

DRAFT Tiered Framework for Data Collection and Integration for Nontraditional Monitoring

Introduction:

The Alliance for the Chesapeake Bay (Alliance), Izaak Walton League of America (League), the Alliance for Aquatic Resource Monitoring (ALLARM) housed out of Dickinson College, and the University of Maryland Center for Environmental Science Integration and Application Network (UMCES IAN) are partnering to provide technical, logistical, and outreach support for the integration of citizen-based and nontraditional monitoring partners into the Chesapeake Bay Program partnership. The integrations of this data into the CBP monitoring network will provide additional cost-effective data and information that supports shared decision-making and adaptive management by the CBP partners focused on restoration of the Chesapeake Bay and its watershed.

The project partners, using their background, expertise, and knowledge with the nontraditional monitoring community, are working with CBP STAR (Scientific, Technical Assessment and Reporting to 1) establish institutional structures and procedures, such as the tiered data use framework; 2) facilitate development of consistent monitoring and training protocols, technical guidance, data gathering tools, quality assurance mechanisms, and data analysis and communication tools, 3) inventory, prioritize and recruit monitoring groups and 2) provided training and technical support to monitoring groups. This comprehensive approach will ensure a consistent, high quality submittal of data to the Chesapeake Bay Program partners.

Purpose of the Framework:

The Tiered Framework for Data Collection and Integration for Nontraditional Monitoring identifies levels of data use and associated data requirements for categorizing data to be submitted to the Chesapeake Bay Program and partners. This framework will also provide a decision making process to inform protocol and quality assurance project plan (QAPP) development. It is also intended to stimulate conversation and pinpoint questions that need to be explored and decisions that have to be made prior to fleshing out a QAPP.

For the development of this framework and associated protocols, project partners are working with experienced nontraditional monitoring programs, state agency programs, and the STAR Data Integrity workgroup to incorporate best practices and lessons learned. The partners will seek adoption of the tiered data use framework, monitoring protocols, and QAPP by the CBP.

Monitoring Questions:

To help inform the CBP decision-making on Chesapeake Bay watershed restoration efforts, the following monitoring questions have been identified:

Central:

- Are we improving habitat for living resource?
- What is the health of our waterways (Tidal & Non-Tidal)?

- Are restoration projects working?

Ancillary:

- Climate change: How is temperature changing?

Intended Data Use:

TIERS	Intended Data Use
TIER 1	Education
TIER 2	Report Cards, Screening, Targeting
TIER 3	Attainment

Tier Descriptions and Framework for Determining Tier:

Tier 1 - Education:

Definition: Tier 1 data are those programs whose data do not meet the requirements of Tier 2 and Tier 3 but still want to contribute to the understanding the health of the Bay watershed.

Data Uses: These data will help to indicate where monitoring is taking place. These data can also be used to provide on-the-ground information for future site development. Additionally, these data can be used to indicate potential pollution hot spots, and prioritize sites for follow-up monitoring. Data at this tier can also target restoration projects.

Data Requirements: Clearly defined monitoring methodology and site locations.

Tier 2 - Report Cards, Screening, Targeting:

Definition: Tier 2 data are data with clearly defined and approved methodology that do not meet Tier 3 data requirements.

Data Uses: These data will help inform attainment assessments, 305(b) reports, as well as being used for screening for 303(d) stream segments. Additionally, these data will help with targeting new priority agency sites, track the performance of TMDL implementation projects, as well as all data uses in Tier 1.

Data Requirements: Has an approved Quality Assurance Project Plan and uses approved field or lab operation procedures. Or can be participating in an umbrella monitoring initiative that has an approved QAPP or field/lab operation procedures.

Tier 3 - Attainment:

Definition: Tier 3 data are agency level data.

Data Uses: These data are used for attainment purposes, 305 (b) reports, and 303 (d) listing and delisting, as well as all data uses in Tier 1 and 2.

Data Requirements: EPA approved QAPP and field or lab standard operating procedures (SOPs)

Examples of data contributor success stories:

Let's use this section as an opportunity to highlight diverse data use success stories from the volmon community.

Existing Tools:

There are a number of existing tools to inform chemical water quality monitoring procedures that will be helpful for this project.

- To inform non-tidal monitoring procedures, the Project Team will use the VA Department of Environmental Quality's Virginia Citizen Water Quality Monitoring Program's Methods Manual.
- To inform tidal monitoring procedures, the Project Team will use the Mid Atlantic Tributary Assessment Coalition protocols.
- To inform attainment data use the Chesapeake Bay Program's Recommended Guidelines for Sampling and Analysis as well as...

Areas for Development and Consideration:

For chemical data, the VA DEQ methods will have to be examined and the Project Team will have to confirm that those tiers fit in appropriately with this project.

The questions that non-traditional data will help answer are expansive and require integrative data. How can we expand the existing tiered framework to better integrate integrative parameters (macros, habitat, SAVs). For example, visual assessment surveys will be helpful in answering habitat and TMDL restoration project effectiveness. There are two challenges with visual data: 1) there is no existing data integration tiered framework; and 2) these protocols require a high level of proficiency and expertise, which will require significant training. Likewise, macroinvertebrate assessments will be crucial to this project but currently the existing protocols have not been placed into Tiers. This project will have to develop a tiered framework for different protocols.

Another consideration is how the Project Team defines the participation of non-traditional data contributors. To achieve proficiency with biological, chemical, and/or visual assessment protocols, a data producer team may choose to focus on one type of monitoring – if a non-traditional partner only contributes macroinvertebrate data, is that okay?

Example Parameter/Tier:

Question 1: Are we improving habitat for a living resource?			
Parameter	Tier 1	Tier 2	Tier 3
Dissolved Oxygen			
Temperature			