2024 Coastal Inundation Workshop: Meeting Summary

Center for Urban Horticulture, University of Washington Botanic Gardens, Seattle, Washington
November 12 to14, 2024

From November 12 to14, 2024, nearly 90 participants gathered in Seattle, Washington, for the inaugural Coastal Inundation Community of Practice Workshop.

Context

The Bipartisan Infrastructure Law (BIL) allocated a significant investment to enhance coastal inundation mapping, forecasting, modeling, and product development. As part of this effort, a national Coastal Inundation Community of Practice (CICoP) was conceptualized to ensure that coastal communities impacted by inundation are engaged in the process of developing and implementing these advancements. The community of practice is hosted by NOAA's Office for Coastal Management, the National Sea Grant Office, and the American Society of Adaptation Professionals with an aim to ensure that the resulting tools and products are responsive to user needs and effectively support decision-making at the local level.

The Coastal Inundation Community of Practice officially launched in January 2024 with a virtual kickoff and a mission to create a national network of practitioners that facilitates peer-to-peer learning, information exchange, and collaborative engagement to advance coastal flooding science, knowledge, and solutions. The inaugural in-person workshop of this new national network was held in Seattle and is outlined below.

Meeting Goal

The goal of this in-person workshop was to build relationships among 100 coastal flooding practitioners representing diverse transdisciplinary perspectives. Coastal communities are facing tremendous inundation threats across the country, and local practitioners are meeting these challenges with innovative solutions transforming our coastal ecosystems, built environments, and socioeconomic structures. This event was designed to create space for practitioners to learn from one another and foster networks of peer support.

Meeting Objectives

- Build relationships with colleagues across the country who are addressing inundation challenges
- Hear and share innovative approaches for addressing inundation challenges in local communities
- Share and learn about the latest inundation scientific data, including tool and modeling advances
- Begin to explore and co-develop products to help address inundation questions
- Help shape the future activities and direction of the Coastal Inundation Community of Practice

Meeting Website

https://adaptationprofessionals.org/coastal-inundation-community-of-practice-workshop/

DAY 1: NOVEMBER 12, 2024

LOCAL WELCOME | HENRY BELL, Washington State Department of Ecology
OPENING REMARKS | MARK OSLER, NOAA National Ocean Service

LOCAL PERSPECTIVES PANEL

Panelists:
JESSICA BRUNACINI, Wells National Estuarine Research Reserve
FARA ILAMI, Northeast Florida Regional Council
ARIAM TORRES-CORDERO, Graduate School of Planning, University of Puerto Rico, Río Piedras

Moderator: KATY HINTZEN, Hawai'i Sea Grant and National Sea Grant

FLOODING ACROSS TIMESCALES PANEL

Panelists:
HEIDI STILLER, NOAA Office for Coastal Management
DOUG MARCY, NOAA Office for Coastal Management
GWEN SHAUGHNESSY, NOAA Center for Operational Oceanographic Products and Services
CHRSTOPHER MOORE, NOAA Pacific Marine Environmental Laboratory
PATRICK BARNARD, U.S. Geological Survey
TREY FLOWERS, NOAA National Weather Service

Moderator: LISA AUERMULLER, Rutgers University, Megalopolitan Coastal Transformation Hub (MACH)

INUNDATION TOOLS CAFE

Coastal Storm Modeling System (CoSMoS)
Federal Flood Standard Support Tool (FFRMS)
U.S. Sea Level Change Information Hub
Community Model Interfaces for Tsunamis (ComMIT)
NOAA's Sea Level Calculator
High Tide Flooding Outlooks
National Water Prediction Service

DAY 1 HIGHLIGHTS

In the ***local perspectives panel***, panelists from Maine, Florida, and Puerto Rico discussed the coastal inundation challenges facing their region, shared stories of success, and offered insights on transformations for a resilient future.

Key themes that emerged:

- Collaborating across jurisdictions is critical for addressing shared challenges.
- A model or guide for conducting vulnerability assessments is needed to ensure regional cohesiveness. Expanding these assessments beyond flooding to include other hazards

offers a more comprehensive approach to help communities adapt to a wider range of risks.

