CLIMATE ADAPTATION LEADERSHIP AWARD
for natural resources

PREVIOUS WINNERS

2023

WINNERS

Federal: Dr. Dawn Robin Magness, Landscape Ecologist, U.S. Fish and Wildlife Service, Kenai National Wildlife Refuge

Dr. Dawn Magness's work on climate adaptation is pivotal to a cultural shift within the U.S Fish and Wildlife Service (USFWS) to proactively steward toward future conditions. She does this by utilizing systems thinking, her on-the-ground experience with ecological transformation in Alaska, and her unique way of thinking about the landscape as a spatial modeler. Dawn grounds her thinking about ecological transformation and landscape change on the Kenai Peninsula, which positioned the Kenai National Wildlife Refuge as early adopters in thinking about how to assist managers in making science and value-informed decisions to proactively steward toward novel future conditions.

Among her many accomplishments in leading a cultural shift with the USFWS, Dawn was a thought leader for the 2022 Special Issue of Bioscience that described the Resist-Accept-Direct Framework and how it can be used to conserve biodiversity and ensure a more resilient future for fish and wildlife. In 2022 and 2023, Dawn led the USFWS in writing a Resist-Accept-Direct (RAD) Implementation Guidebook document with her agency colleagues. This same team designed and carried out the first-ever RAD Workshop, held at the National Conservation Training Center (NCTC) in January 2023, which catalyzed nearly a dozen climate adaptation plans and projects across the country. Dawn leverages her climate adaptation experience at the national level to inform the USFWS's Climate Change Action Program (CCAP) and leads the CCAP Spatial Planning and Adaptation Implementation Subcommittee. With over 20 years of work in climate adaptation and her landmark work to provide the foundational pieces for thinking about how agencies steward toward the future, this award is much deserved.

State and Local: Dean Paron, Stream Habitat Supervisor, Minnesota Department of Natural Resources, Fish and Wildlife Division

Dean uses multiple strategies to adaptively manage fisheries to climate change. For his work area, he developed and applied a fisheries climate action plan to identify and prioritize work, the first of its kind in Minnesota. He works with diverse partners to protect and improve habitat for trout and other coldwater species in streams, including identifying and improving areas with low connectivity and through management of riparian areas. He helps prioritize the replacement of infrastructure to improve fish passage using projected stream temperature data, focusing on streams and reaches that are most likely to maintain brook trout habitat in the future. Recognizing partnerships can expand the scale of projects, Dean has led the formation of diverse partnerships that include state and federal agencies, local governments, non-profits and private landowners to protect or improve stream temperatures, developing

and implementing riparian enhancements with tree species that will shade stream reaches and slow the rate of snowpack melting. He frequently talks with local groups and media about climate action to protect trout in northeast Minnesota.

Dean helps lead the Minnesota Department of Natural Resources (MNDNR) statewide strategy on climate communication and outreach with staff at all levels of the organization. He helped organize two all-staff climate conversation conferences and update the MNDNR climate scorecard, a tracking mechanism for climate-related work. Dean is the chair of the MNDNR Fish and Wildlife (FAW) Climate Committee that promotes integration of climate change into agency work, provides information on climate adaptation and mitigation, and identifies and supports climate training opportunities. He has been actively involved in 5 subcommittees, including a carbon inventory on FAW-managed lands and a statewide fisheries climate action plan.

Tribal: Bazile Minogiizhigaabo Panek, Institute for Tribal Environmental Professionals,
Kawe Gidaa-naanaagadawendaamin Manoomin research collaborative

Starting in 2022, Bazile worked as the Tribal Climate Adaptation Menu (TAM) Coordinator for the Great Lakes Indian Fish & Wildlife Commission (GLIFWC). In this role, he brought together tribal and non-tribal communities, agencies, and organizations in multi-day workshops to discuss climate change and decolonial approaches to adaptation. Participants left with plans for climate adaptation that supported Indigenous communities in their management areas. Bazile also facilitated bi-monthly calls to provide additional resources, inspiration, and community for participants. Bazile has since transitioned from GLIFWC to the Institute for Tribal Environmental Professionals (ITEP) as a consultant for their Tribes and Climate Change Program. At ITEP, he is co-leading the efforts to convene the second volume of the Status of Tribes and Climate Change (STACC) Report which will focus on Indigenous Knowledges in climate adaptation and mitigation planning. This involves convening and facilitating a steering committee of 20 leaders in Indigenous climate sciences as well as gathering input from the broader Indigenous communities across Turtle Island. Additionally, for the past two years he has consulted as an Ojibwe knowledge holder on a Manoomin research collaborative between several Ojibwe Nations and the University of Minnesota. This research collaborative works to study Manoomin (Wild Rice in the Ojibwe language) to support adaptative caretaking of this sacred plant relative in the face of climate change. For this partnership, Bazile has led the collaborative construction of a framework for understanding Manoomin and its relationships grounded in Ojibwe knowledge of the Medicine Wheel.

Non-government Organizations: Dr. Krista Romita Grocholski, Physical Scientist, The RAND Corporation

Dr. Krista Romita Grocholski has made significant contributions to climate adaptation and resilience capacity in the Mid-Atlantic. Her leadership on the MARISA team for over 5 years has been instrumental to the team's research, tool development, outreach, and partnership building. Particularly notable is Krista's leadership of two MARISA web products, co-produced with partners, which have substantially enhanced the adaptive management of Mid-Atlantic communities and ecosystems.

Krista led the development of MARISA's Seasonal Climate Summaries and Outlooks; a quarterly series, now in its 4th year, that details seasonal weather and climate change. Each summary has interactive data tools and analyses of temperature, precipitation, and season-specific weather. Developed with input from users throughout the region, these are one of MARISA's most popular products.

Krista also led the development of the Climate and Hazard Mitigation Planning (CHaMP) tool, along with a technical report, CHaMP supports local and regional planners, natural resource and emergency managers, and climate adaptation professionals to incorporate historic and projected climate data into their adaptation efforts and Hazard Mitigation Plans. CHaMP was created in partnership with the Urban Sustainability Directors Network, planners in Blacksburg, VA and Philadelphia, and the Carolinas and Great Lakes RISA/CAP programs, whose geographies are part of the tool.

Broad Partnerships: Southeast Regional Partnership for Planning and Sustainability

The mission of SERPPAS is to solve problems in value-adding ways that provide mutual and multiple benefits to the partners, which include Department of Defense (DOD), state environmental and natural resource agencies, and their counterparts at federal agencies, to support their missions and secure the future for the region and the nation. Since 2019, an increasing focus on climate adaptation and resilience across DOD and these agencies has prompted accelerated action to address climate resilience in the region's ecosystems. Among these efforts are monthly meetings of a Coastal Resilience and Regional Adaptation Workgroup, leadership in the South Atlantic Salt Marsh Initiative and a Sentinel Landscapes Climate Resilience Summit to accelerate climate resilience planning across the landscapes around military installations and ranges in the southeast. Since 2005, SERPPAS has leveraged the power of unconventional partnerships to solve natural resources challenges and has increasingly focused on the threat of climate change in the last 5 years.

Emerging Leaders: Dr. Thomas Timberlake, Climate Change and science Coordinator, U.S. Forest Service, Western Wildland Environmental Threat Assessment Center

Although 30 years of climate change science are available, integration of this information into practice on federal lands has been relatively slow. Dr. Thomas Timberlake has accelerated the integration process, making significant contributions to science, decision making, and policy in the U.S. Forest Service and beyond. After receiving his PhD from Colorado State University in 2019, Thomas has published more than 12 peer-reviewed journal articles and reports focused on climate change policy and applications on federal lands, including a landmark evaluation of the application of climate change vulnerability assessments on federal lands. These publications have advanced the science related to climate change assessment, adaptation, and policy, providing a solid foundation for resource managers to implement adaptation practices.

During the past four years, Thomas has worked collaboratively with resource managers in the Forest Service and other agencies to develop detailed climate change vulnerability assessments covering

millions of acres of public lands in the western United States. His work on tools and data that expedite integration of climate change in natural resource planning and projects has been especially innovative. For example, he designed a tool that inserts relevant information from climate change vulnerability assessments into Forest Service land management plans, thus facilitating the forest plan revision process. He was also a lead author on the Forest Service Climate Adaptation Plan. Working across multiple research and management organizations, Thomas is helping to translate climate change science for planning and on-the-ground applications on federal lands.

Distinguished Leaders: Dr. Charles "Chip" Fletcher, Interim Dean, and Dr. Haunani Kane, Assistant Professor, University of Hawai'I at Mānoa

Interim Dean Dr. Chip Fletcher and Assistant Professor Dr. Haunani Kane have made substantial contributions toward helping Hawai'i plan for climate change. Professors Fletcher and Kane both dedicate their careers to researching impacts from sea level rise and climate change on Hawai'i's ecosystems and both urban and rural communities. They meet with U.S. Fish and Wildlife Service biologists whenever asked and share their knowledge freely. Drs. Fletcher and Kane enthusiastically provide the most current data and expert guidance to Fish and Wildlife Service biologists in Hawai'i regarding strategies to apply the Resist-Accept-Direct framework to address challenges in managing coastal wetlands that supports four listed waterbirds species and provide myriad benefits to many urban and rural coastal communities adjacent to these wetlands.

HONORABLE MENTION

Federal: Dr. Michelle D. Staudinger, Science Coordinator, USGS Northeast Climate Adaptation Science Center

Dr. Michelle D. Staudinger initiated and led a climate change synthesis for states' 2015 and 2025 Wildlife Action Plans. Michelle established a regional Climate Change Working Group of federal, state, academic and NGO partners to share current state of the art information and tools to advance all partners knowledge and ability to respond to climate change.

