

An aerial photograph of a tidal marsh landscape. A straight road with a white car driving away from the viewer cuts through the marsh. The marsh is composed of green vegetation and numerous small, dark water pools. The sky is overcast.

Marshes for Tomorrow – A Strategic Plan for the Restoration and Resiliency of Maryland's tidal marshes

STAC, CENTER FOR INLAND BAYS, 2025

DAVID CURSON, AUDUBON MID-ATLANTIC



Public Landing boat ramp, Worcester County. Credit: Hailey Glasko

Atlantic Coast Joint Venture Saltmarsh Sparrow Conservation Plan

Saltmarsh Sparrow: A conservation umbrella for the entire high marsh ecosystem

Saltmarsh Sparrow Conservation Plan

Partners working to conserve salt marshes and the birds that depend on them.



ATLANTIC COAST JOINT VENTURE

- SALS nests only in high marsh, the most vulnerable marsh zone to SLR.
- Extinction possible by mid 21st Century, due to SLR and marsh loss.

State	% of global pop'n	Pop'n goal (indivs)	Minimum habitat goal (acres)
Delaware	6.8%	1,711	2,838 ac
Maryland	25.2%	6,302	24,783 ac
Virginia	7%	1,753	13,517 ac



Marshes for Tomorrow: A project of the DRCN

Goal: Create an implementation plan for tidal marsh restoration on a landscape scale in Maryland.

Objective 1

Marsh prioritization

Identify at least 25,000 acres of tidal marsh to be maintained long term to conserve the high marsh ecosystem and Saltmarsh Sparrow in Maryland in the face of sea level rise.

Objective 2

Restoration strategy

Determine a schedule of restoration projects to maintain this acreage as high marsh over the long term.

Objective 3

Community input

Create conceptual conservation strategies at the local/county level, which have the broad approval of local communities

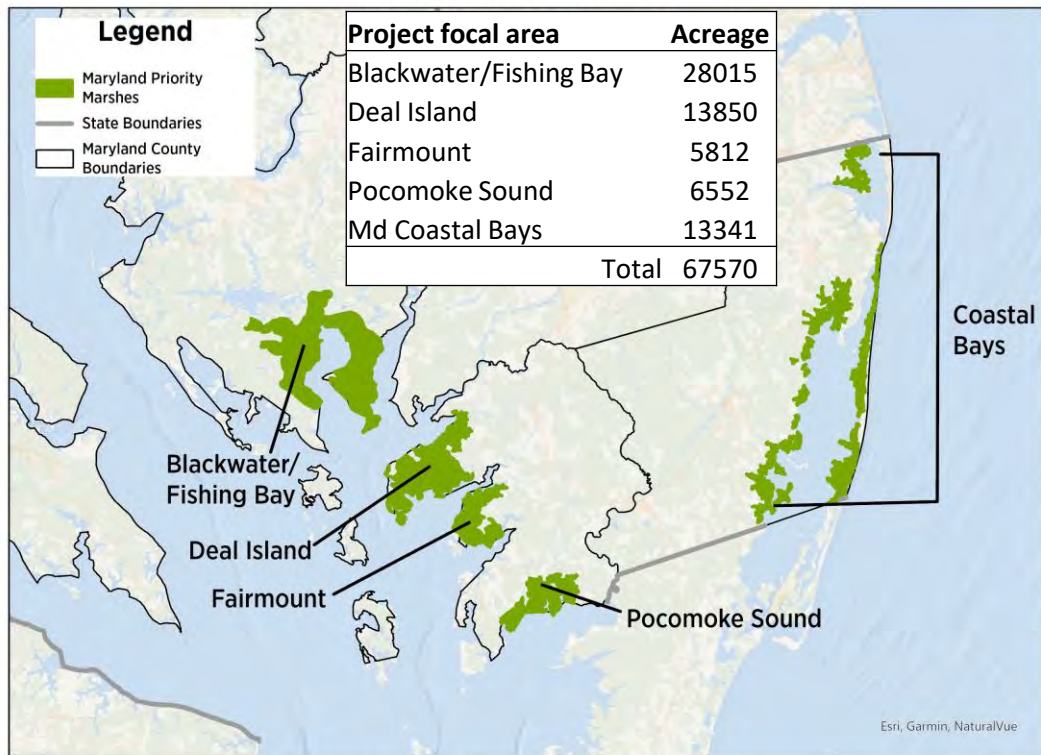
Funding: USFWS: \$1.7 million (inc. implementation)
NFWF: \$416,000



