Reducing Urban Wildlife Pollutants:
Back River TMDL

One of the bodies of water that surrounds NASA Langley is the Back River. The Back River is a small, 2-mile-long, tidal estuary between the cities of Hampton and Poquoson that flows into the Chesapeake Bay.

Although a historically valuable area for shellfish harvesting and recreation, the Back River is listed as impaired for both uses due to high concentrations of bacteria that exceed allowable, "safe" levels.

The Virginia Department of Environmental Quality (DEQ) established Total Maximum Daily Loads (TMDL) to address fecal coliform bacteria in the Back River in 2018. A TMDL is defined as the maximum amount of pollution a "dirty" or impaired waterway can hold, while still remaining healthy.

NASA Langley is under a bacterial TMDL for the Back River watershed. Because of this TMDL, NASA was required to develop an action plan to address bacterial contamination. Currently, NASA Langley is working to reduce the annual fecal coliform load by almost 35%. The Center has no septic systems, pets, marinas, or livestock within its property. Instead, the largest contributor to bacterial discharges is from wildlife. So, the Center's best management practices designed to reduce bacteria are focused on urban wildlife, not sources of human waste.

Fecal coliform is a term used to describe bacteria found in the intestines of warm-blooded animals. If fecal material is present in excessive concentrations, there is a larger potential for other pathogens to be present. High levels of this bacteria in our waterways indicate the possible presence of disease-causing bacteria, viruses, and protozoa, which are harmful to the health of both people and wildlife. This often results in beach closures and restrictions on shellfish consumption.

Increased levels of fecal coliforms also provide a warning of degrading water quality. Fecal material contains nitrogen and phosphorus and can result in nutrient over-enrichment of water bodies, which can cause algae blooms and oxygen depletion in marine wildlife habitats.

Outreach and training to NASA Langley personnel are needed to bring awareness and understanding of the Center-wide initiatives set forth in the Back River TMDL Action Plan. The Action Plan is located on our environmental website. Your education and consideration will help us to reduce bacteria loading!

How To Help Reduce the Amount of Fecal Coliform Entering Local Waterways

How You Can Help (At Work)

- Do not feed wildlife -- for their health and your safety!
- Report stray or feral cats to the Environmental Management Office. Please do not feed them.
- Reduce unnatural food sources accessible to wildlife in urban areas.
- Keep picnic areas and dumpsters free of litter. This will deter wildlife and reduce wildlife bacterial coliform pollution.

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 proper functioning.
- Do not flush substances such as pesticides, fertilizers, chlorine bleach, and oven cleaners down septic or storm drains.
- When camping, use proper facilities or follow "Leave No Trace."

Actions NASA Langley Undertakes:

- Stormwater retention practices or ponds are prohibited to discourage Canadian geese and other birds.
- The Environmental Management Office conducts training and outreach to employees about preventing stormwater pollution.
- The Center's Grounds contract:
  - Cleans out storm drains twice a year to remove waste from wildlife.
  - Conducts stormwater ditch cleaning and vegetation removal that attracts wildlife.
  - Implements a program for the proper disposal of animal carcasses.

Let's work together to keep our water clean!

Call*: Ande Remington (757.864.8332), Sarat Calamur (757.864.4791) or Jazmin Argarin (757.864.7031) for water quality concerns

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