

Activity: Exploring your Local Issue

Time: 45 minutes

Preparation: Cut out the Issue Cards (p. 4-10) and Issue Descriptors cards (p. 11-17)

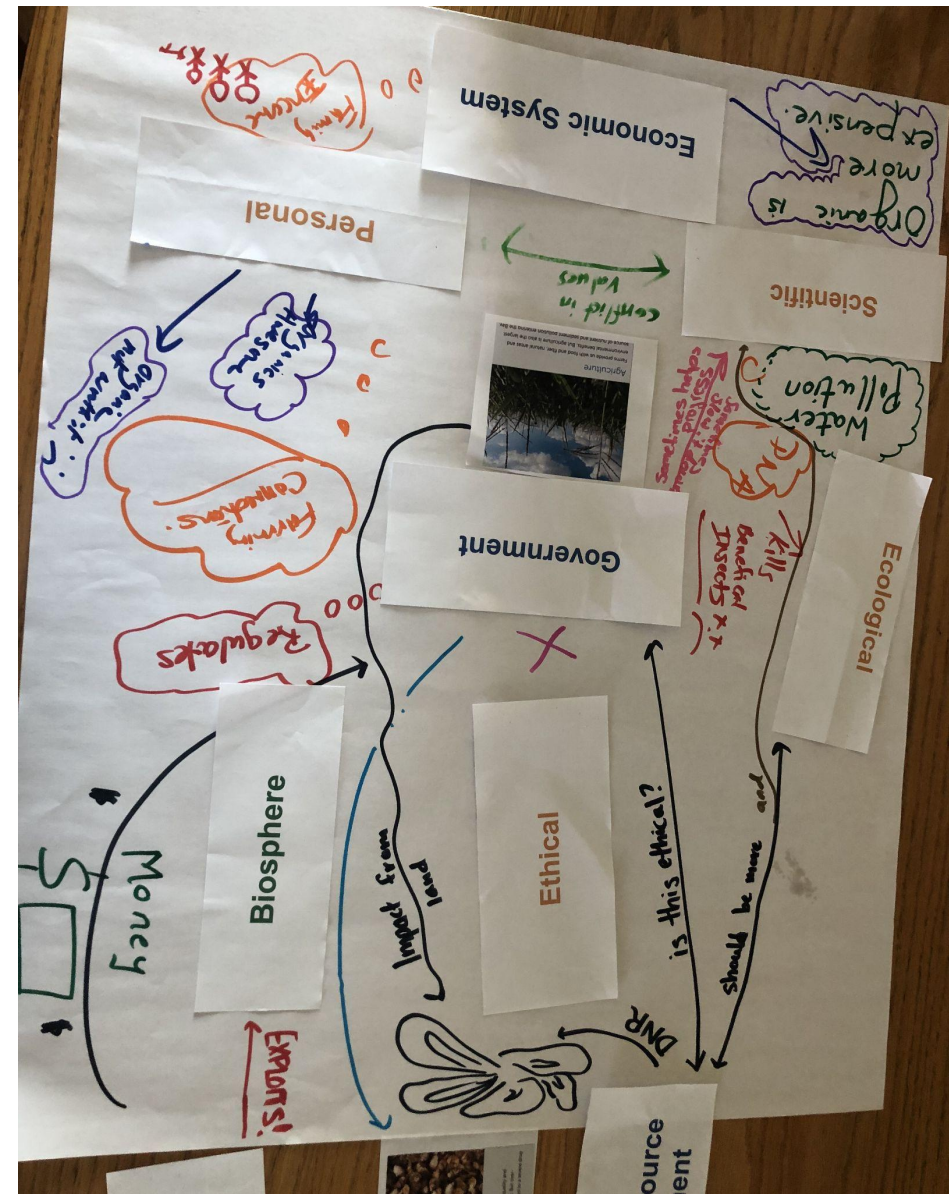
