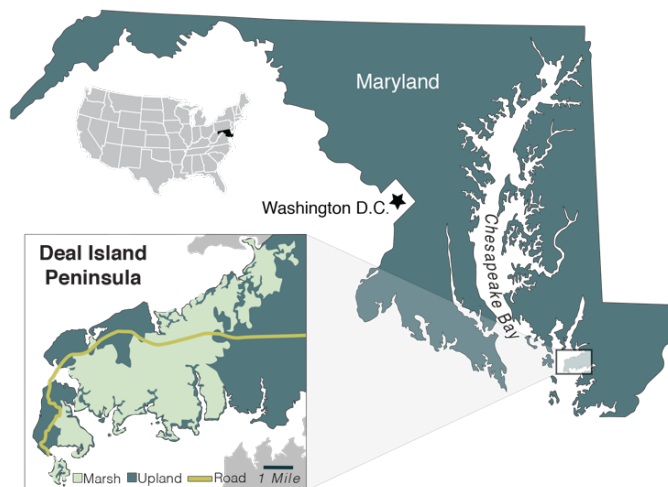




Using Collaborative Learning to Engage Rural Communities in Climate Change Adaptation Planning: Lessons from the Deal Island Peninsula Partnership

The Deal Island Peninsula Partnership:

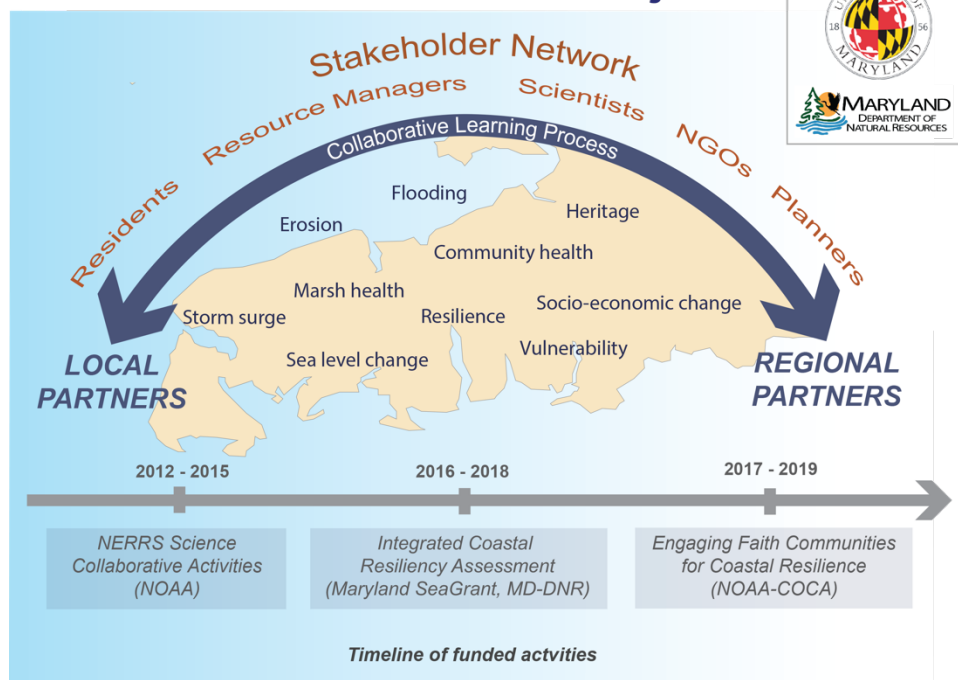
The Deal Island Peninsula on Maryland's Eastern Shore of the Chesapeake Bay is a rural, unincorporated area composed of low-lying coastal islands, six small watermen communities, and some of Maryland's most extensive marshes, much of which are managed by Maryland Department of Natural Resources (MDDNR) as part of Maryland's Chesapeake Bay National Estuarine Research Reserve. (CBNERR-MD). The communities located here – like many rural, underserved coastal communities – are increasingly vulnerable to the impacts of climate change, but have limited resources and political influence to draw upon in sustaining the area's social and environmental health under a rapidly changing coastal landscape. These limitations present real challenges for their well-being and the health of the surrounding coastal environments as climate change worsens.



