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Incorporating Influencing Factor Indicators on ChesapeakeProgress

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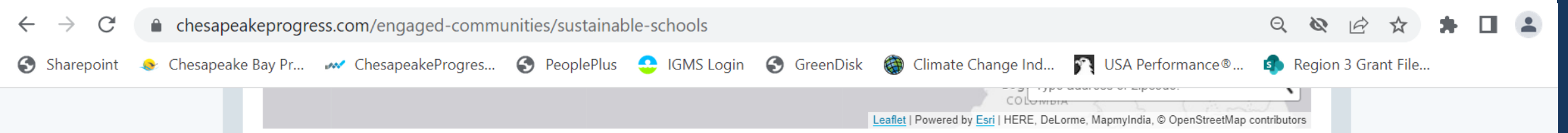
Influencing factors



Certified sustainable schools include public and charter schools within the Chesapeake Bay watershed that have been recognized as sustainable by the following programs: U.S. Green Ribbon Schools, National Wildlife Federation Eco-Schools USA (Bronze, Silver and Green Flag status), Maryland Green Schools, Pennsylvania Pathways to Green Schools and Virginia Naturally Schools.

At 79% of the total (or 470 schools), Maryland is home to most of the certified sustainable schools in the watershed. Twenty percent (or 117) of the sustainable schools in the watershed are located in Virginia, with seven additional schools located in the District of Columbia, two additional schools located in Pennsylvania and one located in West Virginia. Delaware and New York still have no certified sustainable schools in the watershed. Because the vigor of school sustainability programs varies among jurisdictions, state participation in these programs can differ. In some states, programs are robust; in others, programs are not well-established; and in others, programs do not yet exist.

While no part of the watershed was excluded from this count, not every jurisdiction has a state-specific sustainable school program. The Chesapeake Bay Program will continue to monitor sustainable school programs in the region, and may expand future reporting to include new programs that meet the sustainable school criteria defined by the U.S. Department of Education. Future reporting may also include sustainable private schools, which are not measured here.

Sustainable schools reduce the environmental impact of their buildings and grounds, work to improve the health and wellness of students and staff, and offer environmental education incorporating civic skills, STEM and green career pathways. Because increasing sustainability in and around schools can directly involve students in environmental protection and restoration, a rise in sustainable schools can indicate a rise in overall environmental literacy.

Learn About Factors Influencing Progress

SUSTAINABLE SCHOOLS OUTCOME:

Factors Influencing Progress

Several factors could impact our ability to increase the number of schools in the region that reduce the impact of their buildings and grounds on the environment and human health. These factors have directly informed the management actions our partners will take to achieve the Sustainable Schools outcome.

State Agency Engagement

Progress toward this outcome will require state agencies to support state-level sustainable school certification programs and attend meetings with the U.S. Environmental Protection Agency.

Local Agency Engagement

Education is primarily controlled by local school districts (600+ in the region), each with their own leadership and management structure. With the exception of state laws and regulations, education priorities are largely determined at the local level and may not mirror state priorities. Progress toward this outcome will require district- and division-level administrators to include elements of sustainability in their facilities plans.

Education Reform

While national education reform has lent itself to using the environment as an integrating context for learning, the shifts in both teaching and learning these reforms require pose ongoing challenges to developing systemic approaches to environmental education. Progress toward this outcome will require continued support for and participation in sustainable school certification programs.

School Community Readiness

Progress toward this outcome will require administrators to understand the benefits sustainable schools can bring to students and school budgets. It will also require schools to provide teacher training in sustainability and to provide building and maintenance staff training in the benefits and upkeep of best management practices.

Funding

Progress toward this outcome will require funding to support state agency staff and sustainable school projects.

Plans for incorporation of indicators

- Most outcomes have identified influencing factors of progress that are being measured as indicators for other outcomes
- We plan to begin incorporation of influencing factor indicators with these metrics

Example: Blue Crab Abundance

- Blue Crab Management Outcome decided to be complete and no longer tracked through an indicator
- Migrated as influencing factor indicator for Blue Crab Abundance outcome

BLUE CRAB ABUNDANCE OUTCOME:

Factors Influencing Progress

Several factors could affect our ability to maintain a sustainable blue crab population. These factors have directly informed the management actions our partners will take to achieve the Blue Crab Abundance outcome.

