability guides all NRCS programming and activities.

## Motivations of Staff

Interviewees were asked what motivated them in their work with NRCS, and why they do what they do. In reply, most interviewed staff expressed a sense of dedication to and passion for their work, albeit with varying degrees of enthusiasm. Staff found daily meaning in a variety of different ways. Some staff enjoyed directly helping producers achieve their goals; some were



excited about when they could translate national policy into something that they felt was helpful for Vermont farmers; some found it in trying to promote equitable distribution of resources; others in being able to spend time in environments protected by conservation easement programs. There was some sense of frustration with aspects of workload which muted staff enthusiasm for their work. One staff member nicely summarized the motivations of NRCS staff captured in the interviews saying, “Most people who work for NRCS have a passion for either agriculture or the environment, or both.”

- Working with and Helping Farmers
- Promoting Land Stewardship and Caring for Current & Future Generations

### Working with and Helping Farmers

Many of the interviewees talked about how they enjoy being able to work with and help producers, and expressed appreciation for agriculture and the work of farmers. Many staff were driven by their desire to help people.

Unless you really work for NRCS you don't really get it, but we are highly dedicated to our producers, our clients... We try to bend over backwards to help our producers because we want them to succeed as farmers.

You wanna help people and help farmers. The longer I've worked for NRCS, the more I've liked working with farmers.

I love to eat, and I love my clothes and I love, you know, all the things that agriculture provides us. So I want to make sure these folks can continue to provide the things that we need.

Several staff vocalized a particular interest in reaching and helping producers who may have not been as well reached by NRCS assistance in the past, and trying to use NRCS assistance to work towards equity.

[I enjoy] reaching those that we don't see every day, the uncommon producers, the untraditional farmers or producers that wouldn't normally know or participate within our programs, but are and could be eligible for that participation and who are also making a difference every day.

### Promoting Land Stewardship and Caring for Current & Future Generations

Some shared how their interest in caring for and stewarding natural resources and the environment fuels their work with the agency. Several staff expressed a love of the outdoors and the environment, and appreciated how they could care for those things through their work with the NRCS. Numerous interviewees noted how the stewardship of our natural resources are critical to the wellbeing of current and future generations, and they viewed their work with NRCS as a way a caring for both current and future generations.

My wife and I, we have children and it is really, really important to me to pass on, in a better way, the great things that I had. You know, I had clean and abundant water, I have beautiful scenic vistas, thriving agricultural communities. It is really, really important to me that future generations have access to good nutrient-dense, healthy food and they also have a way to recreate and enjoy the outdoors. So for me, this is all about future generations.

We have all the land that we'll ever have. We have all the water that we ever will ever have and it's important that we are good stewards of that. This was a blessing to us and means a way of life. If we're not doing our due diligence to take care of that, who else is going to do it? And how will we continue to live and provide for ourselves and the future generations?

Table 6. SWOT found around the Motivations of Staff \*

<b>Strengths</b>	Most staff genuinely cared about the mission of the agency, land stewardship, and the wellbeing and experience of the clients with whom they work. Staff largely seem dedicated to their work.
<b>Weaknesses</b>	There was some sense of frustration with aspects of workload which muted staff passion for their work and the meaning they found within it.
<b>Opportunities</b>	<i>Many NRCS care about and are dedicated to what they do. Cultivate and use the passion and dedication of staff to advance the mission of the agency and improve its function and impact.</i>
<b>Threats</b>	<i>Frustrations around aspects and perceived limitations of NRCS work may diminish staff passion and dedication, leading to lowered staff satisfaction and agency impact &amp; efficacy.</i>

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

## Agri-Environmental Concerns in Vermont

**Background:** Vermont is largely rural state in the northeastern US. Vermont is home to 650,000 people spread over 6 million acres, making it the 2<sup>nd</sup> smallest state in the U.S. by population, and the 6<sup>th</sup> smallest by area. As of 2017, nearly 66% of non-federal lands in Vermont was forested and about 14% was in cropland or pastureland (USDA-NRCS, 2022d). Vermont has a strong agricultural history and economy.

As of 2020, the small state had 6,800 farms and 1,200,000 acres in farmland (NASS, 2021). The average farm size was 176 acres. The dairy industry is the cultural and economic backbone of the Vermont agriculture sector, in 2017 dairy farms accounted for 52% of Vermont farmland and milk sales comprised 65% of total Vermont agricultural sales (Hoffer, 2021). Maple sugaring is also central to Vermont agriculture. Vermont is the top state producer of maple syrup in the nation, producing 2.55 million gallons in 2022 (USDA NASS, 2022). Vermont has also worked to strategically invest in and support local and regional food systems and has a growing collection of small-scale and diversified farms (Anderson et al., 2014; Jake Claro et al., 2020). According to the Vermont Agricultural & Food System Strategic Plan, Vermont is working towards having 25% of all in-state food purchases will be Vermont food products. As of 2020 state was at 16.1%, up from 5.0% in 2010 (Farm to Plate, 2022).

Vermont deals with acute water quality issues in Lake Champlain, the largest lake in the state, largely due to excess phosphorus, as well as in the Connecticut River, largely tied to excess nitrogen. Addressing these water quality concerns has been a primary focus for local, state, and federal conservation efforts in Vermont. Approximately 38% of the phosphorus load in Lake Champlain is estimated to come from agriculture (Lake Champlain Basin Program, 2022).

NRCS assistance is centered around addressing 'resource concerns' which NRCS defines as "the expected degradation of the soil, water, air plant, or animal resource to an extent the sustainability or intended use of the resource is impaired." Some resource concerns include sheet and rill erosion, greenhouse gas emission, surface water depletion, plant pest pressure, and energy efficiency of equipment and facilities.

Interviewees were asked about what they thought are the most pressing environmental and natural resource concerns connected to agriculture in Vermont. Top mentioned concerns included:



### Water Quality

All staff identified water quality as a pressing resource concern in Vermont. It was the most frequently mentioned concern, with specific callouts to the Lake Champlain basin and the Connecticut River watershed. Numerous staff noted that water quality has been the primary focus of the NRCS and other conservation entities in Vermont for a while. Interviewees directly connected water quality issues with agricultural activities, citing poor manure & nutrient management, nutrient runoff, and soil erosion as the major potential agricultural contributors to these water quality issues. Interviewees recognized that because agriculture can and often does feed into water quality issues, the adoption of the different best management practices and improved manure & nutrient management can have a major positive impact on water quality. Many staff tied water quality outcomes to soil health. Interviewees thought that water quality issues in Vermont are likely to continue to be a major concern, and that a focus on and concerted efforts to improve and protect water quality will need to continue in the long term.

### Climate Change

Climate change was the second most frequently mentioned environmental challenge facing Vermont agriculture. The impacts of climate change in Vermont are predicted to include increased heavy precipitation events, short-term droughts, warmer winters, increased pest pressures, a longer growing season, and increased frost date variability (Dunnington, 2010). Nearly every interviewee explicitly expressed concerns about climate change and the challenges it will bring to farmers. Staff predicted that climate change will have growing impacts on and repercussions for Vermont agriculture, many thought it was the largest agri-environmental concern for the state looking forward, and an issue which needs to receive more focus. Several staff noted that they anticipated USDA-NRCS funding will be increasingly focused on mitigating and adapting for climate change going forward.

One interviewee mentioned that the changing climate will likely bring climate refugees to the state and that more agricultural production will be shifted into Vermont, suggesting that Vermont agriculture will need to be able support more people looking forward. Numerous interviewees pointed out the need for farmers to adopt practices and make operational changes to adapt to changing conditions in order to continue to be productive, viable, and resilient. Several staff expressed concern about the ability of farmers to make those shifts quickly enough.

Numerous staff mentioned soil in conjunction with climate change, bringing up the potential of agriculture to sequester carbon in soils and mitigate climate change (something about which staff were varyingly optimistic). Numerous interviewees noted the importance of soil health for resiliency and carbon sequestration. One interviewee highlighted the role of Vermont's forest in sequestering carbon, a role which they thought should receive more focus.

### Soil Health

Soil health — the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans— was mentioned by numerous staff as a resource concern that warranted more consideration and focus. The NRCS preaches four different principles to manage for soil health: 1) maximize presence of living roots; 2) minimize disturbance; 3) maximize soil cover; 4) maximize biodiversity. Soil health was often mentioned hand in hand with improving water quality and mitigating and increasing resilience for climate change. Many staff vocalized that focusing on soil health creates resilience for climate change and has a positive impact on water quality. One staff discussed the challenges of understanding and defining what soil health look likes in the Vermont and under different farming systems, and the need to tighten that understanding in order to advance and better support soil health in the state.

### Invasive Species

Numerous interviewees mentioned invasive species as a major resource concern, one of the preeminent natural resource concerns in Vermont working lands. Interviewees specifically called out Japanese knotweed (*Fallopia japonica*) and buckthorn (*Rhamnus cathartica*). Interviewees acknowledged the ongoing and growing threats of invasive species, noting that this issue is likely to be fueled by climate change and increasing opportunities for species to travel long distances with humans, such as along highways.

### Other Mentioned Concerns

**Soil Erosion:** Several interviewees mentioned soil erosion as a concern, particularly tied to its impacts on water quality.

**Habitat Fragmentation:** One interviewee brought up habitat fragmentation as one of their chief resource concerns, and argued that this should be a larger focus for the NRCS than it currently is.

**Emerging Contaminants:** One staff member mentioned that they thought there would future focus on emerging contaminants like PFAS and heavy metals in soils and waterbodies.

**Air Quality:** One staff member mentioned that while air quality has received limited agency focus in Vermont thus far since air quality is generally good in Vermont, but that odor control from farms may become a larger issue of focus.

**Plant Productivity & Health:** One interviewee predicted that plant productivity and health will be an increasingly prominent concern, especially in association with the impacts of climate change on plants.

Table 7. SWOT around agri-environmental concerns in Vermont\*

<b>Strengths</b>	<i>Most concerns that interviewees identified are also concerns that NRCS is already working to address and thinking about. Staff perceptions of the nature and gravity of resource concerns present largely aligned with agency perceptions and activities.</i>
<b>Weaknesses</b>	<i>Several staff noted the need for the agency to focus on some resource concerns more than they have, and that not all resource concerns have received attention proportionate to their threat.</i>
<b>Opportunities</b>	Interviewees identified the potential for management decisions to limit or reduce the amount the harm caused by the threats i.e., the ability of soils to sequester carbon and mitigate climate change, and the use of smart nutrient management to reduce negative water quality impacts.
<b>Threats</b>	Numerous resource concerns were identified as threats to agricultural productivity, and/or human or environmental health. Top concerns included water quality, climate change, invasive species, and soil health.

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

## Cultural & Socio-Economic Barriers to Sustainable Agriculture

Numerous employees commented on the strong land ethic that many Vermont famers and citizens possess. One employee observed,

Vermont, of all the states that I've been to, has this really strong ethos, this really strong core value of [balancing] productive working lands and healthy environment. They get it. And they understand that agriculture has to be a part of this cultural aspect of living in Vermont.

Despite the strong stewardship ethic that many Vermonters possess, interviewees recognized a land stewardship ethic and desire to practice sustainable agriculture alone does not necessarily translate into the actual practice of conservation and/or sustainable agriculture. Staff identified a of variety cultural or socio-economic barriers to practicing conservation and sustainable agriculture in the state including:

- Financial Limitations
- Difficulty to Change Traditions & Practices
- Limited Outreach & Education
- Changing Farm Cultures & Economies

#### Financial & Economic Limitations

Many interviewees identified financial limitations as one of the largest barriers to practicing conservation and implementing best management practices. Interviewees recognized that many farmers are dealing with financial strains and may be struggling to stay afloat. One staff reflected, “Farming is really, really hard. I don't think any of us who don't farm full time, or even part time, really understand the challenges at all levels that farmers have.”

The initial implementation of best management and conservation practices can be quite expensive, making them cost-prohibitive for many farmers who may already be saddled with debt or struggling to make ends meet. Farmers dealing with immediate and acute economic strain often feel unable to afford to implement new practices or make changes, even if it is in their long-term interests.

There's lots of sustainable practices that will save money [in the long run] because sustainable agriculture tends to be more low impact than traditional agriculture. But to get there costs money— that's the thing that I think is the challenge. In the long run it could be more cost effective for a farm to adopt sustainable agricultural practices, but with the margin that they [farmers] have to play with in terms of profitability as a farm, they can't get there. There's a barrier to getting people over that hump.

Several interviewees brought up the challenges of trying get the money and resources (i.e., land and equipment) needed to transition and change farming systems to be more sustainable. For many farmers, the money and resources needed to make changes towards more

‘sustainable’ agriculture may be inaccessible, especially for farmers who do not inherit lands, farming equipment, and connections to farming communities.

#### Difficulty of Changing Traditions & Practices

Several interviewees also spoke of some of the non-financial challenges and difficulty involved with changing traditions and practices. One summarized it saying, “People who are used to doing things a certain way [find it] hard to change their ways.” Staff pointed out that not all farming traditions and practices align with current understanding of how to best conserve and protect natural resources in agricultural systems. However, it can be very difficult for farmers to change certain mindsets and/or ‘traditional’ practices, especially when something has been done that way for several generations.

‘Grandpa did it this way. Dad did it this way. I’m doing it this way.’ And it’s tough. People pour their heart and soul into the land. And in their mind they’ve got it figured out, even though they may or may not necessarily have it figured out when viewed from the perspective of an academic or a professional. ... Like [in the] Champlain Valley it’s plow in the fall and walk away. That’s cultural from anyone you talk to, there’s really no actual benefit to doing it. ‘But Grandpa did it. Dad did it. I’m doing it. They made a living this way and I’m still, you know, pulling in money this way, so why change it?’

The difficulty of making changes to cultural traditions and practices can be a major barrier to farmers to adopting more sustainable and conservation-minded agriculture. One staff reflected on the challenges of changing traditions & practices to cope with climate change, and expressed worry about farmers’ ability to adapt quickly enough.

#### Limited Outreach & Education

Several employees spoke about how limited outreach and education, for both farmers and the public, can be a barrier to fostering sustainable and thriving agricultural communities.

One interviewee brought up how lack of public education and awareness about the realities of farming and agriculture can and have created some inhospitable, sometimes even hostile environments for farmers. They argued that providing the public education about agriculture is important in order to support thriving and sustainable agricultural communities.

I think we just need to do a better job in natural resource arena of educating the general public of ‘Hey, this is what it looks like to produce our own food.’ And so, I think education and awareness is probably one of the biggest keys of making sure that we can have sustainable agriculture in the future.