In 2012, the University of Maryland Departments of Anthropology and Environmental Science and Technology, in partnership with the MDDNR and the CBNERR-MD developed the ***Deal Island Peninsula Partnership (DIPP)***, a collaborative initiative between local community members, county and state government, research

institutions, and non-governmental organizations to enhance the social and ecological resilience of the Deal Island Peninsula through the creation of improved pathways for adaptation support in this underserved coastal area. In bringing such a diverse group of stakeholders together, DIPP has relied heavily upon the transdisciplinary approach of ***Collaborative Learning (CL)*** to facilitate discussions and decision-making between a diverse stakeholders, some who have little experience working with each other and differing (sometimes conflicting) adaptation needs and goals. By using CL, DIPP has

Deal Island Peninsula Project



Map credit: Tracey Saxby and Kate Boicourt, University of Maryland Center for Environmental Science Integration and Application Network (ian.umces.edu/imagelibrary/)

helped to improve both local and non-local understandings of social and ecological dynamics impacting the Peninsula, enhanced access to resources and adaptation support, and developed new local – non-local partnerships that have led to adaptive actions that support a range of social and environmental needs (see Johnson et al. 2018).

What is Collaborative Learning?

- A process-oriented approach for integrating diverse stakeholder knowledge, experiences, and values into decision-making about complex socio-ecological problems.
- CL moves beyond conventional one-way knowledge sharing approaches to enable all stakeholders to both teach and learn from one another in developing feasible and appropriate solutions.
- Through facilitated dialogue, CL constructs a “*Kaleidoscope of Expertise*” to inform problem-solving (Feurt 2008). This kaleidoscope enables decision-making to draw upon a wide range of knowledge, values, experiences, and worldviews, including from scientists and technical experts, government decision-makers, and local knowledge holders, whose perspectives provide important place-based context for developing solutions.
- CL giving equal weight to *all* stakeholder input. In doing so, it helps foster trust and rapport that leads to more productive dialogue, decision-making, and supportive implementation that accounts for a range of needs, values, and capacities.
- As a bridging tool, CL bring groups in conflict into conversation in a way that fosters the development of mutual understanding and respect, in spite of disagreements. The goal of collaborative learning is *not* to find consensus, but rather to work through differences in meeting a range of stakeholder interests.



The Collaborative Learning Process:

These steps were developed by Christine Baumann Feurt (2008). For more detailed descriptions of CL approaches and techniques, see [The Collaborative Learning Guide for Ecosystem Management \(2008\)](#)

Step 1 - Assessment: Define the problem; Identify stakeholders that need to be engaged; Collect and synthesize stakeholder understandings of the problem

Step 2 - Design: Invite participants; Develop approaches to engage the *Kaleidoscope of Expertise*; Develop facilitation strategies that promote sensitivity and equal treatment of different knowledge types and worldviews

Step 3 - Implementation and Facilitation: Engage the *Kaleidoscope of Expertise* to connect diverse values; build shared understandings; generate and evaluate issues of concern; develop strategies and implementation plans; develop accountability

Step 4 - Evaluation: Track improvements towards shared goals; Solicit stakeholder feedback; Document learning, conflict, and ideas; Promote accountability

Applying Collaborative Learning through DIPP:

DIPP's primary goal is to enhance resilience to climate change through the creation of a social network that facilitates collaborative decision-making between the local communities, government, researchers, and NGOs. However, building such a network can be challenging when bringing groups together that have little experience working with one another, different worldviews, and competing priorities. The communities on the Deal Island Peninsula, for example have working values that can be odds with governmental and scientific interests in environmental protection. They also have a long history of isolation and independence that has made some quite distrustful of outsiders, particularly of those whose political power (e.g. through environmental regulations) may represent a threat to their way of life (see Van Dolah 2018). DIPP has applied CL through the following three projects to break down these barriers and improve collaborative partnerships between these groups in order to enhance local adaptation support.

