

**Climate Stewards: Studying the
Feasibility of a new Cooperative Extension
Climate Change Volunteer Program
for the Northeastern USA**

**Final Report submitted to the National Institute for Food and Agriculture
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Executive Summary

From 2017-2020, researchers and Cooperative Extension specialists from Cornell University, the University of Maryland, the USDA Northeast Climate Hub, and seven partnering land-grant universities in the Northeast conducted a feasibility study to assess the need for, and interest in, development of a new Extension Climate Change Master Volunteer Program for the Northeastern US. This report summarizes our work and findings. The focus of the analysis was on development of a program to train Extension volunteers to support their communities with climate change mitigation and adaptation projects. Our team conducted a literature review, an inventory of existing climate change educational programs, held focus groups throughout the region to gather stakeholder views, conducted a regional survey of land grant university researchers and Extension, and held a stakeholder engagement meeting during Climate Week NYC in 2018. We found that communities across the region are not well prepared for the impacts of climate change, and most do not have the capacity to undertake climate change mitigation or adaptation projects at the local level. Climate change education and literacy is an important aspect to increasing support for climate change policies and local climate action. There is strong interest among land grant universities in the Northeast in a new Extension volunteer program for climate change; stakeholders felt that such a program could help address capacity challenges of local communities. In order for the new Extension volunteer program to be successful, it would need to be offered online and in person if possible; be developed as a stand-alone program, as well as with providing training components that could be incorporated into existing Extension volunteer programs; provide a sense of community and efficacy for volunteers that would be helping address climate change at a local level; and provide support for Extension staff to facilitate volunteer training and projects. Participants also felt that a new program should be called “Extension Climate Stewards.”

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Introduction

Climate change is arguably humanity's most urgent challenge. We are already experiencing significant climate impacts, and these will only increase in frequency and severity over time (Walsh et al., 2014). As we plan for the future, we can no longer rely on the historical frequency and intensity of events; the old rules simply don't apply. For example, in the "new normal," record-setting disasters are becoming commonplace; in just the first eight months of 2016, Americans experienced eight "500-year" floods (Gillis, 2016). More Americans are gaining personal experience with the impacts of climate change, such as extreme weather, floods, drought, forest fires, and exceptional heat (Spence et al., 2011). However, many people still do not connect these impacts to the increasing concentrations of human-created greenhouse gases (GHG) in the atmosphere.

There is a critical national need for improvements in adult climate change education and increased support of communities that are working on climate change at the local level. If we are to maintain the ability of our communities to function and even thrive in the face of climate change, citizens must understand why climate change poses such an extreme and imminent risk, and be empowered with the knowledge and tools to take action. Studies show that the best predictor of climate risk perception and preparedness is understanding that climate change is caused by human activities (Lee et al., 2015). However, less than 50% of Americans currently accept an anthropogenic explanation for climate change (Leiserowitz et al., 2015). Moreover, despite the increasing personal experience of severe weather or other climate impacts, most Americans (70%) believe that climate change is a problem of the distant future and poses little immediate threat to them now (Leiserowitz et al., 2015). In New York, the threat of climate change ranks far below more immediate issues like jobs and the economy. In addition, after Hurricane Sandy, low levels of citizen education and motivation were the biggest challenge to moving communities toward greater climate resilience, as evidenced by surveys of nine different stakeholder groups involved in adaptation efforts in New Jersey (NJCAA, 2013).

The purpose of our project was to develop a plan for an innovative Climate Master Volunteer Program - to train Extension volunteers who can support their communities to engage in climate change adaptation, resiliency, and mitigation projects at the local level. We focused on the feasibility in the Northeastern United States, an area comprised of large variability in geographies and land use types, and communities - from the largest cities and urbanized areas in the United States, to some of the most rural areas.

Our project partners included researchers and Extension staff from Cornell University; University of Maryland; USDA NE Climate Hub, and Hub partners from Rutgers University (NJ); University of Maine; University of the District of Columbia; Pennsylvania State University; University of Delaware; Delaware State University; and the University of Vermont. See Table 1 below for the project team members and contacts.

Table 1. Project Partners

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Project Goals

The primary goal of this one-year planning grant was to research the need and develop criteria for a new Extension Climate Steward Volunteer Program. The longer-term vision and program goals were to enable land-grant universities to: 1) Develop and Implement a new Climate Master Volunteer Program for Climate-Smart Communities in the Northeast; and 2) Incorporate Climate Change Curriculum into Existing Master Volunteer Programs (e.g. Master Gardener Volunteers); if appropriate funding were provided.

Objectives and Methods

We achieved these goals through work on four supporting objectives:

- 1) *Comprehensive Literature Review*: We conducted a literature review to synthesize key topics covered in the project to provide a solid base of knowledge upon which to build a successful community-based program to improve citizen understanding of climate change, the risks it poses, and motivates citizen support of climate resilience programs. The literature review also documents the research on what makes communities resilient, to provide a baseline of resilience metrics from which to design the new Climate Master Volunteer Program.
- 2) *Inventory of Community-Based Initiatives & Curriculum*: We developed a comprehensive inventory of current community-based initiatives and curriculum on climate resilience and climate change education in both the public and private sector. We also inventoried existing extension climate change educational outreach programs, and current master volunteer programs, in order to provide a baseline of data from which to design and develop curriculum for a new Climate Master Volunteer Program for Climate Smart Communities in the Northeast.
- 3) *Feasibility Study Using Participatory Methods*: Our team designed and implemented a participatory Feasibility Study to assess the need for a climate-smart communities outreach model throughout the Northeast. Working with key partners such as the land-grant universities, New York State Office of Climate Change's Climate Smart Communities Program, ICLEI, and other key partners, we assessed the need for the program, opportunities and barriers that exist, resources (human and financial) needed, and prospects for success through the following methods: a) focus groups; b) a design charrette with the planning team; c) stakeholder meetings and workshops; and d) an online survey.
- 4) *Synthesis of Data, Criteria for Program Development, and Final Recommendations*: Our team synthesized data from the literature review, program inventory and feasibility study to determine the need for a community-based Climate Master Volunteer program and developed a curriculum outline and criteria for a successful program.

Review of the Literature

According to the latest National Climate Assessment, climate change is affecting the Northeastern United States in multiple ways. These changes include alterations to the seasons, with milder winters and earlier spring conditions that are affecting ecosystems and environments in ways that adversely impact tourism, farming, and forestry. Industries and livelihoods are at risk from additional changes to forests, wildlife, snowpack, and streamflow (USGCRP, 2018). Temperature has increased by 2.4°F between 1895-2015 (NOAA, 2019). Precipitation has increased by 4.9 inches over the same time period (NOAA, 2019), and there has been a 71% increase in 1-inch very heavy rainfall events between 1958-2012, the highest increase in such extreme events across the entire United States (Karl et al., 2009). Even though climate change is affecting the region, many community members are unaware of exact impacts, or what they can do at a personal or community-level to reduce the level of climate change, or increase adaptation.

There are few formal mechanisms that can provide research-based, adult education on climate change, with the exception of programming through the Cooperative Extension system. One model of success is Extension Master Volunteer programs, which forge a clear and ongoing link between scientists and front-line communities through well-trained volunteers who can serve as community opinion leaders (Nisbet, 2010) or local climate change leaders. Our research establishes the need and feasibility of developing a research-based Master Volunteer program to support *climate-smart communities*, as opposed to training volunteers for individual climate or home-energy changes in behavior. This community outreach model, of volunteer stewards who can serve their communities, is critically needed to move the bar on climate change action at the local level.

Following the tradition of current and successful Extension Master Volunteer programs, volunteers in an eventual program would receive training in the scientific foundations of climate science, impacts and appropriate responses from land-grant research and extension experts. These citizen volunteers then return to their communities as trusted peer educators and messengers with high credibility (Allred et al., 2011; Broussard, Allred, & Sagor, 2011). As members of the communities and local cultures themselves, the Climate Master volunteers would be uniquely qualified to effectively spread crucial climate information and science-based solutions through their social networks, and to motivate other citizens and possibly their local municipalities toward climate action.

In the sections below, we provide a brief introduction to the need for this project based on the findings highlighted in key literature on climate change belief and action in the United States, local action and community resiliency, and characteristics of existing Extension Master Volunteer programs as models for a proposed Climate Master Volunteer program.

Climate Change Belief and Barriers to Action

Researchers from Yale and George Mason Universities have conducted annual national surveys on perceptions of climate change, starting in 2008 (Leiserowitz, Maibach, Roser-Renouf, Feinberg, & Rosenthal, 2015). The most recent iteration of the survey indicates 70% of Americans think global warming is happening, and more than half of the American population acknowledges that it is caused by human activities (Marlon, Howe, Leiserowitz, & Wang, 2019). Furthermore, a majority of Americans (70% in 2018) think that climate change is likely to affect future generations and only 41% think that climate change will affect them personally (Leiserowitz et al., 2019). Nationally, 57% of Americans think local officials should do more to reduce the impacts of global warming (Marlon et al., 2019).

Even though the majority of Americans now accept that climate change is occurring, their willingness to act on the issue remains a low priority for most citizens (Lee et al., 2015; Pew Research Center, 2010). This is consistent with the common opinion in the George Mason/Yale 2018 survey that found that climate change is perceived as a problem of the future, not the present. A 2014 survey in New York found that 82% of New York residents believe the climate is changing; yet climate change remained a low priority for action, far behind more immediately pressing issues such as the economy, jobs and education (Allred et al., In progress).

The added challenge is that the topic of climate change has become highly politicized. It has become a question of belief, as opposed to a discussion about evidence, analysis and critical thought. Acceptance that the climate is changing has become highly politicized in the US, with strong sentiments held among party lines. Republicans and Democrats are divided when it comes to accepting the existence of global warming and that it is caused by human activities. Dunlap, McCright, and Yarosh (2016) highlight information collected from Gallup polls on climate change perceptions and attitudes. They report 76% of Democrats surveyed agree global warming is occurring, while 42% of Republicans agree it is occurring. The divide is even greater when survey respondents were asked to consider if human activities were the cause of global warming, with 84% of Democrats and 43% of Republicans agreeing. Partisan differences on climate change have increased since 2008, and have led to diminishing support for general climate change policies from Republicans.

In order to boost the motivation of Americans for climate action, it is necessary to bring the short-term risks of climate change home with local examples (Center for Research on Environmental Decisions, 2009). In addition, increasing the understanding of the human causation of climate change facilitates the understanding of risk (Lee et al., 2015). Yet, human causation is precisely the stumbling point for many Americans. Studies in psychology show that most people have difficulty considering issues that inspire fear or guilt (Allred & Chatrchyan, In progress; Swim et al., 2009). Climate change inspires both: people feel guilty that humans could be the cause of such major environmental change, they fear that

their way of life will be lost, and they fear that they will have to change their behaviors. Finally, many people feel powerless in the face of such an immense and wide-reaching problem (Leiserowitz et al., 2015). These fears and feelings of hopelessness make it more reasonable to postpone deep consideration and action on climate change.