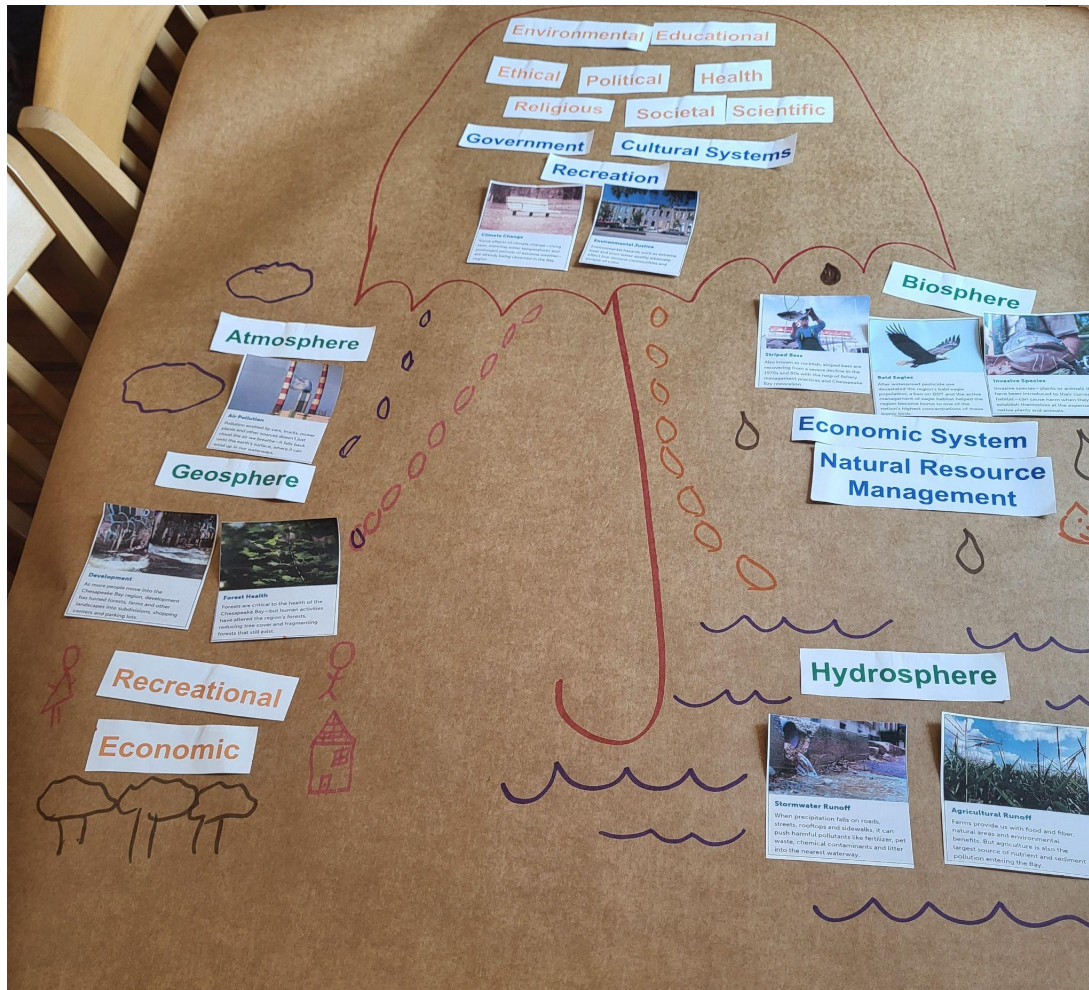
This activity is designed to engage teachers in thinking about Chesapeake Bay issues that are connected to learning objectives and suitable to explore through a MWEE.

