Editor’s Note

Dear Wetlanders,

As I am sure you are all experiencing in your professional and personal worlds as well, the New Year is off to an interesting start. The federal government shutdown is impacting both the professional and personal lives of our federal agency partners, important state and tribal programs, environmental protections, scientific research, the regulated community, public safety and so much more. The Association of State Wetland Managers is doing its best to weather these challenges. We are currently working to navigate projects without the guidance of our federal project managers and are preparing ourselves to hit the ground running as soon as the federal agencies reopen. We have rescheduled two webinars from January to February and put a few of our workgroup efforts on hold. Until the impasse in Washington D.C. is resolved, please keep in mind that we may have to keep rescheduling webinars and some activities that are dependent on federal staff engagement and/or approval of funds until the government reopens.

Additionally, in light of a recent speech by President Trump where he stated that federal protections for waterways and wetlands were “one of the most ridiculous” regulations and that prairie potholes are “bad,” I feel compelled to share information about all the amazingly great benefits provided by prairie potholes. Prairie potholes are a unique type of wetland that provides many critical services for communities in the Upper Midwest, migratory wildlife, and the nation as a whole. According to the U.S. Environmental Protection website, prairie potholes are “depressional wetlands (primarily freshwater marshes) found most often in the Upper Midwest, especially North Dakota, South Dakota, Wisconsin, and Minnesota. This formerly glaciated landscape is pockmarked with an immense number of potholes, which fill with snowmelt and rain in the spring. The Upper Midwest, because of its numerous shallow lakes and marshes, rich soils, and warm summers, is described as being one of the most important wetland regions in the world. The area is home to more than 50 percent of North American migratory waterfowl, with many species dependent on the potholes for breeding and feeding. In addition to supporting waterfowl hunting and birding, prairie potholes also absorb surges of rain, snow melt, and floodwaters thereby reducing the risk and severity of downstream flooding.” They also recharge groundwater systems that supply water to farmlands and wells as well as water and forage for livestock.

Tonight I shall raise a glass and toast the noble prairie potholes. I hope you will join me!

Marla J. Stelk
Editor, Wetland Breaking News
Trump to farmers: Wetlands protections ‘one of the most ridiculous’ regulations

By Ellen Knickmeyer, AP – PBS – January 14, 2019
President Donald Trump pointed to farmers Monday as winners from the administration’s proposed rollback of federal protections for wetlands and waterways across the country, describing farmers crying in gratitude when he ordered the change. But under longstanding federal law and rules, farmers and farmland already are exempt from most of the regulatory hurdles on behalf of wetlands that the Trump administration is targeting. Because of that, environmental groups long have argued that builders, oil and gas drillers and other industry owners would be the big winners if the government adopts the pending rollback, making it easier to fill in bogs, creeks and streams for plowing, drilling, mining or building. Read full story here.

Farm Country Stood by Trump. But the Shutdown Is Pushing It to Breaking Point.

In Georgia, a pecan farmer lost out on his chance to buy his first orchard. The local Farm Service Agency office that would have processed his loan application was shut down. In Wisconsin’s dairy country, a 55-year-old woman sat inside her new dream home, worried she would not be able to pay her mortgage. Her loan had come from an Agriculture Department program for low-income residents in rural areas, but all of the account information she needed to make her first payment was locked away in an empty government office. Farm country has stood by President Trump, even as farmers have strained under two years of slumping incomes and billions in losses from his trade wars. Read full story here.

Farm Bill by the Numbers

National Sustainable Agriculture Coalition – December 21, 2018
The farm bill is complex package of legislation – like other authorizing bills, the bill’s primary focus is on policies and programs, but unlike many authorization bills, the farm bill also provides direct funding for many of the programs it authorizes. Farm bill programs, therefore, have two ways to receive funding: mandatory (or direct) funding through the farm bill, and annual funding through the appropriations process. Because mandatory funding provided by authorizing legislation is substantially larger than appropriated funds, which programs receive mandatory funding and how much is always a contentious issue in farm bill debates. Read full blog post here.

WOTUS Revised: Proposed Federal Rule Retracts the Reach of the Clean Water Act

By Wendy Manley – Forest Network – December 19, 2018
The controversial definition of “Waters of the United States” (WOTUS), which establishes the reach of federal jurisdiction under the Clean Water Act (CWA), may be changing yet again. On December 10, 2018, the Environmental Protection Agency (EPA) and Army Corps of Engineers (COE) announced proposed regulations to describe which waters trigger federal permit requirements for activities that occur in, or discharge to, such waters. The COE issues permits for dredging and filling of WOTUS under CWA Section 404, while EPA (and states with delegated CWA authority) issue permits for discharging stormwater and wastewater to WOTUS under Section 402. As the CWA lacks a statutory definition, the scope of the term is left to the COE and EPA. Read full story here.
ASWM Upcoming Webinars

Compensatory Mitigation Webinar

An Ecological framework for Reviewing Compensatory Mitigation Plans: Plan Review (Part 4 of 4)

Wednesday, February 6, 2019 - 2:00-5:00 pm ET

Presenters

▪ Steve Martin, Environmental Scientist, Institute for Water Resources, U.S. Army Corps of Engineers
▪ Michelle Mattson, Environmental Scientist, Institute for Water Resources, U.S. Army Corps of Engineers
▪ Karen Greene, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries)

Hot Topics Webinar

Waters of the U.S.: Interpreting Geographical, State Program and Legal Impacts of Past, Current and Future Definitions

Wednesday, February 13, 2019 - 1:00-3:00 pm ET

Presenters

▪ Andy Robertson, Saint Mary’s University of Minnesota
▪ Les Lemm, Minnesota Board of Water and Soil Resources
▪ Royal C. Gardner, Stetson University College of Law

ASWM-NRCS Wetland Training Webinar

Webinar 5: Dealing with Reality: How to Work with Wetlands in Altered Landscapes

Friday, February 15, 2019 - 3:00-5:00 pm ET

Presenters

▪ Ray Norrgard, Minnesota DNR
▪ Rich Weber, NRCS retired
▪ Mike McClure, Missouri DOC
Farm Bill could increase funding to control ag runoff to Chesapeake

By Timothy B. Wheeler – Bay Journal – January 15, 2019
Farmers in the Chesapeake Bay watershed stand to get more financial help from the federal government to reduce polluted runoff from fields and feedlots under the new Farm Bill passed by Congress in December. The legislation, which replaces the 2014 Farm Bill, tweaked funding for farm conservation programs in a way that significantly increases the pot of federal money for which Bay watershed farmers and partnering organizations can compete. Read full article here.

5 key environmental impacts of the government shutdown

By Sarah Gibbens, Alejandra Borunda, and Laura Parker–National Geographic – January 14, 2019
As President Donald Trump and Congress continue to wrangle over funding for a border wall and the overall 2019 budget, the federal government remains shutdown since December 22, 2018, making it the longest furlough of large numbers of government employees in U.S. history. While politicians in Washington haggle over long and short-term budgets, the stoppage of many functions of government reverberate across the country. Read full article here.

House votes to fund and reopen Interior Department, EPA and other federal agencies

By Clare Foran – CNN – January 11, 2019 – Video
The House of Representatives approved legislation Friday to fund and reopen the Interior Department, the Environmental Protection Agency and other federal agencies impacted by the partial government shutdown, though the measure is expected to be dead on arrival in the Senate and faces a White House veto threat. The vote was 240-179, with 10 Republicans siding with Democrats. The measure is part of a series of spending bills that House Democrats have advanced this week in an effort to put pressure on congressional Republicans and the White House as the shutdown continues. Read full story here.

Bay Foundation grades health of the Chesapeake Bay a D+

By Rachel Felver – Chesapeake Bay Program – January 8, 2019
The first assessment of Bay health in 2019 shows mixed results. In the biennial “State of the Bay” report, issued by the Chesapeake Bay Foundation (CBF), the health of the Bay dropped one point, lowering its score from a C- in 2016 to a D+ in 2018. While underwater grasses and dissolved oxygen show promising signs of resiliency, nutrients and water clarity contribute heavily to the lower score. Read full blog post here.
Trump threatens to extend partial government shutdown for years

By Jordan Fabian and Alexander Bolton – The Hill – January 4, 2019
President Trump on Friday threatened to keep roughly a quarter of the federal government closed for years amid a dispute over border-wall funding, the latest sign the president and congressional Democrats remain far apart on resolving the two-week-long shutdown. Trump confirmed after a heated, closed-door meeting that he “absolutely” told Democrats the shutdown could last more than a year, which was first revealed by Senate Minority Leader Charles Schumer (D-N.Y.) following the negotiation session inside the White House Situation Room. Read full story here.

Hurricane Michael Cost this Military Base About $5 Billion, Just One of 2018’s Weather Disasters

By Phil McKenna – InsideClimate News – December 18, 2018
As Hurricane Michael quickly gained strength over unusually warm water in the Gulf of Mexico, Tyndall Air Force Base began sending its stealth fighters to safer bases—all but the more than a dozen planes undergoing maintenance. Two days later, the base was being ripped apart by 155 mile-per-hour winds that left it littered with the twisted metal of torn-away rooftops and hangars. The hurricane—one of at least a dozen climate and weather disasters in the United States this year to top $1 billion in damage—left a wide trail of destruction through homes, businesses and farms from Florida to the Carolinas. The military alone suffered several billion dollars in damage. Read full story here.