Effective Climate Change Communication

The literature highlights key strategies for communicating climate change effectively. Particularly, activities and messaging that empowers individuals to take collective action on climate change such as place-based learning, do-it-yourself activities and digital performance spaces encourage the social side of learning and give learners the permission to express their ideas through constructive learning activities (Roschelle et al., 2017). Overall, the most valuable lesson from the literature on communicating climate change and encouraging action is understanding the personal experience with the impacts of climate change and belief that the problem is repairable is pivotal to increasing individual intentions to act on climate (Benjamin et al., 2017, p. 748). Utilizing effective strategies for building confidence, interest, and community within informal environments makes climate action strategies more accessible to individuals that experience feelings of helplessness (Hill and Tyson, 2009).

Overall, the key lessons regarding the effectiveness of carbon literacy and climate change communications are:

- It is most effective if citizens understand why climate change poses extreme and imminent risks, and are empowered with the knowledge and tools to take action.
- The best predictor of climate risk perception and preparedness is understanding that climate change is caused by human activities
- If people understand their actions are the main driver of climate change then they can start to understand their actions can also reverse it.
- Adult beliefs are often strongly connected to their political identities, which can hinder their willingness to act. Hence, beyond providing scientific facts individuals will act on climate change if they understand the immediate, personal or local impacts of the issue, and if they understand the actions they can take to make a difference.

Sheppard (2015) concisely presents key approaches to effectively communicating and engaging the public on climate change. These approaches build on levels of climate literacy, or understanding, amongst different groups of people, improve links between actions and relative impact. They include:

- Make it local: making climate change more salient and immediate by putting it into a community context that people care about, using the local landscape to express climate change issues and focus action.

- Make it visual: Making concepts and realities of climate change and carbon both clear and compelling and again local. Show what effects of climate change really looks like at local level, for example, changes in rainfall in the Northeast and effects on farming.
- Make it connected: Link local with the 'big picture' on climate change, integrating all aspects of climate change that interact with society and affected environments across scales.

Communications are an important aspect of raising awareness and concern about climate change, however, given the barriers to climate action, communications alone are not enough to engage communities in taking action. Thus, educating communities and the people within them is a critical aspect to encouraging more action and resilience to the impacts of climate change.

Strategies to Motivate Local Action on Climate Change and Community Resiliency

National and international action has largely failed to adequately curb GHG emissions to date, and some states (particularly California and New York) and local governments have stepped up to fill this void (Chatrchyan & Doughman, 2008). Recent evidence suggests many communities across the United States will experience significant economic and social risks from a changing climate (Hsiang et al., 2017; Janowiak et al., 2014; Melillo, Richmond, & Yohe, 2014). These communities are uniquely poised to mitigate emissions and adapt to impacts as they control decisions on land-use planning, transportation programs, municipality owned energy sources and building codes (Betsill & Bulkeley, 2006; Homsy & Warner, 2013). However, many communities falter when it comes to understanding or 'buying into' the causes of climate change and localized climate action, leaving them ill-prepared for the impacts of climate change (Scannell & Gifford, 2013; Tang, Brody, Quinn, Chang, & Wei, 2010).

There has also been a growing realization that climate change must be addressed at all levels of government, from the local to the global level (Bulkeley & Moser, 2007). Local governments have even been described as "hotbeds of climate change activity" in the United States (Bedsworth & Hanak, 2013; Sharp et al., 2011). In fact, local government action can target 30 to 50 percent of the world's GHG emissions (Lindseth, 2004). Ostrom (2009) and Betsill & Bulkeley (2006) and Homsy & Warner (2013) all stress the promising role local and municipal governments can play as part of a global multilevel environmental governance system. According to these scholars, lack of robust national climate policy in the United States amplifies the importance of local governments' responses to climate change.

Recent scholarship has drawn attention to the growing number of local government commitments to address climate change, which are reflected in the burgeoning number of municipalities that are working to develop both climate change mitigation and adaptation plans and projects (Bedsworth & Hanak, 2013; Sharp et al., 2011). Much of this work has been coordinated through new networks

of transnational climate change governance mechanisms, such as the ICLEI Cities for Climate Protection Campaign, or the C40 Cities Climate Leadership programs (ICLEI, 2016; C40 Cities Climate Leadership Group, 2016). Most of the local efforts on climate change in the United States are occurring in larger cities, with much lower levels of effort in smaller cities or rural municipalities – in part due to smaller municipal budgets and capacity to support local climate change work (Allred & Chatrchyan, in progress).

Many local climate change efforts in the Northeast are increasingly focusing on building resiliency, especially after the devastating effects of extreme weather events in the region. Folke (2006), Grafton et al. (2013) and Nelson et al. (2007) define climate resilience as the capacity for a socio-ecological system to a) absorb stresses and maintain functionality in the face of climate change, as well as b) adapt and evolve into more desirable, sustainable systems that are better prepared for climate change. However, a study by the Federal Emergency Management Agency (FEMA) reveals that most American communities are unprepared for the major impacts of climate change, such as severe weather, floods, droughts and fire (FEMA, 2016).

Building a resilient community is an iterative and ongoing process of adaptive management that involves stakeholders across multiple sectors, including community members, at every stage (Brunner & Lynch, 2013; Moser & Ekstrom, 2011). Thus, Norris et al. (2008) describe community resilience as “a process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disturbance” – in other words, the quality of the resources, specifically in terms of their robustness, redundancy, and rapidity, matter in terms of the ability of a community to adapt to change. Integrating efforts across agencies is essential, as is considering interactions between humans and the natural environment (National Fish, Wildlife and Plants Climate Adaptation Partnership, 2012).

Both preparedness and adaptation play key roles in a resiliency plan. Many guidelines and case studies are now available that describe strategies for building climate resilience (National Research Council (U.S.), 2010; Brugmann, 2013; Center for Science in the Earth System, et al., 2007; EPA, 2015; Georgetown Climate Center, 2014; Higbee, 2014; Kresge Foundation, 2014; Reeve & Kingston, 2014; Smart Growth America, 2015). The basic elements common to most of these strategies are: performing a vulnerability assessment, identifying options for adaptation through technical consulting, strategic engagement and communication with stakeholders, choosing and implementing the strategies, educating community members, tracking effectiveness, and revising as needed. Many government agencies now recommend incorporating climate change into all community planning processes (Baltimore Office of Sustainability, 2013; Higbee, 2014; Kresge Foundation, 2014; Reeve & Kingston, 2014). This research points out the need for improvements in community climate change resiliency planning, involving multiple stakeholders. The Climate Master Volunteer program can serve as a key resource for communities.

Effectiveness and best management practices for Master Volunteer programs

The traditional underpinning of Cooperative Extension programs is to “provide research-based information and tools to individuals, to help them improve their lives and communities” (USDA NIFA, 2016). This foundation of providing individuals with information, to improve their understanding of an issue, leading to eventual behavior change, is based in part on Fishbein and Azjen’s Reasoned-Action Approach (2011), and is still relevant today. They argue that an individual’s beliefs and attitudes will determine their intentions and willingness to adopt new behaviors.

But we also know from recent research that climate change is a particularly polarized issue in the United States, with a great deal of misinformation and uncertainty that has been disseminated. Effective climate change education and engagement thus requires a strategic communications approach and framing of messages to reach adult audiences. Adult beliefs about the issue are often strongly connected to their political identities, which can hinder their willingness to act (Leiserowitz et al., 2009b). As a result, simply providing local government authorities with more scientific facts or trying to change their beliefs may not persuade them to take action (Kahan, 2015). Alternatively, research has shown that individuals will act on climate change if they understand the immediate, personal or local impacts of the issue, and if they understand the actions they can take to make a difference (Center for Research on Environmental Decisions, 2009; ecoAmerica et al., 2015).

Utilizing the Cooperative Extension system is a natural vehicle to increase adult education and action on climate change. Extension educators occupy a unique position as liaisons between information generators (such as land-grant universities), and information users (such as farmers or community members) (Burnett et al., 2014; Colasanti et al., 2009; Wojcik et al., 2014). This positioning can help facilitate flexible, issue-based discussions on climate change (Allred et al., 2016; Brugger & Crimmins, 2014). The Cornell Climate Smart Farming extension team in New York is an example of trusted specialists who can work with stakeholders to provide them with information on how extreme weather and climate variability are affecting operations (from extreme rainfall to drought), and practical tools to increase resiliency (Cornell Climate Smart Farming, 2016).

Extension Master Volunteer programs are highly successful models for community education and peer-to-peer communication (Allred et al., 2011). There are a wide variety of Extension Master Volunteer programs across the United States, covering issues from gardening, forestry, and family and consumer science. All of these programs operate on the same basic premise: volunteers are provided with 30-60 hours of instruction, which include lectures, discussions, webinars, field trips or hands-on projects. After completing the requirements and becoming a certified volunteer, the trainees devote 20-50 hours per year to volunteer service within their community. The programs also involve continuing education and volunteer service, following the initial training. Building on the success of this

general approach, a new Climate Master Volunteer program will be an effective way to build a cadre of well-trained and motivated community leaders across the entire demographic spectrum in the Northeast.

Extension Master Volunteers enrolled in existing programs are effective educators. In one forestry program, visits from a trained volunteer were more effective in producing behavior change in landowners than were visits from natural resource professionals (Kueper et al., 2014). Peer outreach programs also serve the important role of bridging communication between landowners and natural resources professionals (Allred et al., 2016). The unique effectiveness of the Extension Master programs reflects the advantage of peer-to-peer education; the volunteer is from the same community and culture as the client, and will therefore be a trusted messenger (Kahan et al., 2012). One survey of extension educators cited the Extension Master programs as valuable because volunteers are not only educated, but because they are empowered (Laughlin & Schmidt, 1995).

Trained and enrolled Extension Master volunteers tend to be a unique and loyal group of individuals, and they share qualities that make them particularly effective as community educators. Overall, they are interested in lifelong learning and find working on projects with a visible impact most fulfilling (Peronto & Murphy, 2009). They are eager to learn more about their area of study, such as gardening, natural history, watershed protection or conservation (Strong & Harder, 2010), and willing to attend rigorous training and be tested on the material. Many volunteers remain in the programs for years (Kirsch & VanDerZanden, 2002). Volunteers cite increased knowledge and an enhanced interest in volunteering and environmental stewardship as the biggest benefits of involvement with Master Volunteer programs (Peronto & Murphy, 2009; Strong & Harder, 2010). In some cases, volunteers have become more involved with local governments and policies as a result of their service (Kirsch & VanDerZanden, 2002).

These findings on volunteers and volunteer training and retention were taken into account in planning for the new in the Climate Master Volunteer program. In particular, during our stakeholder meetings, our team noted that it would be preferable to drop the term “master volunteer” from the name of the program and should be dropped from the program as it can sound “elitist,” and instead refer to the new program as *Cooperative Extension Climate Stewards*. Although still based on the successful models of Extension Master Volunteer programs, from this point on, we are referring to volunteers as “Climate Stewards.”

Findings from the Feasibility Study: Needs, Barriers, Opportunities

We set out to develop a comprehensive inventory of current community-based initiatives, which are aimed at enhancing climate resiliency and mitigation at the local level in both the public and private sector, as well as of existing Extension climate change educational outreach, and current master volunteer programs. To accomplish this we have pulled together an inventory of programs which include existing Extension climate change outreach programs (both in the Northeastern United States and nationally); current Extension Master Volunteer programs that are incorporating climate change into their programs; community based resiliency initiatives (including those in the public and private sector); and local climate change action programs - such as ICLEI or the NYS Climate Smart Communities program. The key research questions we sought to answer with this inventory are:

- Who is the primary audience for these programs?
- What is the average cost?
- What is the average program length?
- What is the most common format?
- What are the key topics covered?
- Are there key partnerships, if so with whom?

