

### **ORD Research Addresses Complex Environmental Challenges**

The Office of Research and Development (ORD) has over 1200 scientists and engineers conducting research on stressors to air, land and water. Research needs are identified in partnership with EPA regions, program offices, states, tribes and communities and are described in strategic research plans. ORD also receives requests to provide short-term, technical expertise for problems outside research plans.

#### ecurring Tonics in 2018 Superfund Sites

Superfund Sites, the most frequently cited topic, received more than 3,000 hours of staff support. Superfund sites include several where mining and smelting activities generated legacy contamination. Technology transfer; analysis of soil and water; bioavailability of metals and remediation options were recurring issues. The following sites were frequently referenced:

- Bonita Peak Mining CO, ID, MT;
- Harbor Island Superfund, Seattle, WA;
- Lane Marsh Superfund, Coeur d'Alene, ID



#### **Recurring Topics in 2018** Wildfire Smoke Inhalation in the – West Prompted Calls to EPA/ORD

EPA/ORD staff responded to wildfire smoke with ways to minimize exposure. Specific actions were offered for health professionals and the public. Availability of predictive tools, use of protective equipment, and utility of air quality indices were promoted.

- EPA/ORD staff effectively communicated approaches to reduce health impacts in fire management, and encouraged collaboration among states and Federal Agencies to communicate risks to public health.
- University, grade school and citizen inquirers were schooled on air sensors and contents of the air sensor toolbox to monitor air quality.



TechTracker is an on-line tool created to record the regulatory, programmatic, and scientific support provided by ORD experts to partners and stakeholders outside of ORD's formal research program. Data are entered on-line when service is provided. Before TechTracker, staff time as subject matter experts remained undocumented.

# **TechTracker Tool Documents Cooperative Federalism at the EPA**

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 These actions help reduce impacts of smoke on health and promote compliance with air-quality standards.

#### In 2018 a New Tool—TechTracker—was Launched to Document Technical Support Provided by ORD Staff

## **Cooperative Federalism is a Contemporary Approach for Environmental Protection**

With publication of the FY 2018-2022 EPA Strategic Plan the EPA endorsed cooperative federalism "to improve environmental protection through... enhanced collaboration with local, state, tribal, and federal partners... "Increasingly ORD works with partners and stakeholders to find causes and solutions to environmental problems.

# ecurrina Tonics in 2018 Per- and Polyfluoroalkyl Substances (PFAS)

in Drinking Water Generated Queries ORD staff recorded more than 1500 hours of technical assistance on Per- and Polyfluoroalky Substances (PFAS). Inquiries addressed risk characterization, detection and sampling methods, and remediation options for PFAS. Assistance was given to all 10 EPA Regions, many Program Offices, federal agencies and international bodies, as well as many state and local governments. North Carolina and Michigan were assisted as they assessed hazards and developed sampling and remediation plans at contaminated sites.

#### **Recurring Topics in 2018** Harmful Algal Blooms: An Important Seasonal Stressor

Harmful algal blooms (HABs) rank with wildfires and beach closings as important seasonal threats to health and the environment. Warm temperatures and nutrient-enriched waters create ideal conditions for algal blooms and potential exposure to neurotoxins: HABs generated requests from 36 states, ten cities and counties, five Federal Agencies,

- and many tribes.
- Information on use of remote sensing imagery to locate blooms from satellite, aircraft and drones was proffered. The Agency assisted with use of field algal toxin sensors and kits to measure cyanotoxins plus effective treatments to manage HABs and mitigate potential effects.



#### HCURRING I ODICS I -Recreational Beaches in Michigan:

**An Effective Proving Ground for** 

qPCR *E.coli* Method EPA/ORD scientists collaborated with the Michigan Department of Environmental Quality and others to implement EPA Draft Method C to detect *E.coli* in recreational waters. This new, rapid qPCR method is intended to help reduce gastroenteritis incidence among beach users, especially children, as well as to avoid unnecessary beach closings. ORD scientists fielded numerous questions on implementation of the new method.

# Real-Time Environmental Challenges are Showcased by TechTracker Data

More than half of the technical support requests received were in the following areas: (1) Ecology/Environment

- (2) Chemicals
- (3) Human Health

(4) Biology Experts were most often asked to review documents and provide technical information. Requests were dominated by the 10 EPA Regions, all the states and territories, plus more than 35 Federal Agencies including the DOT, FDA, GAO, NASA, NIH, USGS, USDA, Congress, the White House, and branches of the U.S. military (see footnote \*).



# The TechTracker Data Exemplify Cooperative Federalism in Action

TechTracker was launched in FY18. The resulting database shows high demand for on-call scientific and technical expertise from EPA Program Offices and Regions and from other stakeholders in towns, states, tribes, foreign governments and international organizations.

- During this 12-month period, 473 scientists recorded 43.000 hours of service.
- These entries provide a window into the variety, magnitude, and urgency of challenges faced by those responsible for protection of public health and the environment.
- The data reflect an ongoing demand for access to ORD expertise in environmental and health science



The views expressed in this poster are those of the authors and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency."









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