

**CONTINENTAL DIALOGUE ON NON-NATIVE FOREST INSECTS & DISEASES
SIXTH DIALOGUE MEETING
OCTOBER 5-6, 2011**

Meeting Summary and Action Items

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NOTE: Presentations and attachments (including the meeting agenda, participant list, flip chart notes from the breakout sessions, and a roster of Dialogue Steering Committee members) are available online at the following URL:

<http://www.continentalforestdialogue.org/events/dialogue/2011-10-05/summary.htm>

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I. Overview and Background

On October 5-6, 2011, a diverse group of approximately 80 representatives from state, federal, and municipal agencies; private business and industry; academia; and non-governmental organizations gathered at the Millennium Harvest House in Boulder, Colorado for the seventh meeting of the Continental Dialogue on Non-Native Forest Insects and Diseases (the Dialogue). The meeting was convened by the Dialogue Steering Committee, a cross-section of stakeholders with an interest in protecting forests from the threat of non-native insects and diseases.

The goal of the October 2011 Dialogue meeting was to advance collaboration around actions to address the threat of non-native forest insects and diseases. Specific objectives included:

- Cultivate collaborations toward action to address the threat of non-native forest insects and diseases;
- Link state and local actions to Continental Dialogue efforts to enhance national policies and strategies;
- Enlist communities in the battle against non-native insects and diseases impacting their trees; and
- Identify and agree on needed actions for Continental Dialogue to take in the upcoming year.

Presentations slides are available online at the following URL:

<http://www.continentalforestdialogue.org/events/dialogue/2011-10-05/summary.htm>

II. Day One – Wednesday, October 5, 2011

A. Field Trip

Ahead of the plenary session on the morning of October 5th, approximately 50 Dialogue meeting participants gathered to hear a presentation from Kathleen Alexander, City of Boulder on the history of forest pest invasions in the city, and the city's response. Following her presentation, the group traveled to the city's Park Operations Facility to participate in dissections of logs from trees infected with Thousand Cankers Disease (TCD), and then to various sites around Boulder to observe instances of TCD and other tree diseases.

After the field trip, the group reconvened at the Millennium Harvest House for the plenary session.

B. Welcome and Opening Remarks

Paul De Morgan, the meeting facilitator from RESOLVE, welcomed the participants to the

meeting on behalf of the Continental Dialogue Steering Committee. He asked Steering Committee members in attendance to identify themselves. Mr. De Morgan briefly reviewed the materials provided to meeting participants, highlighting the participant list and Steering Committee roster to help the large group identify existing colleagues and new contacts. Mr. De Morgan reviewed the agenda and ground rules for the meeting before introducing the opening speaker, Mr. Phil Garcia.

Phil Garcia, Regional Director of USDA APHIS PPQ's Western Region, welcomed the participants to Boulder. He described a number of threats facing Western forests, many of which he noted are unique from those in the East. He also acknowledged the unique financial and budgetary challenges borne by those who must deal with forest pests in all sectors, and noted the need for effective partnerships. APHIS PPQ's budget has significantly decreased over the past two years, and Mr. Garcia detailed the funding forecast for some forest pest programs. Congress is significantly decreasing the funding for the Emerald Ash Borer (EAB) program, and the agency will be shifting its focus from a regulatory approach to biocontrol. Mr. Garcia also noted that the Northeast Sirex program will likely be eliminated, and the gypsy moth program had its budget halved in the President's Budget. Given the funding reality of APHIS PPQ programs, the agency will need to be more efficient in its operations. Mr. Garcia also highlighted some funding successes, notably the continuation of the Asian Longhorn Beetle (ALB) program with an agency commitment of pushing for eradication, and Farm Bill 10201 funding for surveillance programs.

Mr. Garcia listed a number of programmatic and regulatory successes of the past year: notably, the implementation of the Plants for Planting Not Authorized for Importations Pending Pest Risk Analysis (NAPPRA) rule (i.e., modifications to Q-37), advance notification procedures for *P. ramorum*, and improved Canadian firewood requirements.

C. Orientation to the Continental Dialogue

Bill Toomey, the Forest Health Director with The Nature Conservancy and a member of the Dialogue Steering Committee, followed with an overview of the Dialogue. He began by acknowledging the work and dedication of the Dialogue Steering Committee members, the RESOLVE team, and the TNC staff who work on the Dialogue. He recognized the leadership of his predecessor, Frank Lowenstein, in forming the Continental Dialogue in 2006 as a place for people to hold a national conversation around the issue of non-native forest pests.

