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# FlashFlood NEWS

2019 Issue 1

Fall/Winter 2019

## Battleship North Carolina: Living with Water Resiliency Master Plan

### Shoreline Restoration and Tidal Marsh Creation on a National Historic Landmark

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The USS North Carolina, a former World War II battleship, now a memorial to veterans and the 11,000 North Carolinians who died during World War II, sits just across the Cape Fear River from downtown Wilmington, adjacent to over 2,000 acres of tidal wetlands and intertidal shoreline. Dedicated as a memorial in 1962, the battleship is no stranger to the impacts of extreme weather events and flooding. The battleship and its facilities endured hurricanes Matthew, Florence, and Dorian, and have been subject to repeated nuisance and sunny day flooding since their dedication. In fact, the battleship has seen more flood stage events in the past decade than in the previous 60 years. The hydrograph shown below illustrates the extreme water levels the battleship experienced during the aftermath of Hurricane Florence in 2018 (source: NOAA Beaufort Lab).

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## Membership Renewals Due in January for all Members

It's almost time to renew your NCAFPM membership. Invoices were emailed for your 2020 membership. Payment is due by January 31, 2020 to keep your membership current. If you have not received your invoice please contact [Susan Frady](mailto:Susan.Frady@ncafpm.org).

NCAFPM is an association that helps you broaden your knowledge base through webinars and conferences. Membership means belonging to a community of more than 400 state-wide passionate experts who are always ready to mentor and lend advice on navigating the sometimes tricky waters of floodplain management. Regional representatives are your point of contact for questions and for bragging rights after you've done a great project. Members of our association include government employees (state, local, FEMA) consultants, and manufacturers of products used in floodplain management. We also put out this bi-annual newsletter with timely information about what's going on in the floodplain management world.

**Please join NCAFPM to help us provide "best value' to our members"**

# From the Chairman's Desk



AMIT SACHAN, PE, CFM  
NCAFPM CHAIRMAN

## My Floodplain Manager Friends,

With the Holiday season upon us, I am thankful to be involved with such a wonderful organization. Working with dedicated professionals is a privilege and I am truly grateful for the opportunity to serve on the board. Thanks to your contributions and tireless work by our dedicated board members, our organization has become a model for other chapters.

We have been fortunate this year due to a mild hurricane season. Barring the concentrated damage from Hurricane Dorian, we were spared from major storms. But I am sure that our floodplain managers were prepared for the worst. Preparations in calm times help us be resilient during disaster events. One of our key goals is to provide training, education, and information sharing opportunities to our membership. We were able to host two great conferences along with several webinars and training sessions.

We returned to Cherokee for our 14th annual fall floodplain institute. Our gathering started with chants from a drum group from the Eastern Band of Cherokee Indians. New NCEM Director, Chris Koltyk, was the keynote speaker. Chris provided an overview of the program along with a glimpse into future initiatives. Jason Hunter from FEMA region IV provided an update on FEMA's programs including Risk Rating 2.0. Fall Institute was filled with various technical sessions along with a workshop on Low Cost stream sensor put together by Josh McSwain and team from Mecklenburg County Stormwater Services. A video with moments from the fall conference are posted at this [link](#).

Looking ahead, we have several exciting initiatives in the works including a college scholarship program and a webinar series with the objective of providing 'best value' to our members. Here is a quick update on a few initiatives and Action Items that we can use your help with.

• **'Berry Williams' Scholarship Program:** Last year, NCAFPM rolled out a scholarship program for College students to promote education in floodplain management related fields (more about the scholarship initiative on page 7.) This year, we have named our scholarship in honor of Berry Williams, one of the founders of our association. Berry is also a veteran and he is an inspiration to many in the floodplain management field. We have also increased the total scholarship amount to \$2,500 (compared to \$1000 in the inaugural year.) Encourage students to apply. For more information visit our Education and Outreach page on our [website](#).

• **FREE Webinar Series:** We have already hosted 3 webinar sessions this year (more about webinar series on page 4.) It is a membership benefit, but it is also available to non-members at a nominal cost. Several webinars are in planning for 2020. Connect with us to be a speaker.

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• **National Conference in North Carolina in 2021:** Raleigh will host National Association of State Floodplain Managers (ASFPM) conference in 2021. It is indeed a matter of pride for our State, but it will also provide opportunity for many of our members to attend national conference and meet with your counterparts in other States. We will need a lot of help. Please volunteer to help by contacting Ken Ashe Vice Chair NCAFPM at [ken.ashe@woodplc.com](mailto:ken.ashe@woodplc.com)

I can't be more excited about our future initiatives and I am confident that our membership will find them useful. Consider getting involved in the organization as committee members, board members, or active participants. There are exciting things to follow in 2020 but hope that you all can take some time during the holidays to unplug and rejuvenate.

Happy Holidays to you and your loved ones!

*Amit*



## Congratulations Spencer!

Spencer Rogers Wins NC State University Award for Excellence Long time NCAFPM member and supporter, Spencer Rogers, was selected as a winner of NC State University's Award for Excellence. Spencer's career as a coastal construction and erosion specialist with the NC State Sea Grant program has spanned more than forty years. The award was presented in June and recognized Spencer in the "outstanding state government service" category for his research into rip currents, coastal construction and his contributions to the North Carolina Building Code Council. Spencer's numerous presentations and field trips at NCAFPM annual conferences over the years have provided attendees with an invaluable insight into coastal construction issues.

*More information on the award can be found at: [NCSeagrantRogers](#)*



The North Carolina Association of Floodplain Managers now offers regular webinars on current topics in floodplain management. We have already had two successful webinars and pdf files of their slides are included on the training page (under “Resources”) on the NCAFPM website:

- **January 31, 2019:** Timothy J. Trautman, PE, CFM, Engineering & Mitigation Program Manager for Charlotte-Mecklenburg Storm Water Services.  
“Planning for Future Hazards”
- **September 25, 2019:** Mr. Harold W. Rempel, III, CP, CMS-LiDAR, GISP, PP, SP, ESP Associates, Inc. “From Bats to Geiger: A History of LiDAR-Enabling Technologies”

### **Upcoming Webinar – December 12, 2019 at noon**

Our next webinar will be led Randy Mundt, AICP, CFM, NCEM Outreach Coordinator and Dan Brubaker, PE, CFM, NC National Flood Insurance Program (NFIP) Engineer. The topic will be “Risk Rating 2.0, NFIP and Mapping Updates” and the webinar will be held December 12, 2019 from 12-1 PM.

#### **Risk rating 2.0, NFIP and Mapping Updates**

This webinar will discuss new Risk Rating 2.0, which is NFIP’s new risk rating system to deliver rates that better reflect flood risk on a property. The speakers will also discuss other NFIP and mapping updates including Governor Cooper’s Executive Order (EO80) to address resiliency to climate change, and NFIP re-authorization.

**Randy Mundt, AIP, CFM** is the Outreach Coordinator with the Division of Emergency Management’s Floodplain Mapping Program. Randy was previously the State Hazard Mitigation Officer. Randy currently provides technical assistance and outreach to increase the scope and accuracy of FEMA’s Flood Insurance Rate Maps. Randy previously managed the coordination of all State and local responsibilities for developing hazard evaluation and mitigation, and served as the project manager for the development of the State’s 322 Hazard Mitigation Plan. Prior to joining the NC Division of Emergency Management, Randy was the Land Development Supervisor for Wake County for five years. He was also the Planning Director for the Town of Clayton, NC for five years, and served as a planner and building plans examiner in Louisville, Kentucky for four years. He has a B.A. in Geography from Southern Illinois University at Edwardsville, and also completed his course work for a Masters in City and Regional Planning from Southern Illinois University at Edwardsville.

**Dan Brubaker, PE, CFM** has served as the National Flood Insurance Program Engineer for the State of North Carolina since June 2011 and as the NFIP Coordinator since January 2017. He assists North Carolina municipalities with technical questions and reviews of engineering reports, reviews engineering information associated with North Carolina map maintenance, and provides training and community assistance visits. Dan graduated from the University of South Florida in 1991 and spent time in private consulting, serving with the U.S. Navy Civil Engineer Corps, and reviewing permits and managing capital projects for the City of Raleigh.

# NCAFPm Chapter News

## Education & Outreach

DAN TOMCZAK, CFM | NCAFPm EDUCATION  
AND OUTREACH COMMITTEE CHAIR

**NCAFPm** was active and busy during 2019 by reaching out to organizations, communities, and schools and becoming more involved with promoting flood risk education. I would also like to welcome and thank Amanda Darrow (Kimley-Horn) and Joshua Allen (McAdams Co) for recently volunteering to assist with the education and outreach activities and looking forward to seeing the NCAFPm outreach program grow into 2020.

**Durham Creek Week** was held March 16-23, 2019 and this year was the second year in which NCAFPm participated. NCAFPm teamed up with NC Central University (NCCU) Department of Environmental, Earth, and Geospatial Sciences and presented to the 5th grade students at Eastway Elementary School in Durham during Creek Week. Dan Tomczak and Emma Bouie (graduate student from NCCU) led discussions on stormwater runoff, flood mitigation, the effects of development on flooding, and water management using the Ward's 3-D flood model. The students were very engaged with the model and able to make a connection to the stream restoration work that has been completed on the nearby Goose Creek.



**The North Carolina King Tide Project** (<http://nckingtides.web.unc.edu/>) continues to grow through involvement by members of NCAFPm as well as citizen scientist groups. Local officials and the general public are seeing a strong interest by their communities to become actively involved with monitoring tidal (or nuisance) flooding and have contacted the UNC Institute of Marine Sciences (UNC-IMS) about having gauges set-up to collect water level measurements. As part of the NC King Tide (NCKT) Project, twenty water level monitoring stations were constructed through mid-2019 along the coast of North Carolina to augment water level data and decrease information gaps. Monitoring stations with staff gauges were constructed by UNC-IMS at locations within coastal communities covering from Carolina Beach to Oriental to Corolla. In addition, the water level data collected at the NCKT stations can be correlated with the data being collected at nearby real-time water level gauges that are part of the NC FIMAN network. Citizens photo-documenting and collecting water level measurements can submit their data using the What's Your Water Level? web-app hosted by NOAA.

