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## PRP survey

The *Florida Specifier* and its environmental industry contributors have prepared a survey to help support improvements in the efficiency of the state petroleum cleanup program. See Page 9 for more information.

## Springs study 7

The St. Johns River Water Management District concluded a three-year investigation into the health of its springs. The efforts was undertaken to identifying the most effective restoration and protection actions.

## Environmental law, policy 11

John Powell provides insight into 25 common themes that crosscut environmental law and policy that environmental industry professionals should be aware of.

## Blue Water Audit 14

Robert Knight discusses an initiative to measure and track our aquifer footprint—the amount of groundwater we use from the Floridan Aquifer and our contribution to the nitrate-nitrogen pollutant load to the aquifer.

## Brevard septic tank ban 17

Brevard County Commissioners approved a five-month moratorium on traditional septic tank installations affecting the county's barrier islands, Merritt Island and a 50-meter-wide strip along the west shore of the Indian River Lagoon and its tributaries.

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## Got a story lead?

Got an idea for a story? Like to submit a column for consideration? Fire when ready. And don't forget to fill us in on your organization's new people and programs, projects and technologies—anything of interest to environmental professionals in Florida. Send to P.O. Box 2175, Goldenrod, FL 32733. Call us at (407) 671-7777; fax us at (321) 972-8937, or email [mreast@enviro-net.com](mailto:mreast@enviro-net.com).

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## EF report: Continued pollution releases plague waterways

By **BLANCHE HARDY, PG**

The Environment Florida Research & Policy Center released "Troubled Waters 2018 - Industrial Pollution Still Threatens America's Waterways" earlier this spring.

Florida is among the top ten states for exceedances reported by major industrial facilities in the study period from January, 2016, to September, 2017.

The report noted that, over the 21-month period, major industrial facilities across the country released pollution that exceeded the levels allowed under their Clean Water Act permits more than 8,100 times.

Often, the report noted, the polluters faced no fines or penalties.

"Troubled Waters shows that polluters, who are spewing everything from fecal matter and heavy metals to oil and grease into the water, rarely face penalties," said Shannon Blankinship, advocacy director for St. Johns Riverkeeper.

The report recommended several measures to ensure a higher level of enforcement to protect our waterways.

It cautioned that numerous policies and actions of the Trump administration including extensive planned EPA budget cuts, a hands-off approach to enforcement and the proposed repeal of the 2015 Clean Water Rule threaten to



Photo courtesy of U.S. Environmental Protection Agency Region 4

Technician collects soil sample at residential property adjacent to Jacksonville's Fairfax Street Wood Treaters Superfund site. The EPA will use sampling data to complete its remedial plan design, hopefully by the end of the year. See story below.

**EF REPORT**  
Continued on Page 19

## Sampling begins, cleanup plan expected soon at Jacksonville Superfund site

By **ROY LAUGHLIN**

Earlier this spring, technicians from Versar Inc. collected soil samples from residential properties around the former Fairfax Street Wood Treaters property in Jacksonville.

The sampling results will show the extent of off-site soil contamination by wood treatment chemicals as well as the depth of that contamination.

The chemical analysis of the samples will advise a planned U.S. En-

vironmental Protection Agency Superfund cleanup of both the treatment facility and the residential neighborhood adjacent to it.

The sampling is expected to indicate that up to 50 residential lots could require contaminated soil removal and replacement with clean soil.

The sampling activity concluded as scheduled, said Dawn Harris-Young, a U.S. Environmental Protection Agency EPA Region 4 spokesperson.

She said the agency expects to per-

form another round of sampling this summer to evaluate properties whose owners have not yet approved agency access for sampling.

She said additional sampling may also be needed to close data gaps that become apparent when analysis results from current sampling are examined.

Fairfax Street Wood Treaters operated from 1980 to 2010 on a 12-acre industrial site surrounded by a residential neighborhood.

The factory-treated wood products that included power poles, pilings, boards and siding.

In 2010, company bankruptcy led to the factory's closure.

When Wood Treaters closed, EPA began immediate short term cleanup action to remove a large volume of waste chemicals stored on site and contaminated soil at unpaved areas, and then secured the site.

In 2011, EPA removed tons of contaminated soil and 150,000 gallons of contaminated water in a pond at the Suzie E. Tolbert Elementary School playground that borders one side of the closed plant.

At that time, EPA also removed contaminated soil from three adjacent residential properties.

These actions attempted to address

## PRP updates Low Score Site Initiative work order process

Staff report

As of May 1, the Florida Department of Environmental Protection's Petroleum Restoration Program updated its Low Score Site Initiative work order template. The template, a multi-page Microsoft Excel file, can be downloaded from the department's LSSI information and documents page.

In another procedural change, PRP is now accepting LSSI work order invoices electronically.

The department requires an original signature or certified signature for all signature blocks in work order invoices.

Contractors may submit electronic

invoices to PRP's accounting mailbox at [lssi\\_invoices@floridadep.gov](mailto:lssi_invoices@floridadep.gov).

In announcing these changes, a PRP press release advised that LSSI's work order terms and conditions have been updated to "closely mirror the terms and conditions of the department's Agency Term Contract to more accurately reflect performance requirements and metrics."

Important revisions include Section 2, Additional Terms and Conditions; Section 3, Retainage and Forfeiture of Retainage; Section 4, Financial Consequences for Unsatisfactory Performance; and Exhibit A, Public Records Requirements.

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# EPA awards grants to assess, clean up brownfield sites in Florida

## Staff report

Five Florida communities will benefit from \$1.2 million awarded by the U.S. Environmental Protection Agency as brownfield grants to clean up blighted properties.

The cities of Ocala and Pahokee will each receive \$300,000 divided equally between identifying hazardous substances and petroleum contamination. The grants will pay for site assessments and the development of cleanup plans.

In addition, the Southwest Florida Regional Planning Council was awarded \$300,000 for hazardous substances and \$300,000 for petroleum site assessments and cleanup plans development. Their work will be conducted in the communities of Moore Haven, Clewiston and Immokalee.

This year, EPA Region 4 tied with Region 5 for the largest number of grants received.

Of the \$54.3 million of total federal support for local brownfield projects, Region 4 received \$8.9 million.

Also notable is that all the Florida awardees are non-urban communities and two are agricultural.

This may reflect a statement made by EPA Administrator Scott Pruitt to more broadly award agency funding to economically-disadvantaged rural communities.

**Senate approves EPA second in command.** After more than 15 months with the number two EPA position vacant, the Senate confirmed Andrew Wheeler as deputy administrator in a 53-45 vote.

Wheeler, a former coal industry lobbyist, played a significant role in blocking coal mining and coal combustion regulations that help protect human health and the environment.

He accompanied Murray Energy Chairman Bob Murray in a series of closed-door meetings whose aim was to nullify environmental regulations on coal mines.

Murray Energy was one of Wheeler's major clients for whom lobbying efforts were largely successful.

Wheeler worked at the EPA early in his career and later served as the Republican chief of staff for the Senate Environment and Public Works Committee.

For the past nine years, he has been a congressional lobbyist.

One senator critical of Wheeler's appointment expressed concern that he might put saving the coal industry ahead of protecting public health and the environment.

Wheeler has publicly expressed skepticism of global climate change and the rigorous science behind it that identifies carbon dioxide emissions from fossil fuel as a contributing cause.

Ordinarily, the EPA deputy administrator's appointment would not be so significant. But the increasing potential of embattled EPA Administrator Scott Pruitt's voluntary or involuntary departure from the agency makes it clear that his replacement would mean little or nothing for a return to the norms of an EPA focused on human health and environmental protection.

**Wet weather reg updates for WWTPs.** In April, EPA proposed a rule to ease restrictions on wastewater treatment plant "blending."

When precipitation inflows exceed treatment plant capacity, some of the excess flow is routed around the secondary treatment units, and then blended back with the finished secondary treatment flow and disinfected before release. This is termed "blending."

Blending reduces the quality of waste-

water effluent. Its primary justification is to prevent plant shutdown and treatment plant damage during peak flow events.

The press release announcing the rule-making noted that "EPA is taking action on a new rule that will give municipalities much-needed clarity on blending at wastewater treatment plants. We look forward to ... a rule that offers a common-sense approach to protecting public health and safety managing our nation's wastewater."

**Rural water systems funded.** The EPA announced more than \$25 million in Safe Drinking Water Act grant funding to assist small drinking water systems and private well owners. The systems are primarily in rural areas.

The three organizations that received funding under the program during the last cycle were named again.

The National Rural Water Association will receive \$8.1 million. This funding provides training and technical assistance for small public water systems to help meet the requirements of the SDWA.

The Rural Community Assistance Partnership will receive \$8.1 to be used for training and technical assistance to meet SDWA compliance by small public water systems.

Finally, the Environmental Finance Center Network, managed by the University of North Carolina at Chapel Hill, will receive \$3.6 million that will help small drinking water systems improve financial and managerial capacity to provide safe drinking water.

In announcing the grants, the agency noted that 97 percent of the country's 150,000 public water systems serve fewer than 10,000 people, and 80 percent serve fewer than 500 people.

The funding helps solve some of the unique challenges in providing reliable drinking water services that meet federal and state regulations.

**Additional support for larger drinking water systems.** The EPA will also begin another round of funding under the Water Infrastructure Finance and Innovation Act of 2014. Congress appropriated \$63 million in the recently passed Consolidated Appropriations Act.

According to an EPA press release, leveraging this funding with private capital and other funding sources could provide as much as \$5.5 billion to leverage over \$11 billion in water infrastructure projects.

This program at the time of its inception in 2014 was intended to fund and guarantee loans for water infrastructure for "regionally and nationally significant projects."

That includes drinking water treatment and distribution projects; wastewater conveyance and treatment projects; enhanced energy efficiency projects in those facilities; desalination, aquifer recharge, alternative water supply and water recycling projects; and drought prevention, reduction or mitigation projects.

**Environmental justice app.** The EPA's mobile version of EJSCREEN, an environmental justice screening and mapping tool, is now available.

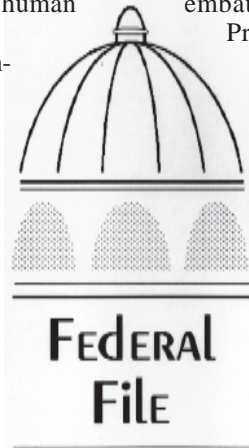
Through its mobile app, the EPA wants to make accessing EJSCREEN easier for those working on the ground in disadvantaged communities.

The app offers the same functions and features as the online version including location selection, access to reports and mapping for environmental demographic and EJ indicators. In the mobile version, the results are in a more compact and accessible format.

The online version, intended to be used with desktop and laptop computers, is one of the EPA's "most regularly used tools."


Since its release in 2015, the agency found that more than 50 percent of its users access the tool from a mobile device.

The EPA's mobile version includes features that make it useful on mobile devices.




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## Fort Myers announces plans for sludge site cleanup

### Staff report

The city of Fort Myers released plans to remove and dispose of lime sludge contamination at its Dunbar site.

During the 1960s, the city disposed of roughly 20,000 cubic yards of lime residual on the property. They now intend to remove all the sludge from the 3.77-acre block, including both city and privately owned properties.

Part of the proposed removal centers on the discovery of arsenic on the site in 2007 and in groundwater in 2012. The city's lime residual removal plan requires soil samples to be tested for arsenic as the work progresses.

Source removal excavation monitoring and confirmatory sampling will be conducted to characterize the materials removed and to assure that the removal of lime residual is complete.

Sludge removal is scheduled to begin in November and is expected to be complete by February.

If possible, the excavated material could be reused in the production of concrete, ceramics and hydrated lime pellets.

**New reactors at Turkey Point.** The U.S. Nuclear Regulatory Commission approved two new nuclear reactors for Florida Power & Light's Turkey Point nuclear plant near Homestead.

The NRC authorized the issuance of a combined license for FPL's proposed 2,200-megawatt Turkey Point 6 and 7 this spring.

FPL has pursued adding two additional reactors to their Turkey Point Nuclear Generating Station south of Miami since 2009. The two existing on-site reactors were built in 1972 and 1973.

The new reactors could come on-line by 2031 and are anticipated to cost roughly \$21.8 billion. The licenses allow FPL to build and operate two Westinghouse AP1000 reactors at the site.

The proposed reactors are the same units left incomplete at the V.C. Summer Nuclear Generating Station in South Carolina as Westinghouse filed for bankruptcy protection in 2017.

AP 1000s are also being installed at a project in Georgia. FPL is monitoring their progress closely.

**Jags roll out plan for shipyard redevelopment.** The Jacksonville Jaguars are planning a new 4.25-million-square-foot, \$2.5 billion "Stadium District" development starting near the football stadium and eventually extending to the St. Johns River.

When complete, the development is anticipated to include hotel, office, residential and convention space.

The development's initial focus is "Lot J," a property formerly occupied by heavy-industrial users including shipyards and tank farms. The lot is between the Jaguars' stadium and Gator Bowl Boulevard.

It is a known petroleum contamination site with uses already restricted by the city of Jacksonville.

Development of the site for recreation or residential use would require contaminant removal or containment. The site is currently paved, which isolates contaminated soils from public exposure.

The Jaguars selected The Cordish Companies to partner with on the project. Cordish has engaged in similar stadium-oriented projects worldwide. They are attracted to Jacksonville for the "walkability" of the proposed project.

Cordish officials have addressed contaminated site development in the past and indicated they are aware of the obstacles.

**FPL solar.** Florida Power & Light Co. brought four new solar plants on line this spring bringing the utility's total number of solar plants in Florida to 14.

Each of the new plants cost \$110 million and each can produce 74.5 megawatts of electricity. Combined, the four new plants generate enough electricity to power approximately 60,000 homes.

At near 930-megawatt capacity, FPL is

the largest solar power generator in Florida.