Several mentioned the limited awareness and knowledge that producers have about the connections between management practices and environmental outcomes, and, in turn, the value and benefits of best management practices for productivity and conservation.

So many people are not aware of some of the sustainability practices that exist or practices that could improve their operations, in conjunction with our natural resources.

Another interviewee mentioned that limited outreach and advertisement about the existence and availability of programs and resources available to help farmers use best management practices can also be a barrier. It's hard for farmers to benefit from help that they don't know exists.

I cannot tell you how many times I've met people just on the fly and I'm talking about NRCS and they're like, "Y'all exist? That sounds like a great thing. I never knew about this.' ... So, I do feel like a big problem is the fact that resources are not widely accessible because they aren't advertised effectively.

### Changing Farm Cultures & Economics

Several employees commented on how aspects of farm culture and economics have changed over time due to socio-economic changes & market pressures. These changes and pressures were identified as having environmental and cultural impacts, sometimes pushing out conservation ethics and practices. One interviewee reflected on the loss of small family farms in Vermont and its repercussions.

[For] small farmers, it's really tough.... When I grew up on a farm 40-45 years ago, we were milking 25 cows. And my dad was somewhat making a living with at it. [Today] a farm that size is unheard of, you wouldn't even consider it. It's really hurting the small family farms. They just can't compete anymore, which is sad, right. And they're part of our culture.... A lot of these big farms are still family-based and family-oriented... but there is definitely a difference. And when you get that big, the pollution potentials, the impact to the environment, and the impact to the soil are exponential.

*Table 8. SWOT around cultural & socio-economic barriers to sustainable agriculture \**

<b>Strengths</b>	<i>NRCS technical &amp; financial assistance can help overcome some of socio-economic barriers including around financial limitations, limited outreach and education, and the difficulty of changing practices.</i>
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<b>Weaknesses</b>	<i>Many of these barriers are outside NRCS control and NRCS assistance has limited and varying potential to overcome these barriers. I.e., financial assistance rates may be inadequate to overcome financial limitations; NRCS has limited impact on external market pressures; NRCS assistance does not always overcome the difficulty of getting people to change traditions &amp; practices</i>
<b>Opportunities</b>	<i>Many identified barriers can be overcome and/or reduced so that natural resource concerns and threats can be addressed</i>
<b>Threats</b>	Interviewees identified numerous cultural & socio-economic barriers to overcoming threats from natural resource concerns including financial limitations; difficulty to change traditions; limited knowledge about resources and opportunities; and changing farm cultures & economies.

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

## NRCS Strengths

NRCS staff were asked to discuss what they thought were the greatest strengths of the agency. Answers varied, but the most widely cited answers were the relationship between local field office staff and clients, and the technical and financial assistance the agency provides. The following themes were discussed as agency strengths:

- Staff-Client Relationships
- Agency Standards and Technical Expertise
- Financial Backing & Assistance
- Conservation Planning Process
- Leveraging Partnerships

### Staff-Client Relationships

The on-the-ground relationship between staff and clients is foundational to the implementation of conservation practices and solutions. Local field office staff and clients work with each other

one-on-one, which gives an opportunity for trust and respect to develop between them which is critical for enabling the successful and effective implementation of conservation solutions. One interviewee said, “It takes building those one-on-one relationships to make informed decisions.” Interviewees most commonly cited strengths of the agency was the quality of the relationship that can form between local field office staff and producers. Many staff highly valued and enjoyed working with clients, and thought that clients, in turn, also valued this relationship.

I think the trust on the ground when you actually meet producer to individual. I think the lowest level is where the trust is between our field staff and the producers. That's what I see as the ultimate strength...that seems to be really what keeps people going. It's our face-to-face interaction in the fields.

Several mentioned the importance of NRCS being non-regulatory for the establishment of a positive working relationship because it means that land managers usually come to the agency on their own volition and are receptive to NRCS staff ideas and suggestions.

I think our biggest strength is that we are a non-regulatory and voluntary agency. So the relationships that we have are not forced. They are because producers & landowners out there trust us and they know that when we step onto their farm we're gonna give them some good recommendations to help them meet their objectives and goals. I think that's probably the biggest thing that we have going for us.

### Technical Expertise of Staff & Standards

Numerous interviewees brought up the technical expertise found within the agency, as one of its greatest strengths, and something which clients appreciate about NRCS. Interviewees mentioned the strengths within standards and specifications which NRCS uses in practice design and implementation, as well as the technical expertise found in staff across the agency.

I think the greatest strength... is that we are a super technical agency. So, we have the technical expertise. And if we don't have the technical expertise, we'll get it so that we can help producers to address their concerns. So we have engineers, planners and, in some places, economists and all kinds of different positions to do that [provide technical expertise].

Our greatest strength is that we have dedicated and knowledgeable staff that can truly break down a situation or help a client understand some of these resource concerns and how they're all connected.... Our greatest strength is our technical side and providing some technical assistance.

Interestingly, several simultaneously noted that this ‘strength’ may also be sometimes viewed as a limitation since high, stringent technical standards *can* slow processes and discourage some clients. One individual remarked, “Everyone views us as like a technical agency— the strengths

in our standards, the strengths in our specs. But a lot of people complain about them too.” Most interviewees, while noting some ways that technical standards and understandings can be improved, still stood by and valued the technical expertise found within the agency.

I feel that the policy has been put in place that allows us to put in good quality products, to put in good quality practices that are going to last, that are gonna work and that won't fail. Now, obviously, you know producers, ‘you engineers like to over design everything.’ And well, yeah, you can say that, but we like to think that we work within the minimum guidelines, that the standards and the building codes and that allow us to do... there was a reason why that policy was put in place.

### Financial Backing & Assistance

Several interviewees mentioned that the public funding that they receive from Congress (and elsewhere) to offer financial assistance to clients is foundational for the success and most of the strengths of the agency. NRCS’s ability to actually invest money in their recommendations for private land management is foundational for its efficacy in getting conservation practices on the ground, and encouraging and enabling land managers to be good stewards of their land and communities. The financial assistance NRCS offers on conservation projects was perceived to be highly valued by clients.

I think we provide good technical and financial resources for the producers. I think that our ability to have the technical staff, the financial backings from Congress and whatnot to be able to... disseminate these funds and these resources to these producers all over.... I think that is one of the strengths that we [NRCS] have.

NRCS has some of the best resources to provide for producers to be successful, while conserving our natural resources.

### Conservation Planning Approach

Several staff brought up the agency's conservation planning approach as an agency strength, and how they valued how NRCS approaches resource concerns with a relatively holistic approach, which recognizes that every context is different.

I look at agencies like the Agency of Agriculture and they're able to go out and they're able to look at problems from a regulatory standpoint and they're able to spend some money. But I don't think they're really providing a holistic approach to something; they're just doing a reactive approach. ‘You’re polluting the stream; you need to stop doing that.’ Well, maybe you need to look at the bigger picture

and the whole farm planning thing... Our planning process, doing a holistic plan process, is I think is one of our biggest strengths.

The unique beauty of conservation planning is the ability to look at everyone's operation and not put it in a cookie cutter situation... Everyone's gonna have different ecological levels or concerns that they want to address as well as their economics in terms of financial ability may be different from producer to producer. And then also just their size of their operations... So that's why I say you can't cookie cutter everything.

Leveraging Partnerships

Over the course of the interviews, many of the staff acknowledged the importance of conservation partnerships in being able to meet agri-environmental goals. One said, “We cannot do it all ourselves. We have to leverage the support of partners to be able to meet our mission and vision.” One interviewee identified NRCS’s capacity ability to leverage and facilitate conservation partnerships as one of the greatest strengths of the agency.

I think one of the great strengths of NRCS is our ability to leverage innovative partnerships to expand NRCS ability to get conservation on the ground effectively and efficiently. NRCS can't do all this on our own, so having those partnerships and those relationships, and then also cultivating those relationships to help us achieve our mission and vision, I think, is one of the greatest strengths of NRCS.

Table 9. SWOT around NRCS strengths \*

<b>Strengths</b>	Staff-client relationships; agency standards and technical expertise; the conservation planning process; leveraging partnerships; and financial backing & assistance were all listed as NRCS strengths.
<b>Weaknesses</b>	—————
<b>Opportunities</b>	<i>NRCS can continue to lean into and hone the strengths that the agency already has, as well as develop new ones.</i>
<b>Threats</b>	<i>The strength and efficacy of the NRCS could be undermined by the diminished role or function of NRCS strengths.</i>

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

## NRCS Limitations and Challenges

Staff were asked to identify the greatest limitations and challenges associated with NRCS programming and function. Staff had a variety of answers around the following themes:

- Shortage of Staff & Resources
- Breadth & Complexity of NRCS Workload
- High Workload Standards & Demands
- Bureaucratic/Political Strings & Requirements
- Slow Adoption of Technological and Agricultural Innovations
- Limited Agency Visibility

### Shortage of Staff & Resources

A shortage of staff was the number one identified limitation for the NRCS in Vermont. “We need more planners. We need more engineers. We need more support staff out to help get all this work done,” one employee remarked, capturing the sentiment expressed by nearly all interviewees that there was a general shortage of time, staff, and resources to carry out agency workloads. Several staff who have been with the agency for a long time indicated that the workload and expectations for NRCS staff has increased over the years without appropriately proportional staffing increases.

I've been with NRCS for [over 20] years...We are economies-of-scale bigger and have more work than we used to as an agency. Our field people now are just maxed out with working with producers and trying to implement the programs.

Somebody once told me that, ‘They gave us more and more work to do with less and less resources. And stupid us, we do it.’... And the problem with that is, yeah, we're doing more, but I'm afraid that when we do that that we're cutting corners. We're not necessarily giving the producer everything that he's entitled to as far as planning design.

Staff indicated NRCS staff was generally overburdened and stressed, and that they needed for more staff to get the work done well and in a timely manner. Slow processes and project

turnarounds was identified as a key client frustration. It was generally acknowledged the shortage of staff had a detrimental impact on clients' experiences with NRCS programs.

[The] reality is right now we're understaffed. To be able to get the staff that we need to fully push out our programs and to service our clients in a timely fashion would much improve our processes and program delivery.

The shortage of other resources, like available financial assistance, was also identified as a limitation for the agency by several interviewees. Several interviewees shared the frustrations that clients feel when they are unable to access financial assistance for their conservation projects.

### Breadth & Complexity of NRCS Workload

Several interviewees mentioned how the complexity and wide range of programs and practices—and the steps in the conservation process—can make it difficult for staff to understand and effectively carry out the workload. This also makes it difficult for clients to understand the processes and decide what programs may be the best fit for them.

I think one of the limitations of NRCS is just that... we have so many conservation practices and we have so many programs that it, I think, can be confusing to work with us and know which program you fit into. And within a program, we might have like 40 fund pools in that program. And, you know, I could tell you that that is one of the reasons I would not wanna be in the field right now. Because I don't know that I could explain it to [a] farmer the way that I used to.

The breadth and complexity of the work covered by the NRCS means that individual staff are unlikely to have answers to all the questions that a client might have or that are relevant to the planning process, thus often requiring answers to be sought from other staff which can potentially cause delays and frustrations for clients trying to get answers or staff trying to carry out workload. The breadth of NRCS programming and function can also mean that the agency may not be optimized to run the multiple different programs.

We have lots of technical expertise across lots of disciplines... but there are some things we're not really geared to do. Like emergency watershed stuff. We have emergency watershed programs, but we're not... like the way that those programs operate, it's not conducive to it being an emergency. And that's like one example where we do things and we get into realms cause we're so spread out that like FEMA would be better at doing that than us. But we have parts that FEMA doesn't have, which is what makes us be able to do it.

### High Workload Standards & Demands

Numerous interviewees noted that workload demands associated with NRCS projects, especially on the administrative and paperwork side, can be challenging. Especially when staff capacity is limited. Several interviewees expressed a sense that work demands associated with a NRCS-funded project may sometimes be excessive, citing high paperwork burdens (for staff and clients), demands for heavy staff involvement on projects, overly stringent practice standards & technical specifications, and the many cogs in the NRCS conservation process, as sometimes detrimental to being able to get more conservation on the ground. One interviewee remarked, “It just doesn't sit well with me why we seem to have to be so hands on.”

It was recognized that high standards and procedural steps can contribute to the quality of the work (though not always), but they can also just add to transaction costs, discourage potential clients, and limit the amount of work that NRCS and staff can accomplish.

We sometimes make things too technical and too hard to do as an agency.... I think sometimes if we had less standards we would do more work. Maybe not do it as good, but we would do more of it.

#### Bureaucratic/Political Strings & Requirements

In the allocation of public funds to the NRCS certain strings and stipulations are attached for both the use of money and associated reporting requirements. Strings are important to make sure that money is spent appropriately and as intended, which one interviewee captured saying, “We have responsibility to the taxpayer. Things have to be auditable and [show] that we're not just giving money away.” However, several interviewees also spoke to the challenges associated with some of the bureaucratic and political strings and requirements, and noted that some of the strings may not make sense depending on the locale, and may detrimentally impact the efficiency of the agency in getting work done.

We've got all these payment limitations. We've got all these rules that have to get met, which means you have to file paperwork.... The processes are painful.

[Farmers] They're working in a natural system, which doesn't exactly follow paper stamp timelines.... [They're] dealing with weather, dealing with climate change, dealing with rainy seasons, dry spells, droughts. And our [NRCS] established processes to meet our audit requirements and financial obligations to the taxpayer are not set up to actually serve the client as best as we could [in those conditions].

Bureaucratic and political strings and requirements can lead to increased transaction costs and workload timelines which may not be appropriate or suitable for the nature of the work being done or aligned with clients' interests. Paperwork burdens associated with these strings were identified as a major source of client frustration. Staff indicated that



they work to limit these strings and requirements as much as possible while still meeting the minimum requirements.

I cut as much red tape as possible, I don't put out any additional instructions beyond that which is really, absolutely mandatory by headquarters. Unless it's like a glaring issue that we just cannot stop. I take as much feedback as I can.

#### Slow Adoption of Technological & Agricultural Innovations

Several staff identified the slow adoption of technological and/or agricultural innovations as a limitation to agency efficiency and its ability to promote the most up to date agricultural innovations and advancements.

We are the federal government and oftentimes we face the inability to adopt technology as we should. And I think our inability to adopt technology at the speed at which innovation in the private sector is moving hinders our ability to really do a good job. Sometimes it seems like we're 5 to 10 years behind the private sector—I think that that's one of our biggest weaknesses... We are the federal government, and we need to make sure that we're protecting our clients' information, but sometimes that gets in our way of really adopting the most innovative technologies when it comes to balancing working lands and a healthy environment.

