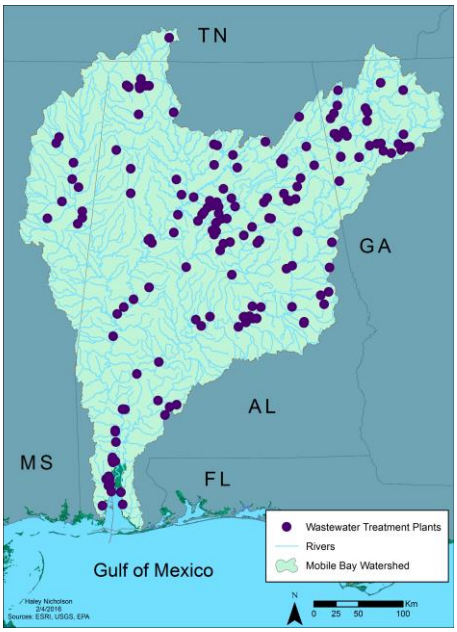
Water quality on the Gulf of Mexico coast: Lessons for the Mobile Bay Watershed

Our human footprint

The Mobile Bay watershed encompasses the 6th largest drainage basin in the US, emptying into the Mobile Bay estuary on the Alabama coast. Throughout Alabama, increased residential and industrial development during the past 60 years has affected water quality by increasing **nutrients** (nitrogen, phosphorus), **sediments**, and **microbes** (bacteria, viruses) delivered to the water from human wastewater and stormwater runoff. What happens upstream impacts the coast where local income and recreation are largely water-dependent.



Haley Gancel, 2/4/2016, Sources: ESRI, USGS, EPA

What do we know?

- By the time Alabama rivers reach the Mobile-Tensaw Delta, they may carry industrial and agricultural pollutants, stormwater runoff, and both treated and untreated sewage from four different states.
- The Mobile Bay estuary is among the largest freshwater inflows in the United States and provides vital nursery habitat for commercially and recreationally important fish species.
- Excess nutrients and microbes from wastewater sources can lead to fishing area closures and public health concerns.
- When properly maintained and operated, municipal wastewater treatment can reduce microbe inputs and help to improve water quality on the Gulf of Mexico coast.

Dauphin Island Sea Lab · Alabama

NOAA National Oceanic and Atmospheric Administration · U.S. Department of Commerce

National Estuarine Research Reserve System

To sustain water quality and keep shellfisheries safe for harvest, communities must work together to **balance land use with water quality priorities** and **implement and maintain** suitably designed **wastewater treatment**.

This study was conducted by the Dauphin Island Sea Lab, Grand Bay NERR, University of Southern Mississippi, & the US FDA with funding from the NOAA NERR Science Collaborative (2010-2014).

What did you see today?

Sources of nutrients and microbes to coastal waters are nearly everywhere, but often unnoticed. Learn to recognize these sources as a first step to avoid, minimize, and mitigate them during your daily activities.

Did you know: Most stormwater drains empty into local streams and rivers that discharge to bays and estuaries without treatment.

What you can do: Properly dispose of yard debris and other litter to avoid clogging drains and gutters, pick up after your pets, and maintain your vehicle to avoid leaks.

- ❑ **Outfall pipes** deliver fertilizers, animal waste, road runoff, and other debris via stormwater, and some homes have unpermitted connections to stormwater drains.

Did you know: About 850 billion gallons of untreated sewage and stormwater are released to US waters each year. [1]

What you can do: Lawfully dispose of human and pet waste (both organic and inorganic) and maintain septic systems. Support maintenance of wastewater infrastructure and facilities.

- ❑ **Recreational fishing & boating** can be sources of wastewater and debris when people dump human waste or trash overboard.
- ❑ **Failing septic systems & pumping stations** can leak untreated wastewater into groundwater, streams and estuaries.

Did you know: Most of the world's largest cities are on the coast.[2]

What you can do: Use porous building materials when possible and design landscapes to include native planted areas.

- ❑ **Impervious surfaces** (roads, parking lots, driveways, sidewalks, buildings) increase runoff into coastal waters.

Learn more:

- See our data, learn how you can improve local water quality, and report possible spills or other concerns at www.disl.org/wastewaterfootprint
- Share, modify, and use copies of this factsheet in your office or classroom to continue improving water quality on the Alabama coast.
- Learn about pollutant sources and how to incorporate clean water tips into your daily life at www.cleanwaterfuture.com

Our wastewater footprint

CREATE A Clean Water FUTURE

Content developed collaboratively by the Dauphin Island Sea Lab, Grand Bay NERR, US FDA, University of North Carolina – Wilmington, Mobile Bay NEP, and Eco-tours of South Mississippi with funding from the NOAA NERR Science Collaborative (2017-2018). [1]EPA 2004. [2]Neumann et al. 2015 PLOS ONE.