"We are committed to advancing affordable clean energy—the right way," said Eric Silagy, FPL president and CEO. "We are building some of the lowest-cost universal solar in the country, which keeps costs down for our customers."

"The completion of these newest plants demonstrates that it is possible to be both clean and affordable, bringing numerous economic and environmental benefits to our customers and the communities we serve."

The new plants are FPL Barefoot Bay Solar Energy Center in Brevard County, FPL Loggerhead Solar Energy Center in St. Lucie County, FPL Hammock Solar Energy Center in Hendry County, and FPL Blue Cypress Solar Energy Center in Indian River County.

The company expects to install more than 10 million solar panels before 2023 in an effort to reduce its carbon footprint.

**Environmentally friendly courses.** University of Florida Institute of Food and Agricultural Sciences scientists are building a template for golf course best management practices that will help golf course

superintendents nationwide make their links more environmentally sound.

To create the template, the IFAS team studied BMP documents from around the country and compiled the content into a central source.

They unveiled a web tool this year that allows golf course superintendents to clone their BMP documents and tailor them to their facilities.

Bryan Unruh, a professor of environmental horticulture with IFAS, is leading the team.

"We believe our work will prove useful in giving golf course superintendents the tools they need to help them ensure they preserve the environment," Unruh said.

The guidelines cover everything from planning, design and construction of the courses to water quality and quantity. They also cover nutrition, integrated pest management, pollinator protection and energy management.

**Company news.** Global design firm Stantec opened its 22nd Florida location in the newly built Wickham Commons Executive Suites in Melbourne on Florida's Space Coast.

**NOTES**  
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## Florida Notes



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# SWFWMD commits \$25M to Polk water cooperative for supply projects

## Staff report

In late April, the Southwest Florida Water Management District Governing Board approved \$25 million to support three water supply projects planned by the Polk Regional Water Cooperative.

The board agreed to budget \$5 million each year for the next five years so that funding will be available when the three projects currently in the planning stage begin construction.

The 15 government entities that comprise the PRWC have agreed to pay \$23 million for the three water supply projects' planning stages.

The projects are the West Polk County Lower Floridan Aquifer Wellfield project near Lakeland, the Peace Creek Integrated Water Supply project near Winter Haven and the Southeast Wellfield project near Frostproof.

The PRWC expects the projects to prevent a possible 46.5-million-gallons-a-day water deficit in Polk County by 2035 in the absence of new water supply development.

**Gulf Breeze WWTP expansion.** The Gulf Breeze City Council unanimously approved a recommendation to upgrade

wastewater treatment facilities at its Tiger Point plant. The South Santa Rosa Utility System Board, which made the recommendation, said the upgrades and capacity expansion must be operational by 2021.

An expected population increase is driving the need for expansion to treat an additional 1.5 million gallons a day.

The authority would like to provide design and conceptual cost estimates to the Florida Department of Environmental Protection by July 31.

Gulf Breeze authorities expect to fund the \$17.6 million expansion by issuing bonds.

The use of \$2.5 million of its own funds and impact fee reserves will finance the remaining \$15.1 million of the project.

About \$10.5 million of the expected cost will pay for treatment capacity expansion. The remainder will cover the cost for necessary maintenance and repairs.

Construction is slated to begin in 2020.

**The Villages sewer service.** The city of Leesburg made a deal with The Villages

to provide it with wastewater treatment. Leesburg will connect to The Villages' wastewater and water reuse infrastructure at a cost of \$8 million.

Leesburg's treated wastewater will be "reused" in The Villages for landscape irrigation, freeing up 1,900 acres near County Road 470 and Florida's Turnpike that Leesburg had used as a wastewater effluent spray-field.

Leesburg agreed to sell the 1,900 acres for \$12 million to The Villages, whose developers intend to build 4,500 homes, and commercial and retail space.

In addition, Leesburg will receive \$9 million in fees over time from The Villages and increased operating revenues. Ad valorem, property and other taxes will add up to \$4.5 million to Leesburg's tax receipts.

The deal is expected to be closed by August.

**Keys canal dredging stymied.** The Islamorada Village Council inked an agreement earlier this year with the Florida De-

partment of Environmental Protection that commits the state to hire a contractor to remove Hurricane Irma debris from the village's residential canals.

The agreement also provides a \$2 million loan to the village to help with debris removal. That loan requires repayment within two years.

Islamorada Village residents were disgruntled to discover that the agreement covers only debris removal—not sediment dredging. Dredging remains the village's responsibility.

While village officials considered issuing request for proposals for simultaneous debris removal and dredging, DEP advised them of strict rules that prevent duplication of effort.

A local news report noted that Islamorada has already spent \$4.5 million of \$4.7 million of its uncommitted funds for post-Irma hurricane expenses. Officials expect FEMA to reimburse at least some of those expenditures, but exactly when FEMA will pay is not known.

In the meantime, canal-front homeowners have been encouraged to consider public-private partnerships that would require homeowners to pay a portion of the dredging costs.

Village commissioners have quietly shelved a proposal to set up a special taxing district for canal improvement.

**RESTORE Act funds for Escambia County.** The Office of Gulf Coast Restoration in the U.S. Department of the Treasury awarded Escambia County \$268,800 to assist in the planning, design and permitting for two stormwater ponds in the county's 11 Mile Creek Basin.

The money comes from the Resource and Ecosystems Sustainability, Tourist Opportunities and Revived Economies of the Gulf States Act of 2012, the RESTORE Act.

According to a press release, the grant will fund planning assistance for coastal flood protection and a related infrastructure project eligible for RESTORE Act funding.

The funding promised is less than two percent of Escambia County's \$16.6 million direct component allocation as of Dec. 31, 2017.

The grant was authorized March 1, which gives the county the opportunity to begin work on the project before the rainy season begins even though funds may not arrive until sometime in the future.

**Rosedale Water System upgrades.** The Rosedale Community in Gadsden County will upgrade its transmission main and install automated water meters with \$275,000 in grant funding from the Northwest Florida Water Management District.

The effort includes replacing 6,300 feet of water transmission lines and associated structures in the Rosedale Water System's main transmission line.

Rosedale will also replace existing water meters with automated meters to help identify the severity and location of water loss within the system.

The city of Chattahoochee supplies the water distributed through the Rosedale Water System. Rosedale's system serves 184 residents.

**FPUA fined for spills.** The Fort Pierce Utilities Authority agreed to pay \$10,500 in fines levied by Florida Department of Environmental Protection.

The fines resulted from three spills attributed to power outages at the utility's main treatment facility on Hutchinson Island that occurred on Sept. 10, Sept. 13 and Oct. 2 last year.

The first two were attributed to power outages that occurred during Hurricane Irma. When the power failed, facility operators were unable to pump wastewater into a deep disposal well.

That wastewater, which had been biologically treated except for final disinfection



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**WATCH**  
Continued on Page 5

# New CFWI work group formed to identify regional water supply projects

By **BLANCHE HARDY, PG**

Three of Florida's five water management districts and the Florida Department of Environmental Protection formed a new Central Florida Water Initiative work group earlier this year.

The CFWI is comprised of engineers, planners and scientists from the water management districts, state agencies, local governments and other stakeholders dedicated to developing regional water supply project options.

"The St. Johns River, Southwest Florida and South Florida water management districts are cooperatively working to update the availability of water resources in Central Florida as part of a joint water supply planning process," said Danielle Spears, a spokesperson with the St. Johns River district.

The Central Florida Water Initiative is re-evaluating groundwater resources as

well as other available water resources in Central Florida, said Spears.

The effort, led by the three water management districts, includes the involvement of DEP, the Florida Department of Agriculture and Consumer Services, local governments, water utilities, agricultural interests and other stakeholders.

"The 2020 CFWI Regional Water Supply Plan will build on the findings and work of the 2015 CFWI RWSP," said Spears.

CFWI is working with the region's utilities, water users and local stakeholders to identify water supply project options that could help meet current and future water supply needs.

The group is reaching out to stakeholders in Central Florida to help develop ideas and concepts for potential water supply, water resource development and water conservation project options.

"As part of the 2020 CFWI regional water supply planning process, the water

the fines towards the cost of upgrades.

**Miami Beach gets new director of public works.** The city of Miami Beach voted unanimously to promote Roy Coley from assistant director of public works to director of public works.

Coley has worked for the city since 2015. During that time, he developed a strategy for using temporary pumps to reduce flooding by king tides in Miami Beach's low-lying areas.

He also implemented an employee incentive plan that increased the number of licensed and certified staff to 32 members. Coley replaces Eric Carpenter who was promoted to assistant city manager.

Prior to working for the city of Miami Beach, Coley worked in Key West where he pioneered a new water quality management technique for drinking water systems.

He also implemented the U. S. Navy's first water utility privatization.

management districts are required to include a list of traditional and alternative water supply project options in their regional water supply plans to meet future water demands," Spears said.

The three water management districts recently circulated a solicitation letter to water suppliers and others regarding alternative water supply projects planned to meet water demands through 2040.

"Because of the projected limitations on fresh groundwater, water suppliers and other stakeholders located within the CFWI planning area were asked to identify potential alternative water supply project options," she said.

This process will allow water users to provide input on the water supply project options that are ultimately included in the new CFWI RWSP.

The projects will contribute to meeting the state Legislature's declared policy to promote the availability of sufficient water for all existing and future reasonable-beneficial uses and natural systems,

as described in Paragraph 373.701(1), Florida Statutes, Spears said.

The state water management districts develop RWSPs to plan for current and future water needs while concurrently protecting Florida's surface and ground waters and natural resources.

"The planning process assesses existing and projected water needs and sources required to meet those needs," Spears said.

An important part of the planning process is identifying water supply project options necessary to meet the anticipated water needs in Central Florida for the 25-year planning horizon.

The projects identified will provide water to meet basic public health, safety and welfare needs, as well as providing water for agricultural, commercial, industrial, institutional, recreational and other typical public supply system needs, while sustaining water resources and related

**CFWI** Continued on Page 20

## WATCH From Page 4

tion with chlorine, overflowed into the Indian River. The three spills at the treatment plant totaled 10.25 million gallons of wastewater.

The fine also included penalties for an estimated 345,000 gallons of untreated wastewater overflows at five lift stations. A lift station in downtown Fort Pierce accounted for about 300,000 gallons of the overflow.

As part of the agreement, DEP required FPUA to take specific corrective actions. Most of those were completed by the time the fines were levied.

The actions included installing a dedicated power feed to the wastewater treatment plant, main transformer replacement, and installation of portable generators.

All the system upgrades are expected to cost \$2.5 million.

In return, DEP allowed FPUA to apply



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# Duke Power begins operation of swine feedlot methane production

By ROY LAUGHLIN

With much fanfare, Duke Power announced that it is now operating a long-expected renewable biofuel project in North Carolina that ferments swine manure, yielding biogas that contains methane for energy production.

Duke will use the biogas as renewable fuel for the company's electricity generating plants.

The concept and the project take advantage of a unique situation in North Carolina. The state ranks second in the nation for hog production.

The hog production farms are primarily concentrated in the state's southeastern corner.

The biogas project is in the small town of Kenansville in Duplin County where nearly two million hogs are produced each year—along with millions of gallons of hog manure, most of which is stored on farms in open pit areas.

The biogas project, referred to as the Kenansville Project, involves five swine farms in close proximity to each other, home to 60,000 hogs.

To trap the raw biogas, farmers cover

their manure pits to reduce oxygen infiltration and confine the raw biogas to allow for its collection.

After collection, the biogas is piped under low pressure to a methane extraction compressor facility.

Going into the purification compressor, biogas is 65 percent methane, 34 percent carbon dioxide and one percent inert substances.

After separation from raw biogas, the resulting gas is 97 percent methane, more than sufficient in purity to be injected into a Piedmont Natural Gas pipeline that supplies natural gas to two of Duke Power's combined-cycle natural gas power plants, the H.F. Lee Station Combined Cycle Plant in Wayne County and the Sutton Combined Cycle Plant in New Hanover County.

Annually, methane from the biogas produced at the five swine farms could yield about 80 billion BTU equivalents of renewable natural gas to generate as much as 11,000 megawatt hours of electricity.

That could supply nearly 880 homes, more than twice the number of homes in Kenansville.

In the big picture, electricity likely to be produced by biogas from this project is only a fraction of one percent of the electricity produced by Duke's two power generating plants burning it.

Using hog waste biogas, however, reduces a number of other problems associated with hog manure and helps Duke Power meet its renewable fuel mandates.

The potential for far greater waste-to-electricity contributions is significant.

North Carolina has about 2,100 swine farms that collectively produce about 10 billion gallons of manure each year.

Manure odor is a nuisance problem. In addition, the open pits used for storage are at risk of overflowing during heavy rains.

Converting manure to biogas is the simplest and most obvious way to convert a risky nuisance to a beneficial material and be assured that all of the product, methane, will be used.

Biogas collection requires that manure pits be covered, which, along with its collection, significantly reduces methane releases to the atmosphere.

Methane is a 25-times more potent greenhouse gas than carbon dioxide, which is produced when burning methane to power the generators.

Combustion of methane to CO<sub>2</sub>, proponents claim, will reduce heat trapping to a level equivalent to preventing automobile exhaust from 7,000 vehicles.

The Kenansville plant operation also meets a long-standing state requirement for Duke to use biogas as an energy source for powering its plants.

A renewable energy law passed by the North Carolina Legislature in 2007 specifically required Duke to use swine wastes as a renewable energy source.

Over the past decade, a series of unfortunate events prevented the company from using renewable biofuel sources to power its generating facilities.

Hurricanes and other bad weather interfered with schedules for the first projects undertaken.

In addition, some of the earlier projects floundered due to technical obstacles that arose from fermenting hog manure.

Swine influenza significantly reduced hog production in the region for several

years, while state legislators threatened to repeal the renewable fuel mandates.

The few waste-to-energy projects on North Carolina swine farms that became operational since the 2007 renewable energy mandate used on-site diesel generators to produce electricity that was sold to the power grid.