Staff indicated that this slow adoption of technology and innovations is sometimes reflected in the practices and types of information that are and are not available to clients through NRCS technical and financial assistance. It also sometimes means that staff are using tools and systems to carry out workload which may not be as efficient as they could be.

#### Limited Agency Visibility

One staff mentioned the limited visibility of the NRCS resources that are available to people saying, “Our greatest limitation is our visibility. People don't know who we are.” NRCS largely relies on word-of-mouth outreach about programs and services. Numerous staff suggested that this limited outreach hinders the ability of NRCS to reach more people and get more work done, and that this limited visibility is a major limitation for the agency. People can't take advantage of NRCS assistance if they don't know it's there.

For the majority of producers that I've met, they have strong values. I just don't know that they know that there's this agency out there that... has the financial means to help them do what they want to do.

*Table 10. SWOT around NRCS limitations & challenges \**

<b>Strengths</b>	
<b>Weaknesses</b>	Shortage of staff; breadth & complexity of NRCS workload; high workload standards & demands; bureaucratic & political strings; slow adoption of technological and agricultural innovations; and limited agency visibility were all identified as limitations to the agency’s ability to carry out its mission and workload.
<b>Opportunities</b>	<i>Minimizing and correcting agency weaknesses would allow for improved NRCS efficacy, efficiency, and impact.</i>
<b>Threats</b>	<i>Doubling down on agency weaknesses or failing to address agency weaknesses may lead to diminished ability for NRCS to reduce and/or address relevant natural resource concerns.</i>

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

## Perceptions of Client Experience

**Background:** Financial considerations are often a top reason for farmer participation in programs, many of the farmers participating in USDA-NRCS conservation programs have some sense of stewardship/responsibility and use programs to overcome cost implementation barriers and/or receive some technical guidance. Farmers have cited program simplicity and flexibility, good communication with and trust in program staff, appropriate payment rates, equitable distribution of payments, appropriateness of practice on their operations, and adequate availability funds all as critical to successful and usefulness of the programs. (Lute et al., 2018; Medina et al., 2020; Ranjan et al., 2019; A. P. Reimer & Prokopy, 2014; A. W. Thompson et al., 2015; C. D. Thompson et al., 2022; A. White & Faulkner, 2019; Wilbur et al., 2021) Farmer environmental leaders in Iowa identified conservation programs as playing an important role in incentivizing conservation efforts (Medina et al., 2020).

There has been a range of different recent research looking at Vermont farmer perspectives around stewardship, as well as their perceptions of and participation in USDA-NRCS and other PES programs (Del Rossi et al., 2021; Friedrich et al., 2022; White et al., 2022). Many Vermont farmers have strong stewardship ethics and want to be good stewards of their lands and communities but are limited by their financial capacity to do so (White et al., 2022). Vermont farmers’ primary motivations for enrolling in conservation programs are to be good stewards of

their farm, good stewards of the environment off their farm, and for financial reasons (White, 2022). In working with PES and agri-environmental programs, Vermont farmers have expressed appreciation for financial & technical assistance, and the help program staff provide. Identified deterrents to program participation and sources of frustration for farmers include high administrative burdens, loss of privacy, high program complexity, and the sense that many programs offer little support to those trying to be proactive and/or are already good stewards of their land. (Friedrich et al., 2022).

Farmer perspectives of payment for ecosystem services programs largely align with what interviewed NRCS-Vermont staff perceived to be farmer perspectives of NRCS programs (discussed in section below), based off a comparison of the content from these interviews and content from interviews with 35 Vermont farmers earlier in the year about PES programs. (Friedrich et al., 2022). However, there is evidence of some misalignment including that farmers seemed to place more frustration, than staff seemed to perceive, around 1) the inability to access program funds, 2) confusing language and requirements within programs, and 3) the sense that programs are not set up for supporting existing good stewards.

Interviewees were asked to imagine the experience of a typical client interacting with NRCS and NRCS programming. Staff were asked to things clients appreciate, as well as things as they might find frustrating or challenging.

*Table 11. Interviewee identified sources of client appreciation & frustration*

Sources of Client Appreciation	Sources of Client Frustration
<ul style="list-style-type: none"> <li>- Technical &amp; Financial Assistance</li> <li>- One-On-One Service</li> </ul>	<ul style="list-style-type: none"> <li>- Paperwork Burdens</li> <li>- Complexity of Programs &amp; Process</li> <li>- Slow Process &amp; Delays</li> <li>- Limited Staff Knowledge</li> <li>- Inability to Access Funds</li> </ul>

Sources of Appreciation

Staff thought the things that clients most appreciate about NRCS are the technical & financial assistance and the one-on-one service which NRCS provides.

- Technical & Financial Assistance
- One-On-One Service

### *Technical & Financial Assistance*

“Producers are almost always appreciative of financial assistance and technical assistance,” one staff reflected. Interviewees widely acknowledged that the prospect of this technical and/or financial assistance on their farms and/or land is what brings most clients in the door and what keeps them coming back.

We have financial assistance funds to invest in their operation when they make decisions about how they want to improve their operation and farm... A lot of people really appreciate that NRCS is willing to invest in those recommendations that we're making, so that their operation does improve over time.

Staff thought that it was important, both for farmers and the efficacy of NRCS work, for the agency to offer both technical and financial assistance. Staff acknowledged that some farmers differentially favored or were interested in financial versus technical assistance, depending on their experience, interests, and context.

[Whether technical or financial assistance is more valued] depends on the operation. Let's say you're a dairy farmer and you are generations in this business. Honestly, you know more about farm production, probably conservation, than a large majority of NRCS staff. What you need help with is money. You need money to run this manure from one lagoon to another...So, if you're a producer that's experienced in agriculture you kind of have that idea of what needs to happen on your operation, you love our money. Let's say...you're just new into agriculture. I think you really, really value the technical assistance. And you'll take the money, too, but it's that technical assistance to help them improve their operation that I think they really value.

### *One-on-One Service & Communication*

Numerous staff mentioned that one-on-one support and responsive communication from field office staff is highly valued by many clients. “They [clients] like the one-on-one service. Most of them like someone coming out and being able to put a face to a name.” Staff thought that clients generally appreciate the hands-on approach used by staff and the opportunity to develop a personal relationship and trust.

Several staff articulated that open and timely communication as something that producers greatly valued. One interviewee remarked, “the fact that we are open and honest, and try to connect the best we can with our clients [is a big thing that our clients appreciate].”

Even if it is not the answer that the producer may want, as long as you are communicating with that producer timely and the communication is open— you're being transparent— they're usually okay and more amicable with the news rather than if you're not telling them, or if you wait till the last minute and they're made aware afterwards. Because you're not giving them the opportunity to make any adjustments that they may need for their livelihood or any decisions that they may need to make.

### Sources of Frustrations

Staff also identified aspects of NRCS programs and process which clients may find sometimes challenging or frustrating. Perceived sources of potential frustration included:

- Paperwork Burdens
- Complexity of Programs & Process
- Slow Process & Delays
- Limited Staff Knowledge
- Inability to Access Funds

### *Paperwork Burdens*

“The number one complaint is there's too much paperwork to get in the door,” one staff said. The paperwork burden for clients was a concern mentioned by nearly all interviewed staff, and was identified as one of the largest sources of client frustrations. “We just have to figure out how to make the paperwork process easier,” reflected another employee. Several staff noted that they are already doing work to streamline the paperwork process as much as possible within the abilities of their positions. One staff noted that some of this paperwork burden on farmers comes from the Farm Service Agency side of things— the sister USDA agency that determines producer eligibility— rather than directly with the NRCS.

The Farm Service Agency is actually the agency responsible for determining producer eligibility. And they have all this paperwork. And we can't work with the farmer until they square that paperwork away with Farm Service Agency. But they [clients] think it's us— rightfully so. But that's their biggest thing. There's gotta be

a way to streamline the Farm Service Agency intake process. They should not have to fill out six, seven different forms to get a client ID.

### *Difficulty Understanding Programs & Processes*

Numerous staff articulated that the complexity and steps involved in NRCS programs and practices can make it challenging for both clients (and sometimes staff) to understand particulars of the process and function. This lack of understanding can feed into client frustrations and confusion throughout the process.

Understanding of how programs work [can be a source of frustration for clients]. I'm pretty sure a lot of our new clients...may have some type of a disconnect as far as like you know, 'OK, well, I've submitted my application and you sent me this. But what's going on now? You're ranking my application, do I need to submit something? Do I need to do something? I don't know what's going on.'

Trying to understand the practice standards for all the practices were recommending you do, and the time frames, and the contracts, and the payments, and stuff—all of that, I think, can be overwhelming.

### *Slow Process & Delays*

“Sometimes the time frame it takes us to help the producer is longer than they would want it to take,” one interviewee noted. All NRCS assistance must go through a certain process in order to meet NRCS technical specifications, audit requirements, and financial obligations. One interviewee captured this saying, “We can't just sign a contract, get the money, and go to work. There's a certain process you have to follow. And they [clients] can't get paid until the practice is installed.”

Several interviewees noted that due to a combination of the complexity and requirements of the planning, contracting, and obligation process—coupled with limited staff time and capacity—it can take a long time for clients to be able to move forward on projects. This sometimes-slow process to get contracts and complete projects was something that numerous staff identified as a source of frustration for some farmers, especially when it holds up projects that farmers are anxious to complete or when they are waiting on cost reimbursement.

I know a lot of producers come in with the idea that they can apply this year and potentially be funded by next year, which does happen sometimes, but it's not something that happens as often as I feel like it could because of [our] being understaffed. So that probably that's probably a frustration of most of our clients.

In an average year, engineer-wise, we'll go out and meet with the farmer and develop a plan. And then by the time the information and that plan gets loaded into CART and gets ranked, it's too late in the year to actually do anything with it,

so we have to wait until the following spring before anything in that plan actually gets implemented. And by that time, you know, half your farmers have changed your mind. They really don't want to do it that way anymore.

#### *Limited Staff Knowledge*

Several interviewees mentioned how the complexity and breadth of NRCS programs and work likely means that local staff may not have immediate answers to every question about programs and practices that clients might have, or they may not be as well-versed in a topic as a client, something which may be frustrating for clients, especially when it leads to delays in getting answers.

NRCS is not like some other local NGO that is made [to] solely focus on one thing. We focus on several things, which is resource concerns... we have 47 of them. So, an individual or someone may come and say, "Hey, I got this concern." And their focus is only on one. So there may be some individuals at time that may have more knowledge about a subject that NRCS would have — at least locally... So they [clients] may get frustrated in that.

#### *Inability to Access Funds*

Several interviewees mentioned the inability of clients to get access to financial assistance they want can also be a major source of frustration.

**About Accessing Financial Assistance:** To qualify for financial assistance (FA), producers must first be recognized as eligible by the Farm Service Agency. Eligibility is based off of a combination of factors including income, amount of USDA funds received in past (there is an upper limit), legal access to land, and adherence to some USDA requirements (i.e., there are management restrictions for highly erodible land). While eligibility requirements have changed to better accommodate more types of farmers, eligibility requirements still excludes some types of producers, especially as there are sometimes delays in FSA staff recognizing and rolling out the changes about eligibility requirements in every field office. On top of eligibility, most funds are competitive, and depending on the 'ranking' of a producer's application and how competitive it is with others in the same funding pool, the contract may or may not be funded. This means some clients may not receive desired financial assistance, even after going through the entire application process. NRCS metrics used to determine how highly applications rank in terms of environmental bang versus buck, may lead to certain farm types being favored over others.

*Table 12. SWOT from staff perceptions of client perspectives\**

<b>Strengths</b>	Staff identified the technical & financial assistance and the one-on-one service offered by NRCS as what clients perceive to be NRCS strengths.
<b>Weaknesses</b>	Staff identified paperwork burdens; complexity of programs & process; slow process & delays; limited staff knowledge; inability to access funds as what clients perceive to be NRCS weaknesses
<b>Opportunities</b>	<i>NRCS has the opportunity to lean into the facets that clients appreciate and are benefitted by, and reduce the sources of client frustration.</i>
<b>Threats</b>	<i>The strength and efficacy of the NRCS, and clients receptivity to NRCS, could be undermined by the diminished role of identified strengths and heightened burdens of aspects which are seen as frustrating.</i>

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

## Under-served Demographics & Farm Types

**Background:** The wide diversity of audiences and contexts across US private lands make it difficult to create programs and assistance which equitably address concerns and serve interests in all these different contexts. It is legally recognized that USDA has historically discriminated against select demographics, including Native American and African American farmers. The USDA-NRCS allocates special pots of programmatic money called ‘funding pools’ which can only be accessed by designated client demographics who are historically under-served (i.e., beginning, limited-resource, and Native American farmers), as way of addressing past discrimination and issues of inequity. Funding pools also exist for specific land uses (i.e., cropland, pastureland, or forests), and other special national or local initiatives (i.e., high tunnels or organic farming).

There has been increasing NRCS effort to reach wider audiences, but it is generally recognized that historic and ongoing factors around program design, assistance, outreach, and agency culture have resulted in some audiences and demographics receiving more benefit from NRCS programs and assistance than others.



NRCS-Vermont staff were asked about whether there were any people or farm types which they felt were under-served and/or under-reached by current NRCS and other agri-environmental programming in Vermont. Staff brought up a variety of different demographics and farm types which they thought that NRCS and/or other agri-environmental organizations could do a better job at reaching. Staff most frequently brought up the under-service of small-acreage & community-scale farmers. Interviewee answers included:

- Urban, Small Acreage, & Community-Scale Farms
- Controlled Environment Agriculture
- High-Diversity Farms
- Select Client Demographics

### Urban, Small-Acreage, & Community-Scale Farms

Interviewees identified that NRCS has historically focused on large-acre producers. One interviewee observed, “We work with the large farmers all day long— they’re our bread and butter... At some point, we’ve probably interacted with every single one of them in some which way or form.”

Nearly every interviewee brought up the need to better reach and include urban, small-acreage, & community-scale farms in Vermont with NRCS programming, noting that these farmers have not been able to benefit as much from NRCS programs as more ‘traditional’ large-acre farmers.

I know here in Vermont, the small-scale producer [is sometimes left out]...I hear all the time from small acreage operations that are doing a great job producing food and really doing a great job for communities [that they] have had limited access to our programs.

