

Northeast Climate Adaptation Science Center



NECASC

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External Review Team Final Report

Prepared with and on behalf of the NE CASC External Review Team

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Background Information

About the Review Process

The external review of United States Geological Survey (USGS) Regional Climate Adaptation Science Centers (RCASCs or CASCs) Host Universities is designed to gain information and insights from external reviewers about the activities and effectiveness of each RCASC Host University, and to inform decisions about USGS's future development and administration of Host University partnerships (this and additional information can be found [here](#).)

Donna Silverberg Consulting ([DS Consulting](#)) is the External Review Manager selected by the National Climate Adaptation Science Center (NCASC) through an open solicitation to design, coordinate, and conduct the structural and operational review component of the external reviews for all eight RCASC Host Universities, including report writing with and on behalf of the ERT. The 2024 DS Consulting team consists of:

Donna Silverberg, JD (Principal and External Review Team Lead, Facilitator, & Manager)
Tina Patterson, MA Dispute Resolution, MDR, MCI Arb, CF APMP, CICM (Project Advisor and ERT Facilitation Support)
Nancy Pionk, JD (ERT Facilitation Support)
Emily Stranz, MS Conflict Resolution (ERT Facilitation Support)
Colby Mills, BA Anthropology (Logistics and ERT Facilitation Support)
Michelle Helman, MA Peace & Conflict Studies (Evaluation Specialist)

Purpose of the Review

- 1. Assess the competencies, efficiencies, challenges, and areas for improvement** of each RCASC Host University in managing the administrative requirements and terms and conditions of the corresponding Host Agreement;
- 2. Assess the contribution** by each RCASC Host University and associated academic consortium with respect to:
 - a. Scientific Achievements on climate impacts and vulnerability science;
 - b. Collaborative Efforts with stakeholders to develop adaptation products applicable to priority regional decision-making;
 - c. Education and Training of early career professionals; and
 - d. Outreach and Communication services;
- 3. Review the effectiveness** of each RCASC Host University and associated academic consortium in meeting the goals established under their current Host Agreements;
- 4. Aid** the National Climate Adaptation Science Center (NCASC) in developing improved requirements for re-competition of the next university Host Agreements.

External Review Model Framework

- What was the Host's proposed approach?
- What did the Host implement and how did they do it?
- So what: What did the Host learn? How did they respond and adjust?

External Review Categories and Process Schedule

The Northeast CASC (NE CASC) External Review Team (ERT) was asked to focus on specific categories stemming from the Host University's Proposal Narrative. These categories and the dates devoted to their discussion follows. Daily summaries of the ERT Sessions and a listing of session attendees may be found in Appendix 1:

	Feb. 5	Feb. 6	Feb. 7	Feb. 8	Feb. 9
Topic	 Scientific Achievements Collaborative Efforts 	 Capacity Building Scientific Achievement & Collaborations	 Outreach & Communications Administrative Management 	Overall Effectiveness towards Host's Proposed Goals	90-Min ERT-Only Debrief Session

External Review Team (ERT)

Review team composition:

ERT members were nominated by USGS administrators and then selected by the ERT Manager based on the following criteria, with a goal of having an ERT that had varying degrees of experience and expertise to suit the CASC. Each member had:

1. Scientific, administrative, and/or stakeholder engagement process knowledge;
2. Working knowledge of the CASC Network;
3. Time, willingness, and support to serve on the ERT;
4. No conflict of interest (e.g., not receiving funding from any CASC at this time, nor expecting to receive funding from the CASC they were reviewing in the next funding cycle).

NE CASC ERT Members included:

- Nick Aumen, PhD., Regional Science Advisor, SE Region, USGS.
- Rezaul Mahmood, PhD., Professor, School of Natural Resources, and Director, High Plains Regional Climate Center, University of Nebraska-Lincoln
- Duncan McKinley, PhD., Acting National Program Lead for Bioclimatology and Climate Change Research, USFS and director, USDA Forest Service Climate Hubs.
- Tom O'Connell, B.S., Director, Eastern Ecological Science Center, USGS
- Erin Williams, PhD., Co-Director, Great Lakes Coordinator, National Park Service.

All ERT members signed Conflict of Interest and Non-Disclosure forms prior to participating in the review.

Findings of the ERT – Administrative Management

	Institutional Development <i>Staffing, Leadership Team, and Consortium Members</i>		Fiscal Management <i>Budget, awards, and grant management</i>
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The ERT finds that the Host and Consortium have created a solid base from which to develop, support, and amplify excellent, co-produced climate adaptation science, impressive capacity building, and inspiring communications and outreach. The Host has a strong and committed team who leads by example and look for ways to improve their processes and products so that all partners (consortium, Tribal, scientists, students, and land/water managers) are included and buoyed by the work they are doing together.

The NE CASC Host and Consortium include the following institutions:

- **University of Massachusetts Amherst (UMass)**: Principal Investigators (PIs) and Co-PIs bring expertise in climate change impacts on surface water hydrology; stream flow temperature and health; water supply systems; decision analysis; invasion ecology; interactions between climate change, land use and invasive species; fire ecology; geomorphology and sedimentology of coastal and fluvial systems; estuarine/tidal river dynamics; wetland dynamics; flood risks; and drought monitoring and forecasting. Additionally, a visiting PI from UMaine brings expertise in indigenous intellectual property rights; research ethics; environmental justice; and Tribal governance.
- **Columbia University (COL)**: Co-PI brings expertise in climate extremes; risk assessment; combined impacts of multiple extremes; natural and built systems; and science of adaptation.
- **Cornell University (COR)**: Co-PI brings expertise in Great Lakes and inland lakes; aquatic connectivity; temperature and flow regimes; fish migrations; coastal fisheries; and nutrient loading.
- **University of Vermont (UVM)**: Co-PI brings expertise in impacts of climate change and invasive species on forest ecosystems; temperate and boreal forests; adaptive management; silviculture; and forest disturbance.
- **Woodwell Climate Research Center (WCRC, formerly Woods Hole Research Center)**: Co-PI brings expertise in coastal processes; estuaries; eutrophication; freshwater processes; and food web interactions.
- **United States Forest Service Northern Research Station (USFS NRS)**: Co-PI brings expertise in landscape conservation design; forest management; species dynamic response to extreme flows; and ecodrought.

Mission: “The Northeast Climate Adaptation Science Center is part of a network of nine Climate Adaptation Science Centers managed by the U.S. Geological Survey National Climate Adaptation Science Center. We work with natural and cultural resource managers to gather the scientific information and build the tools needed to help fish, wildlife, water, land, and people adapt to the impacts of climate change” ([NE CASC website](#)).

Key Goals, Expectations, and Deliverables:

- Advance adaptation science to support local and economic uses and wildlife habitat;
- Engage with Tribes to co-produce science supporting resiliency and self-governance;
- Strengthen regional partnerships to share information and achieve common goals;
- Design adaptation approaches to align with current and proposed DOI infrastructure; and
- Leverage resources and partnerships within the consortium to support adaptation and conservation and therefore increasing efficient use of funding.

The ERT finds that the Host institution has both research strengths and a sound institutional structure in place to support the university-side of the NE CASC. The ERT learned that the University of Massachusetts-Amherst (UMass-Amherst) (hereafter Host) is an R1 research institute that has experience working with NOAA and NASA programs, and for more than 10 years the USGS CASC program. The NE CASC is one of three climate-focused centers at UMass: the School of Earth and Sustainability (SES), serves as a central hub for research, innovation and outreach; the Energy Transition Institute (ETI) is focused on creating ways to enable a fast and fair transition to green energy; and the NE CASC is focused on relationship-based actionable climate adaptation science that is co-produced with regional partners. SES and NE CASC are supporting emerging initiatives related to coastal resilience, graduate training, international climate and cryosphere research, atmospheric research and have strong ties to USDA Extension services, which offers resources and training regarding climate and renewable energy transition.

The three centers, additional research centers at UMass, and the Host's strong relationships with SES and affiliated researchers, provides the home for USGS integration at the Host institution. UMass has more than 440 faculty working or teaching on sustainability and climate-resilience, 32 undergraduate programs, 27 graduate programs that are framed around sustainability and climate resilience, and over \$100 Million in research funding. UMass is a top 10 large public research university for sustainability.

The Host explained the different forms of in-kind support provided by UMass for NE CASC which include: supporting USGS staff by providing reduced overhead; on-campus office and conference room space; adjunct faculty appointments to mentor graduate students; and opportunities for strong collaborations across campus. UMass also supports research reviews by the Animal Subjects review board (Institutional Animal Care and Use Committee (IACUC)) and the Human Subjects Review Board (Institutional Review Board (IRB)). In addition, Host leaders and PIs from UMass visit Capitol Hill annually, have provided information and reports about the national CASC system, and have "a great relationship" with the Massachusetts Congressional delegation who support NE CASC's work and the 'CASC Act' (proposed federal legislation to authorize the CASCs).

The Host also told the ERT that it provides direct in-kind support for four graduate students and has provided a 10% reduced overhead on the Host Agreement, freeing up funds to support

actionable climate science research. UMass' total in-kind support is approximately 40% of the total host budget.

The ERT finds that, based on the information presented, UMass appears to have highly competent personnel and effective and efficient administrative operations to manage the NE CASC Host Agreement. The administrative team understands where additional efficiencies can be gained (e.g. simplified budget forms used for grant proposals) and are empowered to put forth ideas and solutions for consideration. Discussions pointed towards continued improvements of administrative systems to achieve increased efficiencies.

Leadership & Management Approach and Challenges:

UMass has been a great supporter and champion for the NE CASC program. ***The ERT finds the overall focus and value of the university seem to align very well with NE CASC. This inherent alignment is beneficial for the long-term standing of the CASC, and also provides a lot of potential synergies for the students and faculty with other domains in the university. It is clear that UMass is an active champion of the National and NE CASC Program.*** The Host's leadership communicates with MA's delegation on a recurring basis to communicate the benefits derived from the NCASC/NE CASC Program, which is a benefit to all of USGS.

The Host leadership structure has evolved over the 5-year hosting agreement, with both leadership and staffing changes. The original PI retired, and a Co-PI structure was adopted by the Host with new co-directors, Bethany Bradley and Jon Woodruff, taking the leadership roles. NE CASC Regional Administrator, Carrie Brown-Lima (USGS), and NE CASC Acting Assistant Regional Administrator, Will Farmer (USGS), presented the ERT with challenges the Host experienced as a result of the federal/academic partnership, the geographical footprint change that occurred midway through the 5-year funding cycle, and leadership changes within the USGS side of NE CASC.

Importantly, they noted the operational impacts of the geographic footprint change that shifted a portion of the NE CASC, including some consortium members, to the MW CASC. A challenge was presented in that the USGS Host Agreement includes restrictions against adding new consortium members during the funding cycle. This led to a loss in expertise from moved consortium members, including important Tribal partnerships with the College of Menominee Nation.

In addition, multiple leadership changes occurred on the federal side during the 5-year cycle. These changes impacted the Host and USGS in terms of consistency and imposed a need for continual onboarding of new leadership. USGS hired a permanent Regional Administrator in September 2023 (Carrie) and is in the process of hiring a permanent Assistant Regional Administrator and Research Coordinator, as well as continuing to provide support staff through student contractors for partnership building and communications. The ERT heard from partners that the Host adapted and managed these changes remarkably well.

The challenges created by the change in footprint and leadership transitions, resulted in opportunities to increase outreach, design new events, and build new Tribal connections; the Host impressively made a conscious decision to focus on Community Building and did this through dialogue-oriented events to connect PIs across disciplines as a way to overcome challenges they faced. The Host flexed and worked internally at UMass to support the development of, and then partner with, the newly created Center for Braiding Indigenous Knowledges and Science (CBIKS), which received a \$30 Million National Science Foundation grant for 5 years, with the option of extending another 5 years. This administrative flexibility allowed the Host to work with CBIKS to find gaps they can fill now and in the future that otherwise would have been great in terms of the CASC's work with Tribal governments.

While USGS and the Host have different responsibilities and lead roles, the ERT heard from all that they have worked together to develop a culture dedicated to functioning as "ONE CASC".

The ERT finds that the Host, Host Consortium, and USGS have worked hard to overcome a variety of administrative challenges by developing and maintaining productive working relationships through multiple transitions. The ERT sees tremendous potential coming from these shifts, especially with the CBIKS award and partnership.

Administrative & Fiscal Management:

The ERT finds that the Host is fully grasping the administrative and fiscal requirements and is fully meeting the terms of their agreement with USGS. The ERT finds that the Host has a robust administrative infrastructure with an impressive human resource and financial management infrastructure centered on federal – university relationships. The pre- and post-award administrators are knowledgeable and the CASC has had access to added administrative leadership and support during transitions at USGS.

The requirements for USGS funding are complex and can be a barrier to under-resourced entities accessing federal funds. The Host is commended for working with their consortium partners that lack the administrative resources available to the Host to propose projects that meet the USGS requirements for federal funding recipients.

In addition, the Host has accomplished a large degree of leveraging to do actionable, co-produced climate science, almost 5 times more than the funding coming in through the USGS agreement. As such, the CASC is able to leverage from a university institution that provides capacity, resources, and expertise that are beneficial for the administrative functions related to budgets, grants, and human resource management. This has allowed much greater outcomes than would otherwise be possible. The ERT is hopeful that additional funds might be available to alleviate some of the areas that might be overleveraged in this cycle.

By all accounts, the administrative requirements appear to be in very good order. One ERT member noted, "The Host has an excellent system in place to manage the administrative requirements of the Host Agreement."

Administrative Competencies

The ERT finds that the Host has access to a substantial amount of expertise in pre- and post-award administration by virtue of being administratively housed in a successful R-1 university. The Host has a robust financial and administrative team with experience working on federal cooperative agreements, awards, and contracts.

Other competencies the ERT noted are:

- Partnership and commitment from UMass administrators and leadership.
 - Strong alignment with broader university priorities and synergies with other departments.
- Clear value, values, and voice leading to a shared vision and shared culture.
- Highly successful at leveraging funding.
- Adaptive leadership and approaches.
- Strong, effective, and mature Fellows program (see Capacity Building for more on this).
- Good progress on DEIJ understanding around retention and recruitment (see Capacity Building for more on this).
- Strong focus on relationships and partnerships across a variety of sectors is reaping many rewards.
 - Established culture focused on relationship building, along with training for capacity-building in this unique area.
- Adaptive approach to scientific inquiry leading to highly actionable science outcomes.
 - Long-term, relationship-driven projects leading to actionable outcomes.
 - Renewed and expanded Tribal engagement after the footprint change.
 - Tremendous potential with the CBIKS award and partnership.
- An established strategic communication plan is providing increased visibility to NE CASC.
- Self-evaluation and responsiveness to feedback (e.g., programmatic surveys, project surveys, reflective and effective) has led to continual improvements.
- MA and UMass are invested in being leaders in climate change adaptation and this supports both the NE CASC and the broader NCASC.

Administrative Efficiencies

The ERT finds the Host's fiscal management to be efficient and effective:

- Created a framework that enables, successful, actionable science through leveraged funds (40% contribution to total NE CASC funding).
- Effective handling of a complex administrative structure.
- Committed and productive PIs and science enablers (e.g. administrators).

- Developed and continuing to develop PI capacity for partnership building and effective grant proposals.
- Communications work creates natural efficiencies by helping to focus on key themes and connections.
- Administrative team members identified a need to improve upon the PI budget planning tool to increase efficiencies.

Administrative Challenges

ERT members are impressed by how effectively the Host and its federal counterpart at the CASC applied creative solutions to manage the many challenges they faced over the past five years, while accomplishing a great deal in the face of those challenges.

Challenges included:

- Leadership turnover on the USGS side of the CASC affected the Host and consortium's ability to hone regional science priorities.
- Continued uncertainty with USGS leadership, priorities, and funding challenged progress.
- USGS' proposal and budget requirements, which are different from NSF and other federal granting programs with which the university works.
- Difficulty building necessary redundancy into critical positions due to funding limitations. This is a risk if key personnel are temporarily lost, which can negatively impact system efficiencies, scientific productivity, and retaining institutional knowledge.
- Need to expand work into southern regions – might present both logistical and cultural challenges.
- Maintaining an ever-growing network of partners.
- 5-year term of Host Agreements presents a risk to Host University and the state in regards to the level of investment it will make, given that USGS could change the Host University. USGS should share an interest in longer-term, "permanent" agreement.
- General challenge for all CASCs: the timing of funding delivery from USGS (this is beyond the control of USGS staff, as well as Host University staff, but must be noted).
- Covid-19 restrictions on activities originally budgeted, such as travel.

Opportunities for Improvement

While challenges hampered continuous progress, the ERT finds that the Host reframed these as opportunities and was able to flex to make impressive progress on a variety of fronts.

The ERT suggests also considering the following administrative opportunities to strengthen the longevity of the NE CASC:

- Explore investment of increased time for strategic discussions with cross-disciplinary PIs to identify and foster collaborations.

- Consider making better use of tactical meetings with PIs in order to better engage all consortium members in strategic thinking.
- Consider deleveraging in some administrative areas to improve focus on key processes.
- Improve geographic coverage by adding new academic consortium members to NE CASC where gaps exist.
 - Expand the work into the southern regions of the network to be less UMass-centric.
- Better track Fellows after they leave the program.
- Expand elements of Fellows' training to faculty.
- As self-reported, the Host has room to grow in the substantive areas of social science and economics.
- Develop communication metrics to inform return-on-investment for various communication and outreach strategies. This will enable fine-tuning to make the most from available resources. (See Communications and Outreach for more on this).

RECOMMENDATIONS: Administrative Management

As noted above, the ERT finds that the Host institution has both research strengths and a solid institutional structure in place to support the NE CASC. The following recommendations are areas that could continue to strengthen the Host's capabilities:

- 1) **Continue campus-wide, UMass networking.** The work you have done is exemplary.
- 2) **Extend your networking efforts to enhance interactions between PIs.**
 - a. The relationships you have with them are good; now, intentionally help them connect with others in the consortium more meaningfully.
- 3) **Factor in funding and training to support redundancy/capacity of staff.**
 - a. Be strategic about which jobs need this type of investment and continuation, then support them.
- 4) **In concert with your consortium members, examine the effectiveness and efficiency of tactical science team meetings.** Look for opportunities to do strategic thinking and planning with your entire consortium team.
 - a. Consider the format described in "Death by Meetings" book by Patrick Lencioni.

