

Having trouble viewing this email? [Click here](#)

UConn

The Resilience Roundup highlights CIRCA's presence in the news, provides links to recent local/state/national news articles related to resilience and adaptation, and announces upcoming events and seminars.



Resilience Roundup

January 12, 2016

A service of the Connecticut Institute for Resilience and Climate Adaptation (CIRCA)

CIRCA in the News

- **January 8, 2016** - *New Haven forum on Paris climate change deal draws mixed reviews*, New Haven Register
- **January 5, 2016** - *Dune restoration planned at Walnut Beach*, Milford Mirror

Local and State News Clips

- **January 10, 2016** - *Stonington receives \$150,000 storm planning grant*, The Day
- **January 7, 2016** - *Meteorologists: 'Darth Nino' ties record for strongest seen*, CT Post
- **January 5, 2016** - *Massive rail plan leaves Connecticut hopeful but mystified*, The Day
- **December 26, 2015** - *Robert Miller: From local to global, climate change crucial*, News Times Danbury

National News Clips

- **January 9, 2016** - *Wintertime floods among costliest ever*, USA Today
- **January 5, 2016** - *Greenland's Melting Ice Problem May Be Far Worse Than We Realized*, The Huffington Post
- **January 5, 2016** - *Sea Level Rise Threatens Survival of Barrier Islands*, NJTV News
- **January 4, 2016** - *Weather dominates insurance claims in 2015* - Munich Re, Reuters
- **January 4, 2016** - *This Year's El Niño Is On Track To Rival The Worst On Record*, The Huffington Post
- **January 1, 2016** - *Record flooding in the U.K. is just the latest symptom of both El Nino and climate change*, Washington Post
- **December 30, 2015** - *Mississippi River Seeing Near-Record Flood Levels As Death Toll Climbs*, The Huffington Post
- **December 30, 2015** - *Climate Chaos, Across the Map*, The New York Times

Announcements

- **January 15, 2016** - Next review date for CIRCA Matching Funds Program. Up to \$100,000 available. For more information go to <http://circa.uconn.edu/funds.htm>

- **January 19, 2016** - 'Multisolving' webinar. Part of the Exploring Climate Solutions webinar series. Webinar will feature strategies for energy and resilience. [Register here.](#)
- **February 3, 2016** - Applications due for NFWF Five Star/Urban Waters Restoration Program
- **February 4, 2016** - Office of Policy and Management Applications for Responsible Growth and Transit-Oriented Development Grants Due Feb. 4, at 4pm. Community resiliency is an eligible project.
- **EPA Region 1 Releases RAINE Database** - The Resilience and Adaptation in New England (RAINE) database is a collection of vulnerability, resilience and adaptation reports, plans and webpages at the state, regional and community level. The state of Connecticut and Connecticut municipalities are in the database.

CIRCA in the News

[January 8, 2016 - New Haven forum on Paris climate change deal draws mixed reviews, New Haven Register](#)

NEW HAVEN >> There was a lot of pride expressed at a forum on the Paris climate change agreement Friday about the goals set to limit rising global temperatures, but not everyone was feeling good about it.

The "community discussion" was held by U.S. Sen. Christopher Murphy, D-Conn., at Gateway Community College and included Rob Klee, commissioner of the state Department of Energy and Environmental Protection; James O'Donnell from the Connecticut Institute for Resilience and Climate Adaptation; and, by phone, the U.S. State Department's deputy special envoy for climate change, Trigg Talley, who was a lead negotiator on the Paris accords agreed to in December.

Murphy compared the agreement to the Kyoto Protocol of 1997, which the United States never ratified.

"This is a very different kind of agreement, and it recognizes the political realities of today, both here in the United States and across the world," Murphy said. "But the sum total of these commitments is in some ways even more impressive than what could have come out of Kyoto.

"The goal, as you know, is incredibly aggressive," he said. "The goal is to keep global temperature rise contained at under 2 degrees Celsius above pre-industrial levels. Now given the fact that we are almost already halfway there, that is a very difficult thing to do."

While recognizing that critics doubt the nations of the globe can reach that goal, Murphy said, "We've gone even further, made a commitment that was pushed by many of the nations that are at greatest, most immediate peril to do everything in our power to actually keep that number at 1.5 degrees Celsius."

Klee talked of progress in Connecticut, including the Global Warming Solutions Act of 2008, which called for an 80 percent reduction in greenhouse gas emissions from 2001 levels by 2050.

"We had an interim goal of reaching 10 percent reduction by 2020. We already reached that three years ago, so we're on track and we're working toward continued reductions," Klee said.

But Klee was challenged on his focus on carbon dioxide by some in the crowd of more than 100 who thought methane, or natural gas, should be addressed as a source of global warming.

Marge Schneider of Tolland described how, while there is no hydraulic fracturing going on in Connecticut, gas from other states is piped into the state.

"Methane is one of the major contributors to climate change," she said, while advocating alternative energy sources. "They keep saying that we need this gas. We don't need this energy," much of which is exported "to Europe and India."

Gary Bent of Mansfield said, "The amount of warming per year by leaking natural gas from distribution and transmission lines is equivalent to 100 million tons of carbon dioxide going into the atmosphere."

Klee said, "I agree methane is a potent greenhouse gas. Locally we've been trying to be proactive about leaks. ... We have one of the most aggressive replacement programs" for old iron transmission pipes, especially in old cities such as New Haven.

But he said that when demand for energy rises in the winter the state relies on a coal-fired power plant in Bridgeport, whose emissions are higher than natural gas produces.

Speaking generally of the Paris accords, Trigg said the leadership of President Barack Obama and Secretary of State John Kerry "was absolutely essential to this outcome." He called U.S. leadership "a decisive factor" and said more than 180 countries made contributions before the Paris conference began, "which exceeded our expectations."

Klee pointed out one result of global warming: the marine life in Long Island Sound has become more like the mid-Atlantic states, with lobster and winter flounder leaving the Sound and being replaced by blue crabs.

[January 5, 2016 - Dune restoration planned at Walnut Beach, Milford Mirror](#)

A \$7,800 grant will pay to improve a sand dune at Walnut Beach, primarily replacing invasive plants with native ones.

The funds come from the Connecticut Institute for Resilience and Climate Adaptation's municipal resilience grant program.

Open Space Manager Steve Johnson and Janet McAllister, newly appointed to the Conservation Commission, worked on the grant proposal.

Johnson said the money will pay for All Habitat, an environmental company, to use a mild herbicide to destroy invasive plants - mostly Japanese Knotweed - that are growing in the dune and blocking views of Long Island Sound. The grant will also pay for beach grass, shrubs, signs and incidentals, like shovels.

The dune is located near the end of Viscount Drive at Walnut Beach, along the boardwalk that attracts walkers and runners in droves.

"The dune already exists," Johnson told the Board of Aldermen Monday night as they prepared to accept the grant. "We're just trying to get it better: We don't have to put any sand in place. The dune just has some of the wrong vegetation."

All Habitat will treat the invasive plants with an approved herbicide: Johnson said it wouldn't be wise to just pull out the Japanese Knotweed, which is growing in about 16% of the dune in three patches on the western edge of the project, and other invasives because the root system of those plants helps to hold the dune in place. So the work will take place in phases, he said, with some of the invasive plants being destroyed as beach grass is planted in other areas.

"Fifty five years ago this was known as Myrtle Beach," according to a project description. "The Myrtle Beach area was a coastal residential neighborhood. Houses and roads once stood where people now visit daily to enjoy the beach and walk along the boardwalk connecting to Silver Sands State Park."

The project will involve replanting 2,000 feet of barren dune with native beach grass, removing

invasive plant species on 2,500 feet of the dune and replanting the areas with native plants.