In Florida, on-site electrical generation at dairies, several very large wastewater treatment plants and landfills are the prevalent method of obtaining electricity from biogas.

These systems typically rely on biogas-fueled modular diesel generators in the two-megawatt range.

Duke Power, which now owns the gas pipelines that feed its generating plants, prefers to use biogas as source fuel rather than having swine farmers produce the power.

The Kenansville project exploits an ideal situation. The five contiguous swine farms were just a few miles from a pipeline.

In addition, the hog farmers were willing collaborators and their expected level of combined biogas production made a methane extraction compressor plant economically viable.

The Kenansville project is the first in North Carolina to purify biogas and send it to a methane pipeline.

The project is a collaborative venture between Duke Power, Optima KV LLC, a subsidiary of Winston-Salem, NC-based Cavanaugh and Associates that constructed and manages biogas collection and purification, and Smithfield Foods, the largest hog producer and pork processor in the world.

As the Kenansville project came online earlier this year, Duke announced another project with carbon cycle energy based on swine manure biogas for another renewable fuel project.

Chicken manure is also a potential source of biofuel from animal wastes expected to be developed in the near future.

In North Carolina, the lights now burn brightly on these latest biogas projects that make swine manure a useful source of renewable fuel.

## Recovery plan set to protect Lake Brooklyn, Lake Geneva

Staff report

The St. Johns River Water Management District Governing Board recently authorized staff to initiate the rulemaking process to revise the existing minimum flows and levels for Lake Brooklyn and Lake Geneva near Keystone Heights.

The board also approved moving forward with the development of any required recovery or prevention strategies necessary for the lakes to achieve the revised water levels.

The MFL report for Lake Brooklyn and Lake Geneva is currently undergoing the peer review process. The final peer-reviewed MFL report will be available in June.

A public workshop to address draft revised MFLs and any required recovery or prevention strategies for the lakes is scheduled for 5-7 p.m., July 26, at district headquarters, 4049 Reid St., Palatka, FL 32177.

Minimum levels for the two lakes were adopted in January, 1996.

Those MFLs were based on a methodology designed to maintain the location of existing stable wetlands and organic soils.

However, stable wetlands and organic soils do not exist at these sandhill lakes. A re-evaluation is necessary to ensure that appropriate, protective minimum levels are developed.

When a water body or watercourse currently does not or is anticipated to not meet a proposed MFL, the district is required to develop recovery or prevention strategies for adoption in conjunction with the proposed MFL.






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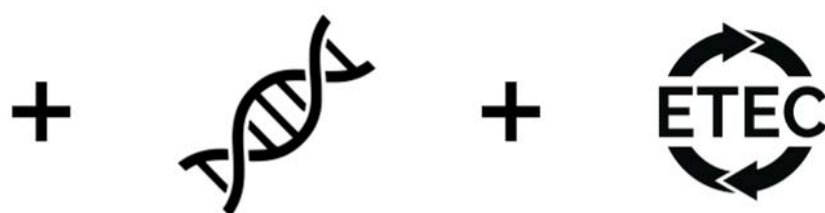
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# SJRWMD, UF uncover surprising details about water quality in new springs study

By **BLANCHE HARDY, PG**

The St. Johns River Water Management District recently concluded a three-year, \$3 million investigation into the health of its springs. The project is an important component of the district's Springs Protection Initiative and one of the district's highest priorities.

The study was undertaken to develop an enhanced scientific foundation to assist the district in identifying the most effective restoration and protection actions.

Scientists from the University of Florida's Institute of Food and Agricultural Sciences and the UF Water Institute participated in the study called the Collaborative Research Initiative on Sustainability and Protection of Springs, or CRISPS.

The springs investigation team's work included enhancing the management of nitrates flowing into the springs, evaluating whether nitrate reduction alone will be sufficient to restore the balance of nature, and assessing the influence of other pollutants and stressors.

Among the more surprising CRISPS discoveries were that a singular focus on reducing the level of nitrates released from septic systems and fertilizers will not eliminate algae growth, and that the velocity of water in the spring and aquifer system was determined to play a greater role than anticipated.

"A number of factors influence algae and vegetation in springs, including nitrate, grazing pressure, flow velocity, light, temperature and nutrients released from the sediments," said SJRWMD's science team lead and Water Resources Bureau Chief Dean Dobberfuhl, PhD.

"A clear take-away from the CRISPS study was that none of these factors are typically dominant. They all interact to

shape the ecosystem we see," he said. "Much like baking a cake, all of the ingredients contribute something and changing the amounts can really alter the final product."

Diminished spring flow velocities are thought to be the result of municipal water withdrawals, residential development, and agricultural and industrial use.

District staff also noted the impacts of drought, damming and over-vegetation of waterways within the springsheds, particularly by invasive species.

Information gathered during the study is already being used by the district in several ways, Dobberfuhl said.

"First, spatial data, like land use and geologic features, are being used to define areas in springsheds that are especially vulnerable to nutrient effects. Once identified, these vulnerable areas receive the highest priority when locating beneficial projects

or purchasing conservation land.

"Second, minimum flow and level determinations already addressed water velocity, but the study has increased awareness of velocity effects and provided better information regarding optimal spring flow. Moving forward, future spring MFLs and re-evaluations will examine water velocity more thoroughly.

"Third, spring flow velocities have been altered in many locations by invasive aquatic weeds or physical channel alterations. Tools developed in the CRISPS study allow managers to better understand how weed control and engineering solutions may benefit water velocity.

"And finally, the study demonstrated our limited ability to determine where nutrient pollution was coming from. This has prompted additional work to better understand the sources and relative contributions of nutrient pollution in impaired spring-

sheds."

Much of the CRISPS study work was conducted in the Silver Springs springshed in Marion County and the Alexander Springs system in Central Florida.

District and University of Florida scientists examined rainfall and runoff quantity and quality; aquifer storage, flow and spring discharge; nitrate sources, nitrate uptake and nitrate loss in soils and groundwater; spring functions; and algae abundance.

Although the study was conducted on two primary spring systems, the results of may be applied to springs throughout the state.

"The importance of water velocity was discovered, in part, by combining and analyzing data from other springs studies around the state," Dobberfuhl said. "This analysis was tested and confirmed by experimentally manipulating actual flow velocities in Silver River and observing corresponding changes to the vegetation."

## Wellington receives state award, continues upgrades to systems

By **PRAKASH GANDHI**

Officials in the village of Wellington in Palm Beach County are celebrating the news that their drinking water plant received a major state award.

The Florida Section of the American Water Works Association named the Wellington plant as the Most Improved Water Treatment Plant in the state last year.

The news comes as Wellington braces for a multi-million dollar project to replace an aging part of its system.

"I'm very happy," said Shannon LaRocque, Wellington's utility director. "It was certainly unexpected, but very much appreciated."

The industry award is recognition of the village's outstanding treatment plant operation, maintenance and compliance.

The award is presented to only one facility from each of the six Florida Department of Environmental Protection regions.

Each year, AWWA presents awards to wastewater and drinking water facilities around the state that demonstrate excellence in operations, maintenance, innovative treatment, waste reduction and pollution prevention, recycling or other special achievements.

The awards are presented to recognize facilities that demonstrate a special commitment to excellence in management.

To receive the award, the village had to submit an application with information on water quality and answer questions on bacteriological samples, chlorine and contaminant levels.

The application also asked for information on the plant's maintenance, including pumps, motors and storage tanks.

Also included were questions about the certification levels of plant operators and employee participation in trade organizations.

**WELLINGTON**  
Continued on Page 20



# Florida Specifier

## 2018 Environmental Lab Directory

Each August, we turn our attention to the environmental laboratory business in Florida. As part of this special annual issue of the *Florida Specifier*, we include a directory of environmental labs providing analytical services in the state.

You're invited to complete the form below, providing details about your lab and its analytical capabilities. **There is a fee of \$200 to list your lab this year.** (*Fee waived for Specifier advertisers, and 2017-18 FRC exhibitors.*) In addition to your listing in the directory, **your lab will also be included in a special lab listing on our Enviro-Net website.**

Please type or LEGIBLY print the information requested and return as soon as possible to Mike Eastman via fax at (321) 972-8937, e-mail [mreast@enviro-net.com](mailto:mreast@enviro-net.com) or mail to P.O. Box 2175, Goldenrod, FL 32733. You can reach us at (407) 671-7777. The deadline for submissions to the August Lab Directory is **Wednesday, July 1, 2018.**

**Note: If you were listed last year, we will be in touch. Do not complete this form.**  
Please include only lab operations, capabilities and personnel in Florida.

**Laboratory name:** \_\_\_\_\_

**Primary Florida address:** \_\_\_\_\_

**City, State, Zip:** \_\_\_\_\_

**Phone:** \_\_\_\_\_ **Fax:** \_\_\_\_\_

**E-Mail:** \_\_\_\_\_ **Web:** \_\_\_\_\_

**Contact:** \_\_\_\_\_ **Title:** \_\_\_\_\_

**Locations in FL:** \_\_\_\_\_

**State of incorporation:** \_\_\_\_\_ **Years under same ownership:** \_\_\_\_\_ years

**Lab capabilities/specialties:** \_\_\_\_\_

**Sample types:** \_\_\_\_\_

**Certifications:** \_\_\_\_\_

**Additional services:** \_\_\_\_\_

**Number of years in business:** \_\_\_\_\_ years

**Staff: Total:** \_\_\_\_\_ **Engineers/scientists:** \_\_\_\_\_ **Technicians:** \_\_\_\_\_

**What single issue has most affected labs in Florida over the past year?**  
\_\_\_\_\_

**Are you a current *Specifier* advertiser or FRC exhibitor?** \_\_\_\_\_ Yes \_\_\_\_\_ No

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\_\_\_\_\_ Submitting a column for the Lab Focus issue

## West Palm Beach, SFWMD reach agreement on Grassy Waters Preserve

By PRAKASH GANDHI

City of West Palm Beach officials said they have won a major legal battle in their efforts to protect the environmental quality of Grassy Waters Preserve.

The preserve is home to protected and endangered species, an Aquatic Reserve of National Importance and the source of drinking water for the city of West Palm Beach, the town of Palm Beach and the town of South Palm Beach.

But for some time, the city and the South Florida Water Management District have been at loggerheads over pollution flowing from the Ibis Golf & Country Club into the city's main water supply.

The dispute over fertilizer contamination from the club was sparked by the city's legal fight against the proposed expansion of State Road 7.

Lawyers for the city claimed that the road extension would spill runoff into the adjacent preserve.

Now, the city and the district have entered into an agreement.

In effect, the water management district is withdrawing an administrative complaint against the city alleging that the city is responsible for the pollution from Northern Palm Beach County Improvement District's lakes.

This pollution, district officials claimed, produced adverse environmental impacts into Grassy Waters Preserve.

West Palm Beach Spokesperson Kathleen Walter said the district's withdrawal will allow the city to focus its attention on an upcoming hearing on improving the adequacy of action plans to correct the pollution of Grassy Waters Preserve.

"The city is confident that the evidence will show that the adverse environmental impacts to Grassy Waters Preserve can be addressed only through effective corrective plans that substantially reduce phosphorus loading into the Ibis Preserve and ultimately into the Grassy Waters Preserve," she said in a statement.

The city is the owner of the Ibis Preserve and Grassy Waters Preserve.

In August 2004, the district issued an environmental resource permit modification to the city for the Ibis Preserve.

Years later, the district ordered the city to take corrective actions including providing a plan to increase secondary treatment and retention in the city's surface water management system.

Another requirement was for the city to provide a plan to remove nuisance and

exotic vegetation at their outfall structure in Grassy Waters.

The district said the vegetation removal plan had to include maintenance and monitoring components.

Thirdly, the district ordered the city to develop an education program for residents of the developments contributing stormwater to the city's system.

The city later filed petitions challenging the original order.

The district also filed an administrative complaint and order for corrective action against the Northern Palm Beach County Improvement District regarding the surface water management system in the adjoining Ibis development.

That order required the submittal of four corrective action plans by the Northern Palm Beach County Improvement District.

The city challenged the four approval plans and an approved amended plan.

In January, the city provided documents to the district showing that extra retention and increased secondary treatment in the Ibis Preserve or the relocation of the city's outfall from Grassy Waters to the M Canal are not technically or environmentally feasible choices.

Under the agreement, the city will submit a plan to the district that will modify its current management program for Grassy Waters.

The plan will include the removal of nuisance vegetation that currently grows in areas of high nutrients near the Ibis outfall.

In addition, the city will provide a report to the district regarding the status of the vegetation removed and has also agreed to update its fertilizer ordinance.

Meanwhile, city leaders vowed to continue their legal fight against the new road, a stretch along the eastern border of the 23-square-mile preserve that will link Okeechobee and North Lake boulevards.

The state and county have been fighting for the road extension, because of anticipated growth of communities to the west.

District officials hailed the agreement as a "favorable legal outcome."

## Melbourne mitigation bank open for business

By PRAKASH GANDHI

A new wetlands mitigation bank west of Melbourne will provide major environmental benefits and allow roadway construction to continue in the area, according to officials involved.

The 1,657-acre Lake Washington Mitigation Bank was permitted by the St. Johns River Water Management District and the U.S. Army Corps of Engineers.

The mitigation bank is owned by the city of Melbourne and P.W. Young Trust LLC. Officials established the bank to help protect water quality at the Buckley Surface Water Treatment Plant at Lake Washington.

The bank will conduct ecological restoration, including removing invasive plants and conducting prescribed burning.

"From an ecological and environmental standpoint, it is positioned in a very key location," said Mike Dennis, PhD, president of Breedlove, Dennis & Associates Inc. in Winter Park. "It is a good site with good environmental benefits. It will hopefully provide a fine mitigation source for projects in that service area."