Findings of the ERT – Scientific Achievements

	Scientific Achievements <i>Scientific Achievements on climate impacts, vulnerability, and adaptation science</i>
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The ERT finds that the Host has been successful in developing an actionable science culture among the consortium of involved Universities and scientists that recognizes the importance of investing time in building relationships, high participatory science planning with resource managers, and leveraging resources across federal, state, Tribal and NGOs.

The Host noted that its science focuses on closing the ‘knowing-doing gap’ by using science, engagement, and building capacity to enhance their actionable science (which they also call stakeholder-driven science, translational science, knowledge co-production, and engagement). At the heart of their work is a keen awareness that building and maintaining relationships is the glue that holds together all their work. As such, their scientific achievements spring from working collaboratively with others, communicating about their work and results, and building capacity to ensure that their efforts continue to grow and multiply.

The ERT noted the following instances of significant engagement with stakeholders and partners to co-produce excellent, actionable climate adaptation science:

- Network-building and scientific research to address urgent management questions, such as working with managers, students, and scientists to create products for assessing saltmarsh integrity and then implementing strategies to enhance restoration potential.
- Developing diverse partnerships for large-scale co-production, network-building, and outreach through their forest adaptation work related to the emerald ash borer (EAB) destruction. The issue was known in Tribal Nation communities who have a longstanding relationship with ash trees, which includes their use in basket weaving in the Northeast. The Host and Indigenous communities in the Northeast work in close partnership with a University of Maine lab group called the Ash Protection Collaboration across Wabanakik (APCAW) to study, develop, and implement restoration practices.
- Exemplary work to build a community for large-scale co-production and network-building, by creating the first Regional Invasive Species and Climate Change (RISCC) management network. The Host begins its science with a management question, then elicits information via workshops and surveys. From that information, research and synthesis is done and shared with managers, who in turn can ask even better questions.

The ERT noted that the Host presented excellent examples of Network-Building and Science Co-Production through several broad examples. They note the shift from the usual academic focus on publishing to actionable science via work the CASC and relationship-building is especially well represented by the NE CASC. ***The ERT finds the process of beginning with a management question, getting additional information via workshops and surveys, then doing research and***

synthesis with managers, is a great approach. As the Host noted, those discussions with managers can then inform and boost the next management question/s.

The ERT finds the Host has been very successful in producing actionable science by integrating various co-production models into their core work. The ERT noted that, in the provided case studies, the Host engaged with potential end-users early in the research question formulation process and continued engaging those end-users throughout the research cycle.

In the case of the RISCC example, the PIs needed to make adjustments to their research questions as they learned more about the community's needs. For example, their focus shifted from identifying invasive species, to prioritizing for prevention. At each stage of the engagement the PIs were able to remain productive on the research side of things while making key adjustments to become increasingly responsive to the needs of the community.

The ERT commends the Host's climate adaptation science contributions in the following areas:

- The saltmarsh restoration (and policy shifts to support restoration), the forestry adaptation/suitable-tree-species in future conditions studies, and developing the first (and successive) RISCC network.
- Providing leadership and support in developing and maintaining effective collaboration resulting in a wide range of quality actionable science: Examples provided clearly show how the Host has adapted their approaches to respond to the deepening relationships with end users. This has resulted in high adoption of the scientific findings, one example being the RISCC.
- Highlighting the importance of relationships: These sorts of relationships take years to build and often need to develop before the connection through science can be most effective. The Fellows training program and communications have an interesting synergy that both deepens the impact, but also amplifies the scope of the work beyond conventional boundaries. The new relationship with Tribes and work to braid science and traditional knowledge has tremendous potential.
- Providing leadership and support to establish effective networks and collaborations. This has fostered the level of dialogue and information-sharing critical to understanding regional natural resource management needs, leveraging resources to implement needed science, and translating science for direct application by resource managers.
- Finally, successfully engaging with indigenous communities to co-produce actionable, innovative climate adaptation science and on-the-ground restoration of climate affected species.

The ERT finds the history of having UMass serve as the NE CASC Host University is resulting in a high level of Center cohesion and cross-disciplinary collaboration that would likely take time to establish if a new Host University were selected. The ERT applauds the Host's work with Tribes and the CBIKS. The ERT saw notable patterns emerge in cycle 2, including a strong focus on building relationships, which have been quite successful overall, with more and better outcomes in producing actionable science.

What factors limited the Host's scientific achievement results?

- The major upheavals that occurred early in the cycle. These included a global pandemic, change in leadership on both the UMass and federal side, and changes in the footprint of the NE-CASC. Any one of these events could have had a large negative impact on science. However, thanks to NE-CASC's leadership and persistence, they seem to not only have minimized the impacts, but learned to become even more effective.
- While the information presented made it challenging to assess where there may have been limitations to the Host's scientific achievement of results, and driving factors, the successes of UMASS are significant given the challenges they faced.
- Losing consortium members as a result of splitting the CASC along with personnel changes at the Host and USGS were challenges.
- And all of the above during COVID-19, as well.

What factors mitigated these challenges? (E.g., what did they do instead?):

- The major ingredient that mitigated these challenges was a highly reflective leadership team that was able to reflect on their own strengths and weaknesses. They developed a shared vision about their collective value, values, and voice. This served as a guiding principle on which they built strategies to enhance their science, strengthen their capacity, and magnified their collaborative approaches. They did all this to great effect and in a very short period.
- The history and well-established relationships and cohesiveness of the USGS NE CASC and UMASS as the Host University, as well as with the consortium of other universities, are likely factors that enabled continued progress towards scientific achievements under this agreement, despite the challenges highlighted above.
- Specifically, the Host moved to two Co-Directors, instead of one; the Host University has contributed a lot of cost-share and support of fellows; they utilized online tools to operate across many states and institutions; and, during the challenging periods, they were able to rely on the long-time tenure of the Deputy Host Director and USGS research coordinator, which was critical during the other challenges of personnel changes.

The ERT finds that the Host was able to mitigate many challenges by staying focused on the importance of their internal and external relationships, and their collectively identified value, values, and voice. The ERT is confident that what the Host has learned during these difficult times and transitions will propel it to even greater success in the future. They have truly embodied adaptation in their organizational structure and posture.

RECOMMENDATIONS: Scientific Achievements

The ERT finds that the Host's climate adaptation science is high quality and is feeding into natural resource management, particularly with respect to planning for future climate impacts on managed species and habitats. The Host was able to adapt effectively to challenges stemming from USGS leadership changes, a geographical footprint (and consortium membership) change, Covid restrictions, and the impacts these had on relationships with key scientific partners.

To build on what the Host has begun, the ERT suggests the Host and its team consider the following:

- 1) **Build on your synthesis work** and expand involvement/application to protected land and water managers.
 - a. Track how the information gets used by land and water managers.
 - b. Help land and water managers learn to make use of the information in the context of their respective missions and policies.
- 2) **Continue your emphasis on actionable science.**
 - a. Your process of working with managers/end-users at the start and throughout the work is excellent and should be continued.
- 3) **Work with USGS to assure that a Science Advisory Committee gets stood up** and can provide the 5-year science priorities needed to do your work in the future.
- 4) **Continue to place the strong and sustained focus on relationship-building practices** as a core of the actionable science you are doing/supporting; it clearly is paying dividends.
- 5) **Continue adding more social scientists to the consortium.** ERT members have found that including sociologists, anthropologists, and psychologists on their climate adaptation teams has enabled them to make their information more accessible to broader audiences.

Findings of the ERT – Collaborative Efforts

	Collaborative Efforts <i>Collaborate with stakeholders to develop and deliver adaptation products applicable to priority decision-making</i>
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The ERT finds that the Host and consortium’s collaborative efforts have led to developing and delivering climate adaptation science products that can assist federal, Tribal, state, local and other organizations make decisions and implement on the ground changes to adapt to climate changes moving forward. They have and are continuing to build tremendous internal capacity and know-how that will continue to emerge and benefit these organizations, either as new staff or collaborators.

The ERT notes that the NE CASC’s partnerships with regional managers, Tribal Nations, students, and other organizations enable them to be effective at engaging others in the northern half of the consortium area, and at multiple levels. The ERT heard that the Host has been very effective, particularly since 2020, in collaborating with different organizations, Tribes, and various communities. This is particularly noteworthy given the turmoil created by the Covid pandemic, the change in the geographic footprint, and rotating leadership in the Host organization and USGS.

The ERT finds that the projects described during the review and in the Host’s materials were illustrative of the breadth and depth of the team’s ability to design, lead, and modify successful collaborative, climate adaptation science projects. Most noted were:

- Work with regional partners to create the first large-scale co-production and network building framework for the Regional Invasive Species and Climate Change (RISCC) Network, and then helping other regional CASCs to do the same.
- Work with Tribal Nations and other partners to identify and find solutions to help restore forests being impacted by the emerald ash borer.
- Work with land, water, and wildlife managers to address urgent management questions related to saltmarshes and their restoration.

The ERT finds the Host’s contributions in the area of Collaborative Efforts take the following forms:

- The Host has established programs, operations, and a culture to foster effective and valued collaborations across UMass and consortium of universities, federal, state, and local natural resource science and management agencies, Tribal partners, the next generation of scientists, including a focus on diversity, as well as NGOs, private sector and general public.

- The Fellows and DEIJ programs are well established programs that focus on collaborative development of co-produced science and making a significant impact on attracting and recruiting the next generation of diverse scientists.
 - Importantly, those participating in these programs are entering the scientist workforce across multiple organizations with a strong foundation in how to do co-produced climate science.
- Furthermore, science program activities are attracting the interest of federal, state, local, and others to collaborate with NE CASC. This is leading to a leveraging of resources and development of co-produced, actionable science.
- The Host has been able to build additional capacity to provide redundancy in an effort to decrease risks and maintain momentum when an individual leading or involved in these programs vacates their position.
- In addition, the Host is implementing effective evaluation tools to achieve high levels of effectiveness and desired outcomes.

The ERT finds the Host's investment in the Fellows and DEIJ programs to be most noteworthy. Understanding limitations on the Host's own capacity and implementing what they are learning has immeasurable value, improving all aspects of their core mission. More importantly, giving the next generation of scientists the needed tools to succeed in co-production at the start of their careers will certainly have great impact over the long run. The Host's success has clearly attracted a growing network of partners and collaborators, in addition to new opportunities such as CBIKS. The NE CASC is growing a lot of momentum that will surely open even more opportunities.

The ERT noted a few factors which limited the Host's collaborative efforts process and results:

- Initial factors limiting the Host's ability to collaborate were Covid, rotating leadership in the Host organization and USGS, and change in the CASC's footprint which led to the loss of consortium members. These required, in some cases, finding new partners and new leaders/staff who had to learn the community and increase their situational awareness and operational effectiveness.
- The inability to change the NE CASC Host agreement after the Midwest CASC was created limited consortium members and their work.
- Capacity limits any organization and the NE CASC had limited capacity to expand into the southern part of the NE CASC, especially once three consortium members were lost, along with reduced federal funding during this Host Agreement cycle.

The ERT finds that the Host overcame these challenges by thoughtfully and skillfully shifting to turn challenges into opportunities. They focused on what they could build and moved forward. Having Co-Directors has helped mitigate collaborative challenges, as has leaning on others to expand on efforts. Their core mantra has been focusing on building relationships both externally and internally, and this clearly helped them to mitigate the challenges they faced. The focus on relationships and doing good work with others has stabilized the NE CASC system and greatly enhanced the Host and consortium's productivity and reach. Their focus on people

has been very effective, even with navigating the Grants and Awards complexities within the USGS.

The ERT finds that the Host has put concerted and weighted emphasis on the importance of building and maintaining relationships as a foundation of actionable, co-produced climate science. The ERT encourages the Host to keep this commitment tied to future actions and decisions. The ERT also finds that NE CASC's new leadership cadre is highly motivated and that clearly shows with their accomplishments and re-imagining how they operate as a group and with partners.

RECOMMENDATIONS: Collaborative Efforts

- 1) **Continue to build the collaborative, relationship-based culture you have developed** in the NE and expand it as a core of the actionable science you are doing/supporting.
 - a. Do this with the same reflective practice you have been, and share your practices with other CASCs if you haven't already.
- 2) **Grow Collaborative Efforts with Care:** The CASC will need to balance the regional needs they identify with the resources they have on hand to address them. This includes building your efforts in the southern portion of your geographic footprint (Kentucky, Virginia, and West Virginia). The CASC likely will be better served to develop a few strong partnerships than many partnerships that are weak.
- 3) **Identify and Learn from Mistakes.** Spend time with your consortium and partners looking at the lessons you have learned from things that didn't go so well. How did you adapt? What can you do differently in the future?

Findings of the ERT – Capacity Building

	Capacity Building <i>Educate and train to build capacity of early career professionals and others</i>
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The ERT finds that the Host’s Capacity Building activities are most noteworthy.

The Host has three inter-related and effective approaches/processes for Capacity Building:

1. Supporting actionable science through consortium PI’s work;
2. Supporting the internal NE CASC community (the Fellows and diversity, equity, inclusion, and justice (DEIJ) programs); and,
3. Building capacity among scientists and managers (science planning workshops, Tribal engagement, and direct outreach).

- 1) Supporting actionable science through consortium PI’s work: Through the programs described in the Collaborative Efforts section, above, the Host has been able to build capacity related to climate adaption at multiple levels. These include but are not limited to, the consortium of NE CASC universities, the next generation of diverse scientists, federal, state, Tribal, and local governance bodies, NGOs, the private sector, local communities, and general public. ***The ERT finds, through active engagement and routine evaluations of their work through surveys and assessments, the Host is able to adapt their programs and activities to achieve goals in building capacity to address the region’s climate adaptation science needs.***
- 2) Supporting the internal NE CASC community: The Host has developed what one ERT member called “an amazing Fellows’ program”, with over 90 Fellows and 150 projects since 2019. The Fellows program includes undergraduate to postgraduate students from all of the consortium universities and is unique amongst the CASCs in this regard. The program runs for two years and offers a diverse set of essential trainings aimed at increasing the capacity of Fellows to collaborate and work across disciplines, including skills and techniques aimed at increasing the capacity to build relationships that support actionable science through active engagement. The program goal is to give Fellows opportunities to learn skills for collaborative science and practice in a controlled, safe setting before they launch their careers. The program includes bi-weekly seminars, small group, and Fellows Intensives and is responsive to participant needs. Skills regarding stakeholder engagement are taught via partner panels that focus on how collaboration happens and how science is done. In addition, Fellows learn about ethical collaboration and community building. Small groups have focused on developing an inclusive fieldwork guide, engaging with Tribes, a flood vulnerability manuscript, translational ecology, and coping with climate dread. ***ERT members were impressed by the thoroughness of the program, the amount of work being accomplished, and applauded having a dedicated individual running it.***

The Host also has conducted internal survey work aimed at better understanding and improving DEIJ with the UMass/CASC network, and have dedicated DEIJ fellows to help serve as ambassadors. In 2021, they created a DEIJ statement and have focused on recruiting and retaining scholars from historically marginalized communities. 7 Fellows have participated in the program. The Host has participated in CAST (Climate Adaptation Science of Tomorrow) which has brought historically marginalized undergraduate students to UMass for 2 summers. ***With National CASC interest and additional funding to help support a dedicated coordinator of these programs, the ERT believes the Host's results may lead to transferability across all CASCs.***

- 3) Building Capacity among scientists and managers: the Host conducts science planning workshops, Tribal engagement and trainings in coordination with the United South and Eastern Tribes (USET), and hosted seminar courses to support learning from Tribal elders and scholars in collaboration with the new CBIKS. The Host provides direct outreach to partners to help them build their own capacity, has hosted open houses for dialogues between scientists and managers, and led Tool Talks focused on particular topics. (See the Outreach and Communications section below for more on this third type of capacity building).

The ERT finds that the Host University has been highly effective building regional capacity, especially given the amount of funding devoted to capacity building. In particular, the ERT finds the Host's Fellows and DEIJ Programs to be exemplary.

As one ERT member noted:

"I was impressed both by the quality of the [capacity building] work being done and the thoroughness and professionalism shown in the way the presentations and reports were generated and presented. I am particularly impressed by the Fellows program and believe this should be a model to be considered across all the CASCs. The host institutions should make sure they are requesting sufficient funds in their proposals to make this program a major part of their work.

Even though most of my job now involves trying to be an effective communicator of science to both scientists and lay persons, working closely with stakeholders, and working in collaborative team environments, none of that was taught to me in undergraduate or graduate school. That is changing these days with better curricula, but the type of structured program [developed by the Host] with engaged and energetic mentors will go much further."

In addition, the ERT finds the Host has been successful in building education, training and capacity building to help meet the expertise needed to address the region's natural resource

challenges of today and tomorrow. The Host is highly effective especially through their exceptional Fellows and DEI programs.

- The Host has developed a highly-relevant and interesting Fellows training program. Some of the Fellows joined the review team and described their experiences and told the ERT how the program has given them the tools they need for the next stage in their careers. The Host tracks where these Fellows go, in terms of types of institutions, but have not specifically connected the relevance of the training they received with the type of work the fellows are pursuing at this point in their career.
- Based on what was presented, the Host appears to be mindful of the importance of continued evaluation and learning, and has systems (e.g. surveys, feedback loops) in place to assist with developing and adapting, when needed.
- Growing the next generation of young professionals has led to a relationship with the City of Boston, who relies on the CASC for synthesis information for City planning.

The ERT finds that, while the Host faced a number of challenges, such as transitional leadership on the USGS side, Covid, geographic footprint changes, and staffing challenges noted above, the team overcame them with highly creative and cooperative solutions to their effective Capacity Building efforts. The ERT notes:

“The Host has been very effective in their reflections of issues that might hinder their mission. They were able to quickly adapt new ways to operate and connect with people. They even found that moving to a virtual environment allowed better representation from their partners and collaborators as the geography barrier was lessened. This ability to adapt stems from their leadership clearly understanding who they are and what they want to achieve, thus little time is wasted on ineffective processes, approaches, and tactics.”