Staff pointed to a variety of reasons for why small-acreage producers have not received as much assistance from the NRCS. They suggested that 1) limited NRCS budget has led to the focus on large-acre farms which often provide more environmental ‘bang for buck’ according to the metrics NRCS uses; and 2) some cultural practices and programmatic definitions and design aspects have limited many small-acreage farmers from accessing NRCS resources, especially financial assistance. However, nearly every interviewee noted the need to increasingly and better work with small-acreage farms/farmers as something they personally believed in, as well as something which NRCS is increasingly working on the national scale.

We in Vermont need to do a better job of embracing community-scale, or small-scale, agriculture. I think small-scale agriculture will and has to play a bigger role

in Vermont than it currently is, and so I think all of the agricultural conservation entities really need to embrace and figure out how we can shift and adjust our programming, so it's more open to small-scale agriculture.

Staff noted a variety of different shifts and changes that need to occur in the agency to better serve these community-scale farmers including 1) Outreach to and Education of Staff & Producers; and 2) Programmatic Changes.

- 1) Outreach to and Education of Staff & Producers:** Several staff suggested that the failure for small-acreage farmers to be included in programs is a primarily a matter of education and outreach to both NRCS staff and farmers. Small-scale, community-scale farms are not the clientele with whom NRCS has historically done the most work with, so there needs to be work done for staff to recognize and learn to work with these different farm types & farmers, as well for small-scale farmers to learn about NRCS programs and how they may be able to help their operations.

I know in Vermont there's still the culture that, unless you're a dairy, you're not a farm. So we're missing a lot of those small farmers— the llama farmers, the a-couple-of- burros [farmers].... the small operations that are in someone's backyard. We're making great strides in just telling people like, 'Yeah, you're a producer if you're selling at a roadside stand. You don't have to have a contract with Hannaford.' [And saying to our NRCS staff] 'They're a farmer. You need to work with them to the same extent.'

- 2) Programmatic Changes:** Several staff suggested that the 'under-service' of small-acreage farms and farmers, isn't just a matter of limited outreach. They noted that some aspect of NRCS programs and function may make participation in NRCS more challenging for small-acreage & diverse farms/farmers to engage and receive benefit from interactions with the NRCS. Two staff noted that they thought the NRCS focus on acres, for payment rates and as success metrics, disfavored the inclusion of small-acreage farms from NRCS assistance. They said increased outreach needs to be coupled with some changes to program and payment scenarios as well, in order to reach these demographics.

I think sometimes our [the NRCS] business model has really been a Midwest of the US [model]—you know Iowa, Indiana, the core Midwest. It's been an acreage-based business model. So the larger operation is, the easier it is to get in this system. And I think sometimes we just need to spend more time to invest and make sure that we're conducting outreach, and everything that we're doing —our business tools, our programs —are designed in a way that it's easier for those smaller scale operations to walk in the door and then walk out with something that's beneficial for them... I think the way that NRCS measures success, so our key performance indicators are acreage based goals and anytime you have acreage based key performance indicators, the system itself will naturally discriminate on smaller size, less-acreage based operations. And I don't think it's ever been intentional because that's what Congress has asked us to do. They've

asked us to report success in acres, and so I think Congress just really needs to figure out what success looks like for the agency and agriculture in the States and make sure that the successes they're looking for enable the agency to deliver the programs equitably.

Several noted that NRCS is increasingly trying make programs more accessible and beneficial for small acreage farmers and have already incorporated some positive changes, but there needs to be work to educate NRCS staff and potential clients about changes.

#### Controlled Environment Agriculture

One interviewee mentioned there is a general need to better work with producers working in controlled environments (i.e., greenhouse or hydroponic systems) and their resource concerns, for both NRCS and other agri-environmental organizations in Vermont.

We're starting to see controlled environment agriculture, so producers that are within buildings. I think we could probably do a better job at assisting those producers with their resource concerns... And I don't think that's just NRCS, I think that's an overall state thing as well.

#### 'High-Diversity' Farms

Several staff pointed out that some of the challenges of the NRCS in working with farms with high crop diversity, noting that aspects of NRCS programs and payment rates are often more optimized for select crops and low-diversity cropping systems. Greater crop diversity within an operation can often lead more complex interactions with NRCS programs, and more onerous paperwork requirements. One staff shared a story to illustrate the challenges of trying to apply NRCS standards to develop an irrigation system for a diverse market garden:

We worked this group...that was all people from parts of Africa, who grew all their indigenous vegetables— which are stuff I never heard of before. But like a million different kinds of vegetables, and we tried to develop a micro irrigation system for that... I had like 72 zones on it because they [the crops] were all different water requirements that had to be done in the system. And it ended up to be a way too complicated for them [the producers] ...So we spent like 2 years of working on that and they [the producers] were like, 'We just wanna turn on the hose and water with the hose because we don't understand how we're going to do that [the micro-irrigation system].' That's kind of what open my eyes to like how complex our stuff is sometimes.

## Client Demographics

Staff called attention to the under-service of particular producer & client demographics, and the need to better reach and serve certain groups of people with NRCS programs. Employees noted that there has been increasing efforts to reach previously under-served or excluded client demographics, but generally recognized that there is still great room for improvements. Interviewees identified needing to better reach and serve:

- BIPOC Producers
- Resource-Limited Producers
- Women & LGBTQIA+ Producers
- Producers of Different Cultural & Linguistic Backgrounds

### *BIPOC Producers*

Several interviewees noted some of the positive work that has been done in reaching BIPOC producers. One interviewee said, “I feel like there's a there's a heavy push for people of color, there's BIPOC initiatives pretty much all across the state—which I love to see.” Another acknowledged the progress that has been made, but noted the work yet to do saying, “I think that sometimes we don't take advantage of the opportunities to find and reach out to some of those producers who are non-white.”

### *Resource-Limited Producers*

Through the course of the interviews many of the interviewed staff alluded to the struggles of farms and farmers to be financially viable and stable. Several staff identified inadequate financial means as one of the greatest barriers to conservation and practicing sustainable agriculture in Vermont. Because of limited economic means, several staff suggested NRCS cost share rates may not be sufficient to enable resource limited farmers to adopt certain practices or put in infrastructure, even if they are interested in doing so. One staff mused, “Maybe NRCS should be considering 100% cost share on some of these historically underserved producers. Maybe that would help get more of them in the door and help them out that way.”

### *Women & LGBTQIA+ Producers*

One staff brought up that they would like to see women and LGBTQIA+ producers better reached by NRCS and other agri-environmental programs in Vermont, and elsewhere. This

individual suggested that the development of a funding pool specific for these demographics would be helpful.

I would say women and queers [(sic. LGBTQIA+) producers could be better reached by the NRCS]... It seems like a lot of different groups have a lot of different avenues to be able to get some resources and get some assistance. But I do feel like some more pressure can be put on [reaching] women and queers [(sic. LGBTQIA+ producers].

Producers with Different Linguistic & Cultural Backgrounds

Several staff also mentioned the added difficulty —for both staff and clients—associated with working with people with different cultural backgrounds and native languages. Cultural and linguistic differences between staff and clients, can impact outreach and make programs and practices harder to carry out effectively. Several interviewees noted that NRCS in Vermont needs to work to make its services more readily and easily accessible to those of different linguistic and cultural backgrounds.

We will see more diversity in our agricultural producers out there, those who own and produce [on] land. And so we'll need to make sure that our programs fit that changing dynamic as we move forward.

The complexity of our programs and our practices can make it difficult [for farmers to work with us] ... and it's [that difficulty is] even more amplified for them [farmers] when you get into like limited resource producers and producers where English isn't their first language. Trying to navigate that with those added complexities is even harder.

Table 13. SWOT around underserved demographics \*

<b>Strengths</b>	Several interviewees mentioned that NRCS programs are well-suited to benefit and help large-acreage operations which grow or produce certain types of products.
<b>Weaknesses</b>	Staff identified numerous farm types which are under-served by NRCS programs including urban, small acreage & community scale farms, controlled environment agriculture, and high-diversity farms. They also mentioned numerous client demographics including producers of color, resource-limited producers, women & LGBTQI+ producers, producers of different cultural & linguistic backgrounds

<b>Opportunities</b>	<i>NRCS has the opportunity to work with a wider diversity of audiences, and to help redistribute resources in ways which effectively address environmental issues and/or issues of equity.</i>
<b>Threats</b>	<i>NRCS redistribution of resources may feed into issues of inequity and/or fail to address resource concerns most efficiently. There may be some tradeoffs between equitable distribution of funds and most environmentally beneficial distribution of funds.</i>

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

## NRCS Impact on Land Managers' Conservation Mindsets

Interviewees were asked whether participation in NRCS programs typically changes how land managers think about and value conservation. Interviewees had a range of different answers and thoughts on if, when, and, how interactions with NRCS impact land managers thought about conservation. It was generally recognized that NRCS assistance can help land managers better understand and value conservation through technical assistance and the collection of data— for both environmental and economic reasons— if and when they are open-minded. However, NRCS assistance has much more limited impact on conservation mindsets of those who are not already open to the merits and possibility of practicing conservation. Interviewees widely acknowledged that regardless of the producers' perceived value of conservation, conservation practices needed to fit in with the economic viability of their operation and their financial means.

Farmers generally approach NRCS and conservation with some combination of economic and/or environmental motivations. Several interviewees acknowledged that most farmers and land managers already care about their impacts on the environment and their communities, in addition to viability of their own operations. One interviewee noted this saying, “For the most part, I really believe that the producers are trying to do good.”

In the course of NRCS assistance, staff share information with clients which may help clients better understand the relationship between management practices and their associated environmental impacts and outcomes on their land, potentially helping them to develop a better eye for conservation concerns that they may have not been tuned into before. This assistance and information can change client perspectives on conservation and their land.

A producer might come in wanting one thing and focusing on one thing, but as they work with our conservation planners and look at it [their operations] from more of a holistic or systematic conservation standpoint, they [producers] learn

more about their operation and the things that they could do and, therefore, may be more apt to adapt better conservation practices.

When we go out into the field and we have that one-on-one visit with the producer, we're collecting data. So we're running a lot of tools and we're sharing with producers the results of that data... and when they see some of the things that we're recommending, absolutely, I think it changes their mind...they see things differently. Especially if they're newer into conservation, I think NRCS really has the opportunity to really change and influence. But it all comes down to that data.

However, several interviewees acknowledged that not all clients are looking to learn or be better conservationists. Some have other reasons for interacting with the NRCS. Several staff mentioned that some farmers are pushed there due to regulations from other agencies, like the VAAF, making the clients interactions with NRCS only quasi-voluntary. It was noted that, in these situations, producers are often only immediately interested in getting the regulator off their back and are not very receptive to conservation or any wider ideas and suggestions from staff. One interviewee illustrated this by saying,

[Alluding to pressure from regulators] We do have a good handful of farmers that come through the door with a gun held to their head, and to be perfectly honest with you, if they're truly resistant...yeah, they'll correct that one problem that the agency, the regulator, is complaining about but they're not really looking to improve the overall stewardship of their farms... So yeah, we got them in the door.... but are we actually really doing a holistic improvement to the farm?

Several interviewees noted the bottom line was nearly always a concern to clients & producers, regardless of the strength of their stewardship ethic or interest in conservation. One interviewee observed, "It really comes down to economics." Conservation needs to fit in with the economic viability of the farm, because peoples' livelihoods depend on it. Several staff mentioned how NRCS can help farmers see the business-sense of certain conservation practices, even those without strong preexisting stewardship ethics, by helping them to realize how conservation might benefit them.

'Hey, wait a minute here. If I manage my nutrients correctly, I don't have to buy as much fertilizer. If I manage my nutrients correctly, I'm not going to get a visit from a regulatory agency every week and get fined every week. If I manage my nutrients correctly. I'm not going to get complaints from my neighbors—I've got to live with these people.'

However, despite the noted potential to help clients better understand their potential impact on agri-environmental concerns, as well as to see some the potential economic value of some conservation practices, several of the interviewees questioned how much of an impact NRCS had on land manager mindsets, noting out how assistance doesn't always lead long-term behavior change. Several staff pointed to producers who merely use NRCS assistance for one-and-done

changes and others who discontinue conservation practices as soon as funding ceased as evidence to how participation in NRCS programs and assistance does not always lead to longer-term changes in use of best management practices or interests in conservation.

You're always gonna have those farmers that they come in, they get the money because it's available. And then once the practice installed, they're just going to continue to do their own thing.

We see a lot of repeat clients. And you would think that at some point they would pick it up and run on their own... NRCS has what are called 'management practices' which you can contract for three years, but the expectation is it changes our producers' behavior to do it on their own [after the three years are up]. And guess what, second you pull that government money, [they're] back to not planting cover crops. So I don't think their behavior changed. And...they can't go past 3 years [of payment for practices]. I'm sure it's out there—I've talked to and met great people that it [NRCS assistance] has changed their behavior. But a lot of it, I think it's if you don't pay for it, they won't do it.... It hasn't changed their behavior if you kept them in no-till for three years and then they go right back to tillage. You didn't teach him anything in that interim time. But again, maybe three years wasn't enough for them to see the benefit either?

Table 14. SWOT around land managers' conservation mindsets \*

<b>Strengths</b>	NRCS assistance can help clients by helping them understand connections between agricultural practices and environmental outcomes, which can allow clients to be better conservationists. It can also help producers see potential economic benefits from practicing conservation.
<b>Weaknesses</b>	NRCS assistance generally does not seem to drastically change value systems or perspectives on conservation for those who are not already interested in or open-minded towards conservation.
<b>Opportunities</b>	<i>Continue to provide education about conservation, citing both environmental benefit and potential economic benefit in order to help a wider audience see the value of conservation.</i>
<b>Threats</b>	_____

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

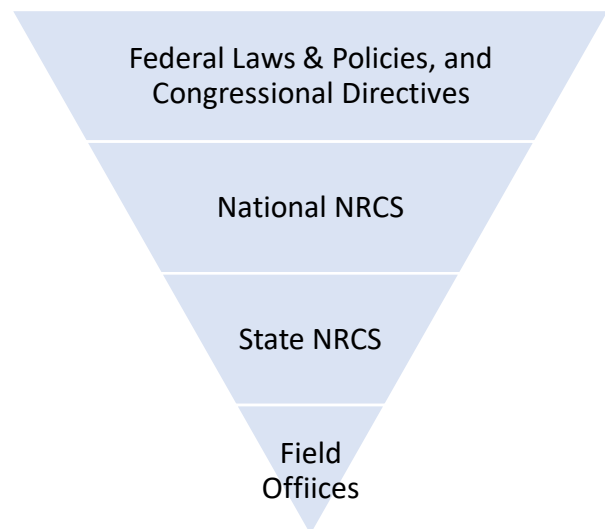


## Ability to Create Change within NRCS

**Background on NRCS Structure:** The NRCS is an agency of the United States Department of Agriculture. It is the largest of the three sister agencies (FSA, RMA, and NRCS) within the USDA's Farm Production and Conservation (FPAC) branch. Most of the funding for NRCS conservation programs comes through the Farm Bill. The Farm Bill is a large, omnibus piece of legislature that is passed every 5 or so years which provides funding and governance for a variety of nutrition and agricultural programs. Due to the expansive nature and wide interests effected by the Farm Bill, the allocation of funds within the bill is a high profile, politically charged event which is highly contested by a wide array of different stakeholders. The directives and allocations passed by Congress in the farm dictate how funds should be spent. The standing Farm Bill was passed in 2018, the next is due for 2023.

