



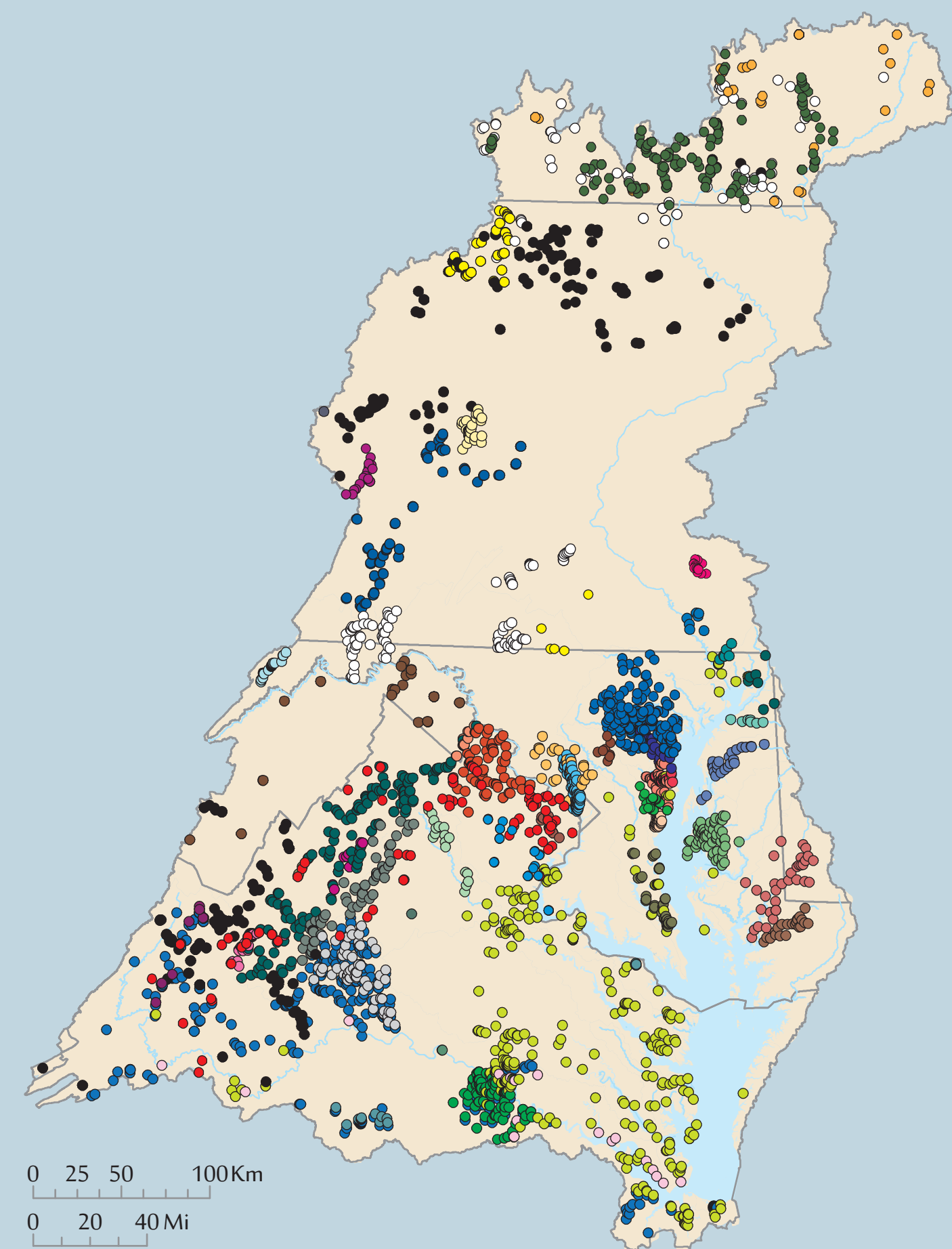
CREATING A MATRIX FOR CROSS-GOAL COLLABORATIONS

E. Caroline Donovan, Alexandra Fries, Suzanne Spitzer, and Dylan Taillie
 University of Maryland Center for Environmental Science's Integration and Application Network
 Resources: chesapeakemonitoringcoop.org

The Chesapeake Monitoring Cooperative (CMC) is a group of organizations that provide technical, programmatic, and outreach support to integrate volunteer-based and nontraditional water quality and macroinvertebrate monitoring data into the Chesapeake Bay Program partnership. Our group developed an indicator matrix that demonstrates the overlapping objectives between the Chesapeake Bay Program's Management Strategies and volunteer monitoring groups. The matrix can enhance understanding and inspire more monitoring, which will be used for restoration across all Bay Program goals (i.e., clean water, abundant life, conserved lands, and engaged communities). Case studies demonstrate the usability of the matrix by both the volunteer monitoring community and the Bay Program. The cross-goal collaborations occurring because the Cooperative was funded and formed by the Chesapeake Bay Program are achievements on their own.