RECOMMENDATIONS: Capacity Building

1. **Continue to build on your strong Fellows Program:** The program is fantastic! It is a great way to build a strong foundation of young climate scientists:
 - a. Expand and create a more formal structure for the program.
 - b. Advertise it and seek more applicants.
 - c. Expand the program to staff and faculty at UMass and your consortium universities.
 - d. Track and link where Fellows go and how they use the information they learned in your program in their career, then amplify that.
 - i. It’s still very early and the ERT expects to see more information and positive outcomes as the cohorts of Fellows mature and advance throughout their careers.

2. **Use the Fellows program to strengthen DEIJ efforts and vice versa.**
 - a. Create Fellows opportunities to target underrepresented groups as much as possible and provide additional funding to support staff coordination and maintenance of this effort.
3. **Add an evaluation or reflection on what did NOT go well.** Such an assessment would help future ERTs and consortium leaders to be nimble and show/see how effectively the team responds to those instances.

Findings of the ERT – Outreach and Communications

	Outreach & Communications <i>Manage and transfer information and data related to research activities</i>
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The ERT finds that the presentations, development of communications infrastructure, and the Host’s communication products are impressive. The ERT learned that the Host has a dedicated, professionally trained communication’s person who developed and is implementing a comprehensive strategic communication and outreach plan based on a critical review and evaluation of the Host’s external communication activities and products – and it shows. The strategic plan, which focused on increasing audience size to engage more managers and researchers in the Center’s work and better defined the NE CASC identity, has enabled improved branding, messaging, visibility, and enabling others to follow and engage with the NE CASC. As noted throughout this report, the ‘better defined identity’ focused on the Host as a “relationship-driven science organization and regional hub for climate adaptation”. The plan included a goal of telling the organizational identity story in multiple terms and formats, with an “and/ but/ therefore” story telling methodology infused with partners’ voices to support the goal of ‘many voices, one story.’

While the information presented did not allow for an evaluation compared to other CASC communication and outreach plans, the information presented does suggest that the strategy is working given the positive change in trends since being implemented (e.g., 90,000 visits since the website has been redone). The Host has an admirable array of outreach and communications tools, websites, and approaches. ***The ERT finds the webinars, fact sheets, and website to be excellent, as are the regular presentations with the public. The ERT also finds the StoryMaps to be incredible – visually communicative and appropriately sized information for the public and others not immersed in climate speak. The website and other use metrics seem to indicate constant progress in increasing and improving effectiveness.***

Overall, the communication and outreach efforts appear to be highly effective at bringing attention to the work of the Host and CASC, presenting an organization with whom others would want to engage and work with as they seek to answer climate-related questions. Having heard from a number of partners (e.g., the City of Boston, the USFWS, the Trustees of Reservations, USDA, and USET, to name a few), the Host’s outreach and communications appear to be working very well at attracting new partners with which the Host can do more good co-produced climate science. The ERT suggests there probably are many things the other CASCs could learn from the communication and outreach work of the NE CASC Host.

The ERT also suggests evaluating the Return on Investment (ROI) for various communication strategies and targeted audiences as a potential value for the Host and team. Such an assessment could be helpful in obtaining the support from those (e.g. scientists and managers) who invest their time in providing information to support the communication and outreach

team's interests and efforts. It would also enable on-going 'fine-tuning' to maximize strategies based on limited time and resources. The ERT recognizes ROI is hard to evaluate with communications, but suggest the value of the work extends beyond the number of hits or good analytics, and also helps to frame and organize the center's work.

The ERT finds that the impressive scope of the Host and CASC's efforts are best seen through the storytelling and StoryMaps that the communication team has helped to develop.

Having a dedicated and highly competent communications specialist whose influence spans boundaries of job titles appears to have been vital to this success. It's clear to the ERT that the communication lead, Will Kazmier, is a valued and respected part of the team. Redundancy in staff to support multiple avenues of communication, consistency in their Outreach/Comms lead, and conducting the external assessment to gain feedback have all contributed to the success of the Host's communication efforts.

The ERT finds that the Host showed intentionality, flexibility, and focused creativity in responding to a variety of challenges in the area of outreach and communications. The ERT commends the Host and team for intentionally developing, maintaining, and highlighting the importance of trusting relationships that were necessary to allow people to do good work together during Covid-19's restricted period.

RECOMMENDATIONS: Outreach and Communications

- 1) **Continue the excellent work of (and investment in) the communications team.**
 - a. Support continued development of your digestible stories and information.
 - b. Look for ways to include the partners with whom you collaborate in all of the stories and papers you communicate to support those relationships in every possible way.
- 2) **Evaluate the use of metrics to assess Return on Investment of communication strategies** so you can continue to be as strategic as possible in getting your information shared to the broadest groups possible.
 - a. Consider looking closer at the number of hits on the website, time spent there, and where the time is spent. Better understanding where the interest is and what the potential interest might be, could be helpful in focusing the content on the site, and perhaps even feeding back to PIs for follow up.
- 3) **Focus a communication and outreach strategy in geographic areas of the Northeast region where there is an opportunity to increase awareness and engagement with the NE CASC** (e.g. southern portion of NE Region).
- 4) **Communicate how the other academic consortium members of NE CASC contribute to the overall NE CASC communication and outreach strategy led by the Host.**

- a. For future reviews, discuss how/whether the academic consortium members do their own communications and outreach, and/or whether there is a team of communication specialists to implement strategic activities.

Findings of the ERT – Overall Effectiveness Towards Host Agreement

The ERT agrees that the Host and consortium effectively met the goals set out in their Proposal to USGS. The NE CASC has been highly effective over the last five years in conducting meaningful climate science, working to build relationships with partners and then co-producing needed science, building capacity of the current and next generation of climate scientists, and effectively communicating their work to a variety of audiences. They achieved all of this under challenging local and national circumstances, including a global pandemic. Their commitment to the time and effort needed to support co-production and climate science capacity building is impressive.

The ERT finds that the Host has been particularly effective in the following areas and encourages sharing its experience with the CASC Network, if it has not done so already:

- a. Continue UMass networking. It is exemplary and should be shared with others in order to replicate the successes.
- b. Continue the emphasis on relationship-based, actionable science and share the novel curriculum you have developed with other CASCs (and broader still, when ready).
- c. The Host and consortium's Fellows and DEIJ programs are fantastic – they are a great way to build a strong foundation of young climate scientists:
 - Expand and create more formal structure for the program. Advertise it; seek more applicants.
 - Expand to the program to staff and faculty at UMass and other consortium universities.
- d. Build on the Host (and CASC)'s synthesis work and expand involvement and application to protected land and water managers.
 - As a Network, track how the information gets used by land and water managers.
 - Help land and water managers learn to make use of the information in the context of their respective missions and policies.

The ERT finds that the Host has applied creative solutions for the challenging problems it faced during the award period. The Host's central focus on building strong and lasting relationships to support organizational resilience, external and internal capacity building, and regionally meaningful co-production of climate adaptation science and practices is laudable and important. The ERT sees the effort, the strength of relationship-based leadership, and the overall commitment that all who were involved put forward. Well done!

OVERALL ERT RECOMMENDATIONS

In addition to the recommendations noted above, the ERT makes the following recommendations about the review process and suggested approach for the Host, NE CASC, and consideration by NCASC with the entire CASC Network:

For this Host:

- Continue the excellent work of (and investment in) the communications team.
 - Support continued development of your digestible stories and information.
 - Evaluate use of metrics to assess ROI of communication strategies.
- Factor in funding and training to support redundancy/capacity of staff.
 - Be strategic about which jobs need this type of investment and continuation, and then support it.

For the NE CASC

- Continue to build the culture you have developed in the NE and expand it.
- Get funding to support a staff person to look for and build CASC opportunities, including relationships and project work.
- Look for opportunities to continue relationships/cross-CASC conversations with the MW CASC.
- Work with NCASC to develop a performance recognition/award system that can cross the agency/academic divide to honor those who do a lot of good hard work for not a lot of money.
- Incorporate capabilities/benefits of climate adaptation science from others in USGS (outside of CASC) that contribute to the shared interests of NE CASC (e.g., state climate offices, Climate Hubs, and RCCs).

For Future Hosts:

- Increase focus on attracting consortium members to address geographic and substantive gaps that exist.
- Fellows program is fantastic: create more formal structure and expand the program.
- Continue the emphasis on actionable science.
 - Continue to place focus on relationship-building practices as a core of the actionable science you are doing/supporting.
- Work with USGS to assure that a Science Advisory Committee gets stood up and can provide the 5-year science priorities needed to do your work.
- Establish and implement a strategic communication plan that builds on the plan UMass has begun and, similarly, fully invest in the communications position as that investment was powerful for UMass.
- Continue the fellows, DEI, and Tribal engagement work that UMass has been doing.

- Continue and build on the strong administrative framework and process development that UMass has created for the grants program.

For USGS:

- Provide additional funding to assist Host Universities attending to the networking and relational components of their work. Funds are needed to support the management and growth of program networks (including DEIJ and alumni networks).
- Support CASCs with funds to integrate work with RCCs, CAPs, and Climate Hubs to expand scientific collaboration.
 - NCASC should convene a (week-long?) conference of these four groups to share information and build a broader community.
 - Incorporate capabilities and benefits of climate adaptation science from others in USGS outside of CASC that contribute to the shared interests of CASC.
- Build on the NCASC network's synthesis work and expand involvement/application to protected land and water managers.
 - Track how the information gets used by land and water managers.
 - Help managers learn to make use of the information in the context of their respective missions and policies.
- Continue to develop longer-term relationships with Hosts that look more like partnerships and less like 'grantor/grantee' relationships.
 - Support the entire network by hosting regular (monthly or more frequently) meetings with both sides of the Center directors.
 - Develop a workable performance recognition award system that can cross the agency/academic divide to honor those who do a lot of good hard work for not a lot of money.
 - Streamline the budget proposal documentation needed for grants so they better align with other grant organizations with which the universities work (see NSF).
- The National CASC may want to consider some form of standard communication metrics, or obtain and provide comparison data across the CASCs to facilitate external review in the future.
- Do one of two things: include a performance metric/requirement for each Host to be able to 'pass the program' to another Host, OR (preferably) set Hosts up with longer term funding that they can receive UNLESS there are real problems (and describe what those might be).

REGARDING THE EXTERNAL REVIEW PROCESS
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- **The ERT finds that the review process was....**
 - Well organized and presented by the Host and DSC, conducive to open dialog that was reflective of successes and challenges.

- The planning and facilitation of the review was of high quality and enabled effective and efficient use of ERT time.
- Organized and effective, allowing quick and easy assimilation of relevant information needed for the assessment.
- The disarming approach allowed for candid discussion.

➤ **For future ERT reviews, the ERT recommends:**

- Utilizing a similar approach though one that is less time intensive for the Host and review panel. One alternative could be that the Host completes a self-assessment similar to this report (or see the CESU for example).
- [CESU Renewal Guidance 2024 memo](#) or general link of [CESU National Network - Resources](#)
- It is valuable to have input from non-Host CASC participants to ensure that multiple reflective perspectives are included.
- Recommend utilizing the same approach as it was highly effective and efficient. Consider shortening the time (although two days might be too intense).

END OF REPORT CONTENT

Scrivener's Note: This report was compiled by Donna Silverberg Consulting in active coordination with the ERT members listed on page 2. The ERT members reviewed and refined the document until all members could support having their names acknowledged on this Final ERT Review Report.

APPENDIX & ATTACHMENTS

Appendix 1 – Attendees

Attendees for all or part of the sessions, alphabetical by last name (affiliations included).

ERT Members: Nick Aumen (USGS), Rezaul Mahmood (UNL), Duncan McKinley (USFS), Tom O’Connell (USGS), Erin Williams (NPS);

Consortium and CASC Presenters: Jenica Allen (NECASC-UMass), Kostas Andreadis (UMass), Sonya Atalay (UMass), Hannah Baranes (GMRI), Eve Beaurty (PU), Bethany Bradley (NECASC-UMass), Carrie Brown-Lima (NECASC-USGS), Peter Clark (UVM), Tony D’Amato (UVM), Rob DeConto (UMass), Linda Deegan (WCRC), Juliette Dixon (NECASC-UMass), Tyler Everett (UMaine, Mi’kmaq Nation), William Farmer (NECASC-USGS), Emily Fusco (NECASC-UMass), Caroline Gleason (NECASC-USGS), Mitch Hartley (USFWS), Addie Rose Holland (NECASC-UMass), Radley Horton (COL), Will Kazmier, (NECASC-UMass), Pete McIntyre (COR), Toni Lyn Morelli (NECASC-USGS), Keith Nislow (USFS NRS), Darren Ranco (UMaine), Kristy Reese (UMass), Julie Richburg (The Trustees of Reservations), Becky Shafer (UMass), Cielo Sharkus (UMass), Amy Teffer (UMass), Casey Thornbrugh (USET), Laura Vandenberg (UMass), Loren Walker (UMass), Jon Woodruff (NECASC-UMass), Brian Yellen (UMass);

NCASC and Session Observers: Gustavo Bisbal (USGS), Kristen Donahue (USGS-NCASC), Emily Fort (USGS), Catherine McCandless (City of Boston);

DSC Facilitation Team: Colby Mills, Tina Patterson, Nancy Pionk, Donna Silverberg, and Emily Stranz.

Appendix 2 – Daily Review Session Agendas and Session Summaries

Day 1 – Scientific Achievements and Collaborative Efforts

DAY 1	Monday, February 5, 2024: Scientific Achievements and Collaborative Efforts Purpose: Reflect on the Host University and associated academic consortium's contributions with respect to Scientific Achievement and Collaborative Efforts.	
Time EST	Activity	Presenters and Affiliation
12:45 – 1:00p	<i>External Review Team - Closed Door</i> Get settled and focused on task for the week and the day	Facilitation Team ERT Members
1:00 – 1:15p	<i>Welcome, Introductions, & Role Clarification</i> Brief welcome, round of introductions of ERT members, NE CASC team, and USGS team, and clarify roles	Donna Silverberg, ERT Manager/facilitator, DS Consulting
1:15 – 1:55p	<i>The Northeast CASC: Building Partnerships to Advance Climate Adaptation</i> - Overview of NE CASC - Overview and introduction to presentations <i>Facilitated dialogue and discussion with ERT, and Q & A regarding Network-Building and Science Co-Production</i>	Bethany Bradley, University of Massachusetts (UMass) NE CASC University Co-Director Facilitation Team NE CASC Coordination Team NE CASC USGS Leadership ERT members
1:55 – 2:35p	<i>Science Achievement and Collaborations: Part 1, Saltmarsh Restoration</i> Network-building and research to address urgent management questions	Jon Woodruff (UMass) NE CASC University Co-Director [Mitch Hartley (USFWS), Linda Deegan (Woodwell Climate Research Center) for Q&A]
2:35 – 2:50p	Break To avoid zoom fatigue: Please turn off and step away from your computer screen if AT ALL possible!	
2:50 – 3:30p	<i>Science Achievement and Collaborations: Part 2, Invasive Species Adaptation</i> Growing a community for large-scale co-production and network-building	Bethany Bradley (UMass) NE CASC University Co-Director + Julie Richburg (The Trustees of Reservations)
3:30 – 4:30p	Break To avoid zoom fatigue: Please turn off and step away from your computer screen if AT ALL possible!	
4:30 – 5:10p	<i>Science Achievement and Collaborations: Part 3, Forest Adaptation</i> Diverse partnerships for large-scale co-production, network-building, and outreach	Tony D'Amato (UVM) + Tyler Everett (U Maine, Mi'kmaq Nation)
5:10 – 5:15p	Break To avoid zoom fatigue: Please turn off and step away from your computer screen if AT ALL possible!	

External Review Team Final Report
Northeast Climate Adaptation Science Center

5:15 – 6:00p	<i>Facilitated dialogue and discussion with ERT, and Q & A regarding Scientific Achievements and Collaborative Efforts:</i> • How is the Host University managing their program and doing Actionable Science; what is the process? What patterns have emerged? What is/is not working well? • What are the Host University and its academic consortium contributions to climate adaptation science? • How effective is the Host at engaging others in these activities? How do the Host’s collaborative efforts enhance the Host’s overall effectiveness?	Facilitation Team NE CASC Coordination Team NE CASC Principal Investigators NE CASC USGS Leadership NE CASC USGS Research Staff ERT members
6:00 – 6:15p	<i>External Review Team - Closed Door</i> Initial reflections on the day. Questions, concerns, and insights	Facilitation Team ERT Members

DAY 1: Facilitator’s Summary

February 5, 2024, 1:00pm – 6:00pm ET

Topic: Scientific Achievements and Collaborative Efforts

Prepared by DS Consulting Facilitation Team

The following summary is intended to capture basic discussion, reflections, concerns, and insights from the session. It is not a verbatim transcript, but has links to the presentation.

Attendees present for all or part of the meeting (in alphabetical order):

ERT Members: Nick Aumen (USGS), Rezaul Mahmood (UNL), Duncan McKinley (USFS), Tom O’Connell (USGS), and Erin Williams (NPS);

Host, CASC and Consortium Presenters: Jenica Allen (NECASC-UMass), Kostas Andreadis (UMass), Bethany Bradley (NECASC-UMass), Carrie Brown-Lima (NECASC-USGS), Tony D’Amato (UVM), Linda Deegan (WCRC), Tyler Everett (UMaine, Mi’kmaq Nation), William Farmer (NECASC-USGS), Emily Fusco (NECASC-UMass), Caroline Gleason (NECASC-USGS), Mitch Hartley (USFWS), Addie Rose Holland (NECASC-UMass), Radley Horton (COL), Pete McIntyre (COR), Toni Lyn Morelli (NECASC-USGS), Keith Nislow (USFS NRS), Darren Ranco (UMaine), Julie Richburg (The Trustees of Reservations), Jon Woodruff (NECASC-UMass), and Brian Yellen (NECASC-UMass)

DS Consulting Team: Facilitator: Donna Silverberg, Reporting and Support: Tina Patterson, Colby Mills, Emily Stranz.

Purpose for the day: Reflect on the Host University and associated academic consortium’s contributions with respect to Scientific Achievement and Collaborative Efforts.

Welcome, Introductions & Role Clarification

Facilitator and External Review Process Manager, Donna Silverberg, welcomed the group and conducted a round of introductions that included: NE CASC ERT Members; NE CASC Host, University of

Massachusetts-Amherst (UMass), leadership and team; NE CASC USGS leadership, and NE CASC Consortium Members.

