State of the Science of Salinity Risks in the Chesapeake Bay and Its Tributaries: Connecting Monitoring, Modeling and Management

A 10 minute update by Sujay Kaushal and Stanley Grant

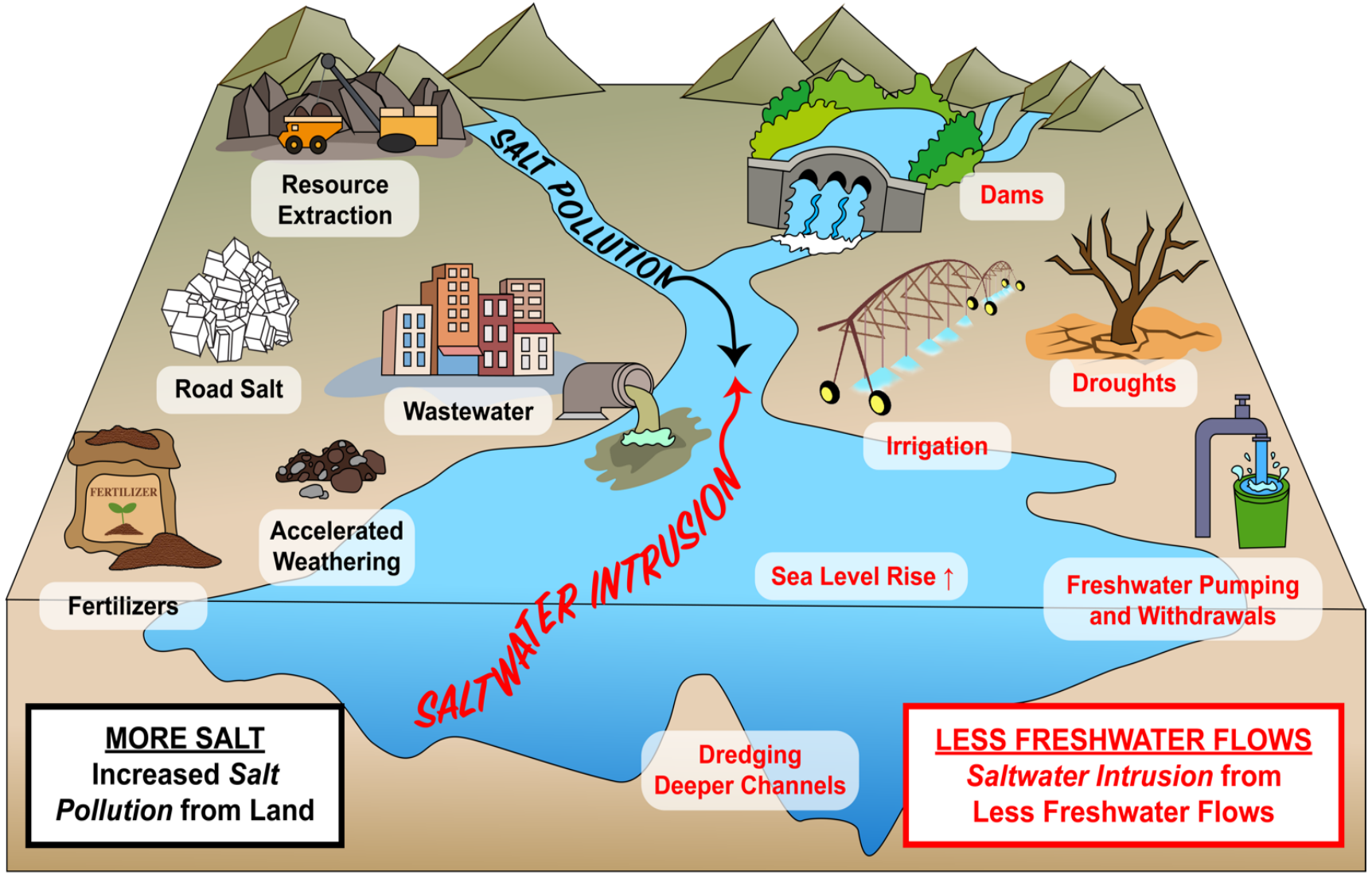
with notes from Meg Cole and Tou Matthews

Workshop Objectives

- Our objectives are to assess the state of the science of salinization in the Chesapeake Bay watershed, gain a better understanding of long-term trends and the magnitude and frequency of extreme salinity events, and identify effective ways to anticipate and manage changes in salinization.