The mitigation bank boundary lies just west of a group of radio towers. The bank stretches to the southernmost shore of Lake Washington and extends southward just shy of U.S. 192.

The area was once a continuous freshwater marsh. During the 20th century, the construction of levees and canals for agri-

**BANK**  
Continued on Page 20

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## Specifier PRP survey announcement

The *Florida Specifier* and its environmental industry contributors have prepared a survey to support improvements in the efficiency of state petroleum cleanups.

Generally, when Agency Term Contractors and Florida Department of Environmental Protection Petroleum Restoration Program site managers are operating efficiently and in a timely manner, the program functions well.

Our survey is intended to identify any unnecessary delays, compile strategies that have worked, share information based on experience and obtain suggestions for program refinements.

Interested environmental professionals that participate in this survey are invited to attend a follow-up meeting as described below to ensure that discussion topics have input from all stakeholders.

*Note: This article is not the official survey. The survey will be sent as described below.*

The survey will be distributed by Mike Eastman at the *Florida Specifier* to stakeholders such as site owners, ATCs, sub-contractors and vendors.

The survey responses will be returned to the *Specifier* via the email address specified. The source of the responses will be kept strictly confidential.

The due date for responses, anticipated to be in mid-to-late June, will be specified in the survey.

All survey responses will be compiled in an MS Word document that will be provided on or around July 1, 2018, to PRP officials and to the various environmental industry associations that have agreed to participate.

A meeting consisting of one leader from each participating association and PRP officials will be convened. It will be moderated by Austin Hofmeister at the Florida Department of Environmental Protection's Central District Office in Orlando. The meeting is tentatively planned to convene before July 31, 2018.

In the meeting, recommendations to

achieve the goals described above will be outlined and documented.

The recommendations to achieve the stated goals would be implemented—at the sole discretion of PRP—beginning in August, 2018.

Our intent is to obtain relevant information in a confidential manner and have a general meeting limited to association leaders and PRP officials in order to effectively manage the survey results.

The survey will include, but not be limited to, the following questions:

1. What is working well that should be done more often?
2. What suggestions do you have to improve the process from SAR approval to RAC implementation?
3. What suggestions do you have to reduce the time for pilot testing?
4. What suggestions do you have to improve the process of completing specific program tasks?
5. What suggestions do you have to improve the process of administrative reviews?
6. What could ATCs do to help speed up the process?
7. What suggestions do you have to increase the number of site closures?
8. On which actions or phases of a project do you feel that PRP could improve its timeliness the most?

In an effort to manage communications after the survey, stakeholders and survey respondents are encouraged to communicate through the industry association they feel best represents their interests.

A follow-up meeting to evaluate the recommendations is anticipated in October, 2018. Additional surveys and meetings may follow. The goal is to keep the conversation focused on peak performance for the PRP.

*If your association is interested in participating in this survey, contact Mike Eastman at the Florida Specifier at mreast@enviro-net.com.*

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# Dade County pine lands acreage moves closer to development with habitat plan approval

By ROY LAUGHLIN

Late last year, the U.S. Fish and Wildlife Service approved a habitat conservation plan for the Coral Reef Commons real estate development project in Dade County.

The development will affect approximately 80 acres of one of the largest continuous tracts of Miami pine lands, home to about 20 threatened and endangered species found nowhere else in the country.

It will also affect 50 acres of conservation land adjacent to the development.

The plan is to develop 32.28 acres within the larger tract of land for a shopping center and apartment complex that will be placed within the center of the land tract's footprint.

Of the remaining land, 50+ acres will be placed under a permanent conservation easement, with a commitment from the permit applicants "to commit to manage as high-quality pine rockland habitat."

In granting approval, FWS noted that improved management on the 50+ acres would benefit endangered species management both on and off site.

The University of Miami owns the property, having received it years ago from the U.S. government. UM is currently using only a small part of it as a research facility.

Over the past several years, plans for its development it have been submitted at least twice.

The first proposal was for a traditional residential development.

The more recent one is for a mix of commercial and residential apartment construction.

The prospects of a school or government offices on additional acreage has occasionally surfaced in news stories, but is apparently not part of the current development plan.

The Miami pine rockland habitat is the

home of endangered plants and animals including the Eastern indigo snake, gopher tortoise, Florida brickell-brush, Bartram's scrub-hairstreak butterfly and the Florida leafwing butterfly.

Over the last century, Miami pine rockland habitat decreased from 183,000 acres to about 20,100 acres in 1996. According to FWS, only about one percent of the acres outside Everglades National Park remain, and those are in small isolated tracts.

FWS granted the RAM Development Co. with an incidental take permit to allow the killing or harming of endangered organisms while clearing the land for development.

"The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild," FWS noted in a document accompanying its approval of the habitat conservation plan.

In response, a group of environmental advocacy organizations led by the Center for Biological Diversity including the Tropical Audubon Society, the Miami Pine Rock Lands Coalition and the South Florida Wildlands Association sued FWS.

The lawsuit alleged an improper lack of a 30-day public notice to review the decision. It also cited numerous other technical failings.

In a press release, the coalition said that the lawsuit urges the court to overturn

FWS' approval of the development because of "the devastating and unlawful consequences it will have to endangered and threatened species and their habitat."

According to local newspaper reports, contractors began clearing the property the day after the Dec. 5 FWS incidental take permit approval.

The coalition then asked the court to issue a restraining order to stop land clearing until the court hears the lawsuit filed Dec. 5.

On Dec. 8, the U.S. District Court for the Southern District of Florida granted a temporary injunction and later extended it until a formal injunction hearing is completed.

Matthew Schwartz, executive director of the South Florida Wildlands Association, said in an interview that the lawsuit challenging FWS might be concluded by May, 2018.

Two months earlier, the Miami Pine Rocklands Coalition filed suit in Miami-Dade County to overturn the project's zoning approval.

The group cited several notification irregularities, including the failure to provide the legal description of the property that would have allowed neighboring property owners to determine the location of the zoning change under consideration. That lawsuit is pending.

"We are optimistic we will have a fair day in court," said Al Sunshine, president of the coalition.

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# Twenty-five themes in environmental law and policy that environmental professionals should understand

By JOHN K. POWELL, JD, PE

Environmental practitioners don't always have time to look at the bigger picture. Often locked into our respective areas of expertise, we work with clients, meet deadlines and stay under budget, consuming the better part of our days.

While we know that environmental law is primarily a collection of major federal statutes that provide direction to federal and state administrative agencies to promulgate rules and establish limits, underneath there are a multitude of controversial and complex policy nuances.

This column identifies 25 common and complex themes that crosscut all of environmental law and policy, or ELP, and that environmental professionals should be aware of.

**1. Scientific uncertainty.** Lawyers and lawmakers want certainty. Clear and irrefutable data assists in making difficult policy choices. However, science is rarely 100 percent certain. Laboratory equipment has confidence limits, ambient conditions are never exactly the same, human error can be a factor and causation sometimes requires a leap of faith. Scientists must be careful to communicate data clearly, including any assumptions and limitations, and law and policy makers must accept this.

**2. Risk tolerance.** The greater the potential impact of an activity and the higher the probability of occurrence, generally the less willing society is to accept a risk. Whether the risk is taken knowingly and voluntarily, or imposed on society, is also an important factor. Risk or injury spread out in time and location is sometimes more acceptable to the public than those concentrated in one small area. ELP continues to struggle with what is considered safe or acceptable levels of exposure.

**3. How clean is clean?** Without exposure there can be no risk. If a groundwater plume is hydraulically isolated and there are sufficient institutional and engineering controls in place, it may not be necessary to clean up to stringent drinking water standards. Regulators and site owners must decide whether additional funds should be used to further reduce concentrations by another part per billion or two. The law of diminishing returns suggests that it might not. A one-size-fits-all standard is not always the most efficient and protective approach, an important consideration in ELP and under many states' risk-based cleanup programs.

**4. Toxic products.** Many industrial and commercial processes result in unwanted byproducts. Fossil fuel combustion for electric power generation produces a variety of pollutants such as carbon monoxide and particulate matter. Similarly, hazardous waste is another unwanted byproduct demanding strict regulation regarding its transport, storage and disposal. What approach should be taken to regulate "products" that happen to be toxic? Pesticides, if manufactured correctly, kill living organisms. Even if applied properly, their application can have unintended consequences. Many toxic substances happen to be valuable commodities. Increase in crop yields can be partially attributed to the application of pesticides, as can the eradication of some vector-borne diseases. Therefore, the balancing of costs and benefits is a complex but necessary component of dealing with toxic products.

**5. Cost considerations.** Should cost be considered when setting environmental standards? Some laws require it, others allow it, while others strictly prohibit it. When setting health-based National Ambient Air Quality Standards, for example, cost cannot be considered. However, when establishing major source New Source Performance Standards designed to help meet those same NAAQS, cost can be a consideration. Whether and to what extent cost plays a role in establishing environmental requirements varies across ELP. Most of the time cost plays a direct, or at least indirect, role.

**6. Technologic feasibility.** Why set a goal that cannot be achieved? The Clean Water Act's goal was to eliminate the discharge of pollutants into navigable waters by 1985. Now, decades later, this goal has not yet been met. Similarly, the Clean Air Act intended to meet NAAQS by 1975. However, there are areas today in non-attainment that will likely never come into compliance due to factors such as meteorology, population and technology. Whether to incorporate technology into the decision-making process is a complex issue. Some believe setting overambitious goals will force technology to catch up, while others believe it may lead to continued disappointment.

**7. The precautionary approach.** In the face of scientific uncertainty, when is there sufficient data to warrant action? The well-known "precautionary principle" tells us that where consequences could be severe or irreversible, or the probability of occurrence high, lawmakers should act—even in the face of scientific uncertainty. This approach has been incorporated into ELP around the world. For hesitant lawmakers, a "no-regrets" approach that offers both environmental and economic benefits might be the preferable option.

**8. Decision makers.** Who decides controversial questions such as whether a certain level of risk is acceptable or whether cost can be considered? In the U.S., there is the non-delegation doctrine which prohibits Congress from delegating its constitutional responsibilities. In reality though, and certainly in the context of ELP, these important decisions are often left to administrative agencies. Regulatory agencies, which are thought to possess the requisite expertise, frequently find themselves in the unenviable position of making complex policy decisions that place competing interests at odds and with far reaching effect.

**9. Separation of powers.** The level of trust between the three branches of government is tenuous and varied. The legislative branch is sometimes suspicious of the executive branch with the judiciary often serving as the referee, and vice versa. There is constant and arguably healthy tension between the branches, each checking and correcting each other. On any given day though, you may find your executive branch environmental agency adopting requirements that look a lot like legislation or making decisions akin to a quasi-judicial hearing. This is common and generally acceptable in ELP.

**10. Reactive legislation.** Most of our major environmental laws were originally

enacted in response, or partially in response, to some significant catastrophe or event. For example, the Clean Water Act was enacted in response to the Cuyahoga River fire, and the Comprehensive Environmental Response, Compensation and Liability Act was enacted in response to Love Canal. This reactive pattern means that sometimes laws are developed in haste, and maybe not as effectively as they could have been. This rush to act may also result in setting unattainable goals based partially on emotions that send a tough

message to polluters, but perhaps simultaneously set us up for eventual failure.

**11. Uniform flexibility.** How is ELP both flexible and inflexible at the same time? The Clean Air Act established uniform NAAQS for six criteria pollutants that must be met whether you are watching the sunrise at a state park in Big Sky, MT, or in a parking lot at rush hour in Miami, FL. At the same time, the law allows states to decide how to meet these standards and which sources to regulate.

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Similarly, the Acid Rain Program sets a nationwide cap on nitrogen oxide and sulfur dioxide emissions. Within this hard cap, industry can buy, sell and trade emissions allowances according to their unique needs and market pressures. ELP often sets boundaries, but allows flexibility within the detailed implementation.

**12. Existing versus new sources.** Not every pollutant source is treated equally in ELP, and sometimes for good reason. Many laws distinguish between existing and new sources, and with the assumption that it is easier to design processes and install equipment to meet stricter environmental standards in proposed new facilities than it is to retrofit older existing ones. Whether this inadvertently encourages older and less efficient plants to run longer than intended—and stifles innovation—is up for debate. For lawmakers, there is much less opposition to a proposed new regulation from a facility that does not exist yet than one currently in operation.

**13. Point versus non-point sources.** Point source pollution is easy to identify. It could be a 200-foot-tall stack with painted stripes, blinking lights and smoke coming out, or a 36-inch diameter corrugated pipe with effluent discharging into a receiving waterbody. Non-point sources

though are smaller and more numerous, and therefore harder to regulate. The lowest hanging fruit (point sources) that provided the best bang for the buck were the initial targets for most environmental pollution limits, and perhaps rightfully so. The smaller non-point sources like stormwater runoff were generally left to the states to handle, and often through voluntary best management practice programs.

**14. Regulatory avoidance.** Not surprisingly, whenever the legal system draws a distinction between two classes of activities or sources, the regulated community tries to find a way to be on the side that is the least costly or burdensome. New plants have stricter limits than existing ones, creating the desire to keep older ones operating for as long as possible. Areas classified as non-attainment with air standards must meet the lowest achievable emissions rate for new sources; creating the desire for industry to set up shop in areas that are already in attainment with more relaxed standards. Waste categorized as hazardous under the Resource Conservation and Recovery Act costs more than ten times more to dispose of than nonhazardous waste. This is a reality that ELP, as it is being developed, must anticipate.

**15. Effective enforcement.** Without enforcement, the existence of environmental standards is meaningless. Looking at

the total number of regulated facilities versus the number of agency inspections, one could get discouraged. Fortunately, the most common method for agencies to learn of potential violations is through facility self-reporting. Moreover, many noncompliance events are paperwork violations, for example, the failure to submit a monthly report, as opposed to the exceedance of an actual pollution limit. There are many other valuable enforcement tools and techniques available such as the use of criminal sanctions, an offer of audit immunity, and allowing in-kind environmental projects in lieu of monetary penalties.