*Demonstrating the flood model to 5th grade students at Eastway Elementary School as part of Durham Creek Week 2019.*



*Localized flooding during tidal event in Carolina Beach in February 2019.*

### Other Opportunities

There are many other outreach opportunities for members to become more involved with NCAFPm, including the High Water Mark sign initiative, NFIP, community workshops, the Catawba River STEM Festival, and others. If you are interested in becoming involved in outreach for NCAFPm or potentially using the Ward's flood model for an upcoming event, please feel free to contact me at [Daniel.tomczak@jacobs.com](mailto:Daniel.tomczak@jacobs.com).

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## NCAFPm College Scholarships for 2020

NCAFPm is pleased to offer two \$1250 scholarships in 2020 for undergraduate college students interested in pursuing a field related to floodplain management (hydrology and storm water, engineering, planning and zoning, coastal management, hazard mitigation, emergency management, surveying, geography GIS and mapping, etc.) The application process is open to all students attending a college or university in North Carolina. We strongly encourage application submissions by students enrolled at Historically Black Colleges and Universities (HBCUs) or Minority Serving Institutions (MSIs) with a baccalaureate degree program as well as students enrolled at a technical community college with an associate degree program.

Application materials are on the NCAFPm website's Education and Outreach webpage (under Resources). The deadline for submittal of the application is January 31, 2020, and the scholarship recipients will be formally announced at the NCAFPm Annual Conference in April 2020. If you have any questions, please contact Dan Tomczak ([daniel.tomczak@jacobs.com](mailto:daniel.tomczak@jacobs.com)).

## 2020 Annual NCAFPm Spring Conference

April 27 - 29, 2020



NCAFPm will once again return to Atlantic Beach for our 2020 Annual Conference. Our host is the Double Tree and a full program of information and instruction is planned for the two and one-half day event.

As you may remember, Hurricane Florence cancelled the planned conference for April 2019 at this facility, which reopens in late 2019, after extensive renovation and repair. Please join us as we support this newly renovated facility.

Stephen Smith and Holly White are Program Co-chairs, Laura Arnold, Corporate Sponsor Chair, and John Fullerton, Conference Chair. Registration information will be available by February 1st. Conference and program ideas are always welcome and you are encouraged to put this event on your Spring calendar.

**Check out NCAFPm  
on social media!**



[facebook.com/NCAFPm](https://facebook.com/NCAFPm)



[linkedin.com/company/ncafpm](https://linkedin.com/company/ncafpm)



[twitter.com/NCAFPm](https://twitter.com/NCAFPm)

# NCAFPM Chapter News

## 2019 NCAFPM Scholarship Program REPORT

DAN TOMCZAK, CFM | NCAFPM EDUCATION AND OUTREACH COMMITTEE CHAIR

### The NCAFPM Scholarship

**Program** initially launched in 2018-2019 by awarding two \$500 scholarships for undergraduate college students interested in pursuing a field related to floodplain management (hydrology and

storm water, engineering, planning and zoning, coastal management, hazard mitigation, emergency management, surveying, GIS and mapping, etc.) The application process was open to all undergraduate students attending a college or university (including community colleges) in North Carolina. After a competitive applicant review process, Savannah Newbern of East Carolina University and Samuel Blackman of NC State University were each awarded a \$500 scholarship and recognized for their achievement at the NCAFPM Annual Conference this past May in Wrightsville Beach. A brief bio on each scholarship recipient is as follows:



**Savannah M. Newbern** (See Savannah's Full Story on the next Page)

**Samuel A. Blackman** is currently a senior studying Biological Engineering at North Carolina State University. Samuel's interests include understanding the effects of urban planning on water quality, erosion and sedimentation, estuaries and their role in sediment management and flood mitigation, and coastal ecosystem dynamics.

the scholarship program to be a success.

**Many thanks need to be extended to the 2018-2019 scholarship committee** members, including Amit Sachan, Laura Arnold, Scott Brookhart, and Dan Tomczak for their hard work and time commitment in the planning, promoting, and application review necessary for the inaugural year of

**The NCAFPM Berry Williams Scholarship 2020, named in honor of Berry Williams** for his years of service as the State of North Carolina NFIP coordinator and assisting with the establishment and growth early on of NCAFPM, is now open to applicants. Two \$1,250 scholarships will be awarded to students (enrolled full-time in a 2-year or 4-year degree program at a NC college or university) currently studying in a program related to the disciplines of floodplain management (hydrology and storm water, engineering, planning and zoning, coastal management, hazard mitigation, emergency management, surveying, geography/GIS, etc.) Application deadline is January 31, 2020. Application materials are at the link provided in the scholarship announcement in the Education and Outreach section of the NCAFPM website (<http://www.ncafpm.org/training.html>).



### Savannah Newbern received a 2019 NCAFPM Scholarship

of \$500. When I was selected as a recipient, I was invited to attend the first day of the 2019 NCAFPM Annual Conference held in Wrightsville Beach, NC on May 6th-8th, to be presented with the award.

At the conference, I was lucky to attend multiple educational sessions addressing upcoming software tools, on-going research, and implementation of local flood management plans. A detailed presentation analyzing North Carolina's hurricane and flooding vulnerabilities was accompanied by instruction on how to address issues of climate change and weather polarization with the general public. These opportunities to learn more about the day-to-day practices of planning departments from all over the State utilizing floodplain management were very interesting.

From this experience, I received knowledge and professional development in areas pertaining to floodplain management and coastal development. The most impressive aspect of the conference was interacting with dedicated professionals, and seeing their efforts to minimize the economic and social impacts of flooding while strengthening resiliency in communities. I would certainly recommend applying for this scholarship to all students interested in floodplain management or studying in a related field. Not only does the scholarship assist in me in continuing my education, but the connections I made at the conference as well as the practical knowledge I gained will be invaluable tools for working in any region of North Carolina." - by Savannah Newbern, Planning Senior Student

### Savannah Newbern - NCAFPM Scholarship Recipient (Article Credit: ECU Newsletter)

"My name is Savannah Newbern and I am a senior studying Community and Regional Planning at East Carolina University. My professional interests include coastal management, GIS mapping and visualization tools, hazard mitigation, and developing ecological health and public safety through planning. Due to these interests, I applied for the North Carolina Association of Floodplain Managers (NCAFPM) academic scholarship

## Restoring the headwaters of the Pasquotank River and natural floodplain function

Submitted by: Lora Eddy [lora.eddy@TNC.ORG](mailto:lora.eddy@TNC.ORG)

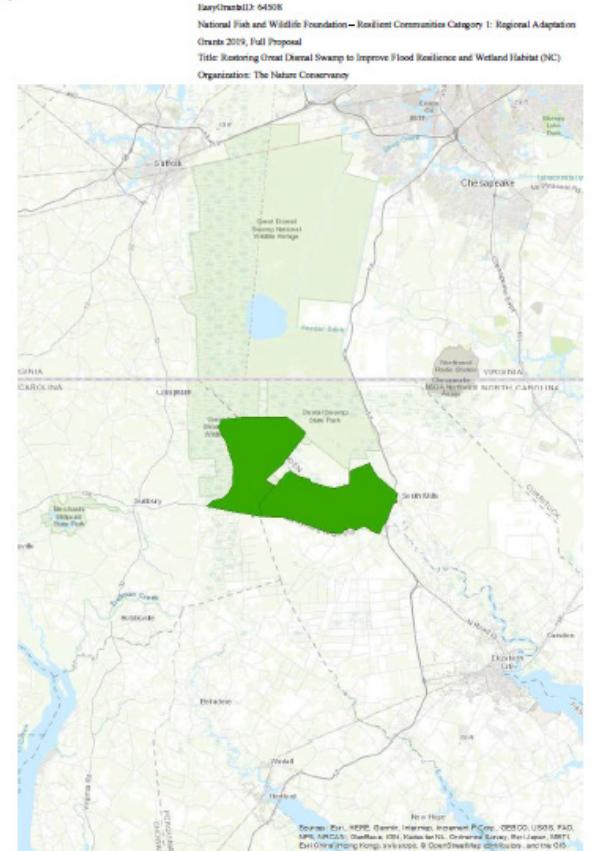
Thanks to a grant from the National Fish and Wildlife Foundation's Resilient Communities program, the Conservancy is poised to restore the last significant drained portion of the Great Dismal Swamp National Wildlife Refuge in partnership with the U.S. Fish and Wildlife Service. The work will involve returning more natural groundwater levels and patterns of stormwater flow to 12,000 acres in Gates, Pasquotank, and Camden Counties—the headwaters of the Pasquotank River. This brings the Conservancy's work full circle in the area. TNC acquired the NC property in the 1970s and later transferred it to the U.S. Fish and Wildlife Service to become part of the refuge, which now sprawls across 112,000 acres of northeast North Carolina and southeast Virginia.

**Eric Soderholm**, who will lead the restoration for the Conservancy alongside refuge staff, says unlike other portions of the refuge, which were drained in Colonial times, this area was drained by prior landowners fairly recently for timber access. "This was part of the last great effort to log Atlantic white cedar in the area," he says. "Almost all of it was cut. With drier soil conditions, other species have come back in its place." Atlantic white cedar, known to many North Carolinians as "juniper," once dominated wetlands from New York to North Carolina, but was largely obliterated by clear cutting. That's because its wood was in demand for boats, shingles and siding. The Albemarle Shad Boat, which is North Carolina's official state boat, was made from the tree.

Drainage and logging road infrastructure dramatically fragmented the region, altering its hydrology. NC Hwy 158 on the southern refuge boundary also impedes the historic outflow from the site. "The project area once drained to both the Perquimans and Pasquotank Rivers," says Soderholm. "Now it drains solely to the Pasquotank."