- Nonpartisan, inclusive language is vital for engaging diverse communities. Meeting people where they are—using terminology that resonates—is crucial for driving change.
- Challenges have gotten more complicated than 10 years ago, but new data and products are also under development. There needs to be a stronger bridge between those who use the information and data and those who make flooding-related decisions.
- People are often discouraged by too many tools, graphs, etc. Helping support local communities and bridging this gap is important.
- People care deeply for the places they're connected to. The impact of flooding and inundation is often an emotional experience, and as a result the work requires greater empathy.
- At this point, we have all the tools we need. People need to be able to use tools without going through extensive workshops.
- A powerful quote: "What if we act as if we love the future?" —Ayana Elizabeth Johnson
- Voluntary, community-driven, thorough approaches that are equitable are required.
- Involving sectors like real estate and insurance is seen as essential for enhancing resilience and addressing long-term flooding impacts.
- Despite the increase in flooding events, problems, and losses, flooding is still not a top-10 problem. People feel that flooding is just something they have to live with.
- When a community is faced with the possibility of managed retreat, reframing the conversation to focus on future opportunities, such as the creation of a "national public seashore," can offer a more hopeful and positive perspective on a sensitive issue.
- It's important to contextualize flooding within broader community concerns and how those issues impact people's understanding and processing of flooding. Flooding may not always be the top priority for residents dealing with other pressing issues. Climate change awareness needs to be integrated in communities at the community-level, not just in advanced academic settings, including in youth education as a strategy to foster long-term engagement and awareness.

Highlights from this discussion are captured in figure 1.