- Given that salt now affects the whole system from land to sea, we will assess salinization risks from the headwaters to the Chesapeake Bay.

DOUBLE TROUBLE



Kaushal...Grant... Mayer...Rippy et al. (2025)

Salinization from Both Land and Sea

Representing Salinity Risks across Sectors

- **Steering Committee (an *indicates STAC members):** Sujay Kaushal (University of Maryland) (Co-Chair), Stanley Grant (Virginia Tech) (Co-Chair), Steven Bieber (Metropolitan Washington Council of Governments), Greg Noe (USGS)*, Lewis Linker (EPA, Chesapeake Bay Program), Peter Tango (USGS, Chesapeake Bay Program), Kaylynn Gootman (EPA, Chesapeake Bay Program), Paul Mayer (EPA), Conor Keitzer (UMCES IAN), Megan Rippy (Virginia Tech), Steven Nelson (WSSC), Rosemary Fanelli (USGS), Lisa Ragain (Washington COG), K.C. Filippino (Hampton Roads Planning District Commission)*

Meeting Plans

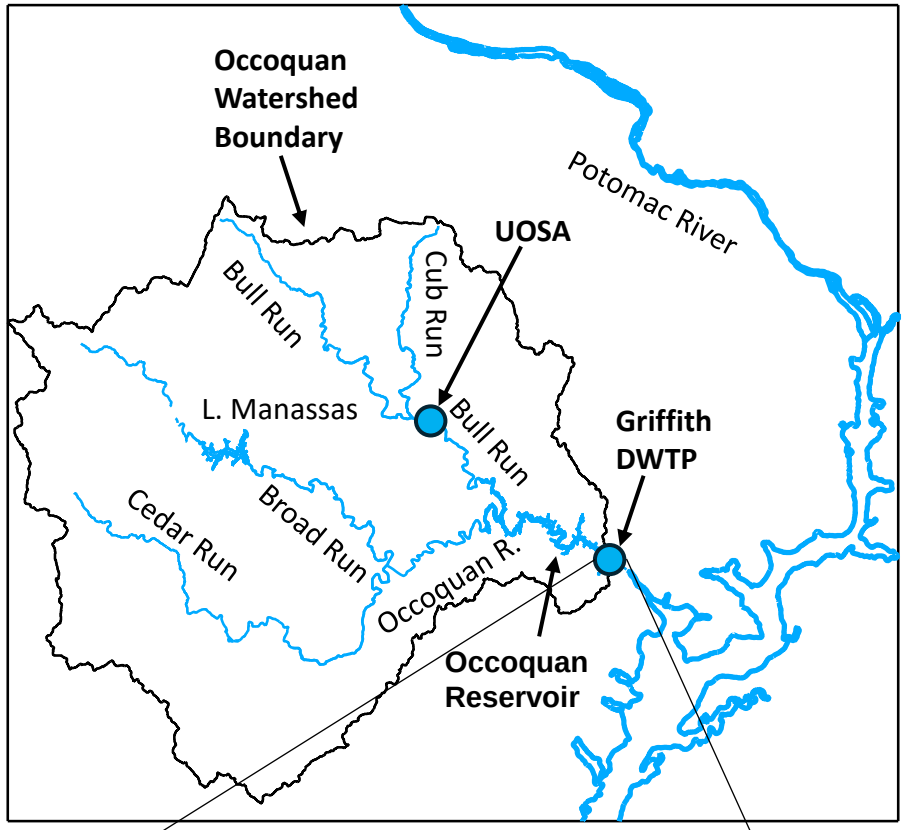
- The workshop will be held as a 2-day in-person event (Spring 2026, DC/Annapolis area) with a hybrid option for federal participants if needed.