The Chesapeake Bay Program (<https://www.chesapeakebay.net/>) is a partnership among federal, state and local governments as well as NGOs that guides the restoration of the nation's largest estuary and its watershed. The Chesapeake Bay Program works to address issues ranging from water quality to the ways in which society uses land throughout the watershed. In this activity participants will use the Chesapeake Bay Program's Learn the Issues (<https://www.chesapeakebay.net/issues>) webpage to explore key issues in the region and consider the human and natural systems connected to these issue.

1. Using big pads, whiteboards, magnets, etc. place the *Issue Cards* in a space with enough room for participants to connect the *Issue Descriptor Cards*.
2. Provide each participant with one or more *Issue Descriptors cards*. The cards are split into three categories that are color-coded: **Natural Systems**, **Human Systems**, and **Value Descriptors**. You can hand out all the cards at once or go through three rounds doing one category at a time. Ask participants to place their descriptors next to an issue and defend why they associated these descriptors with the issue.
3. Facilitate a group discussion considering the following questions:
 - What issue(s) are particularly relevant to where you work/live?
 - Were you surprised by any of the issues?
 - Are there any major issues missing that are important in your community?
 - How else might you identify locally relevant issues?
 - Can you take a couple of the issues, natural systems, human systems, and values to create a driving question that is locally relevant?
 - If practical, note that environmental issues are often the result of tensions between groups and or natural and human/social systems.

Adjustments: If you need to shorten the activity, share fewer issue and issue descriptor cards. This is also great to use with students, especially middle and high school students. Adjust for different ages by selecting age-appropriate and class-relevant issues and issue descriptors cards.

*See activity examples on the next two pages



Activity examples



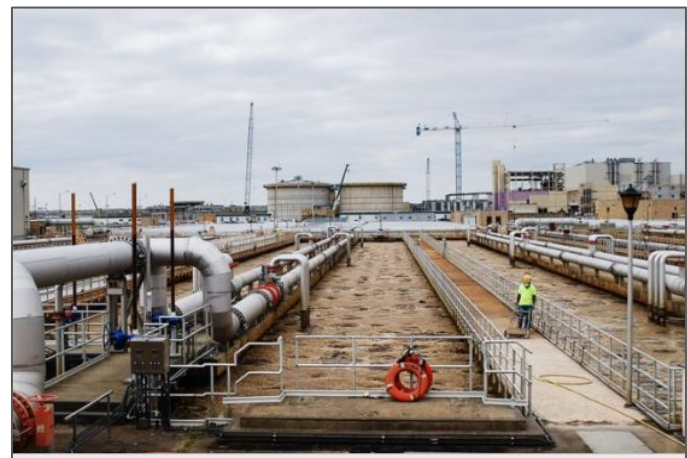
Wetlands

Wetlands are critical in supporting the healthy waters and diverse wildlife of the region. But development, invasive species and sea level rise threaten these important areas.



Underwater Grasses

Underwater grasses grow in the shallow waters of the Bay and its streams. They provide food and habitat to wildlife, add oxygen to the water and trap sediment and nutrient pollution.



Wastewater

Hundreds of wastewater treatment facilities throughout the Chesapeake Bay region are being upgraded to reduce the amount of nutrients flowing into local waterways.



Striped Bass

Also known as rockfish, striped bass are recovering from a severe decline in the 1970s and 80s with the help of fishery management practices and Chesapeake Bay restoration.



Stormwater Runoff

When precipitation falls on roads, streets, rooftops and sidewalks, it can push harmful pollutants like fertilizer, pet waste, chemical contaminants and litter into the nearest waterway.



