



Eastern Shore of Virginia (ESVA)
CLIMATE EQUITY PROJECT



WINTER WORKSHOP ANALYSIS

FEBRUARY 2024



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TABLE OF CONTENTS

- Executive Summary** **2**
- Acknowledgments** **4**
- Project Introduction** **7**
- About the Winter Workshop** **8**
- Participant Information** **9**
- Station Analyses** **12**
 - Station 1: How will changing water and flooding impact Eastern Shore communities differently? **13**
 - Station 2: What are threats to septic systems, soil saltiness, and groundwater on the Eastern shore? **15**
 - Station 3: Who are you worried about when you think about the changing climate? **17**
 - Station 4: How can you contribute to planning for equitable climate adaptation on the Eastern Shore? **18**
 - Station 5: What resources are already here? **20**
 - Station 6: How do you want to continue participating? **22**
- Workshop Feedback** **23**
- Next Steps** **26**
- Appendix A** ESVA Climate Equity Priorities **27**
- Appendix B** Winter 2024 Workshop highlights **28**
- Appendix C** Climate Equity Ticket and Workshop Setup **29**
- Appendix D** Presentation Slides of the Workshop **30**

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With thanks to the National Science Foundation (NSF) Coastlines and People (CoPe) initiative for awarding \$5 million of grant funding to this interdisciplinary team.

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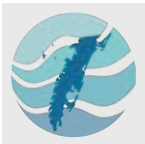
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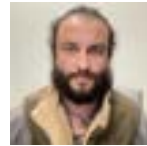
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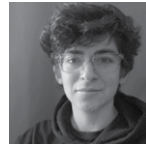
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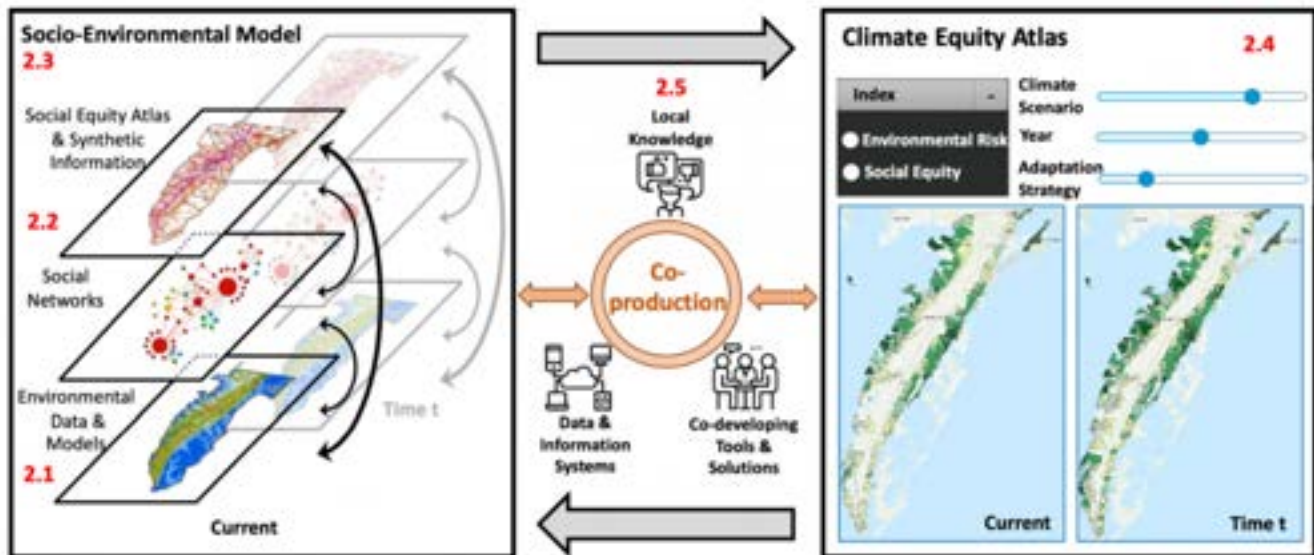
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PROJECT INTRODUCTION

Eastern Shore of Virginia (ESVA) Climate Equity Project

The Eastern Shore of Virginia Climate Equity project aims to integrate local knowledge with scientific methods to understand current and future climate risks that inform equitable policies and practices useful to the community. Our partnership, led by the University of Virginia and local leaders of the Community Advisory Committee, is dedicated to fostering collaboration and understanding in addressing climate challenges on the Shore. Community members and the science team work together to develop priorities and research for climate risk adaptation and mitigation that will be incorporated into the Climate Equity Atlas.



Throughout the world, the economies and well-being of rural coastal communities are impacted by saltwater intrusion from accelerated sea-level rise and more severe storm flooding. At the same time, they face difficult challenges in responding to these climate risks, including lack of access to scientific information and expertise, lack of coordination among communities, geographical isolation, social inequities, unstructured governance, and limited institutional capacity.

This is especially true in Virginia.

The project addresses these inequity and information gaps to improve climate adaptation and resilience. It brings together scholars and community members who are co-producing an open-source data and visualization platform, a Climate Equity Atlas, to enable sustained collaboration, and support equitable decision-making.

For more information on this project:

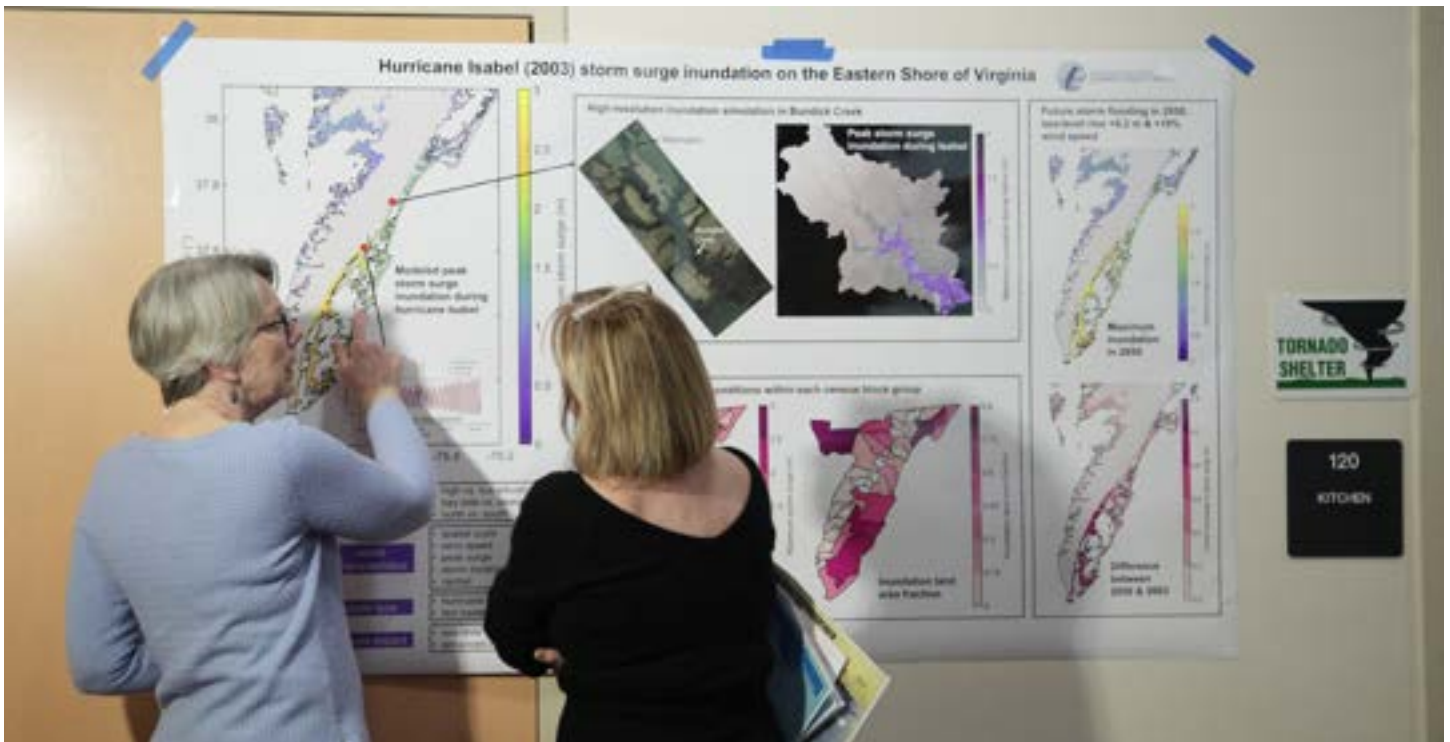
- Visit our page on the UVA Environmental Institute's website
<https://environment.virginia.edu/coastal-futures-hub>
- Check out our project Facebook page
<https://www.facebook.com/ESVAClimateEquity>



ABOUT THE WINTER WORKSHOP

Eastern Shore of Virginia (ESVA) Climate Equity Project

In January 2023, the first Eastern Shore of Virginia (ESVA) Workshop was held at the Eastern Shore Community College. The workshop was hosted by a partnership between the University of Virginia and a group of local leaders (Community Advisory Committee), including Andre Elliott, Executive Director of the YMCA, Karen Downing, minister and Virginia Organizing Board member, and Cora Baird, Director of UVA's Anheuser-Busch Coastal Research Center. At this workshop, participants were invited to participate in a series of stations intended to gather information and sentiment about the state of the Eastern Shore.



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In response to feedback shared by participants and in continuation of addressing the ESVA Climate Equity Priorities (Appendix A), the project team planned a second workshop to be held a year later at the Eastern Shore Community College. All Eastern Shore residents and stakeholders interested in the future of climate equity in the Eastern Shore were invited to attend one of two sessions held on Wednesday, February 7 from 2:00pm to 4:30pm and from 5:30pm to 8:00pm. The workshop was advertised through emails, personal networks of CAC members, previous workshop participants and local/social media such as Facebook page, LinkedIn and local newspapers. Virginia's Eastern Shore community had the opportunity to learn about the project and provide input throughout the workshop at several interactive stations.

This report analyzes the initial feedback and input from the workshop participants.