Based on the research questions, the inventory was narrowed down from 80 to 52 programs and is available to view on the Cornell Institute for Climate Smart Solutions website, under the communities page:

<http://climatechange.cornell.edu/our-mission/climate-smart-communities/#climate-stewards-volunteer-program>.

Among the 52 programs included, 19 were aimed at municipalities and communities, 15 were aimed at individuals or volunteers, 3 were aimed at Extension and 4 were targeted to resource managers. Among the 52 programs 41 were either free or did not provide information on costs. Of the programs that did charge a fee the costs ranged from \$20 up to \$1,300, while the average cost was \$230.

Program length ranged from 2-day in-person workshops to two-years. The Rutgers Environmental Stewards Program is 20 weeks, while the Energy Navigator Volunteer Program in Tompkins County New York lasts 10 weeks. A majority of the programs were either in-person (16) or online trainings (18). Only 6 programs followed the Master Volunteer Training format and only 3 provided a certification. Among the programs, there were only 10 that were

Primary audience	
Individuals	18
Municipalities	16
Communities	3
Extension	3
Resource managers	3
Land owners	2
Planner	2
Consultants	1
Elected officials and CEOs	1
EPA employees	1
Master Gardeners	1
Undergrads	1

Figure 1. Audience of Existing Programs.

specifically focused on climate change in general. The range of topics covered are listed in the figure below, which shows the state most programs are located in, or the headquarters of the managing organization, a breakdown of program type - in terms of how it is delivered, and core topic.

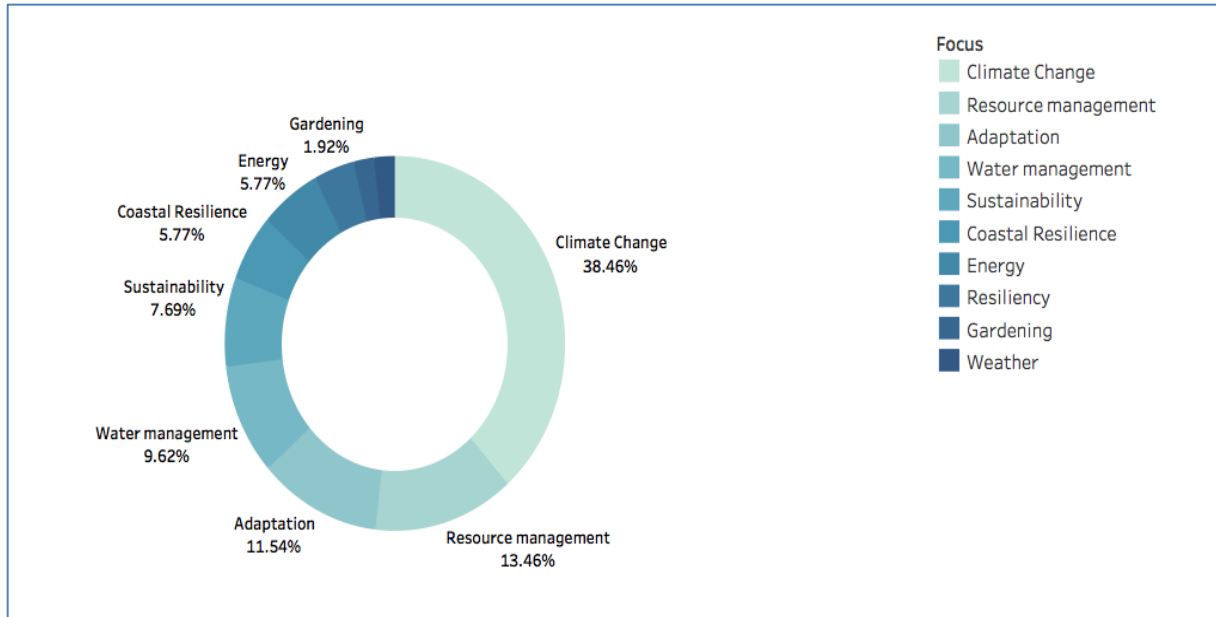


Figure 2: Breakdown of existing community programs by central topic.

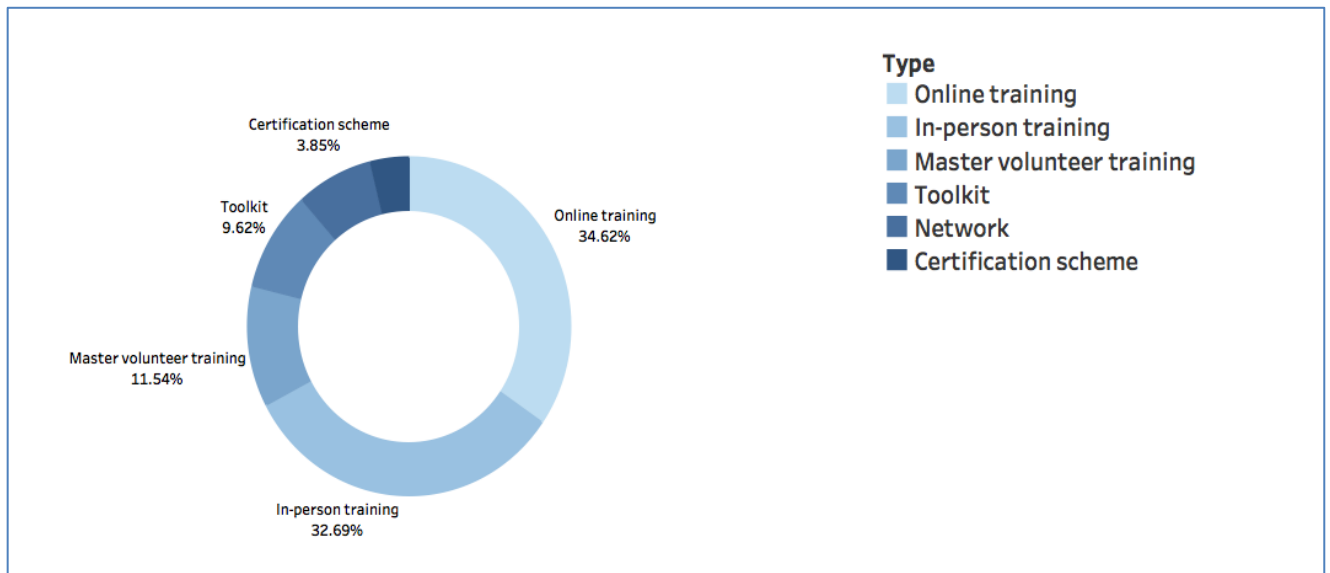


Figure 3: Overview of existing programs by type.

We identified only one complete curriculum for a climate change education program that has been developed for Cooperative Extension, the *Climate Masters*TM

Program from the Resource Innovation Group in Oregon (2016). This program was offered several times in Oregon, Nebraska, and New Mexico, but it is not currently being offered due to resource constraints. Research and extension specialists at Cornell University have developed climate change resources, tools and training materials, including the Cornell climate change website (climatechange.cornell.edu), and climate smart farming program for agricultural stakeholders (climatesmartfarming.org), as well as adult climate change educational resources, and climate change curriculum for Master Gardener Volunteers. Extension Master Gardener programs in New York and Maryland have already begun to incorporate climate change information into their training programs.

Results from the Focus Group Discussions

Our team conducted eighteen focus groups and one interview in seven states across the Northeast to better understand the needs for a new climate volunteer program, and experiences with extension or other volunteer programs. The aim of the focus groups were to better understand views on 1) best practices of Extension Volunteer programs or community outreach programs related to climate change; 2) community needs for a trained volunteer on climate change action; 3) the feasibility of having a climate change volunteer program within communities; and 4) the information, tools, resources and funding needed to make a program such as this successful.

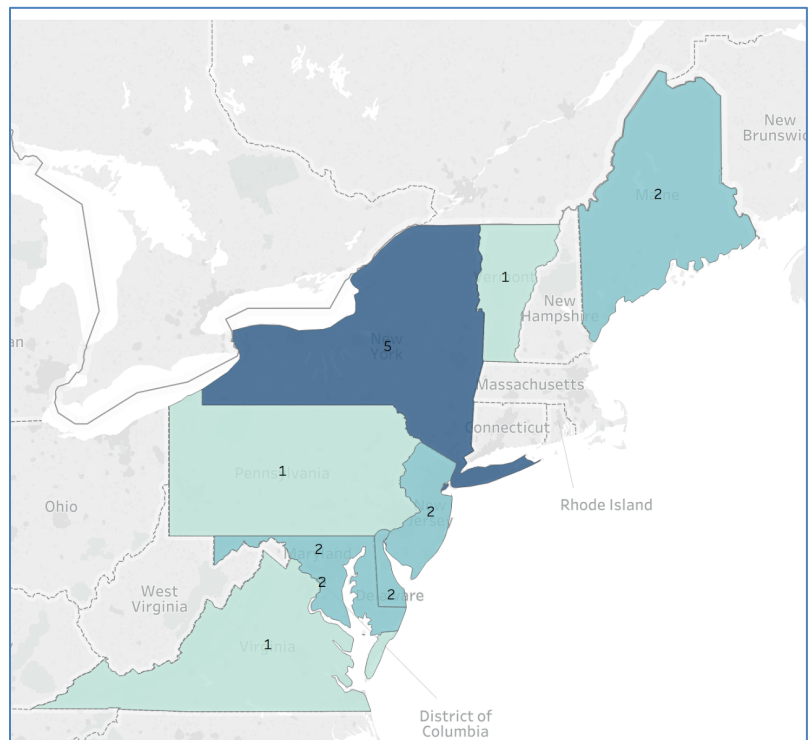


Figure 4. Map of focus groups conducted by state.

In total, 122 (42 male, 80 female) people participated in the focus groups. The focus group audio files were transcribed and analyzed using Dedoose software. The focus group questionnaire is presented in Appendix D, however the main questions consisted of the following:

- Are communities prepared or taking action to prepare for climate change?
- What do communities need to be better prepared for climate change?
- Can trained master volunteers help their communities?

- What factors would impact the success of an Extension Climate Steward Volunteer Program?
- How would a successful Extension Climate Steward Volunteer Program be structured?

We developed a coding framework based on the literature review and research questions, which consisted of the following codes:

- Climate Impact(s)
- Preparedness (level of community preparedness)
- Adaptation (Community Actions)
- Mitigation (Community Actions)
- What Help is Needed? (What are the community needs to address climate change)
- Successful Programs (Elements of Successful Volunteer Programs)
- Program Delivery
- Develop Program (Should the Program be Developed or Not)
- Format (What format should the program take)

We also identified any emergent codes and interesting quotes. The following sections summarize the critical codes from each overarching topic.

Climate Impacts

The most significant climate impacts discussed by focus group participants were flooding, mentioned 38 times and extreme precipitation which was mentioned 35 times. Additional emergent codes included invasive species and pests (25), changing seasons (26), and ecosystems (23). The table below provides a summary of the remaining important codes related to climate impacts experienced by focus group participants throughout the Northeast.