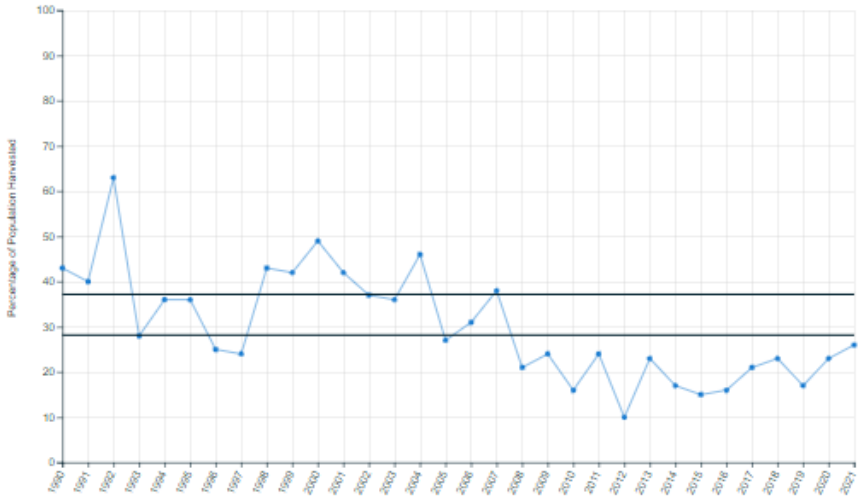
Female Blue Crab Harvest

Recent: No Change

The preliminary estimate of the female exploitation rate, or percentage of female crabs removed by harvest, was approximately 26% in 2021, which was a slight increase from the 2020 estimate of 23%. Although estimated harvest of female crabs increased, the exploitation rate was still below the target (28%) and threshold (37%), indicating that overfishing was not occurring. However, CBSAC is concerned with the recent declines in blue crab abundance and is in the process of identifying and addressing potential causes.

Female Blue Crab Harvest (1990-2021)

VIEW CHART | VIEW TABLE



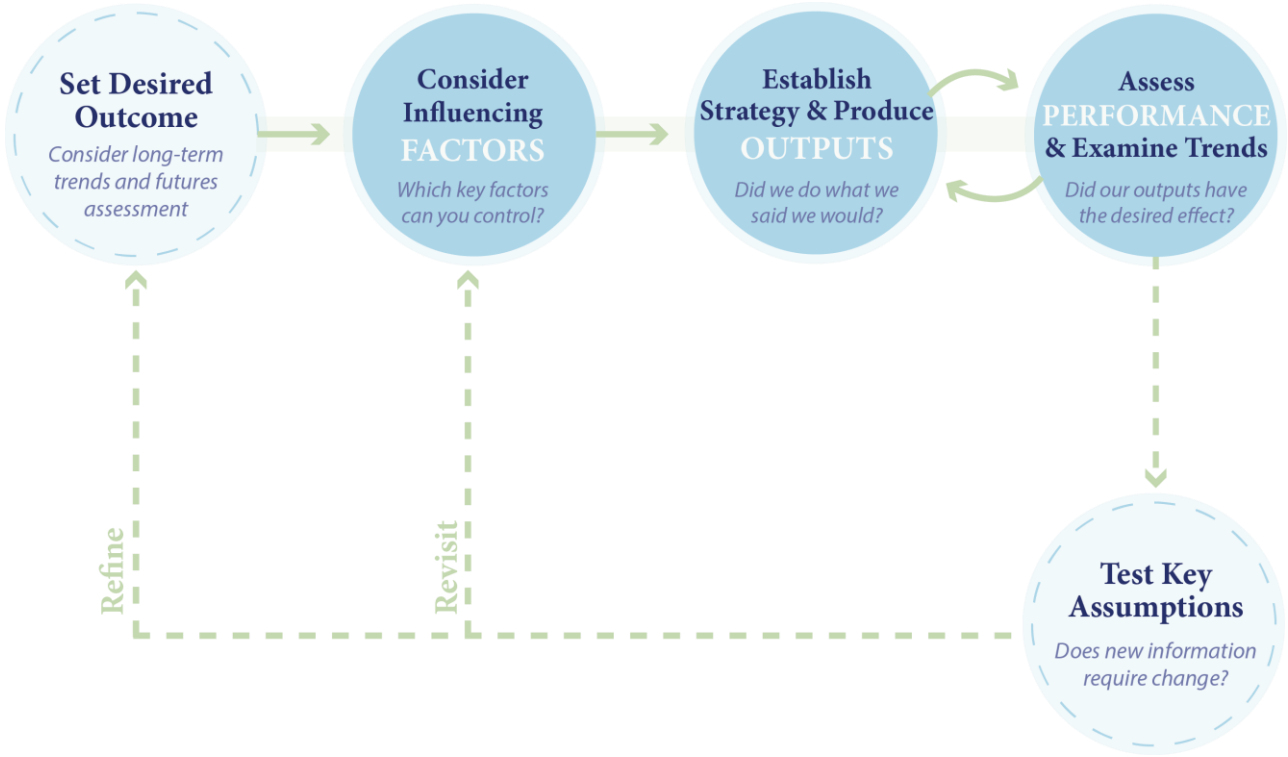
Select a date range:

1990 — 2021

Downloads: Data (.xlsx) | Methods (.pdf) | Screenshot (.png)

We would like to implement this for other outcomes!

- Advantages for communicating status and trends of outcomes
- Outcomes currently without indicators can use influencing factor indicators to inform on outcome
- Communicate relationships between outcomes



Suggested Influencing Factor Indicators

*Sourced from January 2022 Jamboard and various other documents

Sustainable Fisheries Goal

Blue Crab Abundance
- Harvest rate
- Water Quality
- Climate Monitoring and Assessment

Blue Crab Management (n/a)

Fish Habitat
- Water Quality
- Healthy Watersheds
- Climate Monitoring and Assessment
- Toxic Contaminants P&P

Forage Fish
- Water Quality
- Climate Monitoring and Assessment
- Toxic Contaminants P&P

Oysters
- Water Quality
- Climate Monitoring and Assessment
- Toxic Contaminants P&P

Water Quality Goal

2025 Watershed Implementation Plans (WIPs)
- Forest Buffers
- Tree Canopy
- Local Leadership
- Climate Monitoring and Assessment
- Toxic Contaminants P&P

Water Quality Standards Attainment and Monitoring
- Forest Buffers
- Tree Canopy
- Local Leadership
- Climate Monitoring and Assessment

Vital Habitats Goal

Black Duck
- Water Quality (tidal)
- Local Leadership
- Climate Monitoring and Assessment

Vital Habitats Goal (cont)

Brook Trout
- Water Quality
- Forest Buffers
- Local Leadership
- Healthy Watersheds
- Climate Monitoring and Assessment

Fish Passage
- Local Leadership
- Climate Monitoring and Assessment

Forest Buffers
- Diversity
- Local leadership
- Stewardship
- Sustainable Schools
- Climate Adaptation
- Land Use Options Evaluation
- Local Leadership
- Climate Monitoring and Assessment

Stream Health
- Water Quality (Nontidal trends data)
- Forest Buffers
- Tree Canopy
- Local Leadership
- Healthy Watersheds
- Climate Monitoring and Assessment
- Toxic Contaminants P&P

SAV
- Water Quality
- Local Leadership
- Climate Monitoring and Assessment

Tree Canopy
- Diversity
- Local leadership
- Stewardship
- Sustainable Schools
- Climate Adaptation
- Land Use Options Evaluation
- Healthy Watersheds

Vital Habitats Goal (cont)

Wetlands
- Water Quality
- Local Leadership
- Healthy Watersheds
- Climate Monitoring and Assessment

Public Access Goal

Public Access
- Local Leadership
- Climate Monitoring and Assessment

Healthy Watersheds Goal

Healthy Watersheds
- Forest Buffers
- Tree Canopy
- Local Leadership
- Diversity

Land Conservation Goal

Land Use Methods and Metrics Development
- Local Leadership
- Climate Monitoring and Assessment

Land Use Options Evaluation
- Local Leadership
- Climate Adaptation
- Climate Monitoring and Assessment

Protected Lands
- Local Leadership
- Healthy Watersheds

Stewardship Goal

Stewardship
- Local Leadership

Diversity
- Student
- Sustainable Schools
- Stewardship
- Local Leadership

Stewardship Goal (cont)

Local Leadership

Climate Resiliency Goal

Climate Adaptation
- Forest Buffers
- Tree Canopy
- Local Leadership
- Tidal wetlands
- SAV
- Climate Monitoring and Assessment
- Student
- Environmental Literacy Planning
- Sustainable Schools