Michelle initiated annual symposia for Northeast Association of Fish and Wildlife Agencies, conferences, webinar series, and has demonstrated an enduring dedication to NEAFWA and its work to conserve Regional Species of Greatest Conservation Need. She serves as a highly respected and accessible source of current climate change data and tools information for northeast conservation partners and has expanded the quality and availability of data to be readily applied by states. Michelle effectively designed and directed NECASC research and fellows so outputs can be implemented by resource managers to guide on-the-ground conservation actions. Her effectiveness stems from her vision to meet the needs of state fish and wildlife agencies by developing and providing meaningful climate change adaptation strategies at the state and regional level.

Tribal: Climate Adaptation + Tribal Forest Protection Act Leadership Group (Aubrey Maccoux-LeDuc, on behalf of the Bay Mills Indian Community; Rachel Tarpey, on behalf of the Keweenaw Bay Indian Community; Erin Johnston, on behalf of the Keweenaw Bay Indian Community; Eric Clark, on behalf of the Sault Ste. Marie Tribe of Chippewa Indians; and Alina Shively, on behalf of Lac Vieux Desert Tribe of Lake Superior Chippewa)

In September and December 2022, the Climate Adaptation + Tribal Forest Protection Act Leadership Group helped organize climate change adaptation workshops between natural resources staff members at their tribes, tribal citizens, and staff from the US Forest Service. The workshops were designed to identify shared climate change adaptation priorities and to develop several project ideas to advance through the Tribal Forest Protection Act (TFPA). The TFPA is a little-used authority that helps federally recognized tribes directly propose actions to be implemented to reduce risks to tribal values on Forest Service or Bureau of Land Management land. The individuals in this Climate Adaptation + Tribal Forest Protection Act Leadership Group workshop helped their tribes address the risks to tribal values that are occurring or anticipated on Forest Service land. The workshops considered how climate change might affect or intensify risks to tribal values, and they used the Tribal Adaptation Menu and Adaptation Workbook process to consider actions that can help address and adapt to climate change impacts.

Tribal: Termaine Edmo, Blackfeet Environmental Office and Cultural Field Monitor, Piikani Lodge Health Institute

Termaine leads the Blackfeet Tribe's Climate Change programming and collaboration between organizations with a focus on cultural climate adaptation or Traditional Ecological Knowledge. Her efforts have focused on implementing natural practices from the Blackfeet Climate Adaptation Plan.

The work engaged multiple sectors with unique challenges such as different funding barriers leading to sustainable partnerships across sectors to overcome these challenges and showcase this work across Indian Country. One example are the beaver mimicry project from the water sector where work is being done to naturally store water and create carbon sinks, promoting healthy riparian areas while honoring one of the most sacred beings the Beaver. Controlled burns, regenerative agriculture, traditional harvests, and snow fencing are other examples of projects where traditional ecological knowledge is benefiting the agricultural producer and resulting in healthy sustainable ecosystems, improve soil health, and habitats to share a livable climate for all. Within these projects, Termaine teaches youth and leads cultural programming to translate these values to the next generation.

Tribal: Teresa Romera, Native Coast Action Network; Santa Ynez Chumash Environmental Office (SYCEO); Coastal Band of Chumash Indians

Teresa Romero works with partners in California on innovative and collaborative projects happenings at the intersection climate change, ecosystems, and Tribes. She works with NOAA Channel Islands National Marine Sanctuary, NOAA Fisheries, California Ocean Protection Council, EcoTrust, Tribal Marine Stewards

Network, UCSB, Stanford University, and many Tribes. She has been instrumental in developing Tribal indicators for impacts of climate change.

Teresa facilitated the Santa Ynez (SY) Chumash Band of Chumash Indians joining the Tribal Marine Stewards Network as the only southern California partner, and has helped fund the the alliance of Tribal Nations working to protect and restore coastal and marine ecosystems, and cultural resilience for today and future generations.

She is an enrolled member of the Coastal Band of Chumash, and is a member Syuxtun Plant Collective, a traditional plant collective focusing on tending, gathering and preparation of traditional plants. Teresa has served on the MPA Statewide Leadership Team as a Tribal Representative since 2019. Teresa has worked for over 20 years assisting Tribal Communities on projects, such as acquiring lands for the Kashia Band of Pomo Indians, protecting Treaty Rights (Little River Band of Ottawa Indians) and preserving traditional cultural knowledge for her Chumash community. In her time with the Kashia Band of Pomo Indians, Teresa assisted in the acquisition of additional tribal lands including the Kashia Coastal Reserve and oversaw all Tribal Government programs. While working with the Little River Band of Ottawa Indians Teresa assisted in development of hunting, fishing and gathering regulations and an N'me (lake sturgeon) rehabilitation project.

Non-government Organization: Dr. Anthony D'Amato, Professor and Director of Forestry Program , University of Vermont, Rubenstein School of Environment and Natural Resources

A 2023 survey of foresters identified climate change and invasive species as top threats to the Northern Forest. These challenges have been amplified by a third major threat: public skepticism towards the concept of forest management, an attitude that reflects growing support for the goal of transforming forests into unmanaged wildlands rather than maintaining them as a diversity of forest conditions, including protected wild areas and woodlands managed for a diversity of objectives.

Anthony D'Amato has recently fostered an opportunity for foresters to define themselves as agents of change who expand their traditional professional roles and facilitate new thinking and partnerships in the service of forests. This reframing is illustrative of D'Amato's own career. A Northeast CASC principal investigator, D'Amato has advanced climate adaptation and transcended the typical definition of an academic scientist by: 1) Producing original research that is guided by management questions and yields findings that inform management decision-making; 2) Leading what some have called a "renaissance in silviculture" through translation of technical research into outreach products for stakeholders and mentoring early-career forest researchers; and 3) Developing a community of practice around forest adaptation through innovative web-based tools and engagement activities.

Broad Partnerships: The Staying Connected Initiative

The Staying Connected Initiative (SCI) is an innovative, cross-border, public-private partnership of more than 70 organizations in the United States and Canada working to conserve and restore the key landscape linkages of the Northern Appalachians to Acadian region – the world's largest-remaining temperate deciduous forest. As the northern third of the continental-scale Appalachian corridor, this region is vital for large landscape connectivity and mitigating the impacts of habitat fragmentation and climate change on wildlife. Staying Connected partners work at multiple scales - locally, statewide and regionally - to conserve and restore habitat connections.

Beginning in 2008 with funding from U.S. Fish and Wildlife Service Competitive State Wildlife Grants, the SCI partnership takes an integrated, multi-pronged approach to ecological connectivity at the landscape scale. Using conservation science to guide their work in land protection, land use planning and road barrier mitigation, Staying Connected partners have conserved more than half a million acres in priority habitat linkages, helped 159 municipalities or regional commissions add connectivity provisions to land use plans, and generated over 200 news media articles covering connectivity to raise awareness about the importance of the connected landscape.

2021

WINNERS

Federal: T. Douglas Beard, Jr., Chief of the National Climate Adaptation Science Centers, U.S. Geological Survey

Doug established, defined, and grew the network of National and Regional Climate Adaptation Science Centers (NCASC, CASCs). With an initial Congressional appropriation, he took the stakeholder-developed blueprint for a network and made it a reality, selecting university partners, hiring senior staff, and developing the internal structures and controls for a growing organization. CASCs are now an established feature of the local, regional, and national conservation scene due to the vision, mandate, and flexibility Doug provided. He served as acting Associate Director at USGS for a period far longer than normal details, at a time when the agency was in a difficult budget and political transition. Over the past four years, Doug was the primary interface with senior USGS and DOI officials, at a time when the program was under intense scrutiny and was proposed for elimination. Doug's ability to draw and leverage the support of partners and stakeholders at this critical time resulted in a major budget increase for the network, and expansion from 8 to 9 regional centers, a long-sought goal. Aside from his day job, Doug has been president of the World Fisheries Congress, and has fostered a research program about global fisheries and climate. In addition, Doug has actively recruited to diversify the NCASC/CASC workforce and has a "family-first" approach to his employees that enables reasonable work-life balance.

Broad
Partnership: Northeast Regional Invasive Species & Climate Change Management Network (NE RISCC Management Network)

Translating information between scientists and managers: RISCC aims to translate science for managers by synthesizing invasive species and climate change research to highlight key management-relevant aspects. RISCC aims to share manager needs and knowledge by synthesizing input gained through surveys, discussions, and workshops.

Building stronger networks of scientists, managers, and policymakers: RISCC aims to build a stronger network by facilitating opportunities for communication and cooperation between stakeholders, including co-production of knowledge. Addressing stakeholder needs through original research: RISCC aims to address priority science needs of our stakeholders by conducting research and developing new tools on invasive species and climate change

NE RISCC is supported by the Northeast Climate Adaptation Science Center, which has been in existence for eight years and is one of eight regional Centers funded by the USGS. NE RISCC exemplifies how to engage stakeholders on important topics related to climate adaptation, create, and expand networks of managers, scientists, and citizens, and to effect important change in a sustainable fashion.

Individual Achievement: Chris Swanston, Forest Service Climate Advisor

Chris Swanston has served as the Director of the Northern Institute of Applied Climate Science (NIACS) since 2008 and as the Director of the USDA Northern Forests Climate Hub since 2014. Chris has been actively working to promote climate adaptation in natural resources since his start at NIACS in 2008 and has transformed the field during this time. NIACS is the most effective provider of climate change outreach and technical assistance in the Forest Service and the USDA. Chris's leadership has helped equip land managers around the country with the information they need to understand climate change risk, as well as the tools, resources, and support to act and adapt.

