The Importance of Understanding Your Community Watershed

By Greg Blackham, Aquatic Specialist

Did you know that everyone on this planet lives in a watershed? A watershed, defined, is any amount of land that collects water through precipitation and transports it to a common outlet. That common outlet could be a stream, river, reservoir, lake or even a large bay like the Chesapeake Bay. A watershed is simply a term used to describe a transitional downhill area that water collects and flows through to reach its destination, including groundwater. The topography of the land, through elevated ridges, outlines the edge of each watershed, and small sub-watersheds can combine to form larger watersheds. Everything we do affects our watershed and our watershed affects the quality of all life within it and beyond, which makes it critically important to understand our impact on surrounding waterbodies.

Water traveling through the watershed is altered in numerous ways throughout its journey. Surface runoff, creeks and ditches pick up all types of organic and inorganic materials. Harmful pollutants, like chemicals, fertilizers and waste are transported into streams and waterbodies throughout the entire watershed, negatively impacting all life along the way. Nutrient pollution, primarily by phosphorous and nitrogen, can disrupt natural life cycles and bio-diversity in every habitat that they touch by fueling the growth of nuisance aquatic weeds and algae that the ecosystem cannot naturally manage. For example, cyanobacteria, commonly referred to as blue-green algae, thrive on phosphorous-rich water and can form harmful, potentially-toxic blooms that can endanger wildlife, pets and humans. Exposure to cyanobacteria has been linked to the development of degenerative diseases like ALS, Alzheimer's and Parkinson's disease.

Prior to heavy urban development and widespread industrialization, nature was able to clean and filter water through a long and stable process. Through soil infiltration, plant transpiration and evaporation, water was purified sufficiently to achieve a lasting balance. Development disrupts the process through soil removal, compaction and the addition of acres of hard, impervious surfaces that increase water velocities and erosive forces. As the world continues to develop, so has our understanding of this delicate balance. We have learned that we can manage surface water at various stages in its cycle, including each pond and lake along its journey, to make it much less disruptive when it enters into our rivers, reservoirs and bays. We have also learned that we have many opportunities to intercept and mitigate nutrient pollution long before it becomes catastrophic to our most precious resources, sanctuaries and livelihood through stormwater management techniques and facilities.
Lakes and ponds are one of the most critical points of interception in our watershed because they exist at locations where a lot of water is contained in a relatively small area and the speed of discharge can be regulated. These points offer the best opportunity to remove excess nutrients and sediment from the water with a large array of methods, including aeration, nutrient mitigation products, organic waste removal, biological augmentation (beneficial bacteria infusion), invasive species management, and sediment settling.

Though extremely effective, sustainable lake and pond management is not the only way to proactively improve the output of our watershed. The following cultural practices can also prevent a lot of nutrient pollution and chemical translocation before impurities even have a chance to leave the community:

- Use fertilizer without phosphorous and limit overall use on our lawns.
- Prevent leaves, lawn clippings and organic waste from over-burdening stormwater conduits.
- Recycle greywater whenever possible to reduce the need for treated wastewater.
- Use environmentally-friendly detergents and cleaners when washing vehicles and pressure-washing houses.
- Create natural filtering systems using infiltration media and vegetation to intercept water before it enters impervious surfaces and storm drains.
- Change farming practices to increase buffer zones and decrease soil and nutrient run-off.

It cannot be overstated how much watershed management determines the quality of life and the balance of nature. From direct impacts on crabbing, fishing and farming yields to property value, outdoor recreation and flood damage, watershed effects and consequences really are A to Z. Everyone should consider themselves a steward of water (and the environment in general). Improving the water quality of nearby lakes, ponds, rivers and streams will go a long way in protecting regional assets and local wildlife—not to mention all the unseen positive effects down the road and into the future.

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