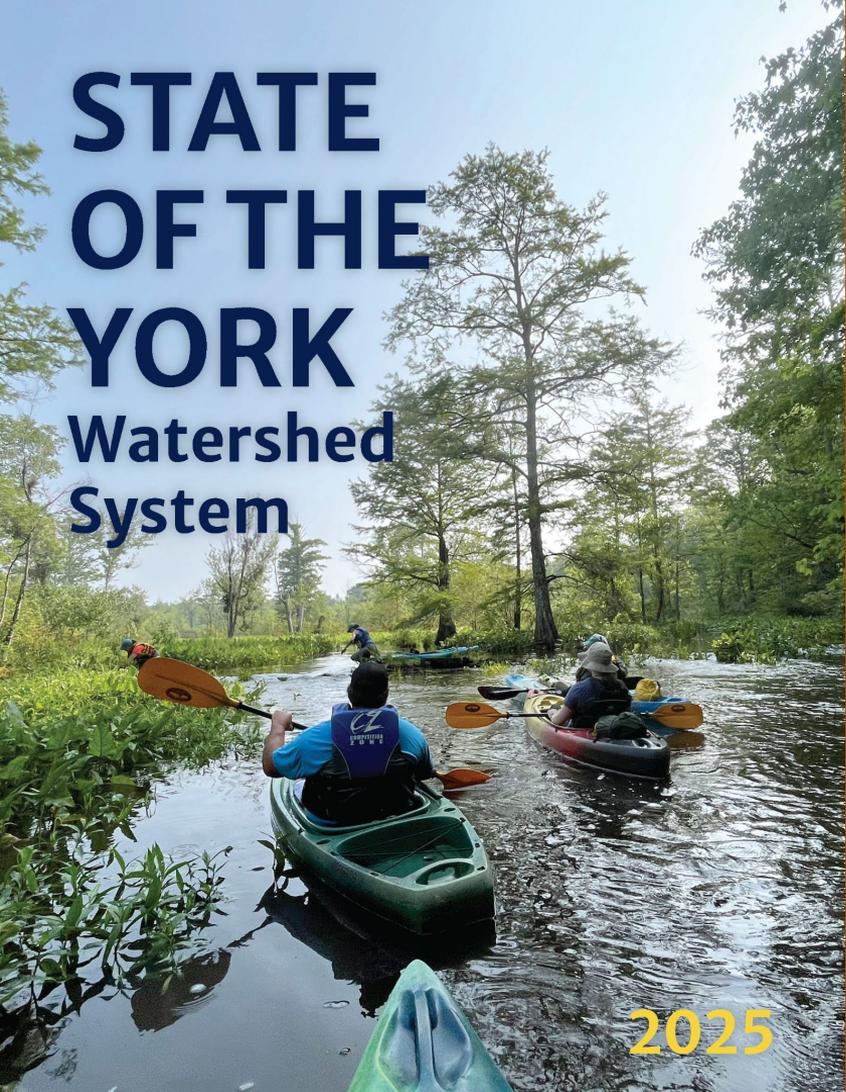


STATE OF THE YORK

Watershed
System



2025

NEED to KNOWS

Cirse Gonzalez
CBNERR-VA

March 26, 2026



Our Mission

Leadership in
coastal zone
management



CHESAPEAKE BAY
NATIONAL ESTUARINE
RESEARCH RESERVE
VIRGINIA

The NERRS

30 sites
around the
country



**National Estuarine
Research Reserve System**



Co-managed

through the Virginia
Institute of Marine
Science

VIMS | WILLIAM
& MARY
VIRGINIA INSTITUTE OF MARINE SCIENCE

Five Programmatic Veins

- Research
- Stewardship
- Education
- Training and Engagement
- Restoration and Conservation