PARTICIPANT INFORMATION

REGISTRATION

88 people PRE-REGISTERED

58 people were PRE-REGISTERED and ATTENDED

61 people ATTENDED the FIRST SESSION

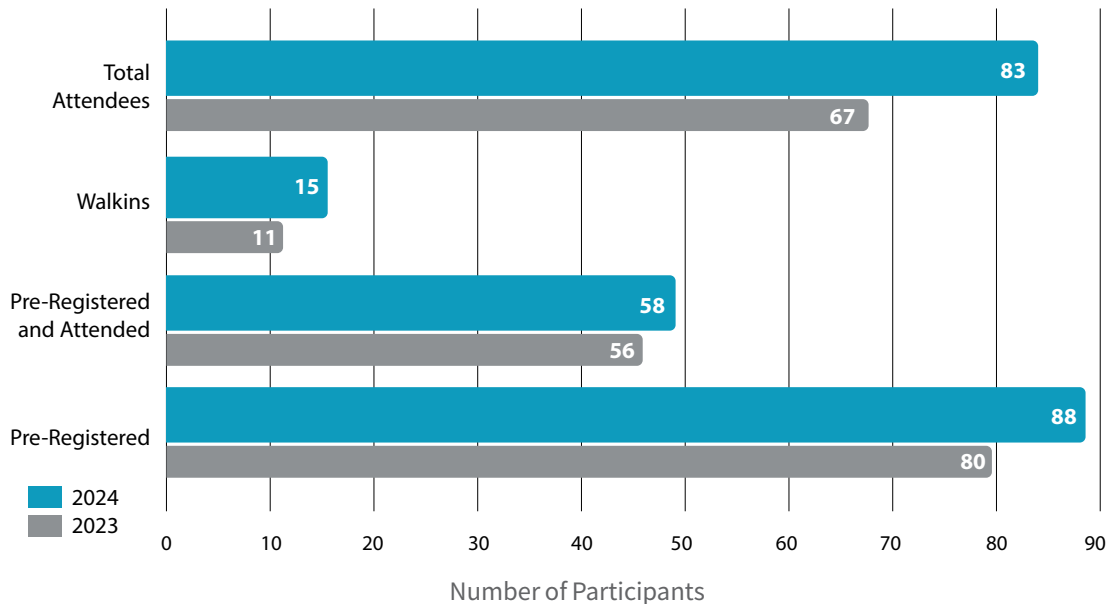
22 people ATTENDED the SECOND SESSION

11 people were WALK INS

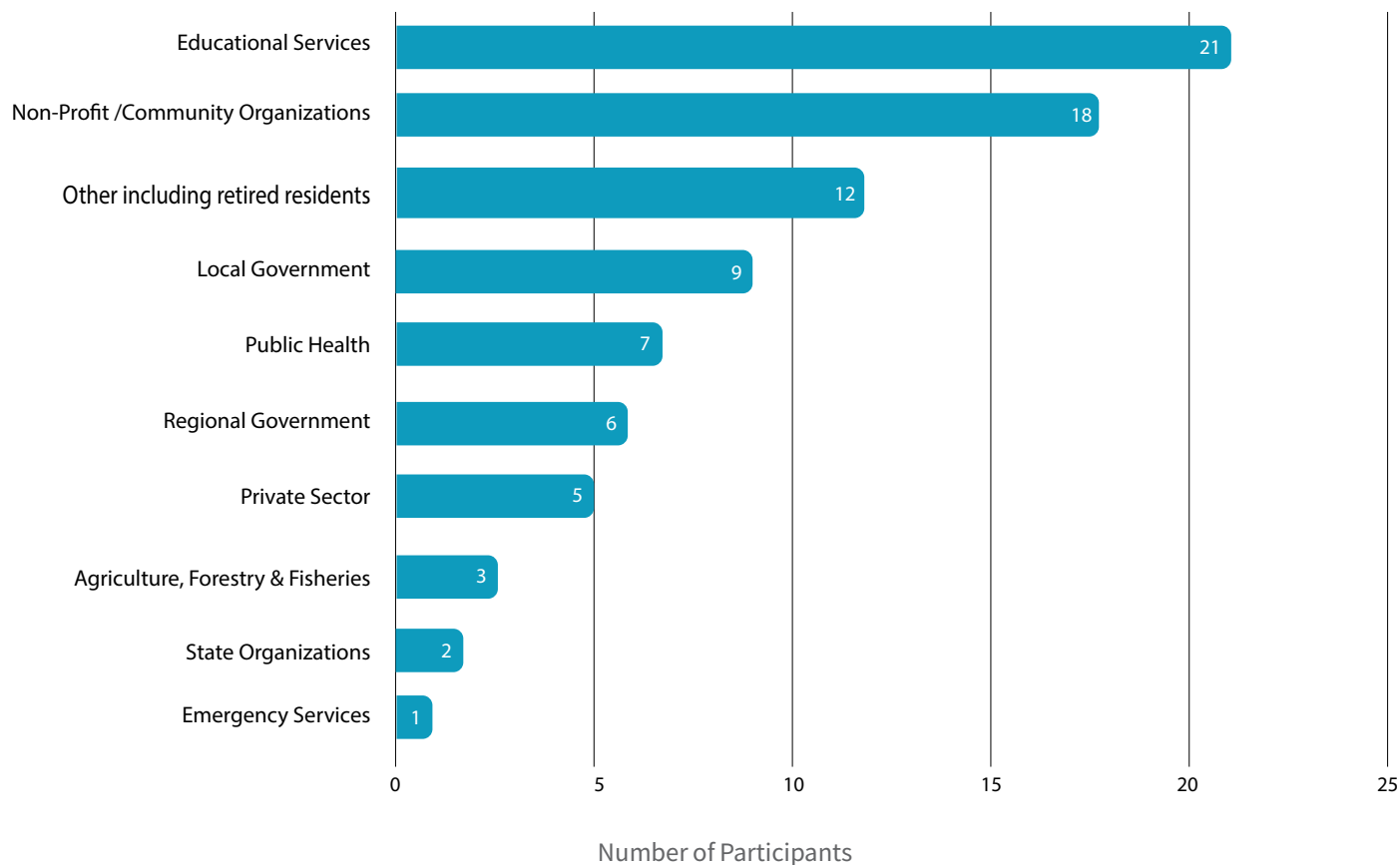
83 TOTAL ATTENDEES

Across the two sessions, over eighty participants from 35 towns attended the workshop, a quarter of which were returning participants from the 2023 workshop session. The registration information below analyzes the demographics of both the pre-registered and walk-in participants.

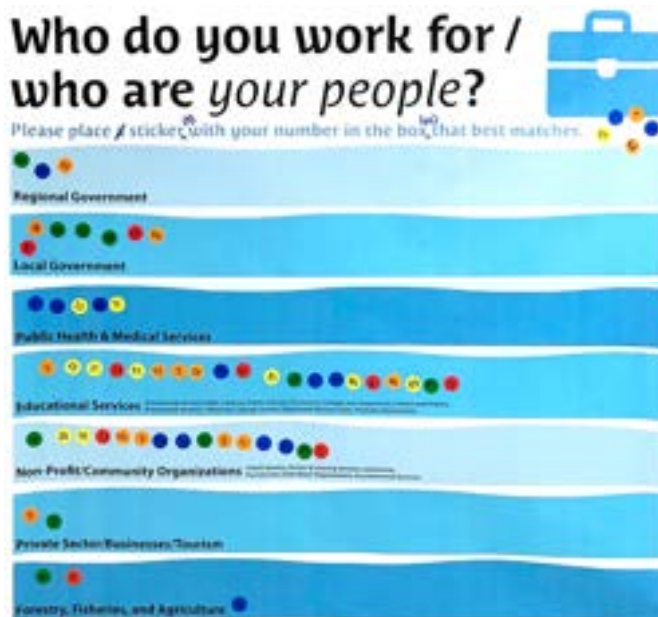
PARTICIPATION BY YEAR



PROFESSIONS / PERSONAL IDENTITY



Many attendees from different professions across the Eastern Shore participated in the workshop. **Non-profits and Regional and Local Government** were the most represented stakeholders. There was an increase in participation from public health and agriculture compared to the 2023 workshop, highlighting the importance of our ongoing efforts to engage with diverse groups to better understand how we can effectively assist the Eastern Shore.

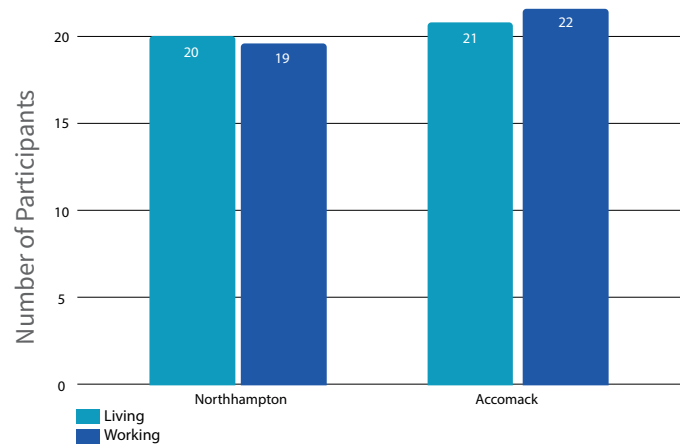


LOCATION OF HOME AND/OR WORK

38 and 28 participants representing **Accomack and Northampton counties** respectively registered for the workshop ahead of time, with 43 and 39 in attendance on February 7. Some of the most represented communities at the workshop were **Onancock, Painter, Belle Haven, Cape Charles and Oyster**.

More than half of the participants engaged with the workshop's interactive mapping exercise, which asked participants to mark their location of work alongside their location of home using color-coded stickers. In comparison with the previous year, there was a **significant increase of participants from Accomack County**, causing the participation ratio to match census population distribution across the counties. It was also observed that there was increased location of home/work diversity from the previous year: instead of attendees being concentrated in a few key locations, guests arrived from more varied and spread-out localities.

