Beneficial Uses of TRI Data
Wednesday, 1:00-2:10 p.m.
Atrium Ballroom

The U.S. Geological Survey's Sediment-bound Contaminant Resiliency and Response Strategy: A Tiered Multi-metric Approach to Environmental Health and Hazards in the Northeastern U.S.

Kimberly Aquino, Presenter

Coastal communities are uniquely vulnerable to sea-level rise and severe storms such as hurricanes. These events enhance the dispersion and concentration of natural and anthropogenic chemicals and pathogenic microorganisms, which could adversely impact the health and resilience of coastal communities and ecosystems in coming years. The U.S. Geological Survey (USGS) has developed the Sediment-bound Contaminant Resiliency and Response (SCoRR) strategy to define baseline and post-event sediment-bound environmental health stressors (see toxics.usgs.gov/scorr). As part of this effort, a decision support tool was developed to identify and prioritize candidate stations vulnerable to contaminants that may be mobilized by coastal storms. The support tool is designed to accommodate a broad array of geologic, land-use, and climatic variables and utilizes EPA's Toxic Release Inventory (TRI) and Facility Registry Service (FRS) along with historic storm vulnerability data to define contaminant sources and storm vulnerabilities.

Over 5,000 stations along the northeast coast were evaluated, from which a subset (~250) was sampled to define the baseline mixtures of environmental health (EH) stressors present in sediments. Data from this effort will be used to document baseline and post-event changes in EH stressors present in sediments, and establish metrics to quantify changes in coastal resilience associated with sediment-bound contaminants. By employing a flexible and adaptable strategy built upon publically available data, the method can readily be applied to other site selection or landscape evaluation efforts. Integration of this information provides a means to better assess the baseline status of a complex system and the significance of changes in contaminant hazards due to storm-induced (episodic) and sea-level rise (incremental) disturbances. This talk describes the construction of the SCoRR decision support tool, with a focus on the EPA data layers used, and how future USGS-EPA collaborative efforts could help increase contaminant awareness and support coastal resiliency efforts.

The TRI+AD Project: Using the TRI with Additional Environmental Indicators to Enhance Use and Understanding

Thomas Cook and Margaret Helms, Presenters

As part of the TRI University Challenge, we sought to develop and pilot a state-wide environmental health indicator database (TRI+AD) along with a series of user-friendly

tools, case-studies and county profiles to help increase use and understanding of the TRI and related environmental health data. The Toxics Release Inventory + Additional Data (TRI+AD) is designed to encourage use of the TRI through making county-level data more readily accessible, providing case studies demonstrating the utility of an integrated indicator database and simplifying the process of navigating and integrating multiple sources data. Methods: As a first step, a broad range of environmental indicators were assessed using uniform criteria for their extent of geographic coverage, frequency of updating (time-relevance), reliability and validity, including any noted time-gaps, lags or changes in reporting over time. Initial indicators were selected based on their relevance to the broader themes of air, land, water and pollution prevention corresponding to those of the TRI. A second set of indicators, some specific to Pennsylvania, were included if they met criteria for spatial resolution, temporal and geographic overlap.

Sources of additional data included the Pennsylvania DEP, the Pennsylvania Department of Health, the CDC, Keep Pennsylvania Beautiful and the USGS among others. Results: Our team, including undergraduate students, developed two case studies built upon a pilot, integrated database capturing over 60 measures from the TRI and environmental databases. We also developed county profiles with 30+ key indicators for all 67 counties. Conclusions: Using the TRI as part of a broader environmental health indicator database at the county-level is both possible and practical even with limited resources. This project seeks to encourage other locations to use the TRI in conjunction with other available indicators to help enhance public understanding of the use and limitations of environmental data and the TRI in education and research.

GIS Mapping of Chemical Transfers Using the Toxics Release Inventory

Joseph Coscia and Ryne Yarger, Presenters

Using Geographical Information Systems (GIS) technology, EPA's Toxics Release Inventory (TRI) Program has developed unprecedented capabilities for users of TRI data to select, map, and query transfers of toxic chemicals to or from facilities. Locational queries can be based on tribal lands, zip code locality, city, county and other "user defined" geographical areas. Once completed the general public, for the first time, will be able to access (online) and execute precise mapping and querying of toxic chemical waste transfers to or from facilities from the data compiled in Envirofacts using state-of-the-art GIS technology. This capability greatly enhances the utility of the TRI database regarding community right-to-know.

EPA's National Air Toxics Assessment and the Role of TRI Data

Madeleine Strum, Presenter

In December 2015, EPA released the National Air Toxics Assessment (NATA) for the year 2011. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing

comprehensive evaluation of air toxics in the U.S. EPA developed the NATA as a state-of-the-science screening tool for State/Local/Tribal (S/L/T) Agencies and EPA to prioritize pollutants, emission sources and locations of interest for further study in order to gain a better understanding of risks. The NATA analysis uses emissions from the National Emission Inventory (NEI), a comprehensive inventory of criteria pollutants and air toxics across stationary, mobile and natural emission sources that is developed triennially using data submitted to EPA by (S/L/T) Agencies. States are required to submit criteria pollutants via the Air Emissions Reporting Rule. The air toxics data are submitted on a voluntary basis, thus certain state/local/tribal inventories are more comprehensive than others. TRI data as well as other augmentation methods are used to supplement the S/L/T data to make the NEI more complete. We will present an overview of the NATA process and results, and discuss more specifically how the TRI data are incorporated into the NEI, and challenges of using these data for NATA.