Message

From: Daguillard, Robert [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BBE9682B940C4F2C90732E4D37355DD4-DAGUILLARD,]
Sent: 8/2/2017 7:17:06 PM
To: AWPS News Ex. 6
CC: Press [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b293283291dc44e0b5d1c36be9281d8a-Press]
Subject: RE: Subject: MEDIA INQUIRY - AWPS News. Remote Water Monitoring. DDL: 6/2/17 @ 1 PM

Kris, with apologies for the delay – and for attribution to the agency, please:

1.EPA researchers are developing and using new technologies – including satellite data, portable and ground remote sensors, etc – to assess the water quality for coastal oceans, estuaries, and inland waters (lakes and reservoirs, for example). There is a multi-agency project, Cyanobacteria Assessment network (CyAN), which includes EPA, NASA, NOAA, and USGS, aimed at developing an early warning indicator system using historical and current satellite data to detect algal blooms in U.S. freshwater systems. Currently, most of the data is available retrospectively. Through the CyAN project, researchers are working on making data available real-time through Android mobile application and EPA's EnviroAtlas.

EPA, and other government agencies, collaborated with multiple public and private organizations to develop and pilot sensor technologies for measuring water quality parameters, including algal toxins, arsenic, E. Coli, and nitrogen and phosphorus.
EPA developed a demonstration project for state and local organizations to deploy the next generation of lower-cost sensors for nitrogen and phosphorus, and will include enabling technologies to better support the needs of users in state and local government.
EPA's Village Blue project, a partnership among EPA, USGS, and stakeholders in Baltimore, provides state-of-the-art data visualization and community outreach for translating real-time water sensor and weather data to increase public awareness about efforts to improve water quality in Baltimore Harbor, which can be applied to other communities across the country.
EPA's National Aquatic Resource Surveys (NARS) are collaborative programs among EPA, states and tribes designed to assess the quality of our coastal waters, lakes & reservoirs, rivers & streams, and wetlands using a statistical survey design. The data is available for download, however, it's not in real time. These surveys provide a snapshot of the overall condition of our nation's water bodies.

a. Sources: Monitoring and Remote Sensing - https://www.epa.gov/water-research/monitoring-remote-sensing
b. CyAN Project - https://www.epa.gov/water-research/cyanobacteria-assessment-network-cyan
c. EPA's EnviroAtlas - https://www.epa.gov/enviroatlas
d. EPA's NARS - https://www.epa.gov/national-aquatic-resource-surveys
e. EPA Challenges and Prizes - https://www.epa.gov/innovation/epa-challenges-prizes
f. Village Blue - https://www.epa.gov/newsreleases/village-blue-brings-real-time-water-quality-monitoring-data-baltimore

Use of remote sensing is one element or tool used by federal, state and other organizations to monitoring and assess the condition of aquatic resources. The National Water Quality Monitoring Council, co-chaired by EPA and USGS, recently published a fact sheet describing the complementary roles of key monitoring activities including statistically representative surveys, intensive targeted monitoring, and remote sensing. The NWQMC comprised of federal, state and non-governmental organizations oversees the implementation of a framework to advance monitoring. https://acwi.gov/monitoring/

Remote sensing at its most basic is collection of photographs from airplanes and satellites, but includes collection and interpretation of much more sophisticated images which include color, light, radiation, and topographic relief. Through development of translation algorithms and use of field monitoring to ground-truth the algorithms the images are used to generate maps of elevation and land cover, temperature, vegetation, soil moisture. Its application to water resources is limited by the resolution of image and the resulting algorithms. Current applications have been focused on larger waterbodies unobscured by tree cover such as coastal waters and large lakes.

2. There is no single program for communities to request local water quality monitoring. Members of a community may of course report water quality concerns such as fish kills, oil spills, etc. to their county, city, or state environmental department for follow up action. In addition, many citizens belong to either statewide, regional, national, or local volunteer monitoring organizations and nonprofit environmental advocacy groups that train them in water quality monitoring methods and collect their monitoring data. There are currently about 1,700 of these organizations across the U.S. Their monitoring data are often shared with the volunteers and the public via meetings and newsletters, and are generally available online on the websites of the individual organizations, who may also produce reports for the public. In some cases, these data are also reported to the EPA's publicly available water database, the Water Quality Exchange, although for the most part data are managed and shared by each organization independently. These organizations help the public understand ambient water quality issues and act to protect their local water resources (primarily rivers and streams, lakes, and bays). Their data can be used to supplement the data collected by governmental water quality and natural resource agencies. Learn more about volunteer monitoring at http://volunteermonitoring.org/.

