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FORESTS AT RISK
Climate Change and the Future of the American West

Moderator: Renee Montagne, National Public Radio

Renee Montagne is co-host of NPR's *Morning Edition*, the most widely heard radio news program in the U.S. She has hosted the newsmagazine since 2004. She hosted *All Things Considered* with Robert Siegel for two years in the late 1980s, and previously worked for NPR's Science, National and Foreign desks. Over the years, Montagne has done thousands of interviews on a wide range of topics: Kurt Vonnegut on how he transformed surviving the WWII Dresden firebombing into the novel *Slaughterhouse Five*; National Guardsmen on how they handle the holidays in Iraq; a Hollywood historian on how the famous hillside sign came to be; Toni Morrison on the dreams and memories she turned into novels; and Bud Montagne, Renee's father, remembering the attack on Pearl Harbor.

Montagne traveled to Greenwich, England, in May 2007 to kick off the yearlong series, "Climate Connections," in which NPR partnered with National Geographic to chronicle how people are changing the Earth's climate and how the climate is impacting people. From the prime meridian, she laid out the journey that would take listeners to Africa, New Orleans and the Antarctic. Since 9/11, Montagne has gone to Afghanistan four times, traveling throughout the country and interviewing farmers and mullahs, women and poll workers, the president and an infamous warlord. She spent a month during the summer of 2009 reporting on the Afghanistan politics and election. In 1990, Montagne traveled to South Africa to cover Nelson Mandela's release from prison, and continued to report from South Africa for three years. In 1994, she and a team of NPR reporters won a prestigious Alfred I. duPont-Columbia University Award for coverage of South Africa's historic presidential and parliamentary elections.

Master of Ceremonies: Bill Ritter, Former Governor of Colorado

The 41st governor of Colorado, Bill Ritter retired in January, 2011 to become Director of the *Center for the New Energy Economy* at Colorado State University. As governor, he built his reputation on enacting policies to support renewable energy production in Colorado, which now has the fourth-highest concentration of clean-energy workers in the country and the second-highest renewable energy standard in the nation. In a statement before retiring as governor, Ritter said that "the Center for the New Energy Economy will serve as a national leader as we move toward a future in which our children will produce and consume energy far differently than we do today."

Speakers:

Craig Allen, PhD – Research Ecologist, Ecosystem Dynamics Branch, U.S. Geological Survey.

Dr. Allen conducts research on the ecology and environmental history of western landscapes. He oversees the USGS Jemez Mountains Field Station at Bandelier National Monument (New Mexico). He is the lead author, with 19 other international scientists, of the 2010 paper in *Forest Ecology & Management*: “A Global Overview of Drought and Heat-induced Tree Mortality Reveals Emerging Climate Change Risks for Forests.” He has researched fire history & ecology in the American West, elk movements and habitat effects in the Jemez Mountains, and impacts of the mountain Pine beetle infestation on forested ecosystems and social values in Colorado’s Front Range. He received his doctorate in forest and landscape ecology from the University of California, Berkeley.

Tom Cardamone – Executive Director, Aspen Center for Environmental Studies (ACES). Tom Cardamone joined his wife Jody (ACES' first Director) as Co-Director in 1975 and became ACES' Executive Director in 1982. He holds a Masters Degree from the College of Forestry and Natural Resources at Colorado State University and a Bachelor of Science degree from Hamilton College. Tom has served on numerous boards, including The Pitkin County Open Space and Trails Board, The Pitkin County Park Association (now the Aspen Valley Land Trust), The Pitkin County Wildlife Task Force, and The Colorado Wildlife Federation. After living 30 years at Hallam Lake, Tom and Jody now live in Emma, and he divides his time among ACES' four sites: Hallam Lake, Toklat, Rock Bottom Ranch, and the Spring Creek Hatchery. Tom finds inspiration in pristine wilderness and the eloquent writers who capture its wild essence.

Linda Joyce, PhD – Quantitative Ecologist, U.S. Forest Service

Dr. Joyce’s recent research has focused on quantifying the impacts of climate change on ecosystems and the socioeconomic implications of this change in the forest sector. As the climate change specialist for the Resources Planning Act assessment process in the Forest Service, she identifies and coordinates analysis of potential effects of global climate change on the condition of renewable resources on the forests and rangelands of the United States. She has contributed to the Intergovernmental Panel on Climate Change reports and the recently released IUFRO report: “Adaptation of Forests and People to Climate Change: A Global Assessment.” Joyce also was the lead author on the national forest chapter of the Synthesis and Assessment Report: “Preliminary Review of Adaptation Options for Climate-sensitive Ecosystems and Resources.” This report represents the first synthesis of management options available for national forest managers as they begin to incorporate climate change considerations. She is the winner of the 2010 *Forest Service Deputy Chief’s Distinguished Science Award*.

Werner Kurz, PhD – Senior Research Scientist, Canadian Forest Service

Dr. Kurz is a Senior Research Scientist at the Canadian Forest Service (Natural Resources Canada) in Victoria, BC. He leads the development of Canada's National Forest Carbon Monitoring, Accounting and Reporting System and of the Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3). His research focuses on the impacts of natural disturbances, forest management and land-use change on forest carbon budgets. Dr. Kurz co-authored five reports of the Intergovernmental Panel on Climate Change (IPCC). He serves as adjunct professor at the University of British Columbia and at Simon Fraser University. He received a Ph.D. in forest ecology from the University of British Columbia in 1989 and an honorary doctorate from the Swedish University of Agricultural Sciences in 2009.