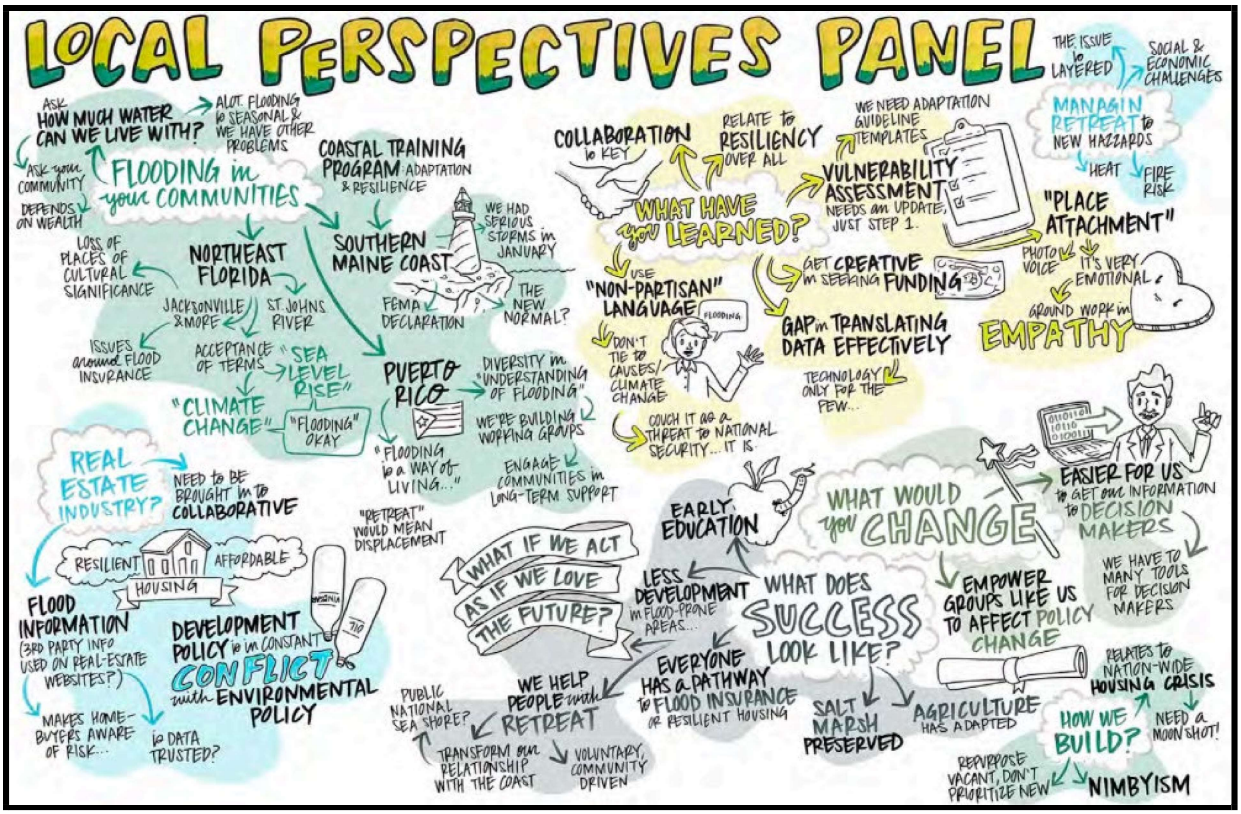

Figure 1 *Highlights from the Local Perspectives Panel as captured by the graphic facilitator. Graphic facilitation provided by Mike Petitto with Collective Next, in partnership with Propel Solutions under contract with NOAA's Office for Coastal Management*

- Developing a shared vocabulary with neutral language is important when discussing coastal flooding in different communities.
- Products translated in multiple languages, especially Spanish, are needed.
- Bridging the gap between product developers and user's comfort applying tools must continue.
- There are still too many tools; tailored resources are key.
- Decision support trees to identify tools or regionally tailored tools similar to Gulf TREE are helpful.
- NOAA needs to continue cross-office communication and coordination.

Highlights from this discussion are captured in figure 2.