- Leveraging partnerships (stay tuned for Stan)

- The agenda will be organized around four themes:
  - Trends and pulses in salinity across the watershed
  - Saltwater intrusion and estuarine/tidal freshwater impacts
  - Anticipating risks to drinking water, agriculture, and infrastructure
  - Management strategies, social/technological innovations, and policy/economic dimensions

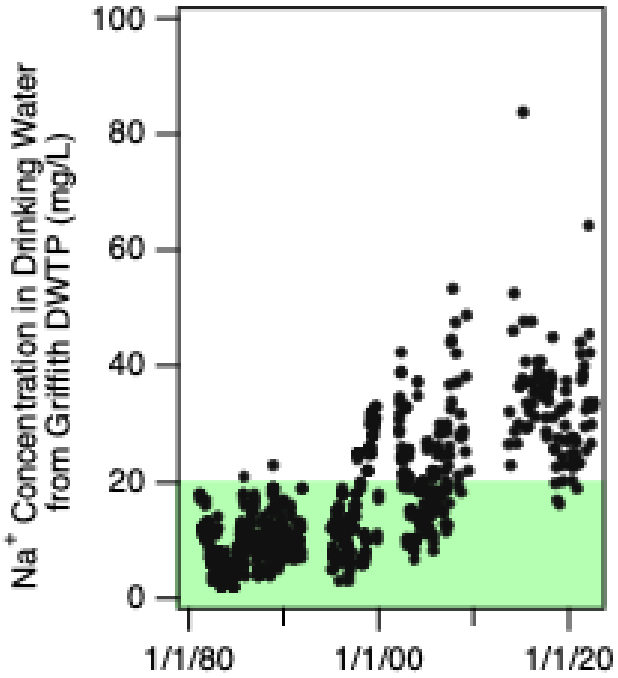
Thank you, Meg! Thank you, Tou!

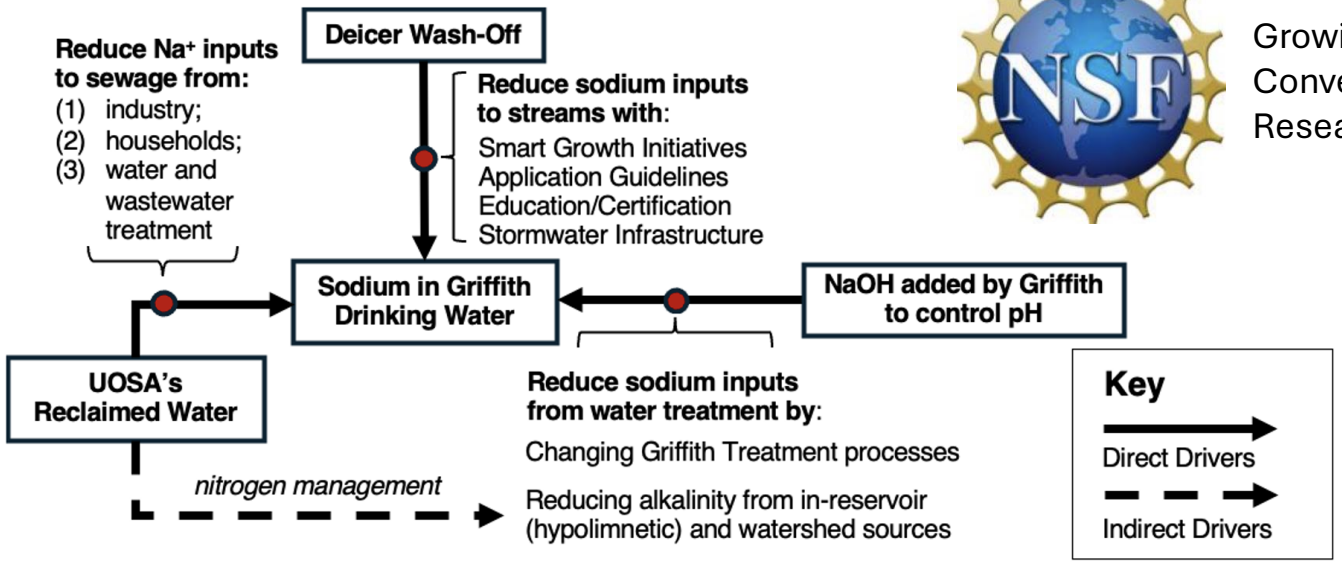
Occoquan Reservoir in Northern Virginia



STAC Workshop on salinization risks/solutions for Regional Drinking Water Supplies!

- Source of water for up to 1 million people in Northern Virginia
- Provides raw water for Fairfax Water's **Griffith Drinking Water Treatment Plant** (DWTP)
- One of the first and largest "One Water" systems in the United States
- Water in the reservoir is from the surrounding watersheds and a water reclamation plant (**Upper Occoquan Service Authority, UOSA**)





Growing Convergence Research