January 2015

The BUZZ

A Quarterly Newsletter

The BUZZ is a forum for Silver Jackets teams' successes, opportunities and resources.

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Yazmin Seda-Sanabria Appointed Acting Deputy Chief USACE Office of Homeland Security

By Katie Noland, USACE IWR

The USACE Office of Homeland Security is pleased to welcome Yazmin Seda-Sanabria as the acting deputy chief. Ms. Seda-Sanabria is on temporary assignment for the next three months. She will oversee matters related to Flood Risk Management, Emergency Management, and Critical Infrastructure Protection and Resilience. Ms. Seda-Sanabria is the national program manager of the Office of Homeland Security's Critical Infrastructure Protection and Resilience Program at USACE Headquarters. In this role, she provides oversight for program development, execution, and implementation of risk management strategies for enhancing the security and resilience of USACE's Civil Works critical infrastructure projects.

In 1994, Ms. Seda-Sanabria joined the U.S. Army Engineer Waterways Experiment Station – now U.S. Army Engineer Research and Development Center (ERDC) – as a research structural engineer in the Geosciences and Structures Division, Geotechnical and Structures Laboratory. While at ERDC, she was involved in multiple research and development programs related to analysis and design of concrete hydraulic structures, as well as rapid load capacity assessment of bridges. She joined USACE Headquarters in 2006 as the Executive Direction and Management, general expenses program manager in the Civil Works Program Integration Division. In 2007, Ms. Seda-Sanabria joined the Office of Homeland Security in her current position.

Ms. Seda-Sanabria holds a bachelor's degree and master's degree in Civil Engineering from the University of Puerto Rico at Mayagüez. She earned a Master of Science degree in Engineering Mechanics from Mississippi State University. In 1998, she received the American Society of Civil Engineers' Young Government Civil Engineer National Award in recognition of her public and professional service achievements. In 2002,

she received the Women of Color Government and Defense Award for Technical Innovation in recognition for her efforts leading to the development and implementation of innovative technologies for rapid load capacity assessment of bridges. She has authored more than 30 publications, including peer-reviewed journal and conference papers, invited articles, and technical reports. She is a member of various professional engineering organizations, including the American Society of Civil Engineers, the Association of State Dam Safety Officials, the U.S. Society on Dams, and the Sigma Xi Research Society.

High Water Mark Program Brings Awareness and Spearheads Action

In December 2014, Santa Rosa County, Florida and San Anselmo, California began their partnership with FEMA and other federal agencies in a joint community awareness project called the High Water Mark (HWM) Initiative. The initiative was created to remind community residents of past local major floods and encourage residents to prepare for the next one.

High Water Mark Initiative aims to remind community residents of past local major floods and encourage residents to prepare for the next one.

Communities host a high profile HWM launch event to create awareness of the initiative and its objectives and then follow that up with a series of mitigation action steps, which will reduce flood losses for individuals and the community.

Santa Rosa County and San Anselmo held their HWM launch events on December 9 and 13, 2014 respectively. Both events were very successful and initiated community efforts to accomplish their chosen mitigation actions.

In **Santa Rosa County,** the community erected a HWM sign at Navarre Beach State Park, a location affected by Hurricane Ivan in 2004, as well as other more recent hurricane and storm surge events.

The project, run by Karen Thornhill, CFM, of Santa Rosa County, worked with numerous local, state, and federal partners, including the Florida State Chapter of the Silver Jackets, FEMA Region IV, FEMA headquarters, the Department of Housing and Urban Development, the National Weather Service, and representatives from the FEMA FloodSmart (insurance) program.

Given the high propensity for flooding from hurricanes, storm surge, and torrential rains, Santa Rosa County customized its HWM project to highlight the importance of flood insurance and other mitigation actions the community plans to take to increase flood resilience.

Congressman Jared Huffman (D-CA), Vince Brown (FEMA), Craig Connor (USACE), and Mark Strudley (NWS).

Further, the community will maintain an educational outreach program as well as additional mitigation actions specific to the Community Rating System (CRS) program.

In San Anselmo, Public Works Director Sean Condry, and Hydrologist Gerhard Epke, worked directly with FEMA Region IX and other federal partners, such as the National Weather Service and the Army Corps of Engineers, to develop its HWM project.

The project was supported publically by Representative Jaren Huffman (D-Ca), who attended the launch and spoke about his personal connection to San Anselmo and the importance of flood awareness and protection. Other organizations, such as the Ross Valley Watershed Association, and other local organizations came out in the support of the event as well.

The town posted five HWM signs along Main Street in San Anselmo, each with a different photo of past floods. Every time there is even moderate rainfall, the town is at risk of flooding from San Anselmo Creek, which runs through the town. In the past, flood waters have reached upwards of five feet, damaging and threatening numerous homes and businesses.

The community, as part of their commitment to future mitigation action, plans to embark on a number of engineering projects meant to reduce water flow through the town during high rain events.

To learn more about the High Water Mark Initiative and take steps to initiate an effort with your partners, visit https://www.fema.gov/know-your-line-high-water-mark-initiative, or contact Vince Brown, Senior Program Specialist at: Vincent.Brown@fema.dhs.gov.

The HWM Initiative launch events create awareness and start the conversation to pursue mitigation actions to reduce flood losses for individuals and the community.

