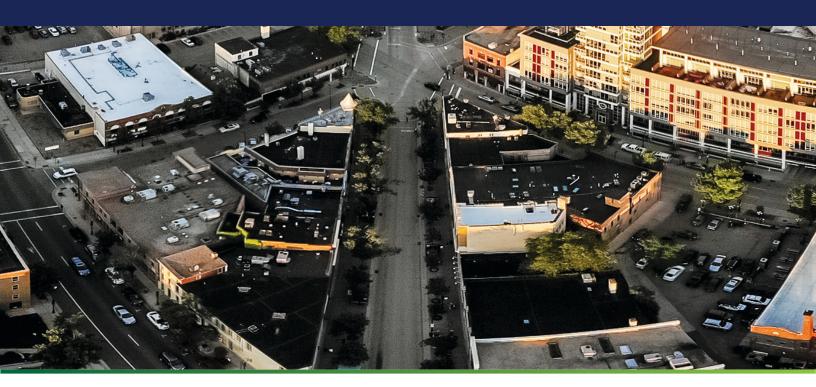


Advancing the Adaptation Field Through Regional Conferences: Reflections on the 2018 Regional Adaptation Fora



Advancing the Adaptation Field Through Regional Conferences:

Reflections on the 2018 Regional Adaptation Fora

This report was produced by the American Society of Adaptation Professionals.

Lead Authors: Rachel Jacobson and Greg Hanafin **Additional Staff**: Dawn Nelson, Beth Gibbons

External Contributors and Reviewers:

- California Adaptation Forum: Julia Kim, Local Government Commission
- Carolinas Climate Resilience Conference: Amanda Farris, Carolinas Integrated Sciences and Assessments
- Great Lakes Adaptation Forum: Jenna Jorns, Ph.D., Great Lakes Integrated Sciences and Assessments
- Local Solutions Conference: Christa Daniels, Ph.D., Antioch University Center for Climate
 Preparedness and Community Resilience; Lisa Graichan, University of New Hampshire Extension,
 New Hampshire Sea Grant; and Melissa Ocana, Massachusetts Ecosystem Climate Adaptation
 Network
- National Adaptation Forum: Lauren Lynch, EcoAdapt
- Southeast Florida Climate Change Compact Summit: Lauren Ordway, Institute for Sustainable Communities
- Southwest Adaptation Forum: Amanda Leinberger, University of Arizona; Carolyn Enquist, Ph.D.,
 Southwest Climate Adaptation Science Center

Recommended Citation

American Society of Adaptation Professionals. "Advancing the Adaptation Field Through Regional Conferences: Reflections on the 2018 Regional Adaptation Fora." April 2019.

| xecutive Summary | |
|--|----|
| Introduction and Conference Summaries | 3 |
| ASAP 2018 RAF Activities | 3 |
| California Adaptation Forum | 4 |
| Carolinas Climate Resilience Conference | 5 |
| Great Lakes Adaptation Forum | 6 |
| Local Solutions Conference | 7 |
| Southeast Florida Climate Leadership Summit | 8 |
| Southwest Adaptation Forum | 10 |
| Moving the Needle and Advancing the Field: Analysis of RAF Content and Participant Reflections | 11 |
| Summary of Findings | 11 |
| Regional adaptation conferences are moving the needle for adaptation professionals and | |
| the field | 11 |
| Cross-regional sharing will advance national cohesion and field development | 12 |
| The field needs to focus on equity, finance, and networks | 12 |
| Consistent data collection will improve the value of RAFs to the field | 12 |
| In-Depth Analysis | 13 |
| Session Titles Analysis | 13 |
| Post-Conference Survey Analysis | 13 |
| Summary Activities Analysis | 14 |
| The Role of Regional Fora in Advancing the Field: Recommendations for 2019-2020 | 16 |
| Report Sources and Methodology | 17 |

Executive Summary

The American Society of Adaptation Professionals (ASAP) is North America's leading professional association for climate change adaptation practitioners and scholars. In 2018, we supported six Regional Adaptation Fora (RAFs) across North America, in response to member requests that we prioritize inperson convening opportunities and recognizing the importance of regional conferences for advancing the climate adaptation field:

- <u>California Adaptation Forum</u> (CAF)
- Great Lakes Adaptation Forum (GLAF)
- Carolinas Climate Resilience Conference (CCRC)
- Local Solutions: Eastern Climate Preparedness Conference (Local Solutions)
- Southeast Florida Climate Change Compact Summit (SE FL Summit)
- <u>Southwest Adaptation Forum</u> (SWAF)

In early 2019 we analyzed data and materials from the RAFs to:

- Gain insight about the state of the adaptation field to share with our members and other adaptation field-spanning organizations.
- Identify opportunities for RAF organizers to leverage their conferences to accelerate dissemination and uptake of adaptation promising practices across regions.
- Determine how we at ASAP can better support the RAFs going forward.

Our experience engaging in and analyzing data from these conferences revealed this fundamental finding:

Each Regional Adaptation Forum is doing an excellent job providing professional development and network opportunities, disseminating promising practices, and addressing practitioner needs in their region. It is critical that the adaptation field, regional entities, and regional and national funders continue to support these events and should consider them a fundamental component of adaptation field development.

Through detailed analysis of conference agendas, post-conference surveys, and data collected during conference summary activities we specifically found the following:

- Regional adaptation conferences are moving the needle for adaptation professionals and the field. Each of these conferences helps individual adaptation professionals, and the field as a whole, advance in the sophistication, quality, and volume of adaptation practice, and contributes to career development for adaptation practitioners.
- Cross-regional sharing will enhance national cohesion and field development. The shared
 relevancy of many topics across RAFs demonstrates a cohesiveness in the adaptation field and
 underscores the value to practitioners of engaging in national conversations to share needs,
 promising practices, and successes to overcome capacity barriers and accelerate the pace of
 field evolution across North America.

- Practitioners want to focus more on 1) equity, 2) funding, finance, and investment, and 3) building networks and relationships. As such, the field should focus on building relationships with experts in these areas and consider these topics for field-spanning activities that take place outside of the RAFs as well.
- Consistent data collection will improve the value of RAFs to the field. Developing consistent
 data collection mechanisms, such as shared pre- and post-conference survey questions and
 consistent conference summary activities, will augment the value the RAFs provide to the field
 as a whole, as well as provide greater context for self-evaluation and understanding to each
 region and RAF.