The Northeast CASC: Building Partnerships to Advance Climate Adaptation

NE CASC Host University Co-Director, Bethany Bradley (UMass), provided an overview of NE CASC and the presentations for Day 1, noting that the NE CASC focuses on closing the knowing-doing gap by using science, engagement and building capacity to enhance their actionable science (also called stakeholder-driven science, translational science, knowledge co-production, and engagement). The slides are available [here](#).

Science Achievement and Collaborations: Part 1, Saltmarsh Restoration

NE CASC Host University Co-Director, Jon Woodruff (UMass), presented on NE CASC's network-building and scientific research to address urgent management questions, such as the work students, scientists, and managers joined together to create regarding saltmarsh products for assessing saltmarsh integrity and restoration potential. The slides are available [here](#). Mitch Hartley (USFWS, Atlantic Coast Joint Venture), and NE CASC PI, Linda Deegan (Woodwell Climate Research Center), participated in the Q & A session with ERT Members.

Questions and Comments from the ERT

- *For the salt marsh research focus, has a connection already been made or is there potential to also highlight the dependencies/benefits of salt marsh restoration to coastal/estuarine fish and other aquatic organisms?*
 - Looking at the bird ecosystems and other ecosystems was the first interest for managers in the region. However, coastal resiliency and protection of humans through a 'whole ecosystem' approach is underway with National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS). There is white paper under review with proposed best management practices (BMPs).
 - In this presentation we provided NE CASC highlights for salt marshes as a landform/ecotone but also have many additional and complimentary projects looking at coastal/estuarine fish and other aquatic organisms including river herring, striped bass, nematodes, etc.
- *Have you thought about where your work has shaped or changed policy?*
 - When called to be on a task force, we're able to talk about bottlenecks to do the mitigation work.
 - One policy example: in the state of Massachusetts the state has instituted a new restoration permit pipeline that didn't exist for wetlands, which are a highly regulated area. This permit allows application of different criteria to be used to apply for and grant restoration permits more quickly. It took five years of discussion by NECASC PIs and partners for this new permit category to happen.
 - Also, the use of runneling has been helping to change the hydrology in the marsh in order to break through historical human-created levees. They started the project with a 3-day workshop attended by more than 100 people. Attendees, made up of

practitioners, helped with identifying and selecting locations, and other aspects of the effort. As a result, two different sites were implemented. The information has fed into other projects, and confirmed the value of developing a concept, working with practitioners, and then creating the scientific design to help bridge the knowing-doing gap. Alice Besterman wrote about results of the work in *Estuaries and Coasts* (2022).

- *How are communities responding to runneling?*
 - The usual response is “what are you doing?” After explaining, they have had good reactions from the public, management, and policymakers.

Science Achievement and Collaborations: Part 2, Invasive Species Adaptation

Bethany and Julie Richburg (The Trustees of Reservations) presented on how the Host has worked to build a community for large-scale co-production and network-building, with a focus on the first Regional Invasive Species and Climate Change (RISCC) management network. Bethany explained that NE CASC begins with a management question, and then gets information via workshops and surveys. From that information, research and synthesis is done and shared with managers, who in turn can ask even better questions. The slides are available [here](#).

EDDMapS tool website (supported by RISCC research): www.eddmaps.org/rangeshiftlisting.

Questions and Comments from the ERT

- *How did other RISCC networks come about and are they plugged in?*
 - The NE CASC team developed the first RISCC and helped other centers do the same around the nation. The other RISCCs have been direct funded through the USGS or funded through project solicitations and, while NECASC has been a guide, each region has formed in different ways. The NE RISCC does a good deal of research, outreach, and network building. There is a cross-RISCC network that meets monthly and they just held their first annual symposium.
- *Does RISCC ever link with the Cooperative Invasive Species Management Area (CISMA)?*
 - RISCC has linked with New York Partnership Regional Invasive Species Management districts (PRISMs), which are the equivalent of CISMAs for the state of New York. CISMAs are more Western U.S. based and not many exist in the east. The Watershed Invasive Species Partnerships (WISP) that Julie R. organizes is one example in the East. There also is a New Jersey invasive plant task force that operates somewhat like a CISMA.
- *Have you thought about outcomes and what the role of the group could be in translating data to behavioral changes? How do you manage the evolution of this? What is your desired outcome?*
 - Early on, Bethany and her partner Toni Lyn asked themselves: What would the RISCC look like in 10 years? At that time, they thought success might mean RISCC would be closed because they had solved the issues! At this point, they don't foresee an end point, but they now have the ability to ask more detailed and nuanced questions. We do know that RISCC research has directly played a role in helping the state of New York shift to more proactive invasive species risk assessment (assessing species not yet present in the state) and directly informed a change in the Massachusetts Invasive

Plants Advisory Group (MIPAG) policy that allows for considering climate change when assessing the potential range of invasive species.

- To manage evolution at the NE RISCC, people keep coming back to do more work together (and grad students stay). So they have managed their evolution by adding more capacity (currently about 20 people) and solid teams with graduate students and practitioners sharing the work.
- *What is the interaction between the USGS biological threats council and NE CASC invasive species work? How do you handle the policy and socioeconomics?*
 - Toni Lyn Morelli sits on the USGS biological threats Council and we have had one RISCC project (on sleeper invasive species) supported by the USGS Ecosystems Mission Area focused on biological threats, so we are integrated with larger USGS initiatives. The extent to which we can combine social science with the work RISCC is doing is still a work in progress, we would love to do more. Since most of us are university folks, we are free to talk about and make policy recommendations (and we have not been shy to do so).

Science Achievement and Collaborations: Part 3, Forest Adaptation

NE CASC Principal Investigator, Tony D'Amato (UVM), and Tyler Everett (UMaine, Mi'kmaq Nation, United South and Eastern Tribes/USET), presented on NE CASC's diverse partnerships for large-scale co-production, network-building, and outreach that has come through their forest adaptation work. The slides are available [here](#).

They noted that the project area involved Tribal Nations and practitioners from Maine (The Dawnland) to Minnesota. The collaboration has resulted in 11 experiments to operationalize strategies that can be scaled (see slide 5). They also serve as focal areas for broader field studies and manager tours, and a community of practice has developed. The communities of practice have developed through the delivery of more than 40 webinars, presentations and trainings by PI D'Amato and their partners (see slide 6). Forest adaptation has resulted in outcomes to inform practice and identify barriers and opportunities (see slide 7).

The emerald ash borer (EAB) destruction was known in Tribal Nation communities who have a longstanding relationship with these trees which includes their use in basket weaving in the Northeast. EAB is a newcomer and tree mortality is not yet realized in many areas. Indigenous communities in the Northeast work in close partnership with a University of Maine lab group called the Ash Protection Collaboration Across Wabanakik (APCAW). In partnership with the NECASC and PI D'Amato, several Tribal partners developed a framework for species preservation that includes cultural integrity, genetic conservation, ecological function, and ethical responsibility. The Brown Ash Tree's cultural significance was discussed. Preservation efforts before EAB included efforts led by the Saint Regis Mohawk Tribe (SRMT), Wabanaki Tribal Nations, and artisans from both each Tribal community, which led to the formation of the Maine Indian Basket Makers Alliance (MIBA) and the Brown Ash Task Force (BATF). The value and need for the framework was explained (see slide 27). In conclusion, Tony and Tyler noted that preservation of a threatened species is not feasible for every stand or ownership, but effective tools do exist. Beyond a given insecticide or biocontrol, the key to ash preservation resides in building knowledge and diverse partnerships across agencies, communities, and scientists.

APCAW website: <https://umaine.edu/apcaw>

Questions and Comments from the ERT

- *In the Midwest there is a struggle to make connections with Tribes. Are there any lessons learned that you can pass along? How does engagement with Tribal communities translate to longer term relationships and meaningful financial investment?*
 - Build relationships first because so much is about connections and community. How these communities are built is significant. To be successful, the focus is on cultural values first versus a traditional tendency to emphasize development and delivery of western science.
 - It's great that there's a cohort of indigenous scholars; it provides opportunities to share research priorities of Tribal communities.
- *Is there any way to replicate this effort in more places?*
 - A big part is the people who are willing to teach, center, and explain the culture and rationale.
- *In most regions, there's variability in the attitudes about climate change. What are overall perceptions about climate change in the community/Tribes and how does that inform your work? Is there a difference in attitudes about mitigation versus adaptation?*
 - Originally the NE CASC footprint included Minnesota. We began co-production workshops there with content explaining climate change trends and impacts to get buy in on need for adaptation. In the Northeast, most everyone is accepting of climate change so we can get to the issues faster. More social science work is needed about public awareness of need for adaptation and how that may include practices, like harvesting trees to increase species diversity and options for adaptation. The value of inter-governmental communication has helped. Global citizenship is a bigger challenge, as many don't recognize global impacts of local decisions.
 - For a lot of indigenous communities, adaptation is an easy concept to get behind. It's part of Tribal resilience. National Tribal organizations are leading the dialogue. Mitigation varies by community.

Facilitated Dialogue and Discussion with the ERT, and Q & A regarding Scientific Achievements and Collaborative Efforts

Donna led a facilitated discussion between ERT Members and the NE CASC and Consortium on their scientific achievements and collaborative efforts. ERT Members were asked to consider the following questions:

1. How is the Host University managing their program and doing Actionable Science; what is the process? What patterns have emerged? What is/is not working well?
2. What are the Host University and academic consortium's contributions to climate adaptation science?

3. How effective is the Host at engaging others in these activities? How do the Host's collaborative efforts enhance its overall effectiveness?
- *One of the challenges of co-production is having people who have the time to attend the meetings. What are your strategies/experiences for keeping people coming to your meetings?*
 - The advantage of tenure is the ability for tenured professors to serve versus 'publish or perish'. NE CASC is also a high-profile and well-known center in our region. Government agencies and regulatory bodies often seek us out for contributions and membership to external task forces and advisory teams. Also, the tenure track in many schools is changing such that membership and service to such advisory bodies is becoming more accepted in terms of credits toward tenure and promotion.
 - One of the benefits of the USGS/NCASC funding is that it is long-term (longer than 10 years for NECASC). This provides stability for researchers and others to get engaged and stay engaged.
 - Key factors are changing culture at institutions, tenure, and the need to have a portfolio of projects that reflect long-term investment. Some pre-tenured faculty members enter with a requirement to have these types of relationships, particularly extension faculty linked to our land-grant institutions (e.g. UMass, Cornell, UVM, and Columbia).
 - There is a culture in the CASC to embrace this mission, which includes attending meetings in order to do collaborative adaptation science and we see it reflected in the recruitment.
 - Not everyone is tenured; tenured faculty members try to attend the bulk of meetings to protect those who are pre-tenure.
 - The extent that Tribal communities adopt and accept active forest management as a component of climate adaptation could carry significantly more weight with anti-management groups than do Western scientists.
 - *Is there a rule or opportunity for host universities to tell the story of the bigger science at USGS (e.g., participatory science, actionable science)?*
 - Universities are a lot freer than USGS partners in terms of who we may talk to. We also have students who can talk as well. As a result, we're all about trying to elevate USGS' work. We benefited from other climate science centers and 100% in the mindset of lifting each other up, it is a win-win.
 - On this topic, my experience coming to USGS from a management agency is that it is somewhat a culture. Participatory science is more and more important for science to be relevant. One benefit of continuing this agreement is that the UMASS NE CASC culture seems to be in a good place, vs having to start over with another organization. And the fellows (grads and postdocs) are soaking up the NE CASC culture of engagement across boundaries.

- From the chat: From the Host University perspective and the USFS perspective, we have worked very closely with specific USGS scientists, including Ben Letcher (and now Jen Fair) with the Eastern Science Center, and Allison Roy, Unit Leader with the MA Co-op Unit. Our relationship with both the Conte Lab and the Co-op Unit has been important from the very outset of Cycle 1. We could put more emphasis on the relationship between these two labs in our communication and messaging, if it makes sense to do so. There are likely similar examples across our footprint.
- *What does success look like?*
 - We couldn't have predicted the success. You have to try all the things. At the beginning of Cycle 2 we took on an evaluation project to see if there were common themes in successful projects. We identified that relationships were important.
 - We're in the midst of accepting grad students. We have grades. We rely on the letters of recommendation— the relationships that people have built— for indicators of good fit.
 - Early in cycle 2 we recognized that we need to develop relationships- some panned out, some have simmered. It was a conscious decision.
 - I think the suggestion goes for many federal agencies. NPS has great need for RAD applications at parks, especially as there are few park staff who can't wade into the breadth of climate adaptation and resiliency planning literature or tools.
 - At Cornell, we have a lot of synergies and exchange with the NY Water Science Center team, mostly related to Adirondack waters and the legacy of human impacts there. We are also looking into NPS partnerships on RAD in the fisheries context. NE CASC gives me and the Cornell fellows a great entry point for those dialogs, especially because of the consistency of CASC support where we have time for collaborations to evolve organically.
- *How do you measure success? What performance metrics do you use? Do you have a system to measure those projects that don't work well?*
 - We compile standard metrics (numbers of papers, numbers of citations, numbers of workshops, numbers attending events). But there's a larger dialogue across the CASC network about measuring successes that are harder to quantify. To date, we've mostly been focused on collecting stories of success, which we'll talk about more on Wednesday in our presentation of our communications. We've also done a lot to invest in relationships with our partners and value the people in the room. We have found that in this work in particular, relationships matter (and we have a self-study to back up this point! <https://doi.org/10.7275/de7g-cf05>). The topic and focus on lessons learned is important and we hope to address this question, perhaps at the NE CASC meeting in June (2024).
 - At some point these projects are individual successes and not communal. A partnership here may be moving slower, may be a "simmer" until a later time when it gets going, while another project is moving much faster.

- NE CASC scientists and partners recently developed/adapted co-production metrics:
<https://doi.org/10.1016/j.envsci.2023.01.010>.
- It was noted in the chat that it is, “Important to discuss the brambles and boulders along with the celebrations.”
- The ERT noted that the Host has faced many challenges – change in footprint, COVID, revolving USGS leadership, etc. and have had many successes.

Donna thanked the ERT, CASC & Consortium Members, and Observers for their participation, engagement and attendance at the session. With that, the meeting was adjourned.

After the joint session, the ERT briefly discussed the day noting the impressive adaptive work being done. Two questions emerged for the NE CASC team to consider:

- 1) If you modified the USGS call for proposals, what would you say?
- 2) What happened when you tried something that didn’t work? How did you manage the challenges they presented, and how do you approach risks of this happening in the future?

*This session summary was respectfully submitted by the DS Consulting Facilitation Team.
Edits were welcome and sent to the Day 1 Scribe: Tina Patterson (tina.patterson@jadeitesolutions.com)
and support staff Colby Mills (colby@dsconsult.co).*

Day 2 – Capacity Building

DAY 2	Tuesday, February 6, 2023: Capacity Building	
	Purpose: Reflect on the Host University and associated academic consortium's contributions with respect to Capacity Building.	
Time EST	Activity	Presenters and Affiliation
11:45a- 12:00p	<i>External Review Team - Closed Door</i>	Facilitation Team ERT Members
12:00 – 12:15p	<i>Brief Daily Introductions and Setting the Day</i>	Facilitation Team NE CASC Coordination Team NE CASC USGS Leadership ERT Members
12:15- 12:45p	<i>Introduction to Capacity Building: Building a Regional Culture of Climate Adaptation</i> - Changing the culture of science to support adaptation - Workforce development - Project capacity building <i>Facilitated dialogue and discussion with ERT, and Q & A regarding Capacity Building</i>	Bethany Bradley (UMass) NE CASC University Co-Director Facilitation Team NE CASC Coordination Team NE CASC USGS Leadership ERT Members
12:45- 1:25p	<i>Capacity Building: Educate and train to build capacity of early career professionals</i> NE CASC Fellows Program	Brian Yellen (UMass) NE CASC Fellows Program Coordinator + Eve Beaury (Princeton)
1:25 – 1:35p	Break To avoid zoom fatigue: Please turn off and step away from your computer screen if AT ALL possible!	
1:35 – 2:15p	<i>Capacity Building: DEI</i> Building more diverse, equitable, and inclusive climate adaptation science and training	Bethany Bradley (UMass) NE CASC University Co-Director + Cielo Sharkus (UMass) [Brian Yellen (UMass) for Q&A]
2:15 – 2:45p	<i>Capacity Building: Climate Adapted Population Supplementation</i> Multi-disciplinary, network-based project to address fisheries and forests led by NE CASC Fellows	Peter Clark (UVM), Amy Teffer (UMass) [Pete McIntyre (Cornell), Keith Nislow (USFS) for Q&A]
2:45 – 3:45p	Break To avoid zoom fatigue: Please turn off and step away from your computer screen if AT ALL possible!	
3:45 – 4:15	<i>Capacity Building: Urban Coastal Adaptation</i> Flood hazard mitigation through community-based research led by a NE CASC Fellow	Hannah Baranes (GMRI) + Rob DeConto (UMass) [Jon Woodruff (UMass) for Q&A]
4:15- 4:25p	Break To avoid zoom fatigue: Please turn off and step away from your computer screen if AT ALL possible!	
4:25 – 5:00p	<i>Facilitated dialogue and discussion with ERT, regarding Capacity Building</i> How is the Host University and associated academic consortium doing their <u>Capacity Building</u>? How effective are they? What is the process? What patterns have emerged? What is/not working well? What is the Host University and associated academic consortium's contribution to <u>Capacity</u>	Facilitation Team NE CASC Coordination Team NE CASC Principal Investigators NE CASC USGS Leadership NE CASC USGS Research Staff ERT Members

	<i>Building? What were their limitations and how were they mitigated?</i>	
5:00 – 5:15p	External Review Team – Closed Door Initial reflections on the day. Questions, concerns, and insights	Facilitation Team ERT Members

DAY 2: Facilitator’s Summary
February 6, 2024, 12:00pm – 5:00pm ET
Topic: Capacity Building

Prepared by DS Consulting Facilitation Team

The following summary is intended to capture basic discussion, reflections, concerns, and insights from the session. It is not a verbatim transcript, but has links to the presentation.

