

PANEL SESSION AND DISCUSSION

INVASIVE SPECIES IN HIGHWAYS RIGHTS-OF-WAY: SUCCESES AND CHALLENGES

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ABSTRACT

Humans have invented ways to transport themselves quickly across vast distances and over otherwise impassable geographical barriers such as mountains, oceans, canyons, and rivers. Transportation technology has increased the rate of human mediated movement of non-native species thousands of times faster than would naturally occur. In terrestrial systems, the networks of roads and highways that effectively connect and move people across the landscape have become major pathways for the introduction and spread of non-native invasive species. Wind gusts and runoff move weed seeds long distances along the roads and other invasive species can hitchhike on vehicles into areas where they did not naturally occur. Soil disturbance and movement of materials for highways construction and maintenance activities have further exacerbated this problem by facilitating the establishment of invasive species.

Invasive species are one of the greatest threats to the environment, economy, and the health and quality of life of the people. Various transportation agencies are developing best management practices and integrated control measures based on sound ecological principles to prevent the introduction and spread of invasive species. However, invasive species do not always originate in highway corridors and roadside vegetation managers have little control over what happens outside of their rights-of-way fences. Furthermore, conservation is not the mission of state transportation agencies and highways managers' efforts are stymied by having to operate within certain jurisdictional boundaries, under strict budget constraints, and with a constantly changing list of priority target species to control.

Connecting with neighboring stakeholders, establishing partnerships, and working collaboratively has become imperative to develop sustainable solutions to the relentless problem of invasive species in highway corridors and to allow Departments of Transportation (DOT) to continue to provide safe and efficient travel ways. The goal of this symposium is to explore successes and challenges and identify innovative approaches and gaps in adopting not just an integrated vegetation management approach but also on working collaboratively with different stakeholders to mitigate the introduction and spread of invasive species through transportation corridors.

Hawaii being one of the largest transportation hubs in the Pacific and with its mild and diverse climate attracts not just tourists but also a wide variety of invasive species. Hawaii DOT (HDOT) recognized the silent invasion of Hawaii by alien invasive species as a growing problem within its own purview and launched the Statewide Noxious Invasive Pest Program (SNIPP). HDOT will discuss SNIPP; including roadside surveys for early detection of invasive species, training HDOT maintenance staff and contractors on invasive species management, and drafting the 10-year SNIPP Strategic Plan. Implementation of this Plan, which will start later this year, outlines

five major goals relative to invasive species management: prevention, early detection and rapid response, control and management, restoration, and collaboration.

Arizona has a diverse range of native plant communities from the lower Colorado Sonoran Desert through semi-desert grasslands, pinion-juniper and chaparral shrublands to conifer forests and high elevation alpine tundra. Each of these areas presents unique issues related to invasive species and noxious weeds. Arizona DOT (ADOT) will present the current state of practice in both the development and operations for managing invasive species along Arizona highway corridors with a focus on important agency partnerships developed with Federal land managing agencies and Arizona Tribes.

Using herbicides on roads crossing Forest Service (FS) lands in Arizona presents some unique challenges to ADOT and the FS. Differences in mission, rules and regulations among the ADOT, FS, and Federal Highway Administration (FHWA) led the need for increased interagency awareness, communication and ultimately led to the development of a new approach toward management of invasive plants along highways that pass through national forests in Arizona. Tonto National Forest will present the Interagency Herbicide Program including various protocols developed collaboratively by FS, FHWA, and ADOT to prevent the spread of invasive species during highway construction projects.

Transportation has had its own important relationships in the history of the Adirondacks. It is recognized today that visitors will experience more of the Park from its State Highways than any other means. Appearance of several invasive species along State Highways made the New York State (NYS) DOT recognize that transportation activities were spreading invasive species along the state highways in the Park and led NYSDOT to form an alliance with Adirondack Park Agency, NYS Department of Environmental Conservation, and The Nature Conservancy. NYSDOT will share this alliance's efforts over the past 17 years, which have become part of the Adirondack Park Invasive Plant Program, and its future as it relates to invasive species and transportation in the Park.

