



Integrated Trends Analysis Team (ITAT)

Workgroup Meeting

Wednesday, April 22nd, 2025
10:00 – 12:00 PM

[Join the meeting via Microsoft Teams](#)

Meeting ID: 221 406 840 669 16 | **Passcode:** 6Ar9jQ6W

Call: +1 469-208-1525 | **Conference ID:** 327 101 737#

[Visit the meeting webpage for meeting materials and additional information.](#)

This meeting may be recorded for internal use only to assure the accuracy of meeting notes. To turn on closed captioning, click on the three ellipses (More actions), then click on “Turn on live captions” (preview). To request accommodations, please contact Gabriel Duran at gduran@chesapeakebay.net.

Please read the following information carefully, as our meeting policies have changed:

- All meeting attendees' cameras and microphones will be muted at the start of the meeting.
- To request access to the microphone and camera, all meeting participants will be required to use the raised hand feature on Teams. Once access has been granted by the meeting organizer, you will then be allowed to unmute your mic and turn on your camera. Unless instructed otherwise, once a participant has microphone or camera access, they will have this permission for the remainder of the meeting.
- Access to chat will be provided as well. Should it be necessary, the Q&A feature on Teams will be utilized to field participant questions.

Compromised Meeting Plan: If the meeting's privacy is compromised, the meeting staffer and coordinator will send an email to all Members, alternates, staffers, coordinators, and interested parties. Within the email, you will find a new meeting link, instructions on sharing this information with external partners, and any necessary adjustments to the meeting schedule. Please do NOT share this information publicly or post it to the Chesapeakebay.net webpage.

Agenda

- I. Welcome, Introductions & Announcements (10:00 - 10:05 AM)**
*Lead: **Breck Sullivan** (U.S. Geological Survey, USGS) ITAT Co-coordinator; and **Kaylyn Gootman** (U.S. Environmental Protection Agency, EPA) ITAT Co-coordinator.*
Upcoming Conferences, Meetings, Workshops and Webinars
- [Choose Clean Water Conference](#) – May 18-20, 2026. Lancaster, Pennsylvania.
 - [Chesapeake Community Research Symposium](#) – June 1-3, 2026. Annapolis, Maryland.
Registration is now open [here!](#)
 - [Restore America's Estuaries' 2026 Coastal & Estuarine Summit](#) – September 22-25, 2026. San Francisco, California.
- II. The Chesapeake Carbon and Alkalinity Study (CHALK) (10:05 – 10:17 AM)**
Description: An overview will be provided of the CHALK project, which is funded by the National Science Foundation. The project aims to quantify the role of macrobiota (specifically bivalves, tidal wetlands, and submerged vegetation) on carbon and alkalinity cycling in the Chesapeake Bay.
Request Action: Informational.
Lead: **Raymond Najjar** (Penn State University, PSU).
Material: Meeting webpage [here](#).
- III. Contributions of benthic calcifiers to coastal carbon cycling (10:17 – 10:30AM)**
Description: Through their physiological processes, benthic calcifying animals exchange total alkalinity and dissolved inorganic carbon with surrounding waters. We will discuss how these fluxes are influenced by environmental parameters, including temperature, salinity, and carbonate chemistry.
Request Action: Informational.
Lead: **Emily Rivest** (Virginia Institute of Marine Science, VIMS).
Material: Meeting webpage [here](#).
- IV. Quantifying benthic calcifier biomass to inform ecosystem carbon models and support future carbon flux estimates in the Chesapeake Bay (10:30 – 10:42 AM)**
Description: We present results from sampling the benthic calcifying community in the Potomac and York River Estuaries as part of the larger CHALK project. We found strong spatial patterns in biomass as well as seasonal changes in relative abundance. Using physiological models from the literature, we calculated respiration, secondary production, and calcification rates that can be used in future ecosystem-based models for estimating total system flux for carbon.
Request Action: Informational.
Lead: **Ryan Woodland** (Chesapeake Biological Laboratory, CBL).
Material: Meeting webpage [here](#).
- V. The impact of benthic macrofauna on carbon cycling in the Chesapeake Bay (10:42 – 10:54 AM)**
Description: Bivalves play an important role in carbon cycling in the Chesapeake Bay, especially in the upper mainstem Bay and the upper Potomac River Estuary. Including their effects in regional ocean models can improve our understanding of the carbonate system.

Request Action: Informational.
Lead: **Seyi Ajayi** (PSU).
Material: Meeting webpage [here](#).

VI. Effects of submerged aquatic vegetation on estuarine inorganic carbon and alkalinity (10:54 – 11:07 AM)

Description: This presentation reports on in-situ benthic flux experiments measuring submerged aquatic vegetation (SAV) effects on estuarine dissolved inorganic carbon (DIC) and total alkalinity (TA). Flux experiments were conducted in the tidal freshwater and brackish reaches of the York and Potomac River Estuaries, which encompass the range of alkalinities and salinities typically found in temperate estuaries. Preliminary results suggest that SAV beds, indeed, affect water column DIC and TA, but the magnitude and direction of these effects vary across sites and seasons.

Request Action: Informational.
Lead: **Cassie Gurbisz** (Saint Mary's College of Maryland).
Material: Meeting webpage [here](#).

VII. Spatial variability of dissolved inorganic carbon and total alkalinity in contrasting estuarine systems (11:07 – 11:20 AM)

Description: This presentation will compare how dissolved inorganic carbon and total alkalinity concentrations change along the salinity gradient of the York and Potomac River Estuaries, highlighting differences in spatial patterns and deviations from conservative mixing.

Request Action: Informational.
Lead: **Novia Mann** (VIMS).
Material: Meeting webpage [here](#).

VIII. Organic alkalinity in two contrasting river estuaries of the Chesapeake Bay: Undervalued buffering capacity (11:20 – 11:32 AM)

Description: Organic alkalinity can be an important, but often undervalued component of total alkalinity that provides buffering capacity in coastal waters. The study shows the importance of organic alkalinity in the Potomac and York River Estuaries, which have contrasting characteristics in their inorganic carbon systems.

Request Action: Informational.
Lead: **Zhaohui (Aleck) Wang** (Woods Hole Oceanographic Institution, WHOI).
Material: Meeting webpage [here](#).

IX. Spatial and seasonal variability of $p\text{CO}_2$ in the Potomac and York Tributaries (11:32 – 11:45 PM)

Description: Estuaries are generally considered a source of carbon dioxide to the atmosphere, but the high spatial and temporal variability of the carbon dioxide partial pressure ($p\text{CO}_2$) within these ecosystems make it challenging to accurately quantify this source, which is thought to be globally significant. As part of the CHALK project, this presentation will present $p\text{CO}_2$ measurements from the Potomac and York River Estuaries, two tidal tributaries of Chesapeake Bay with contrasting inorganic carbon dynamics.

Request Action: Informational.
Lead: **Laura Lapham** (University of Maryland Center for Environmental Science, UMCES).

Material: Meeting webpage [here](#).

X. A multi-year, multi-season survey of high-precision cation (Ca, Mg, Na, K) chemistry in the Potomac and York Rivers (11:45 – 12:00PM)

Description: The presentation will discuss the results of cation concentration measurements made using an ion chromatograph over multiple seasons for two years. The samples analyzed include field-filtered and acidified water from the Potomac and York River Estuaries, including the Pamunkey and Mattaponi Rivers, and Taskinas Creek.

Request Action: Informational.

Lead: **Matthew Fantle** (PSU).

Material: Meeting webpage [here](#).

XI. Adjourn (12:00 PM)

Next meeting: May 27th from 10 AM – 12 PM.