Because of his extensive leadership in promoting climate adaptation at a national level, Chris was selected in May 2021 to serve as the Forest Service Climate Advisor and Acting Director of the USDA Forest Service's Office of Sustainability and Climate, where he is working to coordinate the agency's national climate change efforts and promote adaptation across the 192 million acres of Forest Service National Forests and Grasslands and beyond.

HONORABLE MENTIONS

Federal: Erik Beever, U.S. Geological Survey

Dr. Beever developed and leads a large collaborative network across the country and world studying pikas (*Ochotona* spp.); the network is one of the largest in the US to explicitly monitor and investigate how any mammal species responds to contemporary climate change at species, population, and individual levels. Pikas' life history and physiology make them sensitive climate change-associated stressors, but their talus

habitat generally has not changed in extent or spatial arrangement over ecological time scales. The network can thus identify and test mechanisms of *how* and *why* climate acts on species without the confounding effects of habitat loss or (typically) other anthropogenic disturbances. More broadly, this

work catapulted him into working extensively on the topics of ecosystem transformations and all species' adaptive capacity, across the country and world. Specifically, the network focuses on developing mechanism-based understanding and then predictions about how well species can cope with and accommodate climate change. In turn, these can be converted into testable climate-adaptation management actions. The Network began in 1994 and Erik and his collaborators (e.g., at Federal and State agencies, universities, NGOs) have produced > 33,000 records of pika detections throughout 10 western US states and two Canadian provinces. Because the network includes scientists from multiple disciplines (e.g., ecohydrology, climatology, population modeling, genetics, paleoecology, hydrology, and geology) the team can develop and address questions in more realistic ways. The >50 climate change-based publications produced by the network tackle questions about connectivity of montane areas for diverse species, sufficiency of protected areas under future climates, effects of climate variability and extremes, non-stationarity of climate effects on species (and selection of local-scale climate-adaptation actions), and the mechanisms underlying distribution shifts, and patterns of occupancy and abundance. Erik recently added climate change-focused work on North American porcupines and least chipmunks to the network. As a member of the IUCN Climate Change Specialist Group, Erik works with international colleagues to answer analogous questions globally.

Broad Partnerships: Developing Capacity for Integrated Community Conservation and Resilience, Gulf of Mexico Alliance

The Gulf of Mexico Alliance brings together state and federal agencies, academics, non-profits, and industry to support implementation of adaptive and resilient coastal management at the local community and regional scale. Gulf Coast communities are deeply connected to the natural environment and the ways it influences their sense of place. Coastal habitats, climate, natural hazards, and wildlife conservation needs all shape the planning that takes place within a community. And, while the built and natural environment are interdependent, planning activities have rarely been connected. Adopting a forward-thinking approach to community and conservation planning, this project works to identify habitat and wildlife species data that can be integrated into community resilience and hazard planning efforts for two Gulf Coast cities. Specifically, habitat and wildlife conservation data from the Southeast Conservation Blueprint are being added to the Community Health and Resource Management community planning tool. The Gulf of Mexico Alliance, U.S. Fish & Wildlife Service, and Texas AgriLife Extension have partnered to work with the cities of Biloxi, MS and Foley, AL on this project. These cities recognize the importance of reducing impacts to habitats/species but need additional capacity to incorporate conservation data into their planning.

We are completing pilot projects with both communities to address specific planning needs. Partners and stakeholders will provide input during several virtual workshops. Stakeholders will be able to visualize habitat and wildlife conservation data along with population demographics, critical infrastructure, and other data important to community planning. These updates will be used to support ongoing and future work related to community training, planning support, and project identification for issues such as rapid development pressure, coastal flooding concerns from storms and sea level rise, and stormwater management issues.

Individual Achievement: April Taylor, Tribal Liaison and Sustainability Scientist, The Chickasaw Nation and the South Central Climate Adaptation Science Center

The South Central Climate Adaptation Science Center (CASC) provides natural and cultural resources managers with the science, tools, and information they need to address the impacts of climate variability and change on their areas of responsibility. Ms. April Taylor, a Chickasaw scientist, was hired in 2012 to serve as our first full-time Tribal Liaison and Sustainability Scientist. Her job duties include:

- Communicating climate change-related science to natural and cultural resource managers at Tribes, Pueblos, and inter-tribal organizations based on relationships of trust among Tribal nations and with Tribal officials, elders, and youth.
- Ensuring that South Central CASC research is framed holistically and inclusively so as to encompass the themes of environmental sustainability, traditional knowledge, and exposure of Indigenous peoples to the impacts of climate change; and working with Tribal education programs to build the scientific capacity and workforce of Tribal nations within the context of climate change adaptation and resilience.
- Within these duties, she has served our Tribal partners through all seven National Fish, Wildlife, and Plants Climate Adaptation Strategy goals over the past eight years. She has brought Native voices to the table in all our South Central CASC meetings, changing how we do business and ensuring broader representation in everything we do.

2020

WINNERS

Federal: Matt Whitbeck, Supervisory Wildlife Biologist, Chesapeake Marshlands National Wildlife Refuge Complex

Matt Whitbeck is a primary contributor to the comprehensive marsh adaptation strategy called Blackwater 2100 with The Conservation Fund and Audubon Maryland-DC. This guides Blackwater National Wildlife Refuge's (NWR) proactive strategy to reduce marsh loss into the future. This is critical since the refuge has lost over 5,000 acres of marsh since its establishment in 1933. The full suite of adaptation strategies is comprehensive, ranging from land protection for future marsh migration corridors, habitat management to facilitate transition of uplands to high-quality tidal marsh, and habitat management to slow the rate of marsh loss and increase tidal marsh resilience to sea level rise. This strategy led to the first ever thin-layer

restoration demonstration in the Chesapeake watershed, over $2 million in leveraged funding, and a detailed Implementation Report to encourage replication by others. Matt led both the implementation and monitoring of the thin-layer restoration effort. Matt utilizes the academically rigorous research of numerous scholars conducting their work on the refuge for the past decades. This work is compelling because it is predicted that sea level will rise within Chesapeake Bay by about two and a half feet by 2050,

and 5-6 feet by century's end. Matt also has led several other major restorations at Eastern Neck and Martin NWR's to stabilize shorelines. Their successes have led the way for additional efforts by the Army Corps of Engineers. Matt has been on the forefront of Blackwater's efforts- and that of land managers everywhere- to adapt in a changing climate. He is regularly featured in dozens of national articles, videos, and films as an ambassador to share a message of hope for the importance of conservation and forward-thinking science in a changing world.

State or Local: Climate Adapted Culverts Project Team, Washington Department of Fish & Wildlife and the Climate Impacts Group, University of Washington

This project was initiated by the Washington Department of Fish and Wildlife and grew to become a partnership with the Climate Impacts Group (CIG) at the University of Washington. The project's goal is to make projections of future changes in stream flows and channel widths due to climate change available to engineers designing culverts. That goal has been achieved through an internet site that enables engineers to obtain site-specific information for designing climate-adapted culverts. This is critical information because Washington State is currently investing billions of dollars to repair fish passage barriers that hinder the recovery of imperiled salmon stocks. The team created an internet application so that any engineer could click on any stream-road intersection and obtain a report containing projected changes in bankfull width, bankfull flow, and 100-year peak discharge. In the project's current phase, WDFW and CIG are collaborating to update the projections, and to develop better ways of conveying information to the user. The team is also currently working with a user group that is providing feedback on how to improve this internet tool. The team has also conducted substantial outreach regarding climate adapted culverts and their internet tool for designing climate-adapted water-crossing structures. They have given numerous presentations to government agencies, NGOs, and tribes, and they also created a tri-fold brochure on climate-adapted culverts. This outreach has led to considerable interest in Washington State regarding regulatory requirements for climate-adapted culverts, and consequently, a state rule-making process was initiated earlier this year.

Tribal: Office of Environmental Resource Management and the Communications Team, United South and Eastern Tribes, Inc.

The United South and Eastern Tribes (USET) is a non-profit, inter-Tribal organization representing 30 federally recognized Tribal Nations in the north and southeastern United States dedicated to improving the capabilities of Tribal governments in effectively dealing with public policy issues. USET recognizes that

Tribal Nations directly control 100 million acres, or 4%, of the land area of the U.S. Additionally, they participate in critical environmental stewardship programs on their larger ancestral homelands beyond reservation boundaries. Yet Tribal Nations remain underfunded and understaffed to address the magnitude of the impacts of climate change. One of the areas that Tribal Nations in the southeast have lacked in recent years has been staff capacity in managing natural resource impacts from climate change. To meet this ubiquitous need, USET applied to the BIA for a Tribal Climate Liaison position to serve specifically with advancing climate technical capacity among Tribal Nations. This employee has been working for USET for the past two and half years and should be credited with bringing awareness, climate science resources, planning tools, and bridge-building with other organizations to leverage financial and expertise resources to Tribal Nations. One of the metrics of success can be documented by the increased level of Tribal engagement in the southeast among federal agencies, universities and the Climate Adaptation Science Centers (CASCs). In short USET's Office of Environmental Resource Management has filled an important void in the last three years with respect to building the capacity of Tribal Nations in the eastern U.S. with planning for conservation to their lands, water, fish and wildlife while building important bridges with universities, NGOs, and state and federal agencies. Lastly, USET has kindly offered to connect with graduate students who plan careers in conservation management, so they understand how to ethically and constructively work with Indigenous peoples and Tribal Nations.

