

## Launching the Network

On September 29, 2016 MassBays National Estuary Program held a Summit at the Division of Fisheries and Wildlife Headquarters in Westborough, MA for citizen monitoring coordinators. The goals of the Summit were to create and foster connections between groups, identify needs and opportunities for capacity-building, and gauge interest in establishing a Citizen Monitoring Coordinators' Network.

A Citizen Monitoring Coordinators' Network would support implementation of MassBays' Comprehensive Conservation and Management Plan, especially the monitoring framework and State of the Bays reporting required of all National Estuary Programs. Partnerships supported by a network will help MassBays compile quality long-term monitoring data, meet Clean Water Act §320 mandates and help prompt action toward environmental improvements and MassBays' vision of "a network of healthy and resilient estuaries, sustainable ecosystems that support the life and communities dependent upon them."

We identified potential participants through an inventory of monitoring programs using existing data and outreach to identify groups and programs. Our focus was on water quality, sediment, or species specific coastal and watershed monitoring programs. Once identified, groups were invited to complete an online survey to provide detailed information about their programs and GPS coordinates for the sites they monitor. We used station locations to develop a map that will provide a sense of the spatial and temporal distribution of monitoring and inform where additional monitoring is needed.

The day-long event began with a series of [introductory talks](#) for the 44 [attendees](#), outlining MassBays' mission and mandate as a National Estuary Program, an overview of the bays and monitoring framework, and the goals for the summit.

The [agenda](#) for the remainder of the day was divided into three parts: two professional development panels, an introduction and tour of the Boston Harbor Atlas online tool, and three concurrent breakout discussions to explore existing resources and needs. [Speakers' and facilitators' bios](#) were provided as a handout.

The first panel was about [reimagining the quality assurance project plan \(QAPP\)](#). Its focus was to describe a QAPP as a tool for focusing the project's approach and facilitating data analysis rather than an onerous add-on task that delays the intended program. The panelists and their insights are provided below:

- Nora Conlon (EPA Region 1) emphasized that all types of projects benefit from the QAPP process. There are 24 items in a QAPP outline; address them all, but remember that the scope of the QAPP should match the scope of the project.
- Kim Groff from DEP stressed that ensuring consistency among staff, comparing results over time, or making claims against suspected polluters all require data collection backed up by a QAPP.
- Jo Ann Muramoto from APCC discussed how front-end investment of time in a QAPP makes data analysis easier and more efficient, funders are reassured when you have a QAPP in hand, using a

QAPP supports consistency across sites, and makes it easier to train staff and volunteers because there is a written approved protocol.

Following the presentations, summit attendees suggested that DEP and EPA talk about their respective requirements for QAPPs to streamline the process and decrease the turnaround time for QAPP approvals. Ideas on how this could be accomplished included an online QAPP form or template with quick update options and the ability to switch out components of a generalized QAPP in accordance with the type of project. This would also open the door for further collaboration and sharing between groups. Programs in a monitoring network could share SOPs, model QAPPs/templates/generic QAPPs, training programs for coordinators, and practice QC with volunteers. As a further check to their data, groups could publish or publicize the checks that go into citizen science data, outside of their QAPP, to strengthen scientists', policymakers', and the public's confidence in their work.

Northeastern University and the Encyclopedia of Life previewed a new online tool, the [Boston Harbor Habitat Atlas](#). The purpose of the atlas is to connect educators, students and the general public with knowledge about local ecosystems and foster connections to the natural environment.

The second panel focused on [data management - from collection to dissemination](#) where panelists shared the several insights:

- Rob Stevenson from UMass Boston discussed how proper data management is key to making citizen-generated data useful for decision making and research, described common pitfalls and provided advice for effective data management.
- Rachel Jakuba from Buzzards Bay Coalition detailed how to work with data using anything from simple Excel-based calculations to a full-fledged statistical analysis in order to understand the story the data is telling.
- Andy Hrycyna from Mystic River Watershed Association described best practices for presenting data and emphasized the importance of deploying the data to bring about change in policy and decision-making.