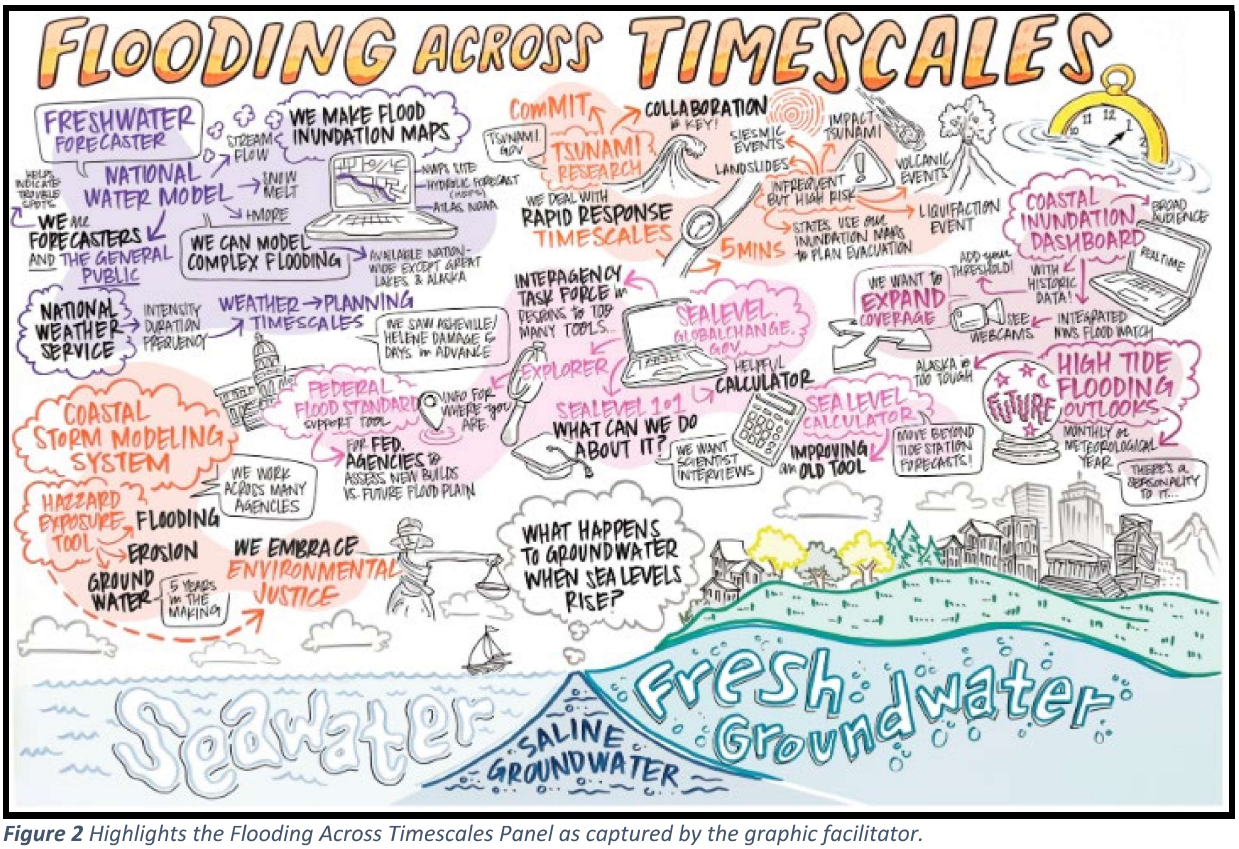

Figure 2 *Highlights the Flooding Across Timescales Panel as captured by the graphic facilitator. Graphic facilitation provided by Mike Petitto with Collective Next, in partnership with Propel Solutions under contract with NOAA's Office for Coastal Management*

DAY 2: NOVEMBER 13, 2024

The second day of the workshop was designed for participants to learn more about regional efforts, discuss challenges facing the nation, and network with their peers.

LIGHTNING TALKS

- **SECTION A: COMMUNITY-CENTERED RESILIENCE**
  - **Community-led Climate Resilience Programs in Urban and Rural Communities**
    Qiyamah Williams, Mississippi State University Coastal Research and Extension Center and Mississippi-Alabama Sea Grant
  - **Increasing Community Resilience Through Washington State's Interagency Coastal Hazard Organizational Resilience Team (COHORT)**
    Ellen Chappelka, Washington State Emergency Management Division; Sanpisa Sritrairat, Washington Sea Grant
  - **Bridging Communities: Evaluating Engagement Strategies in the Connecticut Community Participation and Risk Communication Pilot**
    Sarah Schechter, Connecticut Sea Grant

- **SECTION B: INUNDATION MODELING**
  - **Road Flooding in Coastal Connecticut**
    Jim O'Donnell, Connecticut Institute for Resilience & Climate Adaptation (CIRCA)
  - **NOAA's National Water Model (NWM)**
    Trey Flowers and Brian Cosgrove, NOAA National Weather Service, Office of Water Prediction
  - **Tsunami Inundation Modeling and Forecasting**
    Ernesto Guerrero-Fernandez and Yong Wei, NOAA Pacific Marine Environmental Laboratory (PMEL) and University of Washington

- **SECTION C: INUNDATION TECHNOLOGY INNOVATIONS**
  - **Public-Private Partnerships for Improved Monitoring, Alerting, and Predictions of Hyperlocal Flooding**
    Brian Glazer, Hohonu
  - **Leveraging FloodVision to Inform Resilience Decision-Making**
    Dan Rizza, Climate Central
    Fara Ilami, Northeast Florida Regional Council
  - **Alaska Flood Inundation Tool (AK-FIT)**
    Keith Horen, Alaska Division of Geological & Geophysical Surveys
  - **Diving Into the Digital Coast**
    Bret Folger and Maravilla Clemens, NOAA Office for Coastal Management

CONCURRENT DISCUSSION-BASED SESSIONS

- **COMPOUND FLOODING DISCUSSION**

  Facilitator: Fara Ilami, Northeast Florida Regional Council
  Co-Facilitator: Marian Hanisko, NOAA Office for Coastal Management

  Overview: Participants engaged in a discussion about compound flooding during which they shared challenges being faced in their region. The emergent topics from this discussion were challenges in modeling (e.g., data gaps, region-specific modeling, complex flood dynamics), communication (e.g., limited data, clarity in messaging), and decision-making (e.g., holistic planning, action-oriented approaches). Additional regional and context-specific insights were shared by participants.