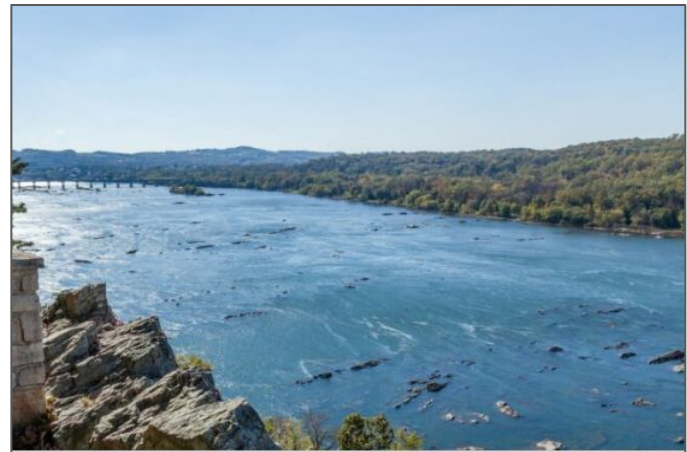
Sediment Runoff

Sand, silt and clay are a natural part of the Chesapeake Bay. But in excess amounts, sediment can cloud the waters of the Bay and its tributaries, harming underwater life.



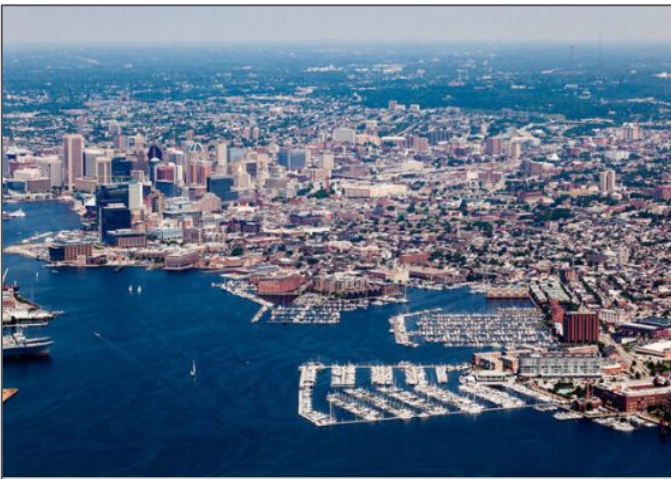
Shad

Once the most valuable finfish fishery in the region, pollution, historic overfishing and the construction of dams that block migration have lowered shad populations.



Rivers and Streams

Hundreds of thousands of creeks, streams and rivers flow through the Chesapeake Bay region, sending fresh water to the Bay and providing habitat to aquatic plants and animals.



Population Growth

Each of the 18.4 million people that live in the region affects the Bay: consuming resources, altering the landscape and polluting the air and water.



Nutrient Runoff

Plants and animals need nutrients to survive. But when too many nutrients enter waterways, they fuel the growth of algae blooms and create conditions that are harmful to underwater life.



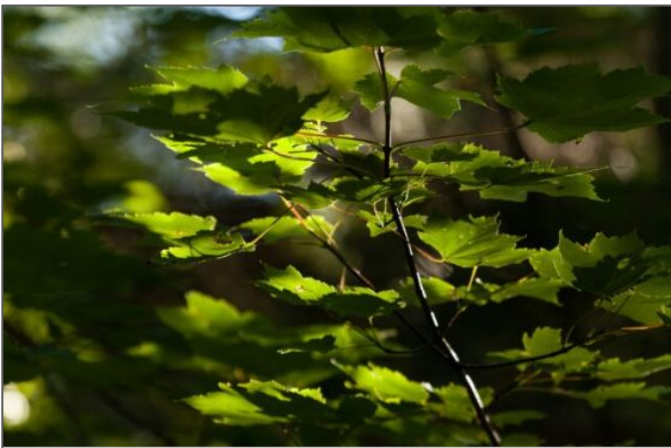
Oysters

This iconic bivalve helps to improve water quality and provides food and habitat to other animals. But over-harvesting, disease and habitat loss have led to a severe drop in population.



Menhaden

These small fish form an important link in the Chesapeake Bay food web, which is why fisheries managers have placed a cap on the amount of menhaden that can be harvested from the Bay.



