

Virginia Marsh Migration April Workshop Update

September 2026



Climate-driven changes affect tidal marshes through multiple pathways influencing coastal resilience.



1. SEA-LEVEL RISE



2. INUNDATION



3. SALTWATER INTRUSION



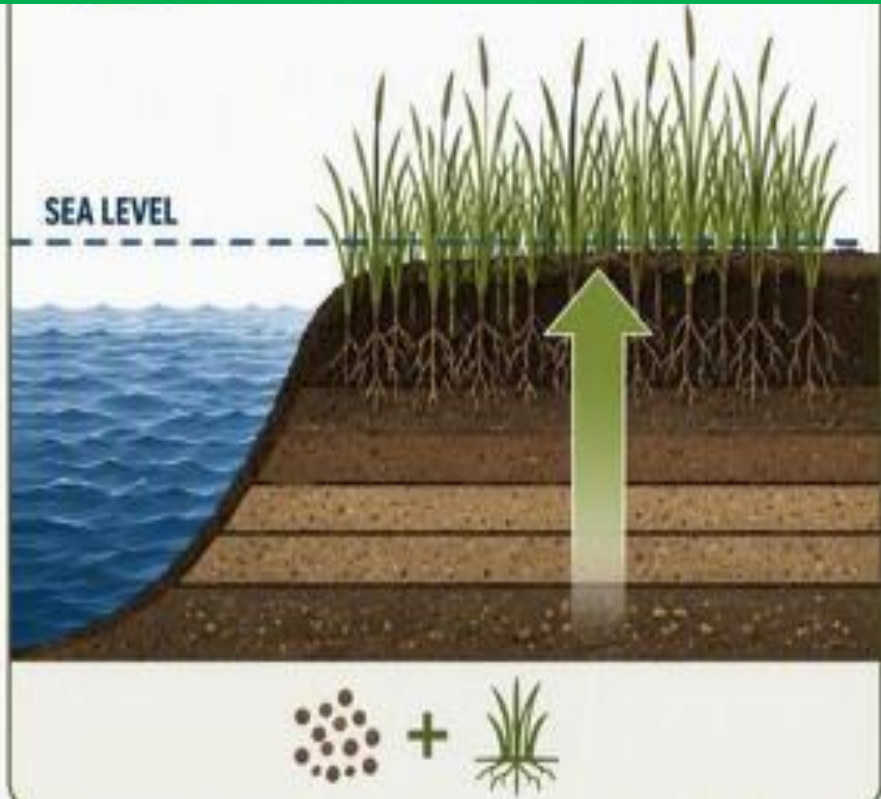
4. EROSION



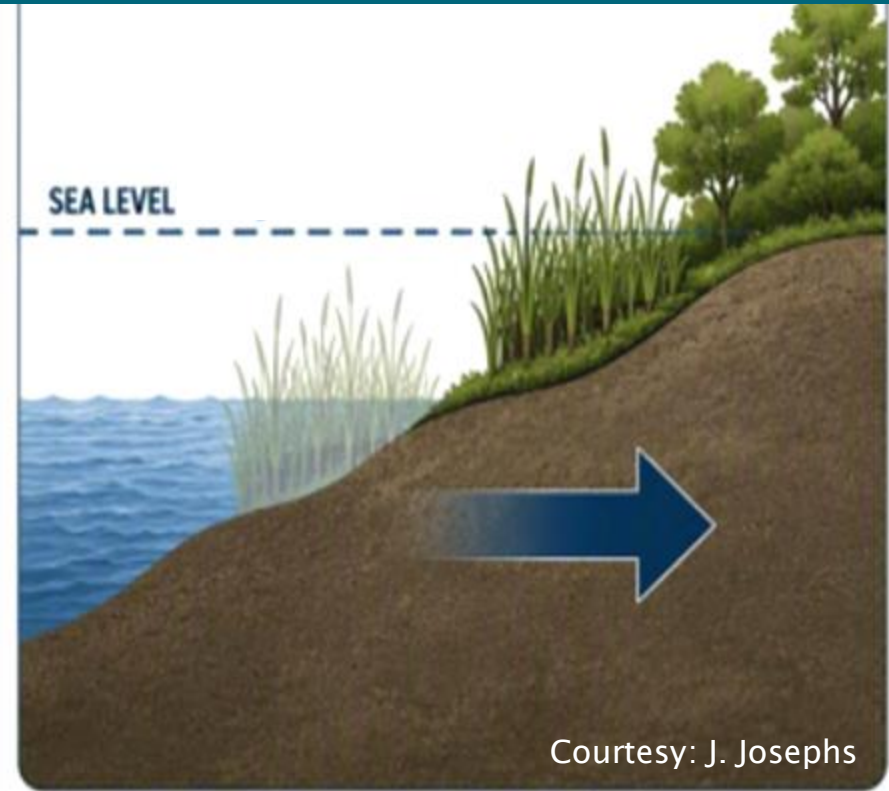
5. STORMS

Coastal marshes have the capacity to adjust to sea level rise through two primary adaptation mechanisms:

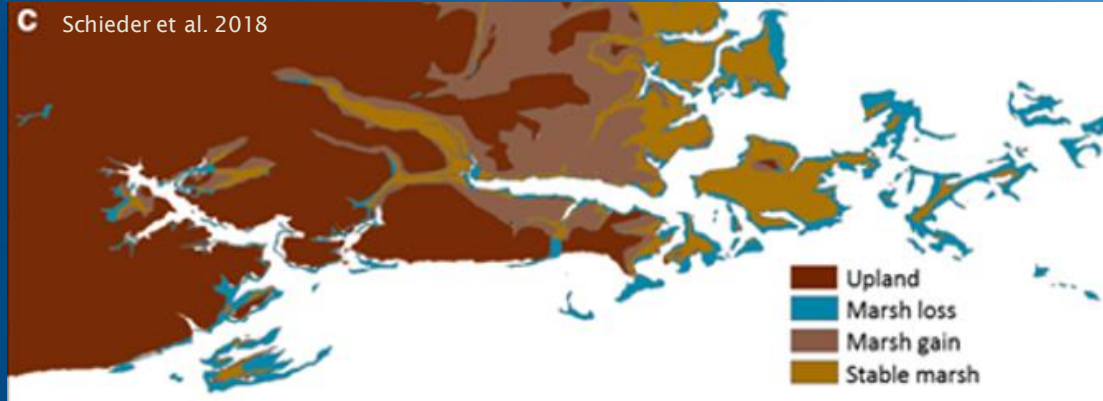
Vertical accretion



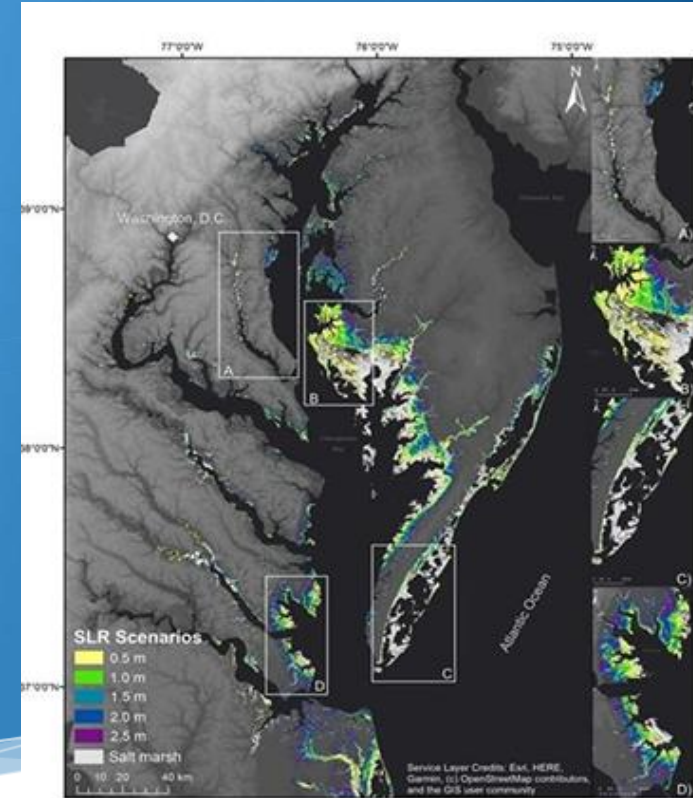
Migration



Understanding tidal marsh resilience and function involves tracking both losses and gains across the coastal landscape.



- ~38,000 ha of tidal wetlands lost to drowning and erosion
- ~40,000 ha of tidal marsh was gained by migration into upland ecosystems
- ~ 48,000 ha of potential migration opportunity



Migration workshop April 2026: How do we manage this change?

1. What are the legal, regulatory, financial, and policy barriers to wetlands migration ?
2. Who needs to be engaged – at what level and timeline – for correcting, encouraging, or incentivizing removal of barriers in the Commonwealth to facilitate wetlands migration?
3. What data do we need that we don't already have in order to make decisions as wetlands migrate? When do we need this data?

>60 participants; local, city, state gov, non-profit, academic partners

Workshop approach explored these questions across 4 settings that represent different scenarios for planning.