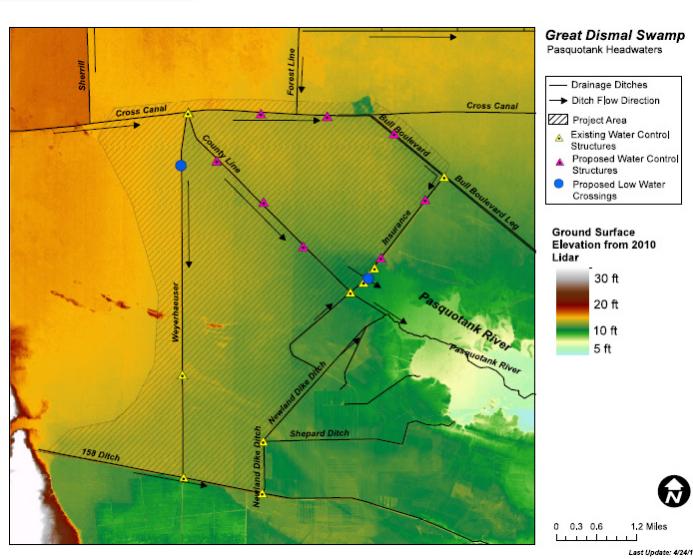
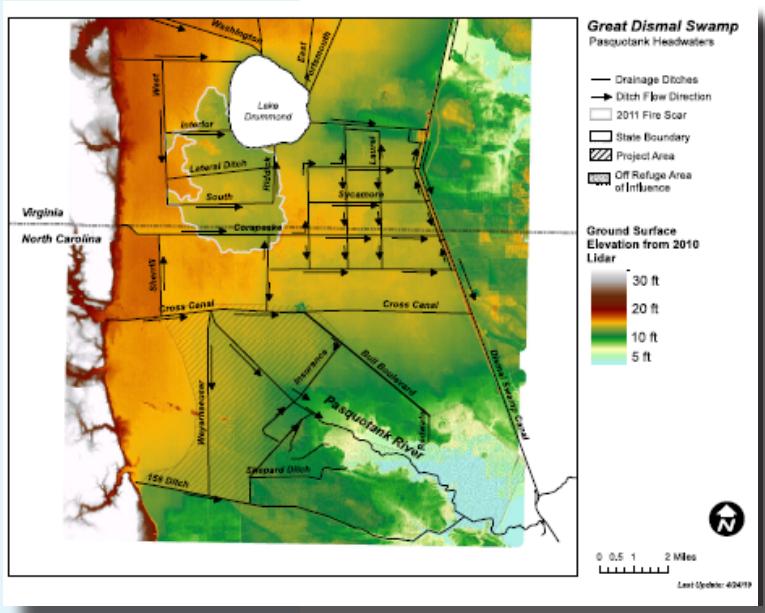
The alterations spell trouble for nearby human communities as well. As climate changes, big rainfall events and larger wildfires have also increased. Rainfall hits the refuge and quickly flows down canals and into the drainage network shared with private lands on its way to the Pasquotank. In its current drained state, stormwater reaches downslope farmland and residences more rapidly and can worsen flooding conditions. Restoring the refuge project area involves holding groundwaters levels higher with management structures added to the drainage canals. In concert with this new structure, portions of the roads adjacent to canals will be lowered to allow overland flow that will slow that stormwater down. Mimicking natural wetland conditions will set the stage for re-establishing Atlantic white cedar and bald cypress, which like wetter feet. "The whole idea is that by rerouting stormwater through the forest rather than straight down ditches, it will slow it down," explains Soderholm. In addition, wetter conditions can reduce the threat of catastrophic wildfires that negatively impact the regional economy and human health. Severe fires can emit enormous quantities of CO<sub>2</sub> and burn several feet of the underlying peat soil, rendering the land unable to support healthy, forested wetland communities.

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## Restoring the headwaters (from previous page)

**The 2011 Lateral West burn scar at Great Dismal Swamp National Wildlife Refuge (NWR). Our Pasquotank headwaters restoration project aims to avoid similar catastrophic wildfires that can burn the peat soil, lower land elevation and lead to prolonged inundation that cannot be tolerated by Atlantic white cedar and other forest species.**





***Post-restoration regrowth of Atlantic white cedars on an adjacent portion of the refuge.***

That's why the restoration qualified for NFWF's Resilient Communities Grant Program, which is aimed at strengthening natural systems. This work benefits nature and people. Reestablishing conditions favored by Atlantic white cedar, which is globally threatened and now occupies just five percent of its original range, will provide valuable habitat.

"There are a number of migratory birds that use that habitat," says Soderholm. "Swainsan's warblers frequent Atlantic white cedar stands."

Local government is also eager for the work to begin.

"From their point of view, whatever can be done to provide even a small flood resilience benefit to adjacent communities and farmland is a positive step," he says. "Right now, after a storm it takes about three to four days for the stormwater pulse to make it to the southern refuge boundary. The hope is to increase that amount of time so communities have a wider window to drain before more water arrives from upslope."

As with all the Conservancy's restoration work, the Great Dismal Swamp project will be monitored before the project commences and after it is complete to measure those benefits.

"And, what we learn here can be applied elsewhere for the mutual benefit of human and natural communities," says Soderholm.

## Living Shoreline Construction Completed at Moor Shore Rd, Kitty Hawk

Michael Flynn, North Carolina Coastal Federation

After much collaboration and teamwork, construction that began on a living shoreline project along Moor Shore Road in Kitty Hawk this past December is now complete. The project consists of seven vertical sills that act as speed bumps and extend approximately 600 feet

along the shore. These sills buffer the shoreline from erosion by decreasing wave energy as it reaches the shore and the road.

This project is particularly important due to the road's use as an emergency route and bypass when US Route 158 cannot be accessed. In addition, the road has intrinsic value as it provides bikers, joggers, kayakers and even marathon participants with beautiful sound side views and water access.

Homeowners and property owners were first to notice the encroaching waves – especially during weather events such as hurricanes – which inspired them to contact local engineers and the North Carolina Coastal Federation to see what could be done. They were looking for a solution that would protect the natural shoreline and the road making a living shoreline the clear choice for this project.

There are a suite of factors and options that need to be considered when designing and constructing a living shoreline. Two alternative designs were considered for the Moor Shore Road project including an oyster sill and a rock sill. Oysters were ruled out because the water is too fresh for their persistence and success and rock sill was ruled out because the footprint (10-13 feet wide) would significantly impact nearby underwater grass beds.



Instead, a vertical sill 18 inches wide and sticking up about 6-12 inches above the water, was chosen. The sill has a low profile to allow large waves to break over top of it and there is an opening every 75-100 feet to allow for water circulation and fish passage. This gap also maintains access to the water for recreational purpose. The installation of marsh grass and upland plants was also incorporated into the design.

## **Living Shoreline (from previous page)**



The grass plantings served as a volunteer and community building opportunity for local residents and visitors. Over the course of two weeks this summer, more than 100 volunteers planted nearly 10,000 plugs of black needle rush, a native marsh grass species, along the length of the 600-foot project.

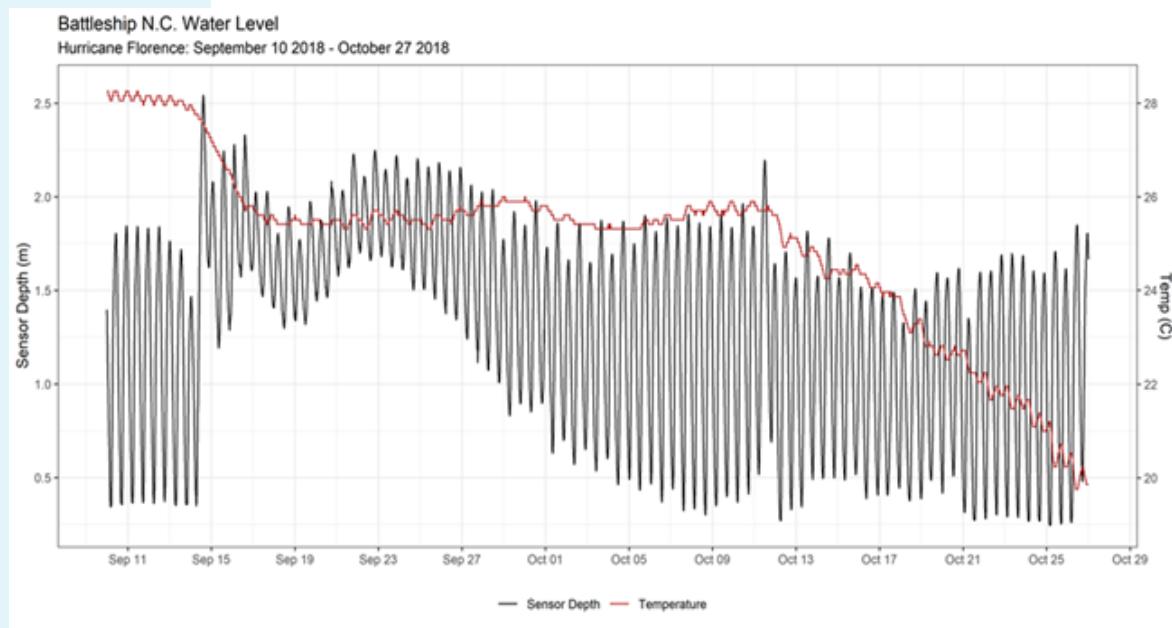
“I’m so happy for the many benefits this marsh sill will provide to the community; providing wetland habitat for flood mitigation, wildlife and fisheries habitat, reducing shoreline erosion and filtering stormwater runoff,” said Ann Daisey of Dare County Soil and Water.

This project is an example of successful collaboration between a variety of partners. Six landowners and four funding agencies including the Town of Kitty Hawk, National Oceanic and Atmospheric Administration, Dare County Soil and Water, North Carolina Department of Transportation (NC DOT) and Coastal Surveying and Engineering have partnered in the implementation of the Moor Shore Road project, with the federation acting as a project facilitator. The Town of Kitty Hawk and NC DOT selected Hatchell Construction in collaboration with Millstone Marine to construct the project. This project is also unique in that it is NC DOT’s first documented living shoreline project in the state. As Mayor Gary Perry of Kitty Hawk has stated, “This project is a long time in the making and something that makes the community very proud.”

For more information, visit [nccoast.org/livingshorelines](http://nccoast.org/livingshorelines).

— continued from page 1

The hydrograph shown below illustrates the extreme water levels the battleship experienced during the aftermath of Hurricane Florence in 2018 (source: NOAA Beaufort Lab).