Based on these findings, we at ASAP plan to:

- Continue facilitating coordination calls for RAF organizers to provide a space for peer support and identify opportunities to promote consistency and shared experience across the RAFs. We plan to work with RAF organizers in the latter part of 2019 to determine the most valuable format and objectives for these coordination calls.
- Facilitate collaboration among RAF organizers to collect comparable data across regions, including through shared pre- and post-conference survey questions and one or two consistent activities or sessions that can generate comparable insights about the state of the field and practitioner needs across regions.
- Support RAF organizers and other field-wide actors, including the National Adaptation Forum, in facilitating and promoting virtual peer learning opportunities that specifically engage crossregional groups of RAF participants.

Additionally, we will continue promoting the success of the RAFs by: sponsoring each RAF and promoting the events in our network; exhibiting at each RAF and, when possible, running networking events for current and prospective ASAP members; and convening and presenting at RAF sessions. We hope this report will serve as a testament to the need for and value of the Regional Adaptation Fora, and encourage increased investment in these events and greater coordination between them. We look forward to continued partnership with the Regional Adaptation Fora in 2019-2020 and beyond.

Introduction and Conference Summaries

The American Society of Adaptation Professionals (ASAP) is North America's leading professional association for climate change adaptation practitioners and scholars. In 2018, we made significant investments in six Regional Adaptation Fora (RAFs). We made these investments for two reasons: 1) our members resoundingly requested that we prioritize activities that facilitate opportunities for them to convene in person and 2) we believe that regional adaptation conferences are critical for advancing the adaptation field in North America.

RAFs are regional climate change adaptation conferences associated with the National Adaptation Forum (NAF). Currently, there are six RAFs: California Adaptation Forum (CAF), Carolinas Climate Resilience Conference (CCRC), Great Lakes Adaptation Forum (GLAF), Local Solutions: Eastern Climate Preparedness Conference (Local Solutions), Southeast Florida Climate Change Compact Summit (SE FL Summit), and Southwest Adaptation Forum (SWAF). Most of these conferences take place biennially in even numbered years, complimenting NAF which takes place in odd numbered years. The SE FL Summit takes place every year. In 2018, the RAFs ranged widely in attendance, from 100 to nearly 800 attendees, and budget, from \$45,000 to \$320,000. Conference lengths ranged from two to three days.

In this report, we present analysis and information drawn from the 2018 RAFs to:

- Gain insight about the state of the field.
- Assess opportunities for the field to leverage the RAFs to accelerate dissemination and uptake of adaptation promising practices across regions.
- Determine how ASAP can best support the RAFs going forward.

We hope this report will serve as a testament to the need for and value of regional adaptation for and encourage increased investment in these events and greater coordination between them.

ASAP 2018 RAF Activities

The ASAP Regional Adaptation Forum strategy included the following activities:

- <u>Convening forum organizers</u>: ASAP held regular calls and virtual connection space for regional adaptation forum organizers to connect, learn from each other's experiences, and share accomplishments.
- <u>Conference sponsorship</u>: ASAP provided in-kind or financial support for most RAFs to solidify our commitment and connection to the events.
- <u>Serving on conference committees</u>: ASAP staff served on the Steering Committee and/or the Program Committee for most of the Fora.
- Running the ASAP Regional Adaptation Leadership Award: ASAP ran regional awards in four RAF regions, receiving 49 nominations, engaging 36 people on selection committees, and honoring 14 awardees.
- <u>Coordinating conference sessions and tracks</u>: ASAP staff served in coordination roles for several of the Fora, with the goal of integrating issues that are important to our members into conference content.
- <u>Conference workshops and summary activities</u>: ASAP facilitated or helped organize workshops or other activities at five RAFs to serve as a platform for soliciting practitioner perspectives on adaptation needs and promising practices.
- <u>Networking Events</u>: ASAP hosted networking events for members and others at two of the RAFs.

California Adaptation Forum

With contributions from Julia Kim, Local Government Commission

The biennial <u>California Adaptation Forum (CAF)</u>, organized by the <u>Local Government Commission (LGC)</u> in partnership with the State of California, gathers the adaptation community to foster knowledge exchange, innovation, and mutual support to create resilient communities and support our transition from adaptation awareness and planning to action. Since its launch in 2014, LGC has strived to leverage CAF as an opportunity to build a community of adaptation practitioners, catalyze action and empower all sectors and levels of leadership, move adaptation into the foreground of attention and urgency, and set the stage for how California should respond to the climate crisis.

The 2018 CAF took place August 27-29 in Sacramento, California and brought together 787 practitioners to learn, share, and network. Three core priorities were integrated throughout the program: Embracing Change to Catalyze Innovation, Uplifting Underrepresented Voices, and Taking a Whole Systems Approach. The program also featured eight cross-cutting tracks, including Forging Power Partnerships for Resilience, Grounding Adaptation in Community Engagement, Creating Pathways for Social Resilience, Taking Action Under Uncertainty, Transforming the Governance Paradigm, Investing in Climate Smart Infrastructure, Integrating Solutions for the Built Environment, and Enhancing Natural and Working Lands Resilience.

This Forum served as the launchpad for California's Fourth Climate Change Assessment, and featured three plenaries, 40 sessions, 13 workshops, eight tool demonstrations, five tours, ten networking events, and dozens of climate art installations. The program followed a curricular arc that covered emerging trends, model projects, financing and funding, and implementation strategies in each track.

Organizers strived to make equity, diversity, and climate justice front and center at the Forum. A dedicated web page featuring equity-focused resources and blog posts focused on equitable adaptation, Traditional Ecological Knowledge, health equity, and youth empowerment served as resources for participants leading up to the event. An Equity & Tribal Advisory Committee was formed to establish measurable goals and identify concrete strategies to better integrate equity and tribal considerations throughout the program. Additionally, over 60 scholarships were provided to enable representatives from under-resourced communities and organizations to participate in the Forum. Participants shared that "the focus on environmental justice and frontline communities (being weaved into the entire event rather seamlessly) was very welcome and necessary" and that "the conference did a great job of integrating the equity issue in a way that didn't feel repetitive."

The American Society of Adaptation Professionals (ASAP) provided daily coverage of the California Adaptation Forum with support from a volunteer reporting team to produce the Daily Digests. ASAP also awarded the California Regional Adaptation Leadership Award to Tiffany Wise-West, Sustainability and Climate Action Manager at the City of Santa Cruz; and Andrew Gunther, Executive Coordinator of the Bay Area Ecosystems Climate Change Consortium.