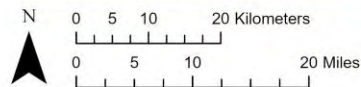
**DELMARVA RESTORATION &
CONSERVATION NETWORK**

MfT project focal areas

Maryland Priority Marshes for Saltmarsh Sparrow



Map prepared by Audubon Mid-Atlantic
in collaboration with ACJV and bird conservation
experts



Thank you to our **Partners** and **Funders**



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*USFWS Partners for Fish & Wildlife Program (via
Chesapeake Bay Field Office)*

NFWF National Coastal Resilience Fund



GEDAN LAB @ GWU



Marshes for Tomorrow Process 2023-24

Working Group	Role
Project Advisory Team	Steer & advise project
Core Analysis Team	Create, review, spatial models
Technical Workshops	Create draft marsh prioritizations
Community Engagement Team	Marsh use survey, community meetings
Focus Groups	Finalize Priority Marsh Areas and restoration strategies



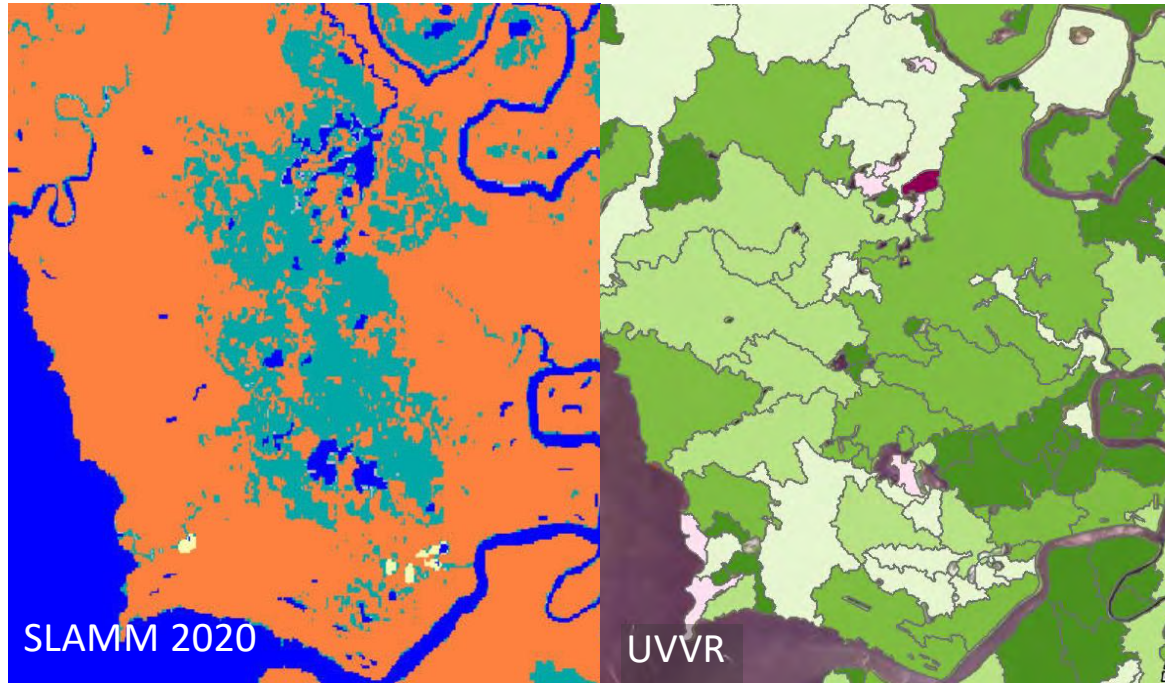
An aerial photograph of a vast wetland landscape. A large, winding body of water, likely a bay or estuary, dominates the foreground and middle ground. The water is a deep blue color. The surrounding land is covered in lush green vegetation, interspersed with numerous small, dark, irregularly shaped ponds or pools of water. The horizon is visible in the distance under a clear blue sky with a few wispy clouds.