Faced with increasing flood frequency, retired Captain Terry Bragg, executive director of the battleship, and his assistant director, retired Lieutenant Commander Chris Vargo, knew that something needed to change to ensure that the memorial remain protected and the annual 300,000 visitors could continue to access the facility. Working with Moffatt & Nichol, along with the National Oceanic and Atmospheric Administration (NOAA) Beaufort Lab, they reached the conclusion, similar to that of the Dutch, that instead of fighting the water, they should learn to live with it. Out of that discussion was born the “Living with Water Resiliency Master Plan.”

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*“The ‘Living with Water’ is the future,” said the Battleship’s Executive Director and Retired Captain Terry Bragg. “Today, we’re dealing with taking a whopping from Hurricane Florence.”*

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The original idea of replacing the battleship’s extensively hardened shoreline with 800 feet of a restored living shoreline was expanded to include replacing the flood-prone section of the battleship parking area, as shown in the photo below, with two acres of tidal wetland habitat. This ecosystem-based approach protects and restores essential fish habitat while providing protection for the battleship facilities and infrastructure through reduced flooding, increased stormwater storage, and improved surface water quality draining to the Cape Fear River.

The battleship serves as an example of how one site is wrestling with the challenges posed by flooding and extreme events and highlights how resiliency can improve upon business as usual. The USS North Carolina is leveraging this Living with Water Resiliency Master Plan to change their operations in ways that will better position them for future weather and sea level rise challenges. By doing so, they build their resilience. This, in turn, supports the fulfillment of their mission to honor veterans and the thousands of North Carolinians who died during World War II even as it supports tourism and the Wilmington area economy.



Aerial view of a flooded parking lot at Battleship North Carolina with the Cape Fear River and downtown Wilmington in the background. This photo was taken at high tide.



The Battleship North Carolina is seeking funding for implementation of the “Living with Water” Resiliency Master Plan which includes the restoration of 800 linear feet of estuarine intertidal shoreline and creation of approximately two acres of intertidal and subtidal estuarine tidal wetland habitat. The proposed project will be implemented through a public/private/state/federal partnership administered by the Battleship North Carolina, a state entity. As of September 2019, the battleship has received \$400,000 in grant funding from the North Carolina Clean Water Management Trust Fund and \$1,500 from the Front Street Brewery, a local Wilmington brewing company dedicated to a clean Cape Fear River.

## From the NCAFP Executive Director



**Bill Tingle, PG, CFM  
NCAFP Executive Director**

2019 was a year of milestones and change for NCAFP. We celebrated our 30th anniversary, initiated new initiatives, happily welcomed new faces, but sadly said good-bye to others. The annual conference was held in Wrightsville Beach in early May, after a late location change caused by delay in repairs to the Atlantic Beach Double Tree Hotel from hurricane damage. Thanks to John Fullerton for the time and effort in securing a great venue at the last minute. Berry Williams (NCAFP founder and continued supporter) provided a great presentation covering the history of NCAFP. Past chairs in attendance were recognized and included Lisa Sharrad (first chair), Bill Tingle, Chris Roberson, Natalie Berry, Stephen Smith, Robert Billings, John Fullerton, Cynthia Fox Barcklow, David Key, and Amit Sachan. The conference also included awarding of the initial NCAFP college scholarships. The annual board elections were held and I would like to welcome our newest board member, Nancy Watford with the City of Asheville, elected as Region F representative. Nancy replaces Nate Pennington, with Buncombe County who stepped down after providing some great, fresh ideas and input during his time on the board. The conference also included recognition of John Gerber's retirement from state government. John served as NFIP coordinator for many years and his knowledge and dedication benefited numerous communities and lead to improved floodplain management across the state.

I would like to welcome Chris Koltyk who was selected as the new Director of the North Carolina Floodplain Mapping Program. Chris attended the spring conference, but I think people really got to know him from his presentation and other interaction at the Fall Floodplain Institute in Cherokee. He is a great addition to the NC Floodplain Mapping staff and NCAFP looks forward to working with him in the future.

Three years ago, NCAFP began considering taking over the administration of the CFM program from ASFPM. As you may know, we are one of six Accredited ASFPM State Chapters which were designated to administer their own CFM program when ASFPM created the nationwide CFM program in the late 1990s. For most of that time, we have contracted with ASFPM to administer our program. This year, the NCAFP board voted to begin the process to take over administration of the program. This should be a seamless transition resulting in an improved customer experience for our 450+ CFMs. Our CFM committee has been working with ASFPM and we hope to officially begin administration of the program sometime in 2020. NCAFP treasurer, Susan Frady, will be handling many of the CFM administration duties. In addition, Susan recently assumed NCAFP's administrative assistant duties.

(from previous page)

**NCAFPM** has seen many positive changes this year, but we also experienced a major loss. Kelly Keesling, NCAFPM administrative assistant for over 20 years, passed away on May 30 following a three-year battle with lung cancer. She was 51 years old. She is survived by her husband Tim and children Ashely (25) and Stephen (23). Kelly handled membership, conference registrations, website administration, the Flash Flood newsletter and anything else we asked of her. Kelly was a licensed PE and began her career as an engineer with the City of Charlotte but decided to take time off as an engineer to raise her family and pursue graphic art and other interests. She began her administrative assistant duties with NCAFPM in 1999. Kelly's service to NCAFPM was invaluable but the legacy she will be remembered for includes her positive attitude, strength, passion, and inspiration for her faith. **"Don't Stop Believing".**



**Mrs. Kelly Elizabeth Gray Keesling**

*Bill*

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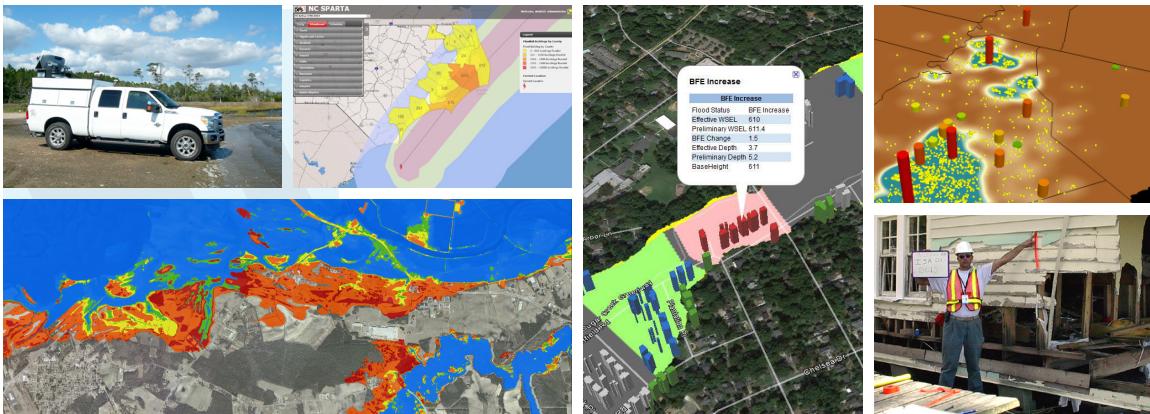


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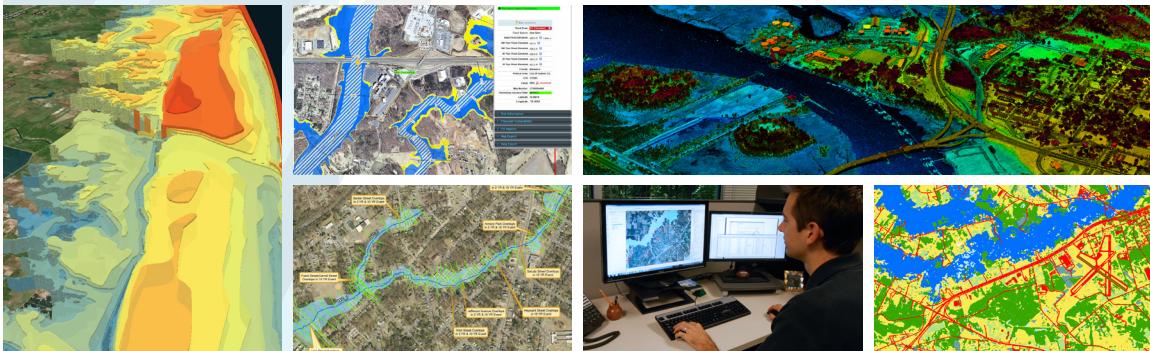
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**Upcoming  
ASFPM Annual  
Conferences**

Fort Worth, Texas  
June 7-12, 2020

Raleigh, NC  
May 9-13, 2021



**ASFPM Annual  
National Conference  
June 7-11, 2020  
Fort Worth, Texas**

The Association of State Floodplain Managers will convene the world's largest and most comprehensive floodplain management conference – the 44th annual gathering – June 7 - 11, 2020 at the Fort Worth Convention Center in Fort Worth, Texas.

You are invited to share your experiences with local, state, regional, tribal and federal officials, industry leaders, consultants and a wide variety of subject matter experts from diverse fields who will give presentations relevant to the theme, " Resiliency Where the West Begins." Registration begins in February 2020.

The conference is conducted by the ASFPM, the world's leading voice for sound floodplain management, with 18,000+ practitioners, 10,000+ Certified Floodplain Managers, 36 chapters and 73 corporate and agency Partners world-wide.

**ASFPM Conference Coming  
to Raleigh in 2021**

Mark your calendar for May 9 - 13, 2021 – the ASFPM annual conference is coming to Raleigh! This conference is recognized as the most important floodplain conference in the United States year after year. With more than 120 speakers and 1,200 participants, it is the national conference that most community, state and federal floodplain managers plan to attend. 2021 will mark twenty years since North Carolina last hosted the ASFPM conference, held in Charlotte in 2001.