Mr. Toomey informed the group of the Dialogue's structure, goals, current activities, and accomplishments. The volunteer Steering Committee directs the activities of the Dialogue, which are carried out in initiatives. There are currently nine initiatives. At the annual meeting, meeting participants are given the opportunity to help the Steering Committee determine the activities and issues the Dialogue should focus on in the coming year.

After five years and a significant transition in leadership from TNC, the Dialogue Steering Committee is carrying out a review and revision of the original Vision, Goals, and Mission document first prepared in 2006. Mr. Toomey provided an overview of the current working draft of the revised document, which was included in the meeting materials.

For the coming year, Mr. Toomey expressed the opinion that the Dialogue should focus on:

- Securing financial, political, and public support for its work;
- Making significant progress on ongoing initiatives; and

- Using information and data to educate and outreach to key audiences.

He suggested meeting participants encourage key constituents, who may not be well-represented at the meeting or in the Dialogue, to learn more about the Dialogue and get involved.

D. Introduction to Pathways in the West

The 2011 Continental Forest Dialogue meeting was the first to take place in the Rocky Mountains region of the United States. **Whitney Cranshaw**, Colorado State University, provided the meeting participants the regional context of non-native insect pathways in the Rockies. He informed the group that the forest pest issues the region faces are unique from the rest of the country, noting the forest ecology, geography, threats, and insect behavior are different and relatively isolated, which limits the risk of introductions and spread. With the Rocky Mountains, the Great Plains, and the Great Basin, Colorado is geographically isolated from both the East and West coasts. And most trees were transported into the state and planted by humans, limiting the existence of corridors and further limiting potential spread. He emphasized that any new introductions would be human-assisted. Any introduction that occurs can also potentially be contained and eradicated due to the ecological isolation that occurs within the region (e.g., Japanese beetle in Palisade). Dr. Cranshaw also provided three examples of introduced species whose behaviors differed in Colorado, due to climate and regional ecology: the banded elm bark beetle, and the European elm flea weevil, and the European paper wasp.

Throughout his presentation, Dr. Cranshaw emphasized that any new introductions to the region would most likely be human-assisted.

E. Panel #1 – Applying What We Know to Managing the Firewood Pathway

A significant portion of the meeting was used to hold four panel discussions on various topics. During each panel, a number of panelists delivered presentations, followed by a facilitated discussion to integrate the content and provide an opportunity for questions and discussion. Four panelists participated in the first of the panels focused on current efforts to manage the firewood pathway of non-native forest insects and pests.

Introduction and Summary of the Dialogue’s Firewood Outreach Coordinating Initiative

Leigh Greenwood, The Nature Conservancy, presented on the newest Dialogue initiative, the Firewood Outreach Coordinating Initiative (FOCI). She explained that the idea for the FOCI came out of the National Firewood Task Force, which recommended a forum for firewood outreach practitioners to share resources and collaborate on efforts. Firewood has long been a recognized pathway of introduction and spread of forest pests, and the Dialogue has been working to educate and outreach to the public through the Don’t Move Firewood campaign and website. The FOCI is a natural extension of the Dialogue’s efforts.

Overview of Firewood Research Efforts and Results

Bill Jacobi, Colorado State University, presented the results of two firewood studies. The first was a survey of Colorado state parks and national parks, which showed that approximately 40 percent of campers bring firewood from outside the state. The second study looked at retail firewood purchased from around the nation, and live insect emergences over a year-and-a-half period. During the study period, 47 percent of the purchased firewood bundles had live insects emerge. Though no

exotic insects were identified, there were several insects found that had never been reported in Colorado before. Dr. Jacobi noted the need for uniform firewood standards.

Interior West, Regional Efforts on Firewood Pathways

Les Koch, Wyoming State Forest Division, related Wyoming's new partnership with Colorado, Idaho, and Montana on firewood outreach efforts, funded by a \$300,000 grant. He informed the group that Wyoming has some unique challenges: the State Forestry does not have regulatory authority, the state has a sparse population, and there are currently no invasive species issues in the state. These considerations affect the focus of the state's firewood messaging, which focuses on native insects and Mountain Pine Beetle, and the scope of the messaging. The states are coordinating around the core message: "don't move firewood." Wyoming, which is relatively new to firewood engagement, will start with basic messaging and outreach to educate the public about the threat to trees from forest pests that move on firewood. Mr. Koch noted that because of the lack of invasive species awareness, he is focusing his message on the outcome of a dead tree, rather than the native or non-native pest issue.