Components of Chesapeake Bay NERR in Virginia

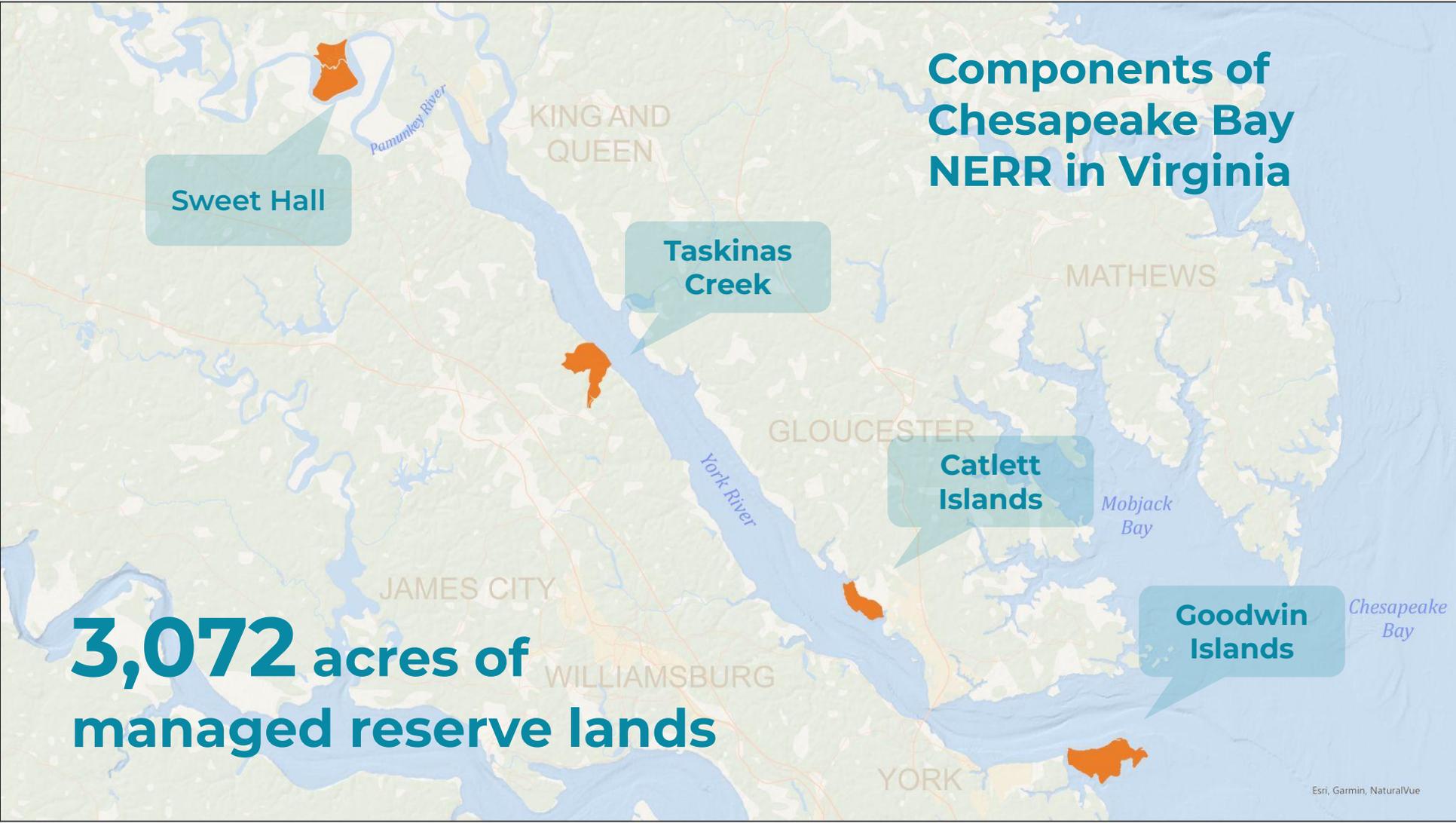
Sweet Hall

Taskinas Creek

Catlett Islands

Goodwin Islands

3,072 acres of managed reserve lands





**#yourYork go-to for
monitoring and engagement**



**YORK RIVER &
SMALL COASTAL BASIN
ROUNDTABLE**

NEED: an updated State of the York



State of the York

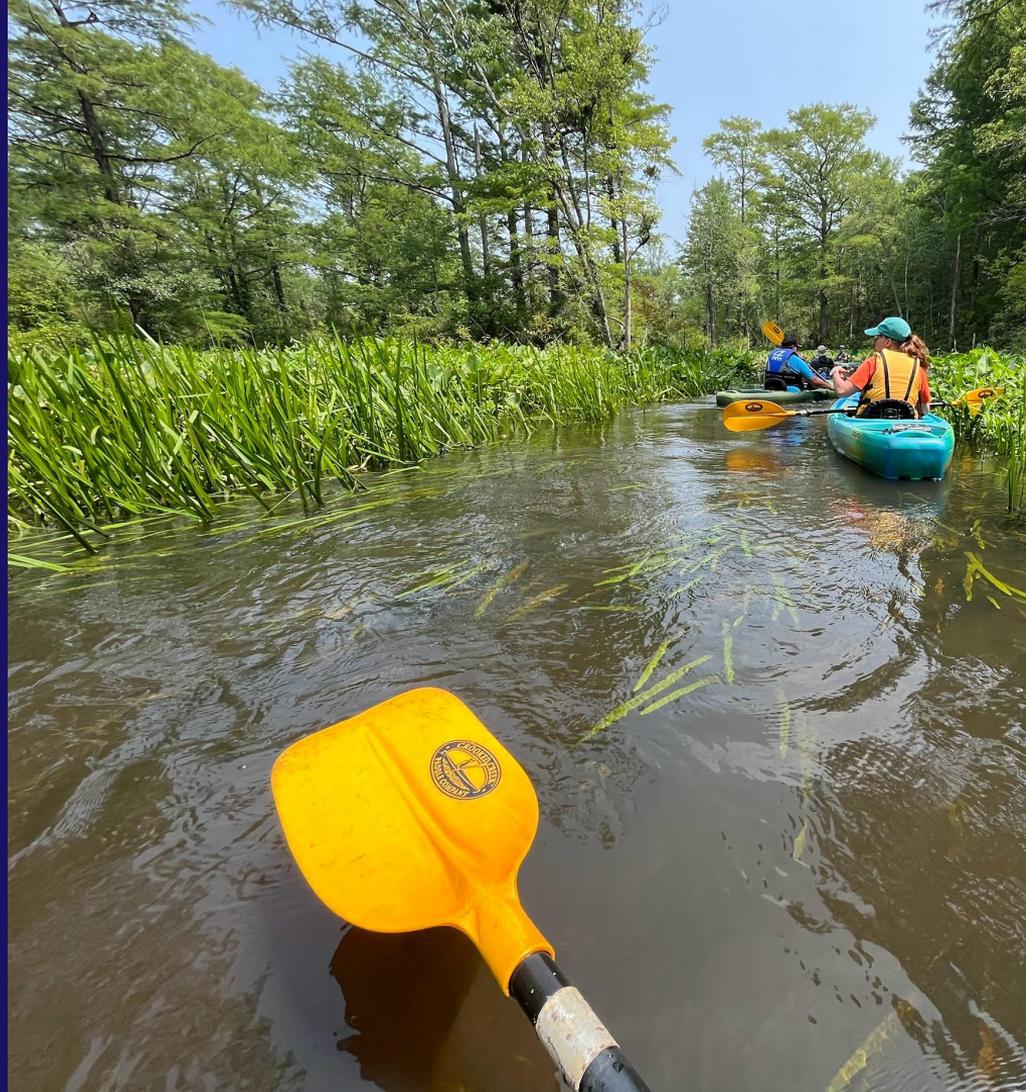
2000



State of the
York
Watershed 2000

WHAT: An informative snapshot of current conditions and trends in the York River System

WHY: To serve as a benchmark for the watershed and a repository of localized data



WHAT TRANSPIRED



National Estuarine
Research Reserve System
Science Collaborative

funded

8

grant team members



CHESAPEAKE BAY
NATIONAL ESTUARINE
RESEARCH RESERVE
VIRGINIA

VIMS | WILLIAM
& MARY
VIRGINIA INSTITUTE OF MARINE SCIENCE
CENTER FOR COASTAL RESOURCES MANAGEMENT

with support from



**ET
VOILÀ**

- Interactive
print-ready report
- Storymap
- One-Stop-Shop

OUR GOALS

- Digestable
- Accessible
- YOURS



End users
first

=

Beginning
users





Gabriela Schmitz for LottieFiles



o u t c o m e s

WHAT YOU WANTED

land use and shoreline
changes

green space

sea level rise

water quality

HABs

fisheries health

water access/visitation

emerging threats

160

hands in the
making

**WHO
HELPED**

NEW this round

- Population demographics and socioeconomics
- Gains and loss to developed and natural land (System-wide)
- Percent change in tidal marsh
- Current extent of marshes and potential for migration
- Projected flooded areas
- High tide flooding, flood risk and road exposure
- Erosion and accretion of shorelines
- Precipitation trends
- Septic hot spots
- Natural and nature-based solutions including riparian buffers, living shorelines and the shoreline suitable for the latter

NEW this round

- Best management practices
- Air temperature trends
- Water temperature trends
- Harmful algal blooms (including new information from community science efforts in Lake Anna)
- Marine debris
- Historic resources
- Oyster landings and leases
- Oyster restoration
- Seagrass cover and trends
- Essential fish habitat
- Commercial fisheries (System-wide)
- Fish passage
- Invasives, including *Phragmites* and blue catfish
- Recreational angling – including effort, demographics, stocking, regulations
- Conservation lands
- Public access

PLUS

- Federally recognized land areas (NOAA Habitat Focus Area, Sentinel Landscapes)
- Phase III of VA's Watershed Implementation Plan (WIP)
- The Chesapeake Monitoring Cooperative repository of community science
- Links to new resources, tools, for further investigation and/or data (various)

PLEASE CONSIDER THESE CAVEATS

- Tip of the iceberg
- Launchpad
 - Links to new resources, tools, in a flipbook!
- No grades
- Limited comparison to 2000
 - Time periods differ

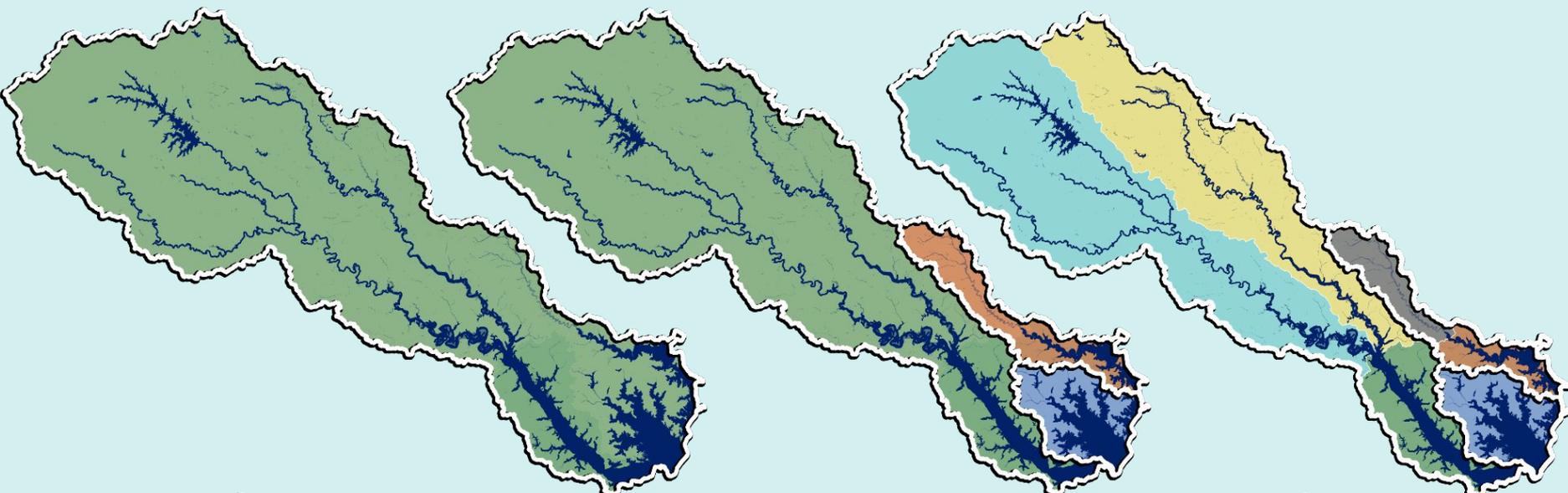
State of the York Watershed System



A person is fishing on a large body of water, likely a lake or river, during the "blue hour" of dusk. The sky is filled with soft, colorful clouds in shades of orange, yellow, and blue. The water is calm, reflecting the light from the sky. In the foreground, a fishing rod is bent, and a net is being used to catch a fish. The fish is visible in the net, splashing water. The background shows a dense line of green trees along the shore. The overall scene is peaceful and scenic.