Many participants shared positive feedback regarding the Forum with 95% of post-forum survey respondents rating their overall experience as "Excellent" or "Good." Participants also shared that the Forum was "rich with information and right on point with where adaptation planning currently is," that they "connected with multiple local colleagues at the Forum that [they] never get a chance to communicate with during the course of regular

business," and that they appreciated "seeing tangible results in the efforts towards adaptation in every sector, and ever more enthusiasm for the work from everyone [they] interacted with."

Years existing: 2014, 2016, 2018

Resources:

California Adaptation Forum Daily Digests
2019 Program
Presentations

Carolinas Climate Resilience Conference

With contributions from Amanda Farris, Carolinas Integrated Sciences and Assessments

The <u>Carolinas Climate Resilience Conference</u>, a carbon-neutral event, brought together 248 representatives from the leading agencies and organizations tackling climate-related impacts in the Carolinas. Hosted by the <u>Carolinas Integrated Sciences and Assessments</u>, the 2018 conference was held October 29-31 in Columbia, South Carolina.

The program covered a wide range of topics and sectors, from sea level rise mapping and coastal climate adaptation to promising practices in climate communications and resilient natural resource management. In the Carolinas, climate adaptation work is moving forward primarily at the local government level. This is especially true in coastal regions where the impacts of sea level rise are becoming more evident. Consecutive years of extreme events, including Hurricanes Florence, Irma, and Matthew have been a key motivation. Key themes throughout this year's program were a collaborative approach to adaptation through regional resilience networks, climate science translated for meaningful use, and work within the communities most heavily impacted by recent extreme events.

One of the primary goals was to bring together people working in a variety of fields and at different levels of governance to cultivate new working relationships and partnerships. These networking opportunities were consistently touted as one of the primary benefits of attendance by previous conference participants. The CCRC was approved for 12 continuing education credits for Certified Floodplain Managers and professional development hours for South Carolina Licensed Engineers and Land Surveyors, which served as a new way to support participation from these professionals.

Objectives for the CCRC included supporting on-the-ground climate resilience efforts by providing managers and regional experts with an opportunity to share lessons learned and discuss resources and tools for incorporating climate information into their work; contribute to the development of a climate information network for the Carolinas; and provide a venue for practitioners, resource people, and researchers to share information about current activities, plans, and opportunities for collaboration.

The 2018 CCRC convened members of federal, state, tribal, and local governments, university researchers, and private sector practitioners from thirteen states and the District of Columbia. The majority were from the Carolinas, though many other U.S. regions were represented. University researchers represented the largest affiliation of attendees (22%), while NOAA and other federal agencies were also among the largest representation (22% cumulatively). Tribal attendance increased slightly for the 2018 CCRC (3%) when compared to the 2016 CCRC

(1%). The presence of local governments and NGOs also increased in 2018. Rescheduling of the conference due to Hurricane Florence resulted in over 40 attendee cancellations, while over 30 new attendees registered for the rescheduled dates.

ASAP led efforts to organize the "Accelerating Climate Action through Innovation and Technology" track, which included a plenary session on financing solutions for climate adaptation, three concurrent sessions highlighting technological advancements in adaptation, and an evening reception to showcase climate adaptation data and technology providers. ASAP also awarded the first Carolinas Regional Adaptation Leadership Award to Holly White, Principal Planner for the Town of Nags Head, NC. Former City of Charleston Mayor Joe Riley gave the keynote during the closing plenary on Wednesday, October 31.

Conference organizers believe the CCRC has expanded the diversity of participants since its first convening in 2014. They are growing the network to include more community representatives engaged in planning and implementation at the local level. These practitioners are sharing their stories and experiences to increase the collective knowledge of the Carolinas network, learning what does and doesn't work in practice. The conference agenda has evolved to reflect this changing dynamic in participation. Two full time staff, a 30-person steering committee, and a ten-person program committee provided support for organizing the conference.

Years existing: 2014, 2016, 2018

Resources:

2018 CCRC Final Conference Report

Great Lakes Adaptation Forum

With contributions from Jenna Jorns, Ph.D., Great Lakes Integrated Sciences and Assessments

The 2018 Great Lakes Adaptation Forum (GLAF) in Ann Arbor, Michigan brought together more than 160 practitioners and scholars for three days of sharing climate adaptation and resilience solutions. The conference was held September 24-26 at the University of Michigan and co-hosted by ASAP and the Great Lakes Integrated Sciences and Assessments (GLISA). This was the 3rd biennial GLAF, with previous events also hosted in Ann Arbor in 2014 and 2016.

The 2018 GLAF focused on equity in climate adaptation and accelerating action through innovation and technology. 163 attendees and students from United States and Canadian-based universities, tribal governments, nonprofits, private industries, and governmental agencies, among others, met to discuss their continued work since the 2016 forum, as well as the latest in adaptation funding, technology, equity, and leadership. The Forum's approach aimed to break down silos between sectors, creating ample opportunity for practitioners to share promising practices, lessons learned, and work jointly to produce solutions to climate challenges facing our region. This was accomplished by centering the program around four cross-cutting session track themes, implemented to bridge sectors and facilitate knowledge-sharing among experts in different fields. These included: Beyond Borders, Finance & Funding, Innovation & Technology, and Leadership at all Levels. These tracks were designed with input from the Forum's Advisory Board, which met monthly to provide guidance on overall Forum

approach and direction. A separate Program Committee developed the agenda, helping to solicit and review proposal submissions. Organizers also engaged early and often with partners in Indigenous Tribes and community-based organizations to ensure the Forum approach and program were attractive to these groups.

GLAF hosted several pre-Forum special interest group meetings to provide space for Forum attendees to convene on their own to discuss projects and issues of interest. These meetings included the 2018 USDN Innovation Fund project, the Detroit Community Climate group, the Northeast Indigenous Climate Resilience Network, the Great Lakes Water Quality Agreement Annex 9 Extended Subcommittee, Developing Opportunities for Indigenous Peoples and Tribal Communities in the National Climate Assessment Process, and the Great Lakes Climate Adaptation Network. The 2018 GLAF also featured the first-ever student symposium, planned by and for students considering careers in climate adaptation. The symposium included a career panel and networking event. ASAP awarded the Great Lakes Regional Adaptation Leadership Award to Chris Swanston, Director of the Northern Institute of Applied Climate Science and the USDA Northern Forests Climate Hub.

Highlighting the Forum's specific focus on issues of equity and inclusion, Dr. Dan Wildcat of the Haskell Indian Nations University gave the keynote address, speaking specifically to the importance of including traditional ecological knowledge in adaptation strategies to climate change. In his opening plenary remarks, Dr. Wildcat stated, "Before any of us in this room thought in boxes, before any of us worked in silos, before any of us did research that was prescribed, and detailed in our disciplines and methodologies of choice we employ, our ancestors learned, worked, thought, researched out of doors."