Pacific Northwest, Regional Efforts on Firewood Pathways

Wendy Brown, the Washington Invasive Species Council, presented on the outreach campaign that just finished in the Pacific Northwest, which was funded through a 2010 Farm Bill grant. Three states – Washington, Oregon, and Idaho – received money for firewood outreach. Ms. Brown indicated the most important action the states undertook was hiring a professional advertising company to help determine the messaging and branding. The states agreed on "Buy It Where You Burn It" as the common message. A variety of outreach materials, including billboards, handouts, posters, cards to hand out with permits, magazine advertisements, and giveaways (e.g., Frisbees and playing cards) were produced, and campground hosts were given prepared speaking points. Pre- and post-surveys showed that the campaign was effective in changing behavior.

Facilitated Discussion

Following the presentations, the Dialogue was given the opportunity to engage the panelists in discussion and ask questions. A few members were concerned about the findings from Dr. Jacobi's retail firewood research, and how to best outreach to firewood retailers and distributors. Dr. Jacobi noted that in Colorado, the stores are interested in appearing "local" so firewood may be an easy certification for the state. A representative from the newly formed American Firewood Producers Association shared his experiences as a firewood producer, and the need to work together to develop and implement a firewood gold standard. He noted that he reaches a large number of retailers, and would be able to help with messaging.

One meeting participant expressed a concern of maintaining funding for firewood outreach activities, past the initial grant money. Ms. Brown explained that the Pacific Northwest tri-state partnership did not receive additional funding, but that the states planned to continue low-cost outreach efforts, including spreading the message on special-interest blogs.

In response to a question about Idaho's participation in both the tri-state partnership and the new western states partnership, Mr. Koch noted that Idaho had listed the Invasive Species Council as a cooperator in its proposal. By participating in both campaigns, Idaho could potentially bring lessons learned to the new Western states partnership.

F. Pest Fest

After the plenary session adjourned for the day, the group reconvened for Pest Fest, featuring a poster session. Participants were given the opportunity to talk with poster presenters and vote on the best poster in three categories. The Pennsylvania's Department of Agriculture poster "Invasive Species Management in the Forest: Theories and Practices" won Best in Show. The Purdue University poster "History doesn't repeat itself, but it does rhyme" won Best Title. The University of Florida poster "Another threat to oak forests in North America: *Diplodia corticola* causes a new canker disease of live oak in Florida" won Best Use of Color.

III. Day Two – Thursday, October 6, 2011

A. Panel #2 – Climate Change Impacts on Forests and the Spread of Invasives

Modeling Likelihood of Pest in Various Parts of the Country

Rob Venette, USFS Northern Research Station, presented models of how climate change will affect the distribution and range of various forest pests and pathogens. He first began by describing how climate change will affect the range of tree species, which will shift given changing temperatures, weather, and habitat. He then summarized the forecasts for three pathogens, given climate change: *P. ramorum*, *Dothistroma* spp., and Hemlock dwarf mistletoe.

Insect and Plant Interactions in the Context of Carbon Levels in the Atmosphere

Evan DeLucia, University of Illinois, presented the results of a study on how elevated carbon dioxide (CO₂) influenced interactions between plants and insects. He specifically studied soybean plants and their susceptibility to leaf-eating insects. He found that plants grown with elevated levels of CO₂ experienced greater leaf damage and higher aphid populations, and that beetles that ate the leaves of plants exposed to elevated CO₂ had greater longevity. Elevated CO₂ changed the leaf chemistry, suppressing a protective enzyme that increases resistance to predation.

In a forest setting, elevated CO₂ leads to community-wide shifts which affected the forest ecology. Forest studies with elevated CO₂ saw decreased herbivore populations, and increased predator populations.

Relationship of Climate Change and Exotic Forests Pests

Troy Weldy, The Nature Conservancy, on behalf of **Frank Lowenstein**, provided his perspective of how climate change will impact forest health and the livelihoods of those who depend on the forest. Mr. Weldy related his upbringing on a dairy farm in southwest New York, where he observed changes in the forest over time. He noted that as new diseases and pests move in, the make-up of the trees in a forest changes.