**16. Distribution of harm.** The environmental burdens of society disproportionately impact lower income communities. Industrial facilities, manufacturing plants and waste disposal sites are often found in the poorest of communities, yet the benefits are enjoyed community wide. While the physical distribution is clear, the reasons for the inequitable siting are not as clear. These communities may not have the ability to hire an attorney to advise them, or may experience lower levels of participation in public meetings and voting rates. Regardless, most agencies and environmental laws now require that environmental justice be factored into decision making.

**17. Public participation.** Citizens in the U.S. enjoy a high level of public participation, particularly in relation to the rest of the world. We participate through the legal process by filing suit against a project or activity under traditional common law causes of action or as a result of a statutory violation. Administrative procedure acts at the state and federal levels offer multiple points of entry including public notice in the media and generous comment periods. There is rarely an agency rulemaking project that doesn't involve considerable opportunity for citizen input. Moreover, citizen suits are authorized under nearly every major environmental law enacted since the 1970s with barriers to constitutional standing requirements interpreted broadly paving the way for even greater involvement. Finally, we partici-

pate in elections where we select leaders to make these difficult ELP decisions on our behalf.

**18. Information dissemination.** In the U.S., we are privy to a considerable amount of information just a few clicks away on a computer, such as information about our drinking water, air quality and proposed new projects. Whether through Toxic Release Inventory reporting or California's Proposition 65, data and information regarding potential threats to human health and the environment are readily available. Citizens and consumers have never had a greater ability to know what is going on in their community, what hazards are present, and what is in their food and personal products than today. This trend in ELP will continue and likely strengthen.

**19. Transboundary pollution.** Pollution does not respect political boundaries. If it did, the approaches we take to ELP would be much simpler. However, air blows, water flows and wildlife migrates. Therefore, there are few truly "local" environmental issues. While our system of laws in the U.S. helps provide uniform standards across states, when pollution crosses between two countries or enters the high seas, all bets might be off. However, dealing with international transboundary issues are hardly new. Confronting these issues has become the new norm in ELP.

**20. Developing countries.** Perspectives on environmental protection differ greatly between countries. While one country may be looking to improve water quality through advanced wastewater technologies and tertiary treatment, another country may be struggling with widespread poverty and food shortages. Wholly unconcerned about issues such as biodiversity or smart development, developing countries' willingness to reduce environmental impacts is sometimes nonexistent, perhaps understandably so. As a result, there is often an expectation that developed countries will carry the majority of the


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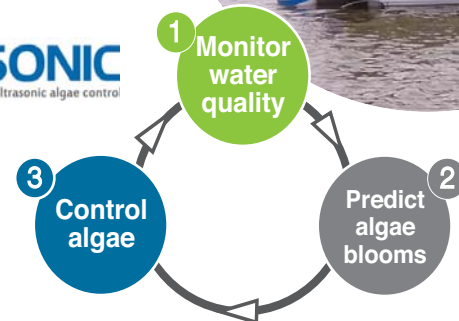
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# EPA's proposed "data transparency" rule: Scientific integrity looking for a home at EPA, or just another smoke screen?

By ROY LAUGHLIN

Announcing that "the era of secret science at EPA is coming to an end," U.S. Environmental Protection Agency Administrator Scott Pruitt endorsed a proposal to establish "data transparency" standards that the agency will use in all future rulemaking.

The rule references President Trump's Executive Order 13777, Reducing Regulation and Controlling Regulatory Costs, calling for regulatory reviews in all agencies that "rely in whole or in part on data, information or methods that are not publicly available or that are insufficiently transparent to meet the standard of reproducibility."

The first paragraph of the rule published in the Federal Register states that "EPA is proposing to establish a clear policy for the transparency of the scientific information used for significant regulations specifically, the dose response data and models that underlie what we are calling 'pivotal regulatory science.'"

"Pivotal regulatory science," another new EPA thing, is defined as the models, data and assumptions that are "critical to the calculation of a final regulatory standard or level or to the quantified costs, benefits, risks and other impacts on which a final regulation is based."

The rule's new definitions break no new ground by identifying specific characteristics of "secret" data or EPA rules.

The new rule's subtext is that science on which the EPA depends for rulemaking predominantly comes from outside the agency, for example, epidemiological studies at population levels or experimental studies done by laboratory researchers.

The proposed rule requires that all data the EPA will use in the future must be publicly available and that "data" includes the algorithms and calculations using multiple mathematically plausible but not necessarily mechanistically-appropriate algorithms.

## "Secret science" hard to find

The EPA's press release quoted two scientists among a list of seven endorsers of its proposed transparency rule. The *Florida Specifier* queried them about their experience with the secrecy of relevant data.

Neither said they had been affected by it in their professional activities.

One of them, Dr. L. Anthony Cox, president of Denver-based Cox Associates, has testified before Congress criticizing EPA methods used to establish standards for ozone and PM2.5.

"It was easy to obtain the air pollution data from EPA's Air Quality System," Cox said. "To me, this is a good example of how data can and should be made readily available."

The issue of data secrecy is the white bread and mayonnaise that serves as cover for a spicy little sandwich of new regulations.

Paragraph 30.5, "What requirements apply to EPA's use of dose response data and models underlying pivotal regulatory science?" goes well beyond the data used in analyses.

The proposed rule claims that "there is growing empirical evidence of non-linearity in the concentration-response function for specific pollutants and health effects. The use of default models, without consideration of alternatives or model uncertainty, can obscure the scientific justification for EPA actions."

This statement belies broad ignorance of even simple dose-response models.

The simplest model for toxicity is not linear, it is sigmoidal, but only the linear, non-horizontal portion is modeled or analyzed for standard setting.

At low pollutant concentrations, toxins are expected to produce no effect different from controls so the dose-response line is horizontal. Over a threshold concentration, the response increases with dose over a significant range.

Once pollutant exposure crosses an acute toxicity threshold at high concentrations, the response again flattens out be-

cause all the test subjects are affected.

The art of bioassay science is to ensure that the range of exposure concentrations tested have a low and high concentration test exposure near their respective inflection points of the dose-response line.

Mathematical models for standard setting usually focus on the non-horizontal portions of the response range because that is where exposure modifies a biological response dose-dependent pattern, a rational justification for the utility of exposure standards.

But sometimes, toxicity data challenge the linear models just described.

Edward J. Calabrese, PhD, professor of toxicology at the University of Massachusetts, Amherst, supports the EPA's proposed rule for "recognizing the widespread occurrence of non-linear dose responses in toxicology and epidemiology."

A substantial portion of Calabrese's research includes a focus on hormesis. Hormesis is a paradoxical dose-response relationship in which a measurable and often statistically significant enhanced response occurs at low pollutant exposures, while subsequently, a linear response with increasing dose occurs at higher pollutant exposure.

The hormesis concept comes from homeopathic medicine to explain observa-

tions that, at low doses, many toxins produce an apparent response enhancement but exposure beyond the hormesis range results in the expected dose-dependent adverse response.

In homeopathic medicine, low-exposure enhancement is seen as beneficial.

More recently, non-homeopathic concepts explain hormesis as a counteractive overshoot of a stress response caused by low pollutant exposure. The over-response may temporarily over-extend a biological response, giving the misleading impression that the pollutant is beneficial. A long-term beneficial hormesis response is still open to debate.

Because the EPA regulates to reduce the adverse responses, it remains to be seen in future rulemaking how low exposure threshold nonlinear responses, especially those involving perceived hormesis responses, might affect a standard's value using non-linear doses-response models.

In the standard-setting process, non-linear model mandate could support opportunistic challenge to calculations and the algorithms yielding them to obtain a standard more favorable to the regulated community.

The data transparency rule is not intended to initiate a broad-scale re-evaluation of standards across all EPA programs.

The proposed rule applies only to "significant" regulations, those defined as regulations whose expected compliance costs will exceed \$100 million.

## An issue already addressed

Scientists and data professionals are disgruntled by what they see as another anti-science slap in the face by Pruitt and the Trump administration.

Other scientists critical of the data transparency rule point out that the scientific community itself identified the problem of non-reproducible scientific studies several years ago.

Numerous journals—from prestigious titles such as *Science*, *Nature* and *Proceedings of the National Academy of Sciences*, and others serving specialized scientific disciplines—require free access to archived data to enhance peer review.

"Anyone who gets funded with public money is being required to have a plan for public dissemination of their data in order to get funded," said Dennis Hanisak, PhD, a research professor at Harbor Branch Oceanographic Institute in Fort Pierce. "I think that is a good thing and will take care of this issue moving forward."

Non-disclosure of data is increasingly

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- Cleanup case studies of sites and surface water contaminated with petroleum, PCBs, DNAPLs and LNAPLs, chlorinated solvents, arsenic and heavy metals, pesticides, nitrates/nitrites and other contaminants.

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## More crackpots than ever influence policy decisions at EPA

A Florida Specifier opinion

U.S. Environmental Protection Agency Administrator Scott Pruitt recently proclaimed that “the era of secret science at EPA is coming to an end”—his way of identifying a problem that his data-science agency does not have, but is sure to get the attention of people looking for a way to evade EPA regulations and enforcement.

Pruitt’s statement conjures up images of the Saturday morning cartoon evil scientist working surreptitiously to undermine the good guys. But really it’s just another way of playing fast and loose with truth, and appeal to those with simple minds.

Pruitt’s behavior and public statement shows that he knows next to nothing about science and its reliance on peer review and scientific integrity. EPA’s environmental science, unlike his meetings with industrialists and campaign donors, is not done in a cone of silence.

An accompanying news story in this issue makes the point that scientists who support his so-called “increased transparency” rule could provide no examples of any secret data. They described no difficulties whatsoever in obtaining data used for standards setting.

Secret science allegations would not be so annoying to the nation’s science establishment if they had not already independently addressed the issue of high visibility experiments whose findings could not be replicated or corroborated.

The top national journals initiated the requirement of data archiving in open repositories for published articles. Many other journals have followed suit.

The editors of *Science*, *Nature*, *Proceedings of the National Academy of Sciences* and *PLOS* are pushing back against Pruitt’s proposed rule.

They note that “it does not strengthen policies based on scientific evidence to limit the scientific evidence that can inform them; rather, it is paramount that the full suite of relevant science vetted through peer review, which includes ever more rigorous features, informs the landscape of decision making.

“Excluding relevant studies simply because they do not meet rigid transparency standards will adversely affect decision-making processes.”

Pruitt is blind to the fact that the combination of unrestricted data dissemination plus peer review promotes transparency far better than his proposed rule. And it works without gratuitous insults against professional scientists and the nation’s research enterprise.

So exactly where did the allegation of “secret EPA data” come from? It came primarily from Congressman Lamar Smith (R-TX), whom the EPA quoted first in its press release:

“Administrator Pruitt’s announcement ensures that data will be secret no more. For too long, the EPA has issued rules and regulations based on data that has been withheld from the American people.”

Smith has introduced several laws into Congress based on his data secrecy theory. They have all crashed and burned. If Congress couldn’t see a conspiracy in the clouds obscuring data transparency, should we be surprised that only Pruitt is left to imagine they exist?

The EPA has no secret science. Allegations of secret EPA datasets used to derive regulatory standards are fables—incorrect and without merit.

But wait, maybe there is one cache of secret data. The EPA maintains a treasure trove of secret data about chemicals that it does not share with the public. The EPA guards it as “confidential business information,” or CFI, that manufacturers and importers provide under the law for chemical registrations.

A 2005 U.S. Government Accountability Office report found that 95 percent of the chemical notices submitted to the EPA contain confidential business information, including the names and at least some data on chemical identities of more than 17,500 chemicals registered with the EPA.

Has the EPA’s public access restrictions to CFI data adversely affected public agencies’ ability to protect public health and the environment?

Perhaps so. One recent example is in North Carolina’s Cape Fear River where The Chemours Company released the polyfluorinated alkyl precursors of GenX, a polyfluorinated alkyl compound that is a replacement for Teflon™.

The EPA’s restricted-access CFI was a significant obstacle to EPA researchers’ efforts to identify the source of the contaminants and the state of North Carolina’s efforts to remove them from public drinking water supplies.

When it pertains to the EPA’s secret data, people in business suits, not lab coats, are responsible.

Perhaps the EPA should amend its proposed data transparency rule to ensure that confidential business information is just that: limited to business information. Absent that, Pruitt is accusing scientists of the EPA’s own sins of secrecy.

### A pressing need to archive data

In spite of this proposed rule, the goal of data transparency and accessibility is a worthy discussion topic. Data is valuable and important.

The U.S. has supported science more lavishly and generously than any other society in history. Since the 1950s, three generations of scientists have produced and published more data than has been discovered in all of prior human experience.

Until the last two decades, however, the data has largely been kept in notebooks, drawers or otherwise in the scientist’s possession. Many older valuable data sets are not easily available today for further scrutiny or use.

There is a pressing need to archive data before media degradation and obsolete information technology renders it unreclaimable.

A recent article by Nic Rawlinson in *PC Pro Magazine* (May 2018) discussed the uncertainty involved with archiving electronic data and files of the pre-web storage era. He noted that degradation of the physical media, which can occur extensively in less than two decades, is the major cause of data loss.

But in addition, the software for reading and operating a file in obsolete or proprietary formats may also be unavailable now or in the future.

Think of the Iomega Zip drive or the 3.5 megabyte floppy disc. Even the first generation of serial hard drives is not usable without an add-in card and a driver for current operating systems. Researchers who want to archive data should perhaps give thought to archiving some of the intermediate steps in statistical analyses programs, inverted matrices, for example.

Web-accessible data is the currently favored archive method. EPA’s STORET system is a notably successful example that is continually updated with program utilities such as GIS database linkages to visualize the data. Time and perseverance in the face of adverse experience will tell if online data center storage is really as persistent as the people using it hope it to be.