Within the NRCS, there are national, regional, state, area, and field office levels. Within the parameters of allocated funds and all the connected stipulations from the Farm Bill and other funding sources, as well as all relevant federal laws, NRCS works at the national level to make additional determinants for program function, which are passed down to the state level. States— within the parameters passed through in the Farm Bill, decisions made by national NRCS and, relevant state laws— make additional determinants for program function, which are then passed down to field offices to carry out the programs.

Interviewees were asked about the extent that they felt they had the capacity to incorporate feedback and suggestions from staff and/or clients, and make changes to NRCS programming and function. Individuals felt they had a varying amount of ability to create changes to NRCS programming and function, depending on their positions and at what level the changes of interest needed to be made. Interviewees generally felt that they had influence in helping to make local changes—within the parameters of what can locally influenced— but much less influence on many of the national decisions that impact local NRCS function.



Local/State Level

Interviewees— many of whom were affiliated with the State leadership team— generally felt that they had influence and say in decisions and changes that can be made on the local or state level. They felt that their voices were generally heard and that they, in turn, did their best to incorporate and share the feedback and ideas from other staff and clients. Staff generally felt that on the state level, feedback from staff and clients was sought and incorporated as best as it could, if and when possible.

I do feel like the suggestions that we provide during these meetings are being heard and if at all possible—if it's not something that has to be addressed nationally, if it can be done in state— they [State Staff] are making those changes.

We do get a lot of feedback from the field staff and field operations about program inputs, and I think we are pretty good as a state about incorporating those.

National Level

In contrast, most staff felt they had relatively limited influence on the national level decisions, laws, and policies. Numerous staff indicated that many aspects of NRCS practices and policies are largely beyond their direct control, and that they generally just had to go along with the decisions, policies, programs, and rules coming down from Congress and/or the National level of NRCS.

I get the feeling like a lot of our policies and that are out of our control. You know, every once in a while, if something's really wonky, I guess we can write a white paper and send it up to our national headquarters. But the common answer is, 'Well, that's the way it is in policy. There's nothing we can do about it.'

Several interviewees expressed frustrations with some of the policies and decisions, and that a lot of major ongoing sources of frustration coming from field office staff center on perceived changes that would need to be made at the national level.

The program requirements for certain things that a lot of people dislike are program requires that our [national] agency put in place and we can't change at the state level.

Locally we like to take feedback and try to incorporate as much of the feedback as possible. But a lot of that feedback or a lot of the suggestions are out of our control.

Several staff did speak of avenues in which they were working for changes on the national NRCS level, including through working groups and steering committees which have the potential to influence and inform local and national policy and programming.

Several staff brought up how the Inflation Reduction Act, passed in August 2022, allocated approximately \$20 billion towards USDA-NRCS conservation program. As the Act had only been recently passed there was much uncertainty surrounding that money and how the agency would be directed to and be allowed to use it, capturing a sense of the limited control and influence that local staff had on the processes and decisions which may have major repercussions for them.

Table 15. SWOT around interviewee’s perceived ability to create change in agency \*

<b>Strengths</b>	There is some ability to incorporate changes to NRCS programs and assistance based on local priorities, and feedback from staff and clients. Interviewees generally felt that they incorporated feedback into the workload as best they could, and that other staff tried to do the same, whenever possible.
<b>Weaknesses</b>	Most staff noted they had comparatively limited influence on the national level decisions, laws, and policies. Numerous staff indicated that many aspects of NRCS practices and policies are largely beyond their direct control, and that they generally just had to go along with them whether or not they seemed optimal or appropriate to the context.
<b>Opportunities</b>	<i>Staff have some ability to incorporate some changes on more local levels to improve program function. Some opportunity for improvement is on local levels. The brunt of opportunities for improvement on national levels. Influence and feedback should be used, when possible, in order to improve NRCS function.</i>
<b>Threats</b>	<i>Staff have limited input on directives coming from Congress and/or the National level, which may mean that said directives are not locally appropriate or optimal for the situation.</i>

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

NRCS frequently works with partner agencies and organizations to get conservation on the ground, on both national and local levels. Numerous staff talked about the importance of partnerships in order to meet shared goals and interests. Interviewees were asked about other entities or programs in Vermont which have been, or have been the potential to be, particularly effective in supporting land stewardship and complementing and/or augmenting the work of the NRCS. Partnerships with and complementary work done by other entities was highly valued by most interviewed staff. Interviewees also reflected on some of the challenges that come with those partnerships.

- Valued Partnerships
- Challenges around Partnerships

### Valued Partnerships

Interviewees most frequently mentioned the value of partnerships with NRCS and Vermont's Agency of Agriculture, Food & Markets (VAAF) and the Natural Resource Conservation Districts (NRCD). Numerous other organizations and programs were also mentioned though.

- Natural Resource Conservation Districts
- Vermont Agency of Agriculture, Food & Markets
- Other Partners & Complementary Programs

### *Natural Resource Conservation Districts*

**Background about Conservation Districts:** The National Association of Conservation Districts (NACD) is a nonprofit organization in the US which represents the Conservation Districts nationally. Conservation Districts are local units of government which can be found in most US counties. Established under state law, they are comprised of a board of locally elected volunteers called commissioners who help guide local conservation efforts. Conservation Districts may also have staff— some have many, others none. Differences between state legislature around conservation districts and/or number of staff, lead some conservation districts to be identified as comparatively strong versus others weak, across county and state lines. Vermont's Conservation Districts are known as Natural Resource Conservation Districts (NRCD). There is a NRCD located in every county. NRCD staff work with farmers, private landowners, government agencies, and partner organizations to get conservation on the ground and address local natural resource priorities. Conservation Districts often work closely with NRCS staff and programs across the US, often within NRCS field offices.

Numerous staff called out the value of the Natural Resource Conservation Districts, specifically for their ability to foster more locally led conservation and advocate for and connect with farmers. One interviewee remarked, ‘The Conservation Districts are our best friend... We connect with producers once they reach us, but I feel like the Conservation Districts actually reach out to clients.’ Several staff members noted that many of the NRCDs in Vermont have limited staffing and funding, and asserted there would be great potential benefit in investing further in NRCDs and scaling up their presence and influence. Interviewees saw the NRCDs as strong allies with NRCS and were interested in seeing them strengthened and further leaned on going forward.

The Conservation District is always a good potential partner. I originally came here from [another eastern state], where the conservation districts were so strong. Some of the counties had like 30 some odd staff on the conservation district. Here [in Vermont], you're lucky to have a half-time manager. But the potential there is so great. These [Conservation District staff] are people that can actually be on the ground, front facing the land owners and trying to encourage land owners to use more of these programs... and that advocate for the farmer.

I think the one untapped resource in Vermont...are the Natural Resource Conservation Districts... If we can figure out how to really strengthen the districts and utilize that local expertise by that producer elected board. And all of these state and federal agencies are coming to those conservation district boards and soliciting feedback from them and tiering to their priorities, I think the sky is the limit when it comes to really protecting and conserving Vermont's working lands... They're super unfunded, they don't have a lot of resources. But I think they're definitely a key in making sure we're doing a good job moving into future generations.

*Vermont Agency of Agriculture, Food & Markets*

**Background about VAAFM:** Every U.S. state government has an agency focused on agriculture. Vermont has the Vermont Agency of Agriculture, Food & Markets (VAAFM). VAAFM has numerous conservation incentives/financial assistance programs. Some of their programs build on USDA programs, such as through additional cost share rates on select EQIP-funded practices. On several EQIP practices, NRCS provides 75% cost share, and VAAFM will stack additional money on that to provide 90% cost share on the practice. Other VAAFM programs are fully independent, such as Farm Agronomic Practice (FAP) which offers flat-rate payment on select practices and the Vermont Payment for Phosphorus which provides performance-based payments for the reduction of P loss from farms (State of Vermont, 2022). VAAFM also has some regulatory function within Vermont. This includes enforcing the ‘Required Agricultural Practices,’ practices meant to reduce non-point source pollution of surface waters. It requires farms, based on their

size, to keep up with some combination of certification, nutrient management plans, and educational requirements (VT-VAAFAM, 2016).

Several interviewees recognized the Vermont Agency of Agriculture, Food & Markets (VAAFAM) as a strong partner, which one interviewee summarized saying, “We have a really good relationship with the Agency of Agriculture.” Staff voiced appreciation for VAAFAM’s financial add-ons to NRCS programs, as well as some of VAAFAM’s own programming and work like through their BMP program. Several mentioned that the regulatory nature of Vermont Agency of Agriculture did impact the ways that some farmers viewed and interacted with the agency. It was also noted that those regulations from VAAFAM sometimes brought farmers to NRCS for financial assistance.

### *Other Partners & Complementary Programs*

Several other valuable partnerships were mentioned, including the partnerships that form through the Regional Conservation Partnerships Program (RCPP). Several mentioned the value and promise of the program, particularly in creating partnerships between organizations.

A program offered by the Vermont Housing & Conservation Board was also mentioned as complimentary to the work. Partnerships formed through EQIP Conservation Innovation Grants (CIG) were also highlighted by several interviewees.

### *Challenges Around Partnerships*

Though partnerships were widely seen as valuable, several interviewees also identified challenges connected with partnerships. Working partnerships between NRCS and other organizations, such as ones formed through RCPP, require partner agencies to follow NRCS requirements and specifications when using NRCS funds. Two interviewees identified this as sometimes being a limitation to partnerships, as the requirements it places on partner agencies restricts the flexibility and innovations of the partner agency, thus limiting some the potential benefit of the partnerships. One interviewee expressed concerns about how this can also impact the nature of the work of NRCS staff, turning staff into office workers rather than field agents.

When you give money to [partner] entities to do work that NRCS does, NRCS still has way more involvement than we need to do because it's considered a government action ... So if we were to turn around and give money to Audubon, Audubon still has to work the way NRCS would work. They still have to do NEPA [National Environmental Policy Act], and they have to file financial reports, and they got to meet every single NRCS standard and spec because... all of that is tied to the money transfer. And then you have NRCS managing a lot of money flowing to a partner... So that is the big problem when you do federal exchange of money is that they still have to—they basically become NRCS and they're always asking

you questions...It's like why pay a partner to do something when we could still be doing it? And that's one of the things we do see when we try to get work over to like a grant recipient, you [NRCS staff] start becoming a paper pusher more than getting out in the field.

I like the idea of RCPP, but the way RCPP is right now, it just requires [so much] involvement from NRCS and the partner that we're doing it with that it, I think, just takes a way a lot of the benefits of doing RCPP.

Several staff mentioned how partnerships or entities working on similar issues can be confusing for clients, and lead to unhelpful competition between the entities. One interviewee also brought up the challenge of added delays sometimes when multiple partners are involved, particularly regarding the misalignment of state and federal fiscal years.

The only the only frustrating thing there is that our fiscal year and the state's fiscal years don't line up very well. So when we're ready to go, they're kind of finishing up their fiscal year and vice versa. I just wish the two would dovetail together a little bit better... Well, we you know, we'd have our contract in place and then we'd have land owners and producers very frustrated just waiting for a phone call from the agency of Agriculture to tell them that, 'Okay, we've got this additional money' because you know a lot of them do not want to move forward just with the 75% [cost share]. They want to be assured that they're going to get up to 90% [cost share], which a lot of times the Agency of Ag program will do that.

Table 16. SWOT around conservation partnerships \*

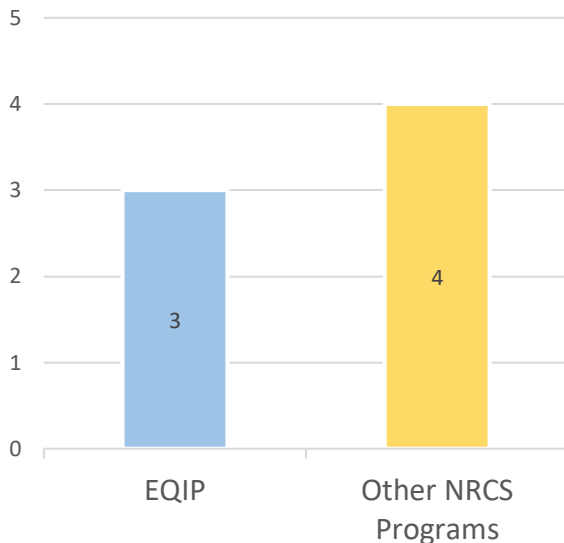
<b>Strengths</b>	Partnerships can be a huge asset in advancing conservation and complementarily working towards shared goals and missions.
<b>Weaknesses</b>	Working agreement partnerships can be perceived as overly burdensome and restricting for partner staff. A client working with a variety of entities may find things overwhelming or confusing.
<b>Opportunities</b>	There is a lot of potential in further investing in partnerships and the development and strengthening of partner agencies. Increasing the funding and influence of the NRCDs was suggested by numerous interviewees.
<b>Threats</b>	_____

\* Directly discussed SWOTs are listed in regular type, SWOTs which were inferred are in italics.

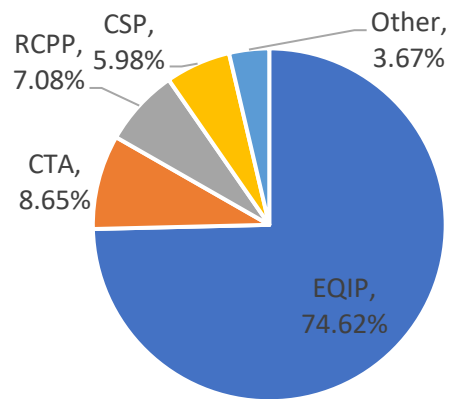
## Programs to Scale Up in Vermont

Staff were presented that scenario that they had the funding and capacity to scale up or build out any one existing NRCS program. They were asked which program they would choose to expand and why. Staff chose a variety of different programs for a variety of different reasons. More staff chose working lands programs than easement/set-aside programs. EQIP was the most chosen program, with other program choices varying.