Interior Secretary Zinke Resigns Amid Investigations

Interior Department Secretary Ryan Zinke submitted his resignation to the White House on Saturday, facing intense pressure to step down because of multiple probes tied to his real estate dealings in his home state of Montana and his conduct in office. Read full story and view video here.

Translating Wetland Science into Fair and Reasonable Government Policies

For more information about the meeting, including the draft agenda, registration deadlines, lodging and transportation options, click here.

Registration is now open

Early bird rates good until January 31st
State News

CA: National park visitors cut down protected Joshua trees during partial government shutdown

By Andrea Diaz – CNN – January 12, 2019 – Video
There are two kinds of people in this world: Those who take it upon themselves to go to understaffed national parks to keep them clean during the government shutdown, and then those who set up illegal campsites and cut down Joshua trees in the national park of the same name. Read full story here.

FL: FGCU researcher wants to clean water by flipping lands between wetlands and farm fields in Everglades

By Chad Gillis – News-Press – January 7, 2019 – Video
A local researcher says he’s figured out a way farmers can make money cleaning instead of polluting water in the historic Everglades. Bill Mitsch, director of Florida Gulf Coast University’s Everglades Wetland Research Park in Naples, says he and a business expert at the University of Notre Dame worked out a model in which farmers could get checks from several government programs for building wetlands and capturing carbon. Called wetlaculture, the idea is to convert lands from farm fields to wetlands to reduce the harmful nutrient loads flowing to the east and west coasts. Read full story and view video here.

MD: Science foundation cuts 20-year-old Baltimore ecological study’s funds

By Timothy B. Wheeler – Bay Journal – January 9, 2019
For two decades, scientists have been monitoring the streams that flow from Baltimore’s outer suburbs through some of the city’s most blighted neighborhoods on their way to the harbor. Now, though, the future of that research is in doubt. One of just two urban-focused long-term ecological research projects in the nation, the Baltimore Ecosystem Study faces what one of its chief scientists calls a “funding crisis.” The National Science Foundation, which has provided grants to underwrite the study since its inception, is pulling the plug on its financial support. Read full article here.

MD: Blackwater National Wildlife Refuge Gets 155-Acre Addition

By Meg Walburn Viviano – Chesapeake Bay Magazine – December 28, 2018
Blackwater National Wildlife Refuge is getting bigger, with the addition of 155 newly-protected acres of land in its Nanticoke Unit. The U.S. Fish and Wildlife Service and Chesapeake Conservancy teamed up to create Blackwater’s first-ever perpetual conservation easements, which will ensure there’s no development on these protected lands. Read full article here.
NY: Ridgewood Reservoir Receives Wetland Designation, Ensures Site Preservation

By Laura Hanrahan – Ridgewood Post – January 7, 2019

The historic Ridgewood Reservoir has at last been designated by the state as a wetland in a move that permanently protects the reservoir as a natural area after years of advocacy. The state Department of Environmental Conservation designated the 50-acre reservoir on the border of Brooklyn and Queens as a Class 1 Freshwater Wetland in October. The designation, which applies to areas where threatened or endangered species have been observed, comes 160 years after the reservoir was first built as a water supply basin for the then-independent city of Brooklyn. Read full story here.

OH: Long term ag change impacts stream water quality

By Adityarup “Rup” Chakravorty – American Society of Agronomy – January 2, 2019

In the early 1990s, Acton Lake in southwestern Ohio had a muddy problem. Large amounts of sediment from nearby farms were entering the lake’s watershed. These sediments traveled through streams draining the landscape and were filling up the lake. So, the USDA gave local farmers incentives to change some of their farming practices. One of these practices was conservation tillage, in which the soil is plowed less often. That can reduce sediment runoff. Read full story here.

PA: Wolf Administration Announces Public-Private Initiative to Promote Innovative Farming Practices for Health, Environmental, and Economic Benefits in Chesapeake Bay Watershed

DEP Newsroom – January 11, 2019

Department of Agriculture Secretary Russell Redding and Department of Environmental Protection (DEP) Secretary Patrick McDonnell today joined six public and private partners in launching the High Performance Farms Initiative to help increase environmental sustainability, economic benefits, public health, and soil and water quality by promoting innovative farming practices in Pennsylvania’s part of the Chesapeake Bay Watershed. “The health of our farms, soil, and water is inextricably linked to the health of our communities,” said Secretary Redding at a ceremonial partnership signing event at the 103rd Farm Show. "This initiative recognizes that stewardship of our farms and natural resources is also linked to our dinner plates and farm gates.” Read full news release here.

WA: Restoration plan adopted for Icicle watershed


A just released final programmatic environmental impact statement (EIS), adopted by Chelan County and the Washington Department of Ecology, spells out a plan for improving water efficiencies and boosting streamflows in the Icicle Creek Watershed. Read full news release here.

WA: Ecology boosts water quality protections at existing Atlantic salmon net pens

Contact: Colleen Keltz – Washington Department of Ecology – December 27, 2019

The Department of Ecology is taking action to strengthen the water quality permits for existing Atlantic salmon farming operations in Puget Sound. Farming Atlantic salmon in net pens is officially banned from Puget Sound starting in 2022. Until then, these operations must protect Puget Sound’s water. Ecology is using the investigation from the 2017 Cypress Island net pen collapse to mandate more protective permit requirements. Read full news release here.
In February 2017, the U.S. President issued an executive order directing the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) to undertake a proposed rulemaking for notice and comment to rescind or revise their joint 2015 Clean Water Rule, also known as the Waters of the United States or “WOTUS” rule. The rule was originally intended to clarify the jurisdictional scope of the Clean Water Act. Per comments by the President and other members of the Executive Office, the intent of this Order potentially signals a move to substantially narrow the jurisdictional scope of the Clean Water Act. If this is the case, the new rule may remove protection from a range of ephemeral and intermittent flowing waters (streams and rivers) and the wetlands that abut or are hydrologically connected to those waters.

With grant funding from the Hewlett Foundation, Saint Mary’s University of Minnesota’s GeoSpatial Services has created a geospatial model that predicts the spatial extent of federally protected wetlands and waterways under three different jurisdictional scenarios. The scenarios draw distinctions using geographic concepts deemed relevant in Justice Scalia’s plurality opinion and Justice Kennedy’s concurring opinion from the 2006 Supreme Court Rapanos decision and from the 2015 Clean Water Rule. However, the scenarios do not depict the precise limits imposed by any specific legal framework or opinion. Each of these scenarios are modeled spatially using commonly available geodatabases, current wetland mapping and Geographic Information Systems (GIS) technology. The completed models are fully documented and stored in ESRI’s (Environmental Systems Research Institute) ArcGIS ModelBuilder environment and are available for users to run and adapt for their own assessments. Results from this project are presented using three digital communication tools: an ESRI Story Map based on ArcGIS Online; a dashboard summary of project outputs hosted using ESRI Operations Dashboard on the Saint Mary’s University of Minnesota GeoSpatial Services (SMUMN GSS) portal; and an interactive spatial Web Map hosted by SMUMN GSS. A public release is being planned during the week of January 21 – January 25, 2019. A webinar presentation on the Story Map will be included in ASWM’s Hot Topics Webinar scheduled for February 13, 2019.

Click here for more information.

For more information on the model, please contact Andy Robertson, Executive Director, Saint Mary’s University of Minnesota, Geospatial Services, at (507-457-8746) or by email at aroberts@smumn.edu.
Wetland Science News

UCI/JPL: Antarctica losing six times more ice mass annually now than 40 years ago

UCI News – January 14, 2019
Antarctica experienced a sixfold increase in yearly ice mass loss between 1979 and 2017, according to a study published today in *Proceedings of the National Academy of Sciences*. Glaciologists from the University of California, Irvine, NASA’s Jet Propulsion Laboratory and the Netherlands’ Utrecht University additionally found that the accelerated melting caused global sea levels to rise more than half an inch during that time. “That’s just the tip of the iceberg, so to speak,” said lead author Eric Rignot, Donald Bren Professor and chair of Earth system science at UCI. “As the Antarctic ice sheet continues to melt away, we expect multi-meter sea level rise from Antarctica in the coming centuries.” Read full story here.

Oceans are warming even faster than previously thought

Environmental News Network – January 11, 2019
Heat trapped by greenhouse gases is raising ocean temperatures faster than previously thought, concludes an analysis of four recent ocean-heating observations. The results provide further evidence that earlier claims of a slowdown or “hiatus” in global warming over the past 15 years were unfounded. Read full story here.

New policy design needed to tackle global environmental threat, according to report

University of Exeter – January 11, 2019
A team of international researchers, including experts from the Land, Environment, Economics and Policy (LEEP) Institute at the University of Exeter, has examined how politicians and legislators can develop a new way to tackle the growing threat of climate change. The perspective piece, which is published as the cover article in *Nature Sustainability*, comes in response to advice from leading scientists, suggesting that the human impact on the environment are already tipping the world into a new geologically significant era. Called the Anthropocene, this new era is defined by the effect human-kind has already caused on Earth, from mass extinctions of plant and animal species, polluted oceans and altered atmosphere. Read full story here.