How did we identify our target
25,000 acres?

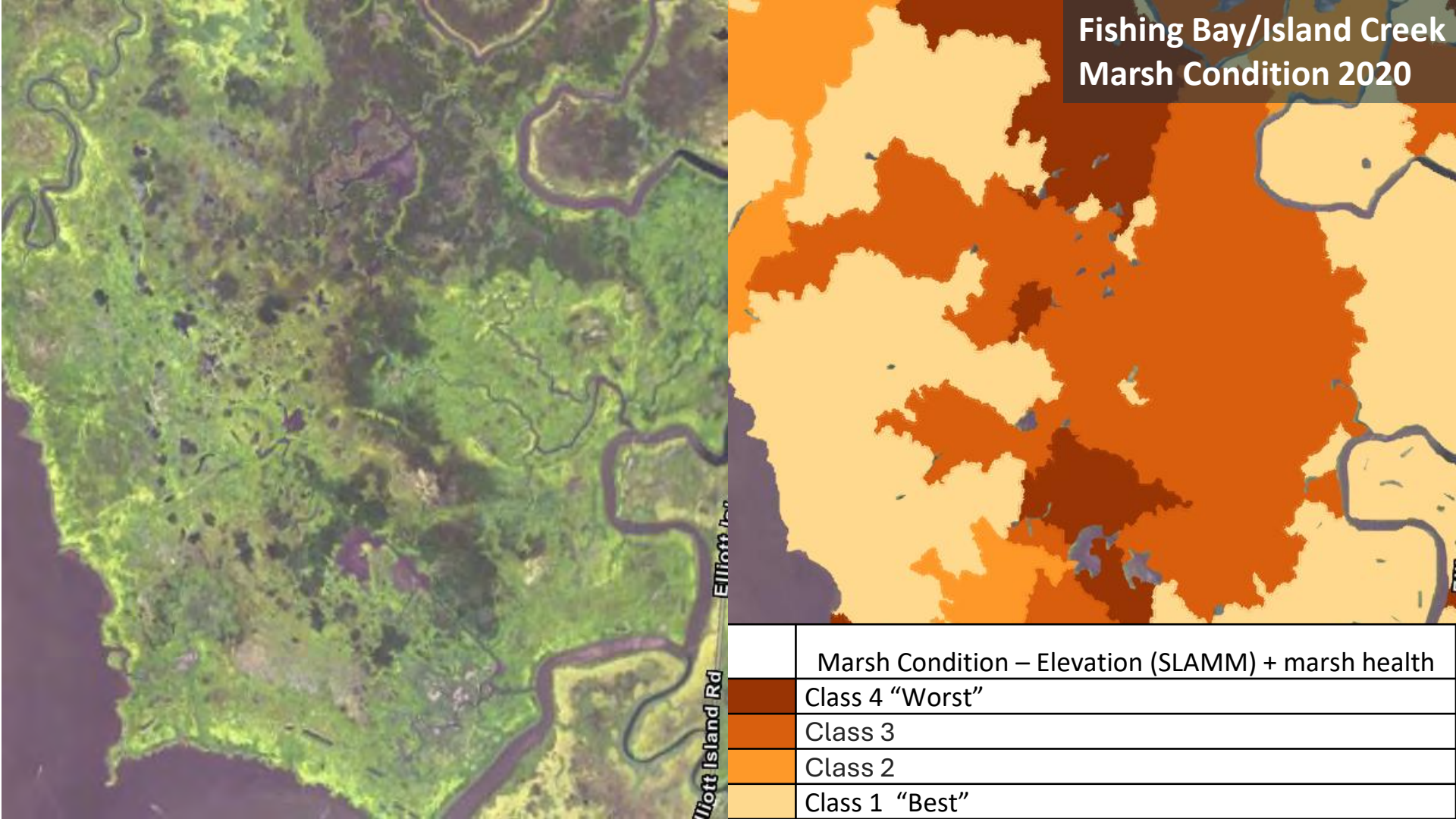
Marsh Condition Model

Includes marsh health (**UVVR**) and future resilience to SLR (elevation, from **SLAMM**).

- Analysis Conducted for all Marsh Units in the Chesapeake and Coastal Bays