"Robust public education and outreach efforts will accompany the dune restoration work," according to the project description. "All dune replanting will be completed by June 2017; most invasive plant management efforts will be completed by this time also, but one follow-up control is scheduled for fall 2017."

Much of the work is planned for early spring of 2016 and 2017.

Public engagement is a big part of the project and thus calls for recruiting volunteers to help with planting and maintenance, and putting signs along the dune to identify the various plants growing there. The Walnut Beach Association has already agreed to be part of the project and to help recruit volunteers.

Some aldermen, including Bill Bevan, noted that there is sand being stored at Eisenhower Park, which was removed from the shoreline area after Storm Sandy. He wondered if that sand might be used at the beach for the dune project.

Johnson said the sand won't be needed for this project, but he said that he and Public Works Director Chris Saley have talked about possibly creating another dune one day using that sand.

At the eastern edge of project, the dune tapers off and there is no dune, Johnson said, adding that there is an opportunity to create more dune using the sand at Eisenhower. He cautioned that the sand would have to be tested to make sure it's usable.

"You'd have to place it, permit it, get it vegetated, but it would be even more protection and more interesting," he said. "So I'm hoping that can take place, but it is outside the scope of this grant."

Local & State News Clips

[January 10, 2016 - Stonington receives \\$150,000 storm planning grant. The Day](#)

Stonington - The town has announced that it has received a \$150,000 state grant to develop a plan to protect the town from future storms.

The grant to develop a Coastal Resilience Plan comes from the state Department of Housing. The proposed study will help the town determine how it can protect low lying villages such as the borough and Mystic from sea level rise and coastal flooding during storms. According to the town, the study will analyze the risks to the town's population, housing, infrastructure, economy, civic spaces and historic and natural resources and will propose ways to mitigate risks. The town has also said that "extensive public input" will be part of the planning process.

"Stonington is a shoreline town with two rivers that historically developed in close proximity to the water and so it contains several areas in which increased resiliency will be a necessity over the next few decades," said First Selectman Rob Simmons in announcing the grant. "Areas like the historic villages of Mystic and Stonington Borough cannot effectively retreat out of harm's way and so we must begin to plan for the increased challenges ahead."

One of the plan's primary focuses will be to better protect infrastructure such as Masons Island causeway, Town Dock, sewer plants and pumping stations and drainage systems. Simmons commended Town Planner Keith A. Brynes, the staff in the town's planning and public works departments and the town's Climate Change Task Force in helping to secure the funding.

[January 7, 2016 - Meteorologists: 'Darth Nino'TM ties record for strongest seen, CT Post](#)

WASHINGTON (AP) - Meteorologists say the current El Nino has stormed its way into the record books, tying 1997-1998 as the strongest recorded.

Mike Halpert, deputy director of the federal Climate Prediction Center, said initial figures for October-November-December match the same time period in 1997 for the strongest El Nino. Meteorologists measure El Nino based on how warm parts of the central Pacific for three consecutive months. Records go back to 1950.

El Nino is the natural warming of the central Pacific that changes weather worldwide, including bringing more rain to California.

Halpert said what really matters is what El Nino does during January, when its impact peaks.

Weather Underground meteorology director Jeff Masters said "Darth Nino may finally have California in its sights," as a series of storms may dent record drought.

[January 5, 2016 - Massive rail plan leaves Connecticut hopeful but mystified, The Day New London](#)

Nearly four years and \$30 million after the Federal Railroad Administration began looking at how to reinvent the Northeast Corridor rail system, there is a proposal. In fact three of them in a nearly 1,000-page environmental impact statement.

NEC Future, as it is called, offers rail improvement choices that range from bare-bones fixes for noted choke points and other problems on the existing line to entire second lines that in Connecticut could re-route historic travel patterns.

It is also prompting a good deal of exasperation from officials, communities and all manner of interest groups in Connecticut, even though many have been begging for an improved rail system for years, if not decades.

"They spent \$30 million on this report - it just doesn't feel like a finished product," said Joe McGee, vice president for public policy at the Business Council of Fairfield County, who, along with many others, was having difficulty assessing the options because of a lack of details. "It looks more like a response to be rejected than a real option."

Compounding that core problem are several other issues. The report's release just before Thanksgiving left about half the comment period, which ends Jan. 30, coinciding with the busy holiday season. Attendance was light at the first of two public information sessions in Connecticut, held 10 days before Christmas in New Haven. The other is Jan. 13 in Hartford. None is scheduled for Fairfield County, where rail is currently most widely used.

Many otherwise interested parties - including leaders of some of the municipalities that would be most affected - were unaware the rail plan even existed. And there is the recognition - noted repeatedly in the document - that Connecticut would come in for many more impacts, including environmental ones, than any state in the 457-mile corridor from Washington, D.C., to Boston.

Those impacts could be so pronounced - taking tens of thousands of additional acres of undeveloped land, farmland and forest and affecting miles of water resources - that some are wondering whether much of the rail plan could do more harm to the environment than the good that would be achieved by getting cars off the road.

There are tradeoffs, said Rebecca Reyes-Alicea, who managed the NEC Future process. "What we want the public and the stakeholders to understand is this is what it will take to see major improvements in service. Are we ready for it, or not ready for it? Are there intermediate steps we want to take?" she said. "At the end of all of this, it's intended to define a vision. Do we want a big vision; do we want a small vision?"

But even James Redeker, Connecticut's transportation commissioner and the chair of the Northeast Corridor Commission that oversaw development of the study, was not sure it provided those affected by it with enough to judge it.

The problem, he said, was the process. This environmental impact statement was not a traditional one that would have provided plans to solve specific problems along with all the relevant environmental, economic and other data, such as, in the case of rail, ridership information. Instead, NEC Future offered rail corridor options consisting of general locations, little detail about what it would take to put the rails there, no service development plan, and a broad price tag - but no funding strategy.

That's not enough for people to make even a conceptual choice, Redeker said, though that is what people are being asked to do.

"How are we supposed to make choices if we don't know what service we're going to get and if we don't know yet if you're going to turn to us to pay for that, and to what degree?" Redeker said. "I think this is going to be difficult for the public to provide meaningful input on."

And that includes Redeker. He said he doesn't yet know how he'll respond. "If I can't demonstrate to Connecticut folks that there's a substantial and documentable and believable return on investment for transportation dollars, you might as well put them somewhere else," he said.

The plan and the problems

There are three options beyond a no-build option that maintains a "state of good repair," something even Redeker called a "non-starter." All three keep and maintain the existing track, even if it's no longer the primary route.

Option 1, with a capital cost of about \$66 billion (none of the costs include property acquisition), provides Connecticut with upgrades at chokepoints and adds a 50-mile line from Old Saybrook to Kenyon, R.I. The new line would bypass the existing shoreline route, much of which is in flood zones and salt marsh, making it susceptible to climate change and sea level rise.

Option 2, at \$136 billion, does not include that bypass, but adds about 30 miles of track between Westport and New Rochelle. The biggest addition would be a route from New Haven to Hartford along the track being revitalized now. But then it continues east from Hartford through Storrs to Providence, merging into the line to Boston.

It would divert a large portion of regional and eventually high-speed rail away from the longstanding shoreline route.

Option 3, costing as much as nearly \$310 billion, contains the most massive changes in Connecticut. In addition to the Option 2 changes, it would add a tunnel under Long Island Sound between central Long Island and Connecticut, joining the New Haven line around Milford. It would add an inland route from New York City running through White Plains, Danbury and Waterbury to Hartford - much of it in tunnels.

From Hartford, in addition to the line to Providence, another would angle off to Worcester and then into Boston.

Even without the massive environmental impact from the rail right-of-way increase (more on that in a minute), the new lines are raising a list of concerns.