To ensure data transparency, would it be useful to scientists to identify and preserve 20th century raw data sets to ensure long-term future public access? If so, what data,

what archival format and what data platform best ensure its persistence and continued availability?

If Pruitt’s EPA focused on rational, useful workable guidelines under a rule, it could help the agency and our other data science agencies move forward with assured access to data sets important to scientists that have informed concepts about the environment and public health, and could be lost as the researchers who now hold the data pass on.

Where the scientists who obtained older data are still available, they could assist in vetting the data. Older data sets do not necessarily need to be digitized in computer readable files. Images of the data, a PDF file for example, with appropriate notation to assist cataloging and retrieving the data, could be maintained. For data that might require authenticity guarantees, digital signatures could be included.

It is appropriate to make funds available to pay for acquiring and archiving such data sets where significant effort is involved. Academic researchers likely have most of the candidate data for archiving. Working through academic institutions for pilot scale and then broader efforts for data archiving is a suggested strategy to identify and archive data.

This opinion piece began with criticisms of the EPA’s proposed transparency rule. One more aspect of it invites criticism.

The proposed rule’s requirement to use non-linear models is an open invitation for data modeling cafeteria style—if you see what you like, put it on your tray. It belies an insufficient understanding of why linear toxicity models are validly used. It also ignores (or is ignorant of) the increasing use of completely different methods of addressing uncertainty.

Probabilistic risk assessment using Monte Carlo simulation is one increasingly used technique. The Florida Department of Environmental Protection updated Florida water quality standards in 2016 using it. Even though environmental advocates criticized the results of the modeling, alternative risk assessment is not a secret method. It provides a distinctly different way to incorporate variability into standard-setting models.

### So, what’s the big deal?

So, a reader might conclude that regulators are already meeting data analysis requirements that the proposed data transparency rule demands. What’s the big deal? The threat is that the vaguely-worded rule allows opponents of a proposed standard to use plug-and-play data massage algorithms to obtain a suitably-beneficial outcome that has no rational validity.

The data massage result could be accepted just because the rule endorses the methods without simultaneously stipulating that the methods are scientifically appropriate and applicable.

Messing with the data used by the EPA, one of our nation’s foremost data science agencies, messes with its DNA. The rule as proposed is yet another techno-farce from Pruitt’s EPA.

What his data transparency rule lacks in contributing to science, the techno-farce accompanying it lacks in entertainment value. It will not have a happy ending.

## Blue Water Audit: One method of determining the effectiveness of Florida’s springs protection expenditures

By ROBERT KNIGHT, PhD

All of us living in and visiting Florida have an “aquifer footprint.” Our aquifer footprint is measured by the amount of groundwater we use from the Floridan Aquifer and our contribution to the nitrate-nitrogen pollutant load to the aquifer.

One’s aquifer footprint is an estimate of the personal detrimental impact we each place on Florida’s groundwater environment, especially the ecology of the state’s springs, rivers, lakes and estuaries supported by that groundwater. Each person’s aquifer footprint can be a source of personal pride or an area in need of personal improvement.

If you live where the Floridan Aquifer is vulnerable to contamination due to a lack of impervious clayey soils and you apply fertilizer to your lawn, garden or pasture, you have an elevated nitrogen aquifer footprint.

If your home’s wastewater is disposed of in a septic system and your lot is less than five acres, you also have an elevated nitrogen footprint.

If you water your yard and landscaping plants with groundwater or consume unusually large volumes of water in your house, then you also have an elevated water use footprint.

The Howard T. Odum Florida Springs Institute has completed the first phase of its “Blue Water Audit,” an assessment of the aquifer footprint of the 4.2 million Floridians living in the Springs Region of North and Central

Florida.

Publicly-available geographic information system databases were analyzed by overlaying information on land use, aquifer vulnerability, property ownership, method of wastewater disposal, human population and other factors to estimate the effects of humans and their domesticated animals on the quantity and quality of the water in the underlying aquifer.

If you live within an urban boundary, your estimated impact on the Floridan Aquifer is reported as an average with all your urban neighbors. If you own property covering five or more acres outside of an urban boundary, your aquifer footprint is reported individually for your property.

The Blue Water Audit provides the first comprehensive estimate of individual human impacts to the Floridan Aquifer and the springs and other surface water bodies it supports.

For example, the Blue Water Audit estimated that about 22,000 tons of nitrate-nitrogen reach the Floridan Aquifer each year in Florida’s 15 million-acre Springs Region. An estimated one billion gallons per day of groundwater is pumped cumulatively by residents, municipalities, farmers, and industries in North-Central Florida.

The average per capita nitrogen load and groundwater use in this Springs Region is 10.6 pounds per year and

**KNIGHT**  
Continued on Page 16

**Florida Specifier**

P.O. Box 2175  
Goldenrod, FL 32733

Michael R. Eastman  
Publisher/Editor  
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The *Florida Specifier* welcomes columns, articles and letters to the editor on any subject or issue pertinent to the environmental, regulatory and technical areas the newspaper covers. We reserve the right to edit all submissions for newspaper style and publish submissions on a space-available basis only. The opinions expressed on this page are those of the authors.

# Calendar

## JUNE

JUNE 8 – Course: Hazardous Waste Regulations for Generators, Daytona Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 10-12 – Conference: 22<sup>nd</sup> Annual Gulf States Engineering Conference, Miramar Beach, FL. Presented by the Florida Engineering Society and the Louisiana Engineering Society. Contact Brenda Gajanj, LES executive director, at [brenda@les-state.org](mailto:brenda@les-state.org) or visit [www.fleng.org](http://www.fleng.org).

JUNE 13 – Course: FlaWARN Training 2018: Lessons Learned from Hurricane Irma, Wellington, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 13 – Conference: Annual Conference of the Florida Association for Water Quality Control, Naples, FL. Contact Jon Hull at (813) 777-1041 or visit [www.fawqc.com](http://www.fawqc.com).

JUNE 14 – Course: FlaWARN Training 2018: Lessons Learned from Hurricane Irma, St. Augustine, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 23-24 – Course: Backflow Prevention Recertification, Tampa, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 23 – JULY 1 – Course: Backflow Prevention Assembly Tester Training and Certification, Jacksonville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 25 – Course: Introduction to Backflow Prevention, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 26-27 – Course: Cross Connection Control – Survey and Inspection, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 28-29 – Course: Cross Connection Control – Ordinance and Organization, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 26 – Course: FlaWARN Training 2018: Lessons Learned from Hurricane Irma, Largo, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 27 – Course: FlaWARN Training 2018: Lessons Learned from Hurricane Irma, Orlando, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 28 – Meeting: South Florida Aquatic Plant Management Society General Meeting, Boynton Beach, FL. Call (954) 370-0041 or visit [www.sfpams.org](http://www.sfpams.org).

JUNE 28-29 – Course: Backflow Prevention Recertification, West Palm Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

## JULY

JULY 6-7 – Course: Backflow Prevention Recertification, Miami, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 7-8 – Course: Backflow Prevention Recertification, Bradenton, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 9-13 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Pensacola, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 9-13 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Pensacola, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 9-13 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 9-13 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 9-13 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Altamonte Springs, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 15-17 – Conference: 2018 SWANA FL Summer Conference, Palm Beach Gardens, FL. Presented by the Florida Section of the Solid Waste Association of North America. Call (727) 940-8855 or visit [www.swanafl.org](http://www.swanafl.org).

JULY 16-17 – Exam: Licensed Environmental Professional Exam, Marco Island, FL. Presented by the International Society of Technical and Environmental Professionals. Call (850) 558-0617 or visit <http://instep.ws/>.

JULY 16-18 – Course: Backflow Prevention Assembly Repair and Maintenance Training and Certification, Gainesville, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

JULY 16-19 – Course: Backflow Prevention Assembly Tester Training and Certification, Key West, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JUNE 17 – Course: FlaWARN Training 2018: Lessons Learned from Hurricane Irma, Miramar Beach, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

JULY 24 – Course: Refresher Training Course for Experienced Solid Waste Spotter – 4 Hours, Plant City, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

JULY 24 – Course: Initial Training Course for Spotters at Landfills, C&D Sites and Transfer Stations – 8 Hours, Plant City, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 24-25 – Course: Initial Training Course for Transfer Station Operators and Materials Recovery Facilities – 16 Hours, Plant City, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 24 – Course: Refresher Training Course for Experienced Solid Waste Operators – 8 Hours, Plant City, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570.

JULY 24-26 – Course: Initial Training Course for Landfill Operators and C&D Sites – 24 Hours, Plant City, FL. Presented by the University of Florida TREEO Center. Call (352) 392-9570 or visit [www.treeo.ufl.edu](http://www.treeo.ufl.edu).

JULY 26-29 – Expo: Sunshine Expo, Orlando, FL. Presented by the Florida Petroleum Marketers Association. Call (850) 877-5178 or visit [www.fpma.org](http://www.fpma.org).

## Florida Specifier

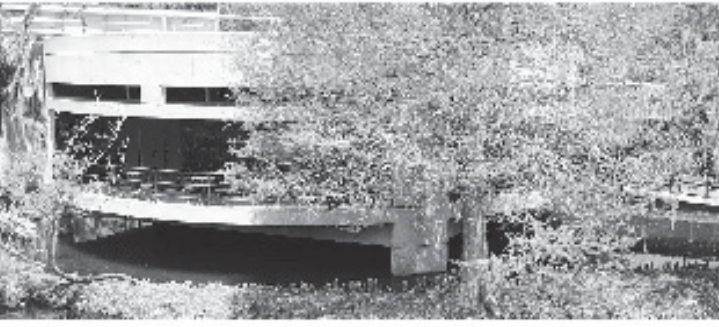
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## Thank you!

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**Process Control of Advanced Waste Treatment Plants**  
Oct. 16-18, 2018 | Kissimmee, FL | CEUs: 2.1

**Effective Utility Leadership Practices**  
Oct. 31 - Nov. 1, 2018 | Gainesville, FL | CEUs: 1.5

**Water Class A Certification Review**  
Jul. 30 - Aug. 3, 2018 | Gainesville, FL

**Water Class B Certification Review**  
Dec. 11-14, 2018 | Gainesville, FL

**Water Class C Certification Review**  
Sep. 11-14, 2018 | Gainesville, FL

**Wastewater Class A Certification Review**  
Feb. 18-22, 2019 | Gainesville, FL

**Wastewater Class B Certification Review**  
Feb. 12-15, 2019 | Gainesville, FL

**Wastewater Class C Certification Review**  
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### ASBESTOS COURSES

**Asbestos Initials**  
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**Asbestos Refreshers**  
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### SOLID WASTE COURSES

**Initial & Refresher Solid Waste Courses**  
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### BACKFLOW PREVENTION COURSES

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Jul. 9-13, 2018 | Gainesville, FL  
Jul. 9-13, 2018 | Pensacola, FL  
Jul. 14-22, 2018 | Tampa, FL\*  
Jul. 25-28, 2018 | Venice, FL  
Jul. 30 - Aug. 2, 2018 | Tallahassee, FL  
Aug. 6-10, 2018 | Destin, FL  
Aug. 17-25, 2018 | Ft. Myers, FL\*\*  
Sep. 10-14, 2018 | Gainesville, FL  
Sep. 10-14, 2018 | Orlando, FL  
Sep. 10-14, 2018 | Pensacola, FL  
Sep. 21-29, 2018 | Venice, FL\*\*  
\*Two consecutive Sat. & Sun.  
\*\*Two consecutive Fri. & Sat.

**Backflow Prevention Assembly Repair and Maintenance Training & Certification**

Jul. 16-18, 2018 | Gainesville, FL  
Aug. 13-14, 2018 | Venice, FL  
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Jul. 6-7, 2018 | Miami, FL  
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Wastewater Collection Systems Online  
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Asbestos Refresher: Contractor/Supervisor  
CEUs: 0.8

Asbestos Refresher: Inspector  
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Spotter Training for Solid Waste Facilities: Refresher - 8 Hours  
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# Increased efficiency of state cleanup programs more important than ever

By STEVE HILFIKER

According to the U.S. Census Bureau, Florida's population grew from 2.7 million in 1950 to 20.6 million in 2016. And we may grow to 30 million by 2045, according to the University of Florida Bureau of Economic and Business Research.

This increase in population will require a renewed focus on growth management planning. Groundwater resource managers and government planners will need to work

together to accommodate this growth.

Where are we going to put 10 million more people? The best option is urban redevelopment—crucial for a sustainable environment. Many of these projects will be built on contaminant-impacted properties where risk management strategies, state-funded cleanup programs and brownfields redevelopment incentives will help get the job done.

Any development of raw land must be carefully considered because these properties are needed to sustain the environ-

ment. Proper management of Florida's natural resources, including Everglades restoration, groundwater quality and quantity, and land preservation are legislative priorities that are here to stay.

In 1978, the total cropland in Florida was 4,298,952 acres. In 2007, the total was 2,112,129 acres. These U.S. Department of Agriculture statistics speak volumes about the urbanization of the state. Over 2.1 million acres in Florida would now be considered to have had historical agricultural land use. Some of this land may have gone back into production since 2007, but considering the acreage developed prior to 1978, it's safe to say that former cultivated land in Florida exceeds two million acres.

There are three important points to consider in assessing growth management. First, we must continue to fund and encourage economic and regulatory incentives to accelerate sustainable redevelopment on land best suited for that purpose.

Second, we must carefully manage land preserved under the Florida Forever program, Everglades restoration, wildlife corridors, springs and other natural resource management and conservation issues.

Finally, we must protect human health and the environment to sustain our growing population.

One of the most important considerations is groundwater quality. With roughly 90 percent of our drinking water coming from groundwater resources, consistent annual funding of state cleanup programs is important. Each year, various environmental industry associations with interest in maintaining and developing these programs demonstrate to legislators why increased and consistent funding is so important. It is not too early to start planning those conversations for the 2019 legislative session. Now is the time to communicate the message to your local lawmaker.