yorkriverroundtable.org/soty

REPORT STRUCTURE



1

SYSTEM

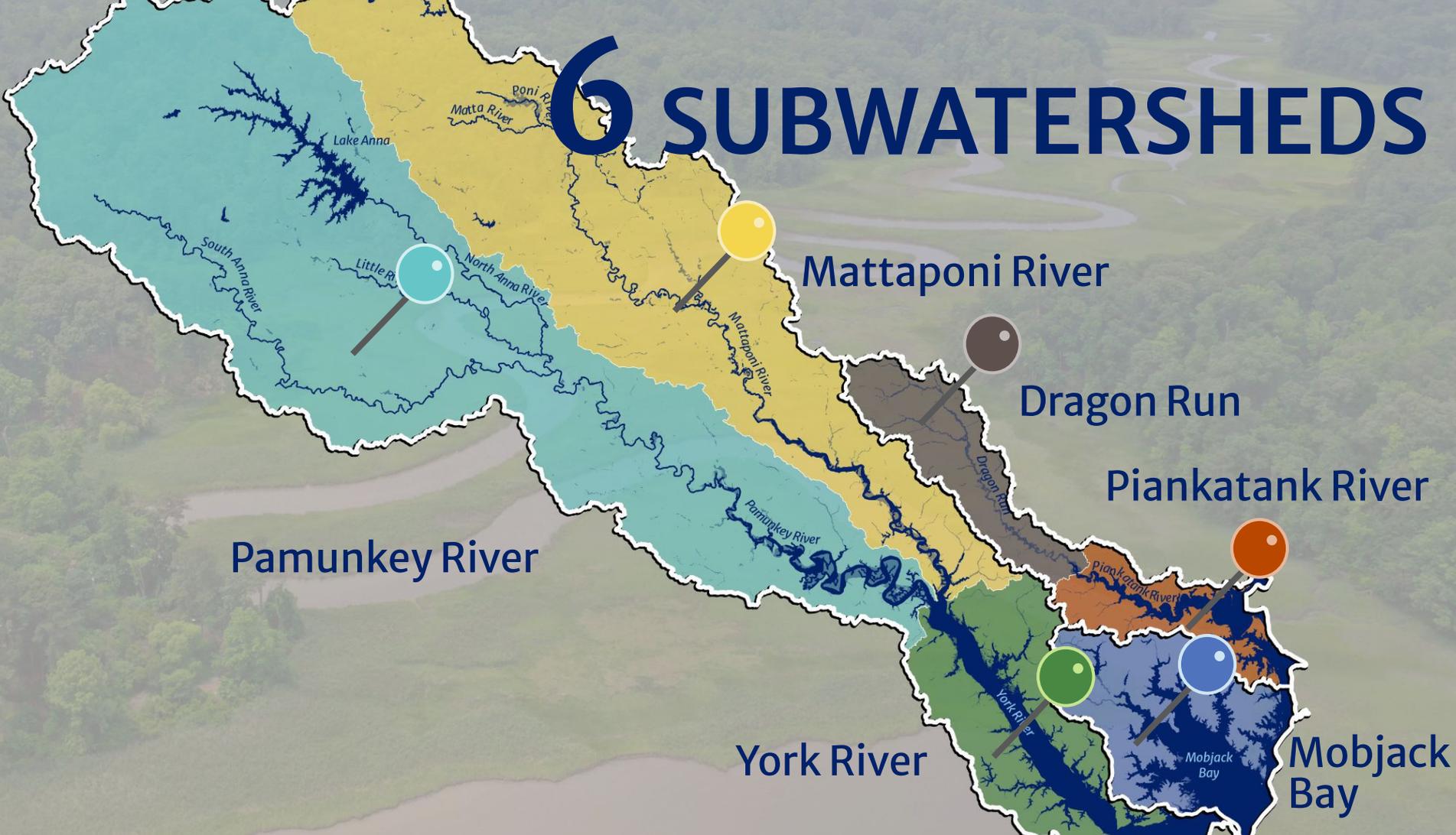
3

BASINS

6

SUBWATERSHEDS

6 SUBWATERSHEDS





JOURNEY WITH US

OUR CHANGING LANDSCAPE





OUR WATER QUALITY

THE RESOURCES WE STEWARD





 @skywardphotoservices

INFO TYPE

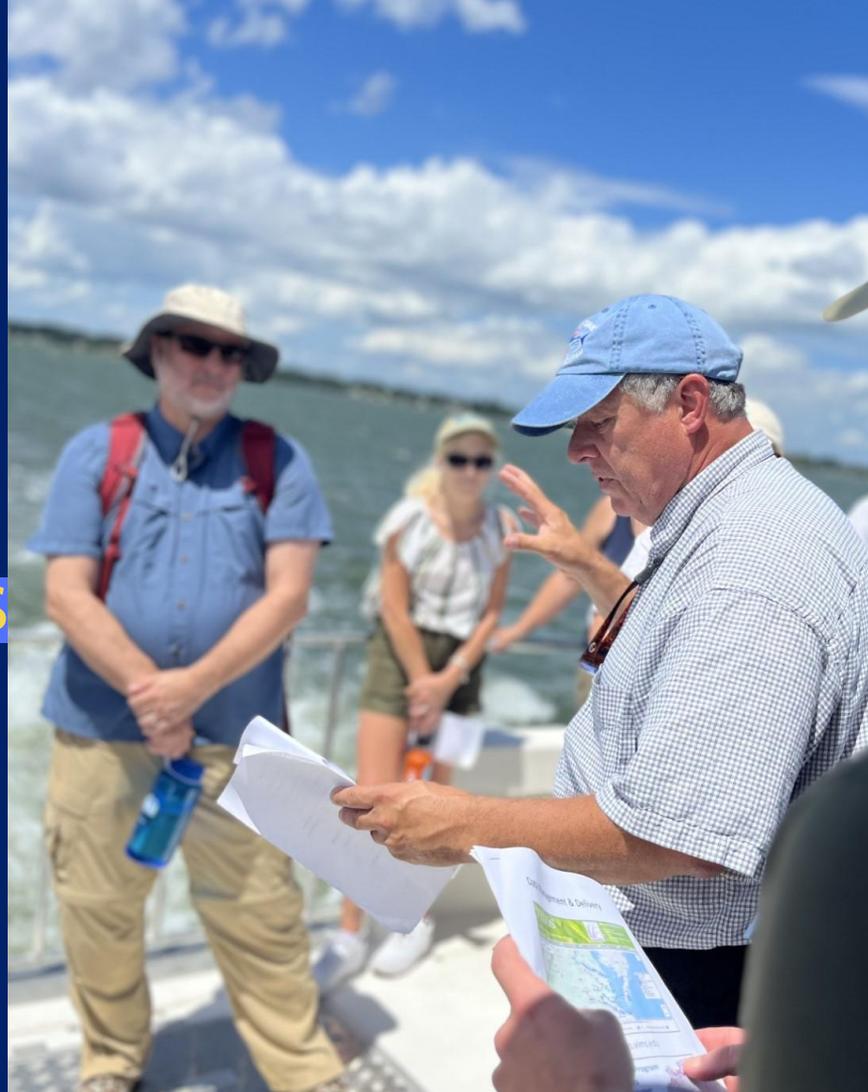
S_tatus

T_rend

O_pportunity

REPORT HIGHLIGHTS

- Calls to Action
- Resources
- Case Studies
- Tool Features
- Fast Facts
- FLAGs
- DYK
- Quotes



FLAGGED

as priorities for
continued study
and development

- Net loss of wetland coverage, and origins
- Potential impact of planned intake and discharge
- Vessel discharge: baselines and projections
- Forever chemicals: baselines and intersection
- Recreational landings within System: assessment
- Guide for rare and threatened species
- Continued synthesis of information that evolves to meet user needs

