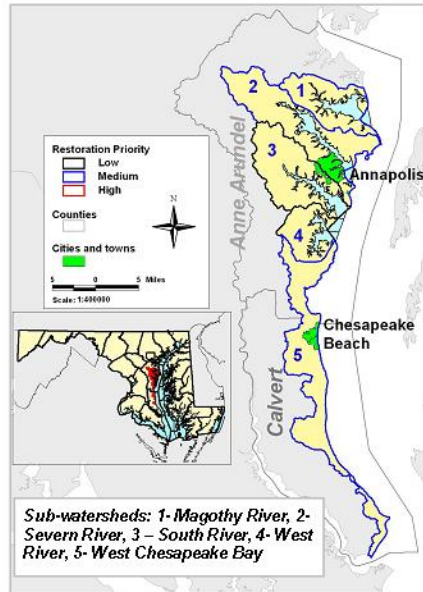


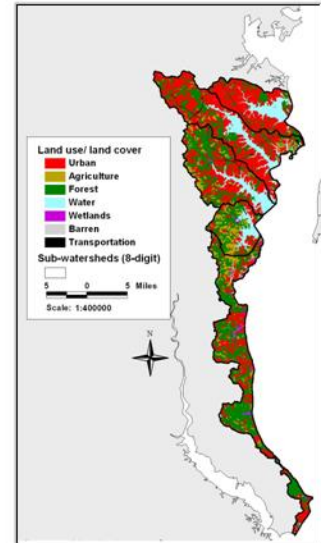
Lower Western Shore Water Quality and Habitat Assessment

Lower Western Shore Basin

Maryland's Lower Western Shore basin drains approximately 300 square miles in Anne Arundel County and a portion of Calvert County. This basin includes the Magothy, Severn, South, Rhode, and West Rivers. In 2010 there were approximately 300,000 people living in the basin. The dominant land usage in the Lower Western Shore basin is urban areas (46%) and forests (34%). Between 2000 and 2010, urban land use increased by 10%, while forests decreased by 6% and agricultural lands decreased by 5%. Impervious surfaces cover approximately 10% of the overall basin.



Land Use/Land Cover



Overall Conditions

Magothy River

- Fair water quality but high nitrogen levels
- Septic systems are largest source of nitrogen and most phosphorus loads come from urban areas and point sources
- Poor and declining water clarity has led to poor underwater grass habitat and no grass coverage
- Very low summer dissolved oxygen levels and habitat quality for bottom dwelling animals is poor

Severn River

- Fair water quality but high nitrogen levels
- Point sources are largest source of nitrogen and phosphorus
- Impaired underwater grass habitat due to poor water clarity and high algal densities—grass coverage is 40% of restoration goal
- Very low summer dissolved oxygen levels and habitat quality for bottom dwelling animals is poor

South River

- Fair water quality with high nitrogen and phosphorus levels
- Point sources are the largest source of phosphorus and sediments
- Poor water clarity and high algal densities have led to impaired underwater grass habitat—grass coverage is <1% of restoration goal
- Poor summer dissolved oxygen levels and unhealthy bottom dwelling animals

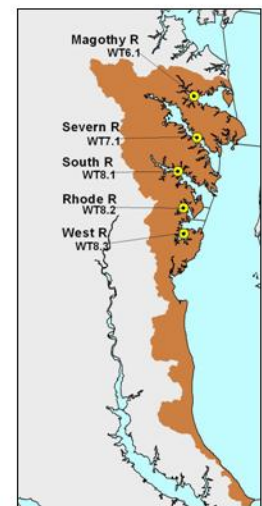
Rhode River

- Fair water quality with high nitrogen and phosphorus levels
- Agriculture is largest source of sediments and phosphorus; point sources are largest source of nitrogen
- Impaired underwater grass habitat due to poor and declining water clarity—no grass beds have been found since 1978
- Dissolved oxygen levels and habitat quality are fair to good for bottom dwelling animals

West River

- Fair water quality with high nitrogen and phosphorus levels
- Agriculture is largest source of sediments and phosphorus; point sources are largest source of nitrogen
- Impaired underwater grass habitat due to poor and declining water clarity—no grass beds have been found since 2004
- Dissolved oxygen levels and habitat quality are fair to good but bottom dwelling animals not healthy

MD DNR Monitoring Stations



Improving Water & Habitat Quality: What's been done and what needs to be done?

- Upgrades to the major wastewater treatment plants in this basin are under construction and will be completed by 2014
- More than 200 septic system retrofits were completed between 2008 and 2010, and stormwater retrofits have reduced nitrogen loadings and prevented nearly 8,000 pounds of nitrogen from entering the rivers since 2003
- In 2010, 330 acres of cover crops were planted between growing seasons to absorb excess nutrients and prevent sediment erosion
- Fencing on over 700 acres of farmland was used to keep livestock out of streams and prevent streambank erosion and over 250 acres of stream buffers are in place to reduce runoff and erosion
- Approximately 2,500 acres have been protected and preserved through various programs such as the Rural Legacy Program, the Maryland Environmental Trust, and the Maryland Agricultural Land Preservation Program
- Efforts to reduce nitrogen loadings, particularly those from septic systems in the northern basin, should be a priority
- Sediment and phosphorus load reduction actions should target urban runoff and point sources in the northern basin and agricultural runoff in the southern areas
- Reducing pollution from urban areas can be accomplished with alternatives to conventional building materials and methods that reduce the amount of impervious surfaces
- The full assessment is available through the link: <http://tinyurl.com/ohxbytu> or by scanning:



Annapolis Harbor is located on Spa Creek, a tributary of the Severn River

What Can You Do?

There are many things you can do to help improve water and habitat quality on the Lower Western Shore.

- **Plant trees along streamside property.** Tree roots will slow erosion and absorb the flow of nutrient runoff.
- **Pump out septic tanks regularly (every 3-5 years).** A failing system can contaminate groundwater.
- **Conserve water.** Use rainwater for plants, take shorter showers, and turn off the faucet when brushing your teeth.
- **Drain gutter spouts into rain barrels or grassy areas.** This will reduce erosion, which adds sediment to rivers.
- **Carpool, or try biking or walking.** Exhaust fumes contain nitrogen oxides, which can end up in rivers and bay.
- **Dispose of household chemicals properly.** Toxic chemicals poured down the drain could end up in rivers.
- **Use fertilizer sparingly.** If you must fertilize, try doing it in autumn, when it will have less of an impact on rivers.
- **Support land protection initiatives.** Preserving existing green space is much easier than restoring degraded areas.
- **Get involved.** Let county, state, and local officials know that water and habitat quality is important to you.

<p>Water quality data from the Lower Western Shore are available at: www.eyesonthebay.net</p>	<p>Please report fish kills, algal blooms, or any other events or problems to the toll-free Chesapeake Bay Safety and Environmental Hotline at 1-877-224-7229</p>
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Martin O'Malley, Governor

Joseph P. Gill, DNR Secretary



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 Toll free : 1-(877)-620-8DNR(8638) in Maryland Out of state call: 410-260-8638 TTY users call via the Maryland Relay
www.dnr.maryland.gov



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This document prepared by members of the DNR Tidewater Ecosystem Assessment Division
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