*Figure 3. Programs interviewees would choose to further invest in if given the chance.*



*Figure 4. Percentage of total acres in Vermont by programs from fiscal year 2017-2021*



**About NRCS Programs:** Nationally, NRCS has a list of approximately 170 federal practice standards and 140 enhancements which outline the general definitions and requirements for funded and/or supported practices. These practices and enhancements form the basis for the range of recommended and cost-share eligible practices in the different working lands and set-aside conservation programs provided through the agency (USDA-NRCS, 2022b). NRCS programs use a range of different support and payment structures, but most programs are orientated to fund additionality—improvements in practices and resource conservation—rather than support practices that may already be in use (Stubbs, 2020; U.S. Department of Agriculture



Natural Resources Conservation Service., 2022). NRCS-Vermont has eight primary conservation programs: Environmental Quality Incentives Program, Agricultural Management Assistance, Conservation Innovation Grants, National Water Quality Incentives, Regional Conservation Partnerships Program, Conservation Stewardship Program, Emergency Watershed Protection, Agricultural Conservation Easement Program. Both nationally and in Vermont, Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP) practices are applied on the most cropland acres.

One individual's response captured the varying value of the different programs and why there may have been so much heterogeneity in staff choices and responses.

You have to consider what programs work best for people and it really just depends on their situation. I can't say that I have one [programs] that I would particularly build out and build up because it [the best program] really just depends on where those producers are in their operations and what they're trying to do. Some of them are doing an excellent job with their current operations and resource concerns and they just need additional funding and support to say, hey, I'm doing a good job, we can enhance this a little bit and continue to give you some financial support and patting you on the back for doing a great job. And that would be through our CSP program, right. But if there are producers who are still trying to get their footing, still need a lot of infrastructure for their operation and still need a lot of support to really get them where they need to be, to that CSP point, then that's EQIP. And then you've got other producers that the operation is a total kind of a wetland situation and it can't be what they want it to be... but they could use some financial resources and still do just a tad bit of agriculture in certain parts, I would look at that from an easement standpoint, right? And then looking at some that are not traditionally within agriculture, but we're looking at some aquatic habitat and streambank restorations and dam removals or rehabilitation, and stuff like that, I'm looking at our RCPP program. And so it really just depends on what's the need of those producers and those particular areas.... I don't think that one program fits the whole gamut of what we're dealing with when we're talking and working with our producers.

Programs which interviewees discussed included:

- Environmental Quality Incentives Program (EQIP)
- Conservation Stewardship Program (CSP)
- Healthy Forest Reserve Program (HFRP)
- Regional Conservation Partnerships Program (RCPP)
- Agricultural Management Assistance Program (AMAP)

## Environmental Quality Incentives Program (EQIP)

**About EQIP:** The Environmental Quality Incentives Program (EQIP) is NRCS' most extensively used conservation program, both nationally and in Vermont, by the number of contracts, dollars obligated, and acres. The program was first instated in 1996. Through EQIP, producers receive technical and financial assistance to address a resource concern through the implementation of a NRCS-approved structural, vegetative, or management practices on agricultural land. Payment rates are based on cost share percentages to implement the practice. Cost share rates are typically 75% but may be higher based on client demographics or stacking of other funds. EQIP management contracts practices typically last for three years. EQIP is considered a relatively straightforward program for NRCS staff, because its workload process is less complex than some other programs and —because it is the most used NRCS program — staff are well acquainted with it.

While there was a variety of different responses, the most chosen program was the Environmental Quality Incentives Program (EQIP), with three of the interviewees identifying it as the top program that they would choose to expand. One described it in comparison to other programs saying, “EQIP is more targeted, we have higher payment rates, and we can kind of turn things around quicker.” Interestingly, all interviewee who chose EQIP had different reasons why they would choose that program.

One chose EQIP because it funds the construction and implementation of manure storage and waste management systems. They noted the need to increase adoption of such systems in order to make a notable difference for water quality in Vermont water bodies:

Well, having worked with manure storage and waste management almost my entire career, I guess I would focus on that. If we can get every producer to 1), correct any kind of point source pollution problem on every farm, and then 2) get every farmer to be properly applying their nutrients according to a proper nutrient management plan, those two things would go a long way to reduce nutrient runoff and reduce phosphorus going into Lake Champlain.

Another chose EQIP for some of its programmatic abilities, including “Act Now” which allows quicker potential turnaround on some contracts by waiving the need to wait on application ranking deadlines. Several individuals also mentioned the newly developed EQIP-CIC Conservation Incentives Contracts, which was described as an intermediary step between EQIP and the Conservation Stewardship Program (CSP).

Another chose EQIP, with the suggestion of rolling elements of other programs into EQIP and making EQIP a more all-encompassing program. They argued that this would reduce some of the confusion that derives from some duplicative or compartmentalized programming, and make it more straightforward for staff and clients.

I would expand on EQIP and roll things [other program aspects] into EQIP.... I think just focusing on EQIP and rolling our other programs into it and figuring out how to maybe just revise the EQIP program so it's more inclusive and easier to implement... I think our employees would be more efficient and they could get more conservation out the door, having to deal with less paperwork and understand less programs and rules and stuff like that. And I think it would help producers. Even if the paperwork side of the implementing, the context is the same, there's less confusion about what we do up front. If that program could just basically do everything and then it's easy to explain what that program does.

One interviewee specifically said that they would not choose to expand EQIP, saying that they would rather see one of the lesser-used programs like CSP, RCPP, or one of the easement programs used more in Vermont, since EQIP is already the dominant program. “I don't think that EQIP needs to be built out any further, if we're being honest in that regard, because that's the one we utilize the most.”

#### Conservation Stewardship Program (CSP)

**About CSP:** The Conservation Stewardship Program (CSP) was formed in the 2008 Farm Bill. CSP provides an annual payment to participants to improve or enhance the environmental outcomes on their operations for the length of the 5-year contracts. CSP, in comparison to EQIP, is more orientated towards supporting producers who have already implemented many best management practices, it focuses on making enhancements on operations. CSP is more complex and has a comparatively higher workload burden for NRCS staff than some other NRCS programs. Nationally, the NRCS is preparing for an additional push on CSP, as a chunk of Inflation Reduction Act funding has been specified for the program. CSP in Vermont has had limited utility, largely due to the initial hurdle of investment of time and energy for staff to learn about the program, and limited outreach to farmers about the program. In the past five years, less than 7% of acres receiving conservation assistance through NRCS-Vermont are through the CSP program (USDA-NRCS, 2022d).

Numerous interviewees reflected on the value the Conservation Stewardship Program. One interviewee chose the CSP as the top program they would choose to expand in Vermont because of its ability to support the many producers who are already doing a good job on their operations in Vermont, and to better enable them to make adaptations for climate change.

In Vermont there's this really core value of producers valuing the environment and really wanting to do a good job, and CSP has the ability to really help elevate the awareness of the work that people are already doing and help them continue to do a great job. And it's one [program] that's not widely known, Vermont really hasn't done a good job of selling CSP— it's a little bit more complicated for my

staff. But I think it really has the ability to help producers that are doing a good job to keep doing a good job... and the other factor there is I think it really has the ability to help them adapt to some of the climate challenges that they will see moving forward.

Several interviewees commented on why CSP has not been used as much in Vermont, citing that staff need more training on the program and it can sometimes be challenging to for producers to be eligible for the program.

#### Healthy Forest Reserve Program (HFRP)

**About HFRP:** Healthy Forest Reserve Program (HFRP) helps landowners restore and enhance forests through the use of 10-year, 30-year, or permanent management contracts or easements. Funding for HFRP is discretionary and has very limited availability. Only three contracts have historically happened in Vermont. HFRP is one of several easement programs for which the NRCS administers and/or provides technical support.

One interviewee recommending prioritizing the expansion of the Healthy Forest Reserve Program (HFRP), noting that thus far the program has received minimal funding in this state, but that it has great potential is supporting healthy forests and protecting forests from development. The interviewee specifically called out the value of Vermont forests for carbon sequestration. A second interviewee also noted that they would like to see some more investments in land easement programs.

#### Regional Conservation Partnerships Program (RCPP)

**About RCPP:** Regional Conservation Partnerships Program (RCPP) is a program which uses coordination between NRCS and private or public partners to provide conservation assistance and address natural resource concerns of priority.

While none of the interviewees chose RCPP as their top program to scale up/out in Vermont, several mentioned the value and promise of the program, particularly in creating partnerships between organizations. One interviewee summarized this saying, “RCPP is a good program cause it works with partners, and with them implement programs—either our own programs or create-their-own programs— but like an alternative funding arrangement.” Another interviewee added, “I think that program [RCPP] is very, very beneficial and it doesn't get as much credit as it should.” However, several interviewees vocalized frustrations around aspects of RCPP, particularly around the sometimes redundancies and the overlap between RCPP and other programs, potentially capturing why RCPP was not any of the interviewee’s explicitly top choice to expand.

I think a big challenge right now is like we have EQIP and then we have RCPP. And RCPP can compete with, when you have a pool of producers in the state and funding, RCPP and EQIP could compete with each other... RCPP is a good program and EQIP is a good program, but they can overlap to such a degree that it would be better if there were one or the other, but not both.

#### Agricultural Management Assistance Program

**Background:** Agricultural Management Assistance Program (AMAP) was founded in 2000, it is administered by NRCS, RMA, and AMS. It exists in 16 different states where there has been historically low participation in the federal crop insurance program. The program provides cost share assistance on select practices meant to reduce agricultural risk. In Vermont, 0.85% of acres receiving NRCS assistance are through AMAP.

One interviewee advocated for expanding the use of the Agricultural Management Assistance Program (AMAP) in Vermont saying,

I would like to see more funds go into our Agricultural Management Assistance program, AMA. We have a lot of producers, specifically small-scale producers, that are looking for assistance with irrigation, looking for assistance with soil health and looking for assistance with residue tillage management and crop rotations. So I do feel like, since that it [AMAP] is a risk-oriented program, we could really see some true benefit coming from that.

## PART FOUR: SUGGESTED CHANGES FOR THE NRCS

Through the course of the interviews, staff shared a variety of concerns and suggestions around the efficacy, efficiency, and equity of the work of the NRCS. There was general recognition that that the agency needs to constantly work to improve, “We have to continue to evolve as an agency and look at different ways that we're doing things.” This section provides an exploration of interviewee-generated recommendations and ideas for how to address current weaknesses and gaps, and improve the function and efficacy of the agency in Vermont. Some of the discussed changes can be made on the local levels, however, many require changes at higher political levels or through National NRCS. The following general suggestions came up through the course of conversations:

- Hire More Staff
- Streamline & Expedite Workload
- Incorporate More Local Input & Influence
- Reach Missed Demographics/Farms
- Increase Agency Visibility
- Improve Client Experiences
- Other

### Hire More Staff

It is critical for both staff wellbeing and agency efficacy and efficiency that staff have appropriately sized and manageable workloads. Staff was widely viewed as a major agency asset, and the shortage of staff was identified as the largest limitation for the NRCS in Vermont. Staffing shortage within NRCS-Vermont can and has led to staff burnout, slower project turnaround, and, sometimes, lowered quality of assistance. Under current workloads and administrative requirements, field offices need more NRCS and/or partner staff to effectively carry out their workload and mission.

Interviewees pointed to a combination of different factors which feed the staff shortage including 1) the slow nature of the agency hiring process; 2) a general shortage of ‘qualified’ candidates for positions; 3) failing to attract qualified candidates due to limited outreach and advertisement; and 4) a shortage of affordable housing options available for potential staff. In order to hire needed staff NRCS may need to:

**Optimize NRCS Staffing Caps & Hiring Processes** — Ensure the staffing caps and quotas for locations are appropriate for the workload and potential workload of the area. The hiring process often takes a long time, and may also need to be abbreviated or better timed in order to be able to bring on new employees as soon as they are needed.

**Make Open Positions More Visible** — NRCS may need more advertisement and outreach about the agency in general so that more people are familiar with their work. More recruitment for and advertisement of open positions may also be beneficial.

We [NRCS] can't get the people to apply in some areas.... For Vermont, we probably need to sell ourselves better; do better outreach in regards to recruitment of staffing and for hiring.

**Make Positions Attractive** — Try to create positions which are fulfilling and/or interesting for staff. It is unlikely that everybody feels thrilled and passionate about every aspect of their job, but it is important to have positions which allow people to find passion and/or contentment within their work. Ensuring appropriate workload burdens and positive work cultures is critical to creating positions in which current staff are generally happy and which are attractive to those

looking in. This may require change on both the national level and county levels, and everywhere in between.

**Ensure Job Requirements Don't Overly Limit Hiring Pool** — Different NRCS job classes have different minimum requirements to qualify. Some of the minimum requirements for particular job classes may not necessarily be critical and could rule out otherwise suitable candidates. There may need to be a review of requirements for different job classes and/or choose more appropriate job classes for the situation.

We're trying to hire people, but we can't hire people at the rate we need to hire people because there's not people to hire... there's not that many people who could be a soil conservationist that are out there [under job class requirements].

**Address Housing Shortage** — While not an issue specific to NRCS, one interviewee identified shortage of affordable housing for potential staff as a barrier for hiring staff. Staff are unlikely to move to an area if they can't find housing. NRCS may want to consider ways it may be able to assist with housing for staff.

**Bring in Partner Staff**— Partner staff in NRCS offices can be a great help in advancing and complementing the work and mission of the NRCS. Partner staff can be helpful in carrying out workload and reaching and helping more people and concerns. Efforts should be made to bring in and support partner staff in NRCS offices.

### Streamline & Expedite the Workload

There was a general sense shared by all interviewees that NRCS programs and processes are not always designed to be as efficient or efficacious as they could be. Numerous staff expressed the sentiment that field office staff should spend more time in the field, and less time doing paper and administrative work. All staff recognized need for and potential benefit of streamlining and/or expediting some aspects of workloads, and the lowering of transaction costs. Some thought that simply streamlining the workload process was sufficient; others thought that more extensive trimming in the conservation process workload would be of value and potentially worth pursuing. One interviewee, thinking about a project process from beginning to end, remarked,

It just seems to be a lot of red tape. And I don't know we can do anything about that. But, you know, in order to [apply a practice] you gotta do a plan, then you got to rank, it, you got to do this and that, and then you got to do a contract and then... it's just... There's a lot of teeth in the cogs that just really slow down the process. And I don't necessarily have the answer to this, but I wish there was a more streamlined way of the producer coming in asking for assistance and walking out the door with a contract in hand and a conservation practice ready to be installed.