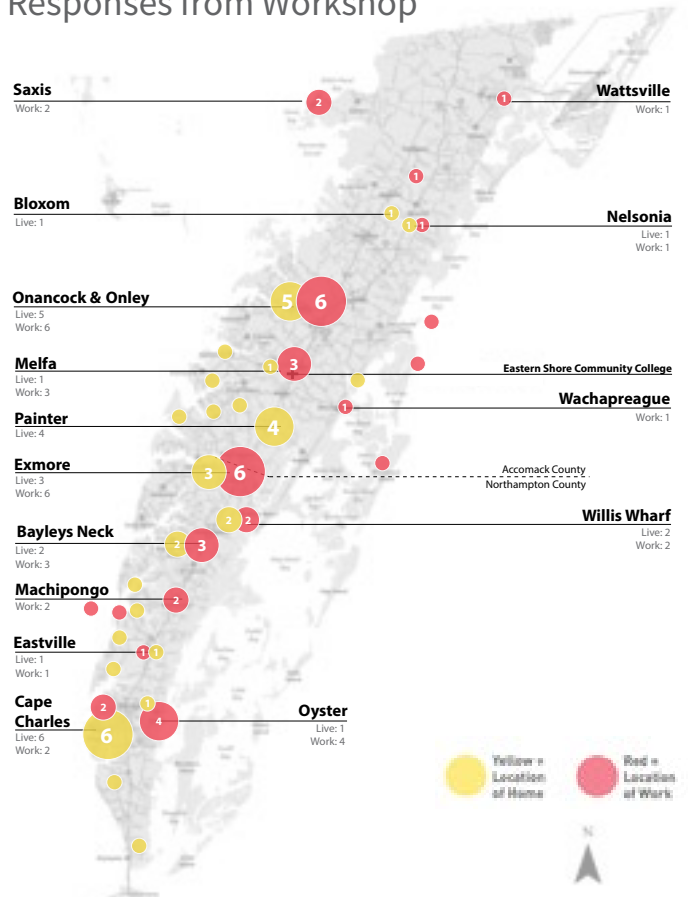
Participant Location by County



Heat Map from Registration



Responses from Workshop



STATION ANALYSES

The workshop included [six interactive stations](#) which encouraged collaborative discussion on current climate challenges, arranged around the Great Hall and Conference Room of Eastern Shore Community College (Appendix C). The goal of these stations was to [invite participant to discuss the impacts of changing climate and how it is affecting the Eastern Shore and the lives of its community members](#). Upon arrival, participants were assigned a “Climate Equity Ticket” that included station information, a recommended route between stations, and sticker dots with unique participant number that connected a participant’s information with their sticker responses for later analysis ([Appendix C](#)). Participants engaged in station contents with the use of sticker dots, post-it notes or discussion with researchers at the stations.

The summary highlight sheet of each station is provided in [Appendix B](#) of this report.

1 How will changing water and flooding impact Eastern Shore communities differently?



2 What are threats to septic systems, soil saltiness, and groundwater on the Eastern shore?



3 Who are you worried about when you think about the changing climate?



4 How can you contribute to planning for equitable climate adaptation on the Eastern Shore?



5 What resources are already here?



6 How do you want to continue participating?





STATION 1

HOW WILL CHANGING WATER AND FLOODING IMPACT EASTERN SHORE COMMUNITIES DIFFERENTLY?



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Station 1 focused on questions of flooding, especially from **storm surge**. In the flash presentations, we showed simulated **flooding patterns from Hurricane Isabel** (which agree well with local water level measurements during the event). Based on this and other simulations, we found some general patterns, visualized at level of census block groups: 1) Higher storm surge occurs on the seaside and toward southern end of peninsula during most hurricanes and large Nor'easters in past and future simulations; 2) Flooding also depends on land elevation, such that the census block groups with the greatest percent of inundated area are low-lying northern regions on bay side (near Saxis) and seaside (near Wallops Island).

Station 1 asked attendees about their experiences with past flooding and how well our maps captured the events. The station contained a large easel where attendees were encouraged to document what concerns them most about potential future storms and flooding.

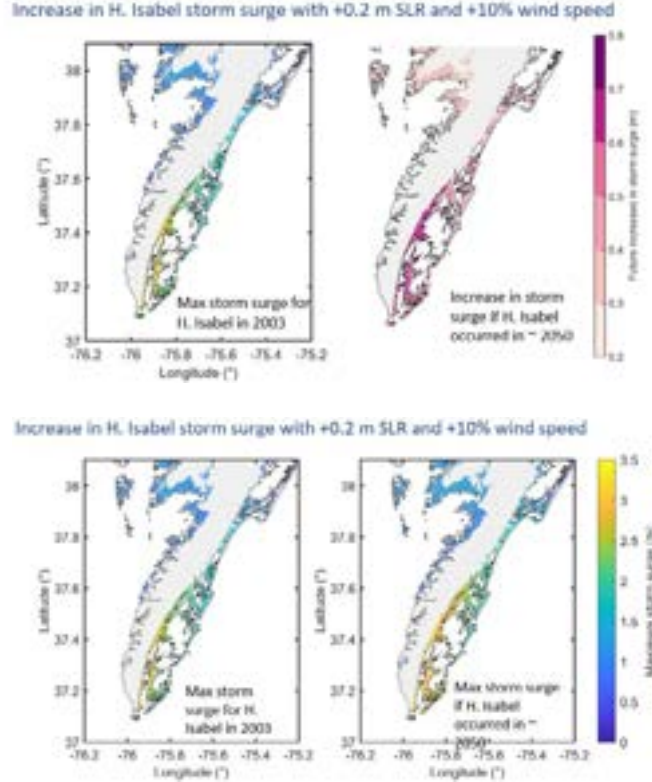
Several attendees living on the bay side (which has lower flood risk) told us how storms were impacting them. The concern these visitors raised most often was erosion of the bluffs bordering the incised creeks on the bay side. Other seaside residents raised concerns about the increasing frequency of storm surge flooding in their neighborhood compared to several decades ago. The station received many written



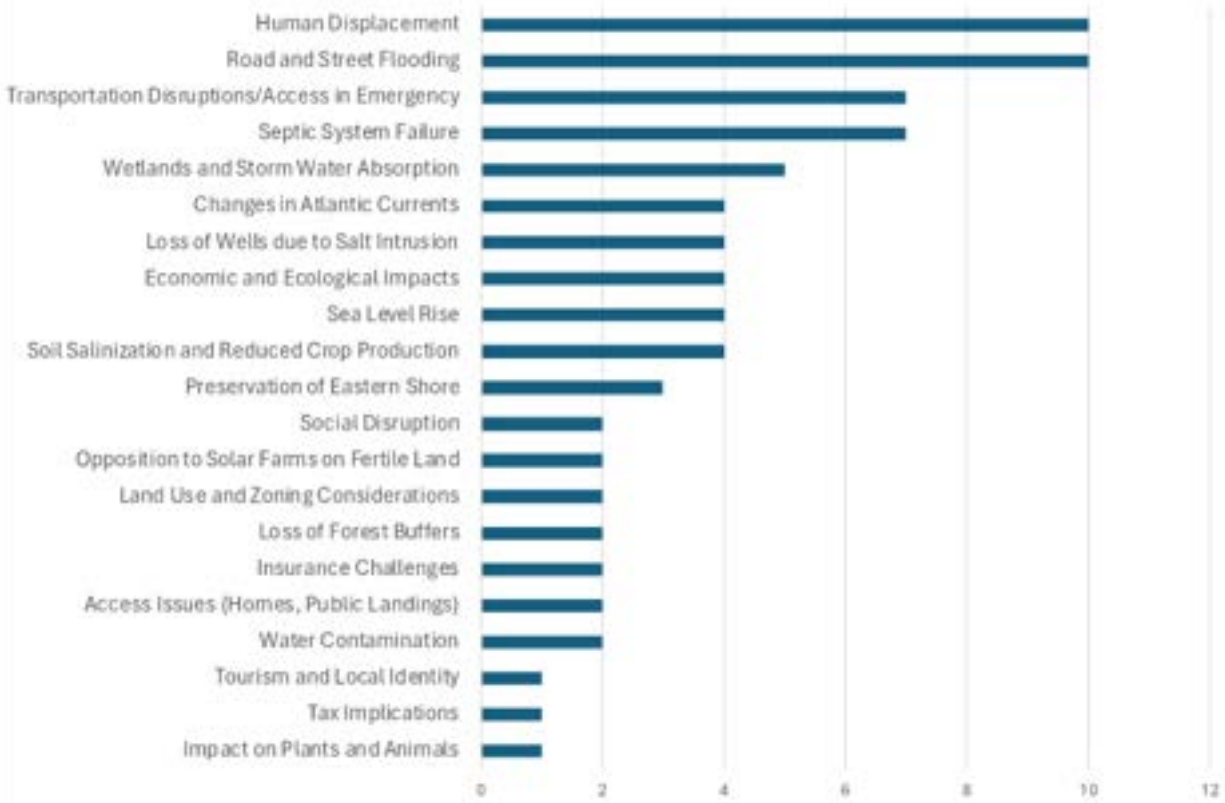
responses to concerns about future storms. The items that received the most votes (stickers) were street flooding, septic system failure, transportation during storms and flooding, and human displacement. There were many other concerns listed in addition to these.

The participants expressed many concerns about future storms and flooding. The most highlighted issues were street flooding and related transportation problems, septic system failure, and increasing frequency of storm surge flooding.

In characterizing flooding associated with storm surge, the team will work on ways to reflect the resulting transportation disruptions due to road flooding in designated areas of concern. In discussions with participants, it was shared that bluff erosion is a concern to many residents on the bayside of the Eastern Shore of Virginia. The team will investigate rates of bluff erosion rates and relate them to storm surge and sea-level rise.



What concerns you most about future storms + flooding?





STATION 2

WHAT ARE THE THREATS TO SEPTIC SYSTEMS, SOIL SALTINESS, AND GROUNDWATER ON THE EASTERN SHORE?



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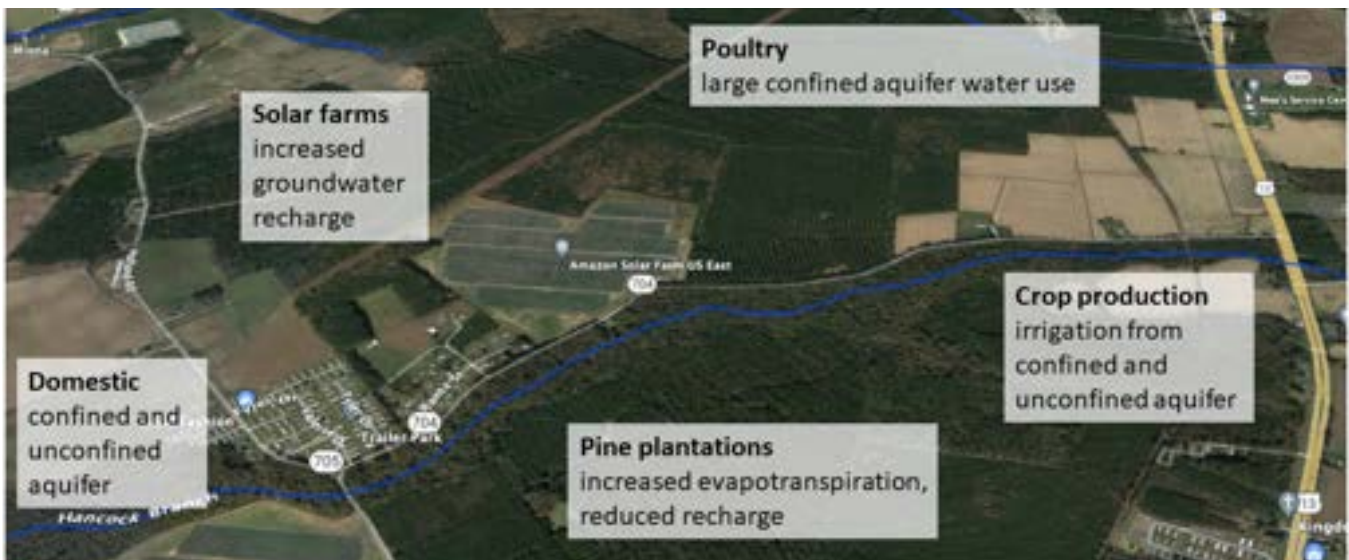
The goal of the station is to have an interactive conversation with the workshop participants provide people about their experiences with historical extreme events, and share findings to address their specific concerns and questions about their living and working conditions. The primary water resource issues and concerns addressed at this station were **inland flooding**, **roadway wash-outs**, **septic system impacts** and **saltwater reaching wells**.