Attendees present for all or part of the meeting (in alphabetical order):

ERT Members: Nick Aumen (USGS), Rezaul Mahmood (UNL), Duncan McKinley (USFS), Tom O’Connell (USGS), Erin Williams (NPS);

Host, CASC and Consortium Presenters: Jenica Allen (NECASC-UMass), Kostas Andreadis (UMass), Hannah Baranes (GMRI), Eve Beaury (PU), Bethany Bradley (NECASC-UMass), Carrie Brown-Lima (NECASC-USGS), Peter Clark (UVM), Tony D’Amato (UVM), Rob DeConto (UMass), Linda Deegan (WCRC), William Farmer (NECASC-USGS), Emily Fusco (NECASC-UMass), Caroline Gleason (NECASC-USGS), Addie Rose Holland (NECASC-UMass), Pete McIntyre (COR), Toni Lyn Morelli (NECASC-USGS), Keith Nislow (USFS NRS), Cielo Sharkus (UMass), Amy Teffer (UMass), Jon Woodruff (NECASC-UMass), Brian Yellen (UMass);

Session Observers: Gus Bisbal (NCASC), Emily Fort (NCASC), Catherine McCandless (City of Boston);

DS Consulting Team: Facilitator: Donna Silverberg, Reporting and Support: Tina Patterson, Colby Mills, Emily Stranz.

Purpose of the Day: Reflect on the Host University and associated academic consortium’s contributions with respect to Capacity Building.

Brief Introductions & Setting the Day

Facilitator and External Review Process Manager, Donna Silverberg, welcomed the group and conducted a brief round of introductions that included: NE CASC ERT Members; NE CASC Host, University of Massachusetts-Amherst (UMass) leadership and team; NE CASC USGS leadership, NE CASC Consortium Members; and session observers.

Introduction to Capacity Building: Building a Regional Culture of Climate Adaptation

NE CASC Host University Co-Director, Bethany Bradley (UMass), presented on the Host’s efforts in changing the culture of science to support adaptation, workforce development, and project capacity building. At NE CASC, they seek to build a regional culture of climate adaptation through capacity building.

Capacity Building efforts at NE CASC falls into three bins:

1. Supporting actionable science through consortium PI's work (see Day 1 slides and meeting summary).
2. Supporting the internal NE CASC community (the Fellows and diversity, equity, inclusion, and justice (DEIJ) programs).
3. Building capacity among scientists and managers (science planning workshop, Tribal engagement, and direct outreach).

Bethany provided a summary overview of the internal NE CASC capacity building efforts, as well as the work that NE CASC is doing to build capacity externally with partners, Tribes, and resource managers. More information on specific capacity building efforts, including the Fellows program, DEIJ program, and Climate-Adapted Population Supplementation was provided in subsequent presentations throughout the day (see below). Bethany emphasized that relationships are at the center of NE CASC's capacity building. Presentation slides are available [here](#).

Dialogue and Discussion with the ERT Regarding Capacity Building

- *Question/Comment:* Is the Fellowship component common across all CASCs? How did it start, and what are the advantages?
 - *Response:* Different CASCs handle fellowships differently. Some regions have fellowships, others don't, and some have single-year fellowships. The NE CASC fellowship program is fairly unique: most of the other CASCs have a curricular class that is only available at the Host Institution; the NE CASC fellowship program is open to any fellows who support science PIs. They do not need to be funded by the Host Agreement, and in fact, are often supported by many programs and sources. This helps make the fellowship program PI-driven. The NE CASC fellow training model is region-wide and covers all consortium partners.
 - *Response from NCASC:* The fellowships are evolving as the Host Agreements are recompeted; CASCs are learning from each other regarding what works well. Most CASCs have a structured program in place.
- *Question/Comment:* The work that you are doing is fantastic. Very impressive. (This comment was echoed by other ERT members.)
- *Question/Comment:* What are the internal controls to evaluate the things that do not go well? How is this handled and learned from?
 - *Response:* Some of the larger challenges have been on the administrative side; for instance, a lack of staff or faculty capacity where there was not redundancy meant that if a person was out or moved on, the work needed to be covered by someone else. Relationships and institutional knowledge are important, and can be lost when there is no redundancy built in. We've learned that we need to have redundancy, so we are not reliant on any single person. The co-director approach is helpful for redundancy at the leadership level.

- *Response:* One example of evaluating and adjusting is the Fellows Program. We've built in continuous evaluation from the outset and are committed to incorporating learnings for improvement; this was in response to a recognized need within this program. It was challenging to create a cohesive community across the geographic and institutional range. The program has shifted from being reactionary, to a more proactive approach for building the program.

Capacity Building: Educate and Train to Build Capacity of Early Career Professionals

NE CASC Fellows Program Coordinator, Brian Yellen (UMass), and NE CASC Fellow, Eve Beaury (Princeton), presented on NE CASC's Fellows Program. The goal of the Fellows program is to give fellows the opportunity to learn about skills they want to develop in collaborative science, practice them in a controlled and safe setting, and receive feedback, so they may accelerate them as they advance their career.

The program includes three touch-points with the Fellows:

1. Bi-weekly seminars for skills training, science/engagement challenges, to share research and find opportunities for transdisciplinary projects, and to practice written and spoken communication.
2. Small group work every spring to provide opportunities to dig deep and explore topics of interest and build relationships.
3. A Fellows intensive, which includes an in-person deep dive on skills, concrete management actions resulting from stakeholder-engaged science, and experiencing the value of relationships and co-production of science.

The program has had 95 Fellows since 2019; of those 26 are people of color and 60 identify as female. The Fellows program is actively working to diversify the scientist community so that it reflects the populations that they work with. The program is responsive to participant needs and has utilized participant input to adjust the program over time. In addition, the program built in a twice yearly evaluation of what is working and what should be enhanced.

Core skills that the Fellows program works to develop include:

1. Stakeholder engagement preparation – Working with partners on a collaborative problem, learning about process, relationship, challenges, etc.
2. Communication – Gaining self-awareness in communication, how to communicate so everyone can understand, messaging, and framing.
3. Ethical collaboration and Tribal engagement – This starts with acknowledgement that there are multiple ways of knowing and skillsets, and close collaboration is needed to achieve goals. Relationships are important.
4. Career preparation and capacity building – Learn about careers and build professional networks.

Eve shared personal experience of the NE CASC Fellows Program, noting that it was a special group to be a part of, and provided an opportunity to expand her interest in applied ecology, working with stakeholders, and having a real-world impact. The program was supportive of mission driven science, how to work with stakeholders, build trust, and partnerships, and helped shape further educational endeavors and her career choices. Presentation slides are available [here](#).

Questions and Comments from the ERT

- *Question/Comment:* I wish there was something like this when I was in school; it was difficult to get into a career. The inverted pyramid is awesome. (See slide 10)
- *Question/Comment:* What was the thought process, or context that encouraged NE CASC to change the approach from traditional science to softer skills; this seems like a unique approach and lots of opportunities for replication at other CASCs.
 - *Response:* Many of the Core Values came out of Cycle 1. One success was that there was a tight knit group of partners who valued the engagement. In Cycle 2, we have moved into a more formalized curriculum, designed from an educational process of seeing, talking about, and practicing the skills within a structured environment.
 - *Response:* As a Fellow, it was initially a challenge to learn about actionable science and then incorporate it and try it out. It was a bit nebulous how the Fellows program was going to be utilized. However, the NE CASC was receptive to hearing from fellows to learn and adjust the program. Over time, the program has evolved to be more structured and formalized.
- *Question/Comment:* It sounds like a wonderful program; super impressive skill development. It would be good to hear more about where the fellows are going. NE CASC should consider tracking this into the future: where do folks end up when they have that upfront training? There has always been a tension between publication and engagement. The message was, get tenure and then engage and work towards impact. This program takes a different approach.
 - *Response:* And the plus is that all the NE CASC PIs are on board with this approach, so the fellows are hearing the same message from their research mentors.
- *Question/Comment:* Fantastic work. Do you dream dreams of the next steps of this program?
 - *Response:* Yes! The opportunities and challenges generate ideas. As we formalize the program more and more, we recognize that there are a lot of demands on graduate students' time. We want to maximize the utility and minimize time, have clear expectations (that are not massive), and try to provide training as efficiently as possible.
- *Question/Comment:* These are important activities that need to be funded from the Federal level.
- *Question/Comment (direct comment from meeting chat):* Thanks so much for helping us understand the Fellows program more. I have a comment rather than a question, and it speaks to the value in such programs. I have been involved in the Society for Freshwater Science for more than four decades. It is a society that, in so many ways, puts students first. I am absolutely sure that I benefited tremendously from that approach, and I learned many things as a student that I may not have been exposed to otherwise. It made senior, accomplished mentors seem way more accessible and human! I see the exact same types of benefits from the Fellows program, and I hope that other CASCs consider similar approaches in the future.

- *Question/Comment (direct comment from meeting chat):* Awesome work. The program components and core skills being focused on are outstanding. I believe I heard earlier that not all fellows are funded by NE CASC funding. If true, is there an estimate for what percentage is? If I heard correctly, the NE CASC funding is being leveraged substantially. Great job!
 - *Response:* Yes, about 50% partially funded.
 - *Response:* Almost all (90%) of fellows have been funded on another source during some point of their time as fellows.

Capacity Building: Diversity, Equity, Inclusion, and Justice (DEIJ)

Bethany and Cielo Sharkus (UMass), presented on the Host's efforts to build more diverse, equitable, and inclusive climate adaptation science and training. The DEIJ program focuses on retaining and recruiting scholars from historically marginalized groups and building an equitable and inclusive NE CASC community. Relationships are key to this effort. The program worked with PIs at UMass to leverage support for graduate students as DEIJ fellows, and since 2020, there have been 7 graduate student fellowships. DEIJ Fellows are:

- Conducting research on environmental justice and vulnerabilities of cities to climate extremes.
- Doing outreach to UMass and HBCU classrooms to talk about graduate school, process of science.
- Supporting a new course on Indigenous knowledge.
- Mentoring undergraduate researchers from marginalized groups.
- Conducting and analyzing a "working climate" survey to identify barriers to overcome to stay in science.

The NE CASC DEIJ program is one of four CASCs participating in NCASC's Climate Adaptation Scientists of Tomorrow (CAST), which brings students from historically marginalized groups for summer residency for two-years. NE CASC hosted the first CAST cohort of three students in 2022-2023 and will host five CAST students in 2024 and 2025. NE CASC also is engaged in the Science to Impact Program (SIP).

Cielo Sharkus, PhD candidate in Civil and Environmental Engineering, founder of HOPE, NE CASC DEIJ Fellow, NE CASC Fellow, and NCASC DEIA Core Team appointee, shared her experience at NE CASC. Cielo noted that the Fellow program small group discussions helped her in writing a manuscript on critical race theory related to flood risk; NE CASC funded travel to conferences that allowed for networking with leaders in the field, presenting research, and other professional development opportunities. Cielo has a number of dissertation projects regarding flood exposure in Massachusetts EJ communities, community engaged research, and groundwater modeling of contaminants in EJ communities. She expressed appreciation for the opportunities through NE CASC. Presentation slides are available [here](#).

Questions and Comments from the ERT

- *Question/Comment (direct comment from chat):* Hearing stories like this remind me/us about how fortunate jobs we have, and the opportunities we can foster with others in helping to prepare the next generation of scientists who will help ensure our kids and their kids can have the same or better opportunities to enjoy our nation's awesome natural resources. Very motivating/inspiring, thanks.

- *Response:* I completely agree, Tom. That's what motivates me - not just that we need 'all hands on deck' for these huge environmental problems, but also because I want everyone to have the opportunity to have access to jobs as great as ours are!
- *Question/Comment:* What lessons learned do you have from working to build a culture of community when working so much online?
 - *Response:* We are continuing to learn; we are thinking about how to make friends and build trust on the screen. This was already a part of what we were doing at NE CASC prior to Covid, so it wasn't as disruptive as it could have been. Now we are in-person at UMass and we are still working to engage across geographies, to bring fellows and consortium PIs in to feel that they are a core part of the NE CASC.
 - *Response:* It is harder to facilitate from the outside, small groups are a good strategy to create opportunities to foster connection.
- *Question/Comment:* Echo the need you identified of recruiting and making sure to retain people; sometimes people leave because they don't feel comfortable. We need to make sure to support people early and often. Also, funding is important for the long-term. Appreciate Cielo for taking time to share.
 - *Response:* Yes, the funding is important. NCASC support was awarded for DEIJ and this has made a huge difference in the long-term investment capacity. Students can expect that there will be travel grants, a DEIJ fellow in the Fellows program, and undergraduate students coming every summer. These longer-term processes and funding in place allow for us to build and do more.
- *Question/Comment:* There are efforts to build bridges to community colleges who are serving more historically marginalized students, to bring those students into the university programs. The CAST program has been a national search; in the first year, 100+ students applied.
- *Question/Comment:* Everyone has shrinking budgets, and many are not seeing diversity in applicants. How do we get into the high schools, expand with different funding sources, etc.?
 - *Response:* The PIs at UMass and across the Consortium institutions offer a lot of support, they are happy to volunteer time to have undergraduates in the lab, and paying for undergrads and housing is low cost. The bigger challenge is the coordination of the program – the time for booking flights, coordinating payment through the UMass pipeline, organizing activities - these pieces need staff support and that has been a challenge for NE CASC. We don't have a staff person who can do those things.
 - *Response (direct comment from chat):* I'd like to echo what Bethany just said; there are great, diverse students on all the partner campuses, and beyond. Mentoring students in meaningful, positive ways is challenging, but we have a lot of capacity that has not been

tapped. It would be great to see overall CASC leadership leverage the network of regional CASCs in that way. Lots of synergy potential with graduate and postdoc Fellows that would make for win-win approaches.

- *Response:* Established staff positions are key; the volunteer faculty members are there, but the staff time is harder. Funding for these positions is key. A dedicated person for the coordination, similar to Brian Yellen's role in the fellowship program will be critical for the long term survival of the program.

Capacity Building: Climate Adaptation Population Supplementation (CAPS)

NE CASC Principal Investigators, and Fellow program alumni, Peter Clark (UVM) and Amy Teffer (UMass post-doc and NE CASC fellow) presented on NE CASC's multi-disciplinary, network-based project to address fisheries and forests led by NE CASC Fellows. The Climate Adaptation Population Supplementation (CAPS) focuses on species population supplementation, which is a key element of stewardship and a longstanding management practice. However, with changes to environmental conditions, there has been a decrease in return on investment. The population supplementation efforts are often supplementing with species that are maladapted to the environment. The NE CASC CAPS team started by exploring what challenges spanned across species, identifying trends, and thinking about solutions. They co-developed a stakeholder process to support climate adaptation population supplementation and have been working to implement the process for brook trout in the Adirondacks and with the Urban Silviculture Network. Presentation slides are available [here](#).

*Peter McIntyre (COR) and Keith Nislow (USFS) participated in the Q & A session with ERT Members.

Questions and Comments from the ERT

- *Question/Comment:* Very enlightening, love the application of integrating the science and process, and ability to support others in doing this for their geographic area and taxa. What kind of feedback or interest are you hearing from others on how they can implement this? Any surprises along the way?
 - *Response:* One surprise is that folks are enthusiastic about the concept. The concept uses a familiar framework, but the marriage of them is new and people are interested.
 - *Response:* With respect to urban forest practitioners, this is resonating. They see the need to think differently about resilient strategies. This is particularly important given the reforestation investments in urban forests.
 - *Response:* On the fish front, it has been surprising that management practices from the 1950-60's are still being utilized even though they are not seeing success. There was a lot of initial thought that went in to choose the supplementation species, but not much adaptation along the way. There has been a welcome reception, but it is surprising how little the science penetrated the management previously.
- *Question/Comment:* Seems like a very relevant topic as management agencies pursue an increase freshwater mussel supplementation programs.

- *Response:* Yes, we are initiating conversation with St. Regis Mohawk Tribe about this and other T&E species.
- *Response:* Working on common species supplementation is important before T&E; there are lots of failures to be learned from before working on T&E species.

Capacity Building: Urban Coastal Adaptation

Hannah Baranes (Former NE CASC Fellow, Assistant Research Scientist at GMRI) and Rob DeConto (UMass) presented on NE CASC's flood hazard mitigation through community-based research led by a NE CASC Fellow. Hannah explained that the Gulf of Maine has large tides that greatly influence the severity of storms. Hannah's work as a NE CASC Fellow focused on updating coastal flood hazard statistics to reflect tidal modulation more accurately and was incorporated into the Climate-ready Boston report that is being used for coastal resilience planning in Greater Boston and Massachusetts more broadly. Hannah now works with Gulf of Maine Research Institute (GMRI) and utilizes many of the skills and knowledge gained through her work with NE CASC, including the communication of information to a broader audience, working with community stakeholders, co-creating science with communities to build local flood resilience, including through community (citizen) science, and then translating science to inform decision makers.

Rob noted that Hannah is a shining example of NE CASC Fellows program and outcomes. As the two cycles of funding have gone by, and students like Hannah go out into the world, it is expanding the impact of NE CASC. As NE CASC has matured, relationships are built and grow, and now communities are reaching out to NE CASC for guidance and support in the region. NE CASC has been a steady and constant support in the region. Presentation slides are available [here](#).

Catherine McCandless, City Planner with the City of Boston, joined the session to share her work on the Climate-Ready Boston Initiative. She noted that the City relies on the data that NE CASC has synthesized to inform the Climate-Ready Boston plans, and guides planning work that is now being implemented. NE CASC's work has helped the City think about what impacts can be expected in the future and how to plan accordingly.

*Jon Woodruff (UMass) participated in the Q & A session with ERT Members.

Questions and Comments from the ERT

- *Question/Comment:* How were you led to the NE CASC for this work or did the CASC spark an interest you were not fully aware of, and how that might translate into lessons learned for others?
 - *Response:* Throughout my time coming up in a general liberal arts degree, I was under the impression that local applied science was lesser than basic research. However, seeing the impact of translational science, and more local efforts, was impactful and came from being in connection to NE CASC.
 - *Response:* The NE CASC has instilled the value of local applied science; science is utilized when there are relationships with managers who can apply the science. This is a learning and growing process.