**OUR
WATERSHED
SYSTEM**

3,254
square miles

7.6%
of VA's total land area

220 miles
Orange County to Bay





27,070+
acres of tidal marsh

8,600+
miles of river

18,300
acres of lakes

200

species of fish

50

species of mammals

26

species of amphibians

190

species of birds

36

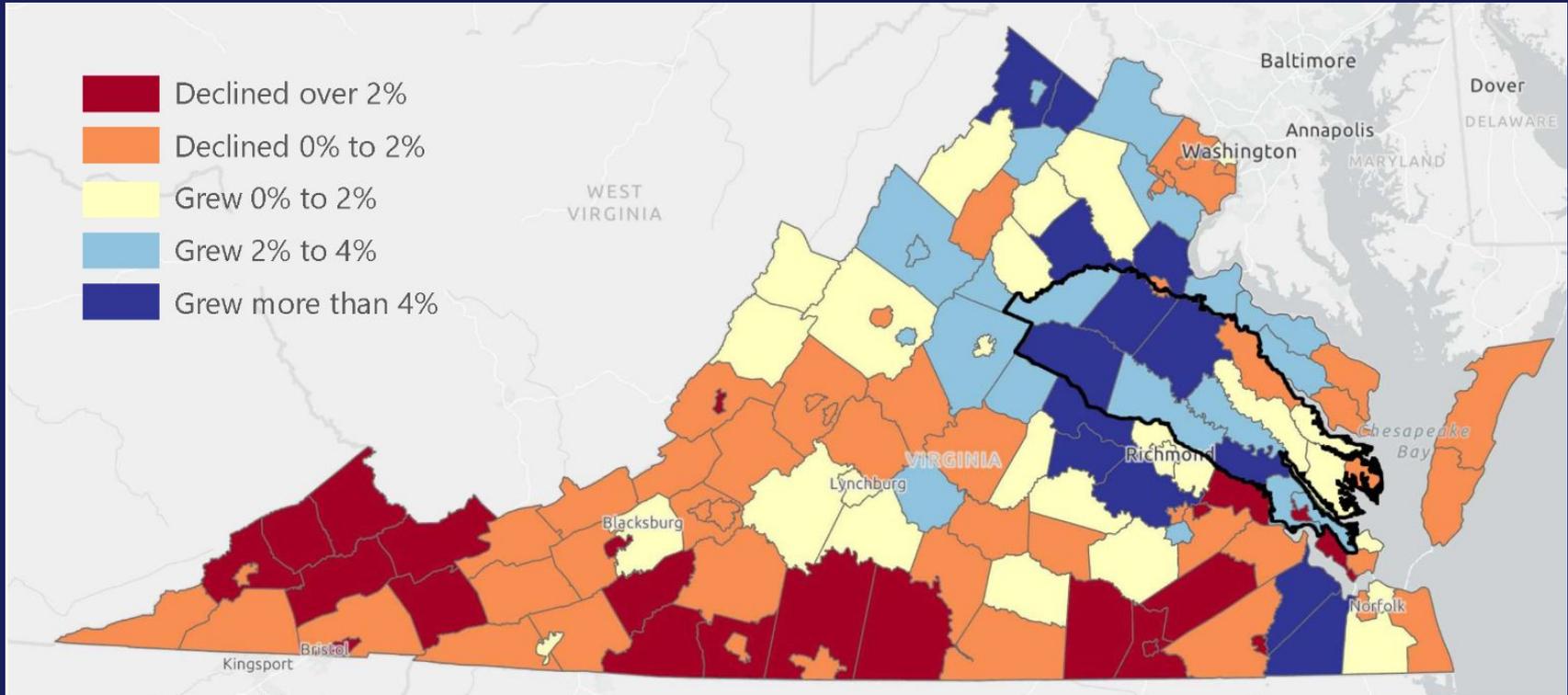
species of reptiles



630,000+
people



Population Change 2020 to 2023



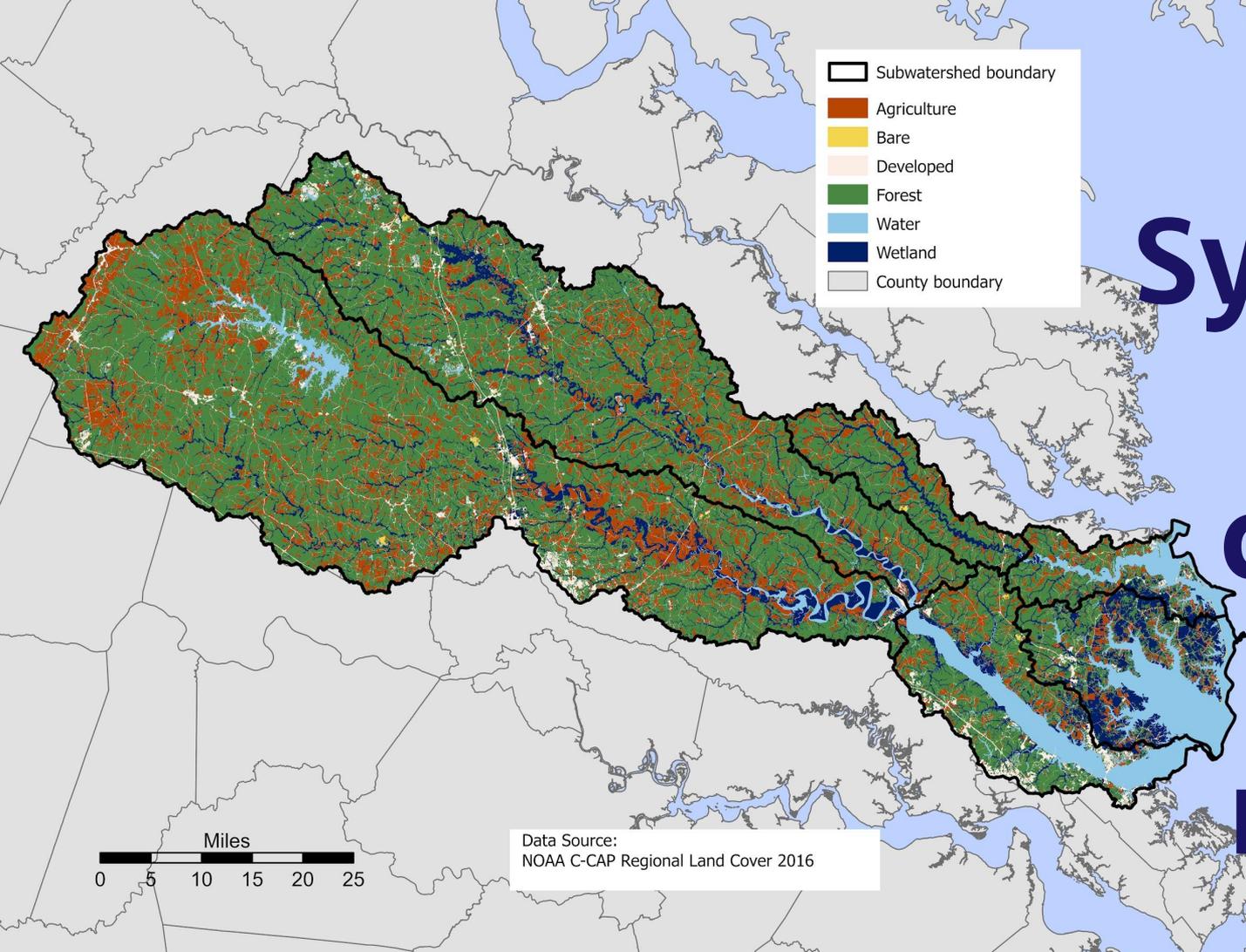
**Translating
to ...**

~34 billion
GDP

Increases
in developed, bare and
ag lands

Decreases in
forest and wetlands

**OUR
CHANGING
LANDSCAPE**



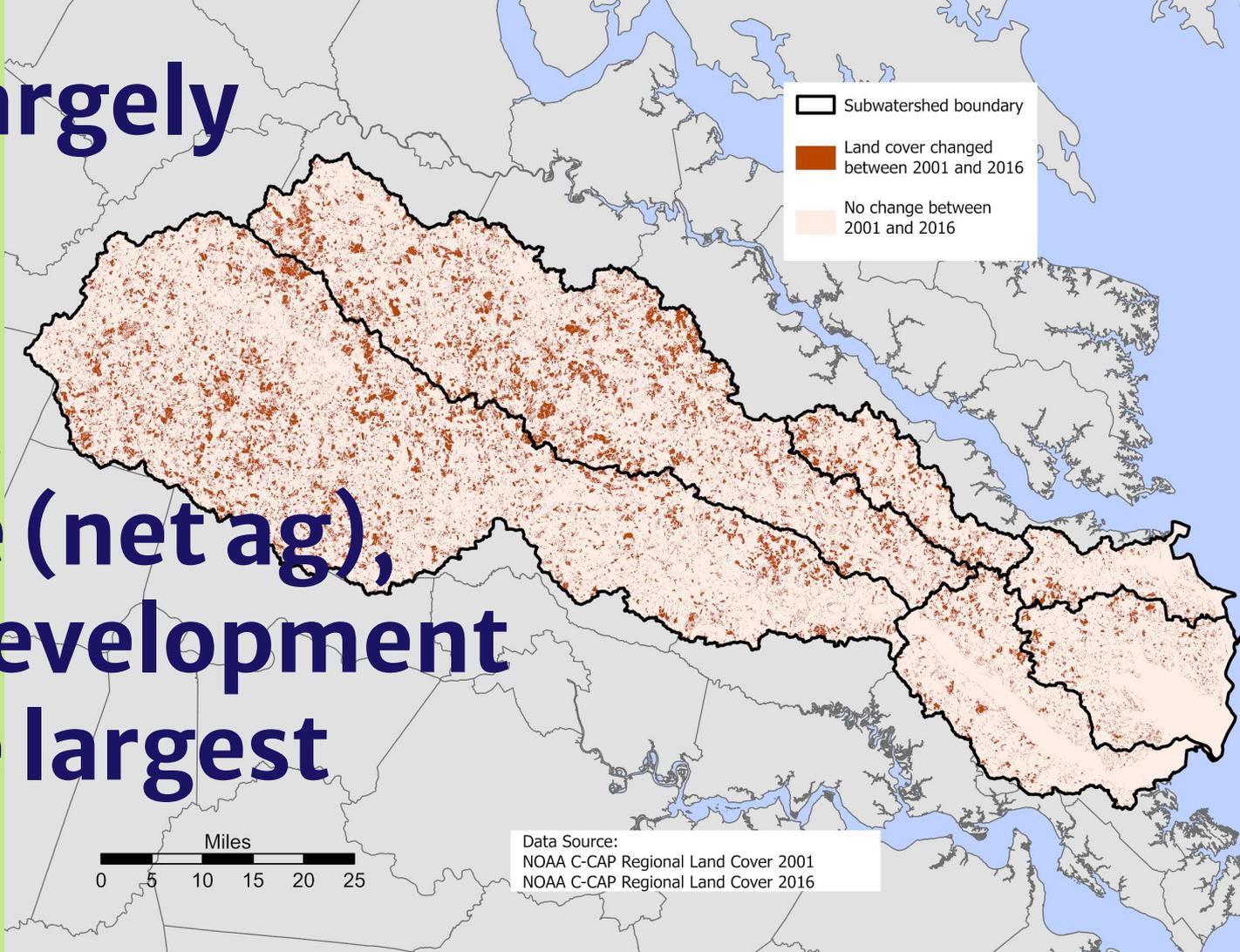
- Subwatershed boundary
- Agriculture
- Bare
- Developed
- Forest
- Water
- Wetland
- County boundary