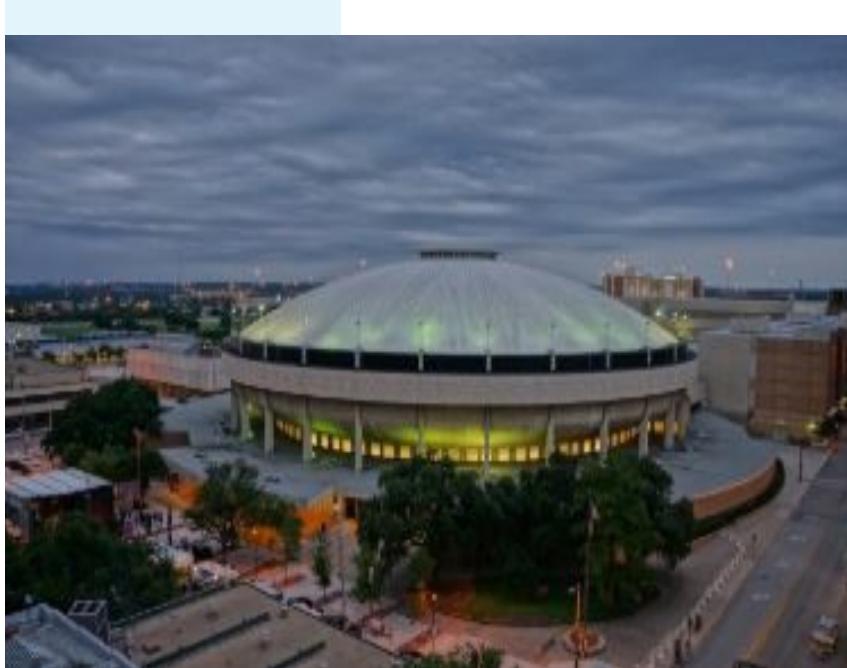
ASFPM will handle most of the logistics including hotel/meeting space, program design, exhibits, sponsors, meals, breaks, etc. However, as local host chapter, this will be a major undertaking for NCAFPM. Fortunately, Ken Ashe with Wood has agreed to serve as the local host team coordinator and will work with ASFPM and local volunteers to ensure a great conference. Some of NCAFPM's responsibilities will include: organizing "Welcome Fest" event, tours/transportation, chapter race, memorabilia, promotion/PR, field trips, golf tournament, and more. This is a huge task for NCAFPM and your help is needed! There are numerous volunteer and local sponsor opportunities available and more detailed information will be made available by mid-2020.

This national conference includes concurrent session presentations. For an extra fee, you may attend 2-4 hour workshops targeted at offering continuing education for floodplain management professionals. The CFM exam is also offered during the conference – please submit your application as explained on the NCAFPM website's Certification page.

ASFPM has contracted with the Omni Fort Worth, Sheraton Fort Worth Downtown and the Hilton Fort Worth. All three hotels are located within walking distance of the Fort Worth Convention Center.

For more information, go to [asfpconference.org](http://asfpconference.org). ▲

— continued on next page



## Convention Center

**Fort Worth Convention Center**

**1201 Houston Street**

**Fort Worth, TX 76102**

**The 2020 ASFPM Annual National Conference will take place at the Fort Worth Convention Center.**



## Hotels

ASFPM has contracted with the Omni Fort Worth, Sheraton Fort Worth Downtown and the Hilton Fort Worth. All three hotels are located within walking distance of the Fort Worth Convention Center.

## Fort Worth Texas

Fort Worth is the 13th-largest city in the United States and part of the No. 1 tourist destination in Texas, welcoming more than 9.4 million visitors annually. Fort Worth is comprised of eleven primary entertainment districts each offering distinct dining, shopping, entertainment, and cultural amenities. In only a few days you can enjoy a range of experiences: from NASCAR racing to rodeos, world-class museums to cowboy cuisine, boutique shopping to a Top 5 zoo, biking to horseback riding.

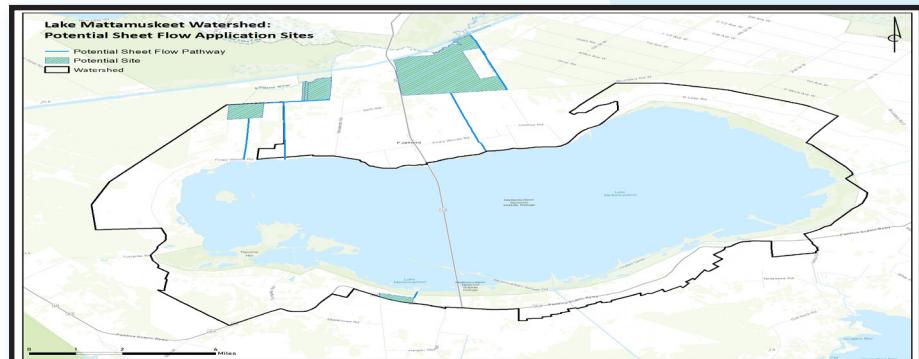
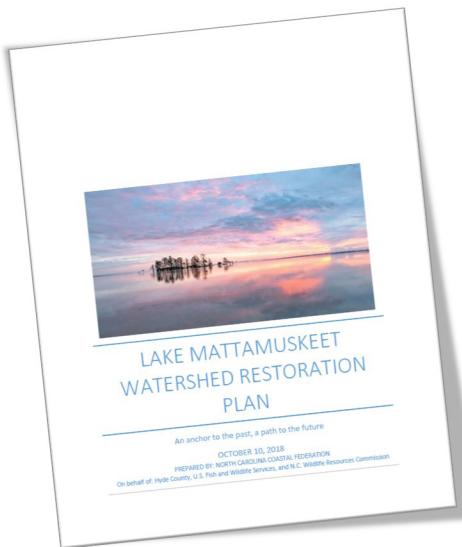
Learn more visit [www.fortworth.com](http://www.fortworth.com)

# Lake Mattamuskeet Watershed Restoration Plan

Michael Flynn, CFM | Coastal Advocate - North Carolina Coastal Federation

Lake Mattamuskeet is located in the heart of Hyde County and is the centerpiece of the Mattamuskeet National Wildlife Refuge. However, flooding issues have become commonplace due to a drainage system that relies on gravity in a very low-relief area. Drainage is further compromised by rising sea level. Water quality has also drastically declined due to increased nutrient levels that produce harmful algal blooms. In 2016, the lake was listed on the state 303(d) list for impaired waters due to elevated levels of pH and chlorophyll-a. A reduction in water clarity and total loss of submerged aquatic vegetation in the lake have also been observed.

Hyde County, N.C. Wildlife Resources Commission, and U.S. Fish and



Wildlife Service partnered with the North Carolina Coastal Federation to develop a watershed restoration plan for Lake Mattamuskeet. A team of core stakeholders met 14 times beginning in May 2017 until November 2018 to develop a plan that will restore the lake's health and improve conditions for people living around the lake. The stakeholder team identified three goals and various management actions to protect the current way of life in Hyde County, actively manage the water level within the watershed (in coordination with the mission of the Refuge,) and restore water quality and clarity within the lake.

Quarterly public meetings were held at the Hyde County Government Complex to provide progress updates and facilitate public engagement through participatory activities to identify data gaps and collect feedback about the likelihood that property owners adjacent to the lake would voluntarily implement various best management practices. The final draft of the Lake Mattamuskeet Watershed Restoration Plan was presented to an audience of approximately 100 during a public symposium at Martelle's Feed House Restaurant in Engelhard on December 3, 2018 following the conclusion of an 18-month planning process. The symposium featured short presentations from ten panelists about water quality concerns and solutions as well as the process for implementing active water management in the watershed.

*Lake Mattamuskeet Watershed:  
Potential Sheet Flow Application  
Sites*

— continued on next page

## Lake Mattamuskeet (from previous page)

The final draft of the plan was submitted to the NC Division of Water Resources Nonpoint Source Program for review shortly after the public symposium. Federation staff worked with stakeholders to identify additional information requested by the review team with regards to estimated pollutant load reductions associated with the implementation of management measures, cost estimates, and interim milestones. An addendum was submitted to the Nonpoint Source Program on July 22, and approval of the watershed restoration plan was granted on August 7, 2019.

Project partners simultaneously applied for and successfully acquired funding to implement priority management actions identified within the plan. The Clean Water Management Trust Fund awarded Hyde County with a grant to contract with the federation and an engineering firm to develop a hydrologic and hydraulic model for the watershed that includes the identification of a proposed service district boundary, wetland siting and capacity analysis of potential project sites, and preliminary engineered drawings for sheet flow applications. This scope of work is anticipated to begin in early 2020, and will be supported by several concurrent research projects.

To find out more visit [nccoast.org/lakemattamuskeet](http://nccoast.org/lakemattamuskeet) or contact Michael Flynn at [michaelf@nccoast.org](mailto:michaelf@nccoast.org).

## ADVERTISEMENT

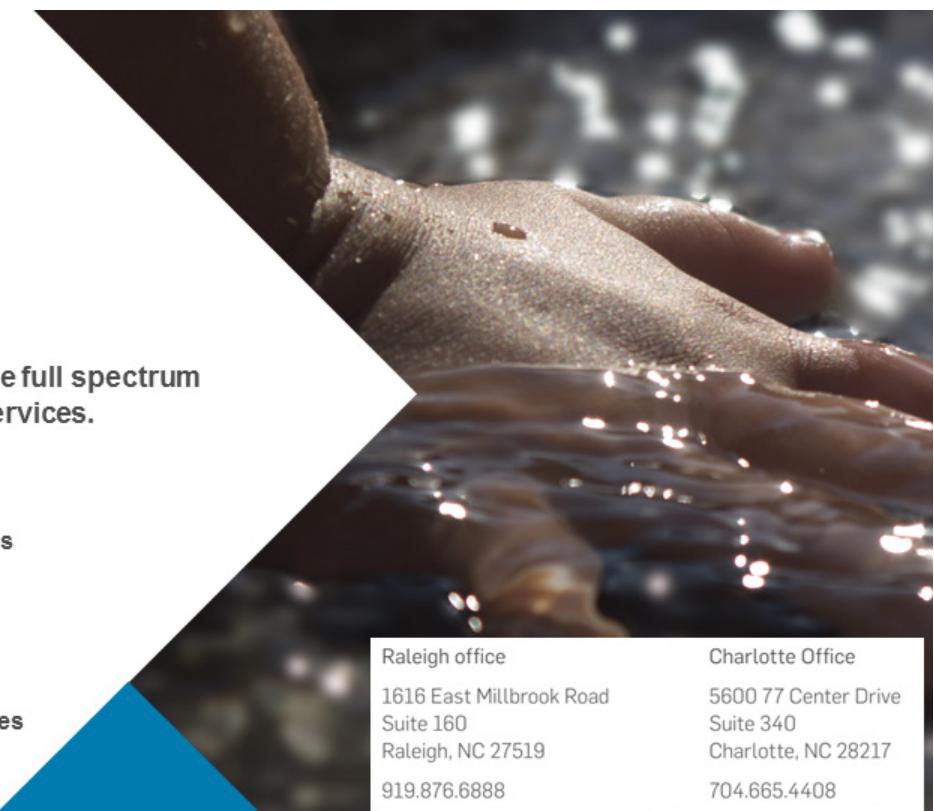


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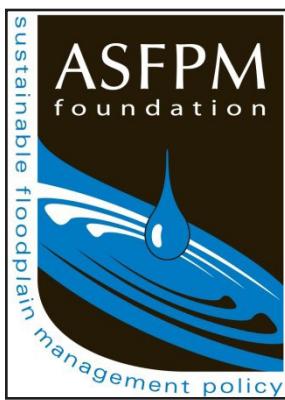
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# How ASFPM Foundation Benefits Local FPMs

Best practices and case studies are effective tools to highlight state and local initiatives to reduce flood risks at the local and regional level. The ASFPM Floodplain Management Best Practices and Case Studies Compendium catalogues best practices and case studies in a searchable format for online viewing, which increases accessibility and usefulness to the reader. The project, funded by the ASFPM Foundation, was completed this summer and is now ready for prime-time use!