Non-Governmental: Adaptive Reefscapes, Coral Reef Alliance

In 2015, the Coral Reef Alliance (CORAL) launched a pioneering research project to understand what actions we can take today to help corals adapt to climate change. The results, published in Nature Climate Change, show that evolution can help rescue reefs from the effects of climate change. The research shows that when we conserve a diverse portfolio of coral reefs species, variable environmental conditions and significant connectivity, we enable the necessary conditions for nature's survivors to spread their genes to future generations. The research also shows that adaptation is possible when local stressors are reduced across a network of sites. The result is an Adaptive Reefscape: a network of healthy reefs in which corals can adapt to climate change. A vitally important component of CORAL's Adaptive Reefscape approach is that the reefs within the network are healthy. This means that reducing direct threats to reefs, particularly unsustainable fishing and land-based pollution, is essential. Well-managed reefs serve as sources of repopulation over the long term, enabling coral survivors to rescue other reefs across a region. As a leader in coral conservation, CORAL is turning peer-reviewed scientific results into action locally and globally to give reefs the best chance to survive the coming decades.

Broad Partnership: Sea-Level Rise Resilience, Northern Gulf of Mexico Sentinel Site Cooperative

The Northern Gulf of Mexico Sentinel Site Cooperative (Cooperative) is a partnership working together to increase sea-level rise resilience. The Cooperative has over 35 partners, spanning four Gulf states. These include state and federal agencies and organizations, non-profits, researchers, municipalities, and regional associations. Since 2014, partners, staff, and stakeholders have worked together to secure almost $4 million to address sea-level rise and inundation gaps and needs in the northern Gulf of Mexico.

Cooperative efforts generally fall into the following categories: enhancing access to available data and research, supporting application of the data and data products, facilitating conversations about sea-level rise and sea-level rise impacts, and obtaining funding so partners can take adaptive action based on the best available science. Project examples include synthesis of technical reports, a web resource to sift through available climate change resources, open house community forums, one-on-one technical support, training workshops and lunch 'n' learns, vulnerability analyses, applied research projects, and

data collection efforts. As a result of these efforts, large scale coastal restoration efforts include locally specific sea-level rise rates, sea-level rise scenarios utilized for community planning and design are intentionally selected based on risk and needs, and sea-level rise resilience has become a more common and informed conversation across the northern Gulf. Northern Gulf communities are more aware of risks, better able to take adaptive action, and have integrated accurate, local rates of sea-level rise into infrastructure, planning, and conservation activities due to the Cooperative's efforts.

Individual Achievement: Cat Hawkins Hoffman, Chief, National Park Service Climate Change Response Program

Cat Hawkins Hoffman is recognized for her sustained body of work to advance climate change adaptation (CCA) in resource management. She has done this through developing innovative and pioneering approaches, working to operationalize and extend adaptation planning methods into natural resource management, and continually pursuing strategic opportunities to incorporate CCA considerations into myriad resource management decision making arenas. Her efforts have consistently sought to improve on-the-ground conditions for our nation's natural (and cultural) resources in the face of directional change, either directly through improved natural resource management in light of the plausible range of climate futures, or indirectly through reducing other stressors (current and future) on those resources. Her work demonstrates efforts on-the-ground, and at regional, national, and international scales. While she has predominantly focused on advancing CCA throughout the U.S. National Park Service, she has involved myriad partners to target approaches in adjoining land management units, as well as developing CCA techniques that are reproducible in other settings. Cat has done this work as a true leader with a sense of purpose and humility, focusing on results rather than recognition, and fostering a true sense of partnership among her staff and her many external collaborators. Her depth and breadth of experience, combined with her leadership style, have earned her a level of respect and trust among her peers and staff that enables her to cultivate collaborative efforts critical to CCA , fostering experts to come together to address the very challenging problems (scientific, administrative, or policy-related) that must be resolved to meet the goals of the National Fish, Wildlife and Plants Climate Adaptation Strategy.

HONORABLE MENTIONS

Federal: Climate-Smart Travel Management**,** Kevin James, Mount Baker-Snoqualmie National Forest & George Wooten, Conservation Northwest

The Mount Baker-Snoqualmie National Forest (MBSNF) utilized a climate change vulnerability assessment (developed through the North Cascadia Adaptation Partnership) and subsequent analysis to determine potential effects of climate change on the forest road system. Individual road segments were evaluated for climate change hazard; factors evaluated included projected increase in 100-year floods, increases in soil moisture, change in rain- or snow-dominant subwatershed regime, and projected date of snowmelt. Results allowed managers to see how proposed changes in road maintenance levels may be impacted by future changes in climate, identify vulnerable riparian areas near infrastructure and road crossings, as well as changing patterns in visitor access to higher elevation recreation area (with increasing snow-free days). This information was used by the forest to evaluate the potential impacts of climate change on the proposed actions of two access and travel management National Environmental Policy Act (NEPA) projects. Specifically, the information was used to make decisions about road decommissioning, maintenance, and downgrading. Roads projects are being integrated with broader scale terrestrial and aquatic habitat restoration projects in the forest. Currently, climate change adaptation approaches from the original travel management plans have been incorporated into several large-scale (>100,000 acre) restoration projects across the forest. Implementation of some of these climate-smart restoration projects is expected to begin in the summer of 2020.

Non-Governmental: Cathy 'Cat' Techtmann, Environmental Outreach Specialist, Community Development Institute, University of Wisconsin, Madison, Division of Extension

For over twenty years Cathy 'Cat' Techtmann has been instrumental in bringing innovative and effective place-based, culturally relevant climate change education and climate adaptation to the Northern Great Lakes region. Cat is the driving force behind both the Gikinoo-wizhiwe Onji Waaban (G-WOW) Changing Climate, Changing Culture Initiative and the Climate Strong! Educator Professional Development Institute as well as numerous other climate education and outreach projects. Cat has also created interactive outreach and environmental education curricula for the UW Extension and Northern Great Lakes Visitors Center that teach students and visitors to the Lake Superior basin about climate change impacts to tribal and non-tribal communities and the resources they rely upon for subsistence, recreation and ecosystem services.

Broad Partnerships: Oregon Coordinating Council on Ocean Acidification and Hypoxia, Oregon's Ocean Acidification and Hypoxia Action Plan

Oregon's Ocean Acidification and Hypoxia Action Plan will guide Oregon's efforts and become Oregon's submission to the International Alliance to Combat Ocean Acidification. Because Oregon is one of the first states to feel the impacts of ocean acidification and hypoxia, these actions can serve as a model for others to apply to their own geographical and political context. This work will also help demonstrate that local actions are meaningful in fighting the global challenges of climate and ocean changes. Implementation of the plan will be achieved by state agencies and local governments on the front lines of this issue by

incorporating funding needs for ocean acidification and hypoxia into 2021-2023 budgeting and through intra-agency communication and collaboration on projects and actions identified in the action plan. Completion of the plan is an important milestone in Oregon's commitments to broader partnerships, but one of the key values that the Coordinating Council's work is that it has been elevating the issues of a changing ocean in to the discourse in Oregon surrounding excess greenhouse gas emissions (GHG) in the atmosphere. Changes in the ocean are among the most direct impacts of excess GHG emissions, but also among the least understood and least discussed. The Oregon Coordinating Council on Ocean Acidification and Hypoxia has helped solve that problem in Oregon and provides the state a more holistic look at GHG emissions and the need to reduce emissions and respond to changes.

Individual Achievement: Jim Vose, Senior Research Ecologist, Southern Research Station, USDA Forest Service

Jim Vose is a senior research ecologist and project leader with the Southern Research Station of the Forest Service. He is leading the Agency with research related to ecohydrology, forest climate-land use interactions, science and policy syntheses, fire ecology, hemlock woolly adelgid impacts on ecosystem structure and function and much more. Jim was nominated for his leadership in multiple science management partnerships and syntheses related to drought and climate change. In 2012, Jim co-led the development of a scientific assessment focused on the current and future condition of forest resources related to climatic variability and change. This report was part of the National Climate Assessment. In 2016, Jim and others developed a state of the science synthesis on the current and future impacts of drought in the United States. And in 2019, he built on that synthesis and developed region-specific management options for increasing resilience to drought for Alaska and the Pacific Northwest, California, Hawaii, Interior West, Great Plans, Northeast and Midwest and Southeast. These strategic actions will help institutionalize awareness of drought effects and drought responses in public and private land management by: (1) establishing and maintaining relationships with providers of drought information, (2) including drought in collaborative efforts among agencies and stakeholders, (3) revising best management practices as needed, (4) implementing drought in relevant planning processes, (5) establishing long-term monitoring of drought effects, and (6) sharing information on effectiveness of drought responses. Jim's leadership in developing a synthesis geared to the management community is a model for others in the research community. He has demonstrated strong tech-transfer and science delivery skills and deserves recognition for his contribution to advance the impacts of drought on forests and rangeland systems.

2019

WINNERS

Federal Agency: Tidal Marsh and Barrier Beach Restoration, Prime Hook National Wildlife Refuge

For several decades, more than 4,000 acres at Prime Hook National Wildlife Refuge in southern Delaware were maintained as a freshwater habitat for ducks and geese, using a complex engineering system that blocked the daily tidal flow of saltwater from Delaware Bay into neighboring marshland. Following repeated dune breaches and a catastrophic intrusion of saltwater during Hurricane Sandy in 2012, Refuge staff, using state of the art science and engineering, decided the best long-term option for sustainability was to restore the marsh's natural water regime. Working with partners and using funds for Hurricane Sandy restoration and resilience, the U.S. Fish and Wildlife Service and its partners restored the highly damaged tidal marsh and barrier beach ecosystem. This project is the largest restoration project of its kind in the eastern United States at a cost of $38 million. The restored barrier beach and salt marsh complex improved habitat for a wide array of migratory birds and marine life and will better withstand future storms, making the coastal environment more resilient. Wildlife and plants have responded quickly, especially threatened Piping plovers. Over the past three summers, close to 100 fledglings have been produced on the restored barrier beach. Also, thousands of horseshoe crabs arrive each spring to lay eggs which are an important food source for endangered Rufus Red Knots. Physically, the restoration has performed well through multiple intense storms. The project has been covered extensively by local and national environmental media.