Coastal surge flooding and infiltration into soils and groundwater and salinization hazards on the Shore were presented to workshop participants. The overarching goal was to provide science-based evidence supporting informed decision-making to manage weather-related extreme events in the coming years. Participants were encouraged to share their experiences with historical extreme events and changing environmental condition, while also provide insights into their perceptions and coping mechanisms.



Road Washouts and Flooding

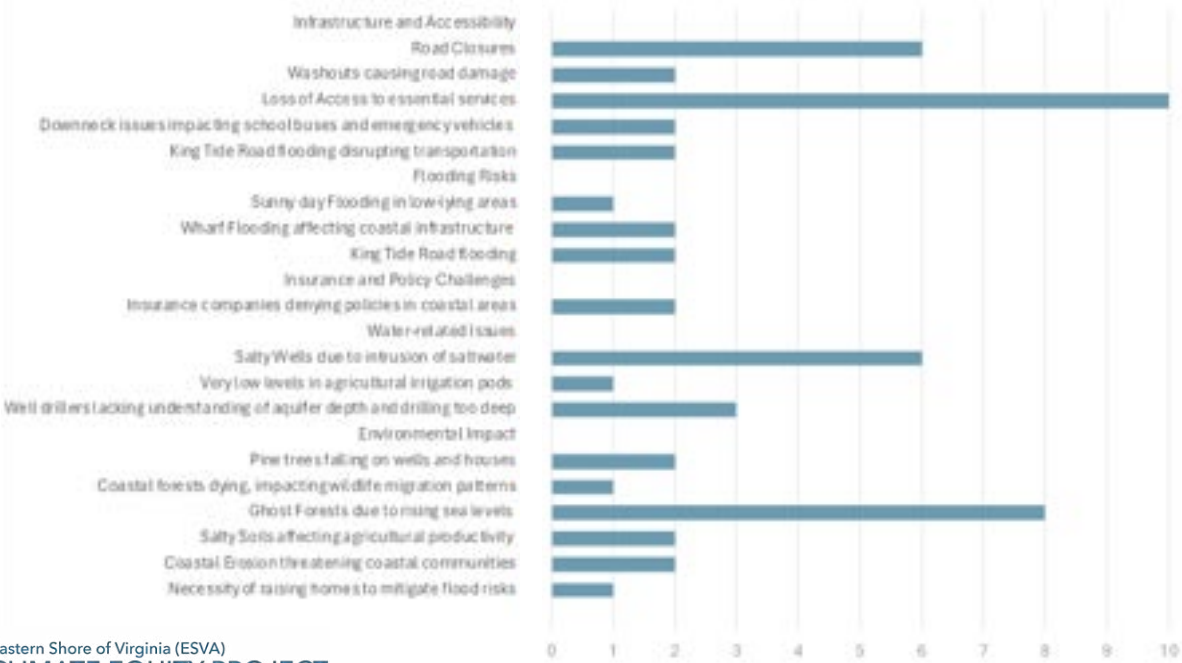




The participants highlighted a range of changes and impacts on the Eastern Shore due to changing climate. They noted frequent road closures and washouts, affecting transportation and access to essential services. Concerns were raised about the increasing occurrence of flooding, including sunny day flooding and king tide-related inundation, which disrupt normal life and threaten coastal infrastructure. Participants also expressed frustration over insurance companies denying policies in vulnerable coastal areas, exacerbating financial strains. Water-related issues, such as saltwater intrusion into wells and irrigation problems in agriculture, were reported as growing challenges. Additionally, participants

observed environmental shifts, such as coastal erosion, the proliferation of ghost forests, and declines in coastal forest health, signaling broader ecological impacts. For many of these issues, participants suggested locations on the Eastern Shore of special concern. These firsthand observations emphasize the urgent need for holistic approaches to address infrastructure resilience, water management, and ecosystem protection, while also addressing community-specific vulnerabilities. Through this engagement, valuable feedback was gathered to refine future research efforts and better support community decision-making processes.

What Changes and Impacts have you noticed because of the changing climate?





STATION 3

WHO ARE YOU WORRIED ABOUT WHEN YOU THINK ABOUT THE CHANGING CLIMATE?



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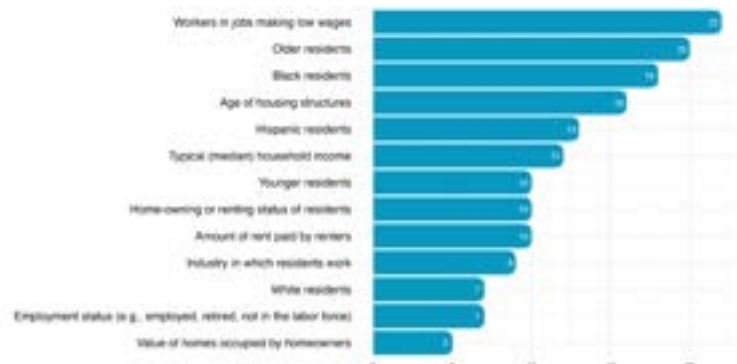
This station offered an example of how a Climate Equity Atlas can [show how people on the Eastern Shore of Virginia experience the effects of a changing climate differently](#) based on where they live and a variety of population characteristics.

Participants were asked to share who they are worried about in their communities, that may be disproportionately impacted by environmental changes.

Through conversation and surveys, it was discovered that many participants are concerned about low-wage workers, older residents, communities of color, renters, and those living in older homes. Additionally, the station introduced an ongoing historic timeline project inviting participants to contribute events related to extreme weather, agriculture and food, and economic and transportation history.



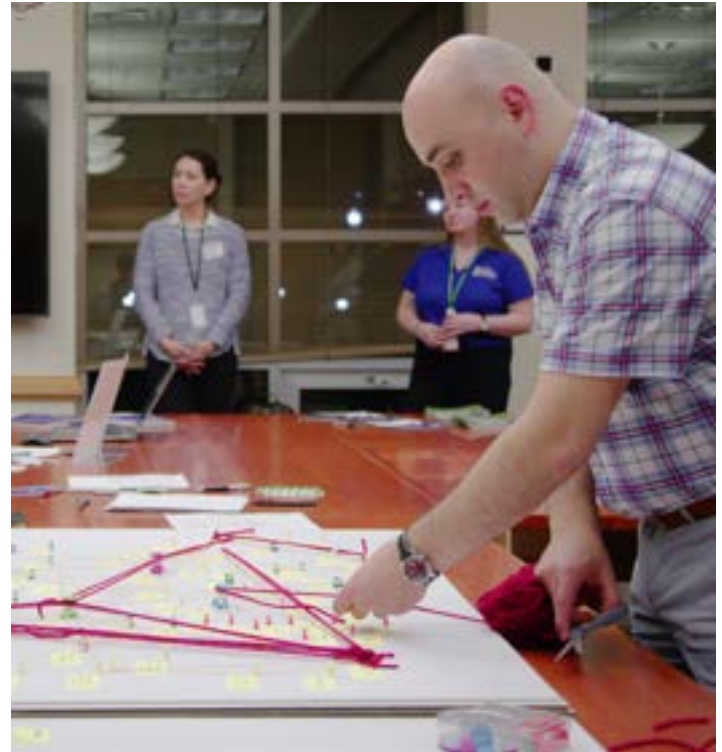
Popultaion Topic Priorities for the ESVA Climate Equity Atlas





STATION 4

HOW CAN YOU CONTRIBUTE TO PLANNING FOR EQUITABLE CLIMATE ADAPTATION ON THE EASTERN SHORE?



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This station visualized how **community input informs actions and decisions to promote climate equity** on the Eastern Shore.

First, participants were invited to update a stakeholder network to enhance understanding of current climate equity efforts. Second, feedback was gathered on the role of participatory mapping and community science in supporting resilience actions. The team prioritized collecting data on physical elements impacting quality of life, health and safety challenges, and critical infrastructure. These efforts aimed to empower communities by involving them in decision-making processes and gathering essential information to inform resilience strategies. Data collected from workshop participants helped us prioritize the types of data and

information that should be collected and organized through participatory mapping and community science. Participants identified the top three types of data as: (1) physical elements that may affect quality of life or prevent resilience; (2) health and safety challenges that may affect community well-being; and (3) critical infrastructure crucial for community safety and functioning.