Deal Island Marsh and Community Project (Funder: NOAA Science Collaborative): Creating the Building Blocks for a Collaborative Stakeholder Network

The Deal Island Marsh and Community Project (DIMCP) was carried out from 2012-2015 as the first step towards forming DIPP's stakeholder network. It was conducted as a collaborative science project guided by CL, with the goals to (1) improve understandings of climate change resiliencies and vulnerabilities across the socio-ecological system of the Deal Island Peninsula, and (2) develop recommendations for future collaborative adaptation work. The initial network of 35 stakeholders was convened by the project's coordinators to include key local community members, researchers, government decision-makers, and NGO partners with interests, insights, and resources critical to meeting these goals. Over the course of the project, these stakeholders helped to grow the network to 60. The DIMCP employed the following CL tools in bringing these individuals together:



- ***Interviews and Thematic Analysis:*** 25 stakeholders participated in 1-1.5 hour-long interviews guided by a set of open-ended questions about their understandings of local resiliencies and vulnerabilities to climate change. Qualitative analyses of interview transcriptions were conducted in Atas.ti, text-analysis software, to identify key themes that captured the range of understandings about local sources of vulnerabilities and resiliencies. Themes were used to guide facilitated workshop discussions about future adaptation needs. Interview data were important for refining our focus, understanding barriers and challenges, and identifying opportunities to engage the kaleidoscope of expertise within the stakeholder network.
- ***Collaborative Research Projects:*** Three Collaborative Research Projects (CRP) were developed to explore aspects of (1) marsh restoration, (2) shoreline erosion and tidal flooding, and (3) cultural heritage. These topics were collectively identified by the stakeholder network as critical components of the Deal Island Peninsula's socio-ecological system and topics that need to be better understood in developing resiliency strategies. CRPs were carried out by collaborative research teams composed of subgroups of stakeholders with scientific and local knowledge expertise on the CRP topics.
- ***Facilitated Workshops:*** Workshops led by trained facilitators were hosted as part of the CRPs, providing a forum for teams to share their findings, collect feedback, and gather interactive data to further CRP research. These workshops were important for facilitating two-way knowledge sharing, which helped to foster trust and rapport and building mutual understanding between stakeholders. Workshops also provided a forum for stakeholders to informally engage with one another, providing opportunities for individuals to develop relationships.

- [Community Conversations](#): Additional public meetings, or “community conversations,” were hosted to engage the broader Deal Island Peninsula communities in discussions about resilience. During community conversations, DIPP shared information on topics of importance for the social and environmental health of the Peninsula. They included presentations by resource managers, researchers, and community members from the DIPP network on FEMA flood insurance policies, scientific assessments of marsh vulnerability and restoration options, shoreline erosion and opportunities for building living shorelines, and religion, faith, and climate change.



The DIMCP resulted in recommendations for where adaptation support is most critical for future DIPP activities, which included developing a list of prioritized adaptation projects, the focus of DIPP’s second collaborative project - the Integrated Coastal Resiliency Assessment.

The Integrated Coastal Resiliency Assessment (Funder: Maryland Sea Grant): *Collaboratively Assessing and Prioritizing Socio-Ecological Risks and Future Adaptation Projects*

Building from the DIMCP findings and recommendations, DIPP carried out an Integrated Coastal Resiliency Assessment (ICRA) from 2016-2018 to further assess and prioritize local vulnerabilities, and collaboratively develop priority adaptation projects to meet resiliency needs. The ICRA enabled DIPP to *integrate* local experiential knowledge into conventionally top-down science-driven coastal resiliency assessment approaches by using collaborative science and collaborative learning. In doing so, DIPP identified key vulnerabilities of concern and developed two locally-relevant and scientifically-robust adaptation projects to address the network’s areas of concern. CL was an integral part of the ICRA, and carried out through the following activities:

- [Collaborative Mapping](#): In determining where to focus the ICRA assessment activities, DIPP stakeholders participated in a collaborative mapping exercise to identify areas of the Peninsula that are socially and ecologically significant and vulnerable to flooding and erosion impacts. Participants also evaluated flood risks using a sea-level rise mapping tool. The network selected four focus areas, which were shared and discussed with the broader community at a community meeting before focus area boundaries were finalized.
- [Key-Informant Interviews and Site Visits](#): Twenty interviews and site visits were carried out with select DIPP stakeholders with in-depth knowledge of the focus areas. Qualitative data were used to further characterize the focus areas’ significance, resiliencies, and vulnerabilities. Summaries of the focus area characterizations were used to develop a baseline of understanding to guide stakeholders through collaborative field assessments.
- [Collaborative Field Assessments \(CFA\)](#): Focus area teams composed of local community members, researchers, government staff, and NGO partners were convened to further assess the vulnerabilities of each focus area. Teams met for an initial scoping workshop to review focus area characterizations. Teams then selected focus area locations to visit during a half-day collaborative



fieldtrip to conduct the assessments. A survey was developed to enable comparable data to be collected across each team's assessment. Following the field trips, CFA teams collected additional survey data from households within their respective focus areas. Data were compiled and presented back to CFA teams to guide discussions about which vulnerabilities to prioritize.

- **Photo Documentation:** As part of the CFAs, stakeholders also collected photos of vulnerabilities to accompany the CFA survey data. Photos were collected over the course of six months in a public photo archive stored on the DIPP website (www.dealispenninsula.org). The photo collections, which largely focus on flooding and erosion vulnerabilities, continues to be an important tool for documenting risks and facilitating ongoing collaborative discussions about adaptation needs.
- **Facilitated Workshops:** As part of the final phase of the ICRA, facilitated workshops reconvene all focus area teams to discuss CFA findings, identify common areas of concern, and collectively prioritize vulnerabilities on which to focus adaptation project development. A second set of facilitated workshops were hosted to develop potential adaptation projects to address two prioritized vulnerabilities (see below).

ICRA Outcomes:

Two prioritized vulnerability concerns:

- 1) Tidal ditch flooding in two highly flood-prone areas of the Peninsula, which impacts road access for residents and interrupts important public services (e.g. school busses, emergency services).
- 2) Erosions along a section of shoreline on Deal Island, which threatens to impact Deal Island Rd. – the only access road to points south -- and houses in neighboring communities.

Two adaptation projects developed in response to these concerns:

- 1) State-sponsored ditch drainage assessment carried out by the County government to identify sources of flooding and procure additional funds for implementation.
- 2) \$1-million State-funded living shoreline project to rebuild critical dune structure and habitat along the Deal Island shoreline in order to slow erosion and enhance the shoreline's storm protection capacities.



Engaging Faith Communities for Coastal Resilience (EFCCR) (Funder: NOAA COCA):

Bridging Faith and Science to Improve Rural Adaptation Support

As DIPP's third collaborative learning project, the EFCCR sought to further develop collaborative relationships through the churches on the Deal Island Peninsula, as well as through churches in two other rural communities in nearby Wicomico and Dorchester Counties, Maryland. Within many rural communities, churches are a critical social institution, providing support, knowledge, and guidance that is especially valuable in times of need. These institutions represent a potentially important connection to underserved rural communities that could enhance social networks between government, researchers, and rural communities for improved adaptation support, especially in those places that otherwise lack a local government presence.



On the Deal Island Peninsula, DIPP engaged four churches – three Evangelical United Methodist churches and one independent church -- in the EFCCR. Members from these churches have been important DIPP stakeholders, but recruiting more active participation from the faith communities on the Deal Island Peninsula has been challenging. Thus, DIPP used the EFCCR's work on the Peninsula to explore the sources of these tensions and opportunities to integrate more faith-based considerations into the governance of local climate change adaptations. Like DIPP's other projects, the EFCCR drew heavily upon a CL

approach to navigate these discussions, using the following approaches:

- [Interviews and Thematic Analysis](#): 23 project participants, including church members, government decision-makers, and researchers, participated in 1-1.5 hour-long interviews on the topic of climate change and the role of churches, faith, science, and government in adaptation. Interview transcriptions were coded in the text analysis software, Atlas.ti for themes that captured the range of perspectives on these topics, with specific attention to how faith and religion are used to frame climate change. Identified themes were used to organize a series of facilitated workshops with our stakeholder network to discuss findings, and develop understandings of different climate change perspectives across our stakeholders.
- [Facilitated Workshops](#): Four workshops were hosted -- two with the local churches, one with decision-makers and researchers, and a final workshop with all participants. Workshop discussions were facilitated using four questions developed from the coded interview data. These questions were designed to delve into the identified interview themes without privileging one view over another. A selection of de-identified interview quotes representing each theme were used to prompt group discussion to each question. Given the limited experience that participating church communities, government decision-makers, and scientists had with engaging each other on the topic of faith and climate change, we separately hosted workshops with church members and decision-makers/scientists in order to encourage participants to openly share their perspectives within a comfortable, non-judgmental space. The final workshop brought all stakeholders together to reflect on what was shared and explore opportunities for faith-communities, government, and scientists to more productively work together to support resilience on the Deal Island Peninsula.



***To learn more about these projects, please visit our Collaborations tab on the DIPP website:
www.dealispenninsula.org***

Outputs from DIPP's Collaborative Learning Activities:

- Improved trust and rapport between groups with little prior experience working together
- Improved two-way communication and outreach opportunities
- Enhanced non-local understandings of local concerns, capacities, and collaborative opportunities
- Enhanced local understandings of governmental concerns, capacities, and collaborative opportunities
- Enhanced understandings of the value of social and natural science research in adaptation decisions
- New knowledge of the socio-ecological dynamics affecting human and environmental vulnerabilities
- Identification of locally-supportive and scientifically-robust adaptation projects
- Development of shared visions for supporting environmental *and* human resilience to changing conditions on the Deal Island Peninsula.

Other Key Considerations for Collaborative Learning & Network Building:

Routine Communication: Regular communication in between face-to-face activities has become a critical part of DIPP's CL process. Not only does it sustain engagement, but it also offers opportunities to continue relationship-building and to improve upon the collaborative learning process. DIPP has done this through: 1) a monthly newsletter used to provide updates and announcements about project activities and to share stakeholder news and opportunities; 2) a website with information about our collaborative projects, events, publications, and resources; and 3) informal interviews and conversations with our stakeholders in between activities to gauge where gaps, oversights, and opportunities exist to improve CL.

Dedicated Coordination: CL can lead to solutions and the development of valuable partnerships between local and nonlocal stakeholders, but not without mechanisms to ensure accountability and sustained engagement. DIPP has benefited greatly from having a dedicated coordinator in this role to ensure follow-through on project outcomes, identify new collaborative opportunities and needs, and maintain stakeholder engagement. Coordination of a partnership like DIPP is a time-consuming process, and must have funding to be sustainable.

Sensitivity to Other Values and Perspectives: Before engaging in CL, it is important that facilitators as well as participants set pre-existing value judgements aside and recognize the legitimacy of other worldviews, regardless of whether they match their own. Facilitators can encourage this by establishing ground rules for engagement prior to beginning the CL process. Doing so helps to create an environment that promotes active listening, fosters respect and rapport, and enables new ways of understanding to become a resource for problem-solving rather than a source of conflict.

Evaluation: Continual evaluation of CL is necessary to ensure its success and to gauge progress towards supporting sustained partnerships. It is also essential for adapting the network to fit emergent needs, issues, and interests. In DIPP, we routinely collect feedback from workshops and other CL activities through surveys, which enable us to measure increases in trust, rapport, relationship-building; and identify additional needs, gaps, and areas for improvement. Informal follow-up interviews with stakeholders is another important tool we rely heavily upon for evaluating the CL process and network sustainability.

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- Johnson, K., C. Feurt, M. Paolisso (2018) Collaborative Science and Learning as Tools for Climate Change Adaptation Planning. The International Journal of Climate Change: Impacts and Responses 10(1): 59-75.
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