URBAN



Land use

- ~ 75% developed
- ~ 15% wetlands
- ~ 1% ag lands
- ~ 10% other

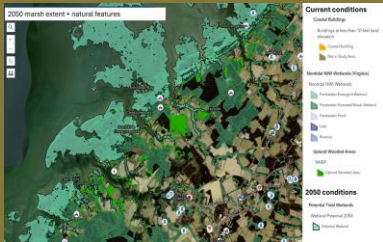
SUBURBAN



Land use

- ~ 25% developed
- ~ 50% wetlands
- ~ 20% ag lands
- ~ 10% other

RURAL



Land use

- ~ 5 % developed
- ~ 50 % wetlands
- ~ 25 % ag lands
- ~ 20 % other

SMALL TOWN

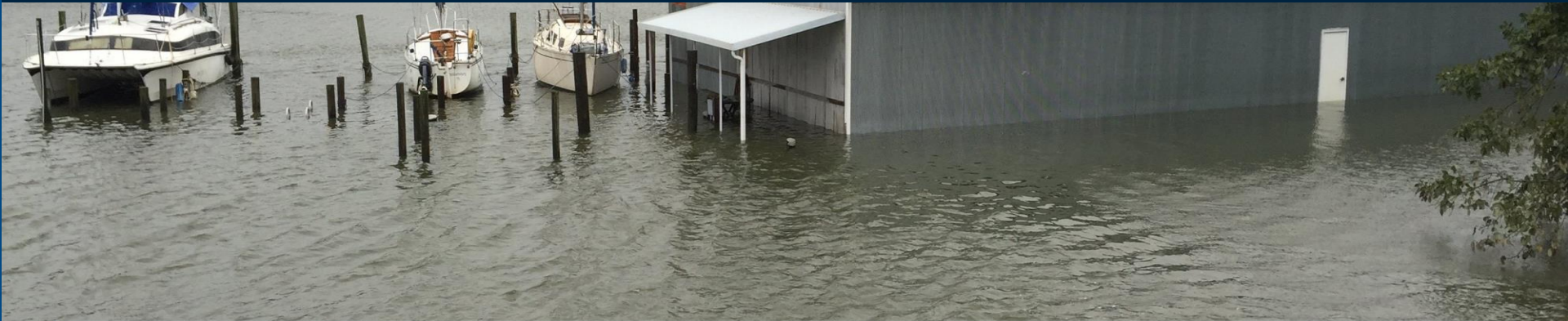


Land use

- ~ 5% developed
- ~ 50% wetlands
- ~ 10% ag lands
- ~ 10% other

Marsh migration facilitation is a land use & planning challenge

Planning for the transition before flood risk makes decisions for us provides greater opportunities.



Comprehensive planning provides for a predictable pathway for managing marsh migration.

- Integrate marsh migration corridors into comprehensive planning at the state level
- Develop a graduated toolkit of responses:
 - Voluntary: easements, incentives
 - Hybrid: rolling easements, tax incentives, TDRs
 - Regulatory: zoning, acquisition, land-use restrictions....

Communities that help shape adaptation strategies are more like to support and implement them.

Successful marsh migration planning depends on community co-production

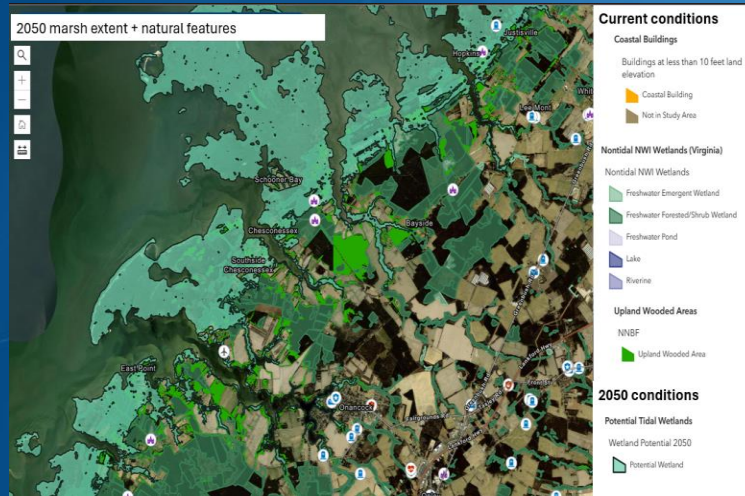


Successful marsh migration requires helping people, communities and local governments.

- Use trusted local intermediaries (differs by locality)
- Outreach & education; share information to show corridors, discuss implications
- Co-design adaptation pathways, i.e., what should be protected, transitioned, restored
- Support local capacity, technical assistance and participation of all groups

What data do we need that we don't already have in order to make decisions as wetlands migrate?

- Mapping of marsh migration corridors relies on high-resolution data
- Improved understanding of ecological function of migrating marshes
- Socioeconomic information to characterize community exposure and capacity



3. Marsh Migration Corridors

Planning for Tomorrow

Forecasts marsh evolution under sea level rise. Scenarios modeled: 0.6m (mid-century) and 1.2m (end-century).

Models: SLAMM, InVEST, NOAA Viewer, VIMS Marsh Models.

- Produces a **Marsh Migration Corridor Envelope (MMCE)**.
- Identifies future conservation areas or restoration targets



Mitchell, M., Nunez, K., Tumbleson, C., Herman, J. (2023). A marsh multi-model approach to inform future marsh management under accelerating sea level rise. Ecological Solutions and Evidence. <https://doi.org/10.1002/2688-8310.12285>

Map, Plan & Understand



e.g., NOAA 2022

- ## Build a marsh migration toolbox

Planning Tools

Mapping

Decision support

Incentive-based Tools

- Easements
- Tax incentives

Transition Tools

- Land acquisition
- Rolling easements
- TDR programs

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Stay tuned: Report draft under development