Climate Change Could Be Breaking a Natural Coral Reef Thermostat

By Richard Kemeny – Hakai Magazine – January 10, 2019
The 2,300-kilometer Great Barrier Reef fringing Australia’s northeast coast might function like a giant thermostat, regulating the temperature of its environment. Yet as scientists work to uncover more about this built-in mechanism, climate change might be breaking it. Read full article here.
Sen. Marco Rubio warns Trump a border emergency could embolden a future Dem president on climate change

By Berkeley Lovelace, Jr. – CNBC – January 9, 2019 – Video
A national emergency declaration by President Donald Trump over border security could wind up hurting Republicans, GOP Sen. Marco Rubio told CNBC on Wednesday. The Florida Republican contended that Trump was elected on the promise of building a wall along the U.S.-Mexico border and the president has to "keep that promise." But "we have to be careful about endorsing broad uses of executive power," he added. "I'm not prepared to endorse that right now." Such a declaration would set a precedent, Rubio said. "If today, the national emergency is border security ... tomorrow the national emergency might be climate change." Read full story here.

Trees change inside as drought persists

Contacts: Associate Professor Susan Laurance; Professor David Tng; and Dr. Deborah Apgaua – James Cook University Australia – January 9, 2019
James Cook University scientists have found that trees change their anatomy in response to prolonged drought. JCU’s Associate Professor Susan Laurance has led the Daintree Drought experiment since 2015, in collaboration with colleagues from the University of Edinburgh and Imperial College in the UK. The project involves using plastic sheets to reduce the rainfall getting into a half hectare of rainforest, artificially creating an extended and drier dry season. A neighbouring half hectare is uncovered and gets the normal amount of rain to allow close comparison between the two groups of trees. “The purpose of the experiment is not to kill the trees, but to understand how trees are changing in the short term by simulating longer dry seasons in the field,” said Dr Laurance. Read full news release here.

Can Trump’s new science adviser convince him that climate change is real?

By Brandon Miller – CNN – January 3, 2019 – Video
In the eleventh hour of the outgoing Congress' term, the Senate confirmed one of President Trump's nominees that could have a profound impact on the future of our planet. Kelvin Droegemeier, a meteorologist and former University of Oklahoma professor, was confirmed to be director of the Office of Science and Technology Policy on Wednesday-- a role commonly referred to as “science adviser” and the top scientific office in the country. The position has sat vacant since Trump's presidency began nearly two years ago. Droegemeier, an expert on extreme weather that has served as The University of Oklahoma's vice president of research since 2009 and has conducted atmospheric research for over 35 years. His extensive background in weather provides some hope among the science community that he can influence the administration, which has disputed the scientific community's view that the planet is warming and that humans are the primary cause of the change. Read full story and view video here.

Fewer monarch butterflies are reaching their overwintering destination – scientists ask why

Contact: Eric Merkel-Sobotta – De Gruyter – January 2, 2019
Arguably, one of the world’s most famous insects, the monarch butterfly, is currently experiencing dire problems with its migration in eastern North America. Fewer and fewer monarchs are successfully reaching their overwintering destinations, and scientists aren’t sure why. Because of this, the need for research on the migration has never been more urgent. New research published in De Gruyter’s Open Access journal Animal Migration, aims to help with this effort. Read full story here.
**Rising Waters Are Drowning Amtrak’s Northeast Corridor**

By Christopher Flavelle and Jeremy C.F. Lin – Bloomberg Businessweek – December 20, 2018

By the middle of this century, climate change is likely to punch a hole through the busiest stretch of rail in North America. Parts of Amtrak’s Northeast Corridor route, which carries 12 million people each year between Boston and Washington, face “continual inundation.” Flooding, rising seas, and storm surge threaten to erode the track bed and knock out the signals that direct train traffic. The poles that provide electricity for trains are at risk of collapse, even as power substations succumb to floodwaters. “If one of the segments of track shuts down, it will shut down this segment of the NEC,” warned members of Amtrak’s planning staff. “There is not an alternate route that can be used as a detour.” [Read full story here.]

**Why is Sea Level Rising Faster in Some Areas Along the U.S. East Coast Than Others?**

Woods Hole Oceanographic Institution – December 19, 2018

Sea levels are rising globally from ocean warming and melting of land ice, but the seas aren’t rising at the same rate everywhere. Sea levels have risen significantly faster in some U.S. East Coast regions compared to others. A new study led by the Woods Hole Oceanographic Institution (WHOI) reveals why. Over the 20th century, sea level has risen about a foot and a half in coastal communities near Cape Hatteras in North Carolina and along the Chesapeake Bay in Virginia. In contrast, New York City and Miami have experienced about a 1-foot rise over the same period, while sea levels farther north in Portland, Maine, rose only about half a foot. [Read full story and view video here.]

**Arctic Lakes Are Vanishing by the Hundreds**

By Chelsea Harvey, E&E – Scientific American News – December 18, 2018

The rapidly warming Arctic is no stranger to loss. Climate change is gradually claiming some of its most iconic features, from melting glaciers in Greenland to shrinking sea ice in the ocean. But some casualties may be more surprising than others. Research suggests that small lakes and ponds across the Arctic tundra are also steadily disappearing. [Read full article here.]

**The Long Dry: Why the World’s Water Supply is Shrinking**

Contact: Ashish Sharma – Eurek Alert – December 13, 2018

A global study has found a paradox: our water supplies are shrinking at the same time as climate change is generating more intense rain. And the culprit is the drying of soils, say researchers, pointing to a world where drought-like conditions will become the new normal, especially in regions that are already dry. [Read full story here.]

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**Celebrate World Wetlands Day**

2 February 2019

Wetlands and climate change

Find out more here.
ASWM WEBINAR RECORDINGS

Pipeline Permitting Webinar
Held November 7, 2018
Webinar #4: Pipeline Permitting 101 – Clifford Brown, West Virginia Division of Natural Resources; Robert Parker, Wetland Policy Consultant; and Brenda Zollitsch, Association of State Wetland Managers

View Recording Here

ASWM-NRCS Wetland Webinar
Held November 14, 2018
Webinar 3: Wetlands Ecology for Planners – How Wetlands Function – Stacey Clark, USDA Natural Resources Conservation Service; and Kendra Moseley, USDA Natural Resources Conservation Service

View Recording Here

ASWM Members' Wetland Webinars
Held November 28, 2018
Planning Wetland Restoration at the Watershed Level – Ralph Tiner, US Fish & Wildlife Service (Retired); Juli Crane, Lake County IL Stormwater Management Commission; Glenn Westman, Lake County IL Stormwater Management Commission

Held October 24, 2018
Building Wetland Water Quality Monitoring Analysis Capacity Utilizing EPA’s Water Quality "eXchange" Tools and Services – Laura Shumway, US Environmental Protection Agency

To view the members' webinars, you must log in on the ASWM Home Page, then navigate to the Members Wetland Webinar Series. Please contact us at (207) 892-3399 or laura@aswm.org, if you need assistance logging in.

If you are not currently a member, click here to join ASWM.
Resources and Publications

New website provides support and tools for citizen scientists

By Joan Smedinghoff – Chesapeake Bay Program – January 14, 2019
Today, the Chesapeake Monitoring Cooperative (CMC) launched its new website, chesapeakemonitoringcoop.org. This website provides a platform to share CMC services and free resources for water quality monitoring groups. Created in 2015, the CMC brings together a diverse group of people who monitor water quality to provide a greater understanding of Chesapeake Bay watershed health. The CMC aims to provide technical, logistical and outreach support to volunteer-based and nontraditional monitoring groups, and incorporate that data into the Chesapeake Bay Program partnership. Read full blog post here.

Discover “Facebook for Fish” Featuring the Black Warrior, Cahaba, Coosa, and Mobile Watersheds

By Pat Byington – Bham Now – December 15, 2018 – Video
The Tennessee Aquarium Conservation Institute has launched a new online database of scientific records and photos of more than 400 native fishes. Described by the Institute as a “Facebook for Fish,” this resource is now available to scientists, students and the general public. Read full story and view video here.
Potpourri

UN Warns of Rising Levels of Toxic Brine as Desalination Plants Meet Growing Water Needs

United Nations University – January 14, 2019
The fast-rising number of desalination plants worldwide — now almost 16,000, with capacity concentrated in the Middle East and North Africa — quench a growing thirst for freshwater but create a salty dilemma as well: how to deal with all the chemical-laden leftover brine. In a UN-backed paper (“The state of desalination and brine production: A global outlook”), experts estimate the freshwater output capacity of desalination plants at 95 million cubic meters per day — equal to almost half the average flow over Niagara Falls. Read full story here.

Putting some mussel into river restoration

By Rebecca Chillrud – Chesapeake Bay Program – January 2, 2019
Maryland’s Patapsco River, which flows through central Maryland into the Chesapeake Bay, hasn’t been home to the eastern elliptio, a freshwater mussel species, for 50 to 100 years. That’s about to change, as a group of scientists from the Maryland Department of Natural Resources (DNR) plans to plant baby mussels in the Patapsco in an attempt to reestablish their populations, clean the water and improve the health of the ecosystem. Read full blog post here.