Use all data of known quality to inform management and restoration decisions

Some potential datasets that can be used by the Chesapeake Bay Program



Each color represents a separate nontraditional monitoring group conducting water quality, benthic macroinvertebrates, and/or other ecosystem monitoring in the watershed. These data, combined with traditional monitoring, will better inform management and restoration of the watershed.

The Chesapeake Bay Watershed Agreement, a guide to the protection and restoration of the Chesapeake Bay and its watershed, includes 10 goals, and 29 outcomes. There are management strategies to achieve each of the 29 outcomes. The Water Quality Matrix developed by the CMC lists many overlapping objectives between the Water Quality Management Strategies, the Chesapeake Monitoring Cooperative team, and the nontraditional monitoring groups throughout the watershed. By using the matrix, all data of known quality can be incorporated into the Chesapeake Bay Program's existing networks. This is a huge undertaking that includes diverse partners, including local, state, and federal agencies, academic and nonprofit organizations, soil and water conservation districts, and others.

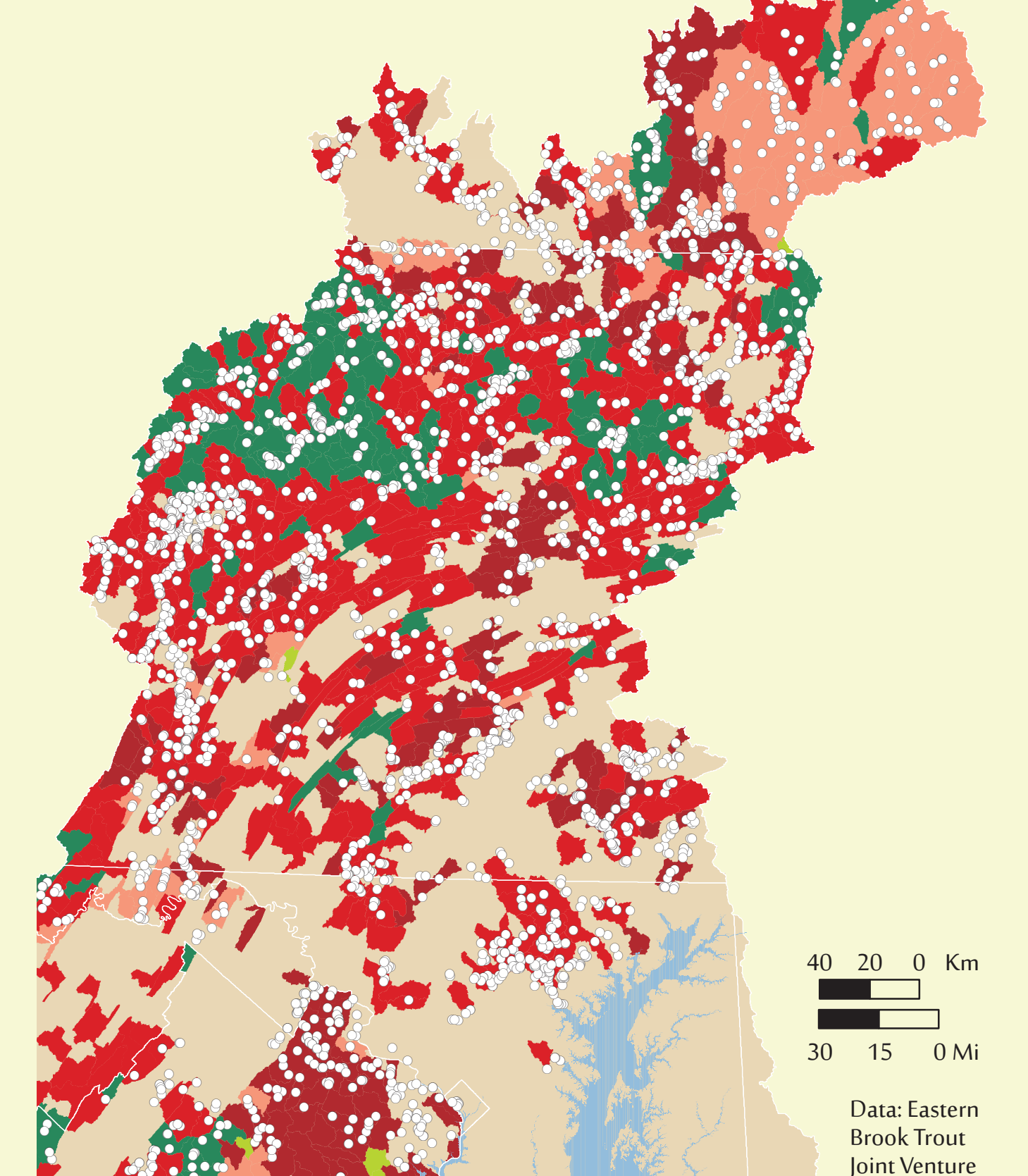
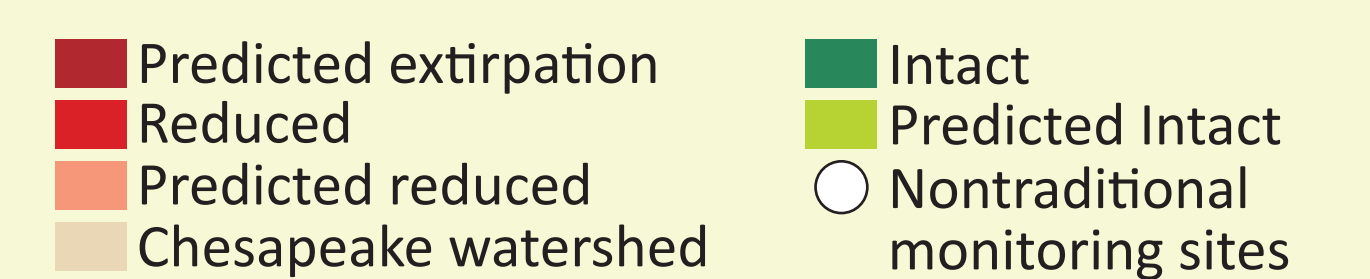
Connect nontraditional monitoring groups with Brook Trout Workgroup