- Marsh Unit – small scale drainage systems within a Marsh
- USGS Coastal Wetland Synthesis
- Landscape Scale Approach



Fishing Bay/Island Creek Marsh Condition 2020



Marsh Condition – Elevation (SLAMM) + marsh health

Class 4 “Worst”

Class 3

Class 2

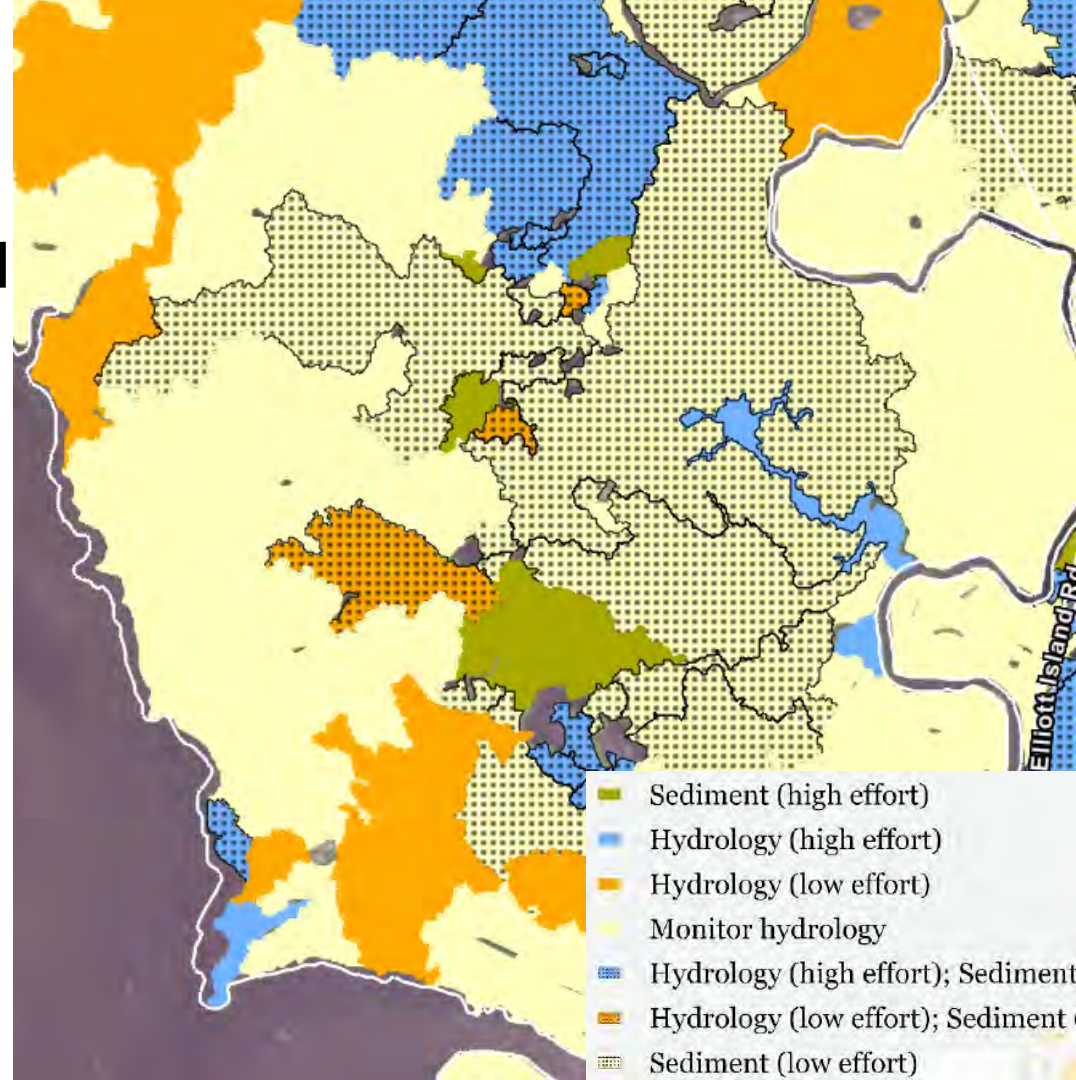
Class 1 “Best”