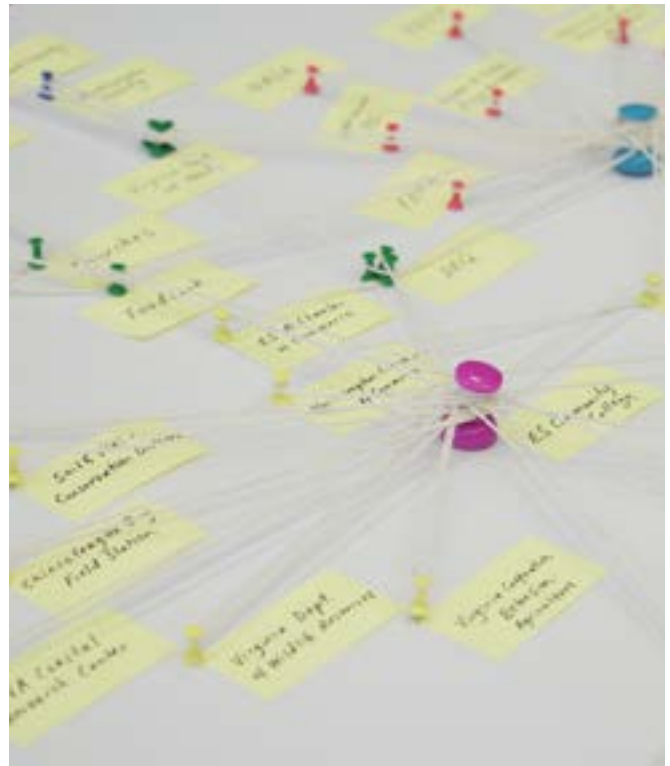
Workshop participants shared an interest in community members and stakeholders participating in collecting and curating local data. The data collected through participatory mapping and community science could be used to populate models (ie, with information about infrastructure, health and safety challenges, etc.) or to ground truth models. From the stakeholder network mapping activity, the team learned that



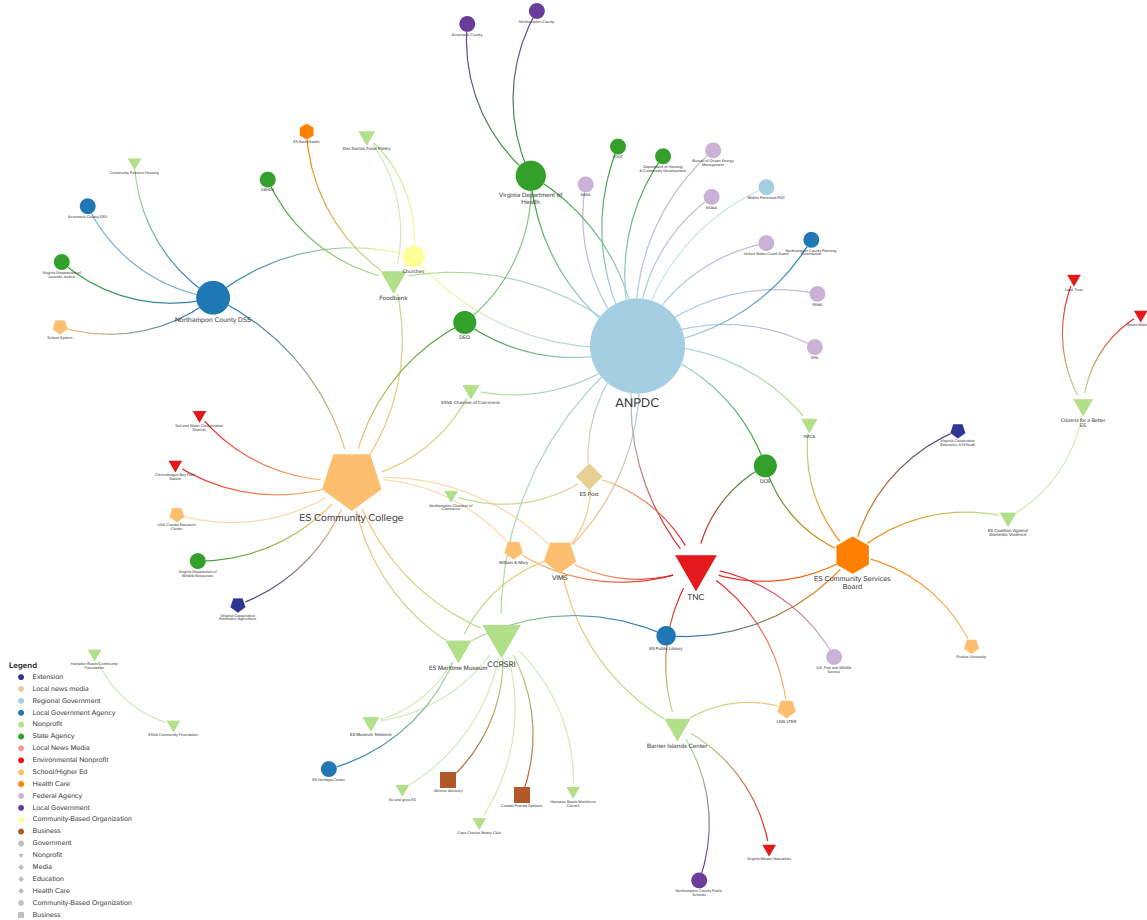
there is a wide range of organizations working in the climate or equity space along the Eastern Shore and that many of them are already working together.

With the information provided during the workshop the team now has a better idea of what types of information are important for the community and that will be useful for informing decision making about climate equity. We also have an indication of interest by community members and stakeholders to be part of the process of creating information data and capturing local knowledge.

Data was also collected to refine and enhance a stakeholder network of organizations working in the climate and equity space on the Eastern Shore. The outcome of this activity is the development of a more robust and representative network that can be used to identify central organizations that can be partnered with to disseminate information, solicit input, and engage broader participation in project activities.



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STATION 5

WHAT RESOURCES ARE ALREADY HERE?



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The goal of this station was to **share information about resources currently available** on the Eastern Shore that help to support resilience efforts.

Participants were asked to mingle around the table displays and were encouraged to ask questions of staff from the RAFT (Resilience Adaptation Feasibility Tool) project, the Accomack-Northampton Planning District Commission, the Virginia Department of Emergency Management, and the Virginia Department of Conservation & Recreation's Resilience Planning Program. Participants were not asked a specific list of questions; rather, the discussion evolved around each attendee's questions and interests. There frequently was concern expressed about flooding and both responding to and planning for it.

The interactive poster aims to engage the community in identifying gaps in climate equity efforts in Eastern Shore. It is divided into four sections: Resilience Plans, Resilience Tools, Working Groups, and Non-governmental Organizations

(NGOs). Each section lists current plans, tools, groups, and organizations involved in resilience work, with a prompt for community members to suggest what might be missing using sticky notes.

Key outcomes from participant contributions emphasize the need for better coordination among existing plans, a stronger focus on vulnerable populations, and enhanced environmental justice efforts. Participants suggested the creation of new resources, including a coastal monitoring and engagement plan, environmental justice mapping tools, and the formation of Virginia's Conservation Alliance. Additionally, there was a call for more involvement from grassroots organizations and the inclusion of the Chesapeake Bay Foundation and East Shore Land Trust to strengthen local resilience efforts. These insights underscore the importance of inclusive, well-coordinated, and community-driven approaches to climate equity.



Climate equity efforts

What is missing?

Resilience Plans

-  Chesapeake Bay Program: Climate Resiliency Outcomes: Management Strategy 2021-2025 - June 2021
-  Commonwealth of Virginia & Department of Conservation & Recreation (DCR) Virginia Coastal Resilience Master Plan - Phase 1 December 2021
-  Virginia Academy of Science, Engineering, and Medicine: The Impact of Climate Change on Virginia's Coastal Areas - June 2022
-  Virginia Coastal Zone Management Program at Department of Environmental Quality: Virginia Working Waterfront Master Plan - July 2016
-  The Nature Conservancy: The Eastern Shore of Virginia: Strategies for Adapting to Climate Change - May 2011

These are the things we learn from you last year...

DCR's Community Outreach & Engagement plan Northampton Comprehensive Plan
 ESOC Strategic Plan Community of Oyster Coastal Adaptation & Resilience Plan
 Mapping Communities most vulnerable to hear effects, energy equity

Please list any that you feel are missing with a sticky note

- County Local comprehensive Plan
- Coastal 30 (marine) Land Conservation/Protection Program Plan (CLLP) (WCEM Being updated)
- DCR State Wildlife Action Plan with Climate Smart Action & Policy Wildlife habitat priorities updated 10 years
- DOE Forest Action Plan (Updated every 5 years)
- The Plan of Saving your Home in Northampton County
- 2017 VCI Land Trust was established now consist of 14,000 acres of private land - Strategic Plan

Resilience Tools

-  The Nature Conservancy - Coastal Resilience
-  Department of Conservation & Recreation (DCR) - Virginia Coastal Resilience Web Explorer
-  Old Dominion University and the Commonwealth Center for Recurrent Flooding Resiliency - Coastal Virginia Sea Level Rise
-  The Resilience Adaptation Feasibility Tool (the RAFT) by the Institute for Engagement & Negotiation (IEN) at UVA, the Virginia Coastal Policy Center at William & Mary Law School (WCPC) and Old Dominion University/the Virginia Sea Grant Climate Adaptation Resilience Program (ODU) 2018-2019 Eastern Shore Virginia communities scorecards and resilience action checklists

These are the things we learn from you last year...

Environmental Justice work | Mapping
 EPA Social vulnerability index
 Digital Coast (NOAA)

Please list any that you feel are missing with a sticky note

- Virginia Environmental Justice Scorecard - 2020 Environmental Justice
- Mapping Tools based on 2020 Environmental Justice Act

Working Groups

- Accomack Northampton Planning District Commission (A-NPDC) - Climate Adaptation Working Group (CAWG)
- Chesapeake Bay Program - Climate Resiliency Workgroup
- Citizens for a Better Eastern Shore
- Town of Oranock Citizen Committees - Waterfront & Tree Committees

These are the things we learn from you last year...

Community partners of Eastern Shore
 Planning, Transportation, Education, Food Security, Employment, Health

Matt Parker - 22 ESAAA / CAAS - Eastern Shore Virginia Chapter Master Naturalists
 Eastern Shore Soil & Water Conservation District NRCS CAWG
 Northampton Democratic Committee Tree Advisory Committee, Cape Charles
 ES Regional Navigable Waterways Committee Virginia Eastern Shore Land Trust
 Cape Charles Town - Tree Advisory Board CBES

Please list any that you feel are missing with a sticky note

- ESVA Groundwater Committee
- Virginia Organizations
- Virginia ES Conservation Alliance

Non-governmental Organizations

- National Wildlife Federation
- Serra Club
- Wetlands Watch
- Alliance for Chesapeake
- The Nature Conservancy

These are the things we learn from you last year...

Political will

Please list any that you feel are missing with a sticky note

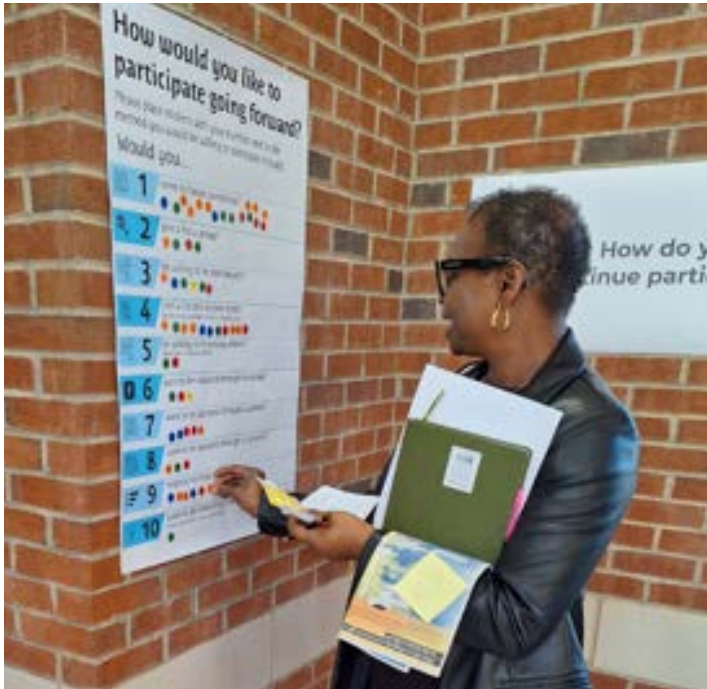
- ABCDC/DCR/Oyster VA/VA
- Chesapeake Bay Foundation
- ESVA Land Trust
- VCI Land Trust





STATION 6

HOW DO YOU WANT TO CONTINUE PARTICIPATING?



