

# Virginia's Water Quality and TMDLs

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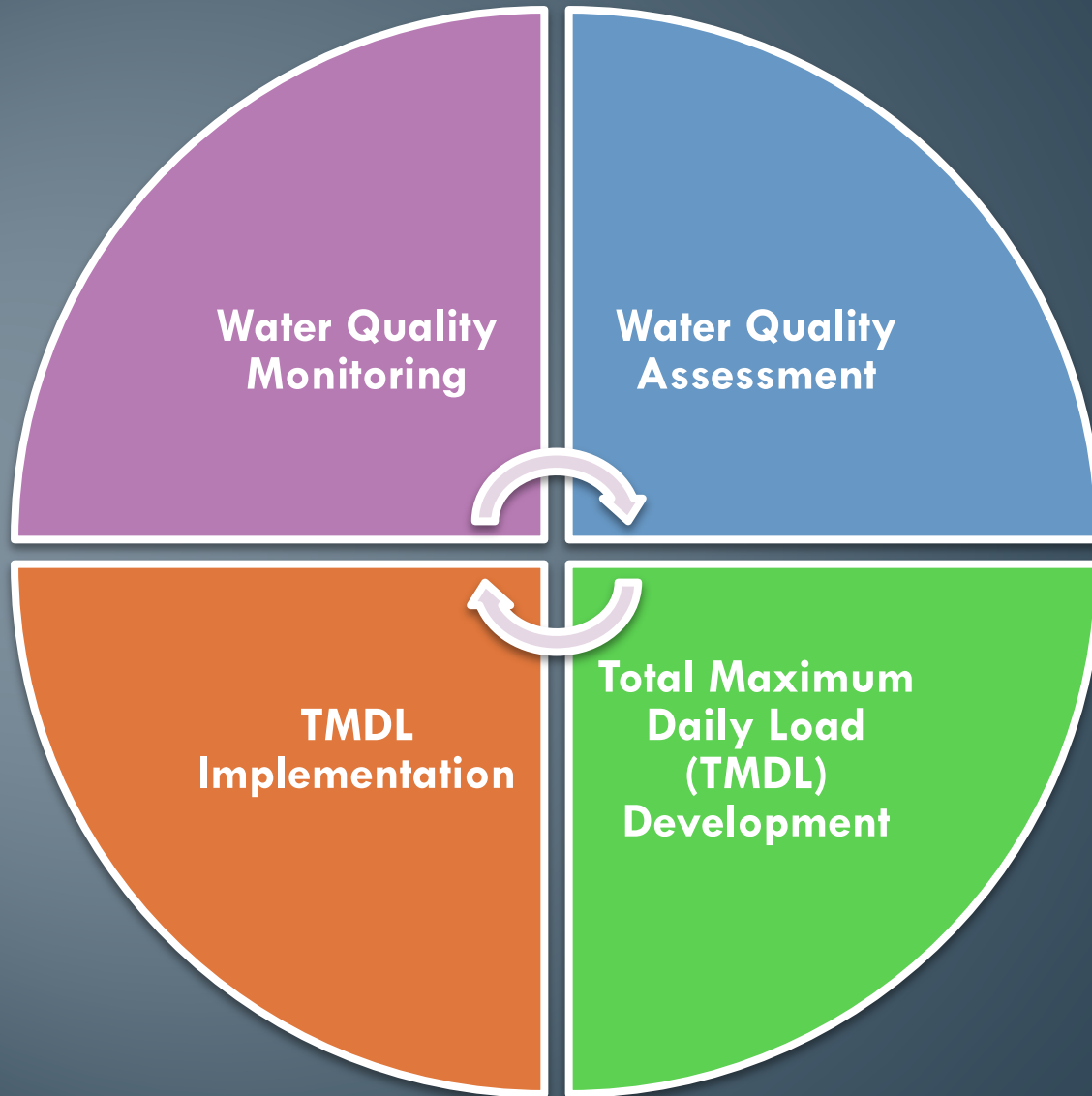
Merrimac Farm Master Naturalist

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# Water Quality Standards

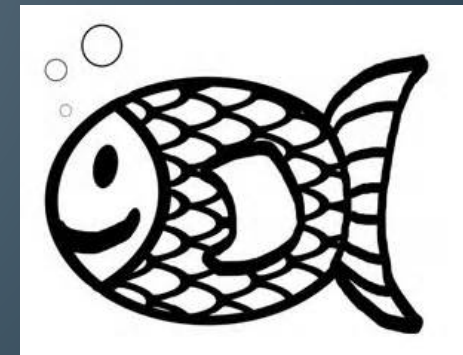
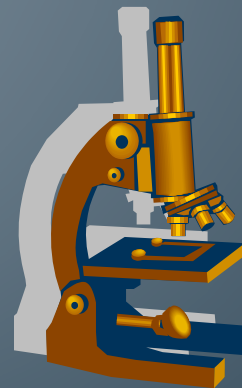


# Water Quality Process Overview



# Water Quality Process: Monitoring

- Chemical
  - Bacteria
  - Nutrients
  - Dissolved oxygen
  - pH
  - Toxics
- Biological
  - Benthic Macroinvertebrates
- Fish Tissue
  - Mercury
  - PCBs
- Citizen Monitoring