Making Waves: 5 Steps the 116th Congress Should Take to Restore the Health and Productivity of America’s Oceans

By Alexandra Carter and Miriam Goldstein – Center for American Progress – December 18, 2018
The 2018 elections sent a clear message: Americans value conservation. Voters elected representatives and senators who vowed to protect public lands and waters and stand against the Trump administration’s many attacks on the environment. Now, as the 116th Congress prepares to start work in January, it is time to put these principles into practice. Read full story here.

19 Schemes to Survive Climate Change

By Lois Parshley – Popular Science – December 17, 2018
Record-breaking hurricanes, historically bad fire seasons out West, unprecedented flood levels in the Midwest, and “bombogenesis” becoming a household word along the Eastern Seaboard: Devastating weather events are the new normal in nearly all areas of the United States. Climate change is causing both more-frequent and more-severe calamities. Add to that ongoing threats from earthquakes, tornadoes, and volcanoes, and it’s no surprise that, according to NOAA’s National Centers for Environmental Information, natural disasters cost us more than $306 billion in damage in 2017. But a new generation of architects, designers, and experts is creating infrastructure and buildings that respond to both extreme conditions and ongoing stress. Here’s a look at some of the most innovative approaches to living in an increasingly apocalyptic world. Read full story here.

FELLOWSHIPS/AWARDS/GRANTS AVAILABLE

Wetland Ambassadors Graduate Research Fellowship
Society of Wetland Scientists
Apply by January 25, 2019

Earl Core Student Research Awards
Southern Appalachian Botanical Society
Apply by February 7, 2019

Doris Duke Conservation Scholars Program
Apply by February 8, 2019

North American Wetlands Conservation Act Grants
Apply by February 22, 2019

The Camp Monaco Prize 2019 – $100,000
Greater Yellowstone Biodiversity Research
Apply by April 15, 2019

14 Wetland Breaking News
# Calendar of Events

## Webinars

### January 2019

**January 24, 2019**<br>12:00 p.m. ET<br>Antioch University Webinar: Built Environment – Resilient Water Features

**January 24, 2019**<br>1:00 p.m. ET<br>The Swamp School Webinar: 2019 Wetland Status and Trends

**January 30, 2019**<br>3:00 p.m. ET<br>ASWM’s Members’ Wetland Webinar: Wetland Restoration Contractor Selection 101: Keys to Successful Wetland Restoration and Project Implementation

### February 2019

**February 1, 2019**<br>2:00 p.m. ET<br>Environmental Law Institute Webinar: Stream Compensatory Mitigation -- Monitoring and Performance Standards

**February 6, 2019**<br>2:00 p.m. ET<br>ASWM’s Compensatory Mitigation Webinar: An Ecological Framework for Reviewing Compensatory Mitigation Plans: Plan Review (Part 4 of 4)

**February 15, 2019**<br>3:00 p.m. ET<br>ASWM-NRCS Wetland Training Webinar 5: Dealing with Reality: How to Work with Wetlands in Altered Landscapes

**February 13, 2019**<br>1:00 p.m. ET<br>ASWM Hot Topics Webinar: Waters of the U.S.: Interpreting Geographical, State Program and Legal Impacts of Past, Current and Future Definitions

**February 28, 2019**<br>3:00 p.m. ET<br>EBM Tools Webinar: Learning from others: The new global conservation planning database

## Special Events

**World Wetlands Day**<br>February 2, 2019

**Central Coast Watershed Wetlands Tour**<br>The Wetlands Conservancy<br>February 2, 2019<br>Newport, OR

**Shiver in the River**<br>February 23, 2019<br>Richmond, VA

**Wings Over the Rockies Festival**<br>May 6-12, 2019

**Bay Day Festival**<br>May 18, 2019<br>Kemah, TX
# Meetings

## January 2019

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<tr>
<td>January 31-February 2, 2019</td>
<td>Yale Chapter of the International Society of Tropical Foresters: Examining Tropical Changes: Resilience in the Context of Disturbance and Transgression</td>
</tr>
</tbody>
</table>

## February 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 5-7, 2019</td>
<td>Tamarisk Coalition and the Desert Botanical Garden: Riparian Restoration Conference</td>
</tr>
<tr>
<td>February 5-7, 2019</td>
<td>Missouri Natural Resources Conference</td>
</tr>
<tr>
<td>February 7-10, 2019</td>
<td>River Restoration Northwest: Stream Restoration Symposium</td>
</tr>
<tr>
<td>February 11-15, 2019</td>
<td>Alaska Forum on the Environment</td>
</tr>
<tr>
<td>February 21-24, 2019</td>
<td>University of Arizona Conference: Crafting the Long Tomorrow: New Conversations &amp; Productive Catalysts Across Science and Humanities Boundaries as the Global Emergency Worsens</td>
</tr>
<tr>
<td>February 23-March 2, 2019</td>
<td>Association for the Sciences of Limnology and Oceanography: Planet Water: Challenges and Successes</td>
</tr>
<tr>
<td>February 27-28, 2019</td>
<td>International Conference on Water Management Modeling</td>
</tr>
</tbody>
</table>

## March 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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</thead>
<tbody>
<tr>
<td>March 2, 2019</td>
<td>Massachusetts Association of Conservation Commission Anr Environmental Conference</td>
</tr>
<tr>
<td>March 6, 2019</td>
<td>2019 Washington Botanical Symposium</td>
</tr>
<tr>
<td>March 11-22, 2019</td>
<td>Smithsonian-Mason School of Conservation Course: Statistics for Ecology and Conservation Biology</td>
</tr>
<tr>
<td>Month</td>
<td>Date</td>
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</tr>
<tr>
<td>March</td>
<td>13-15, 2019</td>
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<td>March 13-17, 2019</td>
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<td>March 20-22, 2019</td>
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<td>March 21-23, 2019</td>
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<td>March 22, 2019</td>
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<tr>
<td>April</td>
<td>2-4, 2019</td>
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<td>April 4-6, 2019</td>
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<td>April 8-9, 2019</td>
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<td>April 12-14, 2019</td>
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<td>April 22-25, 2019</td>
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<td>April 23-25, 2019</td>
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<td>April 29-May 2, 2019</td>
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<tr>
<td></td>
<td>May 20-22, 2019</td>
</tr>
</tbody>
</table>
May 6-10, 2019  National Mitigation & Ecosystem Banking Conference: Connecting Policy, Practice, Business, Science & People
Minneapolis, MN

May 7, 2019  Environmental Law Institute 30th Annual National Wetlands Awards 2019
Washington, DC

May 19-22, 2019  Arboriculture & Urban Forestry Educators’ Symposium & Summit
Lisle, IL

May 19-23, 2019  2019 NAEP Conference: The Environmental Landscape in an Age of Infrastructure Modernization
Baltimore, MD

May 19-24, 2019  Association of State Floodplain Managers 42nd Annual Meeting: Managing Floods Where the Mountains Meet the Desert
Cleveland, OH

Baltimore, MD

May 29-June 2, 2019  Ducks Unlimited National Convention
Waikoloa, HI

June 2019

June 4-6, 2019  2nd International Conference on Community Ecology
Bologna, Italy

June 10-14, 2019  The College at Brockport, State University of New York: 62nd Annual Conference on Great Lakes Research: Large Lakes Research: Connecting People and Ideas
Brockport, NY

June 13-14, 2019  Land Trust Alliance: Seventh Symposium on Advanced Legal Topics in Land Conservation
Providence, FL

June 16-19, 2019  2019 AWRA Summer Specialty Conference: Improving Water Infrastructure Through Resilient Adaptation
Sparks, NV

June 17-20, 2019  National Hydrologic Warning Council Conference
Louisville, KY

June 21-24, 2019  River Network: River Rally
Cleveland, OH

Flagstaff, AZ

July 2019

July 1-5, 2019  International Association for Landscape Ecology's World Congress: Nature and society facing the Anthropocene: challenges and perspectives for Landscape Ecology
Milano, Italy

July 25-31, 2019  20th INUA Congress: Life on the Edge
Dublin, Ireland
## August 2019

- **August 11-16, 2019**
  - Louisville, KY
  - **Ecological Society of America Annual Meeting**

## October 2019

- **October 8-10, 2019**
  - Pittsburgh, PA
  - **Natural Areas Association: Natural Areas Conference**
    - Proposals due by **April 15, 2019**
  - **AASHE Conference: Co-Creating a Sustainable Economy**

## Training/Workshops

### January 2019

- **January 21-February 4, 2019**
  - Online
  - The Swamp School **Winter Wetland Tree Identification Workshop**
- **January 22-May 9, 2019**
  - Online
  - University of Missouri Online Course: **Topics in Natural Resources (Urban biodiversity, conservation, planning)**
- **January 30, 2019**
  - Tacoma, WA
  - Washington State Department of Ecology: Coastal Training Program Course: **How to Administer Development Permits in Western Washington’s Shorelines**
- **January 30-31, 2019**
  - Gainesville, FL
  - T. Richardson Soils and Environmental: **Florida Wetland Delineation Workshop**