Funding for the Florida Department of Environmental Protection's Petroleum Restoration Program must return to the higher levels of a few years ago and be established as a consistent annual appropriation until the intent of the program is achieved—the successful rehabilitation of all sites eligible for funding.

According to the April, 2018, DEP Dashboard Report, there are a total of 19,342 eligible sites. Of these, 10,180 have been rehabilitated, 6,419 are in some stage of active restoration, and 2,743 await funding. The PRP has experienced substantial progress over the past few years and success is not too far off into the future. This is not the time to reduce appropriations.

Consistent funding at a higher level must also be provided to the Drycleaning Solvent Cleanup Program. Additional funding will go a long way to ensure that these sites are cleaned up and do not pose a threat to potable water supplies.

According to DEP data as of Jan. 1, 2018, there were 1,421 eligible drycleaner and wholesale supply sites. 381 assessments have been completed and 67 assessments were active at the end of 2017.

Remediation has been initiated at 251 facilities and 166 sites have met closure or natural attenuation monitoring criteria and do not require additional active remediation, or operations and maintenance. 210 sites have achieved closure, 21 through voluntary cleanup and four using risk-based corrective action through 2017.

The Brownfields Redevelopment Act was passed in the 1997 legislative session. The initial visionaries of the state program consisted of legislators, developers, lawyers, consultants and bankers who understood the economic opportunities that would result as land became increasingly scarce. They knew that urban land available for redevelopment, although contaminated, had the potential to provide large returns on investment and created regulatory and economic incentives to encourage it.


The regulatory and economic incentives accrue to both the development community and the local governments that assists them, with DEP reporting over \$80 million in voluntary cleanup tax credits to developers and municipalities. As of 2017, DEP reports that approximately \$2.7 billion in lender and equity investment is projected in designated brownfield areas.

Risk-based corrective action was introduced to Florida in 1997 through the administrative codes that govern contaminated site cleanups. The process established institutional and engineering controls to prevent exposure to impacts. Not surprisingly, most developers and property owners prefer RBCA as an effective risk management strategy for real estate transactions and redevelopment activities.

In the next 25 years, Florida may become the nation's second largest state in terms of population. With an increasing focus on redevelopment, the efficient use of state cleanup and brownfield programs will become even more important if we want to maintain the quality of the environment around us.

Steve Hilfiker is president of Environmental Risk Management Inc. in Fort Myers. He can be reached at 888-368-6468 or steve@ermi.net.

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### KNIGHT From Page 14

230 gallons per day, respectively. For Alachua County residents, the per capita averages are 9.5 pounds per year of nitrogen loading and 142 gallons per day of groundwater use.

By contrast, the aquifer footprint for an individual living in Suwannee County, with a highly vulnerable aquifer, intensive agriculture and low human population compared to livestock population, is 84.5 pounds per year of nitrogen loading and 1,455 gallons of groundwater per day.

A few counties have lower estimated aquifer footprints. For example, Leon County has a per capita nitrogen footprint of 5.1 pounds per year and a groundwater use footprint of 75.8 gallons per day per person. These lower numbers reflect a large urban population within a region of low agricultural productivity.

We all have an aquifer footprint. If you refrain from using fertilizer or irrigating your lawn, you are doing your part in protecting the aquifer and springs. There is little more that you can change in your life to directly protect the springs. But, if you are wasteful with fertilizer and water, you can make personal choices that will significantly reduce your aquifer footprint.

Make no mistake, the aquifer footprint of a farmer irrigating and fertilizing 200 acres of vegetables or a dairyman keeping 2,000 milk cows is more than one hundred times more impactful to the aquifer than a person living in an apartment or retirement

village.

A lush golf course or fancy corporate park with irrigation and landscaping may have an aquifer footprint equivalent to thousands of individuals. It is imperative for environmentally-damaging businesses and local governments to reduce their aquifer footprints.

In pursuit of improved human health and environmental protection, the public interest should take precedence over personal gain or extravagant lifestyles.

The net result of the choices we are currently making within Florida's Springs Region is an average groundwater nitrate-nitrogen concentration 2,900 percent higher than natural background concentrations and an overall decline in average spring flows of about 32 percent.

One goal of the Blue Water Audit is to continue making these estimates over time to determine how much the state's roughly \$100 million annual springs protection expenditures are, or are not, improving conditions in the Floridan Aquifer and regional springs.

So far, despite record funding, our springs and drinking water supply are becoming more depleted and polluted every year. Reducing your personal aquifer footprint is essential. But without government action, the springs and aquifer cannot be maintained. Please keep that fact in mind when you cast your votes this year.

Dr. Robert Knight is director of the Howard T. Odum Florida Springs Institute in High Springs.



# Brevard County imposes five-month ban on septic tank installations

By ROY LAUGHLIN

At its April 26 meeting, the Brevard County Board of County Commissioners approved a five-month moratorium on septic tank installation.

The ban affects only the county's barrier islands, Merritt Island and a 50-meter-wide strip along the west shore of the Indian River Lagoon and its tributaries.

The ban applies to traditional septic tanks and drainfields.

Cities in Brevard County may opt out of the moratorium through a vote of their city councils.

The goal is to reduce nitrogen sources that have fueled eutrophication and extreme algae blooms during the past decade in the Indian River Lagoon system.

While the commission met to consider the ban, the Banana River and Indian River's central segment were experiencing another months-long algal bloom.

During the moratorium, the county health department will not approve traditional septic tank permits for sites in the designated areas. It will permit only advanced on-site wastewater treatment systems that remove at least 60 percent of the wastewater nitrogen.

Allowing installation of alternative wastewater treatment systems during the ban is key to assuring its enforceability. The county's legal counsel explained during the pre-vote discussion that if the county banned septic tanks without alternatives, the ban would not likely survive a court challenge.

County Commissioner Jim Barfield, who sponsored the moratorium, provided a list of aerobic and advanced on-site wastewater systems that have been tested by the Florida Department of Health and meet the nitrogen removal capability.

There are twelve such systems that currently meet the 60 percent nitrogen removal requirement. Some are significantly more effective.

The five-month period applies to new construction and to applications for permits to replace existing septic tanks.

Barfield noted that the county still allows repairs to traditional systems.

During the five-month moratorium, the commission will draft language for a permanent septic tank ban in areas where the effluent significantly contaminates the IRL.

The commission tasked the county De-

partment of Natural Resources Management with drafting an ordinance and preparing supporting documents for a permanent ban on traditional septic tanks in designated areas.

Barfield said that the department has broad latitude to draft the proposed ordinance. It could be a simple direct stipulation for alternative systems within a specified area or it could involve broader measures.

Those broader measures could set stricter requirements for sewer use, or wastewater treatment plant expansions in Brevard County. That and other measures could be made in the county's land use regulations.

Details will be sorted out this summer when the department provides its proposed ordinance to the council.

Barfield seems intent on a new county ordinance which, at a minimum, will end permitting of traditional two-compartment, 1,000-gallon septic tanks in favor of aerobic systems that remove more nitrogen from wastewater effluent.

Discussion of the addition cost of the advanced systems dominated the April council meeting.

Commissioners were told that anaerobic treatment systems could add \$2,000 to the cost of a septic tank. Phosphorus treatment capability would double that additional cost. And in the case of the most expensive treatment unit, it would more than double total system cost.

The cost of extra phosphorus removal was an obstacle to moratorium approval.

During the meeting, Commissioner Curt Smith asked if the commissioners should be considering an ordinance that also set a phosphorus removal standard.

Vice-Chair Commissioner Kristine Isnardi said that she would not support the temporary moratorium if it included phosphorus removal and therefore allowed for only the most expensive advanced on-site wastewater systems.

Given past the behavior of the commission, the increased cost of alternative systems could lead to a rejection of a permanent moratorium due to the influence of special interests.

A recent Tetra Tech report attributed 42.5 percent of the nitrogen responsible for algae blooms and other eutrophication processes to releases from muck.

That report ranked septic tanks, which

important provisions and requirements.

**24. Gaps and overlaps.** How many environmental laws govern toxic substances? For simplicity and ease of regulation, hopefully just one or two. In reality, numerous laws including but not limited to the Clean Water Act, the Resource Conservation and Recovery Act, the Federal Insecticide, Fungicide, and Rodenticide Act, and the Toxic Substances Control Act all regulate toxic materials in some way. ELP is a patchwork quilt of legislation, regulation, policies and guidance documents often working together, in a parallel course, or sometimes not at all. There are gaps and overlaps, belts and suspenders. The evolution of modern ELP came swiftly with multiple major federal laws being enacted over a period of just a decade or so. It might be naïve to think we could effectively tackle such a complex and widespread problem on the first try. While hardly perfect, we know that today our air, water and land are better protected than they were just a few decades ago.

**25. Multidisciplinary teams.** The field of ELP is a multifaceted and complex one. Teams of lawyers, planners, scientists and engineers work together on problems bringing their respective expertise to a project. The need to work effectively on these teams has never been more important. The health and success of our environment depends on it.

*John K. Powell, an environmental lawyer and registered professional engineer, is the director of the city of Tallahassee's Environmental Services and Facilities Department and an adjunct instructor at the FAMU-FSU College of Engineering.*

contribute 18.8 percent, as the second largest source of nitrogen contributing to eutrophication.

In 2015, Brevard County voters approved a half cent sales tax levy over 30 years to pay for muck dredging to improve water quality in the Indian River. It was a rare action whereby voters demanded action on the lagoon's increasingly unacceptable levels of eutrophication.

In a statement during a commission meeting, Barfield criticized the years and

years of talk about doing something to improve Indian River's water quality and urged the commission to approve a moratorium and permanent septic tank ban.

If the county bans septic tanks, the combination of muck management and septic tank nitrogen reduction will address more than half the lagoon system's eutrophication-causing nitrogen sources.

The ban, however, will take decades to bear the fruit of beneficial nutrient reduction.

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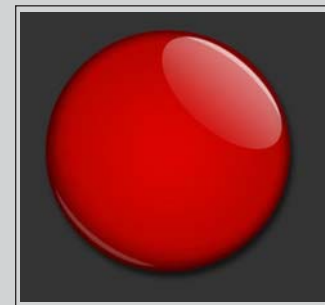
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# SELC files legal challenge in U.S. District Court over clean water protection

By **BLANCHE HARDY, PG**

Conservation advocates are not taking the recent U.S. Environmental Protection Agency and U.S. Army Corps of Engineers suspension of clean water protections under the Clean Water Act lying down.

The Southern Environmental Law Center recently filed a legal challenge in the U.S. District Court for the District of South Carolina on behalf of American Rivers, Clean Water Action, Defenders of Wildlife, Charleston Waterkeeper, Chattahoochee Riverkeeper, Coastal Conservation League, Friends of the Rappahannock, the North Carolina Coastal Federation and the North Carolina Wildlife Federation.

"The agencies' suspension of the Clean Water Rule was proposed and adopted in violation of the Administrative Procedure Act and is thus arbitrary and unlawful," said Meghan Boian, associate director of

policy and government relations at American Rivers.

"The agencies failed to consider and address the merits of the suspension rule," she said. "They did not accept comment on what the implications would be of suspending the Clean Water Rule."

Boian said the legal action is based in South Carolina but has far reaching potential impacts well beyond the state line.

The advocates represent the interests of nearly 20 million people in the South and, given the nature of the filing, 117 million people across the country.

"At the most basic level, the health of our rivers depends on the health of upstream waters, including small streams and wetlands," she said. "By suspending the Clean Water Rule's protections, those small streams and wetlands lose their federal protections that regulate the filling-in or polluting of them.

"Thus, not only would those small

streams and wetlands be directly harmed if they were filled in or polluted, but it would disturb the chemical, physical and biological processes of the whole stream and river network that keep our waters healthy."

The Trump administration has announced several intended actions crafted to repeal now venerable clean water protections. This suspension of standards is the first blow.

"Clean water is a way of life we take for granted in this nation thanks to bipartisan laws passed almost 50 years ago," said Blan Holman, managing attorney at the Southern Environmental Law Center, which is representing the coalition in court. "But large polluters now want to dismantle all our protections.

"The administration is pretending that

pollution dumped upstream doesn't flow downstream, but its plan puts the water used by hundreds of millions of Americans for drinking, bathing, cooking and recreation at risk. We are going to court to protect clean water across the country," he said.

"The Trump administration's attempt to roll back federal protections for some of the most sensitive wetlands and streams is irresponsible," said Bob Dreher, senior vice president for conservation programs for Defenders of Wildlife. "All endangered species, from grizzlies in Montana to panthers in Florida, depend upon drinking water for survival. This action will prioritize industry over communities and wildlife, and put both at unnecessary risk."

The EPA and the corps have 60 days to respond to the lawsuit.

## 2018 "State of the Air" report shows Florida air quality improvements

By **BLANCHE HARDY, PG**

The American Lung Association's 2018 "State of the Air" report found that air quality improved in Florida over the past year. Florida ranked well overall when compared to other states with several of its cities on the cleanest cities list.

"Florida has earned improved grades for the nation's most widespread air pollutants," said Briney Reddick, a spokesperson with the American Lung Association. "Compared to the 2017 report, Florida has seen a cut in ozone pollution slightly. This is in spite of a trend seen across the nation of higher ozone pollution levels."

"Panama City, Palm Bay, Melbourne, Titusville and Tallahassee experienced zero unhealthy air days of high ozone and rank on the cleanest cities list for ozone pollution," she noted.

In addition, Cape Coral, Fort Myers, Naples, Gainesville, Lake City, Homosassa Springs, Lakeland, Winter Haven, North Port, Sarasota, Orlando, Deltona, Daytona Beach, Palm Bay, Melbourne, Titusville, Pensacola, Tampa, St. Petersburg and Clearwater ranked among the cleanest cities in the nation for short-term particle pollution, experiencing zero unhealthy air days.