In Fairfield County, McGee's list may be the longest, starting with a simmering tension over differences in philosophy. The NEC Future plan focuses on high-speed rail, finding straighter and flatter routes through Connecticut than the existing winding corridor that keeps train speeds low. That caters more to Amtrak long-distance service and not the eight regional carriers that use the corridor.

McGee and many others around the state are more focused on the commuters served by the

regional carriers such as Metro-North. "Getting people to work is really the critical piece. That's where the ridership is. That's 125,000 people a day," he said. "We're talking workforce competitiveness, and that is tied to commuter rail."

The Long Island Sound tunnel isn't thrilling him either. "This is the center of the state's economy," he said of Fairfield County. "And you're now going to bypass it? We are very concerned that large chunks of Westchester, Fairfield and New Haven Counties would be eliminated from high-speed commuter rail under those two plans. Why would we do that?"

But what's really stumping him is the New Rochelle to Westport line and its designation as "aerial." With no real details in the report, which he called "opaque," he sent a letter to the FRA with questions to help him make an assessment.

He received a one-paragraph form-response:

"Thank you for your comment. Please note that comments received on the Tier 1 Draft EIS during the formal public comment period will be addressed in the Tier 1 Final EIS, anticipated to be released in late 2016. We appreciate your interest in NEC FUTURE."

"They owe us more information," he said. "How can you make a choice if you don't know where the thing is even located?"

At the Capitol Region Council of Governments, Executive Director Lyle Wray was already bristling that his previously stated concerns about the Danbury to Providence link were ignored in the report. He worries that the focus on high-speed rail will effectively de-rail the Northern New England Intercity Rail Initiative - a regional rail plan to reconnect the 1.7 million people in the Hartford-Springfield, Mass., region to the 5 million in metro Boston.

That plan would re-establish a commuter-rail connection from Springfield to Boston along its former route through western Massachusetts.

"When you say 'let's just build something from Danbury to Providence' - never mind how much it costs and how many eminent domain cases you're going to have to win. It's unconstrained by funding limits, constructability, environmental and community impacts. Well, good luck on that," he said.

Mayor Mark Boughton of Danbury, who like many others was largely unaware the rail report even existed, called the tunnel-heavy plan for a Danbury-to-Hartford line "absurd."

"A monorail system on the median of 84 where we already own most of the property makes a lot more sense and would certainly be more cost effective and might actually get built in all of our lifetimes," he said.

He'd like the Metro North line from Danbury to Norwalk electrified for the many people who use it to commute. "And having a non-stop direct line into Grand Central would be one of the biggest economic development initiatives we can do around here," he said. Option 3 includes that route.

Sam Gold, executive director of the Lower Connecticut River Valley Council of Governments, RiverCOG, said the problem with the plan is that his region, Middlesex County, was not included among areas that would feel impacts - even though there could be a new rail bridge over the Connecticut River.

"If that's what's needed in the future to keep the Northeast corridor running, so be it," he said. "But they need to be careful to make sure they do as much as possible to minimize or mitigate any impact."

Paige Bronk, Groton's manager of economic and community development, was among the few who were not complaining. He said there was enough in the report to help him assess the alternatives and was leaning toward the first one.

"It's a little bit easier for us," he conceded. "We know we support the rail line; we know we don't

want to lose our volume, and if anything we want to increase our ridership. We probably have a simpler analysis than maybe some other communities."

Environmental tradeoffs

The analysis for the environmental community is turning out to be anything but simple.

Long before climate change became the core concern, environmentalists in Connecticut were advocating for better rail as a way to lower air pollution from cars. But after being alerted to the existence of the NEC Future report, most were dismayed at the extent of the environmental impact, especially from Option 3.

Roger Reynolds of Connecticut Fund for the Environment/Save the Sound called the Long Island Sound tunnel a "non-starter."

"From an environmental perspective, and maybe from other perspectives, it's just a manifestly bad idea," he said. "We're paying a remarkable cost to do remarkable damage to our resources - particularly the Long Island Sound."

He favored working with the corridor we already have, though he called the Old Saybrook to Rhode Island bypass an excellent idea. "I think you have to think hard and long about whether you want to do a brand-new train route when an existing train route could do much of what you want," he said.

The numbers that reflect the environmental impacts are staggering. The current corridor in Connecticut encompasses more than 24,000 acres of developed and 10,000 acres of undeveloped land. That would increase to more than 42,000 acres of developed and nearly 31,000 acres of undeveloped land in Option 3.

The prime agricultural land impact would more than triple to 3,100 acres and the prime timberland impact would nearly quadruple to more than 21,000 acres. Parkland and wild and scenic river impacts would more than triple to 2,600 acres.

Fred Reise, a senior environmental analyst with the Department of Energy and Environmental Protection who is reviewing the rail plan, said with that much new rail corridor, the environmental effect was not surprising.

"You're impacting either wetland, farm land, forest land, parkland, historic locations," he said. "There's not really a way to sneak things through and have it go through nothing but, say, gravel pit."

DEEP will be submitting comments as well as guidance on policy, locations that could be problematic, and permitting. "If an answer was going to be 'hell will freeze over before you'd get a permit to do this from us,' we'll try to let them know that up front," Reise said.

But environmental advocates also pointed out that considering just the corridor would be deceptive. Cutting through a forest, for instance, could result in what's known as fragmentation. That could mean losing more trees and ecosystems than just those where the track is laid.

Kip Kolesinskas, a consulting conservation scientist to Working Lands Alliance in Connecticut, and WLA project director Lisa Bassani both worried about farmland loss in Tolland and Windham counties in particular.

"If it's bisecting an agricultural community, that is three or four farms that are really important to that particular area, and there's not a feasible alternative, then that gets pretty tough," Kolesinskas said.

They also worried that a rail buildout without accompanying community development plans could result in housing sprawl and the need for even more roads just to drive to a train station.

"Overall the spirit of this is wanting to increase investment in alternative transportation options. I

think most people would agree that's a good," Bassani said. "Really the devil's in the details of the mapping. What are you doing to distinct farm entities, distinct farm businesses?"

Patrick Comins, director of bird conservation at Audubon Connecticut, seconded the devil-in-the-details concern, but after poring over maps of general route configurations, particularly the Danbury to Rhode Island corridor, he was chagrined to learn it ran right through his organization's Bent of the River Center in Southbury as well as the Connecticut Audubon Society's Bafflin Sanctuary near Pomfret.

He noted what happened when I-95 bisected the Society's Birdcraft Sanctuary in Fairfield years ago. "About only half of the property is remaining," he said.

His litany of areas that seem to be in the path of proposed rail lines was long: Paugussett State Forest, Lake Lillinonah, two drinking water reservoirs near Trap Rock Ridge and Ragged Mountain.

"A path through Natchaug State Forest is concerning because that's got habitat for Cerulean warbler, which is a globally vulnerable species," Comins said. "It goes through Nathan Hale State Forest. It goes through Mansfield Hollow. It goes through some pretty significant wetlands. There would be a huge inland wetland impact.

"It's a difficult conundrum. This is a massive undertaking, and we definitely appreciate a reduction in carbon emissions by promoting mass transit, something we need to do."

But like others, he needs more detail, and that's giving rise to some sentiment that the whole process should slow down.

"My gut instinct is that more time would be helpful," said DOT Commissioner Redeker. But he said some of the motivation for the current compressed timetable is to get things approved before the end of the Obama administration.

"Would I like to see more of Connecticut rail-accessible and have different services and see improvements in it? Absolutely," Redeker said. "As to whether the cost and impacts are worth those outcomes, we don't know that yet. That's the problem."

[December 26, 2015 - Robert Miller: From local to global, climate change crucial, News Times Danbury](#)

All politics is local, said the late, great House Speaker Tip O'Neill.

But if you think environmentally, the local and the global all get into the same great moosh. El Niños in the Pacific or dust storms in Africa change weather patterns in small towns half a world away.