Restoration Decision Model

Based on UVVR and SLAMM

Designated outcomes for

- Hydrological repair (runnels, other)
- Sediment placement



Marsh Prioritization Model

Top-ranked criteria were weighted and combined into single prioritization model

Marsh Condition
45 pts

+

Vegetation type
30 pts

+

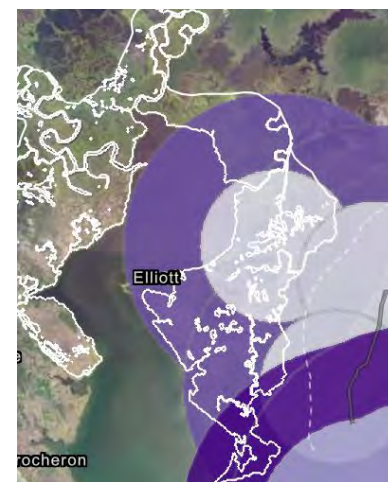
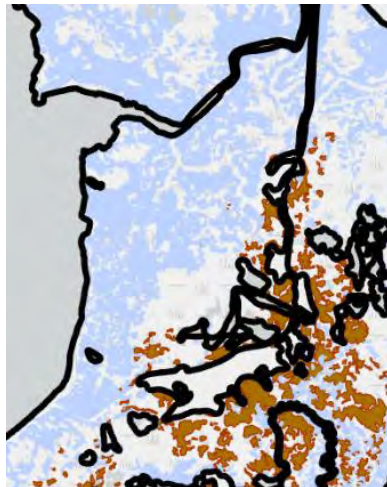
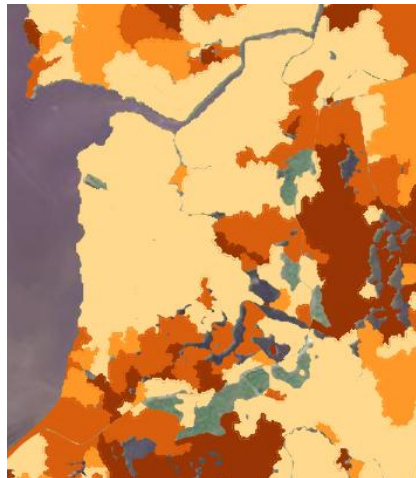
Migration corridors
12.5 pts