Cape Coral, Fort Myers, Naples, Homosassa Springs, Lakeland, Winter Haven, North Port, Sarasota, Orlando, Deltona, Daytona Beach, Palm Bay, Melbourne, and Titusville also appeared on the cleanest cities list for year-round particle pollution.

While the news is positive overall, Reddick pointed out one negative.

"The 2018 report found year-round particle pollution levels slightly lower than the 2017 report, but a few cities experienced slightly higher levels. However, they were still well below the national standard."

Nationwide, the best progress in this year's report came in reducing year-round levels of particle pollution. Orlando, Deltona and Daytona Beach had some of the lowest levels in the nation.

The American Lung Association's "State of the Air" 2018 report is their 19th annual national air quality report. ALA translates information about air pollution into a "report card" to help people better understand their air quality and protect themselves and their families.

To improve air quality, the ALA is calling upon members of Congress to defend the Clean Air Act which, like similar initiatives to protect human and ecological health, is under fire from the Trump administration.

They are also asking the U.S. Environmental Protection Agency to enforce the laws rather than rolling back safety-based standards like the Clean Power Plan and Corporate Average Fuel Economy standards.

"More than four in 10 people in the U.S. live in counties that had unhealthy ozone or particle pollution in 2014-2016," Reddick said.

"Ozone and particle pollution are two of the most dangerous air pollutants. Breathing these can cause asthma attacks, respiratory and cardiovascular harm, and even early death. Breathing particle pollution can also cause lung cancer."

### FEDFILE From Page 2

The agency said that it will continue to solicit and use stakeholder feedback to make additional improvements desired by mobile device users.

More information is available online at <https://www.epa.gov/ejscreen>.

**Interior Department cripples incidental take permits.** In late April, U.S. Fish and Wildlife Service Principal Deputy Director Greg Sheehan sent a memorandum to regional directors noting that it is not appropriate for FWS personnel to advise private parties when it is appropriate under the law for them to seek an incidental take permit under the 1973 Endangered Species Act.

Incidental take permits excuse developers from penalties for destroying protected species, for example, when bulldozing land with gopher tortoise burrows kills the animals in them.

The new policy does not change the ESA requirement that businesses or individuals must request an ITP if they believe their development activities interfere with an endangered species' habitat or individuals in the habitat.

The memo noted that FWS staff should still advise inquiring nonfederal parties about FWS guidance and the potential for take of listed species incidental to their ac-

tivities. Under the terms of Sheehan's memo, it is an entirely independent decision by developers and landowners to proceed with an ITP.

The effect of this new ruling will be to seriously reduce the level of protection for endangered species and their habitats.

In addition, it may seriously reduce mitigation requirements because those are typically negotiated with property owners when they apply for an ITP.

Finally, due to the absence of permit applications and recommendations, FWS will have no paper trail to aid in enforcement in the event of harm to endangered species.

In a separate rule proposed in early April, the Interior Department proposed a change to the way it administers the ESA.

The proposed rule would require the agency to tailor protections for listed threatened species on a species-by-species basis.

A species listed as threatened would be under protective regulations only if and when the agency established specific rules for it.

Currently, when a species is listed as threatened, a blanket rule that prohibits harming, harassing, killing and habitat destruction automatically goes into effect.

If the proposed rule is accepted, it would apply only to species designated as threatened after the rule's effective date.

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# Volusia WWTP upgrade helps protect Volusia Blue Springs watershed

By ROY LAUGHLIN

Volusia County Utilities' Southwest Regional Wastewater Treatment Plant upgrade project was finished earlier this spring and celebrated with a ribbon cutting ceremony in late April.

Improving water supply and water quality flowing into the aquifer feeding Volusia Blue Spring were the upgrade

## SUPERFUND

From Page 1

the urgent human health and environmental risks from CCA and other chemical contaminants that may have been released from burning wood or chemical use at the factory site.

In 2012, the site was designated a Superfund site. During the following year, the EPA began its remedial investigation and risk assessment. Both are now complete.

The record of decision was signed in August, 2017.

EPA expects to remove up to 25,000 cubic yards of soil from the site and as much as 10,500 cubic yards from adjacent

## EF REPORT

From Page 1

exacerbate water pollution problems.

Troubled Water 2018 reported that there were 270 exceedances in Florida during the study period. They came from 49 of the 325 major industrial facilities evaluated.

A total of 103 exceedances were to impaired waters and 69 of them were greater than 100 percent of their point source permit limit. Sixteen were beyond 500 percent of their permit limit.

The report noted three of the top ten polluters in Florida are discharging into the St. Johns River.

"I have seen people fishing, swimming and boating in every single location this report lists as a major violator," said Blackinship. "The pollutants are toxic to our water, hazardous to our health and dangerous to the ecosystem."

The report's recommendations are counter to the direction taken by the Trump administration. The report advised governing bodies to ensure that Clean Water Act regulations are enforced.

"The Clean Water Act's goal is to achieve water quality levels that are fishable and swimmable," said Blankinship. "The law was passed in 1972 and has helped cleanup toxic pollutants and discharges all over the country through permitting and enforcement of illegal discharges. However, polluted waterways remain.

"Any reduction in the standards that protect our waterways will have a negative impact on the health and safety of our nation."

The report noted that many violations are currently going unpunished.

An average of 27,849 facilities were non-compliant in the U.S. every year from 2011 to 2017. Of these, less than half, 13,076, were subject to federal or state action during the same period.

The report suggested that better compliance could be achieved by increasing the number of on-site inspections at major facilities.

Additional funding was identified as the foundation for a variety of activities capable of resulting in better water quality protection, such as restoring funding to state and federal enforcement programs and programs to implement improvements such as water pollution control grants.

The report advocated for the issuance of sufficiently costly penalties to deter companies from polluting waters, noting that most fines currently being issued are too low to deter polluters.

The median fine issued by the EPA in 2017 was lower than the median fines levied annually since 2011.

As of December, 2017, the median EPA-issued penalty for the first year of the Trump administration was \$20,250. For comparison, the median penalty in 2014 was \$45,500.

effort's primary goals.

The SRWWTP upgrade also increased capacity by a million gallons a day to a total of 2.7 mgd. The extra wastewater capacity will handle additional flow resulting from the closure of a small, outdated wastewater treatment plant in nearby Orange City.

The water treatment plant is adjacent to the DeBary Golf and Country Club and

contaminated residential properties.

The recent sampling will provide more information about which lots should be subject to cleanup and the soil volume to be removed.

Retention pond sediments are likely to contribute an additional 1,000 cubic yards of contaminated material to be removed. Also, 2,000 tons of demolition debris and residual waste materials in pits and drains has been or will be removed.

The final cleanup, expected to cost up to \$7.9 million, depends on indications from this year's residential property sampling, input from public meetings to gain stakeholder comments and finalization of the remedial design.

Harris said that the project remains on schedule to complete the remedial design phase before the end of this year. Contingent on funding, soil removal could begin by the end of 2018 and continue for a year to reach completion.

just three miles from Volusia Blue Spring.

The wastewater treatment plant's output of suitably-treated wastewater will be distributed as reuse water across the 130-square-mile Volusia Blue Spring springshed.

The plant's treatment enhancements are expected to reduce total nitrogen in its effluent by 27,000 pounds per year and total phosphorus by 14,000 pounds.

The treated wastewater will be used as irrigation water applied within the springshed.

The upgrade project's total cost was \$12.7 million. The Florida Department of Environmental Protection and the St. Johns River Water Management District contributed \$7.5 million.

CHP Engineers and Wharton-Smith Inc. were involved in the project that took about four years to complete.

This project is one of several ongoing efforts to improve water quality and maintain minimum flows at Volusia Blue Spring, one of Florida's largest springs.

Over the past several years, septic tank-to-sewer conversion projects in neighborhoods near the springs have occurred as another facet of local efforts to reduce nutrient loading in Volusia Blue Spring's water.

As the recent plant upgrade project ends, new projects for further water quality and quantity improvements within the

watershed will begin.

At its March, 2018, meeting, the St. Johns River Water Management District Governing Board approved three projects to enhance water quality and quantity within its springshed.

For the first, the district will contribute \$366,000 to the West Volusia Water Suppliers Group for construction of a rapid infiltration basin to allow up to one million gallons a day of reclaimed water and stormwater to infiltrate into the springshed's aquifer. The RIB project's total cost is budgeted at just over \$1,100,000.

The second project that was approved awarded Volusia County Water Conservation with \$478,000 to help fund the work expected to cost \$957,000.

The project will implement water conservation infrastructure for Volusia County Utilities using the Sensus Flexnet system on production wells and flushing units to help reduce water losses. The upgrades are expected to conserve 220,000 gallons a day.

For the third approved project, as part of the prevention/recovery strategy for the spring, SJRWMD will contribute \$574,000 to expand reuse water for landscape irrigation on 421 residential properties and one sports complex in Deltona.

The project will provide up to 164,000 gallons a day of irrigation water. Total project cost is \$1,739,000.



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**WELLINGTON**  
From Page 7

"Our whole team worked very hard," LaRocque said. "To have them recognized in this way is very meaningful. It recognizes that the direction we are heading in is the right direction. Everybody contributed. It was truly a team effort."

Meanwhile, village officials are working on a \$17 million renovation that will replace the oldest of three plants at the water treatment facility.

LaRocque said the oldest reverse osmosis plant will be taken out of service. Officials will be retrofitting four trains and removing one. Variable frequencies drives will be installed on the feed water pumps and the train pressure vessels will be replaced.

"We're giving the plant a facelift," Laroque said.

In addition, officials are adding a new treatment train, feed water pump and micron filter at Wellington's second reverse osmosis plant. They are also building a new control room and replacing all the high service pumps.

A new control building and laboratory are also part of the effort. Work is expected to begin in August. It will take about two years to replace the old plant.

"This project will expand the life cycle of the plant for 30 years and, for custom-

ers, it will improve reliability and operations," LaRoque said.

Officials are also planning a wastewater renewal and replacement project, she added. This will involve constructing a new control room, laboratories and other work.

Staff is now in the design phase of the project.

**CFWI**  
From Page 5

natural systems. "It is the intent of the planning process to identify more options than are needed," Spears said. "Therefore, it is anticipated that not all proposed projects will be constructed."

"In addition to conservation projects, it is anticipated that sources to be developed will include surface water, stormwater, brackish groundwater as well as increased use of reclaimed water. The suite of projects included in the 2020 CFWI RWSP will be options from which local governments, utilities, and others may choose to help meet their projected water demands."

Water users are not limited to the projects in the plan. The list represents a set of options that could supply a sufficient quantity of water to meet the projected demands if implemented.

**NOTES**  
From Page 3

Stantec has more than 720 staff in Florida offering services in coastal, civil, transportation, water and electrical engineering; planning and landscape architecture; architecture and interior design; program and project management; environmental services; and construction engineering and inspection.

New York-based National Response Corp. acquired SWS Environmental Services Inc. adding to its national footprint and expanding its line of compliance and environmental services.

Since 1974, SWS has provided a broad range of services including industrial, hazardous waste management, emergency response, marine and remediation services to the energy, manufacturing, education, health care, chemical, transportation, government, and retail sectors.

SWS has 21 locations serving states throughout the Midwest, Gulf Coast and Southeastern U.S., including nine in Florida.

Environmental Risk Management Inc. opened a new office in Tampa at 5810 Breckenridge Parkway, Suite D. Tim Terwilliger, PE, will manage the office, which is staffed by project managers and field technicians, and supported by administrative personnel at ERMI's headquarters in Fort Myers.

The Mosaic Company announced plans to move its corporate headquarters to Hillsborough County. Details of the move, including timing, the exact location of the corporate office and the number of employees to be relocated, remain under consideration.

Mosaic President and CEO Joe O'Rourke said that locating corporate office here will give the company opportunities to amplify their presence and engage more closely with communities where they operate.

Mosaic is among the largest employers and most significant corporate economic drivers in Central Florida

**People news.** Universal Engineering Sciences hired Jessika Blersch as environmental project manager. She will assist in the delivery of technical services and support the growth of the West Palm Beach Environmental Department and provide support to the management and sales teams in the promotion of the company's environmental services initiatives.

In May, Environmental Risk Management Inc. President Steve Hilfiker was elected to the board of directors of the Florida Ground Water Association.

Orlando-based FECC Inc. hired Eric R. Brown as executive vice president of operations and strategic development.

**TRANSPARENCY**  
From Page 13

scarce.

**Exclusionary potential**

Far out on the negative arm of the proposed new rule of unintended consequences, scientists warn that the proposed rule's language could exclude the use of entirely appropriate data to establish regulation standards that special interests opposed on financial self-interest and other non-scientific grounds.

Environmental advocates note that air quality standards that impinge on fossil fuel use are those receiving the most concerted opposition from industry. Those standards are most at risk if the EPA's proposed data transparency rule becomes law.

Some air quality standards face more than the usual issues with dose-response variability because measuring air concentrations of regulated substances or materials is challenging, even in experimental studies.

Perhaps not coincidentally, the EPA's data transparency rule proposal coincides with a scheduled periodic review of air quality standards. This periodic review could give the first indication of the proposed rule's implementation.

That is, if it is not tied up in court challenges mounted by the rule's opponents.

**BANK**  
From Page 8

cultural drainage and flood control degraded the marsh into a shrub-dominated wetland.

"We have been involved with this bank for a long time," Dennis said. "Now, it is a fully permitted wetlands mitigation bank and it is 1,657 acres of Upper St. Johns River marsh and floodplain."

Melbourne City Engineer Jenni Lamb said that while only a small part of the bank is within the city of Melbourne itself, the bank is very significant to the region.

"The importance of this project is that the mitigation bank will provide credits for regional roadway projects," Lamb said. "The roadway projects drove us to the creation of this mitigation bank."

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