State or Local Agency: Climate Change Adaptation and Mitigation Plan, Pennsylvania Dept. of Conservation and Natural Resources

The Pennsylvania Department of Conservation and Natural Resources' climate change work is guided by its official position statement: "Climate change is real and is impacting the commonwealth's ecological and recreational resources. As the state's leading conservation agency, DCNR will use the best available science to develop and implement climate change adaptation and mitigation strategies within each of its bureaus to minimize these impacts and serve as a role model for the citizens of Pennsylvania." One of the department's most significant achievements in addressing climate change occurred in June 2018, when it published its climate change adaptation and mitigation plan. The plan is the result of nearly two years of intense work by more than 70 staff members from across the department. DCNR worked closely with the Northern Institute of Applied Climate Science (NIACS) to conduct vulnerability analyses and develop adaptation strategies that address all aspects of DCNR's work, from grant funding for land acquisition to habitat conservation, native plant conservation, invasive species control, providing healthful outdoor recreation, and managing state parks and state forests. The plan also includes mitigation recommendations for reducing its carbon footprint and increasing forest carbon sequestration. To address the broad spectrum of DCNR's work, the plan includes separate vulnerability analyses and adaptation

recommendations for infrastructure, state parks, state forests, geologic features, grant funding and community engagement, riparian buffers, emergency management, and training and communication.

Tribal: Dibaginjigaadeg Anishinaabe Ezhitwaad – A Tribal Climate Adaptation Menu, Tribal Adaptation Menu Team

Traditional and indigenous knowledge and perspectives have not often been recognized in climate adaptation for natural and cultural resources. The Tribal Adaptation Menu was created to make a stronger connection between indigenous values and climate adaptation planning. The Tribal Adaptation Menu is an extensive collection of climate change adaptation actions for natural resource management, organized into tiers of general and more specific ideas. The Menu also includes a companion Guiding Principles document, which describes detailed considerations for working with tribal communities, such as the importance of respect and reciprocity in all our interactions with people and the natural world. The Menu may be used to brainstorm appropriate adaptation actions, to connect specific actions to a larger intent

and purpose, and to communicate adaptation ideas to diverse audiences. In particular, the Menu may be useful to bridge communication barriers for non-tribal persons or organizations interested in indigenous approaches to adaptation and the needs and values of tribal communities. The Menu is for indigenous communities, tribal natural resources staff, and non-indigenous partner organizations. This first version of the Tribal Adaptation Menu was intentionally created from Ojibwe and Menominee languages, concepts, and values. The Menu can be customized for other communities using their language and cultural knowledge. This Tribal Climate Adaptation Menu, which was developed by a diverse group of collaborators representing tribal, academic, intertribal, and federal entities in Minnesota, Wisconsin and Michigan, is a noteworthy advance in the on-going process of recognizing and promoting indigenous perspectives that can help confront some of today's most pressing challenges. The team responsible for developing this resource deserves recognition for their contribution to the climate adaptation field.

Non-Governmental Organization: Brian Obermeyer & Chris Hise, Site Wind Right, The Nature Conservancy

Wind energy provides a clean, renewable source of electricity; however, improperly sited wind facilities pose known threats to wildlife populations and may seriously degrade natural habitats and ecosystem connectivity. Chris Hise and Brian Obermeyer of The Nature Conservancy were instrumental in developing, testing, and deploying a multi-layered geospatial data system, called Site Wind Right, to support the transition to low-carbon energy while protecting iconic landscapes and imperiled species. Unique from past siting efforts, Site Wind Right identifies low impact sites for wind energy development rather than just where to avoid. To provide a realistic estimate of where low impact wind energy may be developed, the Conservancy also factored in engineering constraints and land use conflicts. Site Wind Right promotes a positive vision for renewable energy by demonstrating that wind development goals are achievable and scalable on sites with minimal risk to sensitive species and habitats. Power purchasers

acquiring wind-generated electricity from low impact sites can meet renewable energy goals while avoiding sensitive species and habitats. Likewise, developers are less likely to encounter wildlife related conflicts and project delays, thus resulting in more reliable and efficient deployment of renewable energy. Successful implementation of Site Wind Right began in Kansas, Oklahoma, and the Texas panhandle. It is now being deployed to all 17 of the U.S. "wind belt" states, where approximately 80 percent of interior U.S. wind energy resources exist. This region is also home to North America's largest and most intact grasslands – one of the most altered and least protected habitat types in the world.

Broad Partnership: Gunnison Basin Wet Meadow and Riparian Restoration Collaborative

Land use practices and drought have contributed to unique wildlife management challenges that are now being exacerbated by climate change. The vast majority of the Gunnison sage-grouse population is concentrated in southwestern Colorado where continued habitat fragmentation and more prolonged and intense droughts are increasing the vulnerability of the species, which is currently listed as threatened under the Endangered Species Act. Over the past century, Gunnison sage grouse habitat in low-elevation

and montane sagebrush ecosystems has been degraded by over grazing, erosion, and fragmentation. With climate change, many critical meadow and riparian habitats are vulnerable to changes in the timing of snow melt, drought severity, and increased invasion by nonnative plant species. The goals of this project were to reduce soil erosion and restore meadow vegetation by re-establishing hydrological and soil development processes. Properly functioning meadows slow the rate of runoff, retain soil moisture longer, and facilitate the development of deep, productive soils by increasing sedimentation and deposition of organic matter. Restoring these processes improves Gunnison sage grouse habitat by increasing available food sources, creating habitat connectivity and the amount of habitat available to sage-grouse during severe drought. Since 2012, over 1,500 rock structures have been installed at sites across public and private lands enhancing approximately 21 stream miles and more than 1,000 acres of habitat. The wet meadow restoration and resilience-building project is a collaborative effort that brings together the following partners: The Nature Conservancy of Colorado, Upper Gunnison River Water Conservancy District, Bureau of Land Management, Gunnison Field Office, Colorado Parks and Wildlife, USDA Forest Service, Grand Mesa, Uncompahgre and Gunnison National Forests, Natural Resources Conservation Service, Colorado Natural Heritage Program, National Park Service, Black Canyon of the Gunnison National Park and Curecanti National Recreation Area, Gunnison County, BIO-Logic, Inc., Zeedyk Ecological Consulting, Wildlands Restoration Volunteers, Gunnison Conservation District, Western Colorado University, Western Colorado Conservation Corps, Mesa County Partners, High Country Conservation Advocates, Gunnison High School, Allen Ranches, Redden Ranches, and Wolf Creek Ranch.

Individual Achievement: Jessica Halofsky, University of Washington and USDA Forest Service, Pacific Northwest Research Station

For the past 12 years, Dr. Jessica Halofsky has led climate change vulnerability assessments and adaptation projects throughout the western U.S. These projects, facilitated by Adaptation Partners, cover 50 National Forests and 32 National Park Service units. Assessments have engaged 1,300 resource managers, 100 scientists, and 150 stakeholders through 28 workshops. Each assessment is accompanied by peer-reviewed documentation. Forest Service General Technical Reports are supplemented by journal articles and other publications (24 total). Dr. Halofsky was coauthor of *Responding to climate change in national forests: a guidebook for developing adaptation options*, a foundational publication with national guidance on climate change in the U.S. Forest Service. She recently published the book *Climate Change and Rocky Mountain Ecosystems*. Dr. Halofsky also led development of the Climate Change Adaptation Library which contains 870 adaptation options for water resources, fisheries, vegetation, wildlife, recreation, infrastructure, and ecosystem services. The Library is widely used by resource managers in federal agencies and beyond, thus facilitating the adaptation process and consistency across different locations and organizations. Dr. Halofsky is currently involved in assessments in California, Oregon, and Washington, with discussions underway for new assessments in three other Forest Service regions. She is working on revisions for the Forest Service scorecard process, thus ensuring accountability for climate change in National Forests. She is also working on a national template for implementing climate change in Forest

Service planning processes. This will be widely used, as National Forests accelerate revisions of land management plans.

Student Leadership: Tracy Melvin, Michigan State University

This student's work could well qualify for an award were she a professional. Indeed, many of her colleagues simply assume that she is a professor or agency professional. In addition to being a full-time graduate student, with a demanding field season in Alaska each summer, Tracy has served as the Chair of the Climate Change Working Group of The Wildlife Society (TWS) since 2018. When the American Fisheries Society (AFS) approached the TWS working group with seed money for a joint climate change project, she created a joint AFS/TWS initiative to convene a panel of experts on climate-driven ecosystem transformation, which will present results at the joint AFS/TWS conference in Reno this fall.

In 2018, she organized a symposium titled "Big Ideas and Bold Actions for 21st Century Wildlife Conservation" on future direction and challenges to wildlife management. A former USGS Climate Adaptation Fellow, she always seems to be leading something. For example, she organized the first ever CANR Rising event (College of Agriculture and Natural Resources), which featured several deans and senior faculty telling stories about overcoming barriers in their personal and professional lives. However, her skills are not limited to leadership. Her research itself is promising, and it is grounded in field experience. She is measuring indicators of ecological change during an ongoing and climate-driven ecological transformation on the Kenai Peninsula in southern Alaska, where climate is changing roughly twice as fast as in the continental United States. Her work will provide managers with tangible and measurable metrics

of climate-driven ecological change, and it offers a preview of the types of challenges that managers at lower latitudes are likely to experience in coming decades. As a leader and researcher, Tracy exemplifies the next generation of wildlife ecologists who are driving adaptation with vision and pragmatism.