Miles
0 5 10 15 20 25

Data Source:
NOAA C-CAP Regional Land Cover 2016

**The
System's
land
cover is
75%
natural**

**Change largely
resulting
from:
ag/forest
exchange (net ag),
though development
has made largest
gains**

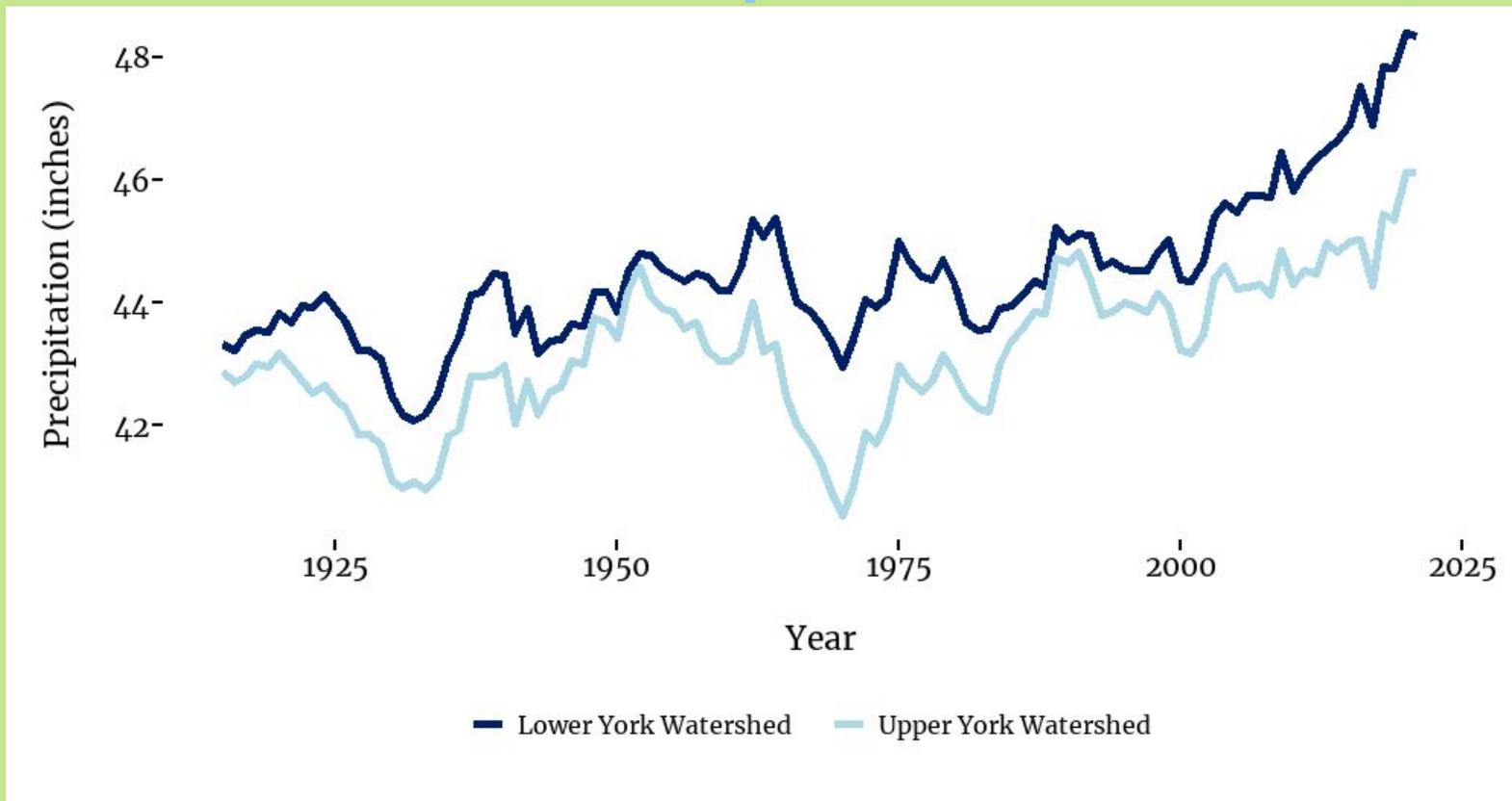


**409
football
fields**

**Tidal marsh loss
between 1970s
and 2009**

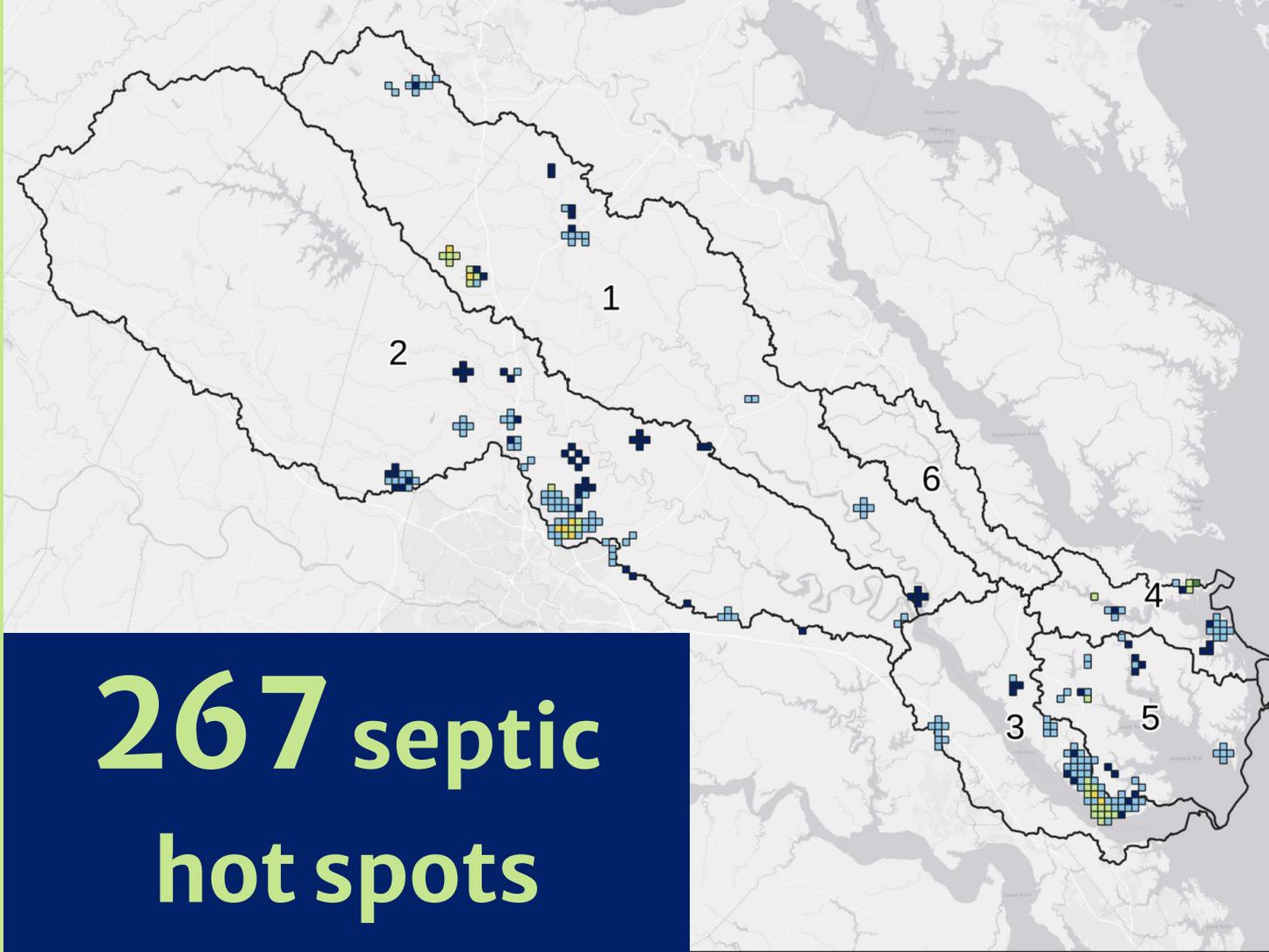


Moving Precipitation Averages in System (1915 - present)