ASFPM's Flood Science Center collected 25 best practices and case studies that comprise the compendium. This project created a typology that established the means to organize and index case studies associated with best practices. Sources included the ASFPM's No Adverse Impact (NAI) How-to Guide, The Nature Conservancy's "Naturally Resilient Communities Project," and the FEMA Cooperating Technical Partners (CTP) mentoring project.

## • NAI How-to-Guides

To further ASFPM's No Adverse Impact™ initiative, ASFPM developed a series of No Adverse Impact How-to Guides. These How-to Guides were developed for each of the Building Blocks in the publication entitled "No Adverse Impact: A Toolkit for Common Sense Floodplain Management."

## • Naturally Resilient Communities

The Nature Conservancy (TNC) contracted with ASFPM to assist in developing a guide and case studies for the mainstreaming of natural infrastructure, such as comprehensive planning, education of developers, relocation of property, the raising of infrastructure, and floodplain regulations, to address coastal and riverine flooding.

## • CTP Support

FEMA contracted with ASFPM to help support the Cooperating Technical Partners (CTP.) The CTP Program is a partnership between FEMA and participating NFIP communities, regional agencies, state agencies, tribes, and universities that have the intent and capability to become a more active participant in FEMA's mapping program. The project involved documenting best practices and providing training, such as automatic engineering tasks.

These best practices and case studies can be important and very useful at the state and local levels in designing programs or projects to reduce their flood risks. The Best Practices and Case Studies Compendium can be found at the ASFPM Flood Science Center by going to [floodsciencecenter.org/products/best-practices-case-studies-compendium](http://floodsciencecenter.org/products/best-practices-case-studies-compendium).

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*continued on next page*

## ASFPM Foundation's 10th Annual Collegiate Student Paper Competition

Do you know a university student currently enrolled in flood risk management related courses? Please encourage them to enter ASFPM Foundation's [10th Annual Collegiate Student Paper Competition](#). Finalists receive a stipend to help with travel expenses to present their papers at the 2020 ASFPM annual national conference June 7-12, 2020 in Fort Worth, Texas. Prizes of up to a \$1,000. Deadline to apply is January 10, 2020

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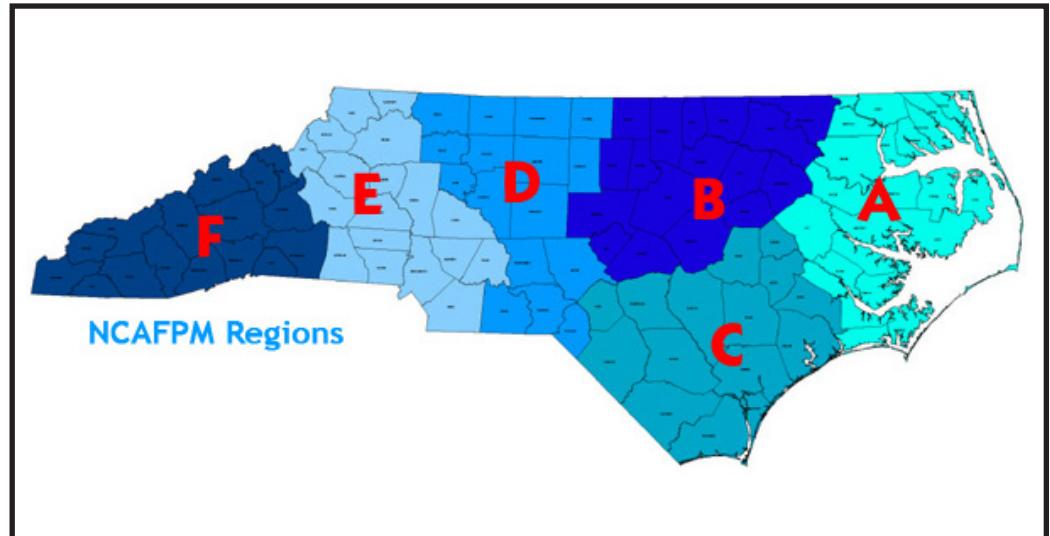
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# NCAFPM Regional Reports



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**Region F** | Nancy Watford, CFM — [nwatford@ashevillenc.gov](mailto:nwatford@ashevillenc.gov)

North Carolina is divided into six NCAFPM regions. Our Regional Representatives give NCAFPM members in each region a “voice” on our board. Flood plain administrators in these regions can contact their representative who can bring regional issues to the board’s attention (ex. coastal erosion, flash flooding and landslides in the mountains, etc.) The map above shows the regions in a graphical format, and below is a list of the counties in each region.

**Region A** | Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Hertford, Hyde, Martin, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, and Washington

**Region B** | Chatham, Durham, Edgecombe, Franklin, Granville, Halifax, Harnett, Johnston, Lee, Nash, Northampton, Orange, Person, Vance, Wake, Warren, and Wilson

**Region C** | Bladen, Brunswick, Columbus, Cumberland, Duplin, Greene, Hoke, Jones, Lenoir, New Hanover, Onslow, Pender, Robeson, Sampson, and Wayne

**Region D** | Alamance, Anson, Caswell, Davidson, Davie, Forsyth, Guilford, Montgomery, Moore, Randolph, Richmond, Rockingham, Scotland, Stokes, Surry, and Yadkin

**Region E** | Alexander, Alleghany, Ashe, Avery, Burke, Cabarrus, Caldwell, Catawba, Cleveland, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly, Union, Watauga, and Wilkes

**Region F** | Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, and Yancey

**Carolina Beach** is tackling tidal flooding, which is occurring more frequently, that is leading to water on people's property and in the street. The flooding can be caused by heavy rain or tides. The town formed the Canal Drive Flooding Advisory Committee. The committee formed and are tackling the following:

- A study to determine at what height bulkheads should be built to;
- Developed a proposed bulkhead ordinance;
- Created signage for gates so when water fills the street, the tools prevent cars from driving through and causing wakes;
- Advocated stricter regulations for driving through flooded streets causing wakes and damaging properties;
- Creating private/public tidal containment initiative.



**Brunswick, New Hanover, Onslow, and Pender Counties** are joining together to update the region's multijurisdictional hazard mitigation plan. A grant was awarded by FEMA through the North Carolina Division of Emergency Management, which will allow the four counties to work together for this update. The plan serves as the blueprint to make our communities more resistant to disasters and is the key to breaking the cycle of disaster damage, reconstruction, and repeated damage. The plan will integrate mitigation planning and CRS planning to produce more effective local food mitigation actions and to meet the criteria of both FEMA programs more efficiently.

## Region C

*Jeremy Hardison  
CFM, CZO*

# NFIP

## Coordinator's Corner

Dan Brubaker, PE, CFM  
NFIP State Coordinator

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### COORDINATOR'S CORNER – “AND ADMIT THAT THE WATERS AROUND YOU HAVE GROWN”

I find it curious that Bob Dylan's lyrics often make a good title for these columns. Last year, when I considered all that I thought I knew about floodplain management years ago, “My Back Pages” was the theme. This title, from “The Times Are a-Changing” (1964), also seems extraordinarily prescient for us now in floodplain management.

This has been a busy year, and there is a lot on the NFIP horizon, so let's get right to it.

We have a plethora of information and documents available on the Flood.NC.gov web site, including links to upcoming training like the NFIP 101 Workshops, the NFIP CRS Class scheduled for February 10-13 in Pitt County, and the first 2020 L-273 Class, scheduled for February 24-27 in Cabarrus County. For documents, besides the Model Ordinances and the No-Rise Guidance Document, we have information on Limited Detail Studies, the Post Flood Guidance Document, and the Substantial Damage Triage Tool. This tool can help with quick substantial damage determinations on residential structures based only on the type of building, pre-disaster condition, and depth of flooding above the first floor of the building,

The screenshot shows the Flood.NC.gov website. At the top, there are links to "Go to FRIS site" and "Go to FIRMAN site". Below that is a navigation bar with links to Home, Property Risk, Mapping Program, Find a Document, Events, Floodplain Management, LOMC, Mitigation, Flood Warning, and Industries. On the left, there is a "News and Updates" sidebar with three items: "Feb 10, 2020 8:00:00 AM National Flood Insurance Program/Community Rating", "Feb 24, 2020 8:00:00 AM L-273: Managing Floodplain Development Through the NFIP", and "Feb 28, 2020 8:00:00 AM Certified Floodplain Manager Exam". There is also a "See All >" link. The main content area is titled "Floodplain Management" and includes a section for the "National Flood Insurance Program" which defines floodplain management as a process to reduce losses due to flooding. It lists various programs and regulations. Below that is a "Important Links" section with links to NC Flood Risk Information System, NC Flood Inundation & Mapping Alert Network, FEMA Map Service Center, and FEMA Media Library. At the bottom of the main content area, it says "For additional information, questions, or requests please contact Dan Brubaker at [nfphp@ncdps.gov](mailto:nfphp@ncdps.gov)". To the right, there is a sidebar titled "Documents" with a list of links including Executive Order 13998, Executive Order 122, NC Floodplain Management 2017 Quick Guide, NC No-Rise Guidance Document, Limited Detail Study Methods, NC Post Flood, Model Ordinance - Coastal, Model Ordinance - Non-Coastal, Building Construction & Material Engineering Guidelines and Standards, SD Triage Tool, SD PowerPoint, NC Executive Order 80, and NFIP Resources. There is also a "See All >" link.