HONORABLE MENTIONS

Individual Achievement: Beth Stys, Florida Fish and Wildlife Conservation Commission

Beth Stys has been quietly moving mountains to implement climate adaptation at the Florida Fish and Wildlife Conservation Commission (FWC) for years. Climate adaptation has never been part of Beth's job -- she leads a spatial analysis team at FWC. Yet through personal passion and leadership Beth has been the most significant contributor to FWC's adaptation program in the agency's history. Beth became lead of FWC's adaptation working group around 2011. In that capacity, Beth led development of the Florida Adaptation Guide, a comprehensive resource for natural resource managers. Beth also took on the role of Science Coordinator for the Peninsular Florida Landscape Conservation Cooperative (PFLCC) in 2015, and she leveraged this role to build partnerships and cultivate a forward-thinking approach to implementing adaptation at a landscape-scale. Beth's commitment to excellence and drive is apparent in how her body of work has evolved over time, regardless of setbacks. When she saw the need for the Adaptation Guide to function as a living resource accessible to a wider audience, she expanded the content into the newly released Climate Adaptation Explorer, an interactive digital guide. When funding for the PFLCC dissipated, she forged a collaborative partnership with the U.S. Fish and Wildlife Service to continue her mission of implementing adaptation on a landscape-scale. Beyond the accomplishments listed above, Beth has led numerous planning and training workshops and has secured funding and support for a full-time agency adaptation coordinator. Beth has been a behind-the-scenes presence throughout much of her work. However, from research and vulnerability assessments to policy to capacity-building, it is not an understatement to say that FWC would not have an adaptation program today without the efforts of this remarkable person who made the choice to step up and get involved.

Student Leadership: Tina Mozelewski, North Carolina State University

Tina Mozelewski is a PhD student studying the effectiveness of various conservation strategies under uncertainty, especially when caused by climate and land use change. She uses landscape forecast modeling to examine how forests in central North Carolina will respond to climate change and uses this as the base for studying the implications of conservation strategy spatial pattern on landscape-level connectivity under climate and land use change.

2018

WINNERS

Federal Agency: Marine Mammal Climate Vulnerability Team, National Oceanic and Atmospheric Administration (NOAA) Fisheries Service

The Marine Mammal Climate Vulnerability Team developed the first nation-wide methodology to rapidly assess the vulnerability of marine mammals to climate change. The Team used the methodology to assess the climate vulnerability of 108 marine mammal stocks in the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. The assessment methodology can used to assess the vulnerability of marine mammals to changing climate and ocean conditions within the U.S. Exclusive Economic Zone (EEZ) and beyond. The Team made critical decisions to help develop, refine, and conduct the vulnerability assessment for selected marine mammal stocks. This foundational work and the resultant products will significantly advance NOAA's capability to make informed decisions concerning conservation and management of marine mammal populations in a changing world.

State or Local Agency: Building Ecological Solutions to Coastal Community Hazards, Office of Coastal and Land Use Planning, New Jersey Department of Environmental Protection

The New Jersey Department of Environmental Protection and the partners of the National Fish and Wildlife Foundation (NFWF) grant "Building Ecological Solutions to Coastal Community Hazards" (BESCCH) engaged in outreach and assistance to local governments, professionals, and citizens. The various components of the project included a guide of achievable actions, an educational program for over 4,000 stakeholders, completion of 20 community vulnerability assessments and ten community ecological projects, an ecological monitoring program, a high school module for ecological studies, and a citizen science monitoring program. The grant addressed the needs of communities, tailored to local concerns and abilities, and advanced their ability to support natural resources and resiliency. The partners included the National Wildlife Federation, Partnership for the Delaware Estuary, Sustainable Jersey, Stevens Institute of Technology, NJ Audubon, New Jersey Sea Grant Coalition, Barnegat Bay Partnership, Rutgers University and local governments: Atlantic City, Brigantine Beach, Cape May County, Downe Township, Lower Township, City of Margate, Secaucus, Somers Point, Spring Lake Borough, and Upper Township.

Tribal: Gerald Wagner, Blackfeet Environmental Office, Blackfeet Nation

Gerald Wagner led the Blackfeet Nation's first-ever climate change adaptation planning initiative, bringing together natural resource managers to complete the Blackfeet Nation Climate Change Adaptation Plan in April 2018. The planning process enhanced tribal managers' capacity to effectively manage fish, forests, wildlife, water resources, agricultural lands, and range lands, while increasing their knowledge about the effects of climate change. Mr. Wagner's leadership fostered increased cooperation between departments and motivated action to protect fish, wildlife, and plants in a changing climate. Mr. Wagner also created a leading regional communications tool: the Blackfeet Country and Climate Change website and established Climate Warriors—a climate change internship program for students recently graduated from high school—helping to motivate youth to take action on climate change issues.

Non-Governmental Organization: EcoAdapt

EcoAdapt was founded in 2008 to create a robust future in the face of climate change. Over the past ten years, it has endeavored to do this through four programs: State of Adaptation, Awareness to Action, Climate Adaptation Knowledge Exchange, and the National Adaptation Forum. Through these programs, it has helped thousands of practitioners from hundreds of agencies understand, design, and incorporate climate change adaptation solutions into their existing efforts relating to fish, wildlife, and plant conservation and management.

Broad Partnership: National Coordinating Office, USA National Phenology Network

The USA National Phenology Network collects, stores, and shares phenological data, value-added data products, and information to advance science and to support natural resource decision-making across a variety of spatial and temporal scales. The Network delivers free and readily available phenological data, information, and standardized protocols for the Nation; connects researchers studying how species respond to climate change and managers who need this information to inform adaptive management; and creates a community for diverse stakeholders (including the public) who are interested in detecting, describing, and mitigating climate impacts on fish, wildlife, plants and ecosystems.

Individual Achievement: Maria Janowiak, Northern Institute of Applied Climate Science, U.S. Department of Agriculture, U.S. Forest Service

Dr. Maria Janowiak is deputy director of the Northern Institute of Applied Climate Science, led by the USDA Forest Service. She has spent the last ten years helping natural resource professionals understand and adapt to climate change, with emphasis on the Upper Midwest, Northeast, and beyond. She has led multiple ecoregional vulnerability assessments, created decision-support tools, taught courses, and provided direct outreach to thousands of people. Maria has aided organizations in turning their real world projects into more than 75 intentional, explicit, demonstrations of climate adaptation in forest ecosystems. Dr. Janowiak is a role-model and inspiration to applied ecologists and adaptation professionals nationwide.

HONORABLE MENTIONS

Federal Agency: Rocky Mountain Research Station, U.S. Forest Service

The USDA Forest Service Rocky Mountain Research Station (RMRS) worked with state and federal partners to provide land managers with methods to evaluate resilience to disturbance and resistance of plant invasion in sagebrush and pinyon-juniper ecosystems; and better predict outcomes from disturbances and management treatments. RMRS and its partners responded to research requests at a time when land managers were struggling with management of sagebrush and pinyon-juniper ecosystems in an ever-

changing
environment, including large-scale wildfire and expansion of invasive annual grasses. This research prompted profound changes in the way managers assess the health of the Great Basin and determine where to locate management treatments. The products help managers to better understand how the ecosystems they manage will respond to management actions or other disturbances, both now and in the future.

Tribal: Chugach Regional Resources Commission

The Chugach Regional Resources Commission (CRRC) is an inter-tribal consortium composed of seven tribes in the Prince William Sound and Lower Cook Inlet in Southcentral Alaska. Concerned with the environmental changes tribal members have witnessed, at the Board's direction, CRRC developed a Climate Change Program which assists its members tribes in addressing climate change issues. The CRRC created a 3-phased program. They have successfully implemented phase-1, the assessment phase, and are currently spearheading phase-2, the vulnerability assessment. CRRC has begun planning and preparing for phase-3 adaptation plans.

Broad Partnership: Maine Connectivity Collaborative

Fragmentation of aquatic habitat is a vital concern in Maine, as it is globally. To address this concern, an innovative and effective collaboration has been working since 2007 with partners from over 50 state, federal, tribal, commercial, local and non-governmental organizations. The Collaborative works to

increase the pace and quality of restoration. The Maine Connectivity Collaborative represents a variety of flexible working groups pursuing strategies to inventory, prioritize, and correct connectivity problems at thousands of stream crossings. The Collaborative includes biologists, geomorphologists, engineers, culvert manufacturers, landowners, regulators, fishermen, land trusts, and concerned citizens.

Individual Achievement: Catherine Corbett, Lower Columbia River Estuary Partnership

The mission of the Lower Columbia River Estuary Partnership's Ecosystem Restoration Program is to recover the biological integrity of the lower Columbia River from the river's mouth to Bonneville Dam through strategic, well-coordinated, scientifically sound projects. Largely due to the efforts of Ms. Corbett, the Estuary Partnership working with a Science Work Group identified science-based habitat coverage targets that, if met, will protect native species of fish and wildlife from becoming imperiled. Regional partners have protected or restored over 23,195 acres, and the Estuary Partnership has directly funded 76 projects representing 4,159 of those acres. The Estuary Partnership Science Team, led by Ms. Corbett, is now working on testing and integrating climate adaptation measures into restoration techniques used within the program, including enhancing and restoring cold water refuges critical for the protection of cold water species such as Pacific salmon and steelhead and mapping floodplain wetlands vulnerable to future loss through rising sea levels and more intense storms. Ms. Corbett is working with the Science Work Group on approaches to gage how species' ranges might shift with changing climate conditions so

that they can integrate the identification and protection of climate refugia into their land acquisition and restoration activities.