Events happening in Connecticut echo the thinking at the United Nations conference on climate change in Paris. The conference ended earlier this month with an unprecedented agreement between 195 nations to address global warming.

"Instead of sacrifice, we talked about economic opportunity and creating a more inclusive society," said U.S. Environmental Protection Agency Administrator Gina McCarthy, who spoke in Hartford after the conference concluded. "And I can say to people, 'This is happening because of the work being done in this state.'"

McCarthy was head of the state Department of Environmental Protection, as it was formerly named, from 2004 to 2009. In Paris, she was part of the American contingent that helped produce the accord.

The stated goal of the agreement is to reduce greenhouse gas emissions enough to limit the increase in global temperatures to no more than 2 degrees Celcius above pre-industrial levels.

However, the accord acknowledged the need to press for a tougher goal - no more than 1.5 C - to keep the worst damage of climate change at bay.

Part of McCarthy's work in Paris was convincing people ways are available to combat global warming and reduce greenhouse gas emissions; ways that work and make economic, as well as environmental, sense.

One of the points in her argument works this way:

During her term as the state DEP commissioner, Connecticut joined the nine-state Regional Greenhouse Gas Initiative - a cap-and-trade system to reduce carbon dioxide emissions from the state's power plants. It succeeded in reducing CO2 emissions from those plants by 34 percent - the equivalent of taking more than 450,000 cars off the road.

Proceeds from the sale of carbon credits in the system return to the nine states. Connecticut has received about \$100 million from the program.

The state has used the money to fund energy efficiency programs. It now helps fund the Connecticut Green Bank, which uses public and private money to support alternative energy programs.

As a result of those programs and others, about 10,000 homes in the state have solar panels on their roofs.

Josh Ross, partner and sales manager for the Ross Solar Group, which has its headquarters in Danbury, said the Green Bank funding has proved to an incentive for companies thinking about installing solar panels atop their buildings.

"It's generating the assistance they need for financing," Ross said.

But, Ross said, while solar energy promises to cut energy costs to homeowners and businesses, it promises something else.

"Homeowners aren't only aware of the costs," Ross said. "They know they're producing clean energy on top of their house."

Moving from local to global, there are places where these issues are becoming crucial.

Mitch Wagener, professor of biological and environmental sciences at Western Connecticut State University in Danbury, said because of climate change, island nations in the Pacific and Indian oceans face the loss of their land, homes and culture because of rising sea levels.

"In Bangladesh, there are 17 million people living within one meter of sea level," Wagener said. Rising ocean levels will pollute wells there with brackish water before it inundates the land. Millions of Bangladeshi people will have to move, he said.

"I always say: 'Watch the Dutch,'" Wagener said. "They live at sea level and they know more about this than anyone. When they get nervous, we should pay attention." The Netherlands signed the Paris accords.

Back to local: Margaret Miner, director of the River Alliance of Connecticut, said because of this year's drought, the state's rivers and streams ran dangerously low. Sections of two streams - the Coppermine Brook in Bristol and the Weekepeemee River in Woodbury - all but dried up.

Part of this was owing to the drought, Miner said. Part of it was owing to people pulling groundwater out of aquifers that weren't being recharged and ended up drawing water out of the streams. If, as predicted, global warming means more extreme weather patterns, this may become a regular issue in the state, she said.

"We have to worry about three types of drought: natural, man-made and artificial droughts," Miner said.

So all these issues - global and local, benefits and necessities - play a part in the thinking of the 195 countries signing the Paris accords.

The EPA's McCarthy said nearly all the countries at the Paris conference had committed to reduce their greenhouse gas emissions before they arrived.

"There was overwhelming international support," she said.

"I like to quote Samuel Johnson," Wagener said of the increased sense of urgency at the Paris negotiations. "When a man knows he is to be hanged in a fortnight, it concentrates his mind wonderfully."

National News Clips

[January 9, 2016 - Wintertime floods among costliest ever, USA Today](#)

As floodwaters continue to rise along the lower Mississippi River, it's clear the slow-motion disaster will be among the costliest wintertime flood events in U.S. history. Officials are simply trying to tally the price tag.

The National Oceanic and Atmospheric Administration (NOAA) said Thursday that damage from the floods will top \$1 billion. That number is likely to climb as the unpredictable and overflowing Mississippi continues its march south.

Over the weekend and into next week, floodwaters will continue to rise along the Mississippi River in Arkansas, Mississippi and Louisiana, including the cities of Greenville and Natchez, Miss., and Baton Rouge, according to AccuWeather. Minor-to-moderate flooding is possible south of Baton Rouge to New Orleans this month.

In recent weeks, the floods severely damaged homes, businesses and farms that line the Mississippi and its tributaries in Missouri and Illinois, where at least 25 deaths were blamed on the weather.

Once all the costs of lost business and damaged roads, bridges and public buildings are added up, it's a "safe bet" the total loss will exceed \$1 billion, said Steve Bowen, a meteorologist with Aon Benfield, a global reinsurance firm based in London.

That estimate comes from preliminary damage assessment information from federal and local officials and on early insurance claims in affected areas.

For example, in and around the St. Louis area, floods have damaged or destroyed an estimated 7,100 structures, according to Missouri Gov. Jay Nixon, and at least a half-million tons of debris will need to be removed. Repairs to roads in St. Louis County will top \$200 million.

In southwestern Missouri's Greene County, flood damage cost almost \$1 million, according to the Springfield-Greene County Office of Emergency Management.

Government officials are calculating damage in Illinois, where Gov. Bruce Rauner issued state disaster declarations for 23 counties, mainly in central and southern parts of the state.

Most of the costliest wintertime flood disasters on record occurred in the West. The highest price tags occurred with the California floods in 1995 that cost \$5 billion, and the El Niño-driven West Coast floods in 1997 that cost \$4 billion, Bowen said.

"That is what has made this current event so unique, since we don't expect this kind of flooding in the Midwest and Mississippi Valley until the spring," he said.

Missouri picked up almost three times its average rainfall in November and December, said Kevin Trenberth of the National Center for Atmospheric Research. The Mississippi River at Cape Girardeau, Mo., set an all-time flood record of 48.86 feet last week, breaking a record set during the floods of 1993, the National Weather Service said.

The floods stem from heavy rains linked to El Niño and man-made climate change, Trenberth said. Such unusual rain and flooding at this time of year would have been outside the realm of possibility were it not for those outside factors, he said.

[January 5, 2016 - Greenland's Melting Ice Problem May Be Far Worse Than We Realized, The Huffington Post](#)

Greenland's massive ice sheet may be in more serious peril from climate change than scientists previously thought, a new study has found.

Studies agree that rising global temperatures are causing the ice sheet that covers most of the world's largest island to shrink. If the entire ice sheet were to melt, global sea levels could increase by as much as 23 feet.

But in a study published Monday in the journal Nature Climate Change, researchers found that global warming is also undermining the ability of Greenland's "firn" to limit the effects of climate change.

The firn is the sponge-like snow pack atop the ice sheet, which traps and stores melting water that would otherwise run off into the oceans. It thereby helps to maintain the ice sheet in the face of the usual summer's warmer temperatures.

Past studies had concluded that the firn's storage capability was largely undiminished. But Greenland endured exceptionally warm summers in 2010 and 2012 – in the latter year, it experienced "the largest observed melt extent" on record.

Now the latest study has found that the firn has become denser and less porous, making it far less absorbent.

What happened? The researchers found that the greater amounts of meltwater from those warmer summers filled up the firn's pores and hardened into an impenetrable layer of ice. Consequently, meltwater in the following years couldn't be absorbed by the firn and "instead drained along the ice sheet surface toward the ocean."