@OzlemEdizel & AnsonTse-UVA

This station **collected participants' feedback on workshop format and materials, hinting potential direction and future participation format for next workshops and associated activities.** Aside from giving out project bookmarks as souvenirs, the station provides both interactive posters and anonymous boxes to collect participants' concerns and feedbacks.

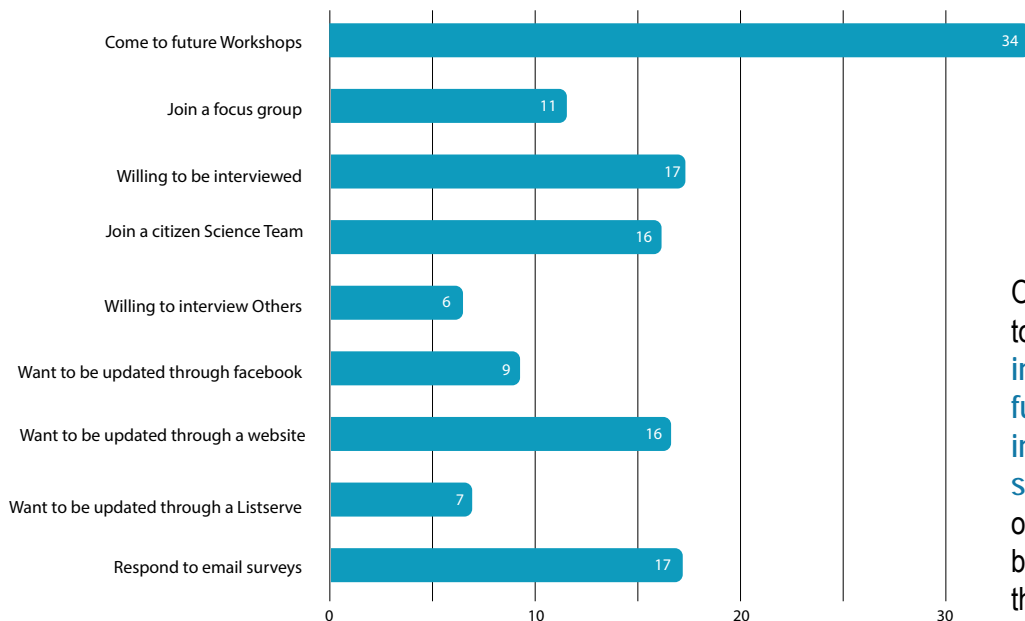
Of the attendees that responded to feedback survey, over half reported interest in participating in future workshops, focus groups, and emailed surveys and polls. Also notable is an interest in a website, further interviews, and the continued updating of the ESVA Facebook page. Most participants expressed a preference to attend in-person events and conversations instead of receiving electronic communication; however, there was a common desire for the project to develop an online presence for updates about the process.

Many of the positive comments emphasized appreciation for hosting the event and communication and participants highlighted using interactive stickers to represent their views across stations. Although all stations were generally appreciated, some respondents reflected they wanted to talk to local government and affected communities more and receive more localized information and a larger venue to facilitate the discussion was mentioned.



WORKSHOP FEEDBACK

FUTURE PARTICIPATION

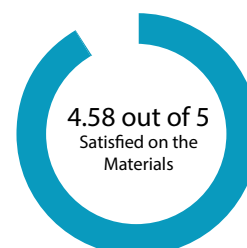
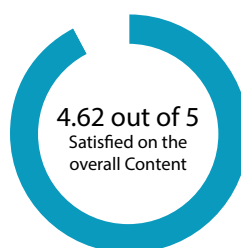


Over 40 participants responded to the feedback survey. Most are interested in participating in future workshops, willing to be interviewed, and respond to email surveys. Also notable is the interest of joining a citizen science team, to be updated through website and through facebook is also desired.

WORKSHOP RATINGS

48 of the attendees filled out a feedback survey after the event. This survey asked participants to rank their satisfaction with five categories on a scale of 1 to 5, with 1 being the lowest satisfaction and 5 being the highest. They were then asked to share details about what they most enjoyed and what changes should be added to future workshops. Overall, the average score across categories was 4.62 points out of 5. No attendees rated any category lower than a 3 out of 5. Through the ranking system, attendees shared the sentiment that there was a high likelihood of returning to attend a future

event (average score of 4.75. The materials and resources received the lowest average score of 4.58. Participants shared the sentiment that they appreciated the opportunity to talk, discuss, and move around; however, there were some expressed need for accommodation like seating in the future. Respondents' suggestions were having a clear and easy-to-understand statement on the project's mission, adjustments in the form of the workshop, and help participants understand their role better.



PARTICIPANT FEEDBACK

WHAT DID YOU LIKE/ENJOY ABOUT THE WORKSHOP?

Flash presentations/introduction



'The presenters' knowledge was great, and the ability for them to explain things with the poster presentation format was great. I also appreciated how the meeting felt like there was a real tangible goal after getting feedback.'
'Emphasis on local knowledge + expertise paired with institutional resources'

Participants enjoyed the brief introduction to start off the workshop. The summary of the specification across the 5 stations with guidelines enabled participants to understand and navigate throughout the session.

Interactive Conversation



'Fantastic level of interaction, variety of information, and displayed in different ways. very accessible.'
'Appreciated the different methods of info gathering & availability of interpreters'
'(I enjoyed) Talking with young students. Conversations with partners, researchers'

Participants reflected the community focused goals are clear that they appreciate the involvement of local communities. The combination between visuals and verbal, paired with simulations that emphasize local knowledge, appeared the best for participants. In addition, participants also reflected their joy in talking to students and younger generations that are dedicated and well-prepared. The experts from universities also showed their simulation models and timeline which enabled the participants to perceive the coast differently.

Thanks for childcare/dinner



'The Dinner was a huge bonus'

Childcare corner throughout the day, and the dinner counter between the two sessions demonstrated the care of participants with specific needs. They were easy to access and created a comfortable space for discussion and sharing.



@AnsonTse-UVA



NEXT STEPS


Insights collected from the community will inform the Eastern Shore Climate Equity Project over the following years. Here are ways you can reach out and engage:

- Mark the date!

The next workshop will be on Wednesday, August 21 at the Eastern Shore of Virginia Regional Library & Heritage Center

- Join focus groups and interviews to provide insight on climate equity on Eastern Shore.
- Learn more about the project at info booths during upcoming community events.

✉ If you would like to participate, please reach out to: ESVAClimateEquity@virginia.edu

 or follow the project's next steps on our [Facebook page](#)



Facebook



@AnsonTse-UVA

Climate Equity Priorities of the Eastern Shore Communities

At the 2023 Community Workshop, participants were asked to select their top concerns from 15 priorities identified by the Community Advisory Committee. Our team is committed to addressing and providing information and resources on the following five questions selected by popular vote.

1

How will **sea level rise, flooding from storm surge, and intense rainfall** affect ESVA communities and populations differently?

2

How will **septic systems, salinization of soils and groundwater** be affected by land use change?

3

What is your community doing to **mitigate and adapt to the effects of changes** in land use and climate?

4

What practices would **encourage and ensure input and collaboration** from residents of underserved communities crucial to the planning process, and from local government officials vital to the implementation process?

5

How can we create **affordable retrofitting for homes and structures** to withstand the increase of powerful storms and hurricanes?

APPENDIX B - Winter 2024 Workshop Highlights

THE EASTERN SHORE OF VIRGINIA CLIMATE EQUITY WORKSHOP HIGHLIGHTS WINTER 2024

The Eastern Shore of Virginia (ESVA) Climate Equity Project, a five-year partnership between the University of Virginia and local community, aims to co-create decision tools that will enable the ESVA community to advance their long-term climate equity. At this second workshop, the project invited over 300 residents to attend on February 7, 2024. A summary of community participation, key findings, and the project's next steps are listed as follows:



PARTICIPANTS

Over 80 participants from 35 towns along the Eastern Shore joined the workshop! Participants actively shared their ideas to support the Shore through the impacts of changing climate. Over 20 participants had attended the 2023 workshop. Educational services and non-profit organizations were the most represented stakeholders. Of the attendees who participated, 38 were from Accomack and 28 were from Northampton counties. Some of the most represented communities were Cape Charles, Onancock, Painter, Machipongo, Wachapreague, Melfa and Exmore.

HOW WILL CHANGING WATER AND FLOODING IMPACT EASTERN SHORE COMMUNITIES DIFFERENTLY?

This station focused on impacts on land surface, particularly stemming from storm surge events. Flash presentations showcased simulated flooding patterns from Hurricane Isabel, correlating well with local water level measurements. Findings revealed consistent trends: 1) Elevated storm surge typically impacts coastal areas, especially the southern end of the peninsula, during hurricanes and Nor'easters; 2) Flood severity correlates with land elevation, notably affecting low-lying regions near Saxis and Wallops Island. Workshop participants were queried about their past flood experiences and the adequacy of Station 1 maps. Concerns expressed by bay side residents included erosion of bluffs and heightened storm surge frequency. Responses also highlighted worries about future storm-related issues such as street flooding, septic system failure, transportation disruptions, and displacement. Combined impacts of storm surge: charming up tidal creeks and inland flooding from intense rain on road washouts were also of concern, particularly when sole road access to neighborhoods is lost.

WHAT ARE THE THREATS TO SEPTIC SYSTEMS, SOIL SALTINESS, AND GROUNDWATER ON THE EASTERN SHORE?

The primary water resource issues and concerns addressed at this station were the projections of future climate extremes, particularly inland flooding, roadway wash-outs, septic system impacts, saltwater reaching wells and groundwater scarcity. The interaction between coastal surge flooding, inland flooding, and infiltration of salt water into soils and groundwater on the Shore were presented and discussed with workshop participants. The overarching goal was to provide science-based evidence supporting informed decision-making to manage weather-related extreme events in the coming years. Participants were encouraged to share their experiences with historical extreme events and changing environmental conditions, while also providing insights into their perceptions and coping mechanisms. Through this engagement, valuable feedback was gathered to refine future research efforts and better support community decision-making processes.