EPA and many other federal agencies support crowdsourcing and citizen science to engage citizens in environmental research and in learning about and protecting the environment. Find out more at https://www.epa.gov/citizen-science and https://www.citizenscience.gov/

3. There are a number of national and international bodies facilitating collaboration and advancement of water quality monitoring. The Group in Earth Observations is an international body working in the area of remote sensing for a wide range of applications. The NWQMC focuses on water quality monitoring using the full range of tools to support national, state and local water quality decisions. EPA with its key role in providing CWA funding and oversight through state and tribal assistance grants, promotes a cost effective strategy that includes using statistically representative surveys to track broad scale national, regional and state water quality conditions and intensive targeted monitoring to address priority local water quality problems. EPA seeks to engage states, tribes, and citizens to use the range of monitoring tools cost effectively to address water quality protection and restoration goals.

4. EPA encourages youth involvement in science in a number of ways, including STEM outreach events, our annual P3 competition, recognizing youth science at the Intel International Science and Engineering Fair, just to name a few. In addition, EPA promotes citizen science for water monitoring in many communities. As an example, in EPA's Region 1 (New England) EPA scientists and employees work with citizen scientists, the general public, and trained water professionals to identify and monitor cyanobacteria (those that cause harmful algal blooms and impact water quality) through a program called the Cyanobacteria Monitoring Collaborative. The Collaborative engages the public to report when and where they see potential cyanobacteria blooms. Then trained citizen scientists and professional water quality managers monitor and track those blooms so that they can eventually understand when and where cyanobacteria species occur.

In addition, EPA collaborates with technology clusters around the country through the Environmental Technology Innovation Clusters program. The clusters are regional groupings of businesses, local/state/tribal/federal government, research institutions, and other organizations focused on innovative technologies for clean air or clean water. In water clusters, a major focus has been on cost-effective monitoring technologies, specifically for watersheds and drinking water systems.

a. Cyanobacteria Monitoring Collaborative - https://cyanos.org/
b. EPA's P3 Program (People, Prosperity, & the Planet) - https://www.epa.gov/P3
c. Intel ISEF - https://student.societyforscience.org/intel-isef?mode=topic&context=6
This year's Intel ISEF EPA winner: https://www.epa.gov/newsreleases/portland-students-plans-disrupt-urban-flooding-win-epa-award-worlds-largest-high-school
g. EPA's Environmental Technology Innovation Clusters - https://www.epa.gov/clusters-program

Many of the volunteer monitoring organizations described above work with local youth in schools and clubs such as Scouts and 4-H, introducing them to science concepts and engaging them in environmental education. As examples, visit http://www.alabamawaterwatch.org/ (Alabama Water Watch); http://www.fairfaxcounty.gov/nvswcd/monitoring.htm (Fairfax County volunteer monitoring); https://anshome.org/water-quality-monitoring/ (Audubon Naturalist Society volunteer monitoring); and http://www.mostreamteam.org/ (Missouri Stream Team).

Project WET (Water Education for Teachers), based in Montana, advocates for and supports water education both within the US and internationally. Visit http://www.projectwet.org/ for more information. Another program that involves youth both in the U.S. and internationally in water monitoring is the EarthEcho Water Challenge, at http://www.worldwatermonitoringday.org/.

Environment, including monitoring, is one area of work for **AmeriCorps,** a program that engages more than 80,000 Americans in intensive service each year at 21,600 unique sites including nonprofits, schools, public agencies, and community and faith-based groups across the country. AmeriCorps State and National supports a wide range of local service programs that engage thousands of Americans in intensive community service each year. We provide grants to a network of local and national organizations and agencies committed to using national service to address critical community needs in education, public safety, health, and the environment.

