Maryland Saltwater Intrusion Plan

CBP Climate Resiliency Workgroup

March 16, 2020

WHY?

- HB1350 (2018 session) directs Planning to
  "establish a plan to adapt to saltwater intrusion"

- HB514 (2015 session) directs the Maryland Commission on Climate Change to
  - prioritize working group actions, including assessing climate change impacts and recommending adaptation strategies

Climate Change and Salinization

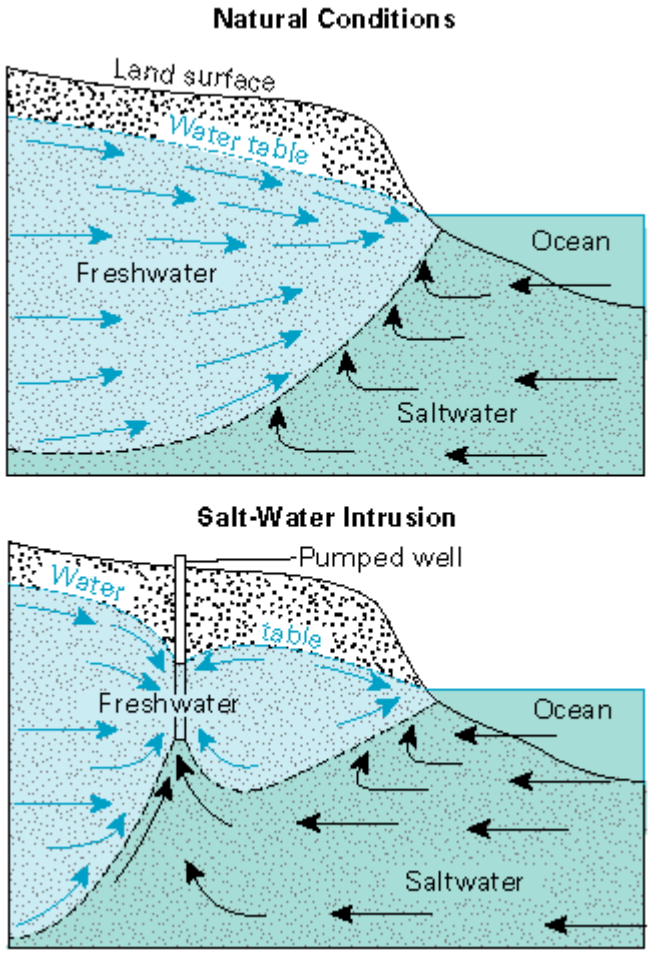
- Long-term and episodic events
  - Sea level rise
  - Tides and storms
  - Heavier precipitation or drought