Both GLISA and ASAP provided in-kind support for GLAF in the form of staff and student time to plan and administer the Forum.

Years existing: 2014, 2016, 2018

Resources:

GLAF Conference Agenda and Presentations

Local Solutions Conference

With contributions from Christa Daniels, Ph.D., Antioch University Center for Climate Preparedness and Community Resilience; Lisa Graichan, University of New Hampshire Extension, New Hampshire Sea Grant; and Melissa Ocana, Massachusetts Ecosystem Climate Adaptation Network

The 2018 Local Solutions: Eastern Climate Preparedness Conference brought together over 300 participants April 30 to May 2 in Manchester, New Hampshire. Hosted by the Antioch University Center for Climate Preparedness and Community Resilience, the conference is one of several pathways Antioch has to deliver applied research, education, and training. The conference objectives and design are a direct extension of the school's approach, which is consistently solutions oriented, pragmatic, participatory, inclusive and based on best practices and systems thinking. The conference was designed to help build stakeholder capacity for climate resilience at the local scale and attendees were a mix of local and regional government planners and decision makers. The event focused on delivering interactive sessions that provided hands on training, best practices, and lessons learned, with an explicit awareness of social and climate justice.

ASAP awarded the New England Regional Adaptation Leadership Award to Sherry Godlewski, Environmental Program Manager for the New Hampshire Department of Environmental Services. ASAP also held a workshop on "Growing into Principled Adaptation Professionals." During the workshop, participants used ASAP's <u>Living Guide</u> to the <u>Principles of Climate Change Adaptation</u> to create a checklist of questions to help assess how their work is reflecting promising practices in the adaptation field. This exercise prompted participants to ask questions like:

- Am I using the most up-to-date science?
- Who would feel left out/ who should be at the table?
- How does this leverage collaborations?
- Am I factoring in uncertainty and leaving room for adaptive management?
- How am I measuring success?

"We don't often get the space or time to reflect on our practice with fellow adaptation practitioners who get 'it,' so I appreciated this session," said ASAP Member Melissa Ocana (Massachusetts Ecosystem Climate Adaptation Network (Mass ECAN), who helped facilitate the session. Melissa also shared that "this conference was a helpful reminder that our network can learn much from and contribute to other networks in the region. It was insightful sharing with coordinators of networks such as Second Nature's Climate Leadership Network for higher education, Urban Sustainability Directors Network (USDN), and New Hampshire Coastal Adaptation Workgroup."

Lisa Graichan (University of New Hampshire Extension/NH Sea Grant) shared, "Several colleagues and I were (sort of) joking that we'd love a session at a future conference that focuses on failures! Sharing both kinds of lessons is important (and cathartic!)."

A team of faculty, staff, and students delivered the conference.

Years existing: 2014, 2016 and 2018

Resources:

Local Solutions Blog Post

Southeast Florida Climate Leadership Summit

With contributions from Lauren Ordway, Institute for Sustainable Communities

The Southeast Florida region is a national leader in addressing climate change and rising seas. While we continue to face challenges, regional leaders have made remarkable progress during the last decade. That message of progress and promise was the focus of the 10.10/ Annual Southeast Florida Regional Climate Leadership Summit on October 24-25, 2018 at the Miami Beach Convention Center.

Coordinated by the <u>Southeast Florida Regional Climate Change Compact</u>, a partnership between Broward, Miami-Dade, Monroe and Palm Beach counties, municipalities, and other partners, the Climate Leadership Summit is a major regional event focused on facilitating climate-related collaboration and knowledge sharing. This 10th Annual Summit celebrated a decade of unprecedented regional collaboration through the Southeast Florida Climate Change Compact, which has served as a national and international model, fostering bipartisan action and support for climate action in the region and beyond.

The Summit continues to attract innovative thinkers and leaders from business, government, academia and the nonprofit community to exchange ideas and dialogue at panel discussions and networking breaks. Garnering interest from 727 attendees, the audience included 58% general registration (including government and private sector), 16% sponsors, 15% nonprofit, 6% speakers, 5% students.

Distinguished speakers, including Noah Valenstein, Secretary of the Florida Department of Environmental Protection, and Jacqueline Patterson, Director of the Environmental and Climate Justice Program at the NAACP touched on topics from increasing the resilience of Florida's coastlines to including social equity as a key factor in climate change and resilience efforts. Secretary Valenstein recognized the Compact for its 10 years of collaboration and bipartisan action in addressing climate change: "I really want to congratulate this group on the amazing work you've done--and really the national and international example you are--for partnership, for natural resource management, for talking about climate change, and for working on adaptation, resilience and mitigation. Thank you."

In addition, Pinellas County Commissioner Janet Long announced the formal launch of the Tampa Bay Regional Resiliency Coalition, another Florida climate collaborative directly inspired by the Compact.

The Summit closed with an interactive panel of elected leaders, including Miami-Dade County Mayor Carlos Gimenez, Mayor Beam Furr of Broward County, Mayor David Rice of Monroe County, Administrator Verdenia Baker of Palm Beach County, and Representative Kristin Jacobs from the Florida House of Representatives, who discussed actions local governments are taking to address climate change and what future leaders will need to focus on to better adapt to shocks and stresses facing the region.

The first Summit was designed to bring the four counties together to establish the <u>Southeast Florida Regional Climate Change Compact</u>. From the organizers' perspective, the Compact's Summit continues to be a critical opportunity to convene elected officials across the region on climate resilience efforts. The Summit's audience has steadily expanded to include government staff from all levels and a wide range of fields, including the private sector, nonprofit representatives, educators, and students. Over their ten-year history, the Compact Summits have grown larger, and, in recent years, with a significantly larger contingent from the business community, inclusive of architects, engineers, planners, other climate affected industries, and representatives of major business groups and alliances in southeast Florida.

The 2018 conference was convened with support from three full-time staff and an event planner, with additional staff members on the days of the Summit itself. The Compact's Staff Steering Committee members participated in the planning of the program.