Table 2. Main Climate Impacts in the Northeast Mentioned in Focus Groups.

Code	Number of mentions
Flooding	38
Extreme precipitation	35
Changing seasons	26
Invasive species and pests	25
Ecosystems	23
Agriculture	17
Drought	17
Sea level rise	15
Disease and health	14
Temperature	14
Economic impacts	13
Erosion	8
Environmental justice	4

Many of the focus group members had interesting thoughts to share on the climate impacts they have experienced in their community. The two excerpts below highlight how individuals are experiencing climate change.

“There was a time for everything. Now you don’t know when the birds are coming or what’s happening, the birds singing in the trees. The next thing you know it’s wintertime.” - DC participant

“People have to cope with it and people are adapting even if they’re not realizing that they are by making behavior changes and some of those behavior changes come at a cost, economic, psychological, in terms of community cohesion.” - DE participant

Preparedness

When asked if your community is prepared for the impacts of climate change the majority of participants indicated their community was not prepared (36), compared to those that indicated their communities were slightly prepared (23) and very prepared (6). A key theme that arose from the topic of preparedness was

that many communities are working on climate action planning, but lack the funds or staff time to implement these plans. In terms of mitigation many communities tackle low hanging fruit such as lighting, while adaptation efforts tend to focus on changing infrastructure to combat immediate risks such as flooding. There also appears to be a disconnect between adaptation and mitigation actions among communities, as opposed to building on the synergistic relationship between these activities.

“Sometimes I feel within communities there’s a disconnect between adaptation and mitigation like oh okay our sea levels are rising, let’s you know let’s build a dike, a berm, replenish the beaches but what’s causing that sea level rise, is it climate change?” - DE participant

Adaptation

When asked about adaptation activities within their communities most participants indicated their communities focus on mitigation, as opposed to adaptation. Adaptation was only mentioned a total of 56 times out of a total of 4506 coded items. In terms of the types of adaptation activities currently underway most people mentioned infrastructure, community outreach and watershed management and planning.

“When it comes to adaptation most of this shit is going to happen and there’s nothing we’re going to be able to do about it, it’s just going to be changing, it’s just changing the landscape, it’s the new weird world.” - VT participant

Mitigation

Mitigation was mentioned slightly more so than adaptation, with a total of 106 mentions. Participants emphasized renewable energy projects and attributed community support to the cost savings or co-benefits from implementing renewable energy projects.

Community needs for help to address climate change

When asked how volunteers could best help their community, the critical themes that arose were education, youth and facilitating projects. The code most mentioned in terms of community needs was information and education, indicating a widespread need across the Northeast for climate change education and reliable information. The other main themes include coordination, funding, and leadership for the community and climate action planning.

“After that big flood in 2014 in Penn Yan people were pointing at the county and the town saying why did you guys not keep our ditches cleared out? And

*they didn't understand that if it's on their property they need to be responsible.”
- NY participant*

“A lot of our local communities don't have the capacity for doing some of that you know climate adaptation and planning work themselves or even the education and outreach that's necessary to recruit their community and citizens to take action steps, so if there was a person that could be the liaison between the community's leadership and council or mayor or whoever is leading the charge you know and implement that program for them, that would help them be able to do that because a lot of our communities don't you know have a whole planning team let alone the climate adaptation team so they can be supplemented with some volunteer assistance. I think that would really start getting things done on the ground.” - DE participant

“We have 565 municipalities in New Jersey and 45 mayors show up to this climate change meeting wanting to do something and if I was a climate change guy, I couldn't get to 45 towns. I would need help you know so having a cohort like that and go out and help give some of those talks. I also think it's very nice too that certain places where you have someone who is a volunteer who is taking this and learn about this, going and talking to other people, residents who are involved. It doesn't always have to be the professor from the college.” - NJ participant

Should the Program be Developed?

A majority of the participants indicated the proposed program, or one similar to it should be developed, however many participants found it difficult to provide an affirmative answer without a clearer picture of what the program would be. Agreement that the program should be developed was coded 51 times, compared to those that indicated the program should not be developed (4).

Format of the Program

The focus groups were asked if the proposed program should be developed as a brand new Master Volunteer program or incorporated into an existing program. Most groups felt that the Program could be developed as a NEW Program, but also incorporated into existing Master Volunteer Programs so as not to dilute the current base of Master Volunteers. Participants further suggested the program, whether new or offered as an additional track to an existing program, should be pilot tested first before expanding more widely.

“I think it could be a great way to pilot a lot of the ideas and to troubleshoot it to focus it in a super specific context...figure out some of the structure of the program before rolling it out to other subject areas like energy or

infrastructure or whatever else you want to open it up to eventually.” - DC participant

“What you don’t want to happen is where these groups have a tendency to be working against each other, and case in point we have a lot of Master Gardeners to sign up for the woodland stewards program ,who then don’t realize the whole issue of, involving the forest...and these things can tend to be a little bit different now. You get another...group going and you just don’t want them going into a different direction than the other groups.” - NY Participant

“The existing programs could be reinforced and uh some of the curriculum could be brought into it and the more I think about it I really would say that no matter what winds up happening I think that there should be some incorporation with the existing programs, discussing about climate change, I think that’s pretty important.” - NJ participant

“There’s only so much money and so many ways you can cut the pie.” - PA participant

Additional themes around the program format included the cost. For example, most current Master Volunteer Programs have a cost to participate. Having a cost can provide an incentive to take program seriously, but this could be prohibitive within low-income communities and would require consideration of need based scholarships. This further led to discussions on environmental justice, given the disproportionate effects climate change has on low-income communities.

“Honestly the question in my mind is who are the people in Baltimore City who are going to come and become these Master Climate Volunteers? Are we going to get people from low income communities that are historically underserved and I think probably not and I think we do see people from those communities in the Master Gardener Program because of food access and social justice and I wonder if we’re going to miss a whole audience that we really desperately need to reach because just kind of the almost academic sort of carrying that climate change has with it, right?” - MD participant

Program Delivery

In terms of how the program should be delivered, online or in-person, the emphasis was on both options (39) compared to online only (5) or in-person only (19). Many participants indicated the social component of Master Volunteer programs is critical to their success and that would be extremely important for a new program. In-person programs also promote hands on learning and help build a sense of community among the volunteers, an element that is critical for success. However, online delivery has advantages as well. The benefits of delivering the

program online would allow for younger audiences to be reached, whereas a majority of current Master Volunteer programs provide training during working hours making the programs more feasible for retired persons. Online programs or components also allow individuals the opportunity to go back and review lessons and/or materials.

“Personally I don’t like the online models because I feel it lacks a human connection in the building of communities and uh but sometimes it’s the only way to reach people in a broad scale so it depends on what your objectives are but if you want to build a sense of community I think, I think you, the in-person model works much better for that.” - ME participant

“You need to create that sense of community if you want people to continue to volunteer so I can imagine even an online training that then had a weekend service work project where you’re putting some of these skills in place together as a team where you’re going out like you did on Fire Island and where it’s very tangible like what you do with the training you just received because that is where the rubber meets the road.” - NY participant

Elements of Successful Volunteer Programs and challenges

Lastly, the focus groups were asked what it takes to make a volunteer program successful. The key themes that arose included the following:

Table 3. Elements of Successful Volunteer Programs Mentioned in Focus Groups.

Code	Mentions
Coordination, support and structure	99
Meaningful projects	62
Research based information	62
Sense of community	61
Partnerships with community initiatives and community buy-in	37
Clear objectives and mission	29
Different tracks for topics of interest	26
Flexible approaches	21

“I would think a survey will be a part of this and trying to survey communities and see what their needs are would be a real important part.” - ME participant

“We need flexible approaches. “ - NY participant

“I suspect that you would get people interested in a track but then as they got into it you would find that they would need more of a tier because none of these impacts of climate change are happening in isolation of each other. So we started off in Nags Head with it being a sea level rise conversation. And they realized going forward as they were thinking about what things are also impacting that part of the infrastructure that they’re worried about, Hurricane Matthew happened, etc., it’s like oh no it’s also the rainfall, it’s also seasonal ground water level, it’s also temperature that’s affecting how much trees are drawing down or that seasonal groundwater level. So it started out interested in hey we want to do a sea level rise plan and then they realized getting into it that it’s hard to just look at sea level rise.” - Sea Grant participant

This discussion also led to key points on what volunteers need in order to be successful and stay in a program. Participants indicated volunteers would need to be trained well to fully understand the science of climate change, and develop a certain level of competency and skills. They would need to be trained to understand the processes within community leadership and planning, and develop skills in responding to questions confidently. Volunteers also need a strong sense of community to stay motivated as well as meaningful projects, tailored to the specific needs of the community to feel as though they are making a difference. This is often facilitated through formal recognition, certification or community accolades.

“I think that the thing that really stops people from doing stuff related to climate change is because the problem feels so huge that it’s like what the heck is the point, nothing I do is going to matter and a really important part of this training program would be giving the climate masters tools to empower their communities and to like show them step by step, here are small steps that have an impact and give them the tools to communicate that part to scale impact so that people do feel that what they’re doing matters um so it’s not just about finding those little solutions, it’s like showing how it fits into the larger context.” - DC Participant

“Give them something meaningful for them to do.” - PA participant

“I think all of these things start locally, I mean in your own community is what you were saying so if you have, make the effort to educate people on a local level then they might start to see the benefit of changing policy on a statewide level and then maybe in the future might even see the benefit of changing it on a national level.” - PA participant

Although Master Volunteer programs are successful for enhancing community projects and delivering peer-to-peer learning, there are many challenges to

starting and maintaining a program. This includes funding and staffing, strong leadership, coordination, volunteer retention and delivering information and education in a credible way.

“Volunteer retention is definitely our #1 challenge.” - NY participant

“One thing that was mentioned before was funding, I mean a lot of communities invest in planning and some of them have really great plans but then they don’t have money to implement things and that can be frustrating for volunteers as well, if they see opportunities to actually implement some activities, but they don’t have the resources to do it or know how to get the resources or they know where the resources are but they don’t have the capacity to know how to apply for the funding or manage grants and you know particularly because we have so many very, very small communities that, those are, those are pretty big challenges I think.” - DE participant

Important topics for program

The following topics were identified as critical themes that all climate stewards would need to receive training on:

- Climate science
- Communication skills, engagement
- Marketing for diverse audiences
- Leadership, Project Management, grant writing
- Local Government 101: How local governments work
- Economic and health benefits

The following important ideas were mentioned by participants from the District of Columbia and New York:

“There’s going to have to be a lot of engagement with the community which means that you have to...teach them...to be in charge when they walk into the community to talk to whoever, whether they’re going to a school or community meeting..so they’ll know how to talk...” - DC participant

“And we can develop a tool and exercises that volunteers could use to kind of get their foot in the door with municipalities like a scorecard, a resiliency scorecard, that can help get the conversation started with them...you might look at like 10 criteria for the community...and then if they score poorly in something that’s where they then have steps coming in.” - NY participant

Results from the Survey of Land-Grant University Researchers and Extension staff

Our team developed a survey for input on the need for a new Climate Steward volunteer program, which was distributed by email to a sampling frame that included representatives from all the land-grant and 1890 universities in the 12 Northeastern states, including: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Pennsylvania, Vermont, West Virginia, and the District of Columbia. The sampling frame was developed with the states in the USDA Northeast Climate Hub. Within the land-grant universities, the frame consisted of all faculty who had appointments in colleges of agriculture, as well as all Extension specialists and educators who worked in programmatic areas related to natural resources and environment, agriculture, or climate change at the university or in regional or county Extension offices. By including all faculty and Extension personnel in these focus areas, the sampling frame included individuals who might not conduct work related to climate change, but we decided to construct an inclusive frame that provided respondents the opportunity to self-identify whether and how their work intersects with climate change, if at all.