WHO ARE YOU WORRIED ABOUT WHEN YOU THINK ABOUT THE CHANGING CLIMATE?

This station offered an example of how a Climate Equity Atlas can show people on the Eastern Shore of Virginia experience the effects of a changing climate differently based on where they live and a variety of population characteristics. Participants were asked to share who they are worried about in their communities, that may be disproportionately impacted by environmental changes. Through conversation and surveys, it was discovered that many participants are concerned about low-wage workers, older residents, communities of color, renters, and those living in older homes. Additionally, the station introduced an ongoing historic timeline project inviting participants to contribute events related to extreme weather, agriculture and food, and economic and transportation history.

THE EASTERN SHORE OF VIRGINIA CLIMATE EQUITY WORKSHOP HIGHLIGHTS WINTER 2024

HOW CAN YOU CONTRIBUTE TO PLANNING FOR EQUITABLE CLIMATE ADAPTATION ON THE EASTERN SHORE?

This station visualized how community input inform actions and decisions to promote climate equity on the Eastern Shore. First, participants were invited to update a stakeholder network to enhance understanding of current climate equity efforts. Second, feedback was gathered on the role of participatory mapping and community science in supporting resilience actions. Workshop attendees prioritized collecting data on physical elements impacting quality of life, health and safety challenges, and critical infrastructure. These efforts aimed to empower communities by involving them in decision-making processes and gathering essential information to inform resilience strategies.

WHAT RESOURCES ARE ALREADY HERE?

The goal of this station was to share information about resources currently available on the Eastern Shore that help to support resilience efforts. Participants were asked to mingle around the table displays and were encouraged to ask questions of staff from the RAFT (Resilience Adaptation Feasibility Tool) project, the Accomack/Norhampton Planning District Commission, the Virginia Department of Emergency Management, and the Virginia Department of Conservation & Recreation's Resilience Planning Program. Participants were not asked a specific list of questions; rather, the discussion evolved around each attendee's questions and interests. There frequently was concern expressed about flooding and both responding to and planning for it.

HOW DO YOU WANT TO CONTINUE PARTICIPATING?

This station collected workshop feedback through an interactive poster and anonymous feedback slips. More than half of the respondents praised the opportunity for engagement with the project team and experts, highlighting the value of hands-on activities and discussions, and would like to come to future workshops. Suggestions for improvement include providing more information on local initiatives, increasing resources for participants, and enhancing representation from various community groups. Some logistical concerns were raised regarding noise and space constraints, alongside suggestions for more structured introductions to workshop components prior to the workshop. The feedback indicates a positive reception to continue participating and seek updates from the website, Facebook and Surveys.



NEXT STEPS

Insights collected from the community will inform the Eastern Shore Climate Equity Project over the following years. Here are ways you can reach out and engage:

- Mark the date! The next workshop will be on **Wednesday, August 21**. Location and time will be confirmed soon.
- Join focus groups and interviews to provide insight on climate equity on Eastern Shore.
- Learn more about the project at info booths during upcoming community events.
- Outcomes from this workshop will be available in the comprehensive workshop report.

If you would like to participate, contact: ESVAClimateEquity@virginia.edu

Project Funded by
The National Science Foundation (NSF) Coastlines and People (CoPe)



Climate Equity Ticket (a)

YOUR NUMBER



1 **How will changing water and flooding impact Eastern Shore communities differently?**

- What concerns you most about potential future storms and flooding?

2 **What are threats to septic systems, soil saltiness, and groundwater on the Eastern shore?**

- Share your experience with soil water logging, saltiness, septic system flooding, shallow groundwater.

3 **Who are you worried about when you think about the changing climate?**

- Contribute to an interactive historic timeline of:
 - Extreme weather events
 - Agriculture & food
 - Economy & transportation
- Learn how population data could be used in the Climate Equity Atlas

4 **How can you contribute to planning for equitable climate adaptation on the Eastern Shore?**

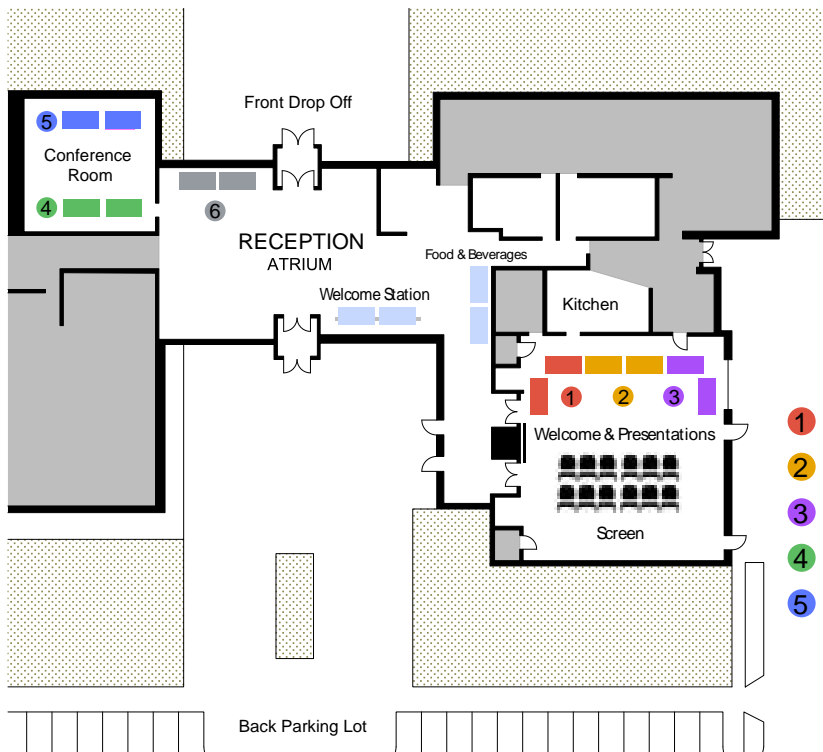
- Learn about and contribute to the network of stakeholders related to climate adaptation/planning in ESVA.
- Learn about Participatory Mapping and Community Science.

5 **What resources are already here?**

- Resilience Adaptation Feasibility Tool, VA Department of Emergency Management, VA Department of Conservation and Recreation, Accomack-Northampton Planning District Commission

6 **How do you want to continue participating?**

- Provide feedback for the workshop



- 1** How will changing water and flooding impact Eastern Shore communities differently?
- 2** What are the threats to septic systems, soil saltiness, and groundwater on the Eastern Shore?
- 3** Who are you worried about when you think about the changing climate?
- 4** How can you contribute to planning for equitable climate adaptation on the Eastern Shore?
- 5** What resources are already here?



Welcome to Eastern Shore of Virginia Climate Equity Workshop

February 7, 2024
ESCC

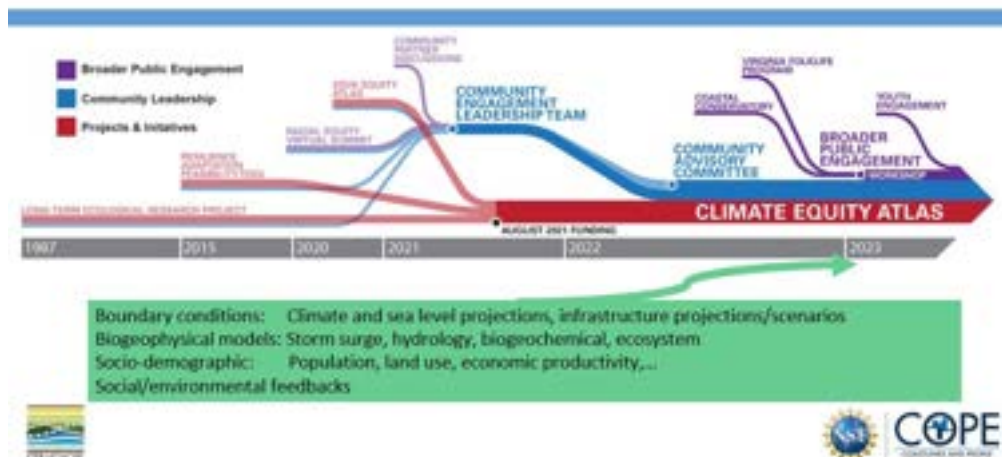


Eastern Shore of Virginia (ESVA)
CLIMATE EQUITY PROJECT

Main goal: Integrate local knowledge with science methods to understand current and future climate risks that inform equitable policies and practices useful to the community

Approach: Community members and the science team work together to develop priorities and research for climate risk adaptation and mitigation that will be incorporated into the Climate Equity Atlas

How we build the Climate Equity Atlas :



Project Milestones in Community Engagement



Kick-off Community Workshop January 30, 2023



©WilliamLeCato-ESCC

Climate Equity Priorities of the Eastern Shore Communities

At the 2023 Community Workshop, participants were asked to select their top 5 concerns from 15 priorities identified by the Community Advisory Committee.

1. How will **sea level rise, flooding from storm surge, and intense rainfall** affect ESVA communities and populations differently?
 1. How will **septic systems, salinization of soils and groundwater** be affected by land use change?
 1. What is our community doing to **mitigate and adapt** to the effects of changes in land use and climate?
 1. What practices would **encourage and ensure input and collaboration** from residents of underserved communities crucial to the planning process, and from local government officials vital to the implementation In A
- M. P

- 1** **How will changing water and flooding impact Eastern Shore communities differently?**

 - What concerns you most about potential future storms and flooding?
- 2** **What are threats to septic systems, soil salinity, and groundwater on the Eastern shore?**

 - Share your experience with soil water logging, salinity, septic system flooding, shallow groundwater.
- 3** **Who are you worried about when you think about the changing climate?**

 - Contribute to an interactive historic timeline of:
 - Extreme weather events
 - Agriculture & food
 - Economy & transportation
 - Learn how population data could be used in the Climate Equity Atlas
- 4** **How can you contribute to planning for equitable climate adaptation on the Eastern Shore?**

 - Learn about and contribute to the network of stakeholders related to climate adaptation/planning in ESVA.
 - Learn about Participatory Mapping and Community Science
- 5** **What resources are already here?**

 - Resilience Adaptation Feasibility Tool, VA Department of Emergency Management, VA Department of Conservation and Recreation, Accomack Northampton Planning District Commission
- 6** **How do you want to continue participating?**

 - Provide feedback for the workshop



1 How will changing water and flooding impact Eastern Shore communities differently?

- Share your experiences of flooding.
- What concerns you most about potential future storms and flooding?

Station 1: How will changing water and flooding impact Eastern Shore communities differently?