Historic Flood Sets up Oregon to Learn from Past, Prepare for the Future

By Amy Echols, USACE Portland District Public Affairs

Oregon Silver Jackets work to boost awareness of individuals, communities and businesses yet to experience flooding.

Oregon's Silver Jackets (SJ) team recognized the opportunity to capitalize on history to raise flood awareness in the context of a 1964 Christmas Flood commemoration campaign. The Oregon SJ team rose to the challenge to communicate flood risk to a very difficult audience: individuals, communities, and businesses that have yet to experience flooding but who live in disaster-prone and heavily developed areas. Statewide growth in the past 50 years has produced a population in Oregon in need of flood risk awareness and preparedness.

In mid-December, federal and state agencies and many Oregon counties and municipalities launched an effort to meet this challenge to improve risk awareness and stimulate individual and community action toward reducing these risks. The team's agencies developed targeted, relevant, and time-specific products and tactics to improve public access to, and awareness of, resources available to reduce these risks.

Additional objectives included informing the public of the flood risk reduction actions of federal, state, and local agencies during and since the 1964 flood and boosting awareness of new approaches to flood risk reduction, specifically the opportunities and limits of federal, state, and local agencies in the current government environment.

Interagency partners pose with the newest high water sign. Left to Right: Melissa Anderson and Darrel Tedisch (City of Albany), Ryan Cahill and Julie Ammann (USACE), Steve Lucker (Oregon Dept of Land Conservation and Development), and Andy Bryant (NWS). Photo by Scott Clemans, Portland District.

SJ agencies identified an initial level of assistance appropriate to support an effective but simple outreach effort

and provided a proposal to agencies' leadership to gain support.

Agencies with the greatest capability for outreach (namely USACE, USGS and NWS) most actively participated in development of campaign tactics and products. USACE staff facilitated campaign tactics, including message and product development, schedules, and execution plans.

Agency staff from multiple disciplines contributed to articles, web content, graphics, hydrographs, photo collections, videos, and the inaugural use of interactive, online story maps.

SJ agencies invited counties, local municipalities, volunteer organizations, public information networks, and the statewide emergency management community to join the campaign and shared material to support localized efforts and ensure consistency in messaging. Early efforts strove to identify the most valuable networks and vulnerable communities to maximize outreach.

The team launched the commemoration and outreach campaign in mid-December in the early weeks of Oregon's typical flood season and in time to facilitate timely news media coverage of the actual Christmas Flood. This outreach included extensive email networking through federal, state, and local governments; an invitation to the news media to tap campaign resources for story development; and a successful news media event for posting of historic high water mark signs in Albany, Oregon.

Agencies saturated their social media networking in the two weeks prior to Christmas, highlighting the weather and ground conditions leading to the flood. Risk awareness and preparedness messages were woven into these efforts through mid-January 2015.

Campaign messages and material remain available if conditions warrant a renewed outreach effort.

The link below shows how a local television station provided information relevant to the campaign to help educate and inform members of the community:

http://www.kval.com/news/local/50th-Anniversary-of-Oregon-Christmas-Flood-of-1964-286720171.html.

Ryan Cahill from USACE installs a high water mark sign at a popular park in Albany, Oregon. Photo by Julie Amman, Portland District.

Campaign organizers will tap Silver Jackets agencies and other collaborators for lessons learned and an assessment of any public reception and value.

SJ agencies invited counties, local municipalities, volunteer organizations, public information networks, and the statewide emergency management community to join the campaign.

Silver Jackets Participation Vital at Discovery RiskMap Meetings

By Laura Algeo, FEMA Region IV

No single agency has all the answers, but often multiple programs can be leveraged to provide a cohesive solution.

As stated on the Silver Jackets website, "Effective and continuous collaboration between state and federal agencies is critical to successfully reducing the risk of flooding and other natural disasters in the United States and enhancing response and recovery efforts when such events do occur. No single agency has all the answers, but often multiple programs can be leveraged to provide a cohesive solution."

This is never more evident than in the implementation of FEMA's Risk MAP (Mapping, Assessment and Planning) program. Designed to update the flood risk information for communities, it works to provide communities with, not only an identification of their flooding risks, but also additional toolsets to better understand and analyze that risk. Risk MAP also educates communities on what funding opportunities or mitigation actions could be best completed at the local level to reduce future risk. The partnerships among federal agencies provide a twofold critical component. They assure that communities have the most up-to-date information about resources and tools and provide the opportunity to maximize the investments of multiple federal programs.

Apalachicola Watershed Discovery Meeting.

The first step in a Risk MAP project is Discovery. The Discovery process joins FEMA with its mapping partners who work closely with communities to better understand local flood risk, mitigation efforts, and other topics and spark watershed-wide discussions about increasing resilience. The team works together to identify the highest risk areas, discuss solutions for reducing that risk, and scope needed updates to the flood studies. These meetings are attended by a number of stakeholders from the local, state, tribal, and national level. Participation from federal stakeholders such as Silver Jackets team members greatly increases the ability to avoid duplication of efforts, especially with tasks and projects such as data collection. By incorporating these stakeholders into the process, there is a better understanding of the flood risk in a community and what resources are available to assist the local governments in addressing that risk.

