PRESIDENT'S MESSAGE

By Al Tucker

Forests, like the oceans, are the heart and lungs of the planet; they provide untold resources enabling a way of life that we have come to expect. We now realize that preserving existing forests is critical to the survival of the planet, and that we can no longer treat them as an infinite resource. Some call trees a renewable resource, but this is only the case if appropriate and adequate areas of land are conserved.

At the local level, forest resources are dwindling rapidly. Development not only destroys forests, but it also fragments remaining forests and thereby leads to an increased loss of ecosystem services. For Anne Arundel County, these services include air quality improvement, carbon sequestration, groundwater recharge, nutrient uptake, wildlife habitat and biodiversity, and stormwater mitigation. Each of these services has an economic value. At the 2016 CEPA Forum[1], the annual estimated value of ecosystem services for Anne Arundel County was $287.6 M per year, representing a natural capital asset of $4.6 billion. From a revenue point of view, this represents about 17% of current county revenue.

The forest conservation bill before the Anne Arundel County Council pits two views about the future quality of life against each other. One views economic well-being through residential and commercial development with the unvoiced implication that Anne Arundel has sufficient forest resources and adequate regulations to protect the environment. The other sees land preservation and forest conservation as a bulwark against further degradation of quality of life and anticipated impacts of climate change. The central question in this debate that's not being asked is: Does Anne Arundel County have adequate forest cover to provide ecosystem services for maintaining the status quo in the face of climate change?

Two studies help bring the question into sharper focus: first, a study by Rand Corporation for NOAA[2] of the Patuxent River watershed looked at development practices and environmental best management practices under population change and expected climate change scenarios. The inescapable conclusion was that current policies and strategies resulted in insufficient land to implement affordable best management practices to meet future environmental requirements. To put it bluntly, the Patuxent watershed will be over-developed using current building technology and land-use patterns. The second study by Anne Arundel Planning & Zoning[3] provides some insight into how much land, including forests, will be lost to sea level rise alone. It states:

- Nearly 2,200 acres of land are vulnerable under a 0-2 foot sea level rise. Almost two-thirds of this area (62%) [1394 acres] consists of woodlands and open wetlands.

- When the inundation area is expanded under a 0-5 foot scenario, over 6,900 acres of land are potentially impacted. In this scenario, 42 percent of the vulnerable area is woodlands [2898 acres].

In the Chesapeake Bay, NOAA estimates an intermediate rate of sea level rise will result in the 2ft. inundation being reached by approximately 2060 and 2100^{+} for the 5ft. level. If the high rate of rise materializes, the 2 ft. level will occur in 2040 and the 5 ft. level in 2070. The recent tidal flooding events of 2.5 ft. or more indicate forest degradation in the critical area has started.

These studies do not answer the question I posed; however, the question is answerable. High resolution land-use data exists, and the assessment technique developed by Rand Corporation would provide valuable insight concerning current development practices when applied to the entire county. It would provide a guide for the types of development that would conserve environmental services. It is imperative that studies like that outlined by Rand be performed. Without these assessments, individuals cannot evaluate the risk that the combination of population growth and climate change present.

The analysis of the Patuxent watershed is a wake-up-call. To the unaided eye it would appear that it is covered with sufficient forest, but the analysis shows that it is not. The watershed actually is urban. Furthermore, the analysis shows that it will not provide the ecosystem services needed to meet future environmental requirements, if current

development practices continue in the face of anticipated climate change. New building technology will be required to have zero run-off and zero increase in ancillary impervious surface, such as roads and parking lots. But any development results in forest loss.

The public needs to know how much will be lost. And the answer starts with knowing if the existing forests in Anne Arundel County are adequate to meet the anticipated growth and the effects of climate change. Otherwise the public cannot make an informed assessment of the risks posed by loss of forests.

[1]CEPA Forum 2016 (https://cepaonline.org/presentations/CEPA%202016%20ECampbell.pdf)

[2] Fischbach, Jordan R., Robert J. Lempert, Edmundo Molina-Perez, Abdul Ahad Tariq, Melissa L. Finucane, and Frauke Hoss, Managing Water Quality in the Face of Uncertainty: A Robust Decision Making Demonstration for EPA's National Water Program. Santa Monica, CA: RAND Corporation, 2015. https://www.rand.org/pubs/research_reports/RR720.html

[3] Sea Level Rise Strategic Plan Anne Arundel County, Nov 2011, prepared by AA County Office of Planning & Zoning, (https://dnr.maryland.gov/ccs/Publication/AASLRStrategicPlan_final.pdf)