

PLENARY SPEAKERS

*“Contemporary Challenges and Conservation of Forests & Wildlife”
Tuesday March 11th, 8:30am-12:30pm*

Collaboration as a Model for Wildlife Habitat Management in Changed Landscapes, Rick Truex, U.S. Forest Service.



Bio: Rick Truex has worked for the US Forest Service for the past 20 years. He began his career in California with a program focused on forest carnivore ecology, monitoring, and management. In 2011, he began working for the Forest Service’s Rocky Mountain Region and currently serves as the Region’s wildlife program manager.

Abstract: During the past decade, forest landscapes throughout the region have experienced dramatic changes due largely to bark beetle outbreaks and wildfire. In addition to these changes, wildlife populations face challenges from invasive species, wildlife diseases, recreation, and the interaction between landscape disturbance and anthropogenic stressors. This presentation will highlight some of the important factors influencing forest-dependent wildlife and explore the role of collaboration as a framework to conserve wildlife while also meeting other resource management objectives. In 2010 the Forest Service began its Collaborative Forest Restoration Program (CFLRP)- a program designed to encourage collaborative, science-based ecosystem restoration. The Front Range CFLRP and the Uncompahgre Plateau CFLRP projects provide 2 local case studies to compare and contrast how collaborative processes influence forest wildlife conservation. Both landscape-scale efforts have demonstrated success in integrating wildlife conservation objectives into their landscape restoration approaches, though in very different ways. Measuring success and effectiveness of restoration requires monitoring, and specific monitoring questions and approaches are determined by each CFLRP. The Front Range CFLRP has emphasized wildlife monitoring and relies on monitoring a suite of avian species across the landscape. In addition to the successes each CFLRP has experienced, challenges have been encountered- particularly with respect to integrating science into management.

Wildlife, Habitat, and Fire: A case study for habitat restoration, Melissa Dressen, U.S. Forest Service.



Bio: Melissa Dressen has been a professional wildlife biologist for nearly 20 years and has been working for the Forest Service on the Routt National Forest for most of her career. She received her BS in Wildlife Biology and MS in Ecology both at Colorado State University. Her passion is understanding how natural disturbances such as fire, beetles, and blowdown may affect forest change and wildlife.

Abstract: Historic fire patterns have been altered across the west with fire suppression along with changes in fuel conditions, vegetation patterns, and climatic conditions. With these changes, wildlife habitats are likely experiencing changes that are outside the historical range of variability. In some cases, habitats have remained for decades in a late successional phase which may alter the wildlife dynamics, distribution, and species composition. Prescribed fire can be introduced on the landscape to restore habitats for a variety of wildlife species including big game. Initiating a pattern of regular fire intervals can keep habitats in a mosaic of successional stages, particularly important for vegetation that may have had a frequent fire return interval in the past. This case study explores fire ecology, application of fire, and the response by wildlife to the habitat changes.

Rocky Mountain High Elevation Five-needle White Pine Communities: Wildlife Habitat Under Threat, Diana Tomback, University of Colorado Denver



Bio: Diana F. Tomback, Professor in the Department of Integrative Biology, University of Colorado Denver, studies the ecological interactions and the conservation biology of high elevation, five-needle white pines. For her doctoral research, she documented the obligate dependency of whitebark pine on seed dispersal by Clark's nutcracker. Her career has followed a research-advocacy model, especially since 2001 when she began as volunteer director of the Whitebark Pine Ecosystem Foundation, Missoula, MT. Whitebark pine, a candidate for listing under the ESA and endangered species under the Species at Risk Act in Canada, has been experiencing a number of anthropogenic challenges that exemplify the current health stressors on North American forests.

Abstract: High elevation five-needle white pine communities comprise important wildlife habitat throughout the Rocky Mountains. The pines include whitebark, limber, Rocky Mountain bristlecone, and southwestern white. They vary in geographic distribution, but all produce nutritious seeds that are consumed by a multitude of birds and small mammals and even bears and foxes. The four species are pioneers after disturbance such as wildfire, but successional on productive sites. The hardiness and stress-tolerance of three species—whitebark pine, limber, and bristlecone pine—enable them to grow at high elevations where they provide ecosystem services, such as snow and soil retention. These communities are under threat from the combination of mountain pine beetle outbreaks, introduced white pine blister rust, fire exclusion, and climate change. Restoration strategies are at various stages of development for all four species, but it will take support and determination to see these plans realized.

Wildlife Responses to Bark Beetle Outbreaks: The Role of Spatiotemporal Complexity in Post-Disturbance Forests, Tracey Johnson, University of Idaho



Bio: Tracey Johnson is an Assistant Professor in the Department of Fish and Wildlife Sciences at the University of Idaho. She received her B.S. from Texas A&M University, M.S. from Kansas State University, and Ph.D. from Oregon State University. Tracey's research interests are in wildlife-habitat relationships, and the role of habitat selection in mediating population and community vital

rates. Her postdoctoral research examined the consequences of broad-scale tree mortality from concurrent bark beetle epidemics on wildlife in subalpine systems in Wyoming.

Abstract: Bark beetle outbreaks have become increasingly widespread in western North American forests. However, predicting responses of wildlife to habitat conditions after outbreaks is limited by a lack of empirical studies. Post-outbreak forests are complex and dynamic, and include many vertebrate wildlife species, multiple tree host-pathogen associations, spatial heterogeneity from previous disturbance, and time-dependence in the development of post-outbreak conditions. These complexities must be considered when making predictions and management decisions regarding wildlife responses to bark beetles, along with potential interactive, cascading, and nonlinear responses from wildlife. In this presentation, the current state of knowledge of wildlife responses to bark beetle outbreaks will be assessed, and considerations for future research and management will be discussed.

Impact of Bark Beetle Outbreaks on Mammals in Colorado, Jake Ivan, Colorado Parks and Wildlife



BIO: Jake Ivan currently works for the Mammals Research Section of Colorado Parks & Wildlife. He holds degrees in wildlife from Purdue University, University of Montana, and Colorado State University. His research is focused on estimation of population parameters and conservation/management of subalpine wildlife.

ABSTRACT: Bark beetles have impacted approximately >1.6 million hectares in Colorado since the initial outbreak began in 1996. Though bark beetles are native to Colorado and periodic outbreaks are considered a natural ecological process, the geographic scale of their impact and simultaneous infestation within multiple forest systems has never been observed. We used occupancy estimation to determine how mammalian use of forest stands has changed as a result of these outbreaks. Engelmann spruce–subalpine fir and lodgepole pine systems were sampled statewide, and sampling covered a variety of conditions including areas that had not yet been impacted by beetles, areas that were impacted only recently, and those that were impacted a decade ago. Response of the mammalian community to this large-scale disturbance was varied. Some species, such as red squirrels, decreased their use of an area after bark beetles moved through. Others, such as elk increased their use of such areas. Still others showed no response (e.g., *American marten*).