Phillip van Mantgem, PhD – Research Ecologist, U.S. Geological Survey.

Dr. van Mantgem's research interests include conservation biology, fire ecology, forest ecology and global change biology. He is the lead author of the groundbreaking 2009 paper in *Science*, "Widespread Increase of Tree Mortality Rates in the Western United States," which concluded that the background mortality rate in unmanaged old forests across the West has doubled in the last two to three decades. He is currently leading the USGS Fire Severity Trends project, which is testing the idea that climate may affect forest fire severity independent of fire intensity. He received his doctorate in Ecology from the University of California, Davis.

Diana Six, PhD – Professor of Forest Entomology & Pathology, Department of Ecosystem and Conservation Sciences, University of Montana.

Dr. Six's research focuses on the evolution and maintenance of symbioses particularly those occurring among bark beetles, ambrosia beetles and fungi. She also conducts research on various aspects of bark beetle ecology and management, including investigations into the interactions of bark beetles with fire and forest stand structure, and interactions between an exotic pathogen (white pine blister rust) and a native insect (the mountain pine beetle) in high elevation whitebark pine ecosystems. In recent years, her focus has expanded to include effects of climate change, particularly on how changing temperatures affect symbioses in ways that affect ecosystem function and diversity. She is also involved in studies investigating the role of climate change on extensive die offs of South African trees. She received her PhD in Entomology (minoring in mycology) from the University of California, Riverside, and did postdoctoral research on chemical ecology at the University of California, Berkeley. She has authored more than 50 peer-reviewed papers focusing on symbioses or forest systems and recently published an invited review on climate change and mutualisms in *Nature Reviews Microbiology*.

Tom Swetnam, PhD – Professor of Dendrochronology & Director of Laboratory of Tree-Ring Research, University of Arizona.

Dr. Swetnam studies changes in climate and forest disturbances using dendrochronology and other analytical tools. His work centers on understanding wildfire dynamics in pine-dominant and giant sequoia forests of the western U.S. He has also worked in Mexico and South America, and he is currently studying fire, climate and carbon dynamics in central Siberia. With students and colleagues, he has developed century to millennia-length fire and insect outbreak chronologies from tree rings in hundreds of locations across the western U.S. These histories reveal both human and climate causes of past and recent changes. He has authored and co-authored more than 120 papers, including a 2009 review paper titled "Fire in the Earth System," and a 2010 paper titled "Forest Responses to Increasing Aridity and Warmth in the Southwestern United States." Dr. Swetnam serves as director of the world's premier laboratory dedicated to tree-ring research and education. The son of a forest ranger, he grew up in rural, northern New Mexico. He received his PhD in Watershed Management at the University of Arizona.

Jim Worrall, PhD – Plant Pathologist, U.S. Forest Service.

Dr. Worrall's research interests include sudden aspen decline & climate, cytospora canker of alder and climate, and root diseases. A leading authority on Sudden Aspen Decline (SAD), his papers include "Rapid mortality of *Populus tremuloides* in southwestern Colorado," "Sudden aspen decline in southwest Colorado" and "Effects and etiology of sudden aspen decline in southwestern Colorado." The latter noted the association of SAD with moisture stress and

concluded that SAD “is occurring in areas where early loss of aspen due to climate change has been predicted. Further warm, dry growing seasons will likely lead to recurrence of SAD.” Dr. Worrall received his PhD in Plant Pathology from the University of California, Berkeley.

OPENING WELCOME:

Harris Sherman, Under Secretary for Natural Resources and Environment

U.S. Department of Agriculture

As Under Secretary for Natural Resources and Environment, Harris Sherman oversees the United States Forest Service and the Natural Resources Conservation Service.

Previously, from 2007 until 2009, he served as Executive Director of Colorado’s Department of Natural Resources (DNR), where he oversaw Colorado’s water, energy, wildlife, parks, forestry, and state lands programs. Earlier in his career, he was Colorado’s DNR Director under Governor Richard Lamm. Sherman has also served as Chairman of the Colorado Oil & Gas Commission, Commissioner of Mines, Chair of the Colorado Water Quality Control Commission, and Chair of the Denver Regional Air Quality Council.



Between his two stints as DNR Director, Sherman was Managing Partner of the Denver Office of Arnold & Porter, an international law firm, where he specialized in natural resources, water, energy, public lands, and American Indian law. He has served on a wide variety of public and non-profit boards including the Denver Water Board, the National Advisory Board for Trust for Public Land, the Nature Conservancy, and Colorado College. Throughout his career, Sherman has dedicated himself to conserving and improving our Nation’s natural resources. He received his B.A. degree from Colorado College and his law degree from Columbia University Law School.

KEYNOTE ADDRESS:

Al Gore – Nobel Laureate & Former Vice President of the United States.

Former Vice President Gore is the author of *Earth in the Balance: Ecology and the Human Spirit* and *An Inconvenient Truth*, which was turned into an Oscar-winning film. In 2007, he shared the Nobel Peace Prize with the Intergovernmental Panel on Climate Change. He is a founder and current chair of the Alliance for Climate Protection, the co-founder and chair of Generation Investment Management, and the co-founder and chair of Current TV. Before becoming Vice President, he served for 24 years in the U.S. House of Representatives and U.S. Senate, representing the state of Tennessee.