He identified three impacts from climate change: the impact on the pest, the impact on the tree, and the pest's relationship with the environment. All three determine the net impact a pest will have. He provided examples of forest pests that have been exacerbated by climate change, including the mountain pine beetle, the southern pine beetle, and the red band blight.

The mainstream media is beginning to realize the interactions between climate change, forests, and overall forest health, evidenced by a New York Times article from October 1, 2011 entitled "With

Deaths of Forests, a Loss of Key Climate Protectors.”¹ Mr. Weldy explained that climate change will cause changes in precipitation will have the greatest impact on forests, stressing trees, increasing fire risk, and increasing the potential of forest pest invasions.

Mr. Weldy encouraged the Dialogue to engage groups, such as Trout Unlimited, who may not necessarily be looking at forests and climate change, but will be impacted by the shifts in forest ecology and health. He also identified the need to better connect the public to forests, and to ensure people understand the complexities of forest health.

Facilitated Discussion

During the facilitated discussion, members focused on how to use the information the panelists presented to create public support for action. Dr. Venette suggested engaging citizen scientists to gather additional data on the distribution and activities of pests of concern. There is a lack of information in the field. Dr. DeLucia noted there were generalities that can be gleaned from the models about where pests are moving, and suggested that focusing on education would be where the Dialogue can have the most value.

One member noted that the Dialogue should use the science and models to identify key messages to convey to public about the effects of climate change to forests, forest health, and forest ecology. Dr. Venette cautioned against using messages that were too broad, noting that it is easier to engage the local community with specific messages related to the impact of climate change to them.

B. Panel #3 – Technology Applications for Managing Invasives

What is the ExFOR (Exotic Forest Pest Database)?

Marla Downing, USFS Forest Health Technology Enterprise Team, presented on the Exotic Forest Pest Website (ExFor), which is an online searchable database of about 170 pests.² The database contains information about the current state of knowledge of each pest, how to identify the pest, current distribution, potential distribution, and a risk rating. She provided examples of pest records, and encouraged entomologists and pathologists to contribute to the database with new pest records, or updating existing records.

Exotic Forest Pest Biocontrol

Rob Venette, USFS Northern Research Station, presented on behalf of **Juli Gould**, USDA APHIS PPQ, how APHIS is using biocontrol to address Emerald Ash Borer (EAB). He informed the group that the goal of biocontrol is to reintroduce non-native pests to its natural controls. APHIS has been investigating natural predators to EAB, and identified three that were promising biocontrol agents. Prior to release, APHIS undertook extensive testing to ensure the predator only attacked EAB. APHIS began releasing the parasitoids in limited numbers in 2007, and the project is still experimental.

Facilitated Discussion

Following the presentations, the discussion mainly focused on the biocontrol applications against EAB. One APHIS representative informed the group that the agency is prioritizing biocontrol and

¹ This article is available online at the *New York Times* website at <http://www.nytimes.com/2011/10/01/science/earth/01forest.html?pagewanted=all>.

² The ExFor is available online at the USFS website at <http://spfnic.fs.fed.us/exfor/>.

will continue that program, which is currently at field capacity. In response to a question, Dr. Venette expressed the opinion that the parasitoids are unlikely to have significant ecological impact if they establish in the environment. One member suggested the possibility of engaging citizen scientists in the biocontrol program once the program is further along. In response it was noted that the program is only producing a few thousand wasps a year, for about five to seven dollars a wasp. Currently, these wasps are carefully released at sites evaluated to have the best potential for establishment.

The group also discussed the inputs used to create the maps in the ExFor database. In response to a question, Ms. Downing stated that the maps are created in partnership with a GIS group, and are mapped at the one kilometer spatial unit. One member cautioned against relying on the ports to identify potential entryways for pests because, often, imports are not shipped directly to the United States, and could arrive from a third- or fourth-party, or could enter the country via rail or truck from Canada or Mexico.

One member identified the APHIS Japanese Beetle program as a good example of how the agency partnered effectively to look at other vectors (e.g., airplanes). The Dialogue could be a forum for conversations with other industries who may be involved in these pathways for EAB.

C. Panel #4 – Collaborative Efforts on Various Non-Native Forest Insects and Diseases

Lessons Learned from Great Lake States Experience with EAB

Ken Rauscher, Michigan Department of Agriculture, retired, presented lessons learned from the Great