# Water Quality Process: Assessment

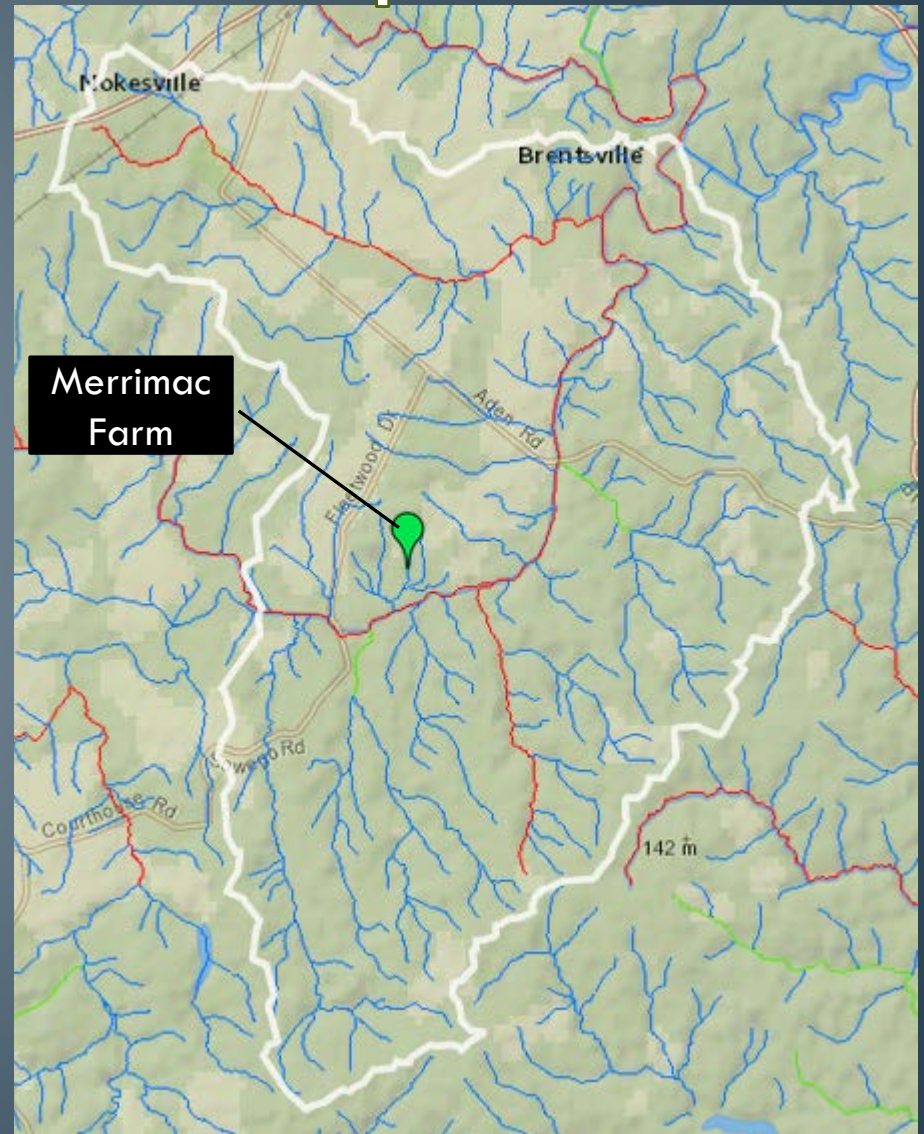
- Required by Clean Water Act
- Submitted to EPA every two years
  - Status of all waters – 305(b) list
  - List of impaired waters – 303(d) list
- Designated Uses
  - Recreation
  - Aquatic Life
  - Wildlife
  - Fish Consumption
  - Shellfish
  - Public Water Supply

# Water Quality Process: Assessment Example

2014 Draft Assessment:

Cedar Run-Slate Run  
Subwatershed

- Four segments impaired for Recreation Use (bacteria)
- One segment impaired for Aquatic Life Use



# Water Quality Process: TMDL

- Total Maximum Daily Load
  - How much pollutant a waterbody can receive and still meet water quality standards
- Utilizes modeling
- Identifies sources and existing loads
- Allocates allowable loads
- Includes a Margin of Safety
- Includes Public Participation



# Water Quality Process: Implementation

- Source Controls to improve water quality
- Planned locally with various stakeholders
- Ex: Recreation Use impaired due to levels of bacteria
  - Residential Controls
    - Repair/replace faulty septic systems
    - Remove straight pipes
    - Stormwater controls
    - Control pet waste
  - Agricultural Controls
    - Stream fencing
    - Stream crossings
    - Rotational grazing
    - Vegetated stream buffers



Photo by USDA NRCS



# Sources

- <http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring.aspx>
- <http://www.deq.state.va.us/Programs/Water/WaterQualityInformationTMDLs/WaterQualityMonitoring.aspx>
- <http://www.deq.state.va.us/ConnectWithDEQ/VEGIS.aspx>