The panel presentations sparked interest among attendees, who shared practices and the tools they use for data interpretation, common terminology, best ways to convey the stories that the data are telling, especially regarding trends and patterns. Another important topic was data management and how best to archive old data. Suggestions varied from using [Tableau](#) or an [Excel reference table](#) to visualize the data to using the University of California data archive as a model. This issue with proper data management, storage and dissemination was common across all the groups; MassBays is investigating the possibility of securing an account with [MyObservatory](#) for the Network.

[Breakout discussions](#) were not intended to be panels, but meant to be conversations about moving a program from simple monitoring to investigative science. Conversations revolved around securing resources for a program, partnering with academia, government, and industry to collect quality data, and collaborating to share data and outcomes.

Barbara Warren led the discussion on securing resources which focused on how to secure funding and equipment through various means. The conversation began with the resources that DEP offers and Supplemental Environmental Projects that can be funded in lieu of fines by those violating DEP regulations. Most of the participants were unfamiliar with this program and indicated there was a need for such funding opportunities to be advertised and the process for applying needed to be easier. There was also hope that the EPA would restart their equipment loan program, perhaps by shifting responsibility for its operation to the state. These types of interactions fostered the desire for further collaboration and inspired people to think about joint solicitations for funding or donations (possibly from the local conservation commission or Department of Public Works or even private organizations), use of equipment, and sharing data that both parties are interested in using.

Carole McCauley launched the discussion on partnering to collect data by having participants read statements underscoring the challenges of working with various sectors, and point out that collaboration among those representing nonprofits, government, academia, industry, and others requires an understanding of each other's challenges and motivations in taking part in a collaboration. Participants shared their motivations for collecting data, which included providing educational opportunities, gathering knowledge for subsequent advocacy for better management, improving environmental quality to protect human health and the environment and to answer compelling research questions. The group then shared their motivations for collaborating with other sectors and ways that partnering would benefit both parties. Such partnerships would foster co-training opportunities for scientists and educators, it would fill in gaps in capacity and staffing holes, act as a stronger regulation driver, and create win-win synergies. Finally, the group identified ways that MassBays can help facilitate a collaboration by standardizing procedures across programs, offer a "certificate" for citizen scientists, carefully and regularly assess needs and interests, identify data gaps and advertise them and maintain the network perpetually.

Sara Grady began the conversation on sharing data and the opportunities for collaboration by teasing out what the message citizen monitoring groups are trying to convey with their data. Participants agreed that data need to be tailored to the audience and that data for citizens should be presented differently than data for scientists. The group discussed ways that data can be presented in a useful and interesting way; ranging from health indices, signs at sampling sites, and providing data in real-time. There was a general consensus that there needs to be a better way of sharing data with other organizations and the public. Participants felt that current practices could be more transparent about what happens to their data and who is looking at them. The group concluded by brainstorming ways in which MassBays can help, which included developing best management practices for data collection and management, identifying common parameters all programs should collect, and bringing together all of the data going forward.

### **Outcomes and Next Steps**

We asked attendees to provide feedback and write up a job description addressing the needs of their organization. The feedback that was provided by 27 of the participants on their [evaluation forms](#) and in

their [job description](#) handouts will help MassBays determine the next steps in establishing the citizen monitoring coordinators' network and drafting the monitoring framework.

The intent of the Summit was to bring together a majority of the identified stakeholders, including them in the discussion and assessing each organization's needs. We are pleased that several participants felt we were successful in meeting those goals. The consensus indicated that there is a willingness and desire to be part of a collaborative network with annual meetings. Suggestions focused around setting aside more time for group discussions and reaching out to smaller programs to expand the network.

Major needs, as reflected in the Wordle below, included analyzing and managing the data that have already been collected, followed by the need for a grant writer to obtain funding. Organizations are looking for ways to manage, analyze, archive and present their data to others.



The next steps for MassBays are to use all of this information to develop its own monitoring framework, and build the citizen monitoring coordinators' network into an effective means for collaboration. Our list of top priorities includes:

- Creating a dedicated newsletter and establishing a listserv as a forum for citizen monitoring coordinators to share ideas and resources.
- Connecting organizations with scientists who can help them formulate their own questions and approaches to answering those questions.
- Facilitating equipment exchanges and joint training for volunteers.
- Providing training in communicating results to local and state decision makers.
- Helping to secure funding to sustain long-term programs and jump-start lapsed ones.