88%
properties
on septic
systems

267 septic
hot spots





**95% of
System's
shoreline**

**eroded between
1937 and 2009**

1,400+
miles

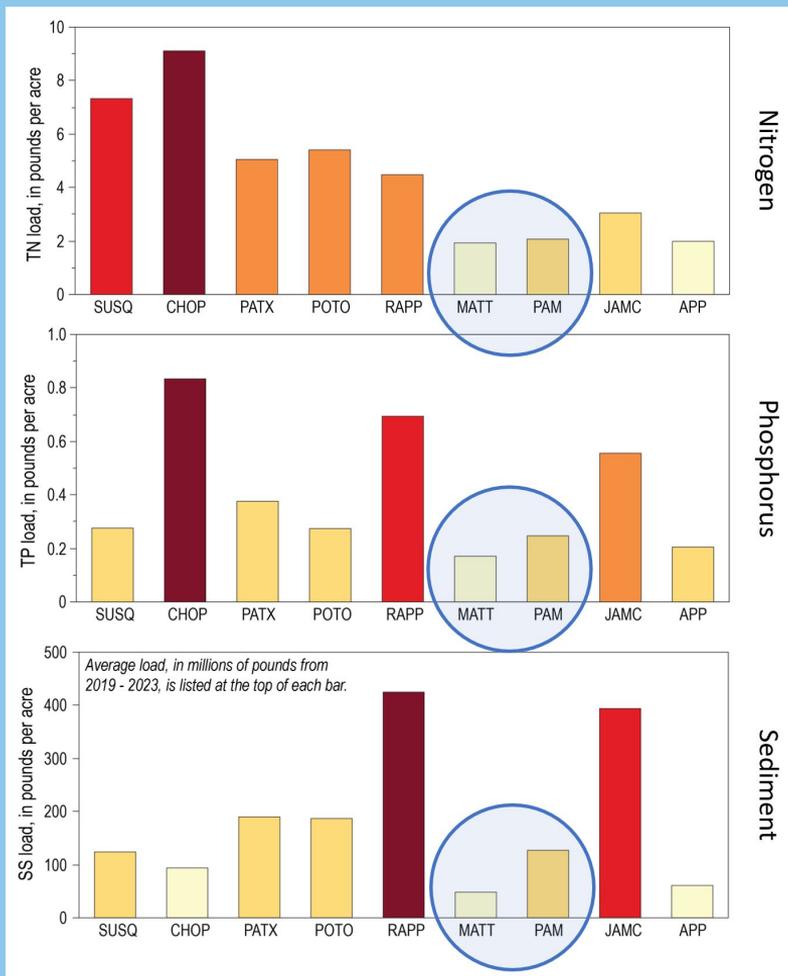
**of tidal shoreline
suitable for living
shorelines**

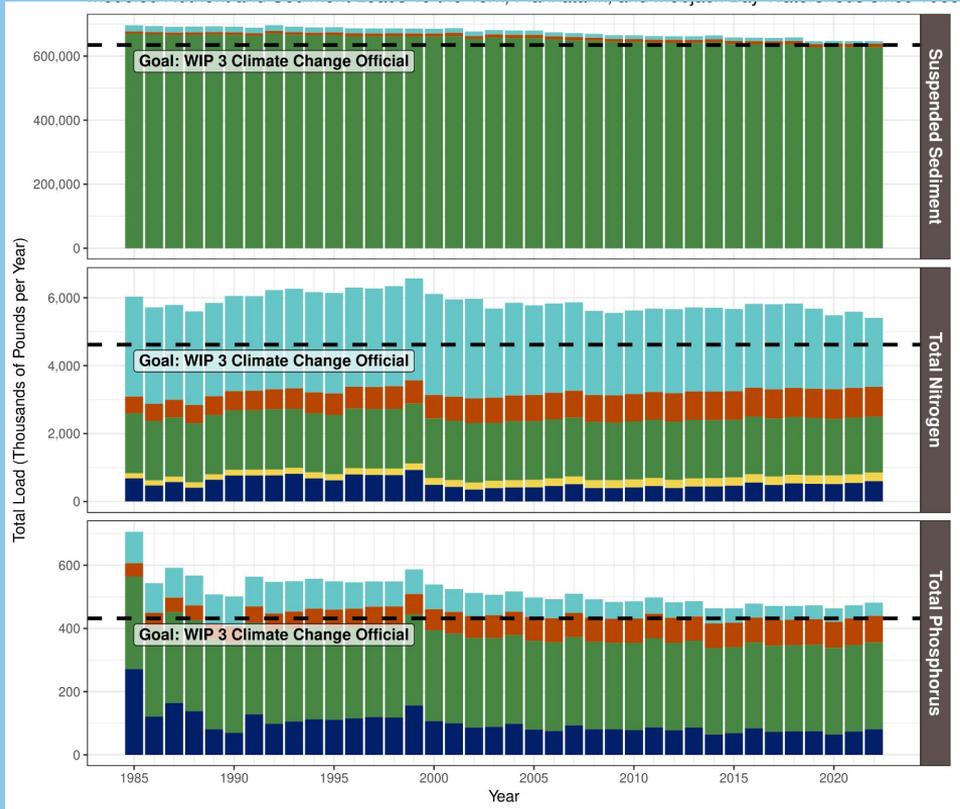


**OUR WATER
QUALITY**

System waters are among the **lowest contributors** of Bay inputs.

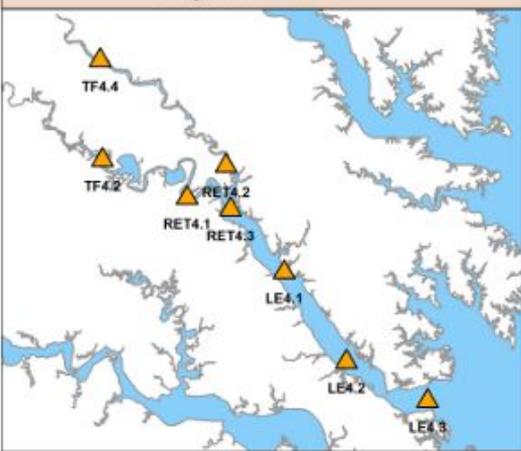
Innate nature of System is at play.



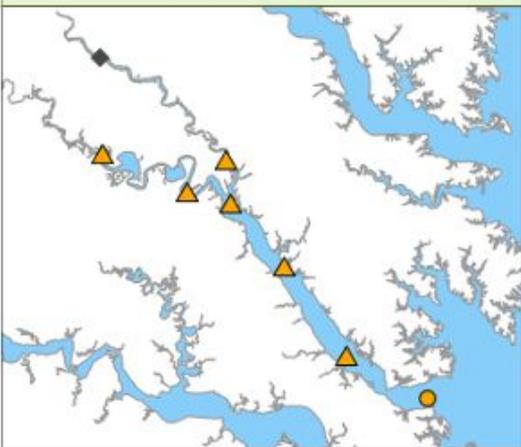


Reductions in nutrients and sediments, including through ag, shoreline restoration and wastewater treatment, have been partially **offset by** sources associated with **continued development.**

Long Term: 1985-2018



Short Term: 2009-2018



- ▼ Significantly Improving ($p < 0.05$)
- ▲ Significantly Degrading ($p < 0.05$)