State staff indicated that they felt that they were already doing everything they could to streamline workloads, while still meeting the requirements indicated by federal NRCS, suggesting that larger inefficiencies and bottlenecks in the administrative process need to be addressed at a federal level.

I think Congress really needs to change the way the Farm Bill is administered, and I think it really begins there. If they can figure out ways to speed that up so that we're still using public funds wisely, but it doesn't take as much time and energy to get that dollar on the ground [that would be beneficial] ... I think Congress really holds the key to helping the agency figure out what that looks like.

Most of the suggestions and ideas around streamlining and expediting workload would need to be made on higher, national levels. Mentioned ideas were to:

- Adopt More Efficient Technology and Systems
- Ensure Staff Have Needed Training & Information
- Minimize Paperwork Burdens
- Simplify and/or Consolidate Programs
- Scale Back NRCS Requirements & Stringencies
- Minimize Changes & Delays Between Fiscal Years

#### *Adopt More Efficient Technology and Systems*

Several staff indicated that there was a need to update and adopt new technology to speed up workload, especially for the application and administrative process. One staff articulated how the use of outdated technological systems can also create more work for both staff and for farmers, noting a need for legacy record-keeping and administrative systems to be consolidated and updated to lower and streamline the paperwork burden for staff and clients.

We have to streamline the application process. And we have to continue to adopt technology for staff in a way that helps them to go out and see more people. So, it's kind of like that work cycle— we need to speed up that work cycle so staff can spend more time in a field and less time on the computer processing information.

#### *Ensure Staff Have Needed Training & Information*

Staff need adequate training and information to ensure that they can understand the particulars of programs and processes and be as efficient and effective as possible in carrying out their workload and handling client questions. Several interviewees discussed the difficulty of understanding all aspects of programs and processes, as well as learning and incorporating new



changes as they come out. One interviewee spoke about the challenges about effectively communicating programmatic updates and information to staff in a timely fashion and in formats that work for them.

Some people want an e-mail; Some people want a meeting; some people are cool with a Teams chat for finding out information. So that's really the struggle we're dealing with, 'What's the best way to communicate?' Because a lot of what we're just hearing is about [as feedback from staff is], 'I just didn't know.' It's not like, 'this is bogus!' It's just, 'I didn't know.'

### *Minimize Paperwork Burdens*

Many of the staff talked about the need to minimize paperwork burdens to expediate and ease the application process for both staff and clients. Paper burdens were seen as major frustrations for clients, and sometimes staff.

Just to be able to walk in the door and take advantage of our technical and financial assistance, there's a significant paperwork burden. And, you know, we could spend all day talking about why we have paperwork and all that stuff, but really, truly if we want to get conservation on the ground to everybody and equitably... we have to streamline the application process.

### *Simplify and/or Consolidate Programs*

Numerous interviewees suggested that workloads for staff would be more manageable if programs and practices weren't so numerous and complicated, sometimes making it difficult for staff and clients to negotiate and understand them all. Several staff thought it would be beneficial to simplify and/or consolidate programs, so as to reduce confusion, and ease and speed up the conservation process.

If we had like one program that did all of the stuff we do right now in a whole bunch of different programs and it was one application, it'd be much easier to work with us than it is right now.... It would ease up the time it takes to implement programs in the field and to understand all of the different programs and practices for each program and the ranking pools that have limited practices to them.... I think our employees would be more efficient and they could get more conservation as the door, having to deal with less paperwork and understand less programs and rules and stuff like that. And I think it would help producers. Even if the paperwork side of the implementing, the context is the same, there's less confusion about what we do up front.

One staff member mentioned one thing that could be helpful and be done on the state level, was to scale back the number of funding pools in Vermont. However, interviewees also recognized that the diversity of programs and funding pools is intended to reach a wider diversity of operations and clientele, and that there may be tradeoffs depending on how programs would be simplified or consolidated which would need to be seriously considered.

The challenge we always face is if you had one funding pool and that's all you had, and one program... everyone would compete against everyone statewide. And so, depending on what you're trying to prioritize and how you're prioritizing it— it would all get done through a program ranking— and probably invariably you would unintentionally exclude certain types of farms, or operations, or groups of people, or whatever... So my thing would be like the simplify that, but not at the expense of being able to—I think we need less, but we still need some.

The more programs we have to administer, the more work we have to do and it just dilutes things. So instead of creating more programs, let's try to consolidate these programs ... it seems like every farm bill it's 'Oh, we got a new program!' And I go, 'Well, that's nice.' And you know, I partly understand, they want to try to make the taxpayers' dollars available to every sector of agriculture and every sector of USDA. But it can be frustrating sometimes, and sometimes it can be counterproductive.

Different values expressed around the complexity and diversity of programs by interviewed staff suggests that NRCS employees would have a variety of perspectives on whether and how programs could be optimally simplified and/or consolidated to improve agency impact.

### *Scale Back NRCS Requirements & Stringencies*

Several interviewees suggested that scaling back the stringency of the minimum technical and administrative requirements for practices and programs would make workloads more manageable and improve NRCS function. One interviewee shared frustration about how the agency required what they viewed as sometimes overly hands-on and involved work.

I know there's other government programs out there that there's way less red tape...I've never seen like another government program where—like I'm talking our programs—where someone has to visit you. Like food stamps, that's file your tax form, it goes through software, you're eligible. Us? Like we're so hell bent on, 'you have to physically get out there and talk and handshake and take pictures and take measurements and walk.' ... There's gotta be ways that you're not always out there [in the field] having to do it... I mean dams is one thing, bridges is something else. But a lot of this stuff [practices] we do, do we really need to be driving 100 miles to look at them? Especially when you're putting it in for carbon

sequestration. You drive 50 miles to look at something, and expend 8 pounds of CO<sub>2</sub> to sequester 1.5 [pounds].

Another interviewee discussed the how NRCS might be able to get more conservation done, if it lowered its standards on some practices, but acknowledged that there may be some tradeoffs in the quality of the work.

We sometimes make things too technical and too hard to do as an agency .... it ends up becoming in of itself a barrier... I think to get more conservation on the ground, even if it's not to like at the highest level of conservation—sometimes I think if we had less standards we would do more work. Maybe not as good [of work], but we would do more of it.

#### *Minimize Changes & Delays Between Fiscal Years*

Several interviewees commented on the challenges around budgetary changes from year to year, a source of frustration for both staff and clients. One staff wished for a longer budget cycle on programs that didn't change from year to year.

They need to pass the Farm Bill that says, 'Do it the same way for five years, not year to year.' So this whole budget thing of not getting budgets until like March, that screws us up. And it's way above the farm bill, it's just Senate in general. We operate on an October 1st to September 30th cycle. And until budgets are passed and everything lined up and reset and recalibrated, you can't even get going until December... There needs to be certainty because we're waiting every year for things to reset and new instructions to come out and payment schedules to update. It makes it hard for planning purposes, and then you're always learning something new... there needs to be less change year to year.

Another noted the added difficulty between the misalignment of the state fiscal year and the federal fiscal year, and how this can further create delays on funding allocations and program activities when the state and NRCS partner on projects.

#### *Incorporate More Local Influence & Input*

Numerous staff mentioned a desire for greater local input and influence on where and how NRCS locally focuses its' efforts, from both local NRCS and the public. One interviewee said, "I always just feel as though we need to continue to incorporate the feedback and suggestions from our clients into our programming." Another mused, "It would be nice if we did have more [local] control."

Currently there is limited space for local influence and input on NRCS programming and priorities, but several staff noted that they were dedicated to incorporating as much local input as possible, and that they felt NRCS as a whole was also moving towards incorporating more local influence in its programming. Several interviewees vocalized a need for more locally directed and targeted efforts in order to have more meaningful ecological and community impact. Partnerships with locally active organizations like the NRCDs were seen as key for incorporating more local influence into NRCS activities.

I think what we really need is hyper-focus conservation delivery based on locally led priorities to really help move the needle forward... folks that see the ground or know the land the most oftentimes know how to best improve it. And so I think the more that the state programs, that federal programs, can incorporate this locally led concept of tiering to Natural Resource Conservation Districts priorities, the more success we're going to have... I think the concept of locally-led conservation is really where we will find success in Vermont moving forward as it relates to climate change, water quality, across the gamut of natural resources out there.

#### Reach Missed Client/Farm Demographics

Most interviewees recognized that NRCS has historically focused on certain farm types, and many programs were built primarily with these farm types in mind. Staff identified that there has been increased efforts from the agency at the national level to better reach and serve the diversity of farmers and farm types found in the US, as well as efforts at the State level. All interviewees recognized a need to better reach different audiences and demographics that have been missed and/or under-served. Interviewees recognized that this could be best done through a combination of both:

- Outreach & Education
- Programmatic Changes

#### *Outreach & Education*

Numerous staff identified that outreach & education directed at both NRCS staff and clients is key to reaching a wider variety of farms and farmers. Staff need to better recognize under-served clients as eligible for NRCS assistance and learn how they can best work with and support these farmers and farm types. It is critical to provide education to NRCS staff on how to work with and serve different farmers and farm types with whom they may have not interacted much with historically with NRCS programs. Outreach and education also needs to be directed at these

under-served clients so that they know about and understand the NRCS assistance available to them.

### *Programmatic Changes*

Several of staff suggested that it may be appropriate to consider some programmatic changes to better meet evolving client types and needs in Vermont, especially in order to include some clients who have historically not benefited as much from NRCS assistance. Staff expressed a variety of different ideas for programmatic changes that may allow different and/or more people to make use of NRCS programs including to:

- **Rework Program Metrics & Definitions**— Some program metrics and definitions may need to be reworked to better include concerns and serve audiences which NRCS programs and activities have not previously been optimized and designed to address or work with. For example, the NRCS focus on acres for payment rates and as success metrics may disfavor the inclusion of small-acreage farms from NRCS assistance.
- **Adjust Cost Share Rates**— Economic limitations of farmers were identified a major barrier for farmers being able to adopt different best management practices. Staff floated several different ideas for how resource-limited farmers might be better reached. Numerous staff identified that higher cost share rates would enable more resource-limited producers to be able to adopt practices or put in needed infrastructure.
- **Targeted Funding Pools** — Several interviewees discussed using or creating funding pools to target missed or under-served groups such as members of the LGBTQIA+ community.

### Increase Agency & Program Visibility

Several staff mentioned the general need for wider public awareness of the NRCS and NRCS programs, so that eligible individuals can take advantage of the NRCS resources and assistance that might be available to them, and the NRCS can help get more conservation on the ground.

I would want to see first and foremost—I'm always going to go back to outreach— more advertisement, more marketing of the agency so we can have more in interest coming into the agency and to be able to address and target more people so we can get more conservation on the ground.

One of the ways I think we [NRCS] could probably improve would be maybe equal education and outreach for all programs. I think sometimes we get heavy on like EQIP and CSP as our flagship and main two programs. But we have other

programs that are included, like our easements and our Regional Conservation Partnership Programs. So maybe doing a little bit more outreach within those areas across the board to cover a broader scope of producers.

### Improve Client Experiences

All interviewees were already very attuned to and interested in providing as positive of client experiences as possible. Several staff brought up that it is difficult to please everyone, but nevertheless, everyone wanted to do the best they could. Staff brought up numerous strategies for improving client experience, some of which they were already working on, and some which they hoped to see more of. The strategy and ideas were to:

- **Provide open and timely communication**— Clients value open and timely communication. Field office staff need to be as communicative and responsive with clients as possible. Clients should be kept up to date on where their application might be at in the process.
- **Help clients to understand the process**— Being in the dark on how processes work and the steps involved can be a source of frustration and concern for clients. Staff should work with clients so that they have a comfortable understanding of the conservation process and what they can expect.
- **Minimize paperwork and administrative burdens** — Paperwork burdens were identified as a major source of frustration for clients. Steps may need to be taken at national and local levels to minimize paperwork and administrative burdens for clients, a task which can be both discouraging and a barrier to conservation.
- **Provide needed flexibility in practice standards & contracts** — Clients may need flexibility in aspects of practice standards and contracts to make conservation with the NRCS work with their circumstances.
- **Provide quick turnarounds on contracts and practices** — Slow turnaround on contracts and payments can be a frustration for clients. Effort should be taken to speed up the process and turnaround on conservation applications and contracts.
- **Ensure staff able to understand client needs** — Historically NRCS has worked with and targeted certain farm types & farmers more than others. As a result of that, and changing farmer/client demographics, NRCS staff may be less familiar with the needs of certain farmers & farm types, and may be less comfortable or knowledgeable working with them. Efforts should be taken to educate staff so that they are better able to work with and understand the needs of clients.

- **Ensure programs design are appropriate for client needs and circumstances** — NRCS programs have largely been designed to serve certain farm types and clients. Programs should be re-worked to better meet and support a wider variety of client needs.

#### Other Suggestions

One staff suggested that **inflation should be accounted for in payment rates for multi-year contracts** or projects with delayed implementation.

There's a lot of frustration with that right now with inflation being the way it is. If a farmer signs up for a contract and really doesn't implement for two years—You know with inflation at 10% or whatever—if they wait two years they're going to lose a lot of money. Which, okay, maybe they shouldn't be waiting two years, but sometimes that's beyond their control. So is there something that can be done with the payment schedules so that we're not paying the payment schedule for the year the contract was developed and we can revise the payment schedule within a contract each year? So we're not just paying 2020 prices even though the contract goes five years?

One staff expressed a desire for NRCS to **better support and fund farm & operational transitions** when they were needed in order for the operation to be more environmental and/or economically sustainable:

I always wished as an agency we had more funding for sort of... like to change operation type.... sometimes the whole operation needs to change to a different kind of agricultural operation. Like a dairy to beef, or something like that. And that's where we don't have as much of an input. We can do the some of the practices to do that, but there's business components of that and infrastructure components of that that are not directly related to addressing resource concerns that also have to be done so that the farm is profitable.

One staff mentioned the idea of having a **grant program to fund client-led projects**, thorough which clients propose ideas or practices that they would like to implement and would address resource concerns, and NRCS could offer funding.

I've worked with people who got SARE grants before, and there's way less documentation for those than we have. And essentially they get to decide what their project is themselves. And I've always thought like that that would be awesome, like we give you some guidance and you tell us what you want to do, and we have a grant program or something. I kind of always wished we had some other component besides EQIP, like EQIP would be like the gold version. But if we had like, a program where it's almost like a grant program where you could come

in and say, 'I want to do pollinator habitat' and it's like under a certain amount we just grant money.