Now is the time to take stock of your SFHA buildings. I went through this in depth in the last Flash Flood News, but it certainly bears repeating. A floodplain administrator should maintain a list identifying structures in the community that are located in the Special Flood Hazard Area AND that do not meet the current ordinance requirements. Basically, if the first floor elevation is below the community's regulatory flood protection elevation (base flood elevation plus freeboard), then it will need a substantial damage determination following a flood.

Identifying structures in the SFHA is easy enough: Ask your County GIS department to intersect the SFHA with building footprints. That should generate a list that you can then review. Structures that are Pre-FIRM (built before the community adopted a flood ordinance) are likely not compliant with the local ordinance, and will probably need a determination following a flood. Post-FIRM structures can be verified by reviewing the elevation certificate. Recent structures should be compliant, but buildings built before the latest map or ordinance update may be non-compliant. Each one should be checked.

Having spent three days on Ocracoke following Hurricane Dorian, I can say that having a plan before you start your assessments is essential. It is always easier to develop the plan before the disaster strikes than after. If you have the data you need in hand, it is just a matter of triage, assessment, and recordkeeping.

— continued on next page

## Coordinators Corner Continued (from previous page)



SD Data Entry on the Ocracoke – Cedar Island Ferry, 9/18/2019 (Photo: Kyle Garner)

## NFIP Coordinator's Corner

### RISK RATING 2.0 – KNOWN UNKNOWNS AND UNKNOWN KNOWNS

The NFIP will be rolling out a new tool for flood risk starting in 2021. It's called Risk Rating 2.0, and leverages data from multiple sources to derive more actuarial rating for all structures, both in and out of the SFHA. Premium information for all structures nationwide should be available on April 1, 2021, and the new premiums will go into effect on October 1, 2021. It will take multiple characteristics into account when developing a rating, including:

- Distance from the flooding source;
- Type of flooding (coastal, riverine, flash flooding);
- Cost of rebuilding;
- Mitigation actions like crawlspace vents, elevation on piers or piles, and machinery elevation;
- Claim history (for the first time in the NFIP);
- Elevation Certificate data.

So yes, there is definitely still a place for Elevation Certificates. ECs will continue to provide the best data for an actuarial rating. Elevation Certificates also continue to provide a floodplain manager with an excellent tool to confirm compliance with construction in the SFHA, which will be regulated on the local level in accordance with your ordinance, just like today.

The rate increases legislated by HFIAA in 2014 will still be in place (15% per year for primary residences, 25% per year for other structures), as will CRS discounts and the mandatory purchase requirement on mortgages for structures in the SFHA. However, the idea of Pre-FIRM, Grandfathered, or Preferred Risk structures will go away once their policies achieve actuarial premiums.

**SDE** Substantial Damage Estimator

SDE is a tool to help local officials administer the Substantial Damage requirements of their floodplain management ordinances in keeping with the minimum requirements of the NFIP.

– continued on next page

## **Coordinator's Corner Continued (from previous page)**

We still have to wait to see what the rates are, how they are derived, how they will be explained to homeowners and insurance agents, and how other interested parties (like mortgage lenders, banks, bond rating companies, local officials, and emergency managers) will integrate the information from Risk Rating 2.0 into their operations.

Note that the effective date for Risk Rating 2.0 was pushed back one year from the date I presented at the NCAFFPM Fall Conference. I just learned this on November 7th. Even though it has been delayed a year the information presented is still valid.

### **FLOOD INSURANCE ASSISTANCE**

North Carolina has authorized \$2,000,000 to develop a pilot program to assist those in need with the purchase of flood insurance. The assistance must be for the recipient's primary residence, it must be in one of the most impacted and distressed counties from Hurricanes Matthew and Florence, and the recipient must have earned less than 80% of the subject area median income. NC Emergency Management will be putting this program together over the next year, and we will be reaching out to these counties with more information as the program is developed.

### **QUICK POINTS**

- Auto-Adoption of updated flood maps was ratified and will go into effect on January 1, 2021.
- In response to NC Executive Order 80, we've updated the NC Model Ordinance to recommend a four-foot freeboard.
- The Disaster Recovery and Reform Act of 2018 will make substantial damage assessments, and related post-disaster permitting efforts, reimbursable at 75%. More information forthcoming when we get additional guidance from FEMA.

### **REAUTHORIZATION – RUMOR ALERTS!**

Seems I have this heading in every Coordinator's Corner I've done. I just have to change the date. I don't have any more information to pass along regarding reauthorization than I usually do. I am confident that the NFIP will at least be renewed before it expires on December 20,, 2019. Considering there was special legislation written to specifically continue the NFIP during the shutdown last December, I think it's doubtful we will see a lapse.

The latest I hear is that the NFIP will be renewed through late 2020 without any significant changes to the NFIP. Congress is considering changes. We'll see whether anything happens during the 2020 election year.

### **ELEVATION CERTIFICATE Forms**

#### *ELEVATION CERTIFICATE Forms*

*Current ELEVATION CERTIFICATE forms have expiration dates of November 30,2018.*

*The current version should be used until further notice. Once a new form has been approved with a new expiration date, an official Bulletin will be released by FEMA.*

## **Coordinator's Corner Continued (from previous page)**

### **COORDINATOR'S AWARD**

Congratulations to Samantha Alsup, the recipient of the 2019 Coordinator's Award. For those not at the Spring Conference, we got her on the phone when I gave out the award. Samantha has led a determined effort in Columbus County to do everything she can to make sure the next flood there is an "event" rather than a "disaster." She also earned her CFM last year, and has worked hard with the Columbus County municipalities on their resilient recovery efforts as well.

### **A HUGE THANKS**

On behalf of Hyde County and NC Emergency Management, I wanted to pass along our thanks and gratitude to three great individuals. First, to Todd Fisher with Cole Jenest & Stone in Charlotte. Todd volunteered to assist with Substantial Damage Assessments on Ocracoke in September. Also, we want to thank Kyle Garner and Kate Allen with the Town of Beaufort, who not only assisted with the damage assessments, but helped coordinate lodging for us while we were there.

### **EASTERN PLANNER**

Welcome to Eryn Futral as our NFIP Eastern Planner. Eryn comes to us from Wilmington and Wrightsville Beach. She's been on the job eight months, and has been working hard from the first day to assist you with your floodplain management responsibilities. Thank you for all you do, Eryn, and Welcome Aboard!

### **NFIP ENGINEER**

I also want to welcome Jintao Wen as the new NFIP Engineer. Jintao joins us from private consulting, and will be assisting communities with State Clearinghouse and hydraulic model reviews. Jintao started on September 30.

I'll close with a reminder that the NFIP group at the State is a resource for you. While we do everything we can to help build safe, ultimately it's up to you to make it happen. When a hurricane approaches, it's the communities with a three or four foot freeboard, a strong permitting and inspections process, and a sound SD/SI program that sleep a little easier.

### **At the end of this past January, we bid "Fair Winds" (but definitely not "Farewell") to John Gerber.**

John retired from the Department of Public Safety and has entered the next phase of his doubtless active life. John is incredibly knowledgeable regarding the NFIP, and has been a valuable asset to everyone in North Carolina involved in floodplain management. Over the years, he developed collegial relationships with many of us, so we're hoping he stays involved in the North Carolina Association. He also was very much involved in the Association of State Floodplain Managers, serving as co-chair of ASFPM's Insurance Committee.



John served with both the Department of Public Safety (since 1994) and the US Army Reserve (since 1988.) He retired from the Army as a Lieutenant Colonel in 2018, and from the State in January 2019. Thank you, John, for your service to the State, to the Nation, and to the cause of floodplain management.

# North Carolina Floodplain Mapping Program UPDATE

Randy Mundt, AICP, CFM  
Outreach Coordinator  
Risk Management  
Section

919-825-2339  
[randy.mundt@ncdps.gov](mailto:randy.mundt@ncdps.gov)  
[www.ncfloodmaps.com](http://www.ncfloodmaps.com)

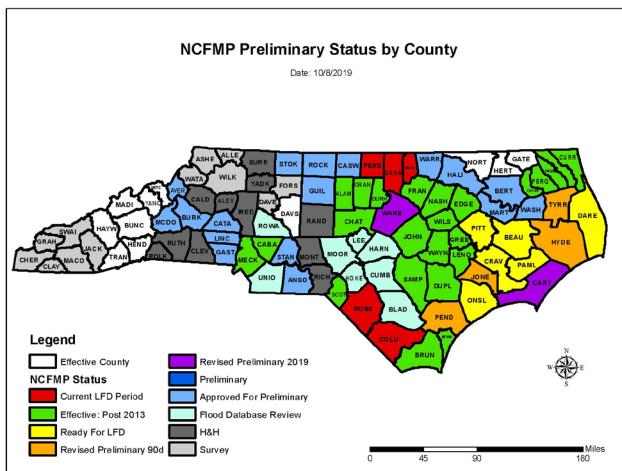


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[www.readync.org](http://www.readync.org)

Looking back at 2019, we've updated FIS and FIRMs for Columbus, Robeson, Granville, Person and Vance Counties (and eight bordering counties: Bladen, Brunswick, Durham, New Hanover, Pender, Sampson, Scotland, & Wake,) which will become 'Effective' December 6th. We will be starting a new round of six primary counties which will receive their Letter of Final Determination (LFD) on December 19th, 2019, which will update the FIS/FIRMs for Beaufort, Craven, Dare, Hyde, Onslow, and Pamlico Counties on June 19, 2020. Early in 2020 NCFPM intends to issue revised preliminary data/mapping for Carteret and Wake Counties; the DRAFT mapping has been shared and accepted by these communities. Due to the Federal Government shutdown and procedural changes to the publishing requirements for the Federal Register (resulting from the Biggert-Waters Flood Insurance Reform Act of 2012) we are still waiting for a new 90-day appeal period for revised preliminary data/mapping for Pender, Hyde, Jones, and Tyrrell Counties; the DRAFT mapping has also been shared and accepted by these counties, and the new 90-day will be merely a formality.