Silver Jackets programs are blossoming across the country. All states within Region IV are involved with the Silver Jackets programs at varying levels. The relationships that are built within these teams and working on specific projects have proved valuable across other programs in the Region. By making the connections to other agencies, such as USACE, USGS, NOAA, FWS, etc., FEMA has been able to better connect to the agencies beyond Silver Jacket meetings. As we moved beyond our Discovery meetings for coastal studies in Georgia and Florida, we held storm-surge analysis update meetings. Representatives from USACE and NOAA's National Weather Service attended, and the background and local knowledge they provided during the meeting were very beneficial. It allowed for the local communities to understand the need for the study and the next steps in the mapping process and see positive federal partnerships.

We have seen better interaction among the agencies at each of the meetings held throughout a Risk MAP project from Discovery through Resilience and Open House meetings as a result of these partnerships. The completed flood risk mapping projects and the coordination under the Silver Jackets teams are extremely beneficial on their own, but the relationships built from these partnerships provide a broader flood risk perspective and more depth in addressing communities' needs.

National Flood Barrier Testing and Certification Program

By Randall L. Behm from the USACE Omaha District and National Nonstructural Flood Proofing Committee

Just imagine that you are standing waist deep in snow, which has been piling up for several months. As far as you can see, this white wonderland extends in all directions. Now, if you will, imagine bright sunshine, rapidly warming temperatures, and melting snow.

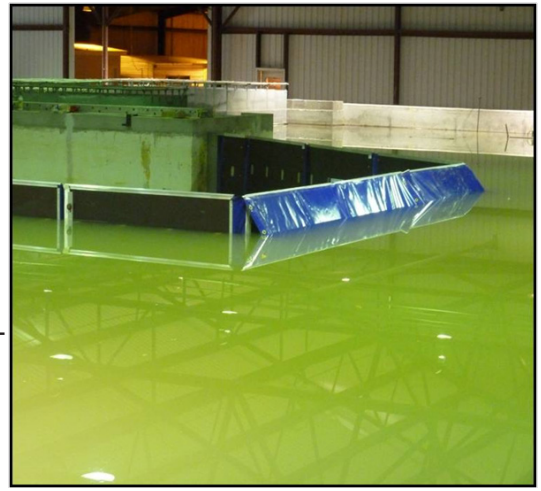
That is one common scenario that brings a chill to those who engage annually in the snowmelt springtime flood cycle. With the knowledge that small rivulets of melting snow will soon turn to raging rivers, you plan for the defense of homes, businesses, and whole communities. The hydrologists have forecast the peak discharge from this rapid snowmelt, and the hydraulic engineers are calculating the anticipated stages to come from this icy thaw.

With the ground frozen and unwilling to be molded into emergency berms and levees, you call for sand and sandbags and an endless army of volunteers to shovel, fill, and place those bags before the damaging waves of water arrive.

In the midst of this emergency response activity, you and local and state officials are being persistently dogged by salespeople representing manufacturers of new and innovative, temporary flood barriers, which they insist will "prevent all flood damages from occurring". What do you do? Do you choose a barrier based on the sales pitch, the cost, or the color? Or do you consider the ramifications of deploying a product that may fail the instant floodwaters come into contact with it. Is there any liability or, at a minimum, technical responsibility in recommending manufacturers' products for flood fight activities? Do you deploy an untested product to protect a community's most critical and vital facilities?

The Association of State Flood Plain Managers (ASFPM) in partnership with FM Approvals and the US Army Corps of Engineers National Nonstructural Flood Proofing Committee (NFPC) have initiated implementation of a National Program of testing and certifying temporary flood barrier products used for flood proofing and flood fighting. This program currently tests barrier products in two broad categories, Temporary Flood Barriers and Closure Devices.

The purpose of this national program is to provide an unbiased process of evaluating flood barrier products in terms of resistance to water forces, material properties, and consistency of product manufacturing. This is accomplished by standardized testing of the products against water related and material forces in a laboratory setting and periodic inspection of the manufacturing process for product consistency. Upon products meeting the consistency of manufacturing criteria and meeting the established standards for the material and water testing, certification becomes available to the product. Since the testing is conducted in a controlled laboratory setting, not all natural forces and potential impacts can be tested.



Perimeter barrier.

Product certification will reflect, in terms of flood proofing, the suitability and performance of the product based on the product deployment literature, the durability and reliability of the product, as well as the product's consistency. All products are examined and evaluated on a model-by-model, type-by-type, plant-by-plant, and manufacturer-by-manufacturer basis.

For more information regarding this national program for testing and certifying temporary flood barriers and closure devices and a list of certified products, visit the program website at: www.nationalfloodbarrier.org.

The purpose of the program is to provide an unbiased evaluation of flood barrier products.

Coastal App Wins Global Disaster Resilience App Challenge

Coastal app identifies coastal protection value of existing reef and wetland habitats and allows users to design restoration solutions.

By Zach Ferdaña, The Nature Conservancy

Esri and the U.N. Office of Disaster Risk Reduction (UNISDR) announced the Coastal Resilience decision support tool as the winner of the best professional and scientific app for disaster risk reduction in September, 2014. As part of the Global Disaster Resilience App Challenge, the winning Coastal Defense app is a module of the Coastal Resilience tool platform. The app identifies the coastal protection value of existing reef and wetland habitats and allows users to design restoration solutions. The UN recognition of this app as supporting disaster resilience issues can be found on the UNISDR website.

Oyster reef restoration in Mobile Bay, AL, as part of the Restore Coastal Alabama project.