PRESENTER BIOGRAPHICAL SKETCHES

Shahin Ansari has over fifteen years of experience in tropical botany, vegetation ecology, and invasion biology of island ecosystems. At SWCA, she provides ecological consulting services and serves as project manager on a variety of projects related to natural resource management and conservation, including invasive species, endangered species, habitat restoration, and environmental mitigation. She has served as principal investigator on several research projects and contributed extensively to various conservation and strategic plans for management and control of invasive species, including that of the U.S. Navy, the National Park Service, and the Hawaii Department of Transportation (HDOT). As project manager on HDOT's Statewide Noxious Invasive Pest Program (SNIPP), she successfully executed the contract scope and

delivered a wide range of products on time and on budget. She seamlessly organized stakeholder workshops, training programs for HDOT staff and contractors, coauthored the SNIPP Strategic Plan, and coordinated and contributed heavily to the development of the *Highway Manual for Sustainable Landscape Maintenance (HMSLM)*. As a graduate student at University of Hawaii, she helped develop the Hawaii Pacific Weed Risk Assessment (HPWRA) model and prior to joining SWCA worked as the State's Weed Risk Assessment Specialist.

Chris Dacus is the chief state landscape architect for the State of Hawaii Department of Transportation Highways Division and is responsible for managing the planning, design, construction, and maintenance of 2,500 miles of state roadsides. He received his Bachelors of Landscape Architecture from the State University of New York Environmental School of Science and Forestry in 1987. He serves on a number of local and national professional boards and is the current President of Hawaii's landscape industry and an American Society of Landscape Architects trustee.

Justin White is Roadside Resources Program Manager for the Arizona Department of Transportation. He is responsible for vegetation and wildlife management in operations and development, and representing his agency on natural resource issues. He has worked in several environmental positions at AZDOT as Natural Resources Manager, Environmental Planner, and as a project Biologist over the last 15 years. During this time he has been involved with numerous highway development projects, mitigating impacts to wildlife and sensitive species and is currently working on agency policy and guidelines for vegetation management and wildlife connectivity.

Despite moving to Arizona at the age of two in a non-air-conditioned station wagon, **Patti Fenner** has chosen a career in the great Arizona outdoors. She attended Arizona State University when it had only one campus, earning degrees in botany and natural resource management. For 25 years she worked as a Range Conservationist, managing grazing by domestic livestock on the Cave Creek Ranger District of the Tonto National Forest. In 2003 she moved to the Tonto Supervisors Office to create the Forest's Invasive Plant Management Program. From 2004 to 2006 she served as President of the state-wide invasive plant organization in Arizona, Southwest Vegetation Management Association. She worked on the Governor's Invasive Species Advisory Board in 2006 and 2007, helping to draft Arizona's first Invasive Species Management Strategy. It takes her three times as long as anybody else to drive anywhere, as she has to make numerous roadside stops to investigate the weeds.

LeRoy Brady is Manager of the Roadside Development Section and Principal Landscape Architect for the Arizona Department of Transportation (ADOT). He provides administrative direction and supervision of the statewide roadside development program, including landscape design, rest area design, parkways, historic and scenic roads program, vegetation management,

revegetation programs for stormwater quality and erosion/sediment control, and other Clean Water Act project plans and specification requirements. Activities include programming of developing project scopes, budgets and priorities, preparation of manuals and guidelines involving landscape architecture for highways, construction drawings and specifications, partnering and problem solving during construction. Mr. Brady is the Landscape Architect Board Member on the State of Arizona Board of Technical Registration; Chairman of the Arizona Parkways, Historic and Scenic Roads Advisory Committee; and a Member of the Board of Directors of the Rose Garden at Mesa Community College, as well as a Member of the Board of Directors of the Boyce Thompson Arboretum. He has, also, served as Member and Chairman of the Transportation Research Board, Landscape and Environmental Design Committee. And a Member of the City of Mesa Design Review Board and the Mesa City Parks Board.

Ed Frantz has worked for NYSDOT for eighteen years including a position as a Regional Environmental Manager and currently is the Adirondack Park and Forest Preserve Manager. For six years he worked for the NYS Department of Environmental Conservation as a Wetlands Specialist. Ed is a Graduate of the SUNY College of Environmental Science and Forestry at Syracuse, and SUNY Morrisville. He currently serves on the Board for the NYS Wetlands Forum, Board member and former Chairman of the NYS Flora Association, a former Board member for the NYS Invasive Plant Council and is a founding member of the Adirondack Park Invasive Plant Program.