- *Question/Comment:* Is there something unique about NE CASC that drew you in?
 - *Response:* Working on climate change in an isolated ivory tower didn't seem to fit the need. This is an urgent problem, and there is a need to work with the people who are being impacted. The funding through the Fellow program was key for being able to participate in Climate-Ready Boston.
 - *Response:* The NE CASC provided a mind-shift to a different style of science, helped mentor me as a scientist to focus more locally on relationships and on co-production.
 - *Response:* NE CASC was the draw. The community of PIs is exceptional, and there is a focus on trying to recruit early career faculty, and their labs, into NE CASC. It also has the backing of long-term funding.
 - *Response:* The reach of NE CASC has been really widespread; it allows researchers to bring global work home to their communities.
- *Question/Comment:* Could you reflect on your training through the NE CASC and fellow program: what has been most useful, and are there any gaps?
 - *Response:* Things that stand out as helpful include the content around co-production and listening to local 'experts' who have lived and worked in an area for a long time. This takes a lot of time, which is good to know for timelines and expectations regarding outcomes and impact. It was good to get connected to other departments and work across programs and gain experience in doing a lot of different things for the first time without being rushed.

Facilitated Dialogue and Discussion with the ERT, and Q & A regarding Capacity Building

Donna led a facilitated discussion between ERT Members and the NE CASC and Consortium on their efforts in capacity building. ERT Members were asked to consider the following questions:

1. How is the Host University and associated academic consortium doing their Capacity Building; How effective are they? What is the process? What patterns have emerged? What is/not working well?
 2. What is the Host's and associated academic consortium's contributions to Capacity Building? What were their limitations and how were they mitigated?
- *Question/Comment:* Along the vein of trying to build partnerships – have you encountered stakeholders who are not interested in working in partnership?
 - *Response:* We have had areas that we want to do work and have not received the same response from potential partners. Sometimes this is due to particular individuals, so we've tried to expand contacts, and communicate that NE CASC brings resources to the table. The best we can do is communicate that we are open, here, and ready to engage when and if they are interested.

- *Response:* An example of failures, reflection and rectification included during COVID when we rushed too fast to launch a project without the appropriate groundwork and discussions in an area where another partner had been doing work for an extended period of time. This got us off on the wrong foot and has taken years of hard work since to develop a level of trust and collaboration that could have far more easily been developed if dialogue had occurred at the onset of the project. So, we needed to take the time to build up the relationships because we can't afford not to when you are invested for working in a region long term as is the case for NE CASC. Also, we've learned that when people want to work with you, jump on it - take the opportunity to foster the relationship and seize the opportunity.
- *Response:* Capacity can be an issue that goes both ways: sometimes would-be partners do not have capacity, and sometimes internally there is not capacity.
- *Question/Comment:* If you have or think about processes, what processes or patterns are you in that are not moving you out of the Covid-era, to life after Covid?
 - *Response:* One area is the virtual versus in-person dilemma, and what that ratio/dynamic looks like. Jon and Bethany joined NE CASC during Covid, so hadn't met some of Consortium PIs in person. NE CASC is planning to bring them all to UMass this summer to have some in-person time and relationship building. The great thing about virtual is that we can come together without geographic barriers, but then we don't get the many benefits of relationship development that come from being in person, sharing a coffee and talking about life, not just work.
 - *Response:* Some learnings around how to make things compelling without burning out on Zoom, include roundtable discussions, and interactive online sessions. The shift to virtual showed that we can create new events that continue building community in a transformative culture of climate adaptation across the region. Something positive came out of something challenging: we learned how to build and sustain virtual community; NE CASC created a series of events that allowed managers and researchers to interact with one another and relationships continued.
- *Question/Comment:* Appreciate the presentations displaying NE CASC work. NE CASC folks can learn from the ERT too, it's wonderful to share back and forth; encourage the ERT members to share and connect.
 - *Comment from USGS:* It is wonderful to see all the things presented so thoughtfully from the Host side; nice to hear about projects and consider ways to improve the CASC.

Donna thanked the ERT, CASC & Consortium Members, and Observers for their participation, engagement and attendance at the session. With that, the meeting was adjourned.

After the joint session, the ERT met to discuss the day and raised questions for the NE CASC Team to consider:

External Review Team Final Report
Northeast Climate Adaptation Science Center

1. What has changed/is different in this 2nd funding cycle? What is the total scope of your efforts (as opposed to the case studies we have seen so far)?
2. If someone were to compete against you in this next round, what would make you the strongest candidate? What would you like to make stronger if given another 5-year cycle?
3. How does the consortium work (and not work)? How have you developed the internal community of the consortium?
4. Can you share your current tracking of your grad students at this point? Where are they and what are they doing?
5. Given your mapped footprint, how are you working with Kentucky, West Virginia, and Virginia now and in the future?
6. Are you working with your RCC and state climate offices to help develop tools you and your students can use in your projects?

*This session summary was respectfully submitted by the DS Consulting Facilitation Team.
Edits were welcome and sent to the Day 2 Scribe: Emily Stranz (emily@dsconsult.co) and support staff
Colby Mills (colby@dsconsult.co).*

Day 3 – Outreach & Communications, Administrative Management

DAY 3	Wednesday, February 7, 2023: Outreach and Communications, Administrative Management Purpose: Reflect on the Competencies, Efficiencies, Challenges, and Areas for Improvement of the Host University in managing the <u>administrative requirements and terms and conditions</u> of the corresponding host agreement, with a focus on Institutional Development and Fiscal Management review categories.	
Time EST	Activity	Presenters and Affiliation
11:45a-12:00p	<i>External Review Team - Closed Door</i>	Facilitation Team ERT Members
12:00 – 12:15p	<i>Brief Daily Introductions and Setting the Day</i>	Facilitation Team NE CASC Coordination Team NE CASC USGS Leadership Team ERT Members
12:15 – 1:00p	<i>Outreach & Communications</i> Reflection, strategy, and improvements	Will Kazmier (UMass) NE CASC Communications & Outreach Manager
1:00 – 1:35p	<i>Institutional Context</i> - UMass institutional research context - SES and affiliated researchers - USGS integration	Bethany Bradley (UMass) NE CASC Co-Director + Loren Walker (UMass) Office of Research Development, Laura Vandenberg (UMass) Research and Engagement, Rob Deconto (UMass) School of Earth and Sustainability
1:35-1:45p	Break To avoid zoom fatigue: Please turn off and step away from your computer screen if AT ALL possible!	
1:45-2:10p	<i>Administration Challenges</i> - Footprint change - Leadership changes	Carrie Brown-Lima (USGS) NE CASC Regional Administrator, Will Farmer (USGS) NE CASC Acting Assistant Regional Administrator
2:10 – 2:35p	<i>Solution: Organizational Goal: Community Building</i> - Dialogue-oriented events - Connecting PIs across disciplines	Addie Rose Holland (UMass) CBIKS Managing Director & former NE CASC Deputy University Director
2:35 – 3:05p	<i>Building Academic Capacity for Tribal Engagement</i> Partnerships for enhanced engagement	Jon Woodruff (UMass) NE CASC University Co-Director + Sonya Atalay (UMass) CBIKS Director [Darren Ranco (UMaine), Casey Thornbrugh (USET), Steph Courtney (USET) for Q&A]
3:05 – 4:05p	Break To avoid zoom fatigue: Please turn off and step away from your computer screen if AT ALL possible!	
4:05 – 4:25	<i>Grants Administration</i> - Fiscal management - Pre-proposal process - Administrative capacity	Juliette Dixon (UMass) NE CASC Grants & Contracts, Addie Rose Holland (UMass) CBIKS Managing Director & former NE CASC Deputy University Director, Kristy Reese (UMass) Office of Pre-Award Services
4:25 – 5:00p	<i>Facilitated dialogue and discussion with ERT, regarding Outreach and Communications & Administrative Management</i> What are the Host University and associated academic consortium's <u>Outreach & Communications</u>	Facilitation Team NE CASC Coordination Team NE CASC USGS Leadership NE CASC USGS Research Staff ERT Members

	and <u>institutional Leadership</u> contributions for climate adaptation? • What factors limited their work and how were they mitigated? • What are the host's Competencies, Efficiencies, Challenges, and Areas for Improvement? What can we learn from them?	
5:00 – 5:15p	<i>External Review Team - Closed Door</i> Initial reflections on the day. Questions, concerns, and insights	Facilitation Team ERT Members

DAY 3: Facilitator's Summary

February 7, 2024, 12:00pm – 5:00pm ET

Topic: Outreach and Communications, Administrative Management

Prepared by DS Consulting Facilitation Team

The following summary is intended to capture basic discussion, reflections, concerns, and insights from the session. It is not a verbatim transcript, but has links to the presentation.

Attendees present for all or part of the meeting (in alphabetical order):

ERT Members: Nick Aumen (USGS), Rezaul Mahmood (UNL), Duncan McKinley (USFS), Tom O'Connell (USGS), Erin Williams (NPS);

Host, CASC and Consortium Presenters: Jenica Allen (NECASC-UMass), Sonya Atalay (UMass), Bethany Bradley (NECASC-UMass), Carrie Brown-Lima (NECASC-USGS), Rob DeConto (UMass), Juliette Dixon (NECASC-UMass), William Farmer (NECASC-USGS), Emily Fusco (NECASC-UMass), Caroline Gleason (NECASC-USGS), Addie Rose Holland (NECASC-UMass), Will Kazmier, (NECASC-UMass), Toni Lyn Morelli (NECASC-USGS), Darren Ranco (UMaine), Kristy Reese (UMass), Becky Shafer (UMass), Casey Thornbrugh (USET), Laura Vandenberg (UMass), Loren Walker (UMass), Jon Woodruff (NECASC-UMass),

Session Observers: Gus Bisbal (USGS-NCASC);

DS Consulting Team: Facilitator: Donna Silverberg, Reporting and Support: Tina Patterson, Colby Mills, Nancy Pionk.

Purpose of the Day: Reflect on the Competencies, Efficiencies, Challenges, and Areas for Improvement of the Host University in managing the administrative requirements and terms and conditions of the corresponding Host Agreement, with a focus on Communications, Outreach, Institutional Development and Fiscal Management review categories.

Brief Introductions & Setting the Day

Facilitator and External Review Process Manager, Donna Silverberg, welcomed the group and conducted a brief round of introductions that included: NE CASC ERT Members; NE CASC Host, University of Massachusetts-Amherst (UMass), leadership and team; NE CASC USGS leadership, NE CASC Consortium Members, and session observers.

Outreach & Communications

NE CASC Communications & Outreach Manager, Will Kazmier (UMass), reflected on the Host's strategy and improvements to their outreach and communications efforts. The goal of the communications program is to amplify to the greatest extent possible the impacts of the work being done by PIs and their partners. After conducting an external assessment of existing communication projects, the communications program sought to expand reach and engagement by better defining organizational identity and brand. They focused on two main pillars for defining organizational identity: 1) NE CASC's uniqueness as a relationship-driven science organization and 2) NE CASC's standing as a regional hub for climate adaptation knowledge and expertise.

The Communications team developed new products that included a new logo, new website, new HTML Newsletter, outreach materials, and a social media initiative. The team also focused on conveying brand identity through storytelling mechanisms and tools that focused on relationship-driven research accomplishments and success stories and emphasized partner perspectives and voices. To this end, the team developed project syntheses and StoryMaps to provide a multidimensional analysis. (See two StoryMap examples here: <https://necasc.umass.edu/adapting-sea-level-rise-options-our-coastline>; <https://necasc.umass.edu/climate-adaptation-aquatic-ecosystems-0>). In addition to online tools, the program has also produced a variety of events including a webinar series, workshops, a Climate Adaptation Science Symposium, Tool Talks and virtual open houses. These efforts have resulted in a replicable approach in storytelling and have helped to establish a clear center "voice" that complements and advances NE CASC's commitment to co-produced, actionable science. The presentation provides more specific information on these efforts and their results, slides are available [here](#).

Dialogue and Discussion with the ERT Regarding Outreach & Communications

- *Question/Comment:* It was great to see the diversity of tools and positive trends. Do you have any data that provides insights about the audience reached across the NE region? Are you seeing gaps in certain areas, and if so, how are you focusing communications in those areas?
 - *Response:* There are a larger number of email subscribers who are headquartered in the upper Northeast because that is where most of the work takes place. Before the change of footprint, there was a more even distribution across the Northeast and Midwest. PIs are trying to build connections in the lower part of the region. Participants from Virginia attended the Symposium and Webinars and the team has seen an increase in participation in the email list from the southern part of the region.
 - *Response (direct comment from meeting chat):* For our Science Planning workshops (and particularly the Biological Thresholds, which happened at the footprint transition) we made targeted outreach efforts to include folks from every state. We developed a few important relationships through that outreach process, and folks that have stayed with us since and continued to engage in other events.
- *Question/Comment:* Appreciate the communications strategy – it was well done and thoughtful. How was identity created? Who was involved and how was vision carried forward?
 - *Response:* The Identity was created in collective discussions of communication materials in staff meetings and input from PIs. What stood out was: the thing that excites our researchers the most is the partnership and forming relationships while doing mission driven work. Additionally, presenting NE CASC as a hub for climate adaptation science

and expertise in the region had been part of the communications effort all along and the team sought to further emphasize it.

- *Question/Comment:* Is there any info on how long visitors stay on the website?
 - *Response:* The average website visit is 2 minutes – up from 1:40. We redesigned the website with the idea of increasing time spent on the website. At the bottom of stories, there is a new feature that refers to additional features to encourage people to stay on the site.
- *Question/Comment:* I like the different pieces on the website and variety of communication tools. Including the problem and solutions is very effective. ‘Amplifying the impact of the work’ is a great catchphrase.
- *Question/Comment:* What is the return on investment for certain types of communication tools such as social media?
 - *Response:* Return on investment is a difficult question to answer. There is a limited amount of time to produce new tools. We try to consider the audience and what achievements are relevant to what audience. A StoryMap is a very labor-intensive process. Yet, the effort is justified by the broad appeal and positive response, and it can be used for different purposes in explaining research to legislators or a general audience.
 - [Note: During summary edits, Will Kazmier provided the following addendum: The communications team relies on an annual planning calendar and the communications strategy document to determine communications priorities and products on a yearly, quarterly, monthly and weekly basis. We begin by budgeting time to meet our recurring responsibilities (DOI highlight submissions, success stories, monthly newsletters, annual outreach reports, monthly webinars, website/project page updates, science planning workshops or symposia, Annual Progress Reports required by NCASC/USGS, etc.). We then budget remaining time to produce additional communications work (story maps, additional events such as tool talks and open houses, videos, outreach materials, extra feature stories, social media, etc.) based on communications strategy priorities (which identifies reaching resource managers as our leading objective). We develop ideas for new products based on expected impact with resource managers and the amount of time available to complete them. These ideas are then added to our planning calendar with a development schedule].

Institutional Context

NE CASC University Co-Director, Bethany Bradley (UMass), Loren Walker (UMass Office of Research Development, Laura Vandenberg (UMass Research and Engagement), and Rob DeConto (UMass School of Earth and Sustainability (SES)) presented on the Host’s institutional research context for UMass, including strong relationships with SES, affiliated researchers, and providing a nested space for USGS integration.

Bethany reviewed the forms of in-kind support provided by UMass for NE CASC which includes supporting USGS staff by providing reduced overhead, on-campus office and conference room space, adjunct faculty appointments to mentor graduate students, and opportunities for strong collaborations across campus. UMass also supports research reviews by the Animal Subjects review board (Institutional Animal Care and Use Committee (IACUC)) and the Human Subjects Review Board (Institutional Review Board IRB)). In addition, NE CASC staff and PIs from UMass visit Capitol Hill annually, have done lobbying work about the CASC system, and have a great relationship with the Massachusetts Congressional delegation who support NE CASC's work and the CASC Act (which is proposed legislation that would authorize the CASCs).

UMass also provides direct in-kind support for four graduate students and has provided a 10% reduced overhead on the Host Agreement, freeing up funds to support actionable climate science research. UMass' total in-kind support is approximately 40% of the total host budget.

Laura Vandenburg, Vice-provost of research and engagement, noted that UMass is a leader on the science of understanding climate change and how that impacts communities, populations and people. In addition to hosting the NE CASC since 2012, leadership efforts include the School of Earth and Sustainability, started in 2016 as a central hub for research, innovation and outreach, and the Energy Transition Institute which is focused on creating ways to enable a fast and fair transition to green energy. UMass has several other research centers on campus and is the #1 public research university in New England with over 1400 full-time faculty, 8000 graduate students and 24,000 undergraduates.

Rob Deconto, SES Director, noted that there are more than 440 faculty members working or teaching on sustainability and climate-resilience, 32 undergraduate programs, 27 graduate programs that are framed around sustainability and climate resilience, and over \$100 Million in research funding. UMass is a top 10 large public research university for sustainability.

Rob provided an overview of SES, which is a central hub for sustainability and sparking transdisciplinary collaboration. SES is going through a transition and a campus-wide working group is exploring future structures that would include NE CASC. SES works to spark new research around sustainability and has seed grant programs to support new ideas on climate. SES and NE CASC are supporting emerging initiatives related to coastal resilience, graduate training, international climate and cryosphere research, atmospheric research, and have strong ties to USDA Extension services, which offer resources and training regarding climate and renewable energy transition. Presentation slides are available [here](#).

Questions and Comments from the ERT

- *Question/Comment:* Do we know if NE CASC's presence has allowed the university to leverage other funding? Have the university fundraising entities and foundations been able to take advantage of outside funding due to this relationship?
 - *Response:* Yes. NE CASC has helped open doors for faculty to apply for funds they would otherwise not be competitive for. There is an opportunity to better engage with the UMass foundation, which is new. The foundation has provided a lot of support in connecting researchers to non-federal funding resources.
- *Question/Comment:* Can you confirm the UMass overhead rate?