### February 2019

- **February 4-7, 2019**
  - Baytown, TX
  - The Swamp School Course: **Wetland Delineation Training**
- **February 4-8, 2019**
  - San Diego, CA
  - Wetland Training Institute, Inc. Course: **Basic Wetland Delineation**
  - Other dates and locations offered
- **February 4-April 29, 2019**
  - Online
  - The Swamp School Online Course: **Wetland Basic Delineation Training 2019**
  - Other dates offered.
- **February 4-April 29, 2019**
  - Online
  - The Swamp School Online Course: **Certified Wetland Hydrologist**
  - Other dates offered.
<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 6, 2019</td>
<td>Lacey, WA</td>
<td>Washington State Department of Ecology: Coastal Training Program Course: <strong>Lower Your Risk: Taking the Mystery out of Cultural Resource Management</strong></td>
</tr>
<tr>
<td>February 7-8, 2019</td>
<td>Washington, DC</td>
<td>American Law institute Continuing Legal Education Course: <strong>Environmental Law 2019</strong></td>
</tr>
<tr>
<td>February 11-12, 2019</td>
<td>San Diego, CA</td>
<td>Wetland Training Institute, Inc. Course: <strong>Basic Wetland Delineation Refresher</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other dates and locations offered</td>
</tr>
<tr>
<td>February 11-12, 2019</td>
<td>San Diego, CA</td>
<td>Wetland Training Institute, Inc. Online Lecture and Field Practicum Course: <strong>Basic Wetland Delineation</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other dates and location offered</td>
</tr>
<tr>
<td>February 11-25, 2019</td>
<td>Online</td>
<td>The Swamp School Course: <strong>Data Collection for Environmental Professionals</strong></td>
</tr>
<tr>
<td></td>
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<td>Other dates offered</td>
</tr>
<tr>
<td>February 13, 2019</td>
<td>Padilla Bay Reserve</td>
<td>Washington State Department of Ecology: Coastal Training Program Course: <strong>How to Explain Science, Share Data, and Build Trust: Presentation Skills for Scientists and Public Officials</strong></td>
</tr>
<tr>
<td>Mt. Vernon, WA</td>
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</tr>
<tr>
<td>February 13-14, 2019</td>
<td>San Diego, CA</td>
<td>Wetland Training Institute, Inc. Course: <strong>Advanced Hydric Soils Online with Field Practicum</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other dates and location offered</td>
</tr>
<tr>
<td>February 18-22, 2019</td>
<td>Online</td>
<td>The Swamp School Course: <strong>Accelerated Online Wetland Delineation Training Workshop</strong></td>
</tr>
<tr>
<td>Fields Days February 25 &amp; 27, 2019</td>
<td>Various locations</td>
<td>Other dates offered</td>
</tr>
<tr>
<td>February 18-March 18, 2019</td>
<td>Online</td>
<td>The Swamp School Course: <strong>Phase I Environmental Site Assessment</strong></td>
</tr>
<tr>
<td>February 20, 2019</td>
<td>Padilla Bay Reserve</td>
<td>Washington State Department of Ecology: Coastal Training Program Course: <strong>Tree and Shrub Identification for Western WA Puget Lowland Habitats</strong></td>
</tr>
<tr>
<td>Mt. Vernon, WA</td>
<td></td>
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</tr>
<tr>
<td>February 25-March 1, 2019</td>
<td>Houston, TX</td>
<td>Wetland Training Institute, Inc. Course: <strong>Basic Wetland Delineation</strong></td>
</tr>
<tr>
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<td></td>
<td>Other dates and locations offered</td>
</tr>
<tr>
<td>February 28, 2019</td>
<td>Shoreline, WA</td>
<td>Wetland Training Institute, Inc. <strong>Course: Demystifying Wetland and In-Water Permitting in Washington State</strong></td>
</tr>
</tbody>
</table>
March 2019

March 4-5, 2019  
Houston, TX  
Wetland Training Institute, Inc. Online Lecture and Field Practicum  
Course: Basic Wetland Delineation  
Other dates and location offered

March 4-5, 2019  
Houston, TX  
Wetland Training Institute, Inc. Course: Basic Wetland Delineation Refresher Course  
Other dates and locations offered

March 4-May 27, 2019  
Online  
The Swamp School Online Course: Wetland Basic Delineation Training  
2019  
Other dates offered.

March 4-May 27, 2019  
Online  
The Swamp School Online Course: Principles of Wetland Design  
Other dates offered

March 11-14, 2019  
Nashville, TN  
March 11-15, 2019  
Atlanta, GA  
The Swamp School Course: Wetland Delineation Training  
Duncan & Duncan Wetland & Endangered Species Training: Basic Wetland Delineation

March 11-25, 2019  
Online  
The Swamp School Course: Habitat Conservation Plans  
Other dates offered

March 18-22, 2019  
Shepherdstown, WV  
U.S. Fish and Wildlife Course: Stream Habitat Measurement Techniques

March 18-April 15, 2019  
Online  
The Swamp School Online Course: Developing Wetland Water Budgets 2019  
Other dates being offered

March 18-April 28, 2019  
Fairbanks, AK  
University of Alaska Fairbanks Course: Arctic Alaska Ecosystems  
17-day Field Excursion – June 13-30, 2019

March 18-June 10, 2019  
Online  
The Swamp School Online Course: Wetland Monitoring Techniques  
Also offered on July 8, 2019

March 25-26, 2019  
Atlanta, GA  
Duncan & Duncan Wetland & Endangered Species Training: Interagency Consultation for Endangered Species (Section 7)  
Other dates offered

March 27-29, 2019  
Hays, KS  
Wetland Training Institute, Inc. Course: Woody Plant Identification

March 28-29, 2019  
San Diego, CA  
Wetland Training Institute, Inc. Course: Basic Wetland Delineation Refresher Course  
Other dates and locations offered

March 29-29, 2019  
Sacramento, CA  
Wetland Training Institute, Inc. Online Lecture and Field Practicum Course: Basic Wetland Delineation  
Other dates and location offered
## April 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1-5, 2019</td>
<td>Wetland Training Institute, Inc. Course: <a href="#">Basic Wetland Delineation</a> Other dates and locations offered</td>
</tr>
<tr>
<td>Sacramento, CA</td>
<td></td>
</tr>
<tr>
<td>April 1-5, 2019</td>
<td>U.S. Fish and Wildlife Course: <a href="#">Wetland Assessment, Restoration and Management</a></td>
</tr>
<tr>
<td>Shepherdstown, WV</td>
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</tr>
<tr>
<td>April 1-June 24, 2019</td>
<td>The Swamp School Online Course: <a href="#">Certified Hydric Soils Investigator</a> Other dates offered.</td>
</tr>
<tr>
<td>Online</td>
<td></td>
</tr>
<tr>
<td>April 1-June 24, 2019</td>
<td>The Swamp School Online Course: <a href="#">Wetland Basic Delineation Training 2019</a> Other dates offered.</td>
</tr>
<tr>
<td>Online</td>
<td></td>
</tr>
<tr>
<td>April 8-10, 2019</td>
<td>CUAHSI Workshop: <a href="#">The Role of Runoff and Erosion on Soil Carbon Stocks: From Soilscapes to Landscapes</a></td>
</tr>
<tr>
<td>Knoxville, TN</td>
<td></td>
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<tr>
<td>April 8-11, 2019</td>
<td>The Swamp School Course: <a href="#">Wetland Delineation Training</a> Other dates offered.</td>
</tr>
<tr>
<td>Atlanta, GA</td>
<td></td>
</tr>
<tr>
<td>April 8-12, 2019</td>
<td>The Swamp School Online Workshop and Field Day: <a href="#">Blended Online and Field Wetland Delineation</a></td>
</tr>
<tr>
<td>Online Field Day – Raleigh, NC</td>
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<tr>
<td>April 16-17, 2019</td>
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<tr>
<td>April 22-May 20, 2019</td>
<td>The Swamp School Course: <a href="#">Phase I Environmental Site Assessment</a> Other dates offered</td>
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<tr>
<td>Online</td>
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<tr>
<td>April 29-May 3, 2019</td>
<td>Wetland Training Institute, Inc. Course: <a href="#">Basic Wetland Delineation</a> Other dates and locations offered</td>
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<tr>
<td>Great Bend, KS</td>
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<tr>
<td>April 29-May 3, 2019</td>
<td>The Swamp School Online Course and Field Day: <a href="#">Blended Online and Field Wetland Delineation Workshop</a> Other dates offered</td>
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<tr>
<td>Online Field Days – PA</td>
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<tr>
<td>May 8-9, 2019</td>
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<tr>
<td>April 29-May 27, 2019</td>
<td>The Swamp School Course: <a href="#">Basic Botany for Wetland Assessment</a> Other dates offered</td>
</tr>
<tr>
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*Jeanne Christie photo*
<table>
<thead>
<tr>
<th>May 2019</th>
</tr>
</thead>
</table>
| **May 6-9, 2019**  | The Swamp School Course: [Wetland Delineation Training](#)  
Aliquippa, PA  
Other dates offered |
| **May 6-10, 2019**  | Duncan & Duncan Wetland & Endangered Species Training: [Basic Wetland Delineation](#)  
Charleston, SC  
Other dates offered |
| **May 6-July 29, 2019**  | The Swamp School Online Course: [Wetland Basic Delineation Training 2019](#)  
Online  
Other dates offered. |
| **May 13-14, 2019**  | Wetland Training Institute, Inc. Course: [Advanced Hydic Soils Online with Field Practicum](#)  
State College, PA  
Other dates and location offered |
| **May 13-24, 2019**  | Northern Arizona University Training Course: [New Advances in Land Carbon Cycle Modeling](#)  
Flagstaff, AZ |
| **May 19-25, 2019**  | Eagle Hill Natural History Science Field Seminar: [Lichens and Lichen Ecology](#)  
Steuben, ME  
CUAHSI Short Course: [The Science and Practice of Operational Ensemble Hydrological Prediction](#)  
Boulder, CO |
| **May 21-22, 2019**  | Rutgers Office of Continuing Professional Education Course: [Vegetation Identification for Wetland Delineation: North](#)  
Sussex, NJ |
| **May 21-24, 2019**  | Wetland Training Institute, Inc. Course: [Graminoids (Grasses, Sedges, Rushes) ID for Wetlands and Wetland Delineators](#)  
Kays, KS |
| **May 26-June 1, 2019**  | Eagle Hill Natural History Science Field Seminar: Calcioid [Lichens and Fungi of the Acadian Forest: Identification and Ecology](#)  
Steuben, ME  
CUAHSI Short Course: [Introduction to Bryophytes and lichens](#)  
May 26-June 1, 2019  
Steuben, ME |
| **May 29-31, 2019**  | CUAHSI Short Course: [Integrated Simulation of Watershed Systems using Parflow](#)  
Golden, CO |
| **May 30-31, 2019**  | Duncan & Duncan Wetland & Endangered Species Training: [Hydrophytic Vegetation (Coastal Plain)](#)  
Charleston, SC |

