REDUCING POLLUTANTS IN LOCAL WATERWAYS:

CHESAPEAKE BAY AND BACK RIVER TMDLS

The Chesapeake Bay is a vital habitat for a diverse array of marine life, including the iconic blue crab. As the largest estuary in the United States, spanning over 200 miles, it supports a thriving fishing industry and sustains approximately 3,600 marine species. Stormwater from a watershed encompassing five states, including the land where NASA Langley is located, funnels into nearby waterways, ultimately reaching the bay. These waters also host a variety of family-friendly recreational activities such as fishing, crabbing, kayaking, and swimming. However, the bay currently faces threats from pollution and chemical spills, underscoring the need for public awareness and proactive measures to protect human health and safeguard this essential natural resource.

In 2010, the Environmental Protection Agency (EPA) established pollutant limits for nitrogen, phosphorus, and sediment in the Chesapeake Bay. These limits are commonly known as Total Maximum Daily Loads (TMDLs) and represent the maximum amount of pollution a waterway can handle without adverse effects. The TMDLs are then divided among the contributing polluters, such as municipalities, campuses, farms, and industries, including NASA Langley. The Center developed an action plan outlining its measures to reduce its pollutant contribution.

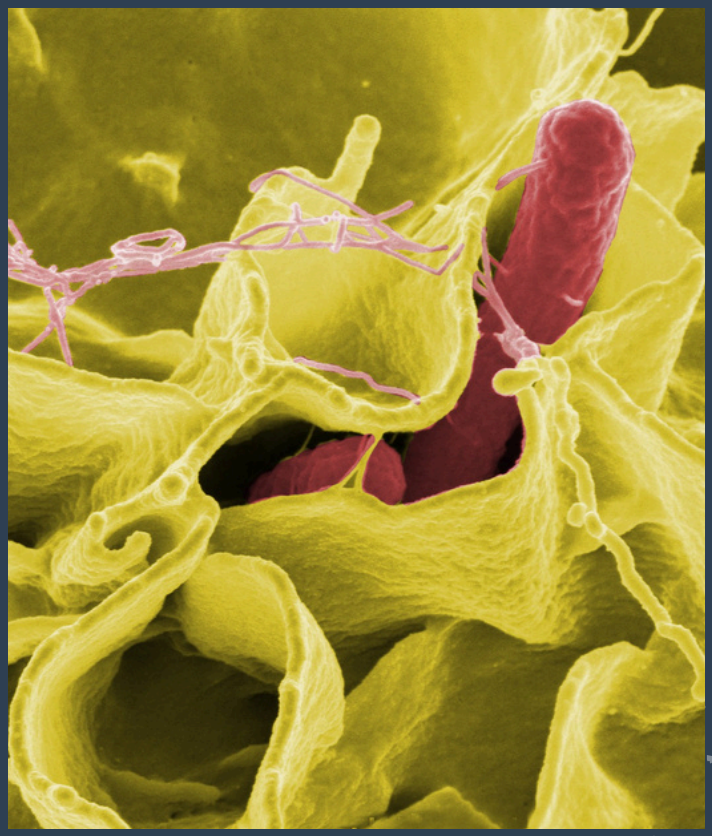
BLUE CRAB

The Blue Crab, one of the Chesapeake Bay's most prized fisheries both commercially and recreationally, generates over $28 million annually. In 2022, the population plummeted to a historic low, but fortunately, began to rebound in 2023. Despite a slight decrease in 2024, the population remains above the record low. While its numbers are improving, caution is still necessary to ensure their survival. One important step is to enhance the water quality in their breeding grounds, such as the Chesapeake Bay.

TMDLS AT NASA LANGLEY

In 2014, the Virginia Department of Environmental Quality (DEQ) established TMDLs to reduce fecal coliform bacteria. NASA Langley is under a bacterial TMDL for the Back River, requiring the development of an action plan to address bacterial contamination and reduce the annual fecal coliform load by 35%. Since the Center doesn't have septic systems, pets, marinas, or livestock, its largest source of bacterial discharges is wildlife. Thus, the Center's best management practices focus on reducing bacteria from urban wildlife.

Facilitating outreach and training programs for NASA Langley personnel is imperative to raising awareness and understanding of the Center-wide initiatives outlined in the TMDL Action Plans. Below you can find a list of ways you can contribute to these efforts both at the center and at home, as well as strategies implemented by NASA. More information on the Chesapeake Bay and Back River TMDLs are available on our environmental website. Your commitment to education and proactive engagement will significantly enhance our efforts towards mitigating pollution in our local water bodies!



FECAL COLIFORM

A bacteria used as an indicator of fecal contamination in water sources. While themselves not generally harmful, their presence at high levels indicate the presence of disease-causing bacteria, viruses, and protozoa in water. Monitoring and managing fecal coliform levels are essential to protect public health and preserve water quality.

HOW TO HELP!

HOW YOU CAN HELP (AT WORK)

- To reduce the amount of fecal matter produced by stray animals and wildlife, you can discourage population growth in the following ways:
  - DO NOT feed any wildlife (especially feral cats) -- for their health and your safety!
  - Report any stray or feral animals to the Environmental Management Office.
  - Reduce unnatural food sources accessible to wildlife.
  - Keep picnic areas and other gathering spots free of litter and keep dumpsters closed. This will deter wildlife and help reduce wildlife bacterial coliform pollution.
- Always use appropriate containment procedures for the storage of onsite chemicals and equipment.
- Immediately report all spills and leaks upon discovery. More information on Langley's spill response procedures can be found on the environmental website here.

HOW YOU CAN HELP (AT HOME)

- Properly dispose of pet fecal matter.
- Individual home septic systems should be checked at least once a month to ensure they are functioning properly.
- Do not flush substances such as pesticides, fertilizers, chlorine bleach, and oven cleaners down septic or storm drains.
- When camping, be familiar with waste management requirements of the area, use proper facilities, or follow "Leave No Trace."

HOW TO HELP!

ACTIONS NASA LANGLEY UNDERTAKES:

- The Environmental Management Office conducts training and outreach to employees about preventing stormwater pollution, how to report spills and leaks, and who to contact with questions or concerns.
- Langley has been converting acres of unused impervious surfaces back into green space. This transformation enhances water retention and prevents erosion. Vegetation and topsoil absorb and retain water, acting as a natural buffer that prevents muddy water and excess nutrients from entering local waterways.
- Approximately, 600 trees were planted near the northwest branch of the Back River. This area is being returned to a natural buffer area.
- Langley has already converted nearly 20.87 acres of land into managed turf forest!
- The Center's Grounds Maintenance Contractor:
  - Cleans out storm drains at least twice a year to remove waste from wildlife.
  - Conducts stormwater ditch cleaning and vegetation removal.
  - Implements a program for the proper disposal of animal carcasses.

LET'S WORK TOGETHER TO KEEP OUR WATER CLEAN!

For water quality concerns, call:
Sarat Calamur (757.864.4791)
Ande Remington (757.864.8332) or
James Griczin (757.864.5030)

*In an emergency or spill, always call
911 (from a Center phone)
or 757.864.2222 (from a cell phone)