Increasing
temperature trends,
over both **long** and
short term scales

HABs

(Harmful Algal
Blooms)

are **increasing** in
frequency



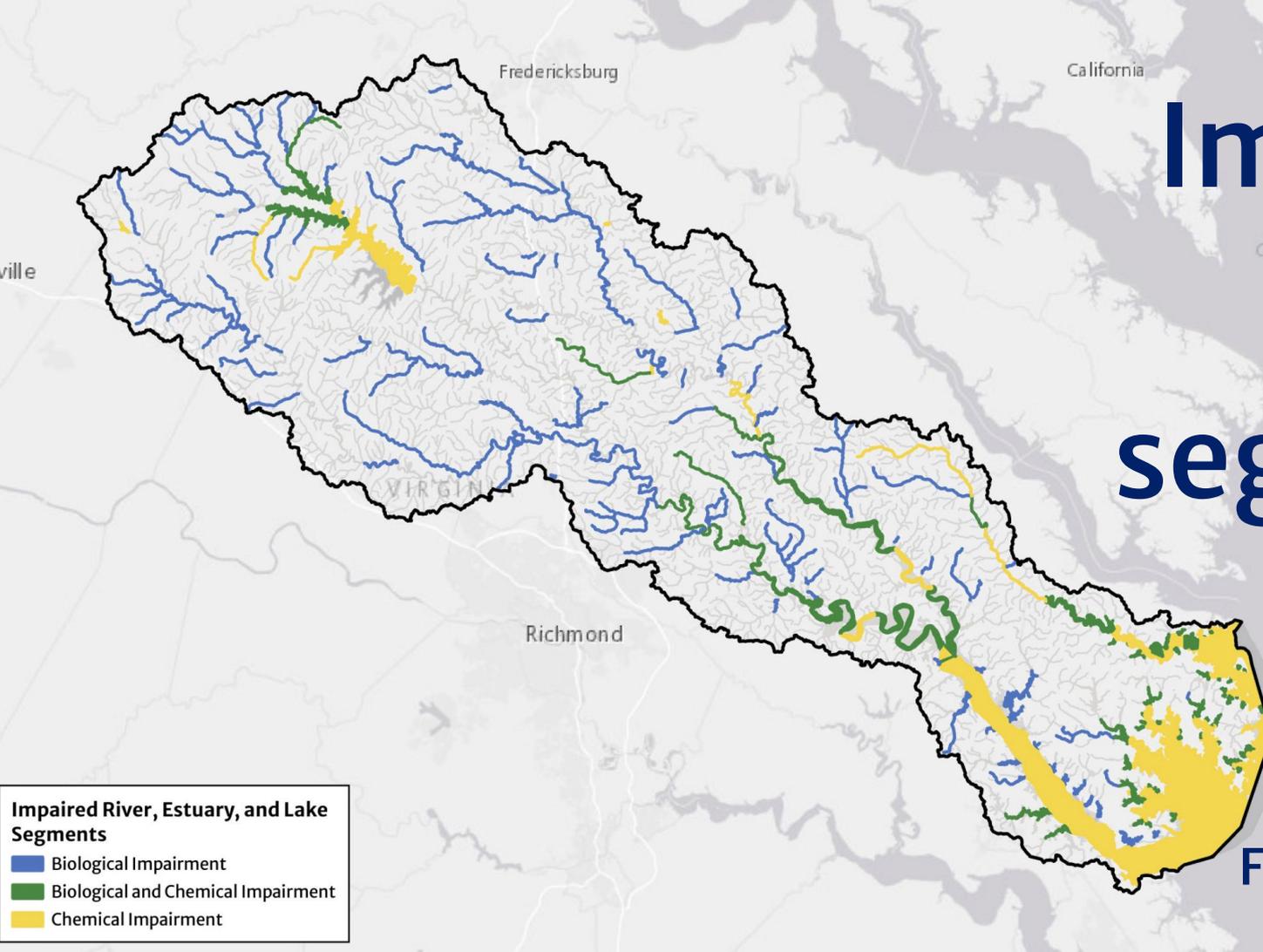
Impaired water segments

DEQ 2022

Final Assessment

Impaired River, Estuary, and Lake Segments

- Biological Impairment
- Biological and Chemical Impairment
- Chemical Impairment



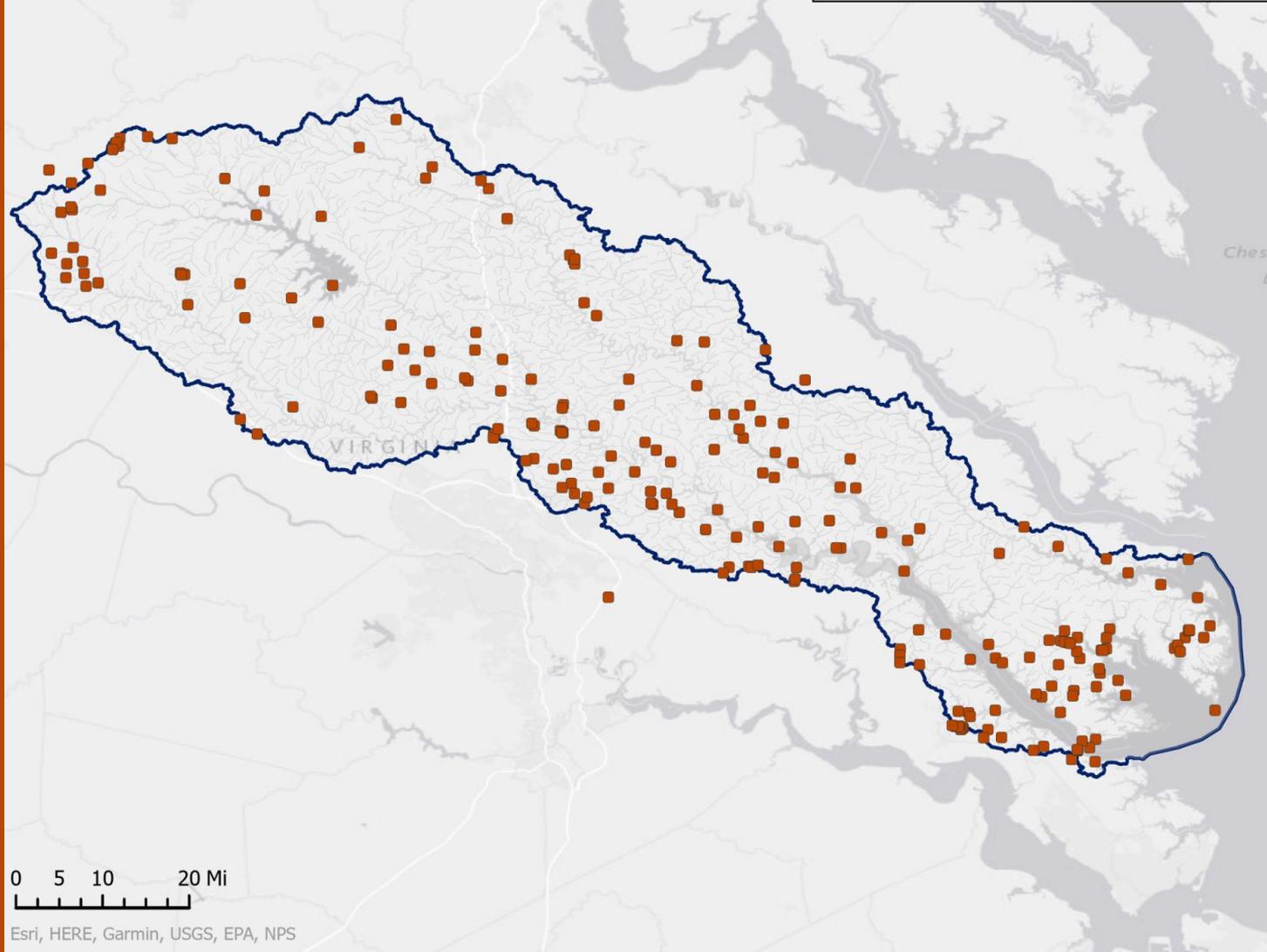


Emerging **threats**
from synthetic
materials need
more study

on extent and impact,
and intersection with
climate change and
increasing development

**THE
RESOURCES
WE STEWARD**

Listed Historic Resources in the York Watershed System





Aileen Devlin

287,180+ lbs.

in oyster landings

\$2.5 million

in value

(2021 landings data)

1,096
private leases
holding
36,675
acres
(2022 permit data)



