PREVIOUS WINNERS

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

CLIMATE ADAPTATION LEADERSHIP AWARD
for natural resources

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

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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

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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,

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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.