- **NOAA SEA LEVEL CALCULATOR**

  Facilitators: Doug Marcy, NOAA Office for Coastal Management; Gwen Shaughnessy, NOAA Center for Operational Oceanographic Products and Services
  Co-Facilitators: Heidi Stiller, NOAA Office for Coastal Management; Katie Urbanski, NOAA Center for Operational Oceanographic Products and Services

  Overview: Through a hands-on demonstration, participants learned about the product's methodologies, features, and potential use cases. Additionally, participants engaged in a discussion on how to leverage the Sea Level Calculator when assessing their coastal inundation risk or other climate resilience goals.

- **ART AS WITNESS, ART AS PRAXIS**

  Facilitator: Vidya Balasubramanyam, Coastal State Organization
  Co-Facilitator: Angelina DeBenedet, American Society of Adaptation Professionals

  Overview: Explored the use of guided art–based approaches to look at coastal inundation through different lenses. Participants discussed how visual art, somatic movement, storytelling, and poetry are all forms of expression vital for working on coastal inundation projects. Participants engaged in a hands-on collaborative zine-making activity around inundation challenges.

Figure 3 *Highlights captured by the graphic facilitator from concurrent discussion sessions. Graphic facilitation provided by Mike Petitto with Collective Next, in partnership with Propel Solutions under contract with NOAA's Office for Coastal Management*

COASTAL INUNDATION CONVERSATIONS

Overview: Participants self-selected three topics and engaged in small-group conversation. The list of topics and facilitators are listed below.

- **Chronic vs. Episodic Inundation**
  Dolan Eversole, University of Hawai'i Sea Grant
- **Coastal No Adverse Impact Discussion**
  Eleanor Rappolee and Alexandra Pouliot, Association of State Floodplain Managers (ASFPM)

- **Understanding of Uncertainty on Stormwater, Wastewater, and Flood Management**
  John Philips, Parametrix
- **Conversations Around Retreat and Relocation**
  Jessica Brunacini, Wells National Estuarine Research Reserve
- **Flood-Ready Neighborhoods Pilot: Emergent Questions and Learnings**
  Anne Cox, Piscataqua Region Estuaries Partnership
  Lucy Perkins, New Hampshire Department of Environmental Sciences
- **Helping Gulf of Mexico Coastal Communities Prepare For, Respond To, and Recover From Inundation Events**
  Marian Hanisko, NOAA Office for Coastal Management
- **FloodVision**
  Dan Rizza, Climate Central; Fara Ilami, Northeast Florida Regional Council
- **Gulf TREE**
  Qiyamah Williams, Mississippi State University Coastal Research and Extension Center and Mississippi-Alabama Sea Grant
- **Alaska Flood Inundation Tool (AK- FIT)**
  Keith Horen, Alaska Division of Geological & Geophysical Surveys

COOKING UP A SUCCESSFUL COMMUNITY OF PRACTICE

Facilitators: Henry Bell and Noah Linck, Washington State Department of Ecology; Sara Bostrom, Padilla Bay National Estuarine Research Reserve; Chandler Countryman, Washington Sea Grant; Jennifer West, Narragansett Bay National Estuarine Research Reserve

Overview: Participants engaged in roundtable discussions on the "ingredients" needed to cook up a successful local or regional community of practice and shared their experiences with their own local and regional communities of practice. Facilitators shared examples from Washington's Coastal Hazards Resilience Network (CHRN) that has been active for over a decade and the more newly formed Rhode Island Climate Resilience Learning Network (RICRLN). A comprehensive overview of this session (Cooking Up a Successful Community of Practice) including challenges and mitigation strategies is available.

Successful Community of Practice (CoP) Ingredients Highlights:

1. **Audience and Purpose**
   A clear, shared purpose is essential for a successful community of practice. Participants emphasized the importance of defining the community's goals, challenges, and shared language to describe who they are and what they aim to achieve. It is crucial to establish a balance between inclusivity and specificity; the community should be small enough for meaningful interaction yet large enough to tap into broader networks for regional collaboration.
2. **Coordination and Sustained Leadership**
   Effective coordination relies on strong, consistent leadership. Participants stressed the importance of securing dedicated staff time, resources, and training programs to support CoP activities. Leadership must foster inclusivity, provide early wins to build momentum, and align CoP objectives with organizational priorities to ensure longevity. Challenges like staff turnover, burnout, and limited capacity can hinder progress, however documented protocols and horizontal

leadership structures can help maintain continuity. Having consistent leadership from one or two agencies will help ensure longevity, even with staff turnover.