Years existing: Annually since 2009

Resources:

Agenda Day 1 Agenda Day 2

Southwest Adaptation Forum

With contributions from Amanda Leinberger, University of Arizona; and Carolyn Enquist, Ph.D., Southwest Climate Adaptation Science Center

The inaugural Southwest Adaptation Forum (SWAF) was held at the University of Arizona on October 29-31, 2018 in Tucson, Arizona. The purpose was to gather climate adaptation and assessment practitioners in the Interior Southwest (with a special focus on Arizona, Utah, Nevada, and contributions from New Mexico, Colorado, and California) to exchange experiences and promising practices and build a network dedicated to finding and implementing integrated, community-based adaptation solutions. As the first of its kind in the region, this conference was unique in that it was by direct invitation to participants, with approximately 100 people in attendance.

By the workshop's close, conference organizers aimed to: (1) strengthen existing and build new relationships among climate adaptation practitioners in the region, (2) identify gaps in existing stakeholder and practitioner networks, (3) generate synergy and momentum for future engagement among partners and stakeholder groups (4) and, most importantly, position the emergent network to take tangible action.

The structure and design of this particular regional workshop was different from other regional adaptation fora. This event was intended to explore the connections between assessment, adaptation, and the state of knowledge in five categories: tribal lands and communities, working lands/public lands, the wildland-urban interface, built environments, and public health. Therefore, invitees were specifically selected and hand-picked to be able to support those conversations. As a result, people who attended had adaptation expertise in these areas. The objective was not maximizing geographic or expertise diversity per se, but rather, making sure there were experienced experts from the Southwest region to support the selected theme areas at the meeting.

From the organizers' perspective in planning this forum, they considered lessons learned from other conferences to determine desired outcomes for SWAF. They received a great deal of feedback from participants that will help guide future meetings, as well as establish a Southwest adaptation and assessment network (SWANN). They are eager to see how the conference continues to evolve in the years to come.

Funding for the conference came from the Southwest Climate Adaptation Science Center (SW CASC). The Center for Climate Adaptation Science and Solutions (CCASS) contributed a full-time staff person to help organize and plan SWAF. The meeting venue was free of charge as the co-conveners are building occupants.

Years existing: 2018

Resources:

Agenda

Moving the Needle and Advancing the Field: Analysis of RAF Content and Participant Reflections

We analyzed conference agendas, post-conference surveys, and data from workshops and end-of-conference summary activities to identify similarities and differences across RAFs. These data tell us which topics were present or prevalent at each conference, how the conferences are moving the needle for adaptation work, what promising practices are most important to practitioners, and what needs and challenges practitioners are working to overcome in their respective regions and across North America. Agendas and post-conference surveys came from workshop organizers, and workshop and activity data were collected through ASAP-led events at the conferences. Below is a summary of our findings, which have been used to inform our recommendations for advancing the adaptation field.

Summary of Findings

Regional adaptation conferences are moving the needle for adaptation professionals and the field

The data we analyzed from post-conference surveys and workshops clearly showed that each of these conferences helped individual adaptation professionals, and the field as a whole, advance in the sophistication, quality, and volume of adaptation practice, and contributed to career development for adaptation practitioners. Many RAF participants, irrespective of region, reflected on the value of the networking and relationship-building opportunities their RAF provided, including networking with people doing similar work and with people doing different work. This was particularly notable among participants at the Southwest Adaptation Forum (SWAF), which held its inaugural conference in 2018. SWAF organizers commented, "at the [conference] close, those in attendance agreed that they had strengthened existing and built new relationships; identified important gaps in our networks; generated synergy and momentum for future engagement; and positioned our emergent network to take tangible action!"

Many participants valued being surrounded by people making adaptation happen and were inspired by the volume and extent of innovation happening on the ground. Attendee Lisa Grachen commented after the Local Solutions conference, "I left with a much-needed boost of optimism, knowing that so many fantastic people are working hard on climate adaptation around the region." Conference-goers gained an understanding of how climate change is, as one Great Lakes Adaptation Forum survey respondent describe, "viewed, talked about, and addressed among various communities and sectors." They also appreciated exposure to the variety of adaptation approaches and lessons learned by different communities.

When asked how they plan to change their practices going forward, common responses among participants included:

- Learning about new levers of power and using them to achieve goals.
- Helping increase the diversity of people working in climate adaptation.
- Implementing a strategy or promising practice to do their job better.
- Following up with new colleagues and potential collaborators or partners.

- Using knowledge gained at the conference to help inform their company's or organization's strategic direction, products, or services.
- Being motivated to learn and keep abreast of specific topics more regularly.

Cross-regional sharing will advance national cohesion and field development

Our data analysis revealed consistencies in conference content and practitioner needs across regions. The shared relevancy of many topics demonstrates a cohesiveness in the adaptation field and underscores the value to practitioners of engaging in national conversations to share needs, promising practices, and successes. These conversations will help practitioners overcome capacity barriers and accelerate the pace of field evolution across North America.

Our analysis also captured regional distinctions and how conferences are responding to specific local needs. The following characterizations emerged:

- In **California**, practitioners and other field actors are eager to mainstream adaptation work, particularly by integrating adaptation into other domains, disciplines, and fields of practice.
- In the **Carolinas**, practitioners are testing different levers of power to determine which will move the region most swiftly towards sustained action. Practitioners are also implementing unique and creative communication strategies to raise awareness and gain buy-in for adaptation work across all segments of the population.
- The **Great Lakes** and the **Southwest** are primarily focused on coming together as respective regions, discovering the extent of existing work and resources, and harnessing the power of cross-sector learning.

These characterizations are useful for identifying regional strengths and goals, and where regions can learn from each other to collectively advance the adaptation field.

The field needs to focus on equity, finance, and networks

Conference participants highlighted 1) equity, 2) funding, finance, and investment, and 3) building networks and relationships as the top issues to address at future conferences. Commenting during CAF on the need to mainstream equity, presenter Beverly Scott said, "Equity is not an initiative, it is a fundamental part. And it must become an integral part of the ecosystem that makes communities move." Funding, finance, and investment includes all mechanisms, both "tried and true" and "new and innovative," for paying for adaptation. In follow-up conversations, conference organizers across the RAFs recognized the importance of and demand for sessions on this topic but reflected on the difficulty of finding presenters. This suggests a possible shortage of relevant expertise and case studies in this area, and that the field overall can benefit from improved connections with experts. Building networks and relationships among parties inside and outside the field of adaptation leads to more robust, coordinated, well-resourced, and informed efforts. This is consistent with information that we and other field actors have gathered about practitioner needs and challenges.

Consistent data collection will improve the value of RAFs to the field

Regional Adaptation Fora are a valuable place to collect and compare practitioner perspectives on adaptation promising practices, innovations, solutions, and challenges. However, there are currently no consistent data collection mechanisms through which to gather this information. Developing these mechanisms will augment the value that the RAFs provide to the field as a whole, as well as give greater context for self-evaluation and

understanding to each region and RAF. These mechanisms include asking consistent questions on post-conference surveys and holding comparable summary activities at the end of each conference. (For a description of summary activities, see "Summary Activities Analysis" below.)