In total, the survey was sent to 3,634 participants. The email notification noted that participation in the survey was voluntary, and that all responses would remain confidential. Of the 3,634 individuals invited to participate in the survey, 172 emails bounced, and 1 email was a duplicate. From the 3,461 correct emails, 786 respondents started to complete the survey, and 510 completed the survey, for a response rate of 15%.

The majority of responses were from university researchers, followed by university extension specialists, and then county cooperative extension educators. The majority of respondents primary work focused on agriculture (22%), followed by environment and natural resources (21%) and then climate change (12%).

When asked “how prepared do you think the communities are in your state to mitigate climate change at the local level,” the majority of respondents indicated the communities in their state are not at all prepared (45%) or only moderately prepared (40%), with only 3.4% indicated their communities were prepared or well prepared to mitigate climate change.

Similarly, When asked “how prepared do you think the communities are in your state to adapt to climate change at the local level,” the majority of respondents indicated the communities in their state were not at all prepared (35%), or moderately prepared (50%) to adapt to climate change, with only 5% indicated their communities were prepared or well prepared to adapt to climate change.

These are concerning numbers. If a new Climate Stewards volunteer program were developed and offered in the Northeast, volunteers could be trained to assist their local communities with greenhouse gas mitigation or adaptation planning for projects.

Breaking it down by state, when asked if there was a need for trained Extension volunteers to work with communities on climate change in their state, the majority

of those respondents from the District of Columbia, and seven states of New Jersey, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire and Maine answered “definitely yes” or “yes.” A more detailed breakdown of this response across all states (Figure 5) shows most respondents think there is a need for trained volunteers to help their community. Dark green indicates “definitely yes” and light green indicates “yes”.

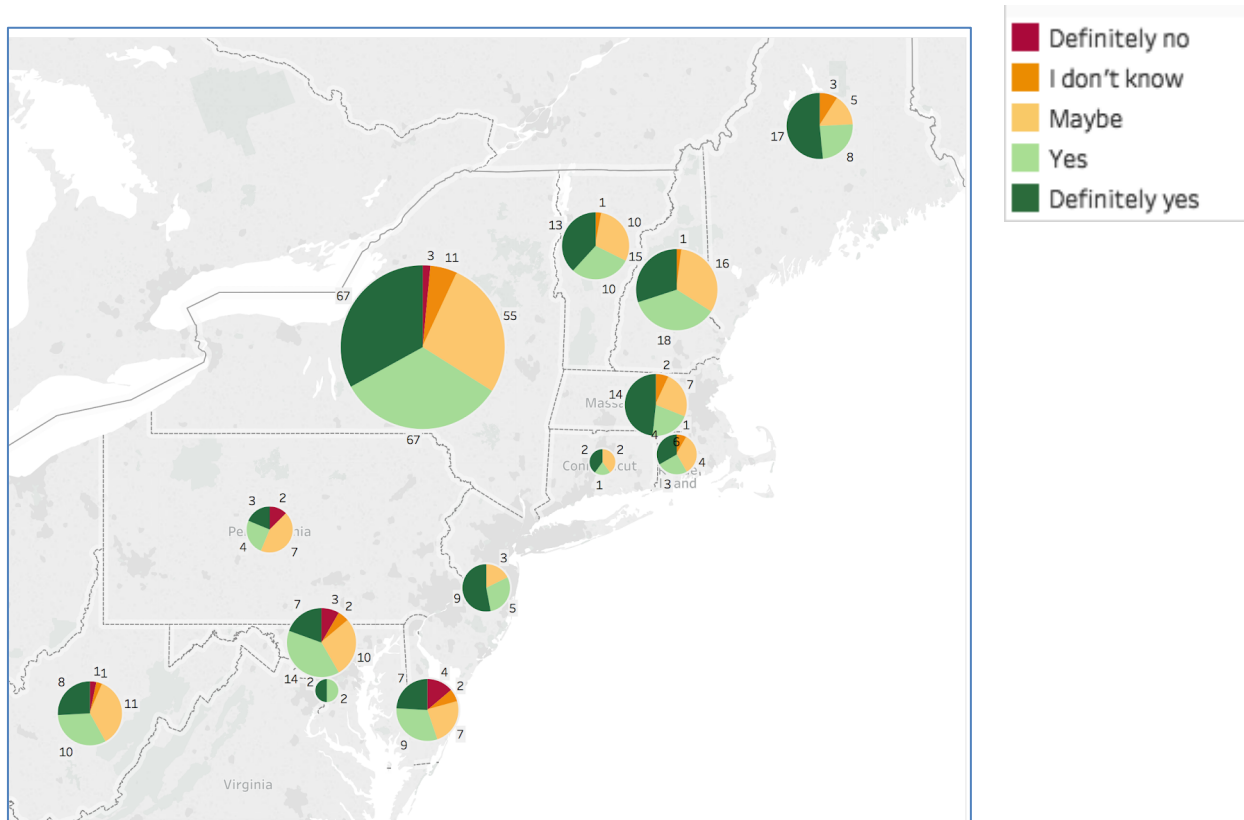


Figure 5. Interest in being part of a Climate Stewards Program by State.

The top five responses to the question, “How could trained volunteers assist their community on climate change projects” were 1) educating citizens; 2) conducting outreach and education with decision makers; 3) developing a local climate action plan; 4) citizen science; and 5) identifying infrastructure that needs changing. This indicates respondents feel that volunteers will be most helpful working on education; citizen science; and adaptation. In comparison, they felt that volunteers could less help with conducting, energy audits, transportation plans or greenhouse gas audits.

Results also showed that respondents felt their state or university would be interested in participating in a new program, 41% responded with “very interested” and 39% said “Interested.” Additionally, participants were asked if land-grant university and Extension staff would personally be interested in seeing a Climate Stewards Volunteer program being developed and implemented, 44% of

respondents identified that they were either “very interested” or “interested” in the program, with another 30% responding “moderately interested.”

This survey also suggests that the program can expect to have support from major land-grant universities. The survey further sought to identify the type of support needed to implement this program in each state, as well as the potential costs. The range of costs indicated for a full time person to manage a volunteer program, educator or volunteer coordinators, as well as travel and admin costs are summarized in the table below. Lastly, survey participants were asked to estimate how many regional educators would be needed to the program.

Table 4. Respondents best estimate of average costs needed for the program by state.

NE States and DC	Estimated state coordinator salary	Estimated number of educators needed	Estimated total for all educators salaries	Travel costs	Program costs	Annual estimate for the program by State
CT	\$75,000	2	\$100,000	\$5,000	\$7,000	\$187,000
DC	\$80,000	1	\$60,000	\$2,000	\$5,000	\$147,000
DE	\$70,000	1	\$50,000	\$3,000	\$5,000	\$128,000
MA	\$70,000	2	\$100,000	\$6,000	\$7,000	\$183,000
MD	\$75,000	2	\$120,000	\$6,000	\$7,000	\$208,000
ME	\$60,000	2	\$90,000	\$7,000	\$7,000	\$164,000
NH	\$70,000	2	\$100,000	\$5,000	\$5,000	\$180,000
NJ	\$70,000	2	\$120,000	\$5,000	\$7,000	\$202,000
NY	\$70,000	2	\$100,000	\$10,000	\$10,000	\$190,000
PA	\$70,000	2	\$100,000	\$10,000	\$10,000	\$190,000
RI	\$70,000	1	\$50,000	\$2,000	\$5,000	\$127,000
VT	\$65,000	2	\$90,000	\$7,000	\$7,000	\$169,000
WV	\$60,000	1	\$90,000	\$6,000	\$5,000	\$161,000
Total	\$905,000	22	\$1,170,000	\$74,000	\$87,000	\$2,236,000

The total average programmatic cost to implement a new program in the twelve Northeastern States, and the District of Columbia is estimated by survey respondents to be approximately \$2.2 million dollars. This estimated total amount does not include a budget for fringe benefits paid on salaries at land-grant universities, nor the overhead charged for contracts administration.

Stakeholder meetings

To further enhance the planning process for the Climate Stewards program we held two stakeholder workshops and one design charette with the full project team. The first stakeholder meeting was held via webinar and included educators, Extension specialists and researchers from across the Northeast. Thirty stakeholders attended the webinar and provided valuable input on the program design and shared valuable resources for developing the curriculum.

Following the webinar, all the project partners gathered at Cornell University to discuss the focus group analysis, the inventory of community programs and conduct a design charrette for the potential curriculum and program design. A design charrette is a short, collaborative meeting during which members of a team quickly collaborate and sketch designs to explore and share a broad diversity of design ideas. All the project partners were put into diverse groups, based on their experience and background. The groups were asked to identify and quickly sketch out the key topics, learning outcomes, and skills gained for a specific program topic, such as Adaptation, Mitigation, or Climate Science. Each group then rotated to another program topic to add input. The result was a fully outlined curriculum for the entire program, which can be found in Appendix E.

Lastly, the project team held a Local Climate Action Summit during New York Climate Week. The event was attended by over 100 individuals from government agencies, NGOs, municipalities, Cooperative Extension and universities that spanned the entire Northeastern US. The summit focused sharing success stories and challenges of local communities to address climate change, and to get stakeholder input on the development of a new Extension Climate Steward Volunteer program that would support climate-smart communities in the Northeast. The key outcomes from the summit are available to view online (<https://bit.ly/2DNlvyH>).

Overall Recommendations on the Design of the Program and Conclusions

Based on the overall analysis of the data we recommend further developing existing resources, curriculum, and training, centralized by one collaborative group of partners. This will provide a more systematic and research-based information and training of adult volunteers in the Northeast who can provide needed capacity for many local community climate resilience programs. The Cornell Institute for Climate Smart Solutions can serve as the central coordinating organization and can aid in promoting climate change resources and products being developed in partnership with other organizations, such as the Climate Learning Network (climatelearning.net) and Extension (extension.org) to ensure regional and national coordination and avoid duplication of effort.