+

Dredging buffers
and navigation
channels
12.5 pts

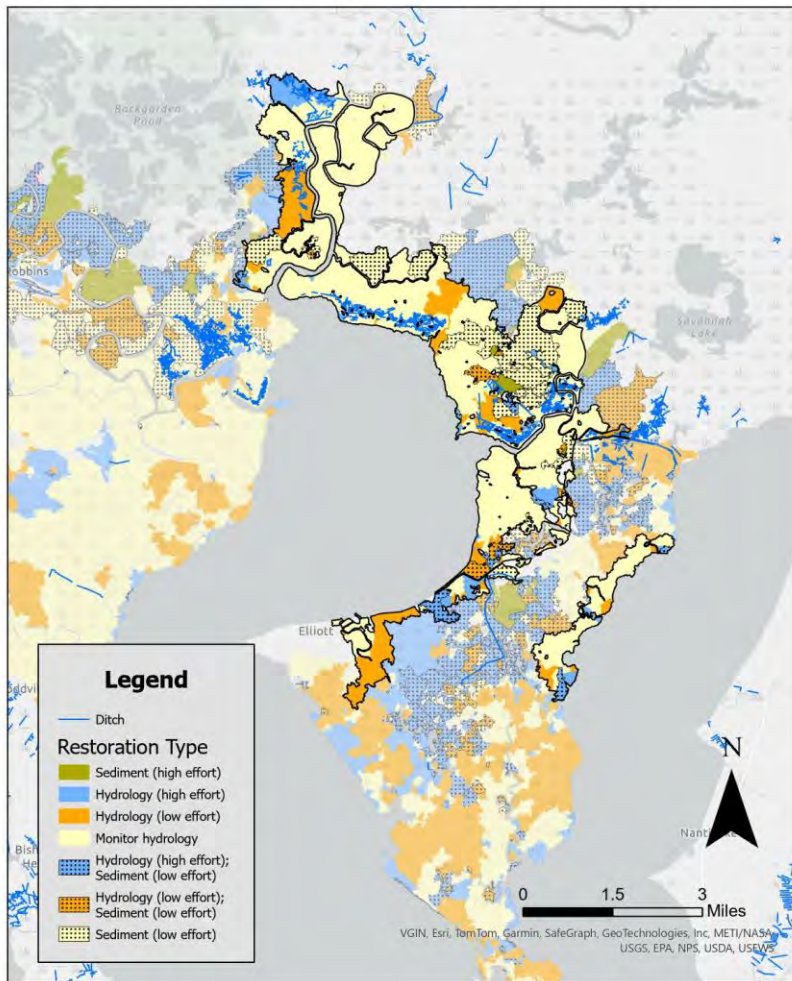
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Total
100 pts



Marsh Prioritization - additional criteria (visual overlays)

Marsh Prioritization criteria	Data Layer	Included as
Land ownership	Land ownership	Visual overlay map
Saltmarsh Sparrow abundance	SHARP abundance 2021-2022	Visual overlay map
Community feedback and infrastructure	Community identified features and community infrastructure	Visual overlay map
Landowners enthusiastic about restoration; conserved lands	Protected lands	Visual overlay map
Large contiguous marsh blocks	No specific data layer	Visual assessment of maps



Marshes for Tomorrow Plan products

1. Map of Priority Marsh Areas (approx. 29,000 acres)
2. Spatially explicit restoration recommendations.
3. Recommended strategy: begin with widespread hydrological repair, e.g. runnels.
4. For landscape-scale planning – need to complete site-level assessment for project plans.

Marshes for Tomorrow GIS Experience Builder

<https://experience.arcgis.com/experience/0d1703e972c849bf88acd6cd7026b50c/page/Marshes-for-Tomorrow/>

Marshes for Tomorrow

A Strategic Plan for the Restoration and Resiliency of Maryland's Tidal Marshes



What does the future hold?

1. Extensive high marsh (historically 80% of tidal marshes) will be effectively gone by 2070.
2. Upslope marsh migration can only replace a small fraction of high marsh lost to SLR.
3. We cannot save all, or even most, of today's marsh, due to high restoration costs.
4. If we act soon with low-tech/low-cost hydrological restoration (runnels, remove tidal restrictions) we can “buy time” and reduce long-term costs.
5. Sediment placement is much more expensive, and will be needed later. Will require novel sources of material and new permitting.

Scaling up with partnerships, policy, and public funding

1. First project at Irish Grove Sanctuary is underway
2. Begin with low-tech innovative restoration
3. Public funding from:
 - USFWS (\$2 million)
 - Maryland DNR (\$13 million)
4. Policy influence on wetland regulations

Marshes for Tomorrow: Responding to Maryland's Tidal Salt Marsh Crisis