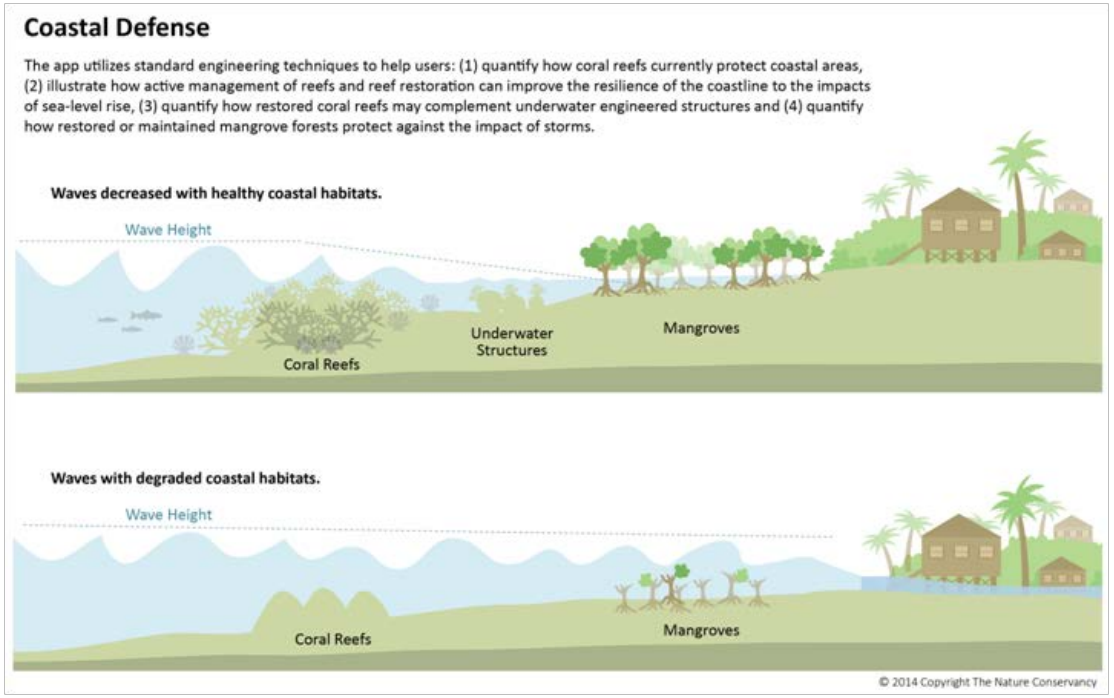
Coastal Resilience is a web-based tool that provides local, state and national planners with a step-wise process to guide decisions to reduce the ecological and socio-economic risks of coastal hazards. The tool works nationwide and globally to assess risk and identify risk reduction solutions and operates at multiple scales for more detailed planning in more than a dozen states and numerous communities. A core feature of the tool is the open source applications that integrate coastal hazards with social, ecological, economic, and coastal engineering in identifying solutions. The Coastal Defense app helps to: (1) identify areas that may be at risk of coastal erosion and inundation from wave action and storm surge, (2) examine interactively the role of coastal habitats in attenuating wave height and energy, and (3) determine appropriate adaptation strategies that incorporate green (habitats) and grey (seawalls and other man-made structures) infrastructure trade-offs. The app has been deployed in Puget Sound, Washington (tidal marshes), Mobile Bay, Alabama (oyster beds), and in Southeast Florida (coral reefs, mangroves, and underwater artificial structures) and is actively being used to make on-the-ground adaptation, conservation, and restoration decisions.

In Mobile Bay the app is supporting The Nature Conservancy and a coalition of partners in restoring coastal Alabama one mile at a time. Called *100-1,000 Restore Coastal Alabama*, the project intends to build 100 miles of oyster reefs that will create the conditions needed to plant, support, and promote more than 1,000 acres of coastal marsh and seagrass. There are ten recently constructed sites that are actively being monitored in Mobile Bay, projects that bring communities together to discuss and plan for the future of the Bay. The sites range in size from 15 to 1,500 meters in length and total approximately 3,600 meters or approximately two miles. The location and design of these emerging oyster reefs are determined through stakeholder engagement, partnership development, and the use of the app to project potential future scenarios as the reefs grow.

In the coming year, the app is being expanded to include all of South Florida as well as New Jersey, North Carolina, Virginia, the Caribbean, and other sites in the Gulf of Mexico. The development

of Coastal Resilience and the Coastal Defense app has led to many important local partnership opportunities, as well as global ones, including being the first environmental partner for the Rockefeller Foundation's 100 Resilient Cities Initiative, providing technical support on natural infrastructure.

"Recently we've seen how people and local economies have suffered during the different hurricanes and storms that have hit the country and around the world. The severity is in part because we have let our coastal habitats degrade and in some cases disappear. Looking forward, along with increased community awareness and preparation, we need tools to understand and clearly communicate how our natural resources increase coastal resilience," Greg Guannel, coastal engineer and modeler at The Natural Capital Project, said. "Coastal Defense helps fill this gap by providing non-technical audiences access to complex socio-ecological models and giving stakeholders the power to create and visualize the consequences of different habitat management options. We hope that this will support our communities to make more informed adaptation and restoration decisions."