Forest Health

Forests are critical to the health of the Chesapeake Bay—but human activities have altered the region’s forests, reducing tree cover and fragmenting forests that still exist.



Groundwater

Drops of rain or snow that fall onto the land can seep through the soil and into groundwater, which can become contaminated when pollutants on land seep underground.



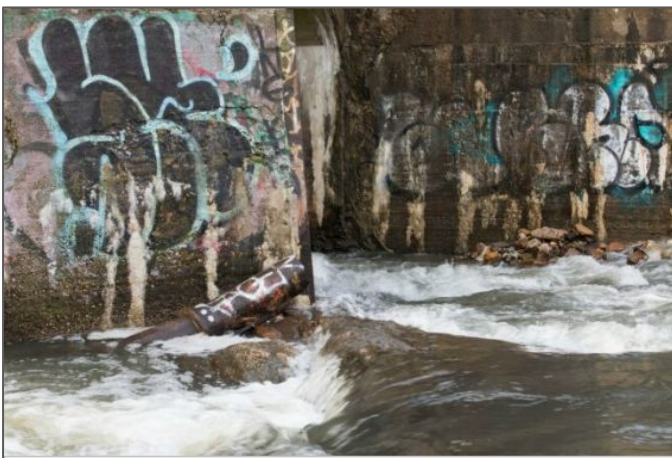
Invasive Species

Invasive species—plants or animals that have been introduced to their current habitat—can cause harm when they establish themselves at the expense of native plants and animals.



Stream Buffers

Streamside trees and shrubs prevent pollution from entering waterways, stabilize stream banks, provide food and habitat to wildlife and keep streams cool during hot weather.



Development

As more people move into the Chesapeake Bay region, development has turned forests, farms and other landscapes into subdivisions, shopping centers and parking lots.



Conowingo Dam

The reservoir behind Conowingo Dam has long captured sediment flowing downstream, but recent studies have drawn attention to its changing effectiveness as a “pollution gate.”



Climate Change

Some effects of climate change—rising seas, warming water temperatures and prolonged periods of extreme weather—are already being observed in the Bay region.



Chemical Contaminants

Almost three-quarters of the Bay’s tidal waters are impaired by pesticides, pharmaceuticals, metals and other chemicals, which can harm the health of both humans and wildlife.



Blue Crabs

The Bay's signature crustacean supports important commercial and recreational fisheries. But pollution, habitat loss and harvest pressures threaten blue crab abundance.



Agricultural Runoff

Farms provide us with food and fiber, natural areas and environmental benefits. But agriculture is also the largest source of nutrient and sediment pollution entering the Bay.



Air Pollution

Pollution emitted by cars, trucks, power plants and other sources doesn't just cloud the air we breathe—it falls back onto the earth's surface, where it can wind up in our waterways.



Fish Blockages

Removing dams or installing fish lifts allows migratory fish to return to upstream habitats and lets resident fish move freely throughout the region's rivers.



The Dead Zone

When nutrient-fueled algae blooms die and decompose, the resulting low-oxygen conditions—known as “dead zones”—can suffocate underwater life and shrink available habitat.



Bald Eagles

After widespread pesticide use devastated the region's bald eagle population, a ban on DDT and the active management of eagle habitat helped the region become home to one of the nation's highest concentrations of these iconic birds.



Environmental Justice

Environmental hazards such as extreme heat and poor water quality adversely affect low-income communities and people of color.



Osprey

These raptors may be found on nearly every corner of the world, but the Chesapeake region is home to the largest concentration of nesting osprey.

Atmosphere

Biosphere

Hydrosphere

Geosphere

Climate System

**Chesapeake Bay
Ecosystem**

Economic System

Cultural System

Natural Resource Management

Recreation

Commercial Fisheries

Government

Aesthetic

Ecological

Economic

Environmental

Environmental Justice

Ethical

Educational

Personal

Ethnocentric

Health

Political

Recreational

Religious

Scientific

Societal