Brook trout need cold, clean freshwater streams to thrive and play the "canary in the coal mine" in streams throughout the watershed. The Bay Agreement goal is to protect and restore these trout. While restoring habitat is not



a core objective of the Chesapeake Monitoring Cooperative project itself, there are monitoring groups that are interested in restoring fish habitat and fish populations. Connecting these groups with the Bay Program's Habitat Goal Implementation Team will allow collaboration outside the CMC umbrella on priority species.

Areas where nontraditional monitoring overlap with predicted eastern brook trout distribution



Areas where nontraditional monitoring groups can collaborate to monitor brook trout. Brook trout data layer shows predicted distribution based on known habitat quality.

Advance programs that foster individual citizen action, volunteerism, and citizen leadership



The CMC team (Alliance for the Chesapeake Bay, Izaak Walton League of America, Alliance for Aquatic Resource Monitoring, and University of Maryland Center for Environmental Science) are working with the Stewardship Goal Team to enact several of the strategies laid out in the Goal Team's management plan. For the first time, the Chesapeake Bay Program has a stated goal of engaging with more citizens through citizen science, leadership, and volunteerism (Figure 3). The Bay Program recognizes that the federal-state partnership cannot fulfill the Bay Agreement goals alone, but rather will need all citizens of the Bay watershed to take action to reduce pollution and restore the streams and rivers that feed the Bay.

At left: A variety of behaviors that residents throughout the watershed can take to protect and improve watershed health.



Work with diverse partners to collect, share, and communicate new and existing data

One of the primary objectives of the CMC is to work with diverse partners throughout the watershed to collect, share, and communicate data to a broader audience than traditionally has had access to the data. In order to support these groups, the CMC team has developed a wealth of resources for monitoring groups such as Quality Assurance Project Plans, Standard Operating Procedures, Indicator Factsheets, and a Data Interpretation Methods manual. These resources can be used by any and all groups who join the Cooperative. Furthermore, an online database called the Chesapeake Data Explorer is available for all groups to share, analyze, and visualize data. This work helps fulfill the Management Strategies of several Goal Teams, including Water Quality, Maintain Healthy Watersheds, Habitat, and Climate Change.



Covers of the indicator factsheets and standard operating procedures that are available to all monitoring groups.