<table>
<thead>
<tr>
<th>June 2019</th>
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</thead>
</table>
| **June 3, 2019**  | Institute for Wetland & Environmental Education & Research: Plant ID Course: [Wetlands & Their Borders](#)  
Boston, MA Area |
| **June 3-5, 2019**  | Wetland Training Institute, Inc. Course: [Plant identification for Coastal Southern California](#)  
San Diego, CA |
| **June 3-August 26, 2019**  | The Swamp School Online Course: [Wetland Basic Delineation Training 2019](#)  
Online  
Other dates offered. |
| **June 3- August 26, 2019**  | The Swamp School Online Course: [Certified Wetland Hydrologist](#)  
Online  
Other dates offered. |
June 4-7, 2019
Boston, MA Area
Institute for Wetland & Environmental Education & Research: Plant ID Course: Basic Wetland Delineator Training
Other dates offered

June 9-15, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Mosses: Structure, Ecology, and Identification

June 9-15, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Chironomids: Classification, Morphology, Identification, and Lifecycles

June 10-11, 2019
Charleston, SC
Duncan & Duncan Wetland & Endangered Species Training: Advanced Hydric Soils, Hydrology, and Regional Indicators (Coastal Plain)
Other dates offered

June 10-13, 2019
Teatown Lake Reservation
Westchester County, NY
The Swamp School Course: Wetland Delineation Training

June 10-July 8, 2019
Online
The Swamp School Course: Basic Botany for Wetland Assessment
Other dates offered

June 11-14, 2019
Basking Ridge, NJ
Rutgers Office of Continuing Professional Education Course: Methodology for Delineating Wetlands

June 12, 2019
Basking Ridge, NJ
Rutgers Office of Continuing Professional Education Course: Introduction to Wetland Identification

June 16-22, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Independent Study: Topics in Fungal Biology

June 16-22, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Medicinal Plants: Traditions and Contemporary Perspectives

June 17-21, 2019
Online
Fields Days June 24 & 26, 2019
Various locations
The Swamp School Course: Accelerated Online Wetland Delineation Training Workshop
Other dates offered

June 17-July 1, 2019
Online
The Swamp School Online Course: Habitat Conservation Plans
Other dates offered

June 19-20, 2019
Anchorage, AK
Wetland Training Institute, Inc. Course: Advanced Hydric Soils Online with Field Practicum
Other dates and location offered

June 23-29, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Sedges and Rushes: Identification and Ecology

June 23-29, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Insect and Spider Biology: "Through the Lens"

June 24-25, 2019
Twin Cities, MN
Wetland Training Institute, Inc. Course: Advanced Hydric Soils Online with Field Practicum
Other dates and location offered

June 24-27, 2019
Pittsburgh, PA
Wetland Training Institute, Inc. Course: Identifying Grasses, Sedges, and Rushes
### July 2019

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Location</th>
<th>Course Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 24–July 5, 2019</td>
<td>Missoula, MT</td>
<td>Flathead Lake Biological Station Course: Conservation Ecology</td>
</tr>
<tr>
<td>June 24–July 5, 2019</td>
<td>Missoula, MT</td>
<td>Flathead Lake Biological Station Course: Environmental Sensors: Designing, Building and Deploying in the Field</td>
</tr>
<tr>
<td>June 28, 2019</td>
<td>Portage, WA</td>
<td>Wetland Training Institute, Inc. Course: Beginners Plant ID for Wetland Delineation</td>
</tr>
<tr>
<td><strong>July 2019</strong></td>
<td><strong>Online</strong></td>
<td><strong>The Swamp School Online Course:</strong> Wetland Basic Delineation Training 2019 Other dates offered.</td>
</tr>
<tr>
<td>July 7–13, 2019</td>
<td>Steuben, ME</td>
<td>Eagle Hill Natural History Science Field Seminars: Survey of Grasses: Their Structure, Identification, and Ecology</td>
</tr>
<tr>
<td>July 7–13, 2019</td>
<td>Steuben, ME</td>
<td>Eagle Hill Natural History Science Field Seminars: Marine Benthic Invertebrates</td>
</tr>
<tr>
<td>July 8–September 30, 2019</td>
<td>Online</td>
<td>The Swamp School Online Course: Certified Hydric Soils Investigator Other dates offered.</td>
</tr>
<tr>
<td>July 8–September 30, 2019</td>
<td>Online</td>
<td>The Swamp School Online Course: Principles of Wetland Design Other dates offered.</td>
</tr>
<tr>
<td>July 8–September 30, 2019</td>
<td>Online</td>
<td>The Swamp School Online Course: Wetland Monitoring Techniques Other dates and location offered</td>
</tr>
<tr>
<td>July 11–12, 2019</td>
<td>Denver, CO</td>
<td>Wetland Training Institute, Inc. Course: Advanced Hydric Soils Online with Field Practicum Other dates and location offered</td>
</tr>
<tr>
<td>July 14–20, 2019</td>
<td>Steuben, ME</td>
<td>Eagle Hill Natural History Science Field Seminars: Wetland Identification, Delineation, and Ecology</td>
</tr>
<tr>
<td>July 15–August 12, 2019</td>
<td>Online</td>
<td>The Swamp School Course: Phase I Environmental Site Assessment Other dates offered</td>
</tr>
<tr>
<td>July 16–19, 2019</td>
<td>Boston, MA Area</td>
<td>Institute for Wetland &amp; Environmental Education &amp; Research: Plant ID Course: Basic Wetland Delineator Training</td>
</tr>
<tr>
<td>July 16–19, 2019</td>
<td>Portage, WI</td>
<td>Wetland Training Institute, Inc. Course: Plant Identification for Wetland Delineators</td>
</tr>
<tr>
<td>July 21–27, 2019</td>
<td>Steuben, ME</td>
<td>Eagle Hill Natural History Science Field Seminars: Ericaceae and Heathland Communities of Coastal Maine</td>
</tr>
<tr>
<td>July 21–27, 2019</td>
<td>Steuben, ME</td>
<td>Eagle Hill Natural History Science Field Seminars: Drawing and Painting Birds</td>
</tr>
<tr>
<td>July 22–August 2, 2019</td>
<td>Missoula, MT</td>
<td>Flathead Lake Biological Station Course: Stream Ecology</td>
</tr>
</tbody>
</table>
July 22-August 5, 2019
Online
The Swamp School Course: Data Collection for Environmental Professionals
Other dates offered

July 28-August 2, 2019
Boston University
Ecological Forecasting

July 28-August 3, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Mushroom Identification for the Novice; Focus on Edible and Medicinal Mushrooms

July 28-August 3, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Leaf and Stem Mining Insects

July 28-August 10, 2019
Bar Harbor, ME
College of the Atlantic Field Botany: Plants of New England

August 2019

August 4-August 10, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Submersed and Floating Aquatic Plants

August 9, 2019
Marysville, WA
Wetland Training Institute, Inc. Course: Beginners Plant ID for Wetland Delineation

August 11-17, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Lichens, Biofilms, and Stone

August 11-17, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: EPT Taxonomy and Ecology

August 13-14, 2019
Atlanta, GA
Duncan & Duncan Wetland & Endangered Species Training: Hydrophytic Vegetation (Piedmont)

August 13-16, 2019
Hays, KS
Wetland Training Institute, Inc. Course: Plant Identification for Wetlands and Wetland Delineators