We are coordinating with FEMA on a very aggressive schedule for releasing 20 counties as preliminary in 2020. A nine county group (Bertie, Caswell, Guildford, Halifax, Martin, Rockingham, Stokes, Warren, and Washington) is expected to be released in the spring, and an eleven county group (Anson, Avery, Catawba, Gaston, Lincoln, McDowell, Rowan, Stanly, Union, and Mecklenburg's fourth physical map revision (PMR4)) should be issued in the fall of 2020.

The NCFMP is in the process of developing an ArcGIS website where we will post the DRAFT PRELIMINARY mapping, where communities can access, view, and comment on-line about the mapping in advance of the official preliminary issuance. A 60-day commenting period will be provided, so that if comments are backed by scientific and/or technical data which supports revisions, the NCFMP will try to make those revisions prior to the official preliminary issuance. The goal being to shorten the time between preliminary and LFD by heading off as many challenges as possible during the official 90-day appeal period, so another round of revised preliminaries (and subsequent 30- or 90-day appeals for those).



flood.NC.gov

# NCAFP Administration of CFM Program

## July 2020

**Membership will be notified of effective dates,  
planned for Spring of 2020.**



**John Fullerton, CFM  
Conference Chair**

NCAFP is preparing to re-administer our CFM program after placing the responsibility with ASFPM seventeen years ago. (see explanation below)

Board members, Bill Tingle, John Fullerton, Susan Frady, Ken Ashe, Melonee Brock, Stephen Smith and Amit Sachan have corresponded and conference called with ASFPM representatives to come up with a timeline and to establish procedures for a smooth transition.

The national CFM program was created by ASFPM in the late 1990s. At that time, there were six state chapters of ASFPM that already had certification or testing programs available. NCAFP was one of the six state chapters and the others included Arkansas, Illinois, New Mexico, Oklahoma and Texas. These six states were allowed (by written agreement with ASFPM) to administer their own, nationally recognized CFM program and are referred to as "accredited chapters."

North Carolina's CFM program was initially administered in house by NCAFP volunteers. Around 2002, NCAFP decided to contract with ASFPM to administer our program because of rapid growth and lack of adequate volunteer time. All NC CFM exam and renewal fees are utilized by ASFPM as compensation for administering the program.

The Board of Directors now believes it would be in the best interest of NC CFMs for NCAFP to again administer our CFM program. Maintaining a quality CFM program is vital for continuing the many successful efforts to reduce losses across the state and NCAFP is committed to ensure we have the best program possible. Therefore, the NCAFP Board of Directors is proposing to terminate our contract with ASFPM and resume administration of the program in North Carolina.

### **Some of the benefits of NCAFP CFM administration include:**

- CFM records and NCAFP membership information housed at one local location (less confusion concerning CFM renewal and NCAFP membership renewal);
- One point of contact for questions concerning exam dates, exam results, CEC records;
- Clarification of the roles of NCAFP and ASFPM;
- More efficient scheduling of exams and training;
- More efficient documentation of continuing education hours;
- Availability of local continuing education opportunities;
- Additional revenues for scholarships, training, communications, and other programs;
- Local accountability of program and funds through NCAFP elected and appointed personnel;
- Overall better customer service for NC CFMs and membership.

NC CFM exam and renewal fee revenues have been conservatively estimated at \$15,000 annually. This will be adequate to cover administration costs and provide funding for other NCAFP programs. Four of the six accredited states currently successfully administer their CFM programs with IL and NC having turned this responsibility over to the national organization.

# Calendar

DETAILS FOR MANY OF THE CONFERENCES listed below are available throughout this newsletter for NCAFPM events and on page 25 for other conferences and events.

**April 26-29, 2020**  
NCAFPM 31<sup>TH</sup> ANNUAL SPRING CONFERENCE  
Atlantic Beach, NC  
[ncafpm.org](http://ncafpm.org)

**June 7-11, 2020**  
ASFPM ANNUAL CONFERENCE  
Fort Worth, Tx  
[ASFPMconference.org](http://ASFPMconference.org)

**October 20-23, 2020**  
NCAFPM 15<sup>TH</sup> ANNUAL FALL FLOODPLAIN INSTITUTE  
Crown Plaza  
Asheville, NC  
[ncafpm.org](http://ncafpm.org)

**May, 2021**  
ASFPM CONFERENCE  
RALEIGH, NC

# Floodplain Management

# Resources

updated spring 2018

## Technical Assistance (State)

### NC Emergency Management National Flood Insurance Program

**NFIP State Coordinator:** Dan Brubaker, PE, CFM  
[dan.brubaker@ncdps.gov](mailto:dan.brubaker@ncdps.gov) | 919-825-2300

**NFIP State Engineer:** Jintao Wen, P.E.  
[jinto.wen@ncdps.gov](mailto:jinto.wen@ncdps.gov) | 919-825-2317

#### NFIP Planners

**Central Area:** Milton Carpenter, CFM  
[milton.carpenter@ncdps.gov](mailto:milton.carpenter@ncdps.gov) | 919-825-2302

**Eastern Branch:** Eryn K. Futral, AICP, CFM, CFM  
[Eryn.futral@ncdps.gov](mailto:Eryn.futral@ncdps.gov) | 919-819-1734

**Western Branch:** Terry Foxx, CFM  
[terry.foxx@ncdps.gov](mailto:terry.foxx@ncdps.gov) | 828-228-8526

### NC CLOMR/LOMR Submittals

<https://flood.nc.gov/ncflood/ncfip.html>  
**LOMC Manager/Community Development Planner:** Steve Garrett, CFM  
[steve.garrett@ncdps.gov](mailto:steve.garrett@ncdps.gov) | 919-825-2316

## Maps & Flood Insurance Studies

### FEMA Map Information eXchange (FMIX)

[https://floodmaps.fema.gov/fhm/fmx\\_main.html](https://floodmaps.fema.gov/fhm/fmx_main.html)  
1-877-336-2627 (1-877-FEMA-MAP)

### Mecklenburg County CLOMR/LOMR Submittals

Technical assistance, LOMA/LOMR Requests  
877-336-2627 (877-FEMA-MAP) (toll free)

### NC Floodplain Mapping Program

Contact for NC Floodplain Mapping Program  
919-825-2341

[flood.nc.gov](http://flood.nc.gov)

**Program Manager:** Tonda Shelton, CFM  
[tonda.shelton@ncdps.gov](mailto:tonda.shelton@ncdps.gov) | 919-825-2345

#### Community Development Planner III:

Randy Mundt, AICP, CFM  
[randy.mundt@ncdps.gov](mailto:randy.mundt@ncdps.gov) | 919-825-2339

#### Community Development Planner II:

Stacey Fuller Bobbitt, CFM  
[stacey.bobbitt@ncdps.gov](mailto:stacey.bobbitt@ncdps.gov) | 919-825-2315

**FlashFlood NEWS** is a semi-annual online publication which offers information and education on topics that are of current interest in the field of floodplain management and the National Flood Insurance Program.

Information and opinions do not necessarily reflect the views of the North Carolina Association of Floodplain Managers.

All inquiries and article ideas should be directed to Susan Frady at  
[sgf@comporium.net](mailto:sgf@comporium.net).

For more information about the North Carolina Association of Floodplain Managers, see our website at [ncafpm.org](http://ncafpm.org).

## SPONSORS

For information on sponsoring **FlashFlood NEWS**, see our Media Kit on the NCAFPM website at [ncafpm.org/FlashFlood](http://ncafpm.org/FlashFlood).

## MEMBERSHIP

For more information about becoming a member of NCAFPM or to apply for membership, go to [ncafpm.org/membership](http://ncafpm.org/membership).

## Technical Assistance (FEMA)

### National Flood Insurance Program Floodplain Management and Insurance Branch: FEMA Region IV

[fema.gov/region-iv-al-fl-ga-ky-ms-nc-sc-tn](http://fema.gov/region-iv-al-fl-ga-ky-ms-nc-sc-tn)

**Branch Chief:** Jason Hunter  
[jason.hunter@fema.dhs.gov](mailto:jason.hunter@fema.dhs.gov) | 770-220-5471

**Natural Hazards Program Specialist**  
Valerie Anderson  
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**FEMA Region IV Insurance Specialist**  
Dewana Davis  
[dewana.davis@fema.dhs.gov](mailto:dewana.davis@fema.dhs.gov) | 770-220-5420

## Individual Lot LOMA/LOMR-F

FEMA LOMA DEPOT  
3601 Eisenhower Avenue  
Alexandria, VA 22304-6425  
Attn: LOMA Manager

## Flood Insurance Policy Issues

**Regional Manager:** Dewana Davis  
[dewana.davis@fema.dhs.gov](mailto:dewana.davis@fema.dhs.gov) | 770-220-5420

**Regional Liaison:** David Clukie, CFM  
[dclukie@ostglobal.com](mailto:dclukie@ostglobal.com) | 770-893-1480

## Websites

NCAFPM.....	<a href="http://ncafpm.org">ncafpm.org</a>
ASFPM .....	<a href="http://floods.org">floods.org</a>
FEMA.....	<a href="http://fema.gov">fema.gov</a>
NFIP .....	<a href="http://floodsmart.gov">floodsmart.gov</a>
NCEM .....	<a href="http://ncdps.gov/Our-Organization/Emergency-Management">ncdps.gov/Our-Organization/Emergency-Management</a>
NC Maps .....	<a href="http://ncfloodmaps.com">ncfloodmaps.com</a> <a href="http://flood.nc.gov">flood.nc.gov</a>
FRIS.....	<a href="http://fris.nc.gov/fris">fris.nc.gov/fris</a>
FIMAN .....	<a href="http://fiman.nc.gov/fiman">fiman.nc.gov/fiman</a>

# FlashFlood NEWS

**FlashFlood NEWS, Fall/Winter 2019**

Published by the North Carolina Association of Floodplain Managers in cooperation with the North Carolina Division of Emergency Management.

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