Credit: Maryland Sea Grant

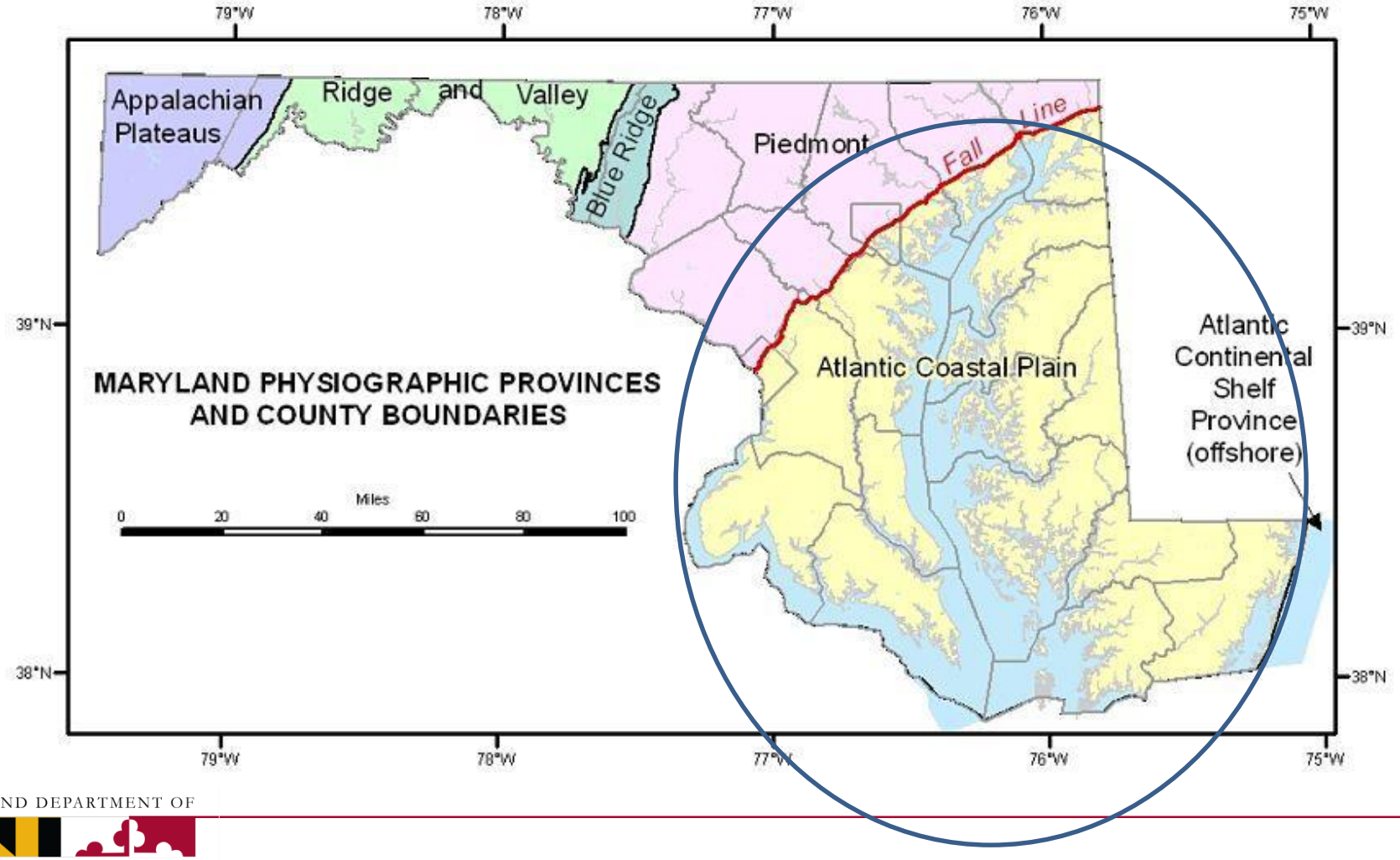
- Anthropogenic factors

Resources and Land Types

- Groundwater aquifers
- Surface waters
- Agriculture
- Wetlands
- Coastal forests
- Infrastructure



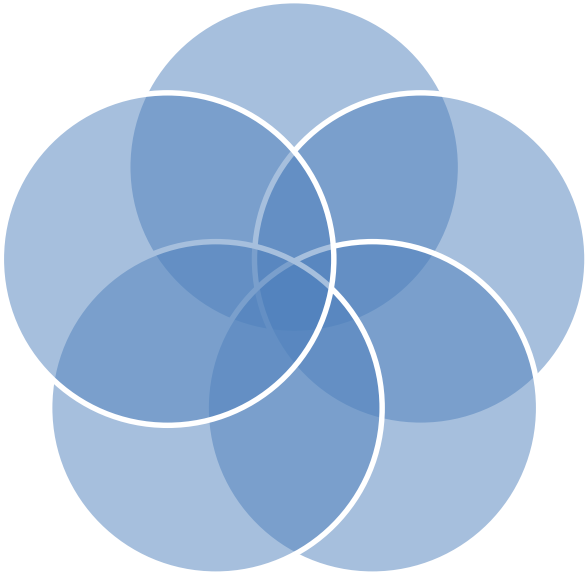
WHERE IN MARYLAND?