The U.S. Youth Conservation Corps (YCC) is a USDA Forest Service project. It is a summer youth employment program that engages young people, ages 15 to 18, in meaningful work experiences on national parks, forests, wildlife refuges, and fish hatcheries. Youth are engaged in fun, exciting work projects designed to develop an ethic of environmental stewardship and civic responsibility such as include work such as building and repairing trails; preserving and repairing historic building; removing invasive species; helping with wildlife and land research; and leading environmental education.

The **Earth Conservation Corps** is a local example of an organization focused on youth development and environmental restoration in Washington DC, along the banks of the Anacostia River.

Regards, R.

From: AWPS News [mailto Ex. 6
Sent: Wednesday, June 07, 2017 9:54 AM
To: Daguillard, Robert <Daguillard.Robert@epa.gov>
Subject: Re: Subject: MEDIA INQUIRY - AWPS News. Remote Water Monitoring. DDL: 6/2/17 @ 1 PM

Hi Robert-
Okay-
Thanks for keeping me and my issue research in mind!

FISA hearing today.. At the moment, data/ electron streams seem quite some distance from idyllic, calming sense of nature's gorgeous streams, waterways, oceans, lakes..

K-
Best Regards,
Kristina ('Kris') Anderson
White House & Capitol Hill, Reporter,
Executive Editor & Photog
A.W.P.S. News
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- not a profit-making venture (yet)

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On Jun 7, 2017, at 7:48 AM, Daguillard, Robert <Daguillard.Robert@epa.gov> wrote:

> Good morning Kris,
>
> Let's do this: Why don't you check back with me if, say, early next week unless I've gotten back to you by then?
>
> I'll go with the above game plan unless I hear otherwise from you.
>
> Regards, R.
>
> ---
>
> **From:** AWPS News [mailto Ex. 6
> **Sent:** Tuesday, June 06, 2017 5:13 PM
> **To:** Daguillard, Robert <Daguillard.Robert@epa.gov>
> **Subject:** Re: Subject: MEDIA INQUIRY - AWPS News. Remote Water Monitoring. DDL: 6/2/17 @ 1 PM
>
> Please keep my interest on your list of folks researching these issues.
>
> The infrastructure discussion has already started. But how far it goes (how fast & where) in this Administration are questions outside my scope of factual knowledge or even divination.
>
> Best Regards,
> Kristina ('Kris') Anderson
> White House & Capitol Hill, Reporter,
> Executive Editor & Photog
> A.W.P.S. News
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> - not a profit-making venture (yet)

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On Jun 6, 2017, at 4:03 PM, Daguillard, Robert <Daguillard.Robert@epa.gov> wrote:

> Thanks, Kris. I understand you're in the research stage, but what's the latest we can get back to you with a response?
>
> Regards, R.
>
> **From:** AWPS News [mailto: **Ex. 6**
> **Sent:** Tuesday, June 06, 2017 4:01 PM
> **To:** Daguillard, Robert <Daguillard.Robert@epa.gov>
> **Subject:** Re: Subject: MEDIA INQUIRY - AWPS News. Remote Water Monitoring. DDL: 6/2/17 @ 1 PM
>
> Hi Robert-
>
> I'm working on background right now so .. yes, still very much interested in this issue. It could be a good time to push for smart tech, monitoring in infrastructure projects. So I'd like to bring this factual information to greater public attention.
>
> Can meet in person if that is a possibility (in /near Washington, DC).
>
> Best Regards,
> Kristina ('Kris') Anderson
> White House & Capitol Hill, Reporter,
> Executive Editor & Photog
> A.W.P.S. News
> **Ex. 6**

- not a profit-making venture (yet)

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On Jun 6, 2017, at 2:51 PM, Daguillard, Robert <Daguillard.Robert@epa.gov> wrote:

> Good afternoon Kris,
>
> With apologies for the delay, are you still waiting for an EPA response to your questions on water quality research?
>
> Thanks, R.
>
> Robert Daguillard
> Office of Media Relations
> U.S. Environmental Protection Agency
> Washington, DC
> +1 (202) 564-6618 (O)
> **Ex. 6** (M)