486

acres of oyster
restoration as of
2022





E. Shields

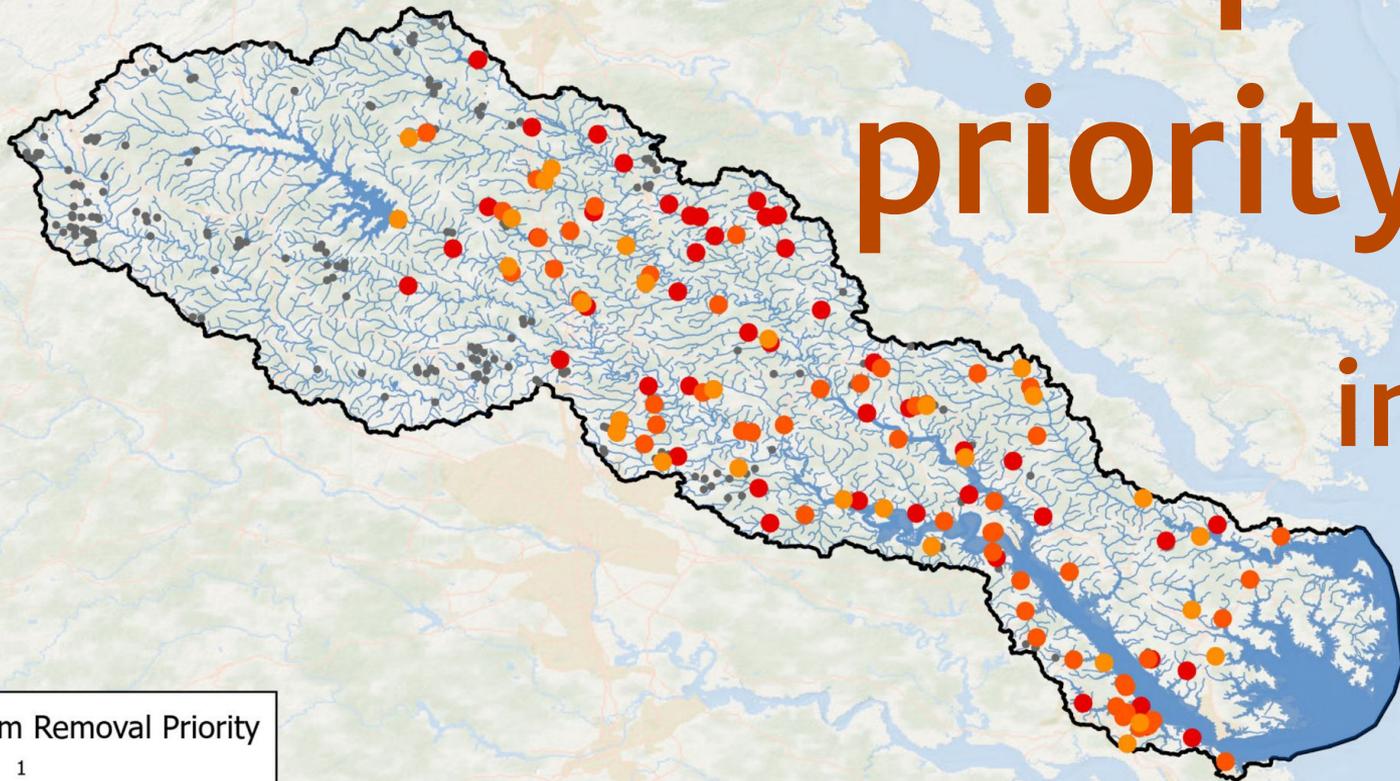
SAV has experienced sharp declines since early 2000's associated with short-term heat events

Fish passage priority sites

including

350

dams



Dam Removal Priority

- 1
- 2
- 3
- All other tiers

Common Commercial Fisheries in System

Common name	Population trend ('89* - '21)	Trend in value of landings ('10 - '21)
Atlantic Croaker	+	-
Blue Crab		
Blue catfish	+	
Spot		

Common name	Population trend ('89* - '21)	Trend in value of landings ('10 - '21)
Striped Bass* ('67)	+	-
Summer Flounder	-	
Weakfish (aka Grey Trout)	-	
White Shrimp* ('91)	+	

~8,300

saltwater

~23,520

freshwater

~11,230

both



**\$6.42
million**

in annual benefits to
recreational fishing from
marshes and living
shorelines in MidPen



~68

public access sites
where you can
enjoy our waters!

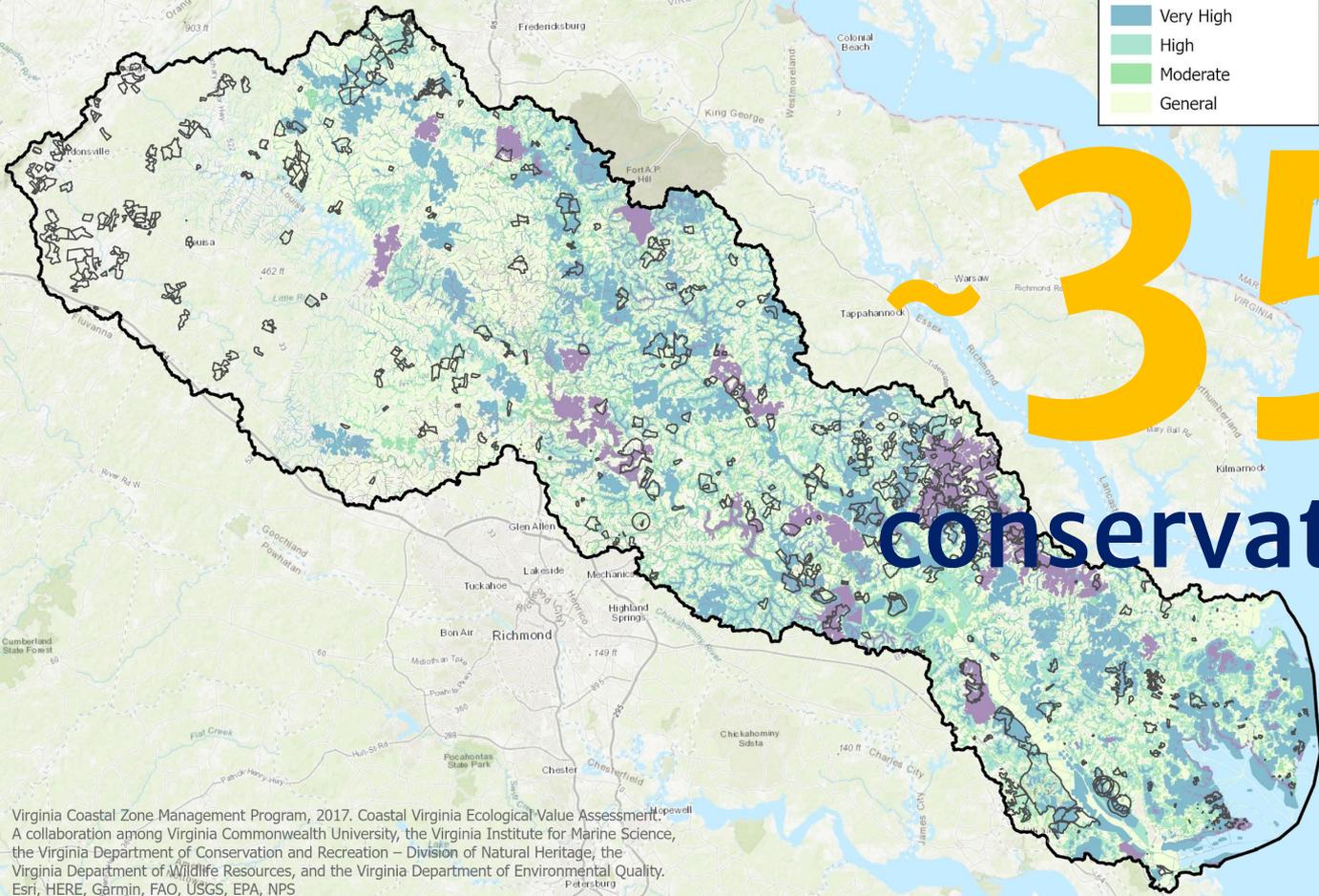


Virginia Ecological Value Assessment and Conservation Lands in the York River Watershed

Conservation Lands

VEVA_Value

- Outstanding
- Very High
- High
- Moderate
- General



350
conservation lands

Virginia Coastal Zone Management Program, 2017. Coastal Virginia Ecological Value Assessment. A collaboration among Virginia Commonwealth University, the Virginia Institute for Marine Science, the Virginia Department of Conservation and Recreation – Division of Natural Heritage, the Virginia Department of Wildlife Resources, and the Virginia Department of Environmental Quality. Esri, HERE, Garmin, FAO, USGS, EPA, NPS

109

Species of Greatest
Conservation Need

98

rare
species

54

significant
natural
communities



Blue Cat Here to stay

Phrag Dominant species in 70 acres of tidal marshes

Two-horned trapa watch out

Snakehead in Pamunkey – not Mattaponi

Nutria no sign yet



SO WHAT ?

Creating a
RIPPLE EFFECT
takes just a
DROP



Deepen your understanding of
the issues

Recreate responsibly in, and on,
our shared waters

Opt-in to conscious consumption

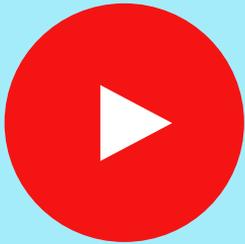
Participate in community efforts



@CBNERRV



@CBNERR



@CBNERR-VA



chesapeake-bay-national-
estuarine-research-
reserve-in-virginia

Connect with us!



CHESAPEAKE BAY
NATIONAL ESTUARINE
RESEARCH RESERVE
VIRGINIA

THANK
YOU

cagonzalez@vims.edu



 @tsean64