Climate Monitoring and Assessment

Toxic Contaminants Goal

Toxic Contaminants Research
- Local Leadership

Toxic Contaminants Policy and Prevention
- Local Leadership
- 2025 WIPS

Environmental Literacy Goal

Student
- Diversity
- Local Leadership

Environmental Literacy Planning
- Diversity
- Local Leadership

Sustainable Schools
- Diversity
- Local Leadership

Indicators/Existing Metrics Only

Sustainable Fisheries Goal

Blue Crab Abundance
- Harvest rate
- WQ Standards Attainment
- Precipitation, Temp, sea level
- SAV

Fish Habitat
- WQ Standards Attainment
- Precipitation, Temp, sea level
- Toxic Contaminants P&P

Forage Fish
- WQ Standards Attainment
- Precipitation, Temp, sea level
- Toxic Contaminants P&P

Oysters
- WQ Standards Attainment
- Precipitation, Temp, sea level
- Toxic Contaminants P&P

Water Quality Goal

2025 Watershed Implementation Plans (WIPs)
- Forest Buffers
- Tree Canopy
- Local Leadership
- Precipitation and Temperature
- Toxic Contaminants P&P

Water Quality Standards Attainment and Monitoring
- Forest Buffers
- Tree Canopy
- Local Leadership
- Precipitation and Temperature

Vital Habitats Goal

Black Duck
- Water Quality (tidal monitoring)
- Local Leadership
- Precipitation, Temp, sea level

Vital Habitats Goal (cont)

Brook Trout
- Water Quality
- Forest Buffers
- Local Leadership
- Precipitation, Temp, sea level

Fish Passage
- Local Leadership
- Precipitation, Temp, sea level

Forest Buffers
- Diversity
- Local leadership
- Stewardship
- Sustainable Schools
- Land Use Options Evaluation
- Local Leadership
- Precipitation, Temp, sea level

Stream Health
- Water Quality (Nontidal trends data)
- Forest Buffers
- Tree Canopy
- Local Leadership
- Precipitation, Temp, sea level
- Toxic Contaminants P&P

SAV
- Water Quality
- Local Leadership
- Precipitation, Temp, sea level

Tree Canopy
- Diversity
- Local leadership
- Stewardship
- Sustainable Schools
- Land Use Options Evaluation

Vital Habitats Goal (cont)

Wetlands
- WQ Standards Attainment
- Nontidal and Tidal WQ monitoring
- Local Leadership
- Precipitation, Temp, sea level

Public Access Goal

Public Access
- Local Leadership
- Sea level rise

Healthy Watersheds Goal

Healthy Watersheds
- Forest Buffers
- Tree Canopy
- Local Leadership
- Diversity
- Precipitation and Temperature

Land Conservation Goal

Land Use Methods and Metrics Development
- Local Leadership
- Sea level rise

Land Use Options Evaluation
- Local Leadership
- Sea level rise

Protected Lands
- Local Leadership

Stewardship Goal

Stewardship
- Local Leadership

Diversity
- Student
- Sustainable Schools
- Stewardship
- Local Leadership

Stewardship Goal (cont)

Local Leadership

Climate Resiliency Goal

Climate Adaptation
- Forest Buffers
- Tree Canopy
- Local Leadership
- Tidal wetlands
- SAV
- Climate Monitoring and Assessment
- Student
- Environmental Literacy Planning
- Sustainable Schools

Climate Monitoring and Assessment

Toxic Contaminants Goal

Toxic Contaminants Research
- Local Leadership

Toxic Contaminants Policy and Prevention
- Local Leadership
- 2025 WIPS

Environmental Literacy Goal

Student
- Diversity
- Local Leadership

Environmental Literacy Planning
- Diversity
- Local Leadership

Sustainable Schools
- Diversity
- Local Leadership

Next Steps

- Please review the previous graphic of influencing factor indicator and send me any modifications by the end of next week (10/28)
  - Barnhart.Katheryn@epa.gov
- As we update indicator metrics, we will reach out to outcomes listed as being influenced by the indicator that has been updated to update the corresponding page
  - Will look similar to Blue Crab: Updating both the chart and language indicating how the influencing factor impacts outcome progress

THANK YOU!

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