Individual Achievement: John O'Leary, Massachusetts Division of Fish and Wildlife

Mr. O'Leary is recognized for his exceptional leadership and building collaborations to benefit conservation of fish and wildlife at the state, regional, and national level. After leading the State Wildlife Action Plan (SWAP) for Massachusetts, he worked with the National Wildlife Foundation on the "Scanning the Conservation Horizon" guide and trained resource managers across the United States in developing vulnerability assessments. Additional examples of accomplishments and national service include leading the development of the Massachusetts Wildlife Climate Action Tool, serving on the Advisory Committee for the National Climate Change and Wildlife Science Center, and serving on the National Academy of Sciences Committee on the review of the Landscape Conservation Cooperatives.

2017

WINNERS

Federal Agency: The Coastal Adaptation Strategies Handbook, National Park Service, Rebecca Beavers, Amanda Babson, and Courtney Schupp

Dr. Beavers and colleagues delivered seminal resources to U.S. coastal national parks managers to prepare for and adapt management strategies of the National Park Service (NPS) to climate change. The "Coastal Adaptation Strategies Handbook" and "Coastal Adaptation Strategies: Case Studies" reports summarize the state of NPS climate adaptation and key approaches currently in practice or considered across coastal national parks to guide adaptation planning and enhance resilience. The reports highlight innovative planning tools, collaborative opportunities, and lessons learned from 24 real-world coastal adaptation examples across 21 states, Washington DC, and 4 territories to generate inspiration and dialogue among park managers, partners, and other management agencies. </p>

Federal Individual: Bruce G. Marcot, PhD, U.S. Forest Service

Dr. Marcot conducts and disseminates research assessing and modeling the effects of future climate change and stressors on at-risk species, including the polar bear, northern spotted owl, Pacific walrus, and other high-latitude wildlife species. Over four decades he has developed and applied structured decision methods and statistical models for informing listing decisions and threats evaluations of at-risk or invasive species; providing climate-smart approaches for forest management; serving on a national team reviewing the Alaska Climate Science Center, and on the Science Advisory Board for the Northwest Climate Science Center; modeling the influence of old-forest reserve designs on the viability of many associated wildlife species; providing a photographic and videographic legacy of landscape images in northwest Alaska for future climate-change studies; and developing innovative ways to bridge ecological and cultural values of subsistence resources used by indigenous peoples of Alaska.

State or Local Agency: Dr. Amber Pairis, Climate Science Alliance – South Coast

Amber Pairis is committed to climate adaptation actions that promote natural resource conservation. She serves as Director of the Climate Science Alliance-South Coast, a partnership between California Department of Fish and Wildlife and the California Landscape Conservation Cooperative with 140 + partner agencies and organizations. In 2013 Amber was appointed by Governor Brown as the Assistant Secretary for Climate Change-California Natural Resources Agency to coordinate the State's nature-based climate adaptation activities. Pairis was the Climate Change Advisor for CDFW and created the Climate Science Program, CDFW Climate College, Western Association of Fish and Wildlife Agency's Climate Committee, and supported development of the National Fish, Wildlife, and Plants Climate Adaptation Strategy.

Tribal: 1854 Ceded Territory Climate Change Vulnerability Assessment and Adaptation Plan: 1854 Treaty Authority, Grand Portage Band of Lake Superior Chippewa, Bois Forte Band of Chippewa, Fond du Lac Band of Lake Superior Chippewa

Through a multi-sector and multi-organization approach, the 1854 Treaty Authority and the Bois Forte, Fond du Lac, and Grand Portage Bands collaborated to develop a Climate Change Vulnerability Assessment and Adaptation Plan across the 1854 Ceded Territory of Minnesota. Using climate data that included both historic information and downscaled regional climate projects, the partners integrated best available climate science with local knowledge to develop customized adaptation strategies.

Through this collaborative process the bands built and enhanced partnerships between the organizations that are key to helping the region adapt to a changing climate landscape.

Tribal Individual: Michael Durglo Jr, Confederated Salish and Kootenai (CSKT)

Michael Durglo Jr was the principal investigator and coordinator of the CSKT Climate Change Strategic Plan produced in 2010. He was also the founder and leader of the CSKT Climate Change Oversight Committee which integrated CSKT tribes and surrounding non-tribal partners into climate planning and management by facilitating communication and monthly meetings. He was also the founder of the CSKT EAGLES program, a youth empowerment and climate education program.

Non-Governmental Organization: Climate Adaptation Fund, Wildlife Conservation Society

The Wildlife Conservation Society (WCS) Climate Adaptation Fund provides direct support through a grant program to conservation organizations engaging in science-based, intentional, planned climate adaptation of ecosystems and resource management. The grant application structure and criteria help organizations connect the dots between science, planning, and action, with funding dedicated to delivering on-the-ground project implementation. WCS staff work with grantees to ensure the work is

completed and that the story is shared with others. The combination of incentivization, actual implementation, and effective storytelling is having a cascading national influence beyond that of any other single grant program or NGO in the US.

Non-Governmental Individual: Dr. Jessica Hellmann, Institute on the Environment, University of Minnesota

Dr. Hellmann is a leading ecologist studying the ecological impacts of climate change and adaptation strategies to reduce climate change risks. Using butterflies and plants as study species, Hellmann has spent 20 years revealing the sensitivities of rare species and the factors that affect their adaptive responses to climate change. She has collaborated extensively with local, state and federal recovery teams in this work. More recently, Hellmann has played a critical role in proposing and critiquing new management techniques for climate change, including species relocation. She has been an outspoken advocate for climate change science and biodiversity conservation.

Broad Partnership: Massachusetts Wildlife Climate Action Tool partnership: University of Massachusetts Amherst, DOI Northeast Climate Science Center, Massachusetts Division of Fisheries and Wildlife, Massachusetts Office of Energy & Environmental Affairs

The Massachusetts Wildlife Climate Action Tool inspires action to protect natural resources and help them adapt in a changing climate. With this tool, you can access information on climate change impacts and vulnerabilities of fish, wildlife, and habitats; and explore adaptation actions to promote resilient natural communities, such as culvert replacement, restoration of coastal buffers, or municipal plan development. This tool was developed by the Massachusetts Division of Fisheries and Wildlife, Massachusetts Office of

Energy & Environmental Affairs, University of Massachusetts-Amherst, and Department of the Interior's Northeast Climate Science Center. It was created for decision-makers, conservation practitioners, and managers. While designed for Massachusetts, it offers broadly relevant information and could serve as a model for other regions.

HONORABLE MENTIONS

Federal Agency: NOAA's National Marine Fisheries Service - Fisheries Climate Vulnerability Assessment, NOAA Fisheries and NOAA Research

Fisheries managers, scientists and stakeholders urgently need information on what species are most vulnerable to climate-related changes to help guide research, develop responses and reduce impacts. Unlike terrestrial systems, there are few tools available for assessing the climate vulnerability of marine species within a region. To meet these needs, the NMFS Fish Stock Climate Vulnerability Assessment Team developed the first standardized U.S. methodology for assessing the climate vulnerability of US managed marine fish stocks (fish and invertebrates). These pivotal efforts paved the way for increasing the awareness and capacity of fisheries decision makers to prepare for and respond to climate impacts. The

Team has
significantly advanced the nation's ability to understand and adapt to climate-related impacts on the nation's fish stocks and fisheries.

Federal Individual: Dr. Megan Friggens - USDA Forest Service Rocky Mountain Research Station

Megan Friggens has developed innovative methods to assess and adapt to threats and impacts to wildlife species and habitats arising from climate change. Through workshops, webinars, and web-based tools, she regularly transfers assessment and synthesis knowledge to federal, state and private land stakeholders. Megan recently applied a coupled model approach to assess habitat and species' vulnerability to climate and wildfire in the southwestern U.S. She is developing a spatially explicit model to predict fire damage on cultural resources and adapting a vulnerability assessment framework to explore implications of climate change impacts for fire regimes. She co-developed and published applications of a vulnerability assessment tool called "System for Assessing Vulnerability of Species", and multiple case study assessments that provide a foundation for developing adaptation strategies.

State or Local Individual: Dr. Olivia LeDee, formerly of Minnesota Department of Natural Resources (DNR)

Dr. Olivia LeDee provided consistent and innovative leadership on climate adaptation for the state of Minnesota including developing and helping to operationalize the DNR's Climate Adaptation and Mitigation in Natural Resource Management policy. This policy encourages the department to implement climate adaptation strategies as well as manage lands so that vegetation can sequester more carbon. She also led the development of guidance, resources, and training for agency staff to be able to implement the policy. Olivia has also represented state agencies on the national scale with the National Fish, Wildlife,

and Plants Climate Adaptation Strategy, Advisory Committee on Climate Change and Natural Resource Science, and the Association of Fish and Wildlife Agencies.

Non-Governmental Individual: Dr. Katherine Mills, Gulf of Maine Research Institute

Dr. Mills is an international leader in the effort to understand how fish populations respond to climate change. Through her research, she has made fundamental contributions to understanding how temperature changes impact lobster, cod, and salmon. She also has a deep commitment to making science relevant to society. She currently leads a major effort to develop a framework to help fishermen and fishing communities make decisions based on expected changes in the species they depend upon. She is also working closely with Maine's lobster industry to develop forecast products for the nation's most valuable fishery.

Broad Partnership: Wind River Reservation Drought Preparedness Team - Wind River Reservation Office of the Tribal Water Engineer, with the National Drought Mitigation Center, High Plains Regional

Climate Center, Department of the Interior's North Central Climate Science Center, Colorado State University, University of Nebraska, Lincoln, National Integrated Drought Information System, University of Wyoming EPSCoR, Wyoming State Climate Office, US Fish and Wildlife Service, Bureau of Indian Affairs, Western Water Assessment at UC-Boulder, Montana State University, Great Northern Landscape Conservation Cooperative, USDA Northern Plains Climate Hub.