- Where are coastal flooding risks greatest now?
- How will that change in the future [~2050]?
- What geographic factors are related to flooding risk?
- What are your greatest concerns & questions?

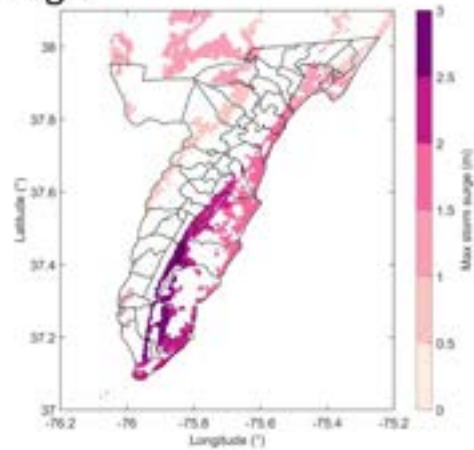


Flooding in Oyster, VA, Sep 6, 2019

Spatial patterns of storm surge

We are using a model (ADCIRC) to simulate storm surge flooding caused by a range of hurricanes and nor'easters.

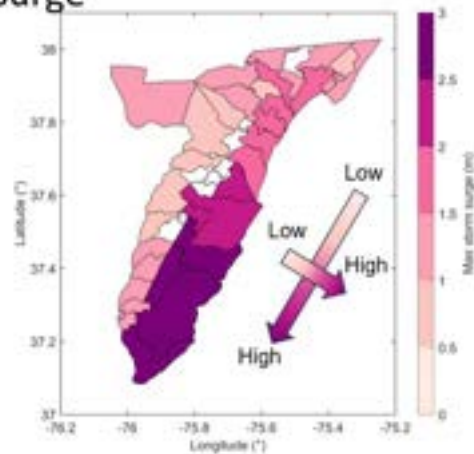
This example is for Hurricane Isabel [2003], showing maximum storm surge.



Spatial patterns of storm surge

Here the patterns are scaled up to the census block group to better show patterns.

This pattern of higher surge on the seaside and toward southern end of peninsula is typical of the storms we explored.

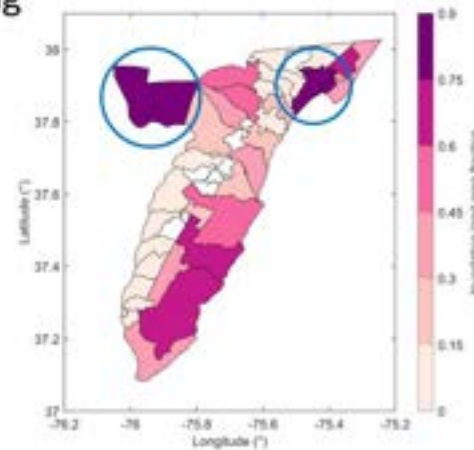


Spatial patterns of flooding

Flooding depends also on land elevation.

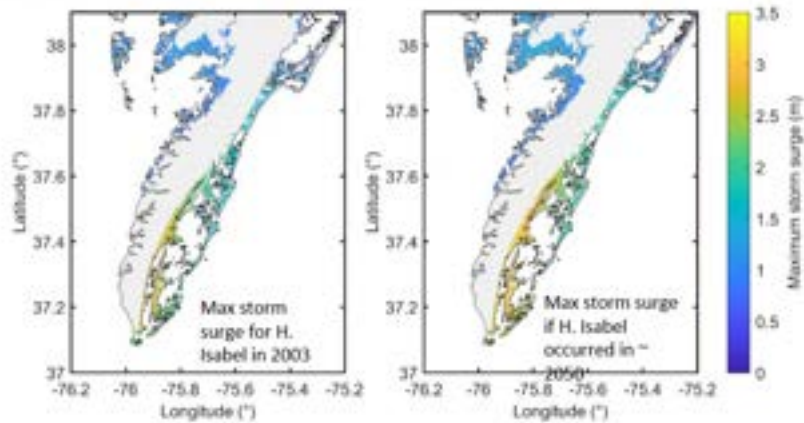
Here we also incorporate differences in land elevation to look at susceptibility to flooding.

The census block groups with the most inundation are low-lying northern regions on bay side (near Saxis) and seaside (near Wallops Island).



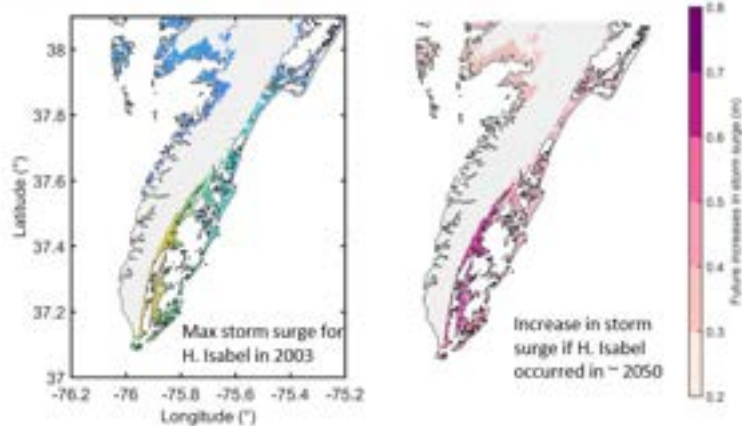
How might storm surge flooding change in the future?

Increase in H. Isabel storm surge with +0.2 m SLR and +10% wind speed



How might storm surge flooding change in the future?

Increase in H. Isabel storm surge with +0.2 m SLR and +10% wind speed



Station 1: How will changing water and flooding impact Eastern Shore communities differently?

Our question for you:

What concerns you the most about potential future storms and flooding?

Come see us at Station 1.



Flooding in Oyster, VA, Sep 6, 2019

2 What are the threats to septic systems, soil saltiness, and groundwater on the Eastern Shore?

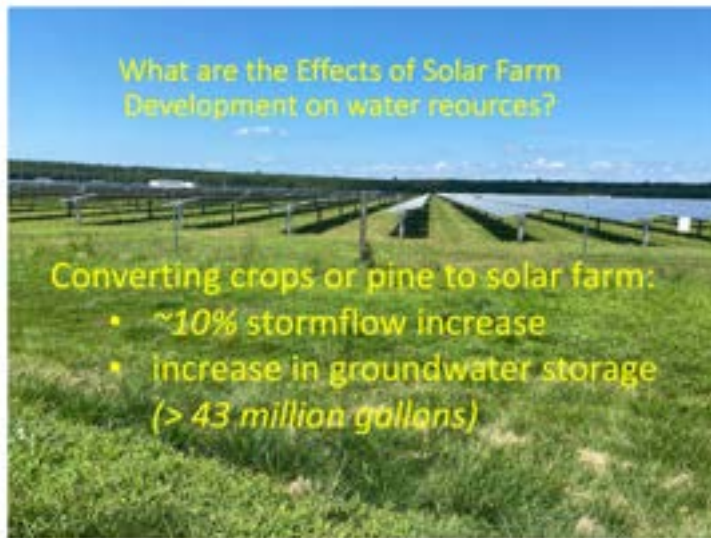
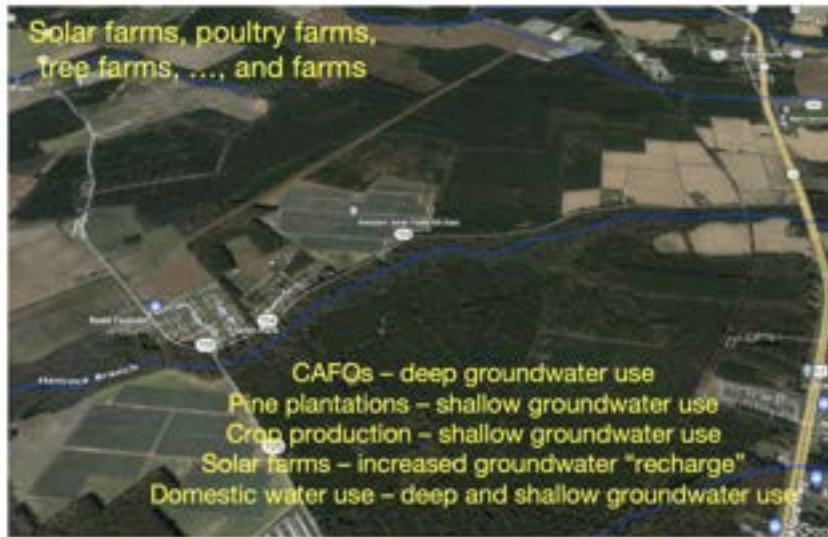
Share your experience with soil water logging, saltiness, septic system flooding, shallow groundwater

How will changes in land use, climate and groundwater use impact resources and hazards on the Eastern Shore?

- How will these combine with sea level rise?
- What are the effects of new land uses (e.g. solar farms) or conversion of pine plantations on water resources?
- Where and how will increased threats of road washouts occur?
- How will rising sea level and more intense storms affect septic systems?

Sea level rise combined with more intense storms:
Road vulnerability to washouts





3 Who are you worried about when you think about the changing climate?

- Contribute to an interactive historic timeline of:
 - Extreme weather events
 - Agriculture & food
 - Economy & transportation
- Learn how population data could be used in the Climate Equity Atlas

Station 3: Who are you worried about when you think about the changing climate?

Our question for you:

What topics about people do you want included in the Climate Equity Atlas?

Come see us at Station 3.



4 How can you contribute to planning for equitable climate adaptation on the Eastern Shore?

- Learn about and contribute to the network of stakeholders related to climate adaptation/planning in ESVA.
- Learn about Participatory Mapping and Community Science.

5 What resources are already here?

- Interactive display of climate equity resources/reports, Resilience Plans/Tools/Partnerships
- Display of the **Resilience Adaptation Feasibility Tool (RAFT)** outcomes on the Eastern Shore of VA
- Hurricane history and storm surge risk to the ESVA presentation by the **Virginia Department of Emergency Management**
- Interactive display of the current and upcoming phases of the Coastal Resilience Master Plan by the **Virginia Department of Conservation and Recreation**
- Housing Resilience on the ESVA by the **Accomack-Northampton Planning District Commission**

6 How do you want to continue participating?

- Identify ways you'd like to participate in the project
- Provide feedback for the workshop

QUESTIONS?



Eastern Shore of Virginia (ESVA)
CLIMATE EQUITY PROJECT

Enjoy the Stations!

•Make sure you have your "Climate Equity Ticket" from the Welcome Desk

•Follow the Route on your Ticket

•Use your participant number and stickers to participate

Stations 1, 2, 3 → Great Hall

Stations 4, 5 → Conference Room

