

CITY SUN: Measuring UV Radiation in Baltimore

Community Update

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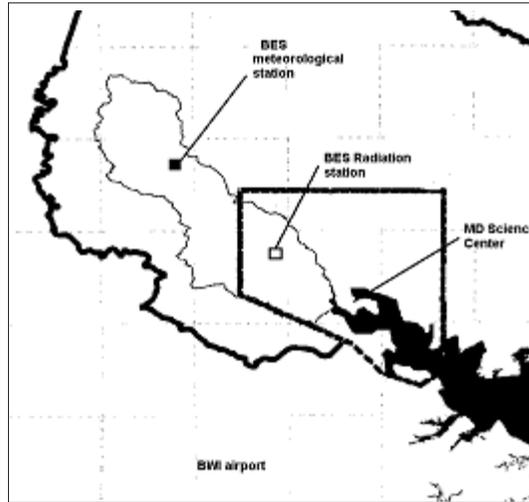
Baltimore Ecosystem Study: BES

WHY?

- UVR (ultraviolet radiation) impacts cities by affecting the health of plants and animals, as well as influencing earth processes like weather.
- Direct UVR has the potential to harm living things. For people, UVR exposure can cause skin cancers, cataracts of the eye, and immune dysfunction. At the same time, our bodies need some UV radiation to produce Vitamin D.
- UVR can alter biogeochemical cycles, air quality, and the potency of pests and pathogens.

HOW ?

An urban radiation monitoring station sits on the roof of a water surge tower at the Ashburton Water Filtration Plant, near the Gwynns Falls Watershed. The elevated site faces open sky, which allows measurement of UV before it scatters through the air.



Map of Gwynns Falls Watershed (thin solid line), Baltimore city (squared thick line) and county (irregular thick line) boundaries. The BES meteorological and radiation stations, the Maryland Science Center and Baltimore-Washington Airport are shown for reference.

What the data can do

In combination with other data gathering stations around Maryland, BES's UV radiation study helps make sense of how UV affects earth processes and life itself.

UV data from the BES monitoring station allows comparisons between UV high in the sky and at ground level, to show how surfaces in the city landscape (like trees, buildings, and air particles) scatter UV radiation.

Looking at data from other studies in BES, we can investigate how UV interacts with different elements of the urban ecosystem. For instance, how might UV intensity influence the spread of exotic species - can one plant outcompete another depending on UV levels?

For educational purposes, numbers from the UV radiation monitoring station will soon be available as they are measured. Local educators can use current data to show students how UV immediately affects weather conditions.



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