August 18-24, 2019
Steuben, ME
Eagle Hill Natural History Science Field Seminars: Mushroom Microscopy: An Exploration of the Intricate Microscopic World of Mushrooms

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Jeanne Christie photo
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EDITOR'S CHOICE

- Trump to farmers: Wetlands protections ‘one of the most ridiculour’ regulations
- Farm Country Stood by Trump. But the Shutdown Is Pushing It to Breaking Point.
- Farm Bill by the Numbers
- WOTUS Revised: Proposed Federal Rule Retracts the Reach of the Clean Water Act

NATIONAL NEWS

- Farm Bill could increase funding to control ag runoff to Chesapeake
- 5 key environmental impacts of the government shutdown
- House votes to fund and reopen Interior Department, EPA and other federal agencies
- Bay Foundation grades health of the Chesapeake Bay a D+
- Trump threatens to extend partial government shutdown for years
- Hurricane Michael Cost this Military Base About $5 Billion, Just One of 2018's Weather Disasters
- Interior Secretary Zinke Resigns Amid Investigations

STATE NEWS

- CA: National park visitors cut down protected Joshua trees during partial government shutdown
- FL: FGCU researcher wants to clean water by flipping lands between wetlands and farm fields in Everglades
- MD: Science foundation cuts 20-year-old Baltimore ecological study’s funds
- MD: Blackwater National Wildlife Refuge Gets 155-Acre Addition
- NY: Ridgewood Reservoir Receives Wetland Designation, Ensures Site Preservation
- OH: Long term ag change impacts stream water quality
- PA: Wolf Administration Announces Public-Private Initiative to Promote Innovative Farming Practices for Health, Environmental, and Economic Benefits in Chesapeake Bay Watershed
- WA: Restoration plan adopted for Icicle watershed
- WA: Ecology boosts water quality protections at existing Atlantic salmon net pens

WETLAND SCIENCE NEWS

- UCI/JPL: Antarctica losing six times more ice mass annually now than 40 years ago
- Oceans are warming even faster than previously thought
- New policy design needed to tackle global environmental threat, according to report
- Climate Change Could Be Breaking a Natural Coral Reef Thermostat
- Sen. Marco Rubio warns Trump a border emergency could embolden a future Dem president on climate change
- Trees change inside as drought persists
- Can Trump's new science adviser convince him that climate change is real?
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▪ Rising Waters Are Drowning Amtrak’s Northeast Corridor
▪ Why is Sea Level Rising Faster in Some Areas Along the U.S. East Coast Than Others?
▪ Arctic Lakes Are Vanishing by the Hundreds
▪ The Long Dry: Why the World’s Water Supply is Shrinking

RESOURCES AND PUBLICATIONS
▪ New website provides support and tools for citizen scientists
▪ Discover “Facebook for Fish” Featuring the Black Warrior, Cahaba, Coosa, and Mobile Watersheds

POTOURRI
▪ UN Warns of Rising Levels of Toxic Brine as Desalination Plants Meet Growing Water Needs
▪ Putting some mussel into river restoration
▪ Making Waves: 5 Steps the 116th Congress Should Take to Restore the Health and Productivity of America’s Oceans
▪ 19 Schemes to Survive Climate Change
CALENDAR OF EVENTS

Webinars

January

- Antioch University Webinar: Built Environment – Resilient Water Features
- The Swamp School Webinar: 2019 Wetland Status and Trends
- ASWM’s Members’ Wetland Webinar: Wetland Restoration Contractor Selection 101: Keys to Successful Wetland Restoration and Project Implementation

February

- Environmental Law Institute Webinar: Stream Compensatory Mitigation -- Monitoring and Performance Standards
- ASWM-NRCS Wetland Training Webinar 5: Dealing with Reality: How to Work with Wetlands in Altered Landscapes
- EBM Tools Webinar: Learning from others: The new global conservation planning database

MEETINGS

January 2019

- 2019 Delaware Estuary Science & Environmental Summit: Estuary 2029: Saving our System Through Collaboration
- Yale Chapter of the International Society of Tropical Foresters: Examining Tropical Changes: Resilience in the Context of Disturbance and Transgression

February 2019

- Tamarisk Coalition and the Desert Botanical Garden: Riparian Restoration Conference
- Missouri Natural Resources Conference
- River Restoration Northwest: Stream Restoration Symposium
- 2019 MAEOE Conference: Full Steam Ahead: Expanding the potential of Environmental Education
- Alaska Forum on the Environment
- Wisconsin Wetlands Association: Wetland Science Conference
- University of Arizona Conference: Crafting the Long Tomorrow: New Conversations & Productive Catalysts Across Science and Humanities Boundaries as the Global Emergency Worsens
- Association for the Sciences of Limnology and Oceanography: Planet Water: Challenges and Successes
- International Conference on Water Management Modeling

Jeanne Christie photo
March 2019

- Massachusetts Association of Conservation Commission Annual Environmental Conference
- 2019 Washington Botanical Symposium
- Smithsonian-Mason School of Conservation Course: Statistics for Ecology and Conservation Biology
- Michigan Stormwater Floodplain Association Conference
- CitSci 2019: Growing Our Family Tree
- Climate Leadership Conference
- 5th Life Discovery – Doing Science Biology Education Conference: Microbiomes to Ecosystems: Evolution and Biodiversity across Scale, Space, and Time

April 2019

- Association of State Wetland Managers Annual State/Tribal/Federal Coordination Meeting: Translating Wetland Science into Fair and Reasonable Government Policies
- Ohio Wetlands Association Vernal Poolooza
- 7th International Conference: Green Energy & Technology
- 2019 Society of Ecological Restoration Midwest-Great Lakes Meeting
- Greater Everglades Ecosystem Restoration: Science Advancing Everglades Resilience and Sustainability
- National Adaptation Forum
- Center for Watershed Protection: 2019 National Watershed & Stormwater Conference

May 2019

- Environmental Law Institute Conference: Clean Water Act: Law and Regulation 2019
- Land Trust Alliance: New York Land Conservation Conference
- Choose Clean Water Coalition: 10th Annual Choose Clean Water Conference
- National Mitigation & Ecosystem Banking Conference: Connecting Policy, Practice, Business, Science & People
- Environmental Law Institute 30th Annual National Wetlands Awards 2019
- Arboriculture & Urban Forestry Educators’ Symposium & Summit
- 2019 NAEP Conference: The Environmental Landscape in an Age of Infrastructure Modernization
- Association of State Floodplain Managers 42nd Annual Meeting: Managing Floods Where the Mountains Meet the Desert
- Society of Wetland Scientists 2019 Annual Meeting: The Role of Wetlands in Meeting Global Environmental Challenges: Linking Wetland Science, Policy, and Society
- Ducks Unlimited National Convention

June 2019

- 2nd International Conference on Community Ecology
- The College at Brockport, State University of New York: 62nd Annual Conference on Great Lakes Research: Large Lakes Research: Connecting People and Ideas
- Land Trust Alliance: Seventh Symposium on Advanced Legal Topics in Land Conservation
- 2019 AWRA Summer Specialty Conference: Improving Water Infrastructure Through Resilient Adaptation
- National Hydrologic Warning Council Conference
- River Network: River Rally

July 2019

- International Association for Landscape Ecology's World Congress: Nature and society facing the Anthropocene: challenges and perspectives for Landscape Ecology
- 20th INUA Congress: Life on the Edge
August 2019

- Ecological Society of America Annual Meeting

October 2019

- Natural Areas Association: Natural Areas Conference
- AASHE Conference: Co-Creating a Sustainable Economy

Training/Workshops

January 2019

- The Swamp School Winter Wetland Tree Identification Workshop
- University of Missouri Online Course: Topics in Natural Resources (Urban biodiversity, conservation, planning)
- Washington State Department of Ecology: Coastal Training Program Course: How to Administer Development Permits in Western Washington’s Shorelines
- T. Richardson Soils and Environmental: Florida Wetland Delineation Workshop

February 2019

- The Swamp School Course: Wetland Delineation Training
- Wetland Training Institute, Inc. Course: Basic Wetland Delineation
- The Swamp School Online Course: Wetland Basic Delineation Training 2019
- The Swamp School Online Course: Certified Wetland Hydrologist
- American Law Institute Continuing Legal Education Course: Environmental Law 2019
- Wetland Training Institute, Inc. Course: Basic Wetland Delineation Refresher
- Wetland Training Institute, Inc. Online Lecture and Field Practicum Course: Basic Wetland Delineation.
- The Swamp School Course: Data Collection for Environmental Professionals
- Washington State Department of Ecology: Coastal Training Program Course: How to Explain Science, Share Data, and Build Trust: Presentation Skills for Scientists and Public Officials
- Wetland Training Institute, Inc. Course: Advanced Hydric Soils Online with Field Practicum
- The Swamp School Course: Accelerated Online Wetland Delineation Training Workshop
- The Swamp School Course: Phase I Environmental Site Assessment
- The Swamp School Course: Basic Botany for Wetland Assessment
- Washington State Department of Ecology: Coastal Training Program Course: Tree and Shrub Identification for Western WA Puget Lowland Habitats
- Duncan & Duncan Wetland & Endangered Species Training: Wetland Delineation Regional Supplement (Atlantic & Gulf Coastal)
- Wetland Training Institute, Inc. Course: Basic Wetland Delineation
- Wetland Training Institute, Inc. Course: Demystifying Wetland and In-Water Permitting in Washington State