This project has foundational partnerships with the Eastern Shoshone and Northern Arapaho tribes at Wind River Reservation (WRR), and over 15 government agencies and university partners. These partners work closely with the Wind River Office of the Tribal Water Engineer (TWE) and the Wind River Water Resources and Control Board, who are the leadership and decision-making authority on water management, to co-produce actionable science for drought preparedness. This includes: a tribal-driven social-ecological vulnerability assessment; co-production of drought and climate change-related information and decision-support tools; and community engagement in drought/climate science education that integrate local knowledge and multi-generational learning approaches to resource management.

2016

WINNERS

Federal Agency: Northern Institute of Applied Climate Science, U.S. Forest Service

The Northern Institute of Applied Climate Science (NIACS) exemplifies the value of bringing partners together to achieve results and foster climate change adaptation. As a highly collaborative institute chartered by public and private organizations and led by the U.S. Forest Service, NIACS includes federal and state agencies, tribes, non-governmental groups, universities, forest industry groups, and researchers in all aspects of its work. Some of its most notable achievements have been in developing vulnerability assessments and integrating the science from these assessments into forest planning processes and management activities in support of climate change adaptation. This work has taken place across large landscapes, such as the northern Great Lakes, the Central Appalachians, and New England, and been implemented in on-the-ground activities in diverse ownerships. NIACS has applied research related to climate change science, forest response, and management strategies for adaptation and transformed discussions within the forest management community about the impacts of climate change across the Midwest and Northeastern U.S. An adaptation workbook and associated website, workshops, and trainings have given managers sound science and the tools to better and more proactively manage forests while taking climate vulnerability into consideration. Most importantly, the collaborative approach NIACS uses to bring scientists, resource managers, and decision makers together has supported climate-informed decision making that is grounded in the needs and perspectives of people who work and live with the land.

Federal Individual: Dan Isaak, U.S. Forest Service, Boise, Idaho

Dan Isaak has integrated and leveraged data from multiple existing observational and monitoring networks across large geographic domains and developed state-of-the-art decision support tools to facilitate climate change vulnerability assessments and more efficient monitoring in forest streams. Mr. Isaak was extremely effective in ensuring that this new science was understood and used by numerous partners across hundreds of millions of acres of land in the western U.S. that encompass more than 1 million kilometers of streams. His thoughtful and practical insights have been critical to identifying priority actions and locations for increasing the conservation of aquatic species and habitats by implementing adaptation actions to reduce non-climatic stressors, such as migration barriers and land use impacts to streams.

State or Local Agency: Environmental Affairs Division, Seattle City Light, City of Seattle, Washington

Seattle City Light is committed to adapting the management of hydropower resources and regional fish and wildlife habitats to a changing climate. A new initiative supports collaborative research to increase the collective knowledge of impacts to water, fish, and wildlife resources. The initiative resulted in the creation of an adaptation plan that brought climate change information into long-term plans for hydropower resources and recovery of Endangered Species Act (ESA) listed species. Seattle City Light purchases, protects, and restores fish and wildlife habitat and is adapting this work to help ensure that the recovery and protection of ESA listed species can be achieved even with the stresses posed by climate change. Seattle City Light leads on climate adaptation in the hydropower industry, and wider energy sector, by initiating information exchange and collaboration with universities, other utilities, tribal governments, and resource management agencies.

State or Local Individual: John R. “Jack” Sullivan, Wisconsin Department of Natural Resources, Madison, Wisconsin

Jack Sullivan was instrumental in establishing Wisconsin's leading climate adaptation group, the Wisconsin Initiative on Climate Change Impacts (WICCI), a statewide network of individuals and more than 70 organizations from the Wisconsin Department of Natural Resources, University of Wisconsin, and various partner agencies and organizations around the state. As the director of the science program at the Wisconsin Department of Natural Resources, his leadership brought many different areas of natural resource research into focus and helped integrate this work into WICCI's first report that outlines specific climate change impacts and adaptation strategies for Wisconsin. Mr. Sullivan continuously led the charge to ensure the state's natural resource research program was an active partner both at the state level and the federal level to effect positive change.

Tribal: Swinomish Indian Tribal Community, La Conner, Washington

The Swinomish Indian Tribal Community Climate Change Initiative is a leader in climate adaptation. The Swinomish conducted assessments; developed plans; implemented on-the-ground adaptation; fostered

partnerships; incorporated community members into planning; and developed tools for other tribal communities to use to conserve their own unique natural and cultural resources. This initiative and development of Indigenous Health Indicators has led climate actions along the Swinomish Reservation and neighboring areas. The beginning phases of the project developed a comprehensive Impact Assessment Technical Report and Climate Adaptation Plan, which enhanced knowledge and capacity of local land managers to understand and adapt to climate threats for the betterment of species, habitats and ecosystems. Additionally, the community education and outreach aspects of the project fostered knowledge and engagement from local community members.

Non-Governmental Organization: National Wildlife Federation, Washington, DC

The National Wildlife Federation (NWF) has played a major role in advancing and promoting climate adaptation across the conservation community through: 1) raising awareness about the urgent need for climate adaptation by highlighting the impacts and consequences of climate change for fish and wildlife; 2) advancing the science and practice of adaptation by leading the development of widely-used adaptation guidance for conservation practitioners; and 3) promoting broad adoption of sound adaptation principles and practices through webinars, training courses, outreach to state wildlife agencies, advisory services, and on-the-ground adaptation projects. Collaboration has been a hallmark of NWF's approach to advancing the science and practice of climate adaptation, and this work was carried out with a wide array of partners, including federal, state, and local agencies, non-governmental organizations, professional societies, and academic institutions.

Broad Partnership: Roundtable on the Crown of the Continent, The State of Montana; British Columbia and Alberta, Canada

The Roundtable's Adaptive Management Initiative (AMI) is significant as an example of both accomplishing climate adaptation projects and demonstrating how an organization can catalyze and implement a

landscape scale, collaborative approach. The goal of the AMI is to promote a culture of stewardship by finding common values, supporting community leadership, promoting shared learning, and seeking place-based solutions. The Roundtable is building a connected ecosystem-wide program that connects land managers from federal, state, nonprofit, and private entities; supporting on-the-ground projects that identify threats to the landscape and build resilience into natural and social processes; and respecting and building culture, community, and conservation.

HONORABLE MENTIONS

Federal Agency: U.S. Geological Survey National Climate Change and Wildlife Science Center & U.S. Department of the Interior Climate Science Centers, Reston, VA

The U.S. Geological Survey (USGS) National Climate Change and Wildlife Science Center (NCCWSC) and the eight regional U.S. Department of the Interior (DOI) Climate Science Centers (CSCs) collaborate with universities, resource management organizations, Tribes, and other partners to provide unbiased scientific data and tools that contribute to an understanding of the widespread impacts of climate change on fish, wildlife, ecosystems, and people.

Federal Individual: David L. Peterson, U.S. Forest Service, Seattle, WA

Dr. David Peterson is an irreplaceable source of knowledge about forest ecosystems and how they are affected by wildfire and climate change. His climate change adaptation guidebook and vulnerability assessments have provided a foundation for developing adaptation options that are mitigating the negative effects of climate change across millions of acres of forest in the western U.S.

State or Local Agency: Colorado Parks and Wildlife, Colorado Natural Heritage Program in collaboration with the Department of the Interior's North Central Climate Science Center Fort Collins, CO

Colorado Parks and Wildlife (CPW) worked with the Colorado Natural Heritage Program (CHNP) and the North Central Climate Science Center to ensure climate change was considered in the revision of Colorado's State Wildlife Action Plan. The collaboration used the best climate and habitat modeling knowledge and resources available and a high level of subject-expert involvement in the process.

State or Local Individual: Robert Glazer, Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute, Marathon, Florida

Robert Glazer's work with the State of Florida and as Executive Director of the non-profit Gulf and Caribbean Fisheries Institute has been instrumental in reducing non-climate stressors on marine and coastal systems and developing capacity to address climate change within the management community of marine protected areas. His activities as Chair of the Monroe County Climate Change Advisory Committee have provided adaptation options for the Florida Keys including the adoption of a Climate Action Plan.

Tribal: Bad River Band of Lake Superior Tribe of Chippewa Indians, Odanah, Wisconsin

The Bad River Band of the Lake Superior Tribe of Chippewa Indians is working to understand how climate change is and will be affecting a manoomin (wild rice), a cold weather species of profound cultural significance to the Tribe. Knowledge gained will help the Tribe make management decisions that will most effectively protect and sustain manoomin and its aquatic habitat for the next seven generations.

Non-Governmental Organization: NatureServe, Arlington, Virginia

NatureServe is playing a significant role in transforming the NFWPCAS into a successful model for collaborative, multi-institutional national conservation efforts by supporting climate-smart conservation training; integrating climate change assessment and adaptation into its decision support system; updating

climate change vulnerability indices; and catalyzing action through the Ecosystem-based Management Tools Network.

Broad Partnership: Planning team for the project "Climate-Smart Adaptation for the North-central California Coast and Ocean", San Francisco, California

Coordinated by NOAA's Greater Farallones National Marine Sanctuary, the planning team for the project "Climate-Smart Adaptation for the North-central California Coast and Ocean" has demonstrated exceptional collaboration and ingenuity in advancing the region's understanding of climate impacts and vulnerabilities to coastal and marine ecosystems by developing a Vulnerability Assessment Report and advancing an adaptation planning process to address those vulnerabilities.