PLAN DEVELOPMENT PROCESS

State Agency Workgroup

Stakeholder Review



Research & Interviews

Climate Change Commission Review

Technical Review

Plan Organization

- How is saltwater moving in the physical environment?
- How is climate change affecting saltwater movement?
- What are the impacts, threats and concerns?
- What are the knowledge gaps?

Concerns

- Loss of productivity in some coastal farmland
- Altered ecological landscape for wetlands and coastal forests

Photo credit: The Nature Conservancy

CONCERNS

- Need for vigilance regarding groundwater and surface water use
- Need to understand impact on Chesapeake Bay restoration and greenhouse gas mitigation

Unanswered Questions

- How will sea level rise affect the extent of brackish water currently in the Chesapeake Bay and Maryland's Coastal Bays?
- How will the salinization of surface waters affect the rate and extent of saltwater intrusion within Maryland's groundwater aquifers?

Unanswered Questions

- How will the extensive ditch network within Maryland's Eastern Shore affect the movement of saltwater over time?
- Which particular water users in Maryland are at risk?

Credit: UMD

Unanswered Questions

- Where are the locations of agricultural land, wetlands, coastal forests, and infrastructure that are at risk?
- Do adjacent lands exist to allow for the migration of at-risk land types over time?

Credit: UMCES

UNANSWERED QUESTIONS

- How significant and/or extensive are the current and forecasted impacts (economic, social, environmental) of saltwater intrusion and salinization?

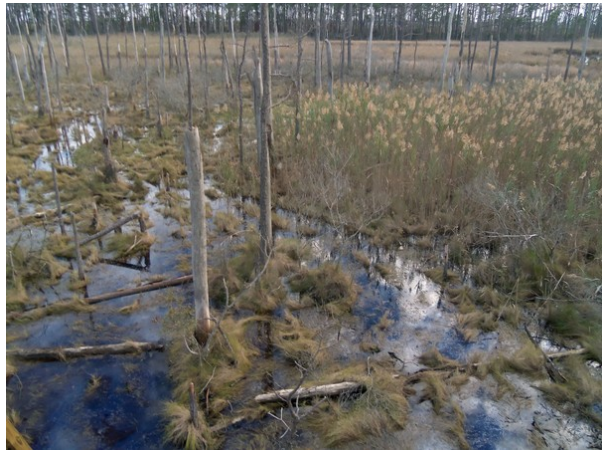
Research and Study Plan

- Develop forecasts
- Complete vulnerability assessments
- Conduct other monitoring and modeling
- Study, identify and adopt effective adaptation measures

Adaptation Measures: Recommended Now

- Facilitate transitional land uses for salt-impacted farmland, such as saltmarsh, through conservation easements and adjusted agricultural technical and financial assistance programs.

- Establish additional education and assistance for farmers to address and prepare for salinization.



Credit: Matthew Kirwan via AP

Adaptation Measures: Recommended Now

- Develop a statewide wetland adaptation plan, which would include marsh migration, and in some cases, measures to protect high priority wetlands in place.

Credit: MD DNR

Adaptation Measures: Recommended Now

- Facilitate alternative uses for inundated forest land, such as promoting sika deer or duck hunting, through adjusted agricultural technical and financial assistance programs.

Adaptation Measures: Recommended Now

- Establish additional education and assistance for forest landowners to address and prepare for salinization, including development of a landowners outreach program.

Long-Term Implementation

- Law requires updated plan by 2024
- Strategic approaches to fund research
- State agency workgroup takes the lead
- Continued information exchange with local, federal, university and NGO practitioners and researchers

Long-Term Implementation

- Seek innovative funding and collaboration approaches to address different research needs and adaptation strategies
- Annual progress reports to Maryland Commission on Climate Change, others
- As developed, incorporate updated data, modeling and forecasting into existing state technical assistance efforts and tools

QUESTIONS?

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