In-Depth Analysis

Session Titles Analysis

Session titles analysis from the conference agendas showed that many topics were prevalent across all RAFs, revealing an atmosphere and opportunity for greater cross-regional learning and sharing. Regional differences that emerged stemmed mostly from the types of institutions represented, existing capacity for adaptation work, and cultural and economic factors.

All RAFs featured sessions focusing on specific steps of the adaptation planning process, including developing climate and vulnerability assessments and turning planning into action. Building and strengthening networks and partnerships, and how this can grow the field of adaptation, was also a common thread. Resource management was another theme that transcended conferences, particularly management of water resources and systems. Sessions addressed the importance of resource management to non-human dominated landscapes (i.e. habitats and ecosystems) and as nature-based adaptation infrastructure in service to the built environment.

Specific regional emphases of note included:

- In the Carolinas, many discussions centered around communication and climate impacts.
- California emphasized equity, community engagement, and infrastructure. CAF was also the only RAF to highlight adaptation pathways as an adaptation strategy.
- The Great Lakes had notable emphasis on technology and innovation, leadership, and indigenous and tribal communities.
- In the Southwest there were multiple sessions dealing with professional capacity in the adaptation field, whereas almost none of the other conferences held sessions specific to this topic.
- Local Solutions highlighted themes of public health, finance, and community engagement.
- Southeast Florida held a unique session examining the role media outlets can play in collaborating and communicating on sea level rise.
- The Carolinas, California, and Great Lakes conferences featured a greater number of sessions that explicitly called out local communities and environments as the focus.

Post-Conference Survey Analysis

Participant reflections from post-conference surveys revealed similarities and unique notes that align with many of the findings from the session titles analysis. Equity was among the most pervasive topics in participant reflections. Participants described a need and desire to make adaptation more inclusive and accessible to all communities, especially those most vulnerable and underserved. In the Great Lakes and Southwest, and to some extent in California, participants commented in particular about representation of indigenous communities. They appreciated the number of sessions featuring work in indigenous communities and indigenous peoples' representation at the conference. However, participants also noted that much more work is needed to truly engage and include indigenous peoples, both in specific adaptation projects and as regular voices in the adaptation field.

There were also some major topics that emerged with greater frequency in individual regions. In the Carolinas, many participants highlighted the conference's strong presentation of communication skills and promising practices. In the Great Lakes and the Carolinas, participants specifically reflected on the benefits of hearing directly from local governments about the actions they're taking. CCRC survey respondents, in particular, frequently mentioned specific local communities and actions in their answers. In California, participants left the conference encouraged to approach adaptation conversations with greater sensitivity to others' experiences. CAF participants emphasized the processes and strategies involved in adaptation, such as vulnerability assessment, adaptation pathways, and evaluation.

As described in the Summary of Findings, three areas that participants across regions were especially interested in learning more about and discussing at future conferences were equity, finance, and building networks and relationships. These three elements are critical to success in the field of adaptation, and it is no surprise they also been identified by many participants as areas in which they have the most pressing challenges and needs.

In the Carolinas and Great Lakes, the post-conference survey specifically asked for participant reflections on challenges. We were able to pull out valuable information from this.

Carolinas Challenges

- Lack of buy-in for adaptation work at various levels of power, fueled by a lack of awareness about climate science and associated impacts.
- Intersecting cultural and political barriers that make it difficult to engage in dialogue, subsequent awareness-building, and ultimately enact needed policy and legal changes.
- Lack of funding opportunities.

As Susannah Tuttle explained in an <u>op-ed</u> following CCRC, "To build a resilient future for the Carolinas and the world as a whole, we must reckon with the fact that profound change is now inevitable. But that change is a beginning as well as an end—an opportunity to hit the "reset" button on how we live. It asks us what we most want to preserve—including our traditions, our recipes, and the ties of culture and faith that bind us together. And it calls us to recommit to the values—justice, charity, and concern for the least among us—that will guide us through the difficult times ahead."

Great Lakes Challenges

- More and better data: downscaled projections and data for specific sections of the region.
- Disconnect between information and action: exemplified by an overabundance of tools and websites and a lack of funding, dearth of monitoring and evaluation, and disconnect between researchers and practitioners.

Collecting data on practitioner challenges at all RAFs would help field-wide actors target cross-regional learning and sharing opportunities and increase the value of regional gatherings.

Summary Activities Analysis

ASAP ran conference activities in the Carolinas, Great Lakes, Southwest, and California to gather information about practitioner needs and promising practices. Each activity was slightly different based on the type of session

and time available. During each activity participants had the opportunity to reflect on their conference takeaways in writing and through pair and group exercises and were prompted to summarize their impressions of adaptation needs, innovations, and promising practices in the region. There were many similarities in participant takeaways captured through these activities, pointing to a convergence in the field that national actors can leverage. Two categories emerged quite strongly across all four regions: 1) Engagement, Equity, and Inclusivity and 2) Interconnectivity, Partnership, and Collaboration. In three of the four regions, two additional categories emerged: 3) Taking Action and 4) Leveraging Existing Resources.

- Engagement, Equity, and Inclusivity: This category covers community engagement promising practices such as inclusive decision making, co-production of knowledge, building trust, and acknowledging historical inequities. It includes engagement, equity, and inclusivity as practice for individual practitioners and projects, as well as for the field as a whole.
- Interconnectivity, Partnership, and Collaboration: This category covers breaking down silos, forming and supporting regional networks, and working together across various parts of the adaptation field. Some regions are further along in establishing the interconnections, partnerships, and collaborations needed, but all recognize their importance.
- **Taking Action**: This category acknowledges that now is the time for action. While all practitioners agree that action is necessary, those in some regions still feel they need better data or more buy-in in order for that action to be effective.
- Leveraging Existing Resources: Practitioners in all regions recognize the value of learning from and building off of others' work.

In many cases, participants were hesitant to characterize something as a promising practice or a need, noting that even if a promising practice has been established, often there is still a need to integrate it more deeply or broadly into adaptation work across the region.

The Role of Regional Fora in Advancing the Field: Recommendations for 2019-2020

Our experience engaging in and analyzing the 2018 Regional Adaptation Fora has surfaced this fundamental message: each Regional Adaptation Forum is doing an excellent job providing professional development and network opportunities, disseminating promising practices, and addressing practitioner needs in their region. It is critical that the adaptation field, regional entities, and regional and national funders continue to support these events and should consider them a fundamental component of adaptation field development.