Partnerships with community members or initiatives was important for the success of a volunteer program. This point was iterated many times throughout

each component of the research process. Within the inventory of community programs we identified several key partners among the programs in addition to land-grant universities:

- CLEAR
- American Institute for Certified Planners
- Alliance for Climate Education
- Association of Nature Resource Extension Professionals
- Cooperative Extension
- ICLEI
- Institute for Water Resources
- National Oceanic and Atmospheric Institution (NOAA)
- National Science Foundation (NSF)
- NYS Office of Climate Change
- The Nature Conservancy
- North American Association for Environmental Education
- Sea Grant
- Sustainable NJ, MD, PA
- US Dept of Agriculture (USDA)
- The WiLD Center

The value of partnerships was further punctuated by the stakeholder meeting held in New York City, during New York Climate Week. Many of the organizations listed above attended the Local Climate Action Summit and support collaboration. Thus, to be successful the Climate Stewards Volunteer program will need to rely on partnerships to connect, build off the momentum and enthusiasm, in order to achieve not just local but state, regional and global climate action. This important message cemented the value of the Local Climate Action Summit, and the value of meeting potential collaborators in person and pursuing relationships among a network of practitioners, researchers and Extension specialists. The Climate Stewards project would aim to continue this in practice through training volunteers throughout the Northeast, but also holding annual local action summits, such as the one held during the planning period.

More specifically, the program should consist of a core, research-based curriculum, updated annually as new scientific evidence on climate science, communication and policy is released. This would serve as the core structure of the program and outline clear objectives for the volunteers and program as a whole. Beyond the core curriculum, the program should remain flexible and adaptable for specific community needs. Yet, the projects need to be manageable for volunteers to implement within the constraints of the community and existing resources. We suggest providing off-the-shelf projects that can be adapted across communities based on the specific needs and interests of the communities and volunteers. We further suggest including optional modules on topics of interest, such in-home assessments for energy reduction and farming.

The program would benefit from both online and in-person activities for training, which are critical to building a sense of community and encouraging action. Lastly, the program should offer differing levels of engagement for volunteers, in terms of commitment and skills. For example, not all volunteers will have the interest or capacity to write a grant for their community. They may, however, want to assist in gathering materials for a grant, or seek out additional support within the community for a municipal leader to write a grant.

Overall, a majority of the respondents and stakeholders we interviewed indicated there is a need for trained climate volunteers to help their communities both mitigate greenhouse gases and adapt to the impacts of climate change. The program, if it were made available on-line could be used throughout the region, however, the needs and costs for implementing the program vary by state. In terms of feasibility, without independent funding to support staff time it would be difficult to implement maintain this program and ensure its success in the long-term.

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Appendix A: Draft Outline for new Climate Stewards Volunteer Program Curriculum

Modules	Activities
Orientation to the Program	We will outline the training, the focus on research-based climate change science and impacts, and the focus on stewardship - working with communities on projects to increase resiliency and reduce GHG emissions. Facilitated discussions will be used to explore the participants' current beliefs and understanding of climate change, in a non-judgmental and open format.
Training Component (@40 Hours): Six Core Modules	
Module 1: Climate Change Science and Impacts	We will provide volunteers with a basis in climate change science, and an introduction to the specific impacts in the Northeast - in collaboration with Dr. DeGaetano and staff from the Northeast Regional Climate Center (NRCC).
Module 2: Mitigation	Training will introduce volunteers to concepts around climate change mitigation, including various options to reduce GHG emissions. It will prepare volunteers to help their communities conduct a GHG Inventory, using tools and calculators. Solutions covered will include renewable energy and efficiency in buildings and operations, innovations in transportation, pricing carbon, waste management and recycling, and land use planning (zoning).
Module 3: Adaptation	Training will introduce volunteers to concepts around climate change adaptation, including various options to increase resiliency. Solutions covered will include emergency preparedness, watershed protection (riparian buffers, green infrastructure), sea level rise planning, local zoning (land use, open space, farmland protection, and overlay districts); and incentives and policies to support the local green economy.
Module 4: Effective Communication	This will prepare Climate Steward Volunteers to speak effectively and authoritatively to members of their communities, and will provide them with tools and leadership skills to build motivation and local climate action. It will also help them learn the leadership skills needed for setting up a local climate change task force.
Module 5: Project Planning	This module will train volunteers to help their Communities to designing and Implementing a Community Projects. The training will introduce volunteers to concepts and tools for local climate

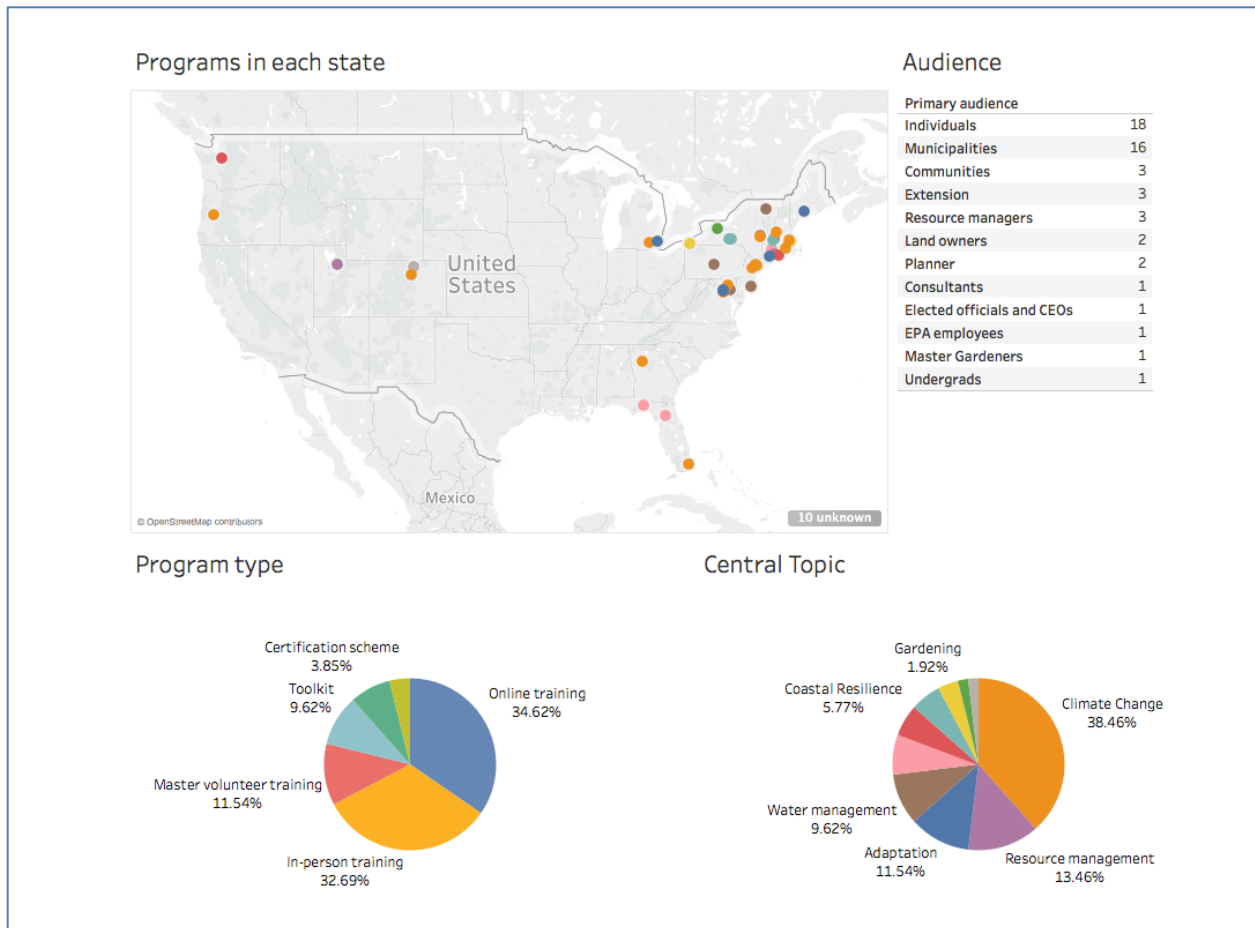
	change action plans, GHG inventories, and community resiliency plans. Resources such as tools from ICLEI will be introduced. Volunteers will work with educators to choose and map out a volunteer project that they can lead or support in their community, to reduce GHG emissions or increase resiliency. Plans will be presented and approved, keeping in mind existing community organizations and the need to support efforts, effective leadership and communication skills, and SMART Objectives (choosing projects that are achievable).
Module 6: Program Evaluation, Certification & Recognition	Volunteers will come back together to evaluate their project and share experiences, and receive volunteer certification and recognition. Following the first year, enrolled volunteers can continue to serve as Climate Steward Volunteers, by providing a continued number of community service hours each year.
Volunteer Service Component (@40 Hours):	
Implementing the Volunteer Community Service Project	At this point, volunteers will work on their own to implement their chosen project in their community, working to support local municipal or community groups on a climate-smart community project, or community educational or policy project.

One important idea that came about from the design charette was to train municipalities and also provide them with several ‘off-the-shelf’ projects with a clear overview of their benefits (environmental, social and economic). The municipality then could Cooperative Extension regarding the potential project(s) and requests help recruiting qualified community volunteers. Cooperative Extension is provided with online training materials that prospective volunteers can go through. Cooperative Extension could then match the volunteers with the municipality project. The campus unit could provide additional resources as needed.

Appendix B: Inventory of Existing Climate Change Community Educational Programs

The inventory of existing climate change community educational programs is available online in an interactive format. <http://climatechange.cornell.edu/our-mission/climate-smart-communities/>

Below is an image of the inventory. Individuals can hover over each dot on the map and view information about each program, including the name, audience, focus, cost, and website.



Appendix C: Focus Group Questionnaire

Focus Group Interview Questionnaire Regarding Development of a new Extension Climate Change Master Volunteer Program Developed by Cornell University - Spring 2018

Moderator Introduction: Hello, my name is (introduce self and present team members). Thank you for attending the Focus Group meeting today. Introduce team.

We are research and extension specialists from {XXX University, Cornell University, UMD and the NE Climate Hub}, and we're interested in learning more about how current climate change educational or master volunteer programs work in our state. We are also interested in learning about the feasibility of developing a new Climate Extension Master Volunteer Program to support communities in the Northeastern US. The purpose of the focus group meeting today is to get your input on what this new program could look like in the Northeast.

Typically, Extension Master Volunteer Programs recruit volunteers from a community, who receive training on a particular topic, and then complete a certain number of volunteer hours working in their community or on a certain project. The strength of these programs is that volunteers are trained with research-based curriculum, to conduct peer-to-peer outreach. Master Volunteers work with experts from land-grant universities and serve as a bridge to their communities, to increase the reach of programming on important topics. Examples include, Master Gardener Volunteers, Master Naturalists, Master Foresters, Master Watershed Volunteers, Master Composters, or Master Energy Volunteers.

With this in mind, we'd like to talk to you today about the climate change or Master volunteer outreach programs that you've been involved with, and what you think would work in your community or state.

Please feel free to speak openly and freely about your experiences - But we would also ask you to be respectful of everyone in the group. Since we have limited time, I will try to keep the conversation on track as much as possible and make sure that we have a chance to hear from everyone in the time allotted. Before we proceed, I'd like to take a minute to go over the consent form and demographic form that are in front of you. We ask you to review and sign the consent form before we start the meeting - there are two copies of the consent form, and you can feel free to sign both and keep one for yourself - and pass them up to me at the front.

The consent form indicates:

"You voluntarily agree to participate in the focus group conducted by Cornell University and university partners about developing an Extension Climate Master Volunteer Program in the Northeast. I understand that my participation is voluntary, and I can leave the focus group at any time. My input to the focus group

is confidential. My name and any identifying information will not be published in any articles or reports that come out of the research project.