- *Response:* The overhead rate is 61.5%, reduced 10% to 51.5% for NE CASC. (When the Cycle II proposal was initially competed, UMass' overhead rate was 59.5%)
- *Question/Comment:* USGS has an enterprise system called BASIS+ (Budget and Science Information System) and every project that USGS funds is included except NE CASC and Climate Research Units, which use Science Base. The systems don't talk to each other. How could we get the two systems to talk to each other?
 - *Response:* Science Base and BASIS+ are different applications. Science Base is a USGS-based, science-results project page. It isn't used for tracking projects. BASIS+ is used for internal monetary tracking. The NE CASC awards have not been included, historically, because they are considered a federal purchase.
- *Question/Comment (Direct Question from meeting chat):* I would be interested to know if we have any sense of how much the presence of NE CASC has leveraged other funding for SES and other schools/departments and the university as a whole? Has the university foundation or other fundraising entities been able to capitalize on this USGS/UMass relationship to raise donor funding that could add value to this overall effort?
 - *Response:* Noted the excitement of leveraging NCASC with the Center for Braiding Indigenous Knowledge and Science (CBIKS) (see below for more on CBIKS). NE CASC was central to the success of getting that grant. CBIKS received a \$30 Million National Science Foundation grant for 5 years, with the option of extending another 5 years. Our link to the entire NCASC system was leveraged heavily. The mission of NCASC is well aligned with CBIKS and there is a synergy between our networks.
 - *Response (direct comment from meeting chat):* Yes. NE CASC is leveraged highly for justification in additional funds and centers including CBIKS. We have also received donor dollars as well.
- *Question/Comment:* How do you track what is being contributed by NE CASC and other centers/school.
 - *Response:* For proper accounting, we must track the funds carefully. it is essential that we track what falls into what category and cost-share is very carefully tracked.

Administrative Challenges

NE CASC Regional Administrator, Carrie Brown-Lima (USGS), and NE CASC Acting Assistant Regional Administrator, Will Farmer (USGS), presented on the federal/academic partnership, the geographical footprint change, and leadership changes within the USGS side of NE CASC and the challenges these created for the Host.

Will noted the different roles and differences in dedicated time between USGS and Host Leads. There are some clear administrative lines between the roles: only federal employees can provide advice/direction on how to spend federal funds, define the science priorities that drive funding decisions, and direct the work of federal staff. Federal staff can collaborate with the universities on ideas generation, but they are not obligated to act on recommendations.

Will reviewed the impacts of the geographic foot print change that shifted some consortium members to the MW CASC and included restrictions on adding new consortium members. This led to a loss in expertise from consortium members, including the Tribal partnerships with the College of Menominee Nation.

He reviewed multiple Federal leadership changes over the past few years, noting the transitions' impacts on the Host and USGS in terms of onboarding new leadership. USGS hired a permanent Regional Administrator in September 2023 (Carrie) and is in the process of hiring a permanent Assistant Regional Administrator and Research Coordinator as well as continuing to provide support staff through student contractors for partnership building and communications.

While USGS and the Host have different responsibilities and lead roles, the culture is dedicated to functioning together as "ONE CASC". Presentation slides are available [here](#).

Questions and Comments from the ERT

- *Question/Comment:* What effect do vacant positions on the federal side have?
 - *Response:* Mostly, missed opportunities. For example, the scientific priorities, which should have been developed by the federal side in Year 1, were not developed until Year 3. The science still continued because the consortium PIs had a good understanding of the priorities developed in Cycle 1, even if they were not articulated in Cycle 2. Other impacts included the time it took to onboard and get staff up to speed on the unique NE CASC system and solicitation process.
- *Comment:* One benefit of the transition is that Will was brought into leadership meetings to provide consistency, a practice that has continued with Carrie's appointment. This has resulted in increased awareness of NE CASC and USGS within the university.
 - *Response:* Being part of the leadership team allows us to show success of the NE CASC host agreement and bring back partnership opportunities to consortium universities.
- *Comment:* Having a lot of transitions can hamper relationship-building. The longer someone is in a role, the more relationships they will have and the more impactful the science will be.

Solution: Organizational Goal: Community Building

Former NE CASC Deputy University Director and current CBIKS Managing Director, Addie Rose Holland (UMass), presented on NE CASC's efforts to build community through dialogue-oriented events and connecting PIs across disciplines as a way to overcome challenges they faced. Addie Rose reviewed the challenges created by the change in footprint and leadership transitions, and noted how they resulted in opportunities to increase outreach, design new events, and build new Tribal connections.

During this time, NE CASC focused on building its internal community and leadership. Each PI builds their own network and communities. They looked at how to connect NE CASC PI's across disciplines to help with network-building, evaluation of adaptation strategies, populations management, and ecosystems research. They then engaged in external outreach to present NE CASC as a hub for relationship-based climate adaptation information and discussion by offering webinars, Open Houses, Tool Talks, Indigenous Knowledge Seminars, and strategic science discussions. Through these efforts, the university has become a strong and resilient support for the federal side of NE CASC. Community relationships are now more centered on the NE CASC organization and less dependent on an individual's

relationships. The results of this all is that people keep coming back to NE CASC for partnership and assistance. Presentation slides are available [here](#).

Questions and Comments from the ERT

- *Question/Comment:* Interesting, good information. Pleased to hear how you are developing, managing, and creating opportunities.
- *Question/Comment:* This shows how resilient the organization is in adapting to the changes. Some of these changes may have been challenging, but they opened other doors.

Building Academic Capacity for Tribal Engagement

NE CASC University Co-Director, Jon Woodruff (UMass), and CBIKS Director, Sonya Atalay (UMass), presented on NE CASC's efforts to build academic capacity for Tribal engagement. Jon reviewed the roles of NE CASC/United South and Eastern Tribes (USET) Tribal Liaisons Casey Thornbrugh and Steph Courtney, and the collaborative opportunities they provide in the region. Casey organizes Tribal Climate Resilience Camps and Tribal workshops which feature presentations from NE CASC members. Jon noted the loss of major Tribal partnerships with the change in the consortium footprint. NE CASC worked to build additional partners in the region. NE CASC was able to acquire a mini-grant of \$10k as part of larger Five Colleges, Inc. \$2.5M grant from the Mellon Foundation for native and indigenous studies to provide funding for virtual mini-residencies of paired Tribal Scholars and Tribal Elders from the NE CASC Region.

The initial connections from this effort led to an award via the project solicitation for to the University of Maine for designing tools and networks to support Wabanaki Adaptive Capacity for Climate Change. This was a unique grant for a member outside of our formal group of institutions. It took some creative thinking but allowed UMaine to join as an informal partner and Tribal Scholar and Prof. Darren Ranco to join our NE CASC Academic Leadership Team as a visiting PI (thus helping to fill the hole left with the loss of consortium member Chris Caldwell from the College of Menominee Nation due to the split off of the Mid-West Center). More recently, through our project solicitation we have also been able to bring in Prof. Robin Kimmerer from SUNY College of Environmental Science and Forestry to promote an indigenous-led research agenda for restoration and stewardship of culturally significant plants for climate change adaptation in the northeast. This award was also via the project solicitation but took a lot of work on the side of the host to make happen due to Prof. Kimmerer being outside of our formal university consortium.

Jon shared information about NE CASC's direct help in securing a new \$30M Center for Braiding Indigenous Knowledges and Science (CBIKS) funded under the NSF Science and Technology Center program and introduced Sonya Atalay as the new CBIKS Director.

Sonya noted that CBIKS received a National Science Foundation grant that funds a Science and Technology Center. CBIKS was awarded \$30 Million over 5 years with an option for an additional \$30 Million/5-year funding cycle. She noted that the NCASC mission is well-aligned with the mission for CBIKS, which received a letter of support from all regional CASC university directors.

CBIKS aim is to provide a foundational scientific understanding of how to effectively and ethically braid Indigenous knowledge and science with mainstream Western science to address significant climate changes, protect cultural places, and support food security. This involves carrying out research with

Indigenous communities in ways that are regenerative and involve care and responsibility with regard to Indigenous knowledge. With 8 regional hubs around the globe, CBIKS is conducting a comparative examination of braiding Western and Indigenous science on a global scale (and with 7 of these hubs covering similar footprints to existing regions of the CASC system). CBIKS has 7 thematic working groups that follow a co-lead model, pairing Tribal and non-Indigenous researchers when possible. CBIKS vision for 2033 is to see a world where braiding Western and Indigenous science is at the forefront of scientific inquiry. Presentation slides are available [here](#).

Questions and Comments from the ERT

- *Question/Comment:* Can you speak to conversations that you have had about what's been working well for NE CASC that you are seeking to integrate into how you operate CBIKS and vice versa.
 - *Response:* Grad students and convergent science (e.g. anthropology blending with climate science work) has been exciting for both of us.
 - *Response:* The funding was received in fall 2023. We were invited to the EPA conference to provide a joint panel discussion on NE CASC/CBIKS. We presented as a joint NECASC/CBIKS team and received positive feedback from Tribal representatives. There is so much excitement from graduate and post-doc students about transdisciplinary conversations and connections between NECASC and the new CBIKS center.
- *Question/Comment:* Would encourage collaboration with Jason Sorenson, USGS NE Region Tribal liaison.
 - *Response (direct comment from meeting chat):* CBIKS knows Jason and has a meeting with him and DOI colleagues in the next couple of weeks with our Policy & Government Agencies working group.
- *Question/Comment (Direct comment from meeting chat)* I would love to see if outcomes from this new work could influence our attempts in south Florida/Everglades to incorporate TEK from the Seminole and Miccosukee Tribes into our decision making.

Grants Administration

NE CASC Grants & Contracts Coordinator, Juliette Dixon (UMass), Addie Rose Holland (UMass), and Director of Office of Pre-Award Services, Kristy Reese (UMass), presented on NE CASC's fiscal management, pre-proposal process, and administrative capacity. Grant administration is a collective effort among NE CASC University staff, the UMass Center Research Office, NE CASC USGS staff and USGS Office of Acquisitions and Grants (OAG).

The host's budget for years 1-4 was \$3,464,710; however the total spent was \$3,267,170 due to Covid travel restrictions, hiring delays, changes in student/postdoc availability, and leveraging of funds used to support research. UMass in-kind support provided in Years 1-4 was \$1,453,450, which was 42% of the total proposed budget. 32 grants were awarded (5 upcoming, 6 complete and 21 active).

To assist PIs at other universities, UMass has developed a process explanation document that includes budgetary guidance, pre-proposal process and documentation requirements, and shared project tracking, all of which has resulted in efficiencies and improved processes.

Addie Rose noted that pass through grants require significant work and coordination for Host and Host University staff. They have developed a good team and process to manage any challenges. One challenge is that, while the CASC project budget may increase, there has not been a corresponding increase in the host's capacity to support those additional projects. UMass has leveraged funds to create a part-time NE CASC research administrator role to support pass-through grants and created a pre-proposal process to bring the NE CASC process in line with university procedures, streamline the process, and give guidance to university administrators. Also, positive relationship building with OAG representatives has been critical to the team's success. Presentation slides are available [here](#).

Questions and Comments from the ERT

- *Comment:* Kudos on developing the process; and building relationships with OAG. Appreciate the investments of time to get to that place.
- *Question/Comment:* Would like to hear more about the scientific review process of project proposals
 - *Response:* Will Farmer speak to this on Day 4.
- *Question/Comment:* Appreciate the “it takes a village approach.” Regarding Addie Rose’s comment regarding the unknowns about whether the budget will increase, can you comment on how the budget has changed in the cycle and any insights you might have about this?
 - *Response:* There has been discussion that, if budgets increase, to consider increasing the size of the awards rather than increasing the number of awards. Other Host Agreements have set limitations on the number of awards (acknowledging that additional awards can impact staff capacity). Juliette has been processing the pass-through entity awards and consortium universities are processing awards for individual PIs. There is room to grow as the process is streamlined.
 - *Response:* There has been an increase in federal appropriations to NE CASC. Currently, grants are non-competitive cooperative grants. They are exploring options to go above the \$500,000 limit; however, doing so could impact the ability to do non-competitive grants.
- *Comment:* Challenges of turnover and change are not unique to UMass – this is a common federal agency experience with a lot of retirements and a lack of entry-level jobs receiving applicants.
- *Question:* If you could change one thing from the grant cycle, what would it be?
 - *Response:* The budget template and budget justification form is not user-friendly. They require a lot of additional administrative time for other consortium institutions who are not as familiar with the USGS grant process. If the application details are a deterrent, people won’t even look at the possibility of the proposal. This is why good relationships with OAG make such a big difference.
 - *Response:* UMass could do more outreach and continuing education for consortium researchers to help them be as successful as possible with their project proposals,

- *Comment:* Note the importance of “science-enablers” – i.e. the administrative staff who support the research projects are a critical piece of the entire system.
- *Comment (direct comment from meeting chat):* This is a reminder that we should pass along "kudos" to OAG when they help us.
- *Question/Comment (direct comment from meeting chat):* I've found Sponsored Projects/OAG has been unbelievably helpful under often tight timelines. Relationship building and discussions about processes BEFORE you need a rapid turnaround helps immensely.

Closing the Day: Bethany noted that NE CASC will provide a document with answers to the ERT’s day 1 & 2 questions via email to everyone later today.

Donna thanked the ERT, CASC & Consortium Members, and USGS for their participation, engagement and attendance at the session. With that, the meeting was adjourned.

ERT Reflections on the Day

The ERT met in closed session to discuss what they had heard throughout the day. Clarifying substantive questions for the Host to answer during the remaining sessions, and/or comments included:

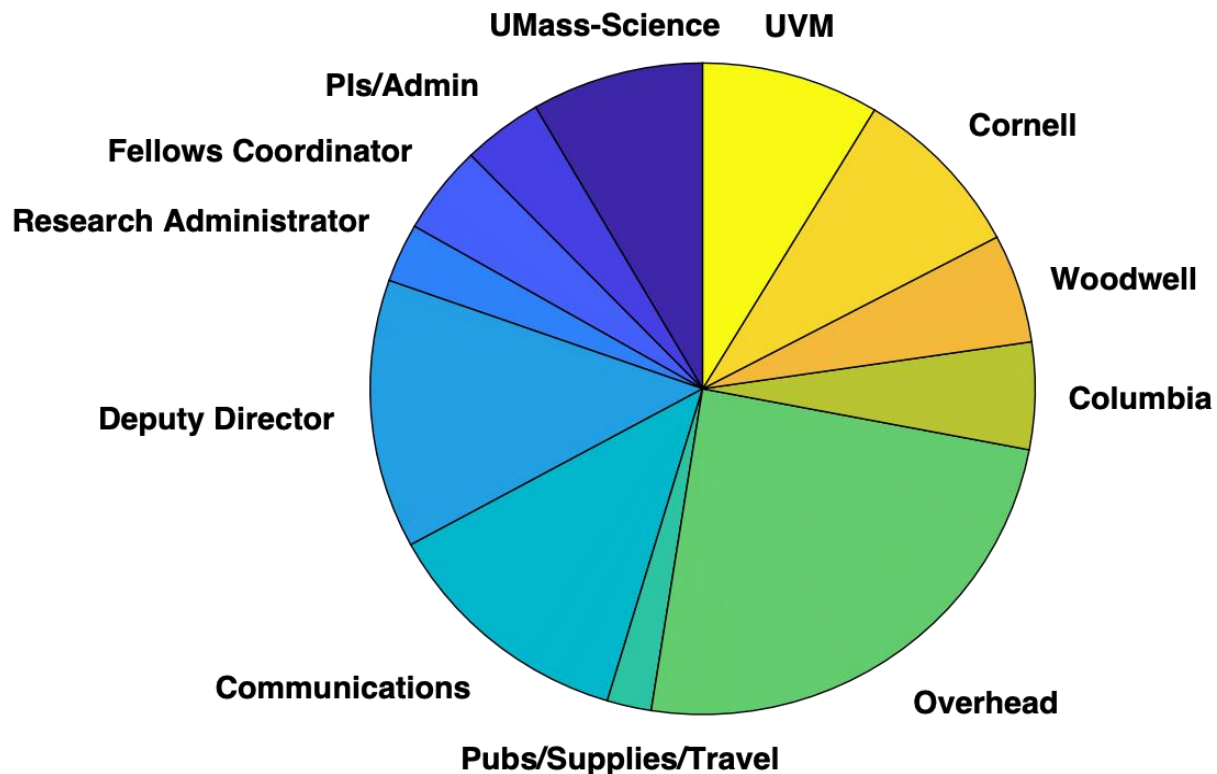
- *Question/Comment:* ERT members would like to see more detail about the consortium members. What are the contributions? How are (and how many) funds shared between the Host and consortium members? It sounds UMass-centric...is there an easy way to show whether or not it is?

Written response provided in summary edits:

For the science presentations we tried to highlight multiple PIs work but in hindsight we should have been more explicit so that it was clearer to ERT when science was coming from other consortium members. For example: 1. Saltmarsh collaboration between UMass and Woodwell, 2. Invasive species work between UMass, USGS and Cornell, 3. Forest adaptation led by UVM and UMaine, Climate Adaptive Population Supplementation led by Cornell, USFS and UVM, 4. Tribal work by UMass and UMaine (and UVM/Cornell); and finally 5. Inclusionary/collaborative DEI work and Fellows program among all consortium partners.

Day 3 was more on Institutional and Administrative support which is UMass-focused and the reason for the skew to UMass yesterday. That said, I think it is valid that some of this administrative work could be better shared among other consortium PIs in order to instill a bit more sense of ownership for the central operations associated with NE CASC. It is also important to note that we did not include presentations or mention of work from original PIs lost with the split. In hindsight, maybe it would have been useful to include presentations from these folks as its support represented a significant part of the host budget in the first part of Cycle II. However, these PIs have not been a part of our consortium for a few years now and it seemed awkward to present science outside of our current region.

For reference the figure below provides a one-year breakdown for the budget of the host funds allocated to UMass and partnership institutions (not including in-kind support from UMass and UVM).



- *Question/Comment:* What is the role/relationship with USFS as a consortium member? How does this partnership amplify USFS work? How did USFS become a consortium member?

Written response provided in summary edits:

Keith Nislow is currently a consortium PI representing the USFS. He sits at UMass and has an adjunct appointment with UMass' Department of Environmental Conservation. As part of the UMass PIs cohort (Bethany, Jon, Kostas Andreadis, and Keith), Keith receives one of the four graduate RAs provided by UMass through in-kind support for the host agreement. He has also received ¼ of UMass science funds from the host agreement, which amounted to 2 years of postdoc funds over the first five years of the agreement (these funds supported Amy Teffer, whom the ERT heard from on Tuesday describing the CAPS project).

- *Question/Comment:* How is the Host meeting the needs of its customers (e.g. USGS, consortium members, students)? ERT members would like to have an ERT-only discussion with USGS folks and, if possible, the same with some additional consortium members.