3. **Equitable Participation and Knowledge Sharing**
   Equity in both participation and knowledge sharing is fundamental. Communities of practice must address power imbalances, compensate participants for their time, and provide multiple modes of engagement to ensure inclusivity. Involvement of community leaders early on and recognition of diverse knowledge systems are key for buy-in and sustained trust. Participants noted the value of creative communication approaches—such as art, storytelling, and accessible mediums—to engage different audiences. Clear agreements on norms and facilitation processes can help bridge gaps across cultural and capacity divides.
4. **Trust and Relationship Building**
   Building and sustaining trust is a long-term process requiring transparency, vulnerability, and consistency. Participants highlighted the importance of listening with curiosity, welcoming dissenting views, and creating authentic human connections within the community of practice. In-person gatherings are vital for relationship-building, and it's important to remember that "relationships are built at the speed of trust." Celebrating small successes, following through on commitments, and addressing historical injustices help deepen trust.

NEXT STEPS:

Facilitators: Lauren Bissonnette, Lynker on contract with NOAA Office for Coastal Management; Brenna Sweetman, NOAA Office for Coastal Management

Overview: Participants discussed takeaways and concluded the workshop by answering the question: *what can we* [Coastal Inundation Community of Practice] *do together that we cannot do alone?*

Figure 4 *Participant responses to the question: "What can we do together?"*
Graphic facilitation provided by Mike Petitto with Collective Next, in partnership with Propel Solutions under contract with NOAA's Office for Coastal Management

Day 2 concluded with Heidi Stiller, NOAA Office for Coastal Management, recapping the meeting by sharing some ideas on essential ingredients for community resilience to coastal inundation, emphasizing the characteristics of the Coastal Inundation Community of Practice that fosters these traits.

- **Collaboration:** Effective across disciplines and geographies, CICoP members break silos, communicate well, and share credit.
- **Community-driven action**: Focused on empathy and building trust, members listen to community needs and foster participation despite challenges.
- **Science and data:** Efforts center on making tools accessible and relevant, with boundary spanners translating complex science in a way that resonates with communities.
- **Determined creativity:** Members display tenacity, adaptability, and a willingness to innovate while supporting one another with positivity.
- **Resources:** Members leverage collective advocacy and storytelling to secure the funding and time necessary for impactful action.

The leadership team will ensure that priorities identified by participants during this session and in the evaluation results drive the activities of the Coastal Inundation Community of Practice during FY25.

DAY 3: NOVEMBER 13, 2024

The final day of the workshop was dedicated to site visits to allow participants the opportunity to learn more about local Washington State–based resilience efforts. This portion of the workshop was led by local planning partners at Washington Sea Grant, Washington State Department of Ecology, and Padilla Bay National Estuarine Research Reserve.

- Padilla Bay National Estuarine Research Reserve and Samish Conservation Area
- Walking Tour of Point Ruston and the Owen Beach Redevelopment in Tacoma, WA
- Walking Tour of the Duwamish Valley Resilience District in Seattle, WA

INUNDATION RESILIENCE NETWORKS INVENTORY

During the workshop participants contributed to the creation of an inundation resilience networks inventory. The inventory is a compilation of existing coastal resilience networks at a local or regional level, organized by geographic region. The scope of these networks may extend to matters beyond coastal inundation, but inundation is a part of their focus area. The updated Inundation Resilience Networks Inventory resource is available.

We recognize this list is not exhaustive, and additional networks can be added to the inventory by emailing ocm.sg@noaa.gov.

NEXT STEPS:

For more information about future Coastal Inundation Community of Practice activities, please visit https://adaptationprofessionals.org/coastal-inundation-community-of-practice/ or contact us at ocm.sg@noaa.gov.