One interviewee mentioned the need for NRCS to **better quantify the impacts of NRCS practices on outcomes and ecosystem services**. Most practices are currently gauged on their impact on resource concerns, which are related to ecosystem services, but not directly connected.

One of the things NRCS has been bad at has been quantifying the impact of resource concerns that we have in terms of like things like carbon sequestration or ecosystem services or whatever... soil health. We know practices address resource concerns, but the quantification of what of like, 'how much phosphorus does it reduce?' or 'how much carbon does it sequesters?' on practice-by-practice basis is what, I think, the agency is spending a lot of time and effort trying to figure out how to measure right now.

## PART FIVE: REFERENCES

This final section includes some background reading and the works cited in this report for readers wishing to dive deeper in on some of the topics covered in this exploratory report.

### Appendix A: Background Reading

The section provides some background reading for readers interested in learning about some of the issues the connections between agriculture, the environment, and ecosystem services. It explores some of the opportunities and threats around agri-environmental management, and the PES programs (like NRCS programs) developed to counter and combat such threats, as discussed in published academic literature.

- Agriculture, the Environment, & Ecosystem Services
- Conservation Incentives & Payment for Ecosystem Services Programs



Ecosystems services are the benefits and value that humans derive and receive from ecosystems and the environment. Ecosystems services are critical to the survival and wellbeing of humans and society. They offer benefits in the form of material services (e.g., food, fiber, medicine), regulating and maintenance services (e.g., carbon sequestration and cycling, pollination, and soil fertility), and cultural/non-material services (e.g., spiritual experiences, recreation opportunities, and beauty). The concept of ecosystems services has been foundational to the modern understanding how the wellbeing of humans and societies are inseparably tied to ecosystems and the functions and services they provide (Haines-Young & Potschin, 2018; IPBES, 2017; Millenium Ecosystem Assesment, 2005)

Conversely to ecosystem services (ES), ecosystem dis-services (EDS) are the detrimental impacts that ecosystems (natural or heavily shaped by human-influence) have on human wellbeing. Disservices might include crop yield loss to wildlife pests, evolution of management-resistant agricultural weeds, light pollution, heightened greenhouse gas emissions, or seasonal allergies from plant species. Ecosystem disservices is a concept most applied to environments heavily human-manipulated, like cities or agricultural fields. Humans are not only affected by ecosystem disservices, but also have the potential to create and generate them with certain behaviors and management decisions on the landscape. (Blanco et al., 2019; Von Döhren & Haase, 2015; W. Zhang et al., 2007).

Agriculture is a form of environmental manipulation/management meant to optimize the balance of ecosystem services for human interests in the situation and context. Agricultural landscapes and production can offer a wide range of material, regulating/maintenance, and non-material/cultural services (Robertson et al., 2014). Agricultural land and production is both enabled and constrained by ecosystem services and disservices of the socio-ecological and bio-physical context within it is positioned, including factors such as climate, geophysical characteristics, and spatio-temporal positioning in landscape (W. Zhang et al., 2007). These contextual factors shape and inform the range that agricultural land can have in terms of resource availability and potential production and environmental impacts.

Building off the existing presence and in-flow of ES and EDS, the spatio-temporal positioning of agricultural lands and the management decisions used determine the ecosystem services and disservices that flow out from them. Agro-ecosystems are generally orientated to optimize the balance of ecosystem services and disservices through management decisions (e.g., practices used, or types of crops grown) made by the land manager according to their interests and capabilities. The ecosystem services and disservices coming from agricultural land have implications both for the land manager, and the wider community and ecosystems with which it is connected. Ideally these agricultural lands will serve the public good, but depending on the context and management decisions, agro-ecosystems can also increase different ecosystem disservices (Gutierrez-Arellano & Mulligan, 2018) and produce negative externalities (Tegtmeier & Duffy, 2004) (e.g., habitat homogenization, biodiversity loss, and nutrient pollution in water bodies). Agricultural working lands can contribute to varying degrees of disservice and service to the public good and societal wellbeing.

The impacts of agricultural management on ecosystem services and disservices is an established and growing body of research. A few of the many areas of research are on topics of soil quality, health and management (Adhikari & Hartemink, 2016); crop selection and rotation (Degani et al., 2019); cover crops (Shackelford et al., 2019), nutrient management (A. White, 2021); use of noenicitinoids (Menon & Mohanraj, 2018); buffer strips (Cole et al., 2020); integration of perennial and/or native cover (Schulte et al., 2017); grazing management (Li et al., 2021); tillage practices (X. Q. Zhang et al., 2016); vegetation management (Winter et al., 2018); land sharing vs. sparing (Balmford et al., 2019; Grass et al., 2019; B. T. Phalan, 2018); and complementary and optimal positioning of agro-ecosystems within a larger landscape (Troupin & Carmel, 2014).

A variety of factors guide farmers/land managers' land management decisions. Traditionally, farmland and agriculture has primarily focused on providing material resources like food, fiber, and fuel because those are the most urgent for short-term human needs and most reliably have markets which provide economic payoffs. However, depending on the context, non-material and regulating/maintenance services may also be considered and be managed for in agricultural landscapes, often through the use of traditional ecological knowledge and/or adoption of conservation and best management practices. Some of the factors which may guide the implementation (or non-implementation) of conservation practices include: farm finances; associated management and opportunity costs; community and relational values and norms; neighbor perceptions; individual demographics; loss of traditional and traditional ecological knowledge and practices from landscape; personal attitudes; perceived benefits and risks; regulations; access to technology and labor; advice from trusted relations, experts, and crop advisors; and biophysical conditions (Baumgart-Getz et al., 2012; Brondízio et al., 2021; Dletz et al., 2017; Eanes et al., 2019; Ann P. Kinzig et al., 2013; Ranjan et al., 2019; A. P. Reimer & Prokopy, 2014; Schaible et al., 2015; Tengö et al., 2014; Wilkins et al., 2021)

Agricultural working land (land used for field crops, pasture, or grazing) comprises over 900 million acres in the U.S (NASS, 2021), over 40% of U.S. land area (USDA Economic Research Service, 2012). The aggregated effects of the services and disservices coming off agricultural land is of critical importance to the wellbeing of the American public due to the sure enormity of the bio-physical footprint of agricultural lands and for the fact that we rely on this land for the provisioning of material goods and regulation/maintenance services, and as a source of socio-economic and cultural significance and value. The ecosystem services and disservices from agricultural working lands are of great interest and importance to the American public.

Nearly all agricultural working lands in the U.S. is privately owned and managed. Privately orientated farm-management is often focused on the material services (e.g., food, fuel, or fiber) since those are the services which can most widely be translated into direct economic value and compensation for private land managers. While investment in regulating/maintenance and/or non-material services can sometimes financially pay (Knight & Hodgson, 2017; LaCanne & Lundgren, 2018; Monast et al., 2018; Schaible et al., 2015), many of these public goods provide limited or no direct economic returns to a private manager and their provision may even represent an opportunity cost (e.g., keeping a perennial buffer along waterways means less area to be cropped and may require investment of time and resources to manage). The mismatch between the economic compensation that private parties can receive for certain values/services over others can lead private parties, in trying to maximize their own direct economic

compensation, to favor management that, at least in the short-term, maximizes the production of the values/services which produce material goods and provide them economic compensation.

This tendency has become increasingly widespread and acute, partially due to the economic pressures that most farmers are under, as they deal with low income and high debt (Burchfield et al., 2022). Additionally, about 60% of American cropland is owner-operated and 40% is farmed by tenants (Bigelow et al., 2016). The discrepancy between who owns a piece of land and who farms can have varied and complicated implications for conservation and management for the balance and nature of ecosystem services provided. Farming on rented versus owned farmland is generally associated with less investment in forward-looking conservation practices, further reinforcing the focus on short-term maximization material goods/services (Allen & Borchers, 2016; Barnett et al., 2020; Deaton et al., 2018; Sklenicka et al., 2015). This trend has also been fueled by growing human population and consumption rates and evolving socio-economic systems.

The focus on provisioning material goods/services has enabled overall improvements in human welfare and conditions (Gollin et al., 2021), though the benefits have been inequitably spread among people. However, while there can be synergistic and mutually-positive gains across ecosystem services (Shackelford et al., 2019), there are often tradeoffs between ecosystem services (Turkelboom et al., 2018). Focusing on maximizing one service may come at the cost or be detrimental to the provisioning of other services (e.g., higher crop yields, a material service, with inadequate nutrient management/return may detrimentally impact soil fertility over time, a regulating & maintenance service). The disproportionate or exclusive pursuit of the economically valued goods/services— which are often derived from material services— can lead a private landowner/manager to push out and diminish the other values/services which do not provide private, economic compensation. With aggregated increase in material services provisioning, there has been a general decline in regulating & maintenance and non-material ecosystem services. In the past fifty years, 60% of all ecosystem services have declined (Millennium Ecosystem Assessment, 2005).

However, despite the focus on using agricultural working lands solely to provide material goods and services, the supply of regulating/maintenance and non-material services from agricultural land and production systems is also of critical importance to public and societal wellbeing. These services are of great functional value to the larger social good (e.g., through flood control and clean water) and sometimes even underly the future and long-term sustainability of the supply of material goods/services (e.g., through soil fertility, pollination services, or evolutionary potential). These services also contain intrinsic, non-anthropocentric, and other unaccounted and/or unaccountable forms of value (Batavia & Nelson, 2017; Piccolo, 2017). The imbalanced pursuit of material goods/services from agricultural working lands can and has created externalities (Tegtmeier & Duffy, 2004) and tradeoffs which have been, and have the potential to be, hugely detrimental to aspects of public, societal, and environmental good (Foley et al., 2005). Low-income and less-privileged populations are disproportionately affected by the loss of ecosystem services (Gourevitch et al., 2021), augmenting social inequalities.

In U.S. farms, the loss of some of these ecosystem services, and increase of disservices, is connected with and a fuel source for some of the most pressing issues of our time including:

biodiversity loss (IPBES, 2019), water quantity and quality issues (D'Anglada et al., 2018), climate change (IPCC, 2022), soil erosion (Borrelli et al., 2017), nutrient cycling imbalances (Millenium Ecosystem Assesment, 2005), and changing farm character and culture (MacDonald, 2020; Production et al., 2014). Many of these challenges and trending ecosystem service losses in the U.S. are also playing out on a planetary scale (Brauman et al., 2020; Food and Agriculture Organization of the United Nations, 2011; IPBES, 2019; Millenium Ecosystem Assesment, 2005; Rice et al., 2014; Rockström et al., 2009)

### Payment for Ecosystem Services & Conservation Incentives Programs

Payment for ecosystem services (PES) and conservation incentives programs developed as way to address natural resource and environmental challenges associated with land management decisions. PES programs are intended to support the optimization of ecosystem function and the public good by providing some degree of private compensation to land managers/owners so as to recognize, support, and/or incentivize the private support of something which a public good value/service, but which offers limited private rewards and potentially an opportunity cost for managers (Arriagada & Perrings, 2013). The general, underlying idea is that by economically valuating some of the valuable, but previously non-marketized or non-economically-valued ecosystem services, it can counter market failures and protect against the loss of some of the critical ecosystem services (TEEB, 2010).

Payment for ecosystem services (PES) programs have become an increasingly popular way to support conservation of natural resources and optimize provisioning of ecosystem services on private land (Costanza et al., 2017; Salzman et al., 2018). While PES programs have various forms and structures (Martin-Ortega & Waylen, 2018; Ruhl & Salzman, 2020; Wunder et al., 2008), a commonly agreed upon definition is market-based conservation program which facilitates voluntary transactions between a service user(s) and service provider(s), conditional on the provision of some agreed upon natural resource management or environmental service (Wunder, 2015). This might include paying a farmer to keep perennial grass borders alongside a stream (a practice which may help protect or improve water quality), instead of planting crops up to the stream edge. PES programs are commonly focused on the idea of additionality, supporting things that wouldn't have happened otherwise, though they have prominently been used for other purposes, like as poverty alleviation tools and to financially support historically-good stewards (Chapman et al., 2020).

However, PES is a strategy with both great promise, but also brings with it potential danger (A. P. Kinzig, 2011). The rising expansion of PES programs brings challenges and criticism with it (Chan et al., 2017). Some of these include: PES's association with expansion of neoliberalism (Fletcher & Büscher, 2017; Kolinjivadi et al., 2019); the risk of motivational crowding out non-financially-orientated values (Akers & Yasué, 2019; Ezzine-de-Blas et al., 2019; Moros et al., 2019; Underhill, 2016); difficulty, inability, and/or failure to adequately quantify and economically valuate different ecosystem services; potential negative social impacts (A. P. Kinzig, 2011; Lü & Wang, 2017); lack of consideration for intrinsic, non-anthropocentric, and not-yet-recognized value (Batavia & Nelson, 2017); assigning fiat economic valuation to

services may inappropriately open up the risk of anonymizing them and potentially subjecting them to whims of market fluctuations and competition (Muddiman, 2019) and; in their documented potential in-effectiveness of programs in actually meeting purposed goals in locales (Corbera et al., 2020; Gordillo et al., 2021; Pynegar et al., 2018) Despite of all this, well-designed and considered PES programs have already been shown to have the potential to be very effective and have also been recognized for their huge potential moving forward (Costanza et al., 2017; Wegner, 2016)

In consideration of the potential danger and ineffectiveness of PES programs (A. P. Kinzig, 2011), in order for PES programs to have positive and cost-effective impacts, they need to be critically evaluated and considered in order to maximize their positive impacts, and minimize the negative impacts, disservices, and tradeoffs. Care and thought must be given to many factors, including the impact of wording around PES (Chapman et al., 2020; Clot et al., 2017); measurability of the sought outcome (Arriagada & Perrings, 2013; Muradian et al., 2013) transaction costs (Arriagada & Perrings, 2013; Hansjurgens et al., 2016; Lute et al., 2018); appropriate compensation rates for the opportunity costs and socio-economic context (Hansjurgens et al., 2016; Muradian et al., 2013); impacts on social goals (Lü & Wang, 2017); potential risks of simplifying socio-ecological complexities (Hansjurgens et al., 2016); the political repercussions of PES either reinforcing the status quo or supporting transformation/change (Muradian et al., 2013); the risks of program leakage and slippage (Gordillo et al., 2021; Lichtenberg & Smith-Ramírez, 2011; Wu, 2000); and costs of policy over-simplification (Armsworth et al., 2012).

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