Written response provided in summary edits:

Customers might not be the right word here but rather partnerships. In all the presentations, we really tried to highlight examples for identifying and meeting partnership

needs. For example the salt marsh work is a true collaboration between NECASC (UMass and Woodwell), two other USGS Science Centers and the USFWS. We have all worked hand in hand jointly, meeting monthly with a mission from the onset to identify the top needs of our greater communities, which in this case was the inventory and impact of legacy infrastructure in the form of ditches and tidal restrictions. For the Regional Invasive Species & Climate Change (RISCC) work, we tried to articulate the process of establishing a key community network framed on Identifying, Prioritizing and Preventing range shifting species. The work presented as part of the session on Forest Adaptation similarly reflects a sustained partnership between NECASC (UVM Consortium) and forest managers, wildlife biologists, and Tribal Nations. This includes 11 co-produced research sites that were generated with diverse manager partners based on their adaptation science needs and include frequent interaction to guide research and outreach coming from each location. In addition, the species preservation framework shared by PI D'Amato and Tyler Everett is an outgrowth of monthly meetings over 1.5 years between the NECASC (UVM), several Tribal Nations, and state and federal partners to develop strategies to help inform adaptation strategies for sustaining the diverse value of threatened tree species for diverse goals and world views.

Students and postdoc researchers are being served in several ways, including direct training, integration into research teams that are coproducing climate adaptation science, and building their professional networks to help them effectively launch into the workforce. Direct training has been mostly focused to the fellows program, which provides a structured environment in which to practice four key components of collaborative science: stakeholder engagement, communication, ethical collaboration, and career preparedness. In addition to direct training, through their involvement in NE CASC, fellows also gain exposure to career and educational experiences through their participation in the fellows program. Examples include workshops such as the 2022 early career workshop hosted by NCASC in Albuquerque (8 NE CASC fellows attended, Yellen helped to organize), and the Diverse Knowledge Systems for Climate Adaptation Fellowship earned by fellow Cielo Sharkus.

In addition to direct training, NE CASC fellows learn about collaborative science through their integration into climate science coproduction projects. Here, they have to opportunity to engage with stakeholders and collaboratively refine research goals, methods, and applications. Last, the wide array of exposure to folks within the NE CASC network helps fellows to build their professional networks. The varied disciplinary fields from which NE CASC investigators and partners hail make this networking especially impactful for building transdisciplinary connections and exposing fellows to science career paths outside of academia.

*This session summary was respectfully submitted by the DS Consulting Facilitation Team.
Edits were welcome and sent to Day 3 Scribe: Nancy Pionk*

Day 4 – Overall Effectiveness Towards Host Agreement

DAY 4	Thursday, February 8, 2023: Overall Effectiveness Towards Host Agreement	
	Purpose:	
	- Review the <u>overall effectiveness</u> of the Host University and associated academic consortium in meeting the goals established under their current host agreements; - Aid the NCASC in developing improved requirements for re-competition of the next university hosting agreements; and - What recommendations does the ERT have for cross-CASC & NCASC learning from this Host?	
Time EST	Activity	Presenters and Affiliation
12:00–1:00p	External Review Team - Closed Door	Facilitation Team ERT Members
1:00 – 1:20	Brief Daily Introductions and Setting the Day	Facilitation Team NE CASC Coordination Team NE CASC USGS Leadership ERT Members
1:20-2:20p	Review and Recap • The NE CASC: Successes, Effectiveness, and Next Steps • Clarifying questions from ERT members	Bethany Bradley (UMass) NE CASC University Co-Director Facilitation Team NE CASC Coordination Team NE CASC USGS Leadership ERT Members
2:20 – 2:30p	Break	
2:30 – 3:45p	Facilitated Dialogue and discussion with ERT regarding the Overall Effectiveness Towards Host Agreement	Facilitation Team NE CASC Coordination Team NE CASC Principal Investigators NE CASC USGS Leadership NE CASC USGS Research Staff ERT Members
3:45 – 4:00 p	Closing Remarks & Adjourn	Facilitation Team NE CASC Coordination Team NE CASC USGS Leadership ERT Members
4:00 – 5:00p	Break	
5:00 – 6:00 p	External Review Team - Closed Door	Facilitation Team ERT Members
	Discuss ideas and insights gleaned from the four days: • What stands out? What needs comment in the ERT report? What are your thoughts about the overall effectiveness of this Host about its work in all areas? What recommendations could be included in your report? Clarify next steps in the process: • What is due and when?	

DAY 4: Facilitator's Summary

February 8, 2024, 12:00pm – 5:00pm ET

Topic: Overall Effectiveness Towards Host Agreement

Prepared by DS Consulting Facilitation Team

The following summary is intended to capture basic discussion, reflections, concerns, and insights from the session. It is not a verbatim transcript, but has links to the presentation.

Attendees present for all or part of the meeting (in alphabetical order):

ERT Members: Nick Aumen (USGS), Rezaul Mahmood (UNL), Duncan McKinley (USFS), Tom O'Connell (USGS), Erin Williams (NPS);

Host, CASC and Consortium Presenters: Jenica Allen (NECASC-UMass), Kostas Andreadis (UMass), Bethany Bradley (NECASC-UMass), Carrie Brown-Lima (NECASC-USGS), William Farmer (NECASC-USGS), Emily Fusco (NECASC-UMass), Caroline Gleason (NECASC-USGS), Addie Rose Holland (NECASC-UMass), Radley Horton (COL), Pete McIntyre (COR), Toni Lyn Morelli (NECASC-USGS), Keith Nislow (USFS NRS), Darren Ranco (UMaine), Jon Woodruff (NECASC-UMass), Brian Yellen (UMass);

Session Observers: Gus Bisbal (USGS-NCASC), Kristen Donahue (USGS-NCASC);

DS Consulting Team: Facilitator: Donna Silverberg, Reporting and Support: Tina Patterson, Colby Mills.

Purpose of the Day: Review the overall effectiveness of the Host University and associated academic consortium in meeting the goals established under their current host agreements; Aid the NCASC in developing improved requirements for re-competition of the next university hosting agreements; Reflect on recommendations the ERT has for cross-CASC & NCASC learning from this Host.

Brief Introductions & Setting the Day

Facilitator and External Review Process Manager, Donna Silverberg, welcomed the group: NE CASC ERT Members; NE CASC Host, University of Massachusetts-Amherst (UMass), leadership and team; NE CASC USGS leadership, NE CASC Consortium Members; and NCASC session observers.

Review and Recap

NE CASC University Co-Director, Bethany Bradley (UMass), reflected on the NE CASC Host's strengths, challenges, and opportunities. She reminded the group of the NE CASC Network themes: centering relationships, reflecting and responding, and transforming challenges to help improve. The Challenges the Host and consortium faced were largely on the administrative side. The team has focused on shaping any challenges they face into opportunities for all. Presentation slides are available [here](#).

Strengths, Challenges, and Opportunities

Strengths

- On the science side: emphasis on long-term relationships and projects that lead to actionable science. She noted that they have a great group to work with at UMass and their partner consortium members, all of whom are motivated to do good purpose-driven, relationship-based work.

- On the programmatic side: they have developed a mature fellows training program, made progress with DEIJ goals, renewed and expanded Tribal engagement (UMaine, CBIKS), and developed PI capacity to propose and implement solid projects.
- Strengths overall: the group is committed to self-evaluation and responsiveness to feedback. They do this through surveys/programming after webinars, after events, and during projects. They also have focused on a strong working climate to support DEIJ efforts.
- Strengths on the administrative side: there is an effective infrastructure to support grant management and the team is effectively handling complex issues. We have strong support from UMass as a committed and strong partner, and this complements the State of Massachusetts' commitment to being climate change leaders.

Challenges

- Leadership transitions (federal and university) - the USGS team is a small group and there were periods of time with vacancies that the Host team helped to fill when they could. The USGS funding process is different enough from other science funders that it requires a lot of creativity and out-of-the-box thinking on the host administration end to be as efficient as possible and time for proper PI education (e.g., pre-proposal, second-level vetting, and alignment with the CASC framework). NE CASC now is in a good place with a solid new USGS leader and the team is excited about the cohesiveness they have developed.
- Political transitions affected funding, decisions, timeliness, and overall support. The agreement started in one administration and shifted to a new one, which impacted how work was done.
- Geographic footprint changes: to assist with the transition, the Host had extra admin tasks to help that be smooth. They also lost science and Tribal capacity that had been part of their original proposal and initial investments (e.g., University of Wisconsin, University of Missouri, and College of Menominee Nation).
- Under-funding: NE CASC received \$ 1.6 million per year in Cycle I, but took a reduction in Cycle II, receiving \$900K per year, which resulted in operating on a shoestring budget. This has led to administrative understaffing and a need to seek leveraging funds. Funding also was not sufficient to fully support all consortium partners (the University of Vermont and Cornell received funding all years, but Woodwell and Columbia did not).

Opportunities for Cycle III

- NE CASC plans to deepen and broaden long-term partnerships with current and new partners.
- They hope to leverage added funds in Cycle III into larger projects (as opposed to more projects).
- They plan to expand on the lessons learned to the Mid-Atlantic states, expand their DEIJ work, and maintain a strong relationship with CBIKS to expand Tribal engagement.
- They look forward to expanding their efforts to the north and south with additional consortium members.

- They plan to deepen the partnership with USGS' permanent CASC staff, and are hopeful to have a full-time research coordinator, and associate research administrator in place soon.

Bethany shared a graphic of the Host budget and where funds are used (see slides). She noted that year 6 funding is closer to \$1 million. The blue and green pieces of the pie in the presented pie chart s show monies that come to UMass, which receives 51.5% as overhead and has 4 PIs. UVM and Cornell receive approximately \$87.5K per year, and Columbia and Woodwell currently receive approximately \$50K per year (which we have been able to provide to our consortium partners following plus up funding that occurred mid-cycle). Each consortium university also has one PI (4 now; they had 7 prior to the footprint change).

Discussion and Clarifying Questions with the ERT

- *Comment:* Kostas Andreadis (UMass) was introduced as being new to NE CASC, replacing Rick Palmer following his retirement mid-cycle.
- *Was the pandemic a challenge?*
 - It was. Now it is almost as though it faded. The pandemic pushed us to be remote and do things we were already doing virtually better. We like to meet people in person, so there's always tension between virtual versus in-person. That said, we've embraced the benefits that virtual work has for being more inclusive.
 - For sure. We lost an entire field season across the consortium, but most folks made up for that in the following years. In a lot of ways, the fieldwork was the first thing to come back.
 - The pandemic and a change in administration resulted in delays in funding for some projects and some bottlenecks. Some of the gap in funding was due to COVID-19.
- *Is it safe to assume that when you say Host University people are paid, that it's a portion of their salary, not all of their salary?*
 - The fellows' coordinator is at about 20% time, Bethany and Jon are at 8% (1-month), and Juliette (Research Administrator) is at 25%. Addie Rose was part-time, but Emily Fusco (our new Deputy University Director) will be at 100% time beginning this summer. Will Kazmier (Communications and Outreach) is at 100% and Jenica Allen's part-time availability to coordinate the ERT prep has been critical.
- *So not all consortium members are receiving funding, only the three listed?*
 - All consortium members have received funding since Year 3.
- *As you look at expanding, is funding a limitation?*
 - The Cycle III annual budget is going up to about \$1.5 million per year. We will need more on the admin side to provide more support capacity for handling greater funding via Project Solicitation. We also hope this additional funding will allow us to expand south via additional consortium members.

- *What are your thoughts: if you were trying to add a member in the south, would you expect to cover them by UMass, in kind, or RFP funds? Is there interest for southern state members to be in the consortium? Will there be challenges finding members?*
 - There are certainly differences in the lay of the land. We're mainly looking at land grant institutions. PIs have identified people that they have worked with before. However, we do not want redundancy expand to gain new scientific expertise.
 - In an effort to expand, we have plans to reach out to Virginia Tech.
 - The University of Maryland System also would be a good fit.
- *Suggestions to make the NE CASC stronger:*
 - Massachusetts is the only state without a state climate office. Encourage the state to establish the office.
 - Work with Art DeGaetano's group (Northeast Regional Climate Center) to operationalize efforts.
 - Contact a former state climatologist in Vermont for assistance.
 - NE CASC has advocated for state climate efforts for a while. Massachusetts has just recently opened a new Office of Climate Science and NECASC PIs and Associates are invited members of the state advisory panel for this new office. For the recompile, a priority would be to bring in a PI with additional connections and relationships for additional areas in our region.
- *What are the top things you would continue in the next cycle? What one or two things would you change or add?*
 - Continue the Fellows Program
 - Change or add:
 - Try to cultivate working groups or a community of practice.
 - Organize an annual meeting to all come together.
 - Bring in institutions from the south.
 - Expand expertise portfolio.
 - Communicate better with the Fellows: align more harmoniously the "many voices, one concept".
 - Streamline and value university partnerships.
 - Include CASC Act funds into the federal budget in a permanent way so USGS colleagues don't have to work so hard to advocate for funds each year (this is a Congressional appropriation issue - USGS funding is 1-year funding).

- (From an historical perspective) It has felt like the university folks are not trusted or valued by the USGS. One big plus in the last year is that NCASC included NE CASC in the federal director selection process and it felt like NE CASC voices mattered and this was appreciated.
- *What is it that you feel you have to go through now to show that trust is warranted?*
 - There are a couple of grants administration examples (such as multiple pages required for small grant proposals, whereas NSF has given multi-million-dollar grants with a 2-page limit for a budget justification which is the other extreme). The lack of trust is more institutional, not individual.

Facilitated Dialogue and Discussion with the ERT Regarding Overall Effectiveness Towards the Host Agreement

Donna facilitated an open dialogue between the ERT and the NE CASC team regarding the Overall Effectiveness, allowing any remaining questions left from prior days throughout the Review to be asked and answered:

Questions and Comments from the ERT

- *Kudos on providing training for relationship building. Which material is being used?*
 - We use a workshop guide from the Interaction Institute for Social Change.
 - Chat Comment: I wish there was a people management/relationship building curriculum when I was in college. It is such an essential skill set needed for natural resource science and management.
 - Chat Comment: The focus on relationship-building training is great. I wish it had been done when I was in graduate school as it truly is at the heart of actionable science.
 - Chat Comment: I recommend 'Facilitating with Ease' by Ingrid Bens for any/all. Excellent ideas to support good collaborative work.
- *You had key terms about federal research in your agreement; How are science priorities set? Is it ad hoc or is there a core?*
 - The science priorities are set by a USGS-convened/led science advisory committee. Director Katherine Smith worked to establish four key areas prior to her departure: 1) climate impacts and vulnerability, 2) effectiveness and transferability of adaptation strategies, 3) landscape-scale conservation strategies, and 4) social, cultural, and economic considerations in climate adaptation. We're very strong in the first three, but not as strong in the fourth area yet. We have been talking about building capacity for urban ecology to address #4.
- *The Host's focus on relationships is great.*
 - UMass has a public engagement fellow program for students and a civic engagement program for faculty.
- *If funding levels were flat in Cycle III, how would that impact your ability to build capacity?*

- That would be really hard. We likely would ask UMass or consortium members to pitch in more. We don't think this will happen because NCASC has indicated it has funding.
- *Do you see obligations to institutions now in the Midwest dropping in Cycle III?*
 - Yes. We also have new projects we hope to implement in the new footprint. When NECASC lost the Midwest partners, funding for Columbia and Woodwell resumed, so we added back those funding obligations. We need funding to add an additional partner in the southern area of the footprint.
- *What if UMass were not selected for the next round? How disruptive would it be to the regional climate action science work you have been leading?*
 - We might have to revert back to the 'loading dock' research we used to do. We and NCASC would lose the investment in developing THIS Center (and doing so wouldn't make sense since this Center is fully functional).
 - It would take a new organization time and money to figure out how things work. We are time tested; it would be one thing if we were a dysfunctional center but it doesn't make sense for another organization to be selected considering our proven track record of success and investments we have made in spinning up and continually improving upon such a high functioning CASC over the last 12 years.
 - Outcomes relative to late in cycle: we were asked to show how our work affected plans; the work UMass and USGS have done with constituents has been ongoing. To rebuild that pipeline would be a substantial effort by others.
 - One of the great successes of NECASC and NCASC has been the RISCC initiative - that work has built a broad network that needs to be supported.
 - NECASC has been an overachiever; If UMass were not selected, this would undermine the RISCC network efforts.
 - We have been highly successful in leveraging NECASC to build additional and complimentary centers. For example, we have CBIKS at UMass in part because of NECASC.
 - If we lose NECASC we'll still figure out ways to maintain the relationships we have in the region because they are so important to us.
 - We operate in a five-year cycle which is longer than the typical 2-3 year grant, but still places some restrictions on relationships that take longer to build in order to do quality actionable science. There is a tension in the system; some might say it is an inherent conflict. That said, having been funded over two cycles now has provided a real opportunity in terms of time required for establishing solid relationships in the region that stand the test of time.
- *Follow up: Do you see that if it goes away it would have similarity to the Landscape Conservation Cooperatives (LCCs)?*

- LCCs and CASCs were originally paired together. When funding got pulled for LCCs it was a huge loss to the RCASCs. If NE CASC funding got pulled, I hate to think about what it would do to our partners (like RISCC and CBIKS). I think we are adding value. UMass cares deeply about climate and is committed to the NECASC mission. It would be a big loss.

Closed Sessions

Donna facilitated separate closed-door sessions between the ERT and the NE CASC Consortium PIs, and with NE CASC USGS leadership; notes were not taken during these discussions to encourage open conversation.

Closing Remarks & Adjourn

ERT members and others noted that the week had been an impressive effort, with more information presented than expected. Many noted how impressed they were with the effort by the Host and all who attended. ERT members appreciated the exemplary focus on relationships that support actionable science, the Fellows program, and the communication of hard ideas in a way that supports people taking action together.

Donna thanked the ERT, CASC & Consortium Members, and NCASC for their participation, engagement, and attendance at the sessions. With that, the meeting was adjourned and the NE CASC Host External Review was concluded.

*This session summary was respectfully submitted by the DS Consulting Facilitation Team.
Edits were welcome and sent to the Day 4 Scribe: Tina Patterson (tina.patterson@jadeitesolutions.com)
and support staff Colby Mills (Colby@dsconsult.co).*

END OF DOCUMENT