By signing below, I agree to be audio recorded, and understand that the recordings will be transcribed and analyzed to gather information about views, actions, and needs for Climate Master Volunteers. The recordings will be kept for approximately one year and will be securely stored at Cornell University. After the data is collected and transcriptions are made, the recordings will be deleted.”

If everyone is ok, we are going to turn on the recorder and start the meeting...

Questions to be Read Aloud: (Goal to complete within 1 hour/20 minutes)

- 1) 0:00 [Introduction] Let’s start by going around the room and having everyone quickly share 3 things about yourself: Your name, your affiliation, and the climate change education or Master Volunteer programs you have been involved with.
- 2) 0:10 [Adaptation to Risk] What do you feel are the most significant climate related impacts or threats to your community? (Prompt if needed to clarify: Some examples could include: extreme rainfall, flooding, drought, or heat waves)
 - a) How well prepared do you feel that your community is to handle these climate risks?
 - b) What would help your local community increase its long-term resiliency to climate change?
- 3) 0:20 [Mitigation/Benefits] Do you know if your community is doing anything to reduce its GHG emissions? (Prompt if needed to clarify: Some examples could include: conducting an energy audit, changing lighting, adopting a local climate action plan, or educating citizens?)
 - a) What would help your local community with climate action planning or reductions to its GHG emissions?
 - b) What do you feel are the most significant benefits for your community of working towards a local climate action plan? (e.g. green jobs or saving taxpayer dollars)
- 4) 0:30 [Program Need/Interest] Does your state or community need a Climate Master Volunteer Program like this? Why or Why not?
 - a) Would your state or local community be interested in having a Climate Master Volunteer program developed and implemented?
 - b) Do you think individuals would be interested in becoming Extension Climate Master volunteers? Why or why/not?

- 5) 0:40 [Volunteer Service] From your experience with master volunteer or educational outreach programs, how could volunteers best help fill the needs in their communities to address climate change? (prompts if needed: through projects to educate community members, or to help their community conduct an energy audit or resiliency plan).
- 6) 0:55 [Generic Attributes of Successful Current Programs] Of the climate change volunteer or outreach programs that you have been involved with, what made them successful?
 - a) What specifically made them work well? (length of program, length of volunteering, is this a paid program?)
 - b) What motivated volunteers to be a part of the program?
 - c) What were the challenges or barriers that limited their success?
- 7) 1:10 [Developing a New Program] Now we'd like to get your input on the structure of a new program...What would make it work well?
 - a) Do you think an online program, in-person training, or a combination of both would work best?
 - b) Should Cooperative Extension develop a NEW climate master's program, or incorporate the topic into existing MV programs (e.g. master gardeners), or both?
 - c) What are some key topics, or content, that volunteers need to understand? (prompt only if needed: need training on, such as climate change science, adaptation, mitigation, or local action).
- 8) 1:20 [Resources] What kind of resources would be needed to develop and maintain a new program?
 - a) What kind of training and support would be needed to make this a success?
 - b) What would be the challenges of developing a new program?
- 9) [1:25] As we prepare to conclude this session, is there anything that else that you feel is important to share about this potential program?

[1:30] Thank you very much for coming today. Your time is very much appreciated, and your comments have been very helpful!

Appendix D: Land-Grant Survey Questionnaire

Cooperative Extension Community Climate Steward Volunteers Survey

Thank you for filling out our survey!

The purpose of this survey is to determine the needs, interest, and feasibility of developing a new Extension Climate Stewards volunteer program to support local climate action with communities in the Northeastern US. This study is being conducted by Cornell University and our land-grant partners from the USDA NE Climate Hub, with support from the USDA National Institute for Food and Agriculture (NIFA).

NIFA has asked us to assess the feasibility of developing a new Climate Stewards volunteer program that would train volunteers in the Northeast to help their local communities plan and implement climate change mitigation (reductions in greenhouse gas emissions) and adaptation (increased resiliency) projects. We are surveying research and Extension faculty, educators, and specialists from land-grant universities in the Northeast on specific needs for a Climate Steward program.

Extension volunteer stewards, or master volunteers, receive research-based training through enrollment in a Cooperative Extension volunteer program. They are trained in a specific content area that prepares them for directed volunteer opportunities in their communities. Examples of Extension volunteer programs include Master Gardener Volunteers, Master Forest Owners, or Watershed Stewards.

The survey is confidential, and your participation is voluntary. It should take no longer than 10 minutes to complete. Your participation is very important. We appreciate your willingness to share your experiences and opinions with us. Thank you!

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## Survey Questions

- 1) Please identify the university you work for in the Northeast.
- 2) Please provide your primary role(s) (check all that apply): *a) County Cooperative Extension; b) Regional Extension Team; c) University Extension; d) University Research; e) Staff or Administration; f) Sea Grant; g) Other.*
- 3) In which of the following areas does your work primarily focus? (Please check all that apply): *a) Climate Change; b) Energy; c) Gardening/Horticulture; d) Agriculture; e) Natural Resources/Environment; f) Economics; g) Food, Nutrition, and Health; h) Community Development; i) Youth Development; j) Education; k) Other.*
- 4) To what degree does your work focus on climate change? *a) Not at all; b) Moderately; c) Significantly; d) Entirely.*
- 5) How prepared do you think the communities are in your state to mitigate climate change at the local level? *a) Not at all prepared; b) Moderately prepared; c) Prepared; d) Well prepared; e) I don't know.*
- 6) How prepared do you think the communities are in your state to adapt to climate change at the local level? *a) Not at all prepared; b) Moderately prepared; c) Prepared; d) Well prepared; e) I don't know.*
- 7) Do you feel there is a need for trained Extension volunteers to work with communities on climate change in your state? *a) Definitely no; b) Maybe; c) Yes; d) Definitely Yes; e) I don't know.*
- 8) How could trained volunteers assist their community or municipality on various climate action projects (including both adaptation or mitigation)? (Please check all that apply): *a) Develop a local climate action plan; b) Conduct greenhouse gas emissions inventories; c) Conducting energy audits; d) Developing transportation plans; e) Land-use planning; f) Conducting outreach and education with decision makers; g) Inventorying natural resources; h) Planting riparian buffers or watershed protection; i) Assist with smart growth plans or projects; j) Assist with developing emergency management plans; k) Identify infrastructure that need changes; l) Educating citizens; m) Applying for grants; n) Researching specific information; o) Citizen science; p) Volunteers cannot help; q) I don't know; r) Other.*
- 9) How important are the following topics for Climate Stewards to understand in order for them to be successful volunteers? (from not at all important to

Extremely Important: a) Climate change science; b) Adaptation principles and examples of successful projects; c) Mitigation principles and examples of successful projects; d) Local climate change impacts; e) Effective leadership and communication; f) Local policy processes (e.g., town board processes); g) Grant development; h) Emergency preparedness; i) Program evaluation; j) Effective planning/project management; k) Citizen engagement; l) Other.

- 10) In your opinion, what makes Extension master volunteer programs (e.g. Master Gardener Volunteers) successful? (Please indicate how important each variable is, from Not at All Important to Extremely Important): a) Reputation of the program; b) The value of the information provided; c) In person programs; d) Online programs; e) Length of the program; f) Strong coordination of volunteers; g) Meaningful volunteer projects; h) A sense of community; i) Cost of the program; j) Other.
- 11) What challenges or barriers limit the success of Extension volunteer or outreach programs? a) Insufficient funding; b) Sustaining volunteer commitment; c) Insufficient staff time for managing volunteers; d) Challenges associated with recruiting volunteers; e) Challenges with making the program applicable to communities; f) Lack of volunteer incentives or interest  
Volunteers lack of time; g) Other.
- 12) How interested would you be personally in participating (extension or research) in a new Climate Stewards program for the Northeast at your university, if sufficient training, support, and funds were provided? a) Not at all interested; b) Moderately interested; c) Interested; d) Very interested; e) Not Applicable.
- 13) How interested do you think your university would be in participating in a new Climate Stewards program for the Northeast, if sufficient training, support, and funds were provided? a) Not at all interested; b) Moderately interested; c) Interested; d) Very Interested.
- 14) If a new Climate Stewards program were developed in your state (with your university), should it be: a) a separate, stand-alone program; b) incorporated into existing programs (e.g. Master Gardeners); c) both?; d) I don't know.
- 15) If a new Climate Stewards program were to be developed at your university, what format would work best? a) In-person; b) Online; c) Combination (in-person and online); d) I don't know.
- 16) Part of our recommendations for developing this program will include estimated costs for staff time and other program essentials. Please provide your best estimate of a budget that would be needed to run the program each year at your university (remember to check the box for each item in your budget, and

provide a \$ amount in the text box): a) State Coordinator; b) educator/Volunteer Coordinator; c) Travel costs; d) Admin or supply costs; e) Indirect (Fringe); e) Other.

- 17) Related to the question above, how many regional Extension educators would be needed to run the program well in your state (in addition to the State Coordinator), given budget realities: (zero; 1; 2; 3).
- 18) What audiences do you think would be most interested in being involved with a Climate Steward program? (check all that are applicable): a) Community leaders; b) Farmers or Ag organization leaders; c) Youth (4-H); d) Retirees; e) Environmental groups or volunteers; f) Students - High School; g) Students - College; h) Current Master Volunteers (e.g., master gardeners); i) Municipal leaders or staff; j) Landowners; k) Other.
- 19) Have you developed any resources and/or tools to help communities with climate change education or local climate action? If so, please let us know about them.
- 20) What is your age?
- 21) Which of the following best describes your gender?
- 22) What is your level of formal education? Check one.
- 23) Do you have anything else you'd like to share with us?
- 24) If you would like more information on the new Climate Stewards program if its developed, please provide your contact information

**Thank you for Completing Our Survey!**



## **Appendix E: Strategic Planning Team Meeting: Design Charette Outcomes for Climate Stewards Curriculum**

### ***Learning Objectives, Key Topics, Skill/Knowledge, Learning Methods/Activities, and Evaluation Methods for Climate Steward Curriculum Modules***

#### **Module 1: Climate Science and Impacts**

##### Learning Objectives:

Climate Masters will:

- Understand the essential principles of Earth's climate system
- Know how to assess scientifically credible information about climate
- Communicate about climate and climate change in a meaningful way
- Be able to make informed and responsible decisions with regard to actions that may affect climate

##### Key Topics/Subtopics:

- Climate vs. weather
- Climate change forcing factors and how they work
- Historic look at the climate, trends
- Climate change impacts environmentally, economically, socially, and physically
- Climate models and projections
- Uncertainty vs. variability

##### Skill/Knowledge:

- Read, understand, and interpret graphs and models
- Trusted resources for local weather/climate data as well as local experts
- Communicate impacts of climate change and make climate change relevant and personal

##### Learning Methods/Activities:

- Pre-tests
- Visual tools, graphs, models
- Videos (e.g. TED Talks)

##### Evaluation Methods:

- Tests and quizzes
- Teach back to peers

## **Climate Master Modules Development Template**

### **Module 2: Mitigation**

#### Learning Objectives:

Climate Masters will:

- Learn and understand the sources of GHG emissions from all sectors globally, state-wide, and locally
- Understand the suite of options for reducing GHG emissions in all sectors
- Learn and understand the financing options such as incentives, resources, programs, and tools
- Learn and understand how to conduct a GHG inventory and establish reasonable reduction targets
- Learn other reduction target set by other towns, cities, states, and nations
- Understand the impacts, benefits, and co-benefits of mitigation
- Understand how mitigation relates to adaptation
- Be able to communicate about mitigation to a range of audiences

#### Key Topics/Subtopics:

- Definition of mitigation and how it relates to adaptation
- Sources of emissions globally and locally by sector
- All the different sectors
- GHG inventory with Climate Action Plans and Mitigation Plans
- Planning process
- GHG emissions reduction targets and mitigation strategies by sectors
- Financing mitigation strategies
- Economic, social, environmental, and health impacts, benefits, and co-benefits of mitigation

#### Skill/Knowledge:

- How to conduct an inventory
- Calculate emissions and reductions
- Tract emissions targets
- Where to find information on financing, incentives, and programs
- Elements of climate mitigation planning
- How to engage stakeholders
- How to evaluate and update mitigation plans
- Communicating the science behind climate mitigation strategies

#### Learning Methods/Activities:

- Case studies, local, regional, and international
- Webinars and videos
- Practice stakeholder interactions and scenarios
- Guest speakers

### Evaluation Methods:

- Develop a mock inventory and plan
- Peer and instructor assessments
- Mock presentation of a mitigation plan

## **Climate Master Modules Development Template**

### **Module 3: Adaptation**

#### Learning Objectives:

Climate Masters will:

- Understand what adaptation and resiliency are.
- How to assess risk to climate change and a variety of strategies for adapting to those risks.
- The co-benefits and synergies between adaptation and mitigation.
- How local adaptations link to regional and state action
- The long and short-term costs and benefits to adaptation strategies
- How to identify and locate useful resources and tools for communities to use for adaptation planning
- How to identify and overcome community limitations and or capacity for building resiliency

#### Key Topics/Subtopics:

- How communities can develop incentives
- Potential adaptations to different climate impacts (flooding, heat, health, land use)
- How to identify tradeoffs to different adaptations

#### Skill/Knowledge:

- How to identify potential sources of funding
- How to identify useful sources of data (including local, university or government based tools)
- How to interpret data on climate risks and vulnerabilities
- How to connect community actions to state and federal bodies, such as FEMA, local emergency groups
- How to understand local regulations and building standards
- How to write grants

#### Learning Methods/Activities:

- Mock local community vulnerability assessment and scenario planning
- Mapping exercises
- Introduction to planning tools
- Shadow a community with an adaptation plan
- Explore case studies in adaptation and share exemplary programs

### Evaluation Methods:

- Peer assessment
- Tests
- Review draft vulnerability assessments and adaptation plans
- Web-based hypothetical problem assessment
- research skills practical on how to find data and resources

## **Climate Master Modules Development Template**

### **Module 4: Communicating Climate Change with Community Leaders**

#### Learning Objectives:

Climate Masters will:

- Understand the aspects of good communication
- Be able to identify different audiences and understand their circles of influence
- Be able to assess the audience and identify biases
- Understand how local, state, and national governments operate and their responsibilities
- Be able to frame climate change based on audience including climate skeptics
- Be able to confidently communicate the science of climate change and the benefits of mitigation and adaptation
- Be able to develop a communication strategy

#### Key Topics/Subtopics:

- Different models and methods of good communication
- Audience identification and segmentation
- Public speaking, diction, and framing
- Communication strategies
- Local Government 101

#### Skill/Knowledge:

- Identify audience and their opinions
- Speak publicly and proper use of tone and word choice
- Local government operations, authority, and responsibility
- Develop a communication strategy
- How defuse tension and admit when you don't know something

#### Learning Methods/Activities:

- Role playing
- Homework of talking to groups of new people and self-assessment of that
- Incorporate what they learned in other modules for practice

- Ongoing training and practice with peer, instructor, and self-assessment
- Practice preparation for a discussion or talk

Evaluation Methods:

- Pre and post assessments
- Mock presentation
- Open-ended questions about how to apply what they learned
- Leading a discussion

**Climate Master Modules Development Template**

**Module Five: Project Planning**

Learning Objectives:

Climate Masters will:

- Understand the context of working in their community and organization
- Develop a self-reflection of skills and leadership for success, motivation, and limits
- Develop a sense of self-efficacy that they can contribute to change
- Be able to develop a detailed, robust project plan prior to implementation, understand the elements in a volunteer project plan essential to success
- Understand and respect the community/network/partners and how they can be utilized as a resource
- Be inspired to learn how to help their community plan and take action on climate resiliency
- Be comfortable asking for help and know their own limits and capabilities

Key Topics/Subtopics:

- Survey the local “political landscape”
- Program/project planning: cost/technical assistance, time, partners, priorities, outcomes, etc.
- Identifying audience
- Evaluation of a project
- Volunteer checklists
- Overcoming stumbling blocks

Skill/Knowledge:

- Plan a project and implement/execute that plan
- Situational context of the community
- Past projects/current organizations
- Identify audience and interpersonal communication
- Prepare (e.g. training or resources) and lead volunteers
- Know the resources and how to overcome an unexpected setback

### Learning Methods/Activities:

- Self-assessment worksheets
- Planning worksheets
- Practice with peers (e.g. planning a mini action project)
- Ongoing reflection/journaling/sharing with peers
- Review sample project plans

### Evaluation Methods:

- Peer evaluation
- Self-assessment worksheet
- External review of a project plan

## **Climate Master Modules Development Template**

### **Module Six: Evaluation and Recognition**

### Learning Objectives:

Climate Masters will:

- Be able to identify goals of a project and then evaluate with metrics of success and write impact/outcome statements
- Be able to assess failures and identify changes that need to be made
- Understand logic models and survey development
- Be able to interact with volunteers and provide support and recognition
- Be able to share and learn from other projects and success stories
- Be recognized, rewarded, and feel pride for completing the program

### Key Topics/Subtopics:

- Metrics of success: Goal, data collection, impact, cost benefit, risk assessment
- Volunteer recruitment, support, retention, and recognition
- Survey development
- Goal setting and evaluation of projects

### Skill/Knowledge:

- Evaluation definition and importance
- Logic model and theory of change
- Survey development, follow-up, and data collection
- Interpersonal skills

### Learning Methods/Activities:

- Run through an evaluation and logic model
- Online manual
- Expert guest lectures
- Group activities

- Participation in project evaluation

Evaluation Methods:

- Pre- and post-tests
- Exit interviews
- Open-ended questions and discussion

## Appendix F: Stakeholder Meeting Agenda - Local Climate Action Summit



**Local Climate Action Summit**  
September 27-28, 2018  
During Climate Week NYC  
at The Cornell Club, 6 East 44th Street, NY, NY 10017

The Local Climate Action Summit, held in New York City during Climate Week NYC, focuses on the challenges local communities are facing in the Northeastern US with climate change, the leadership roles and actions they are taking to respond, and the importance of climate action at all levels to address challenges. The Summit will bring together local officials and experts to share ideas and gather input on what communities need to ramp up climate action on a local level. Community leaders will share input on how new and existing partnerships can best support the needs and actions for local communities. The focus is to better identify how we as a community of practice could support local climate action, address community impacts and needs, extend resources available to communities, and learn from the experiences of Cooperative Extension, NGOs, and municipal officials across the Northeast that are working to implement climate adaptation and mitigation projects. An overarching objective is to gain stakeholder input on a new Cooperative Extension Volunteer Climate Stewards Program being developed to help communities in the Northeast.

### ***Key Questions Driving the Summit:***

- How is climate change affecting local communities and how are they responding?
- What does local climate leadership look like?
- What are the latest research findings on local climate change action?
- How can universities, NGOs and local governments support local efforts to adapt to and mitigate climate change through effective partnerships?
- How could a newly developed Extension Volunteer Climate Stewards Program best help local communities with climate change mitigation and adaptation projects?



The Local Climate Action Summit is being organized by the Cornell Institute for Climate Smart Solutions and our Partners:



### **Day 1 – Thursday Evening, September 27, 2018**

6:30 – 8:30pm Informal Networking for Participants:  
Bierhaus NYC, 712 3rd Avenue, NY, NY 10017, Tel: 212-867-2337  
Group Reservation held under Danielle Eiseman's name

### **Day 2 – Friday, September 28th, 2018 8:00am – 5:00pm**

8:00 – 8:40am: Registration and Continental Breakfast, Visit Information Tables

8:40 – 8:50am: Welcome and Overview of the Summit: Allison Chatrchyan, Cornell University

8:50 – 9:20am: Keynote speaker: Connecting Local, Regional and Global work on Climate Change: Adam Parris, Executive Director, Science and Resilience Institute at Jamaica Bay

9:20 – 10:40am: Panel Discussion 1: Planning and Action at the Local Level:  
Moderated by: Dazzle Ekblad, NYS Climate Smart Communities Program

- Julie Noble, Kingston, NY
- Katie Walsh, CDP Cities North America
- Ann Goodman, CUNY, ASRC Environmental Initiative
- Brooks Winner, Climate Table, ME

10:40 – 11:00am: Networking Break & Visit Tables with Climate Action Resources

11:00 – 12:20pm: Panel Discussion 2: How Communities are Responding to Climate Change Impacts: Moderated by: Erin Lane, USDA NE Climate Hub

- Bruce Packer, Mayor of Glen Rock, NJ
- David Kooris, Resilient Bridgeport, CT
- Tara Paxton, Brick Township, NJ
- Juli Schroeger, Rockaway Waterfront Alliance, NY

12:20 – 1:20pm: Lunch and Keynote Address: Is your Community Prepared for Climate Change? Resources from ICLEI USA: Mike Steinhoff, ICLEI USA

1:20 – 1:35pm: Introduction and overview of the New Extension Volunteer Climate Stewards Program

- Danielle Eiseman, Cornell University, Overview of the Proposed Program
- Allison Chatrchyan, Cornell University: research on community needs

1:35 - 2:15pm: Stakeholder Input to the New Extension Volunteer Climate Stewards Program

Katherine Bunting-Howarth, Moderator of Breakout Session - facilitators at each table to lead Discussion:

- How can we increase climate action (planning, mitigation, adaptation) at a local level?
- What are the barriers to local climate action? What help do communities need to develop a Climate Action Plan or take action?
- How could trained Extension Climate Steward Volunteers help their community with local climate change planning and projects?

2:15 - 2:45pm: Table Report Out and Discussion

2:45 - 3:00pm: Networking Break & Visit Tables with Climate Action Resources

3:00 - 4:25pm: Panel Discussion 3: Overcoming Barriers to Local Climate Action and Lessons Learned, Moderated by: Shorna Allred, Cornell University

- Jackie Guild, City of Annapolis, MD
- Steve Walz, Metropolitan Washington Council of Governments
- Terrance Carroll, Tompkins County CCE
- Andrew Reinmann, CUNY Environmental Sciences Initiative
- Marjorie Kaplan, Rutgers Climate Institute

4:25 - 4:50pm: The Importance of Local Climate Action for Resiliency: Randi Johnson, USDA NIFA

4:50 - 5:00pm: Wrap Up and Adjourn