In order to maximize their potential, the adaptation field and the RAF organizers should prioritize greater cross-forum coordination and collaboration. Greater coordination amongst the RAFs will cultivate a shared identity, boosting individual event attendance and encouraging greater affinity between adaptation professionals working across North America. These practitioners will benefit from increased opportunities to share and learn transferable solutions from other regions. Further, the adaptation field will benefit from a more holistic understanding of similarities and differences in each region, enabling more sophisticated field-spanning analyses.

Improved coordination will also help build a stronger foundation and support system for continued RAF planning and production. Many RAFs are hosted, managed, and organized by small, underfunded teams with expertise in climate adaptation rather than event planning. Team turnover can be a barrier to maintaining continuity in event management as well, since most RAFs happen every other year. Establishing a more connected support system of organizers and resources will have tangible benefits for helping teams overcome these barriers.

There are clear strategies that field actors, including ASAP, can pursue to better serve the RAFs and facilitate creation of these benefits:

- ASAP should continue facilitating coordination calls for RAF organizers to provide a space for peer support
 and identify opportunities to promote consistency and shared experience across the RAFs. ASAP plans to
 work with RAF organizers in the latter part of 2019 to determine the most valuable format and objectives
 for these coordination calls.
- RAF organizers should collaborate to collect consistent data across regions, including through shared preand post-conference survey questions and one or two consistent activities or sessions that can generate
 comparable insights about the state of the field and practitioner needs. The latter could take the form of a
 workshop run by ASAP in each region.
- ASAP should support RAF organizers and other field-wide actors, including the National Adaptation
 Forum, in facilitating and promoting virtual peer learning opportunities that specifically engage crossregional groups of RAF participants. One way in which ASAP plans to support this is through webinars
 highlighting the 2018 Regional Adaptation Leadership Award honorees.

In addition to supporting the strategies as described above, ASAP plans to continue promoting the success of the RAFs by sponsoring each RAF and promoting the events in our network; exhibiting at each RAF and, when possible, running networking events for current and prospective ASAP members; convening and presenting in forum sessions. We look forward to continued partnership with the Regional Adaptation Fora in 2019-2020 and beyond.

Report Sources and Methodology

Report scope/purpose/research question

- Identify a set of common goals toward which regional conveners and ASAP can be working in 2019-2020.
- Surface similarities and differences in the state of the adaptation field across RAF regions to inform a national understanding of the field and generate recommendations for accelerating the pace of field advancement.

Methodology

Qualitative content analysis, mostly inductive approach.

Methods

- 1. Select units of analysis ("participant takeaway" and "session topic")
- 2. Create/conceptualize analysis matrix
 - a. What topics were covered at each conference?
 - b. How does each conference move the needle for adaptation professionals?
 - c. What are the challenges, problems, and needs of adaptation professionals?
 - d. What topics need to be addressed further?
- 3. Gather data by content
 - a. Post-conference surveys from five RAFs: Carolinas Climate Resilience Conference (CCRC); California Adaptation Forum (CAF); Great Lakes Adaptation Forum (GLAF); Southwest Adaptation Forum (SWAF); Southeast Florida Regional Climate Leadership Summit (SE FL Summit). (NOTE: no data available for Local Solutions: Eastern Climate Preparedness Conference)
 - b. **Session titles** from all six RAF agendas: CAF, CCRC, GLAF, SWAF, SE FL Summit, Local Solutions
 - c. **Data gathered from workshops and conference summary activities** run by ASAP: CAF, CCRC, GLAF, SWAF
- 4. Grouping (relating survey questions to analysis matrix)
- 5. Coding and Categorization (development of new groupings)
- 6. Writeup: Contextualize, model, conceptualize, synthesize, and challenge the takeaways

Data Sources

| Analysis Matrix Question | Survey questions and workshop/activity data used |
|---|---|
| How does the conference move the needle? | CCRC: How was this conference effective? What was the most valuable thing you learned? What will you do or change as a result of attending? Do you have specific follow up plans? |
| | CAF: What is the extent to which conference objectives were met? What was most valuable and enjoyable? What do you plan to do differently or change in your work? What do you hope to accomplish before the next Forum? |
| | GLAF: What did you learn or gain? What do you plan to do differently or change in your work? What sector or topics were represented well at the Forum? |
| | SWAF: What were the highlights of the forum? What was the most interesting? |
| | SE FL Summit: N/A |
| | Local Solutions: N/A |
| What are the challenges, problems, needs of adaptation professionals? | CCRC: What challenges does your organization or community face for increasing resilience? What additional resources or opportunities do you need to overcome them? Conference summary activity responses |
| | CAF: ASAP workshop data |
| | GLAF: ASAP conference summary activity responses |
| | SWAF: ASAP conference summary activity responses |
| | SE FL Summit: N/A |
| | Local Solutions: N/A |
| What topics need to be addressed further? | CCRC: Conference summary activity responses |
| | CAF: What sectors or disciplines were not well represented? What topics or issues do you want addressed at the next Forum? |
| | GLAF: What sectors or topics were not well represented? |
| | SWAF: What topics were missing or not sufficiently covered? |
| | SE FL Summit: What topics do you want to address next year? |
| | Local Solutions: N/A |

Category Definitions

Capacity: Adaptation professionals' ability to complete the work that needs to be done. Building the adaptation workforce.

Climate Migration: Human migration as a result of climate change impacts.

Communication: Effectively relaying information to other adaptation professionals and the general public in a way that is understandable, accessible, and productive.

Community Engagement: Effectively making the community part of the adaptation conversation and aware of adaptation plans, actions, and efforts.

Education: Adaptation in formal teaching environments.

Emergency Response: Preparation and action done before, during, and after emergencies caused by climate change impacts.

Equity: Conducting adaptation work in a way that is equal for all people, especially considering historically underserved, under-represented, and vulnerable communities and communities with limited resources.

Faith: Having to do with religious and faith communities.

Finance: Related to the funding and economics of adaptation.

Food/Agriculture: Relationship between adaptation and food and agriculture, including production, practices, and industry.

Health: Human well-being in the face of climate change.

Housing: Relationship between adaptation and housing, including stock, market, type, vulnerability, etc.

Impacts: Natural consequences of climate change. E.g. sea level rise, extreme weather events, etc.

Indigenous/Tribal: Having to do with indigenous and tribal communities

Infrastructure: Having to do with the built environment.