As study author and York University researcher William Colgan explained in a press release, that finding "overturned the idea that firn can behave as a nearly bottomless sponge to absorb meltwater. Instead, we found that the meltwater storage capacity of the firn could be capped off relatively quickly."

The study is a reminder that we don't know all the ways that climate change is affecting our world.

"Basically our research shows that the firn reacts fast to a changing climate," said Horst Machguth, the lead researcher from the Geological Survey of Denmark and Greenland.

[January 5, 2016 - Sea Level Rise Threatens Survival of Barrier Islands, NJTV News](#)

"Everybody wants to live here, I think, most of the time," said Linda Higgins.

We found Higgins pulling the Christmas lights off trees in her mom's front yard in Ocean Beach. The cottage sits on a thin strip of barrier island - just over a quarter-mile wide, bay to ocean. But Superstorm Sandy sent three feet of surf surging through the living room here, and tides in the

back bay keep rising.

When asked if she ever expected the ocean levels would rise like this, Elsbeth Rapolla said, "No, I didn't. I really didn't. I came down here because I wanted all my grandchildren to enjoy the ocean. And they really have."

"I'm sure it is probably inevitable. The water levels are rising everywhere," said Karen Pitzner. "The future for living here, I don't think, is, it's not going to be, some day. The water level's going to come up and that's going to be the end of the barrier island, you know. I can see somewhere, but it won't be in my lifetime," Higgins said.

Actually, it might. Interactive risk zone maps show a four-foot rise in ocean levels would overrun much of Ocean Beach. It's not a matter of if, but when, says University of Miami Professor Hal Wanless.

"Sea level will be rising at a foot per decade - and that's unbelievable, when you think about it," he said.

Critics call Wanless "Dr. Doom" because his climate change projections push the high end of the scientific scale: two feet by 2048, three feet by 2065 - 6.6 feet by the end of the century. New Jersey barrier islands would be under water.

"It would inundate it. It'll simply inundate it. By the time we're at three, four, five feet we're not going to be able to maintain beaches. And that's going to be within 50 years," Wanless said. State Climatologist David Robinson more conservatively projects a three-foot rise by the end of the century. Even so, he said, "With the addition of storms on top of that, we've got big problems. Because a three-foot rise in sea level is akin to a storm surge in a minor to moderate coastal storm - not a Sandy, but many of the storms we've seen have done considerable damage along the coast."

After Sandy, New Jersey rushed to rebuild. The storm punched a hole through Mantoloking - washed an entire house into the bay. Now the road's repaired and the scar is a wide dune that defiantly confronts the ocean. Meanwhile, shore homeowners raised houses 10 feet and more above flood levels.

Nervous towns like Toms River bulldozed mounds of sand along the beach this winter, afraid Hurricane Joaquin would damage their costly renovations. Between state and federal grants and loans, New Jersey was allocated more than \$13 billion after Sandy to repair homes, businesses and infrastructure.

"Once communities look at maintaining the infrastructure with each step of sea level rise, then you will start to look at the economics of doing that and it'll start to become clear when it's no longer economically feasible," Wanless said.

Wanless says living on these islands will become untenable long before they're under water. Even the Army Corps of Engineers' dune wall won't stop the inevitable, when storms turn increasingly violent, routinely damaging roads, bridges, sewage systems and power grids. Who will buy a home with a 30-year mortgage?

"It's a tough decision to say, no you're wasting your money. But when you think about it, and people, the hair goes up on the back of their necks when you say maybe we should be using part of the money to help people relocate. Well, yeah, maybe we should," Wanless said.

Cathy Bogdon just built a brand new, elevated house on a lagoon in Breezy Point.

"We should be fine. We're not worried. Not worried at all," she said. "Not concerned, love it down here."

"If I go over to the beach now and say, 'You can't have your house here, because 50 years from now it's going to be under water,' they'd stick me in the waves out in the ocean. It's difficult to get people excited about it," said Toms River Mayor Tom Kelaher.

Kelahr readily admits rising ocean levels will eventually swamp much of the town's real estate - and the Jersey Shore.

"Tourism is one of our biggest economic engines in New Jersey. People depend on the beaches, people's homes are over there, their savings are in these beach area places. To say you can't be there anymore would be absolutely devastating. So you're going to have to do that incrementally. I don't really have all the answers," he said.

"I just hope that the beach is here for a long time. I would hate to see it go. I'm getting emotional," Pitzner said. There's a lot of good memories. "Oh, yeah. Yeah. And for my kids and my grandkids."

This spring, Toms River will host several climate change experts to discuss steps they can take to deal with the impact of rising ocean levels. Imagine another six feet of ocean here. They say it is inevitable.

[January 4, 2016 - Weather dominates insurance claims in 2015 - Munich Re, Reuters](#)

FRANKFURT, Jan 4 (Reuters) - Insurers paid out around \$27 billion for natural disaster claims last year with weather causing 94 percent of incidents, underscoring the challenge posed by climate change, data from reinsurer Munich Re showed on Monday.

While the climate phenomenon known as 'El Niño' reduced the development of hurricanes in the North Atlantic, storms and floods still inflicted billions of dollars of damage in Europe and North America, the world's largest reinsurer said in an annual review.

Munich Re said floods in the UK and Scandinavia from storm "Desmond" early last month may cause about 700 million euros (\$764 million) in claims, while later flooding from storm "Eva" in the UK may cause overall damage of more than 1 billion euros. Climate change may have played a role in the floods, it said.

Two tornado outbreaks and flooding also hit the United States hard last month but Munich Re said damage estimates were not yet available.

The insurance industry lobbied governments to take action to curb climate change in the run-up to the UN climate summit in Paris last year, citing both rising payouts in heavily-insured rich country markets and a lack of affordable insurance in developing countries where it is most needed.

"The proportion of insured losses for catastrophes in developing and emerging countries remains very low," said Munich Re board member Torsten Jeworrek.

"The insurance industry is exploring new avenues to close this gap in cover and thus to help people better cope with material losses after a catastrophe," Jeworrek said.

Munich Re participates in newly-established insurance pools to help Caribbean, Pacific Island and African states cope with weather related catastrophes.

Insurers and reinsurers may get a push from an international effort unveiled by Bank of England Governor Mark Carney to develop company disclosures so investors can assess companies' physical, liability and other risks from climate change.

"Quantification and disclosure of insurance risk has helped to drive reinsurance demand for the last 25 years," said John Cavanagh, Chief Executive at broker Willis Re.

The \$27 billion in insured damage last year was lower than the \$31 billion registered in 2014 and also below the 10-year average of \$56 billion, Munich Re said.

Overall damage, including that not covered by insurance, was \$90 billion last year, the lowest level since 2009.

In all, 23,000 people were killed in 2015, many in the Nepal earthquake in April. The total compared with 7,700 the previous year, but was well below the 10-year average of 68,000. Lower claims payouts boost insurance industry profit but have a downside for reinsurers, whose insurance company clients often then demand lower prices for reinsurers' backing.

Willis Re said reinsurance prices continued to fall for contracts taking effect at the start of 2016 and that predictions of an end to the multi-year decline had proved illusory.

"The January renewals have unfortunately confounded the hopes of commentators that the market was reaching a pricing floor," Willis Re's Cavanagh said.

The review gave no claims figures for Munich Re itself. The reinsurer is due to report its results from the January renewals contracts with insurers, as well as its 2015 financial results, on Feb. 4. (\$1 = 0.9159 euros)

[January 4, 2016 - This Year's El Nino Is On Track To Rival The Worst On Record, HuffPost Science](#)

El Nino greatly exacerbated the dry season in Indonesia last year, intensifying the country's already-challenging battle against raging forest fires and haze.

The El Niño of 1997-98 was the worst on record. It caused an estimated 23,000 deaths worldwide as widespread drought, flooding and other natural disasters rocked the globe.