Coastal Resilience has been rapidly expanding and now includes 12 U.S. coastal states, (Alabama, California, Connecticut, Florida, Louisiana, Mississippi, New Jersey, New York, North Carolina, Texas, Virginia, Washington), four countries in Latin America (Mexico, Belize, Guatemala, Honduras), and in three island nations in the Caribbean (Grenada, St. Vincent and the Grenadines, and the U.S Virgin Islands). There are also U.S. national and global web maps that together form the Coastal Resilience network.

The Nature Conservancy, Natural Capital Project, NOAA, USGS, UC Santa Cruz, and the University of Southern Mississippi have developed the Coastal Defense app collaboratively. More information can be found on the Coastal Resilience website. The new Coastal Defense app will be released in February as part of the Southeast Florida Coastal Resilience project.

Coastal Resilience has been previously featured in The Buzz: July 2013 "Engaging Communities to Address Natural, Climate-Related Hazard Mitigation through Hazard Visualization," and October 2013 "Announcing New Coastal Resilience Tools."

App provides non-technical audiences access to complex socio-ecological models to visualize the consequences of different habitat management options.

Engineering with Nature Program Collaborates with Flood Risk Management

By Cynthia J Banks, USACE Engineering Research and Development Center

Program aims to align natural and engineering processes to efficiently and sustainably deliver economic, environmental, and social benefits through collaborative processes.

The USACE Engineering With Nature (EWN) Program supports more sustainable practices, projects, and outcomes by working together to intentionally align natural and engineering processes to efficiently and sustainably deliver economic, environmental, and social benefits (www.engineeringwithnature.org). EWN's focus on developing practical methods provides an achievable path toward an ecosystem approach to infrastructure development and operations. Consequently, EWN principles and practices are applicable across multiple USACE missions and business lines and, therefore, are well suited for wide applicability in Flood Risk Management (FRM) projects and practices. The four key elements of EWN include:

1. Improving operational efficiency;
2. Using natural systems and processes to maximize the benefits;
3. Broadening the benefits of the project – economic, environmental, and social; and
4. Using collaborative processes to engage stakeholders throughout the project.

Approximately thirty participants from the FRM and the EWN teams came together for a collaborative meeting June 10-11, 2014. The purpose of the meeting was to introduce the FRM team to the principles and practices of EWN, along with the progress to date, then work collaboratively to: a) define potential demonstration projects in FRM, b) define an EWN research agenda for FRM, and c) determine how best to incorporate EWN into FRM guidance. The Silver Jackets Program was recognized as an opportunity to connect FRM, EWN, and other research and development (R&D) programs, such as Regional Sediment Management. In addition, two EWN Action projects were identified as a result of the meeting and are described below.

Guidelines for Planning, Design, Placement, and Maintenance of Large Wood in Rivers: Restoring Process and Function (POC: Dr. Jock Conyngham, U.S. Army Engineer Research and Development Center-Environmental Laboratory)

The EWN Program promotes triple-win outcomes.

The EWN program and the Ecosystem Management and Restoration Research Program (EMRRP) have joined with the U.S. Bureau of Reclamation's Office of Science and Technology and Sedimentation and River Hydraulics Group to produce a design support manual on large wood utilization in river and floodplain restoration. The target audience is the entire community of restoration practice. The manual addresses project planning, geomorphic effects, ecological responses, design and engineering, risk issues, regulatory considerations, project implementation and staging, monitoring and adaptive management, active and passive restoration techniques, large

wood dynamics in peak flows, and large wood utilization and considerations in flood response. At this time, the manual is under review and will be made available in 2015.

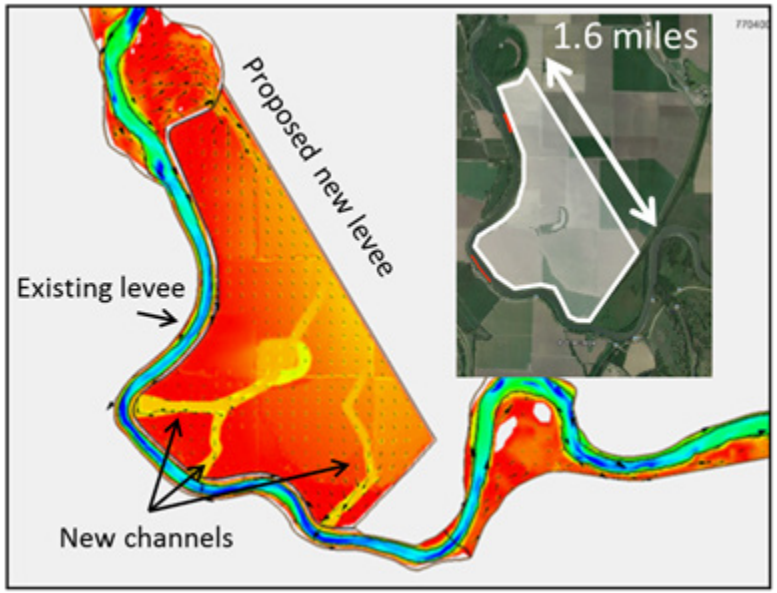
The Use and Value of Levee Setbacks in Support of Flood Risk Management, Navigation and Environmental Services (POC: Dr. David Smith, U.S. Army Engineer Research and Development Center-Environmental Laboratory)

Flood Risk Management is accomplished by independent levee and drainage districts that build, maintain, and operate flood management districts over long stretches of rivers across the United States. Levees in particular can span many hundreds of miles, presenting a maintenance challenge that, in many cases, is not being met. The USACE is interested in developing alternative levee management strategies integrated into a system-wide flood management effort.

This constructed feature creates a velocity refugia **and overhead cover for fish, in addition to protec**tion of one bank, while leaving a wide path for recreational boaters. Rock Creek, Montana.

This study will develop case studies from three separate rivers across the United States. For the Upper Mississippi River where large, medium, and small levee and drainage districts have different underlying economic motives, alternative management approaches with more frequent inundation and less maintenance and cost are one possible outcome of changing priorities.

On the Missouri River, a project was developed resulting in setting back an existing levee to reduce ongoing maintenance cost while preserving the navigation channel, managing flood risk, and increasing environmental benefits. On the Sacramento River, a planned setback levee and a proposed setback levee are examined with one primary conclusion being that environmental benefits remain a difficult aspect of designing levee setback projects. Although this study is in its early stages, an emerging theme across all the projects is that better tools and metrics are needed to estimate flood response and environmental benefits to alternative floodplain management.



An example of a conceptual setback levee on the Sacramento River near **Knights Landing. New channels were excavated on the floodplain for** proper drainage, and the existing levee was largely left in place, except for localized breaches to allow water access.

As indicated through the project descriptions above, a wide variety of projects are currently in place, and there are major opportunities for the USACE to incorporate EWN principles into future FRM projects and potentially partner with the Silver Jackets Program. For more information related to EWN, including recent EWN publications, tools, and R&D, please visit our website at: www.engineeringwithnature.org. (POC: Dr. Todd Bridges, or Cynthia Banks)

There are major opportunities to incorporate EWN into future flood risk management projects and to partner with the SJ.

A Blueprint for Cities to Reduce Stormwater and Flood Damages

Submitted by Russ Rote, USACE Nashville District

Nashville's Storm Busters strategy provides a plan for the mayor's office to engage volunteers to mitigate damage from stormwater runoff and improve the health of the city's surrounding waterways.

Nashville, Tennessee, recently won an award from Cities of Service for its development of a strategy to improve waterways and help mitigate future storm damage. The strategy, called Storm Busters, is a proven plan in which the mayor's office engages volunteers to help mitigate damage from stormwater runoff and improve the health of the city's surrounding waterways by planting trees and rain gardens, cleaning waterways, and restoring river and stream banks.

In May 2010, 14 inches of rain fell in a two-day period in Nashville, which resulted in an historic flood that brought devastation to the city's infrastructure and environment. Additionally, the powerful rains had flooded the city's rivers, streams, and creeks, collecting and carrying materials such as household construction, waste, and woody debris downstream. Even though the waters subsided, the remaining debris was blocked or buried in the waterways or distributed across abutting properties and fields. This debris and the build-up of sediment and silt were dangerous for the environment and could potentially cause increased flooding and stream bank erosion.

As part of Nashville's recovery and restoration efforts, Mayor Karl Dean and Chief Service Officer Laurel Creech worked with the Water Department and community partners to identify ways to reduce the impact of future flooding, strengthen the city's stormwater management system, and prepare the city to be more resilient in the face of future natural disasters. Some of the solutions depend on water being better dispersed and naturally absorbed.

The City outlined a volunteer initiative in the Impact Nashville Service Plan, including planting trees and rain gardens in flood-affected areas to help absorb and manage stormwater and put in place a stronger natural absorption system for future rain events. Since 2010, HandsOn Nashville, the Cumberland River Compact, and other local conservation organizations have planted more than 7,300 trees and 60 rain gardens across the city, mitigating more than 2.5 million gallons of stormwater. In addition, thousands of volunteers are working to restore Nashville's vast number of waterways.

To date, volunteers have assessed more than 200 miles of waterways and cleaned 30 miles of waterways, removing nearly 300 tons of trash and debris. Funding to support the ongoing sustainability of these projects includes federal grants, support from the Nashville Tree Foundation, environmental grants and donations, and corporate sponsorships. Nashville citizens are planning to continue to implement preventative measures in efforts to create a more resilient and healthy infrastructure for its citizens.

As designed, the plan can be modeled by municipalities that want to make their city stronger and more resilient to weather-related events. Nashville's successes are presented in a report called "Storm Busters Blueprint," which identies several key steps that a city might follow. These steps and requirements are abbreviated below:

- Conduct an initial planning meeting.
- Work with partners to engage volunteers.
- Measure the impact to demonstrate the results.
- Secure resources and material to complete project.
- Recognize volunteers who make Storm Busters a success.
- Request that the city or other organizations assist in training the volunteers.

Full details of the report can be found online in the Cities of Service resource library under Blueprints along with other award winning strategies.

Visualize Flood Risk with FloodSmart's Flood Risk Scenarios Tool

The consequences of a flood can be devastating to families, businesses, finances, and the overall health of a community. One hopes that people will never have to live through or recover from these consequences. Unfortunately floods are the most common natural disaster in the United States—in fact, all 50 states have experienced flooding in the last five years.

Using the free Flood Risk Scenarios Tool available on FloodSmart.gov demonstrates that anywhere it can rain, it can flood. FloodSmart is the marketing and education campaign of the National Flood Insurance Program. This tool demonstrates the different risk scenarios in which a flood can occur. Some of these scenarios include the following:

- Snowmelt is a common cause of flooding during the winter and early spring months. During these times, large amounts of runoff cannot be absorbed into the frozen ground. The water accumulates in lakes, streams, and rivers, causing excess water to spill over their banks.
- Flash floods are the most common severe weather emergency. A flash flood is caused by intense rainfall from one or more downpours and can also be caused by the collapse of a man-made structure, such as a levee or dam.
- Construction and new development can change the natural drainage patterns in areas around buildings, parking lots, and roads, meaning less land is available to absorb excess water.
- Dams and levees reduce, but do not eliminate flood risk. While these structures assist in reducing the consequences of floods, there are instances when flooding still occurs. Dams can become jammed with debris or can fail with the build-up of water pressure, or they can weaken over time and crack. Levees can be overtopped or breeched.
- Tropical storms, hurricanes, and Nor'easters can bring several inches of precipitation in just hours. These heavy rains can lead to severe flooding by oversaturating the ground, overfilling storm drains, and/or causing rivers to spill over their banks or levees.

All of these examples are demonstrated

in the Flood Risk Scenarios Tool and can help residents understand the many ways in which they may be at risk. Since floods can happen anywhere that it can rain, it's important that everyone is financially protected from the dangers of floodwaters. Flood insurance is available to residents and business owners in high-, moderate-, and low-risk areas. The time to act is now since most policies take up to 30 days to go into effect.

The Flood Risk Scenarios Tool is available for download through FloodSmart's Community Resource page. For those interested in using this tool, it easily can be embedded into websites. This tool, in addition to other tools and resources on FloodSmart.gov, can assist in educating communities about flood risks and educating residents about the need to purchase flood insurance that will help reduce the financial impact of flooding.

Floods are the most common natural disaster in the United States—in fact, all 50 states have experienced flooding in the last 5 years.

Following up on Informal Leadership

If your action inspires others to dream more, learn more, do more, and become more, you are a leader.

In the last newsletter, Mark Roupas from the USACE HQ wrote that "informal leadership is one of the many factors that leads to organization and programmatic success" and encouraged everyone involved in the Silver Jackets program to pursue their role to play as an informal leader.

But what makes a good leader and what are the traits and characteristics of a good leader? We will attempt over the next few issues to address these questions as we highlight various presentations and articles.

From time to time it is important to refresh our thinking about leadership. It is not about position. Leadership should be everybody's business. People can influence without formal authority.

We all possess the capacity for leadership, but only those who cultivate it will ever become truly effective leaders. It is important to develop individual leadership and to be an active participant in shaping your team and your agency's future.

Several quotes from some of history's great leaders are listed below to provide a flavor of what makes a good leader:

If your action inspires others to dream more, learn more, do more, and become more, you are a leader.
-John Quincy Adams

Example is leadership.
-Albert Schweitzer

One does not discover new lands without consenting to lose sight of the shore for a very long time.
-Andrew Gide

Leadership is action, not position.
-Dannel McGannon

Most things are difficult before they are easy.
-Thomas Fuller

Authority is a poor substitute for leadership.
-John Luther

Fail to honor people and they will fail to honor you.
-Lao Tzu

The more you say the less they remember.
-Francois FeNelon

Never tell people how to do things. Tell what to do and they will surprise you with their ingenuity.
-George Patton

What is LEADERSHIP?

Never discourage someone who makes continual progress, no matter how slow.
-Plato

Many people would rather you hear their story than grant their request.
-Phillip Stanhope

Leaders don't force people to follow; they invite them on a journey.
-Charles Lauer

A leader is someone who believes in you and gets you to believe in yourself.
-Steven Stowell

We are what we repeatedly do. Excellence then is not an act but a habit.
-Aristotle

New Climate Resilience Toolkit from NOAA

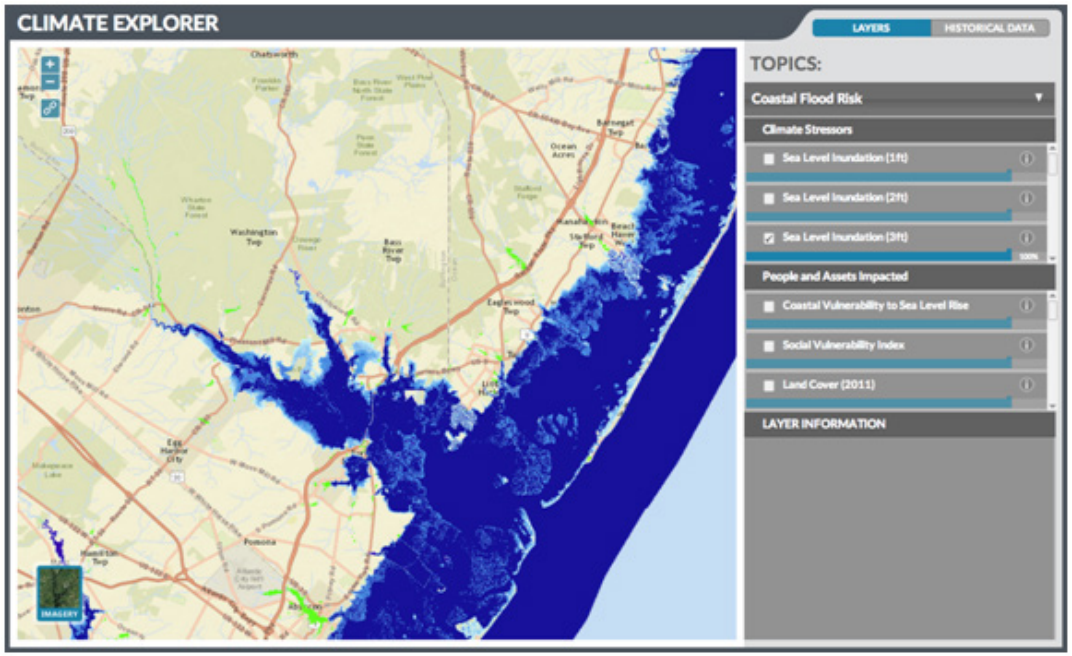
The Administration launched the first phase of the U.S. Climate Resilience Toolkit called for in President Obama's Climate Action Plan in November. The U.S. Climate Resilience Toolkit is a website developed by NOAA and other federal agencies to enable decision makers to take action to boost their climate resilience using data-driven tools, information, and subject matter expertise to make smarter decisions. The Toolkit offers information from across the federal government in one easy-to-use location so that Americans are better able to understand the climate related risks and opportunities impacting their communities and take steps to improve their resilience.

The Toolkit will evolve in phases over the coming months to address issues that impact a variety of sectors in communities across the county. The first phase of the Toolkit initially focuses on the topics of coastal flood risk and flood resilience. In the coming months, it will be updated to address additional areas, such as water, ecosystems, transportation, and health. The Toolkit's collection and functions will connect citizens to the vast, federal data now available through the Climate Data Initiative, as well as relevant information from the National Climate Assessment and other sources of best available science. The site is designed to serve interested citizens, communities, businesses, resource managers, planners, and policy leaders at all levels of government.

Some features of the Toolkit include:

- **The Climate Explorer**: A visualization tool that offers maps of climate stressors and impacts, as well as interactive graphs showing daily observations and long-term averages from thousands of weather stations across the nation.
- **Steps to Resilience**: A five-step process that users can follow to initiate, plan, and implement projects to help make their homes, communities, and infrastructure more resilient to climate related hazards.
- **"Taking Action" Stories**: More than 20 real-world case studies describing climate related risks and opportunities that communities and businesses face, steps they're taking to plan and respond, and tools and techniques they're using to improve resilience.
- **Federal Resource Database**: The Toolkit provides centralized access to federal sites for future climate projections, as well as freely available tools for accessing and analyzing climate data, generating visualizations, exploring climate projections, estimating hazards, and engaging stakeholders in resilience building efforts.

New toolkit aims to enable decision makers to take action to boost their climate resilience.



The Climate Explorer tool offers interactive visualizations for viewing maps and data related to the toolkit's case studies.

FEMA Launches Redesign Website for Flood Risk Management

FEMA launches a redesigned Flooplain Management Section website.

FEMA's Floodplain Management Branch launched a redesigned website for the Floodplain Management Section on FEMA.gov.

The new website (www.FEMA.gov/FPM) offers simpler navigation, a variety of resources, and an easier web address to remember and use.

Using the new site, state and community officials, as well as individual property owners, no longer have to search for related information but instead can click on one or more of several readily identifiable tabs that lead to pertinent resources.

The information resources to support the various users are described below.

Information for Communities addresses local government issues from why and how to join the National Flood Insurance Program to the importance of building to higher standards.

The site also provides tools and resources that can support the adoption of higher standards.

Information for States contains resources to help states shape floodplain management decisions within their communities.

It encourages states to establish higher standards, like the approximately 26 states that already require at least one foot of freeboard as part of their floodplain management laws and urges pro-active local planning that includes expanding open spaces in floodplains.

Information for Property Owners helps individuals understand floodplain management and make smart choices to protect their investments from flooding.

It recommends that residents and business owners know their level of flood risk, work with their floodplain administrator to identify ways to reduce that risk, and consider purchasing flood insurance to reduce the financial impact when flooding does occur.

Upcoming Events

January - February

Webinar on a Holistic Approach to Community Disaster Resilience
sponsored by NHMA
January 30
12:00-1:00pm CST

Michigan Stormwater Floodplain Association Conference
Lansing, Michigan
February 25-27

March - April

National Hurricane Conference
Austin, Texas
March 30 - April 2

Missouri Floodplain and Stormwater Managers Association Annual Conference
Osage Beach, Missouri
April 8-10

AWRA National Capital Region Section Symposium
Urban Water Management and Resiliency in Uncertain Times
Washington, D.C.
April 10

May

FEMA Course E0279 Retrofitting Flood-Prone Residential Buildings
Emmitsburg, Maryland
May 4–7

National Flood Conference
May 17-20
Washington, DC

EWRI World Environmental & Water Resource Congress
Austin, Texas
May 17-21

ASFPM
Atlanta, Georgia
May 31 – June 5

June

NHWC 2015 Training Conference & Exposition
Indianapolis, Indiana
June 15-18

August - September

Pennsylvania Emergency Management Annual Conference
Location TBD
August 29-September 2

October

Maryland Association of Floodplain and Stormwater Managers (MAFSM)
11th Annual Conference
Maritime Institute
Linthicum Heights, Maryland
October 15

US Army Corps of Engineers