Leadership/Electeds: Leadership and decision making in adaptation, including elected officials.

Legal/Policy: Adaptation in politics and law.

Local/Regional: Adaptation specific to a particular local or regional community or area.

Mitigation: Having to do with climate change mitigation.

Partnership/Relationship Building: Building relationships, partnerships, and networks to advance adaptation efforts.

Process: The steps involved in conducting adaptation work. E.g. Assessment, planning, evaluation, etc.

Resource Management: Pertaining to natural resources. E.g. watershed management, urban forest, conservation, etc.

Retreat: Leaving a human settlement due to severe climate impacts such as sea level rise or inland flooding.

Rural: Adaptation in the context of rural communities and areas.

Science: The science of climate change.

Technology/Innovation: Development of new technologies and creative thinking to advance adaptation and climate change efforts. E.g. renewable energy, green buildings, flood warning systems, etc.

Analyses

Post-Conference Survey Analysis

For each survey question noted in the Data Sources, the topics addressed by respondents were identified, and the number of times each topic was mentioned, and whether it was mentioned positively or negatively, was recorded. After identifying all of the topics for each conference, topics were then assigned to one of twenty-six overarching categories (labeled and defined in the Categories section). For each conference, the number of times each category appeared per Analysis Matrix question was then recorded. For example, in the CAF survey, the category "Finance" appeared within the Analysis Matrix question "How does the conference moves the needle?" 17 times.

Using the same survey data, strategies, skills, and actions in responses were identified, as well as the number of times each was mentioned. For example, in the CCRC survey, "Improving networking" was mentioned 10 times in response to the question "What was the most valuable thing you learned?" in the "How does the conference moves the needle?" Analysis Matrix question.

Session Title Analysis

Each session of every conference was assigned categories from our list of twenty-six categories based on the topics of discussion inferred from the session title. More than one category could be assigned to a session. For example, the Southwest Adaptation Forum session "Adaptation Issues and Capacity in the context of Built Environments and Public Health/Human Well-being" was assigned the categories "Capacity," "Infrastructure," and "Health." For each conference, the number of times each category appeared was then recorded.

Conference Summary Activities and Workshop Analysis

All conference summary activities and workshops collected data on practitioner promising practices, innovations, and needs. Much of that data was already organized into themes, so those themes were analyzed and grouped into similar categories, then renamed to reflect the final theme contents.

Drawing from these three analyses, comparisons were made across the RAFs to identify similarities and differences in conference content and participant takeaways.

Assumptions

Session Titles Analysis: titles correspond to content.

Biases

- Confirming what we already thought about the regions/conferences vs the data actually showing that.
- Shortage of consistent data across conferences.
- Personal bias to look for similarities rather than differences.
- No comparable data for Local Solutions (can't use ASAP workshop data) or SE FL Summit.
- No comparable data across all four remaining conferences (can compare 2-3 at a time across a
 question).

Ensuring rigor

- Multiple people analyzed the same data.
- Review period with conference organizers (member checking).
- Used multiple data sources to answer the same question.

Data Sources

California Adaptation Forum. (2018). ASAP workshop materials. Unpublished raw data.

California Adaptation Forum. (2018). Conference agenda for August 27-29, 2018.

California Adaptation Forum. (2018). Conference summary activities. Unpublished raw data.

California Adaptation Forum. (2018). Post-conference survey results. Unpublished raw data.

Carolinas Climate Resilience Conference. (2018). ASAP workshop materials. Unpublished raw data.

Carolinas Climate Resilience Conference. (2018). Conference agenda for October 29-31, 2018.

Carolinas Climate Resilience Conference. (2018). Conference summary activities. Unpublished raw data.

Carolinas Climate Resilience Conference. (2018). Post-conference survey results. Unpublished raw data.

Great Lakes Adaptation Forum. (2018). ASAP workshop materials. Unpublished raw data.

Great Lakes Adaptation Forum. (2018). Conference agenda for September 24-26, 2018.

Great Lakes Adaptation Forum. (2018). Conference summary activities. Unpublished raw data.

Great Lakes Adaptation Forum. (2018). Post-conference survey results. Unpublished raw data.

Local Solutions: Eastern Climate Preparedness Conference. (2018). Conference agenda for April 30-May 2, 2018.

Southeast Florida Regional Climate Leadership Summit. (2018). Conference agenda for October 24-25, 2018.

Southeast Florida Regional Climate Leadership Summit. (2018). Post-conference survey results. Unpublished raw data.

Southwest Adaptation Forum. (2018). ASAP workshop materials. Unpublished raw data.

Southwest Adaptation Forum. (2018). Conference agenda for October 28-30, 2018.

Southwest Adaptation Forum. (2018). Conference summary activities. Unpublished raw data.

Southwest Adaptation Forum. (2018). Post-conference survey results. Unpublished raw data.

References

American Society of Adaptation Professionals. (2018). 2018 California Adaptation Forum Digest. Website.

American Society of Adaptation Professionals. (2018). Local Solutions in 2018: Reflections from the Eastern Climate Preparedness Conference. Website.

American Society of Adaptation Professionals. (2018). ASAP Living Guide to the Principles of Climate Change Adaptation. Raw unpublished data.

California Adaptation Forum. (2018). Website.

California Adaptation Forum. (2018). Equity. Website.

California Adaptation Forum. (2018). News Stories. Website.

California Adaptation Forum. (2018). Programs. Unpublished raw data.

California Adaptation Forum. (2018). Presentation. Website.

Carolinas Climate Resilience Conference. (2018). Website.

Carolinas Climate Resilience Conference. (2018). 2018 Final Conference Report. Unpublished raw data.

Carolinas Integrated Science and Assessments. (2018). Website.

Local Government Commission. (2018). Website.

Great Lakes Adaptation Forum. (2018). Website.

Massachusetts Ecosystem Climate Adaptation Network. (2018). Website.

Second Nature. (2018). Climate Action Guidance Network. Website.

Southwest Florida Regional Climate Leadership Summit. (2018). Website.

Southwest Florida Regional Climate Leadership Summit. (2018). Fees information. Website.

Southwest Florida Regional Climate Leadership Summit. (2018). Sponsorship. Website.

Southwest Florida Regional Climate Leadership Summit. (2018). Agenda. Website.

Southwest Adaptation Forum. (2018). Welcome to the inaugural Southwest Adaptation Forum. Flyer.

Island Press. (2018). Resilience Matters: Strengthening Communities in an Era of Upheaval. Pdf.

Urban Sustainability Directors Network. (2018). Website.