The catastrophic weather system also caused the most devastating coral bleaching in recorded history, killing off about 16 percent of the world's reef systems. In the U.S., the total economic impact of that year's El Niño was between \$10 billion and \$25 billion.

Sounds bad? Well, according to NASA, we may now be facing an equally-destructive El Niño; one that's poised to only worsen in the first few months of 2016.

The weather system -- which has already wreaked havoc globally, contributing to the East Coast's balmy Christmas, deadly storms in the South and the worst floods in South America in 50 years -- "shows no signs of waning," NASA wrote on Dec. 29.

The agency added that the latest satellite image of this year's super El Niño "bears a striking resemblance to one from December 1997."

"The images show nearly identical, unusually high sea surface heights along the equator in the central and eastern Pacific: the signature of a big and powerful El Niño. Higher-than-normal sea surface heights are an indication that a thick layer of warm water is present," it wrote.

With the very worst of the droughts, flooding and other extreme weather events expected to come in the coming months, humanitarian organizations have expressed concern about the mounting needs of the world's most vulnerable.

Aid organization Oxfam International said that the effects of this year's El Niño are "set to put the world's humanitarian system under an unprecedented level of strain in 2016."

"The El Niño weather system could leave tens of millions of people facing hunger, water shortages and disease next year if early action isn't taken to prepare vulnerable people from its effects," the organization said in a Dec. 30 press release.

In Ethiopia, for example, an estimated 10.2 million people will need humanitarian assistance in 2016, Oxfam said; while in Malawi, about 2.8 million people may require assistance before March.

In the U.S., the worst El Niño impacts can be expected in the early part of this year, said NASA.

For parts of the West Coast, however, this may be a boon more than bane. Matt Sitkowski, a weather producer at The Weather Channel, told NBC News that "wetter and stormier" conditions could be expected in drought-stricken California for the next two or three months.

"The East Coast could easily be affected, too. The 1997-1998 El Niño caused a crippling ice storm in New England and southeastern Canada," NBC wrote.

According to NASA, "El Niños are triggered when winds in the Pacific weaken or reverse direction, resulting in a warming of the ocean in the central and eastern Pacific, mainly along the Equator. Clouds and storms follow the warm water, altering jet stream paths and storm paths around the world."

Though El Niño isn't directly caused by climate change, scientists say global warming ups the intensity of the weather event.

[January 1, 2016 - Record flooding in the U.K. is just the latest symptom of both El Nino and climate change, Washington Post](#)

December witnessed a spate of extreme global weather events, from deadly tornadoes in the southern U.S. to bushfires in Australia - and the latest development is a series of record-breaking floods in the United Kingdom, brought on by torrential rain starting in the first week of the month. Thousands of homes in the north of England are believed to have been affected already, and the region is reeling again from a new wave of flooding just brought in this week with the onset of Storm Frank.

There's been much discussion about the causes behind the surprising rash of winter storms in the region (Frank is the third major storm to hit within a month), and equal suspicion has fallen on the effects of climate change and the influences of this year's particularly potent El Niño event. It can be difficult to parse exactly what's going on, though.

Nicola Maxey, a press officer from the Met Office (the U.K.'s national weather service), noted in an email to The Washington Post that it was too early to say for sure whether climate change was a major contributor to this winter's extreme rainfall - but added that evidence from both physics and the study of weather systems suggests that it may have played a part.

The Met Office, in fact, recently published a report in the Bulletin of the American Meteorological Society examining the causes behind dozens of extreme weather events in 2014, including similarly severe rainfall in the U.K. in the winter of 2013/2014. Using models, the report concluded that anthropogenic climate change likely had a hand in the extreme conditions that winter - the highest rainfall since 1931 - and that climate change increases the chances of extreme rainfall during a time period of 10 consecutive winter days by a factor of seven.

So while scientists frequently warn that individual weather events can't always be considered an indicator of long-term climatic patterns, the research in this case suggests that climate change is increasing the odds of extreme winter weather events in the U.K. This is in keeping with research from all over the world that suggests that extreme weather, in general, is likely to increase in frequency and intensity all around the world as a result of climate change.

"I think it is fair to conclude that human-caused climate change here too increased the flooding potential of the recent storms," said Michael Mann, distinguished professor of meteorology at Penn State University, in an email to The Post. "While climate change didn't 'cause' the storms themselves, it has increased the potential for heavy rainfall and flooding with these storms." Continued...

[December 30, 2015 - Mississippi River Seeing Near-Record Flood Levels As Death Toll Climbs, The Huffington Post](#)

ST. LOUIS (AP) - Though the Mississippi River and its tributaries didn't top the 19 vulnerable levees that federal officials were monitoring, the dangers from a rare winter flood remained throughout Missouri and parts of Illinois on Wednesday.

Swollen rivers and streams pushed to near-record heights, which a day before caused an unknown number of inmates to be transferred out of an Illinois state prison and prompted a disaster declaration by Illinois' governor in seven counties and the activation of the National Guard by Missouri's governor to help divert traffic from submerged roads.

At least 20 deaths over several days in Missouri and Illinois were blamed on flooding, mostly involving vehicles that drove onto swamped roadways, and at least two people were still missing Wednesday. Some parts of interstates in Missouri reopened, while others were still covered by water.

In southwestern Missouri, residents of about 150 duplexes and homes in the tourist town of Branson had to evacuate Wednesday when flooding from a manmade lake threatened. But the shopping district along the lake was still open, Fire Chief Ted Martin said, adding, "it has been packed with people, and I don't know where all of them have come from."

Record flooding was projected in some Mississippi River towns after several days of torrential rain that also caused sewage to flow unfiltered into waterways.

The Meramec River near St. Louis was expected to get to more than 3 feet above the previous record by late this week.

The river on Tuesday spilled over the top of the levee at West Alton, Missouri, about 20 miles north of St. Louis. Mayor William Richter ordered any of the town's approximate 520 residents who had not already evacuated to get out of harm's way.

Across the river, in Alton, Illinois, dozens of volunteers helped place sandbags ahead of where water is expected to rise. Mayor Brant Walker said in a statement that flooding was expected at least in the basements of the downtown business district.

The normally docile Bourbeuse River reached the roofs of a McDonald's, QuikTrip and several other businesses in the eastern Missouri town of Union, where the river reached an all-time high Tuesday.

Interstate 44, which had been closed on and off for the past few days, was closed Wednesday in southwest St. Louis County, but the westbound side of the interstate near the central Missouri town of Rolla reopened. Hundreds of smaller roads and highways were also closed across the two states, and flood warnings were in effect.

Missouri Gov. Jay Nixon activated the National Guard to assist with security in evacuated areas and to help keep road closure sites clear.

In southern Illinois, the Department of Corrections transferred an unspecified number of inmates from a state prison to other locations because of flooding risks. The facility houses nearly 3,700 inmates.

In St. Louis, more than 500 volunteers turned out in blustery, cold conditions to fill sandbags where a flooded waterway threatened hundreds of homes. The city later trucked 1,500 of the sandbags south to a nearby county to fortify a wastewater treatment plant threatened by the swollen Big River.

The Mississippi River is expected to reach nearly 15 feet above flood stage on Thursday at St. Louis, which would be the second-worst flood on record, behind only the devastating 1993 flood. The high water was blamed on the shutdown of a wastewater treatment plant on Monday just

south of St. Louis, causing sewage to go directly into nearby rivers and streams. The Metropolitan Sewer District of St. Louis said the Fenton wastewater treatment plant, which is designed for 6.75 million gallons per day of flow, was treating nearly 24 million gallons per day at the time of the malfunction.

One of the two wastewater plants in Springfield, Missouri, also failed, allowing partially treated sewage to flow into a river.