March 2019

- Wetland Training Institute, Inc. Online Lecture and Field Practicum Course: Basic Wetland Delineation
- Wetland Training Institute, Inc. Course: Basic Wetland Delineation Refresher Course
- The Swamp School Online Course: Wetland Basic Delineation Training 2019
- The Swamp School Online Course: Principles of Wetland Design
- The Swamp School Course: Wetland Delineation Training
- Duncan & Duncan Wetland & Endangered Species Training: Basic Wetland Delineation
- The Swamp School Course: Habitat Conservation Plans
- U.S. Fish and Wildlife Course: Stream Habitat Measurement Techniques
- The Swamp School Online Course: Developing Wetland Water Budgets 2019
- University of Alaska Fairbanks Course: Arctic Alaska Ecosystems
- The Swamp School Online Course: Wetland Monitoring Techniques
- Duncan & Duncan Wetland & Endangered Species Training: Interagency Consultation for Endangered Species (Section 7)
- Wetland Training Institute, Inc. Course: Woody Plant Identification
- Wetland Training Institute, Inc. Course: Basic Wetland Delineation Refresher Course
- Wetland Training Institute, Inc. Online Lecture and Field Practicum Course: Basic Wetland Delineation

April 2019

- Wetland Training Institute, Inc. Course: Basic Wetland Delineation
- U.S. Fish and Wildlife Course: Wetland Assessment, Restoration and Management
- The Swamp School Online Course: Certified Hydric Soils Investigator
- The Swamp School Online Course: Wetland Basic Delineation Training 2019
- Duncan & Duncan Wetland & Endangered Species Training: Advanced Hydric Soils, Hydrology, and Regional Indicators (Coastal Plain)
- CUAHSI Workshop: The Role of Runoff and Erosion on Soil Carbon Stocks: From Soilscapes to Landscapes
- The Swamp School Course: Wetland Delineation Training
- The Swamp School Online Workshop and Field Day: Blended Online and Field Wetland Delineation
- The Swamp School Course: Phase I Environmental Site Assessment
- Wetland Training Institute, Inc. Course: Basic Wetland Delineation
- The Swamp School Online Course and Field Day: Blended Online and Field Wetland Delineation Workshop
- The Swamp School Course: Basic Botany for Wetland Assessment

May 2019

- The Swamp School Course: Wetland Delineation Training
- Duncan & Duncan Wetland & Endangered Species Training: Basic Wetland Delineation
- The Swamp School Online Course: Wetland Basic Delineation Training 2019
- Wetland Training Institute, Inc. Course: Advanced Hydric Soils Online with Field Practicum
- Northern Arizona University Training Course: New Advances in Land Carbon Cycle Modeling
- Eagle Hill Natural History Science Field Seminar: Lichens and Lichen Ecology
- CUAHSI Short Course: The Science and Practice of Operational Ensemble Hydrological Prediction
- Rutgers Office of Continuing Professional Education Course: Vegetation Identification for Wetland Delineation: North
- Wetland Training Institute, Inc. Course: Graminoids (Grasses, Sedges, Rushes) ID for Wetlands and Wetland Delineators
- Eagle Hill Natural History Science Field Seminar: Calicioid Lichens and Fungi of the Acadian Forest: Identification and Ecology
- Eagle Hill Natural History Science Field Seminar: Introduction to Bryophytes and lichens
- CUAHSI Short Course: Integrated Simulation of Watershed Systems using Parflow
- Duncan & Duncan Wetland & Endangered Species Training: Hydrophytic Vegetation (Coastal Plain)

June 2019

- Institute for Wetland & Environmental Education & Research: Plant ID Course: Wetlands & Their Borders
- Wetland Training Institute, Inc. Course: Plant identification for Coastal Southern California
- The Swamp School Online Course: Wetland Basic Delineation Training 2019
- The Swamp School Online Course: Certified Wetland Hydrologist
- Institute for Wetland & Environmental Education & Research: Plant ID Course: Basic Wetland Delineator Training
- Eagle Hill Natural History Science Field Seminars: Mosses: Structure, Ecology, and Identification
- Eagle Hill Natural History Science Field Seminars: Chironomids: Classification, Morphology, Identification, and Lifecycles
- Duncan & Duncan Wetland & Endangered Species Training: Advanced Hydric Soils, Hydrology, and Regional Indicators (Coastal Plain)
- The Swamp School Course: Wetland Delineation Training
- The Swamp School Course: Basic Botany for Wetland Assessment
- Rutgers Office of Continuing Professional Education Course: Methodology for Delineating Wetlands
- Rutgers Office of Continuing Professional Education Course: Introduction to Wetland Identification
- Eagle Hill Natural History Science Field Seminars: Independent Study: Topics in Fungal Biology
- Eagle Hill Natural History Science Field Seminars: Independent Study: Topics in Fungal Biology
- Eagle Hill Natural History Science Field Seminars: Medicinal Plants: Traditions and Contemporary Perspectives
- The Swamp School Course: Accelerated Online Wetland Delineation Training Workshop
- The Swamp School Online Course: Habitat Conservation Plans
- Wetland Training Institute, Inc. Course: Advanced Hydric Soils Online with Field Practicum
- Eagle Hill Natural History Science Field Seminars: Sedges and Rushes: Identification and Ecology
- Eagle Hill Natural History Science Field Seminars: EPT Taxonomy and Ecology
- Wetland Training Institute, Inc. Course: Plant Identification for Wetland Delineators
- Eagle Hill Natural History Science Field Seminars: Mushroom Microscopy: An Exploration of the Intricate Microscopic World of Mushrooms
- Eagle Hill Natural History Science Field Seminars: Taxonomy and Biology of Ferns and Lycophytes
- Eagle Hill Natural History Science Field Seminars: Introduction to Bird Banding, Research, and Monitoring for Songbirds and Raptors

July 2019

- The Swamp School Online Course: Wetland Basic Delineation Training
- Eagle Hill Natural History Science Field Seminars: Survey of Grasses: Their Structure, Identification, and Ecology
- Eagle Hill Natural History Science Field Seminars: Marine Benthic Invertebrates
- The Swamp School Online Course: Certified Hydric Soils Investigator
- The Swamp School Online Course: Principles of Wetland Design
- The Swamp School Online Course: Wetland Monitoring Techniques
- Wetland Training Institute, Inc. Course: Advanced Hydric Soils Online with Field Practicum
- Eagle Hill Natural History Science Field Seminars: Wetland Identification, Delineation, and Ecology
- The Swamp School Course: Data Collection for Environmental Professionals
- Ecological Forecasting
- Eagle Hill Natural History Science Field Seminars: Mushroom Identification for the Novice; Focus on Edible and Medicinal Mushrooms
- College of the Atlantic Field Botany: Plants of New England

August 2019

- Eagle Hill Natural History Science Field Seminars: Submersed and Floating Aquatic Plants
- Wetland Training Institute, Inc. Course: Beginners Plant ID for Wetland Delineation
- Eagle Hill Natural History Science Field Seminars: Lichens, Biofilms, and Stone
- Eagle Hill Natural History Science Field Seminars: EPT Taxonomy and Ecology
- Duncan & Duncan Wetland & Endangered Species Training: Hydrophytic Vegetation (Piedmont)
- Wetland Training Institute, Inc. Course: Plant Identification for Wetlands and Wetland Delineators
- Eagle Hill Natural History Science Field Seminars: Mushroom Microscopy: An Exploration of the Intricate Microscopic World of Mushrooms
- Eagle Hill Natural History Science Field Seminars: Taxonomy and Biology of Ferns and Lycophytes
- Eagle Hill Natural History Science Field Seminars: Introduction to Bird Banding, Research, and Monitoring for Songbirds and Raptors
The Association of State Wetland Managers’ *Wetland Breaking News* (WBN) is a monthly e-newsletter. *Wetland Breaking News* is an edited compilation of wetland-related stories and announcements submitted by readers and gleaned from listservs, press releases and news sources from throughout the United States. WBN chronicles the legislative, national and state news relevant to wetland science and policy, wetland regulations and legal analysis of Supreme court cases from the past month; it also links to new publications and resources available to wetland professionals as well as events and training opportunities for those working in water resources and related fields. *Wetland Breaking News* has been published for over fifteen years and ASWM has been a think-tank and source for wetland science and policy news and discussion for over 30 years.

The items presented in *Wetland Breaking News* do not necessarily reflect the views of the editor or of the Association of State Wetland Managers. Send your news items, comments, corrections, or suggestions to news@aswm.org.

"WETLAND BREAKING NEWS“ Compiled by Sean Seary, ASWM Intern; Edited by Marla Stelk, Executive Director; Laura Burchill and Sharon Weaver, Assistant Editors, Association of State Wetland Managers, 32 Tandberg Trail, Ste. 2A, Windham, ME 04062. Telephone: 207-892-3399; Fax: 207-894-7992.

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