The U.S. Coast Guard closed a 5-mile portion of the Mississippi River near St. Louis due to flooding. Capt. Martin Malloy cited high water levels and fast currents in the river, which is a vital transportation hub for barges that carry agricultural products and other goods.

The St. Louis area and surrounding region are bracing for record flood crests after days of record rainfall. US Highway 67 is seen completely submerged in West Alton.

In Granite City, Illinois, about 30 residents of a flooded trailer park idled in a Red Cross emergency shelter in a church basement. The park's property manager told Shirley Clark, 56, and other displaced residents that it could be another 10 to 12 days before they're able to return to their homes.

"We need help over here," said Clark, a diabetic who said she left behind her insulin supply. "We're just holding on."

[December 30, 2015 - Climate Chaos, Across the Map, The New York Times](#)

What is going on with the weather?

With tornado outbreaks in the South, Christmas temperatures that sent trees into bloom in Central Park, drought in parts of Africa and historic floods drowning the old industrial cities of England, 2015 is closing with a string of weather anomalies all over the world.

The year, expected to be the hottest on record, may be over at midnight Thursday, but the trouble will not be. Rain in the central United States has been so heavy that major floods are beginning along the Mississippi River and are likely to intensify in coming weeks. California may lurch from drought to flood by late winter. Most serious, millions of people could be threatened by a developing food shortage in southern Africa.

Scientists say the most obvious suspect in the turmoil is the climate pattern called El Niño, in which the Pacific Ocean for the last few months has been dumping immense amounts of heat into the atmosphere. Because atmospheric waves can travel thousands of miles, the added heat and accompanying moisture have been playing havoc with the weather in many parts of the world.

But that natural pattern of variability is not the whole story. This El Niño, one of the strongest on record, comes atop a long-term heating of the planet caused by mankind's emissions of greenhouse gases. A large body of scientific evidence says those emissions are making certain kinds of extremes, such as heavy rainstorms and intense heat waves, more frequent.

Coincidence or not, every kind of trouble that the experts have been warning about for years seems to be occurring at once.

"As scientists, it's a little humbling that we've kind of been saying this for 20 years now, and it's not until people notice daffodils coming out in December that they start to say, 'Maybe they're right,' " said Myles R. Allen, a climate scientist at Oxford University in Britain.

Dr. Allen's group, in collaboration with American and Dutch researchers, recently completed a report calculating that extreme rainstorms in the British Isles in December had become about 40 percent more likely as a consequence of human emissions. That document - inspired by a storm in early December that dumped stupendous rains, including 13 inches on one town in 24 hours -

was barely finished when the skies opened up again.

Emergency crews have since been scrambling to rescue people from flooded homes in Leeds, York and other cities. A dispute has erupted in Parliament about whether Britain is doing enough to prepare for a changing climate.

Dr. Allen does not believe that El Niño had much to do with the British flooding, based on historical evidence that the influence of the Pacific Ocean anomaly is fairly weak in that part of the world. In the Western Hemisphere, the strong El Niño is likely a bigger part of the explanation for the strange winter weather.

The northern tier of the United States is often warm during El Niño years, and indeed, weather forecasters months ago predicted such a pattern for this winter. But they did not go so far as to forecast that the temperature in Central Park on the day before Christmas would hit 72 degrees. Matthew Rosencrans, head of forecast operations for the federal government's Climate Prediction Center in College Park, Md., said that the El Niño was not the only natural factor at work. This winter, a climate pattern called the Arctic Oscillation is also keeping cold air bottled up in the high north, allowing heat and moisture to accumulate in the middle latitudes. That may be a factor in the recent heavy rains in states like Georgia and South Carolina, as well as in some of the other weather extremes, he said.

Scientists do not quite understand the connections, if any, between El Niño and variations in the Arctic Oscillation. They also do not fully understand how the combined effects of El Niño and human-induced warming are likely to play out over the coming decades.

Although El Niños occur every three to seven years, most of them are of moderate intensity. They form when the westward trade winds in the Pacific weaken, or even reverse direction. That shift leads to a dramatic warming of the surface waters in the eastern Pacific.

"Clouds and storms follow the warm water, pumping heat and moisture high into the overlying atmosphere," as NASA recently explained. "These changes alter jet stream paths and affect storm tracks all over the world."

The current El Niño is only the third powerful El Niño to have occurred in the era of satellites and other sophisticated weather observations. It is a small data set from which to try to draw broad conclusions, and experts said they would likely be working for months or years to understand what role El Niño and other factors played in the weather extremes of 2015.

It is already clear, though, that the year will be the hottest ever recorded at the surface of the planet, surpassing 2014 by a considerable margin. That is a function both of the short-term heat from the El Niño and the long-term warming from human emissions. In both the Atlantic and Pacific, the unusually warm ocean surface is throwing extra moisture into the air, said Kevin Trenberth, a climate scientist at the National Center for Atmospheric Research in Boulder, Colo. Storms over land can draw moisture from as far as 2,000 miles away, he said, so the warm ocean is likely influencing such events as the heavy rain in the Southeast, as well as the record number of strong hurricanes and typhoons that occurred this year in the Pacific basin, with devastating consequences for island nations like Vanuatu.

"The warmth means there is more fuel for these weather systems to feed upon," Dr. Trenberth said. "This is the sort of thing we will see more as we go decades into the future."

Announcements

[January 15, 2015 - Next review date for CIRCA Matching Funds Program. Up to \\$100,000 available. For more information go to <http://circa.uconn.edu/funds.htm>](http://circa.uconn.edu/funds.htm)

The CIRCA Executive Steering Committee is excited to announce its fourth round of funding

under the Matching Funds Program - up to \$100,000 is available. CIRCA will consider requests from Connecticut municipalities, institutions, universities, foundations, and other non-governmental organizations for matching funds for projects that address the mission of the Institute. To be funded, a successful Matching Funds request must have a commitment of primary funding within 6 months of the CIRCA award announcement, or have received a waiver from the CIRCA Executive Steering Committee. CIRCA Matching Funds will provide up to 25% of the primary funder's contribution other than municipal or State of Connecticut funds to enhance the likely success of project proposals that advance CIRCA research and implementation priorities. In evaluating proposals preference will be given to those that leverage independent funding awarded through a competitive process.

[January 19, 2016 - 'Multisolving' webinar. Part of the Exploring Climate Solutions webinar series. Webinar will feature strategies for energy and resilience. Register here.](#)

The series explores innovative and successful climate change solutions across Connecticut and the nation. The webinars provide first-hand accounts of high-profile municipal climate programs, climate initiatives in the corporate world, new greenhouse gas reporting frameworks, statewide sustainability programs, low-carbon fuel initiatives, and other programs and projects that help reduce greenhouse gas emissions and/or improve climate resilience.

The webinars are free and open to the public. Registration required. Attend scheduled webinars from any computer connected to the web. During the webinars, attendees may submit questions for the presenters to answer.

Multisolving
January 19, Noon to 1:00 pm
[Register here](#)

Learn about Climate Interactive's research on Multisolving - the search for systemic solutions that protect the climate while improving health, equality, and well-being. Examples include energy and transportation policies that also reduce air pollution, energy efficiency measures that reduce living expenses for people on fixed incomes, or land conservation projects that sequester carbon and boost resilience to extreme events. While most people find the idea of addressing climate change in ways that capture co-benefits intuitively appealing, there are often practical obstacles to doing so. Climate Interactive, a not-for-profit organization based in Washington DC, is conducting research on the potential for capturing co-benefits in various aspects of climate and energy policy and opportunities for reducing the barriers that stand in the way. In this webinar Elizabeth Sawin, Co-Director of Climate Interactive, will share from this research, with an emphasis on lessons that are applicable at the state level.

[February 3, 2015 - Applications due for NFWF Five Star/Urban Waters Restoration Program](#)

2016 NFWF Five Star/Urban Waters Restoration Program Invites Applications
Deadline: February 3, 2016

The National Fish and Wildlife Foundation is inviting applications for the Five Star/Urban Waters Restoration [Program](#), a public-private partnership designed to develop community capacity to sustain local natural resources for future generations by providing modest financial assistance for wetland, forest, riparian and coastal habitat restoration, stormwater management, outreach, and stewardship projects, with a particular focus on water quality, watersheds, and the habitats they support.

Each funder in this Request for Proposals has different priorities and requirements. NFWF will match every grant with all funding sources applicable to that project's activities, location, and project type. All projects must contain the elements of on-the-ground restoration; community partnerships; environmental outreach, education, and training; measureable results; and sustainability.

1) EPA Five Star Restoration Training Program: Approximately \$180,000 is available nationwide from EPA to fund projects meeting the Five Star program elements. These funds are available nationwide, in any size community.

2) Southern Company Five Star Restoration Program: Approximately \$300,000 is available from Southern Company and its operating companies (Alabama Power, Georgia Power, Gulf Power, and Mississippi Power) in support of on-the-ground wetland, riparian, in-stream, or coastal habitat conservation and restoration projects in Southern Company's service area.

3) EPA and USFS Urban Forestry and Waters Program: Approximately \$475,000 is available for projects designed to improve urban water quality, increase public access, and restore riparian habitat and urban forests in developed watersheds in the United States. Special consideration will be made for projects that directly advance priorities of Urban Waters Federal Partnership Designated Locations and/or that are in designated source-water protection areas.

4) Fish and Wildlife Service Urban Programs: Approximately \$360,000 is available from the U.S. Fish and Wildlife Service for projects that engage urban neighbors and foster a sense of stewardship in Fish and Wildlife Service lands or offices. Urban Wildlife Refuge Partnership proposals should address easily-accessible lands that the service does not own and involve residents in place-based outdoor experiences that foster connections with fish, wildlife, and their habitats. Urban Bird Treaty projects should have an emphasis on enhancing urban habitats for birds, engaging citizens in bird conservation, and connecting diverse and youth audiences to birds and bird conservation.

5) Bank of America: Approximately \$195,000 is available from Bank of America to support community-based restoration and stewardship projects in Washington, D.C.; Boston; San Francisco; Philadelphia, and Seattle.. Proposals must include a volunteer event for up to a hundred local Bank of America employees.

6) Alcoa Foundation: Approximately \$30,000 is available from the Alcoa Foundation for community-based restoration and stewardship projects in Cleveland, Canton, and Barberton, Ohio; and in Farmington Hills, Missouri.

7) Additional Private Corporate Funding: Approximately \$487,000 is available from a private corporate funder in support of urban conservation and restoration projects in Boston; Los Angeles; San Francisco/Oakland; Memphis, Seattle; Dallas/Ft. Worth; Washington, D.C.; northern New Jersey; New York City; Indianapolis; Pittsburgh; Miami; Colorado Springs; Philadelphia; Phoenix; Cleveland; Atlanta; Portland, Oregon; Harrison, Arkansas; Lakeland, Florida; and Akron/Uniontown, Ohio. Projects must include a volunteer event for up to a hundred local employees.

8) Additional Private Foundation Support: Approximately \$425,000 in funding is anticipated from private foundations for community-based habitat restoration and stewardship projects in urban and rural communities in Alaska, Idaho, Washington, Montana, North Dakota, Wisconsin, and Minnesota. Applicants should specify how their project supports sustained protection of non-game animal species and habitat and relates to underserved human communities.

Grant amounts will range from \$20,000 to \$50,000. A minimum one-to-one match of cash and/or in-kind/contributed goods and services to the amount requested is required.

Applicants must fully address the project elements of each applicable funder and complete their projects within one to two years of award. For USFS urban waters funding, preference will be given to projects that take place on, or directly benefit, public lands.

See the NFWF website for complete program guidelines, webinar recordings, an FAQ, and application instructions.

[Link to Complete RFP](#)

February 4, 2016 - Office of Policy and Management Applications for Responsible Growth and Transit-Oriented Development Grants DUE Feb. 4, at 4pm. Community resiliency is an eligible project.

The State of Connecticut Office of Policy and Management (OPM) has issued a Request for Applications for the Responsible Growth and Transit-Oriented Development Grant Program. Proposals under this grant program will be accepted from municipalities and regional councils of governments only, although partnerships, which may include non-profit and private entities, are encouraged.

This is a competitive grant program that provides financial support for the following:

1. construction projects that expand on previous state investment in transit-oriented development, as defined in Section 13b-79o of the Connecticut General Statutes, and/or
2. planning or construction projects that demonstrate responsible growth through their consistency with the Conservation & Development Policies: The Plan for Connecticut 2013-2018.

The deadline to submit a completed application is Thursday, February 4, 2016 at 4:00 pm. Questions should be directed to Matthew Pafford, at either Matthew.Pafford@ct.gov Office of Policy and Management, 450 Capitol Avenue MS# 54ORG, Hartford, CT 06106-1379.

http://www.ct.gov/opm/cwp/view.asp?a=3006&Q=383284&opmNav_GID=1386&opmNav=

One of the types of projects that is eligible for funding is as follows:

Projects that promote community resiliency in response to extreme weather events, and that are supportive of responsible growth and/or TOD

[EPA Region 1 Releases the RAINE Database](#)

Climate Change: Resilience and Adaptation in New England (RAINE)

The Resilience and Adaptation in New England (RAINE) database is a collection of vulnerability, resilience and adaptation reports, plans and webpages at the state, regional and community level.

New England communities are taking action to adapt to the impacts of climate change in new and creative ways. This database catalogs what is happening so we can learn from these experiences, share lessons being learned, discover how to better assist municipalities, and promote collaboration. RAINE provides information about actions at the state, regional or local level. It not only includes links to web pages, reports and plans but also examples of presentations that communities use to engage their citizens, what tools they used to identify their vulnerabilities and who funded their projects.

The results from RAINE include:

- Quick maps
- Graphs of top ten topics, impacts, partners, tools and funding that are found in the database
- Lists of states, municipalities, organizations or waters that meet your search criteria, these can be downloaded into an excel spreadsheet
- Links to the products or plans
- Reports for each state, municipality, organization or water body of interest and detailed reports with information about a specific document or product
- Spotlights that highlight unique adaptation and resilience efforts

How RAINE can be used

Communities can use the RAINE database to share what they have done and learn from others. They can find examples of products and plans and read about what neighboring communities are

doing to be resilient and adapt for climate change. Planning agencies can identify where work has been conducted and where gaps may exist. The database can be used to target vulnerable areas that have yet to plan for climate change. The database can be used to support collaboration. Communities can see how plans and products have been funded and who has partnered on different resilience and adaptation projects.



The *Resilience Roundup* highlights CIRCA's presence in the news, provides links to recent local/state/national news articles related to resilience and adaptation, and announces upcoming events and seminars.

The Connecticut Institute for Resilience and Climate Adaptation's (CIRCA) mission is to increase the resilience and sustainability of vulnerable communities along Connecticut's coast and inland waterways to the growing impacts of climate change and extreme weather on the natural, built, and human environment. The institute is located at the University of Connecticut's Avery Point campus and includes faculty from across the university. CIRCA is a partnership between UConn and the Connecticut Department of Energy and Environmental Protection (CT DEEP).

circa.uconn.edu

Follow us on 

CIRCA, UConn Avery Point Campus, 1080 Shennecossett Road, Groton, CT 06340

[SafeUnsubscribe™ {recipient's email}](#)

[Forward this email](#) | [Update Profile](#) | [About our service provider](#)

Sent by circa@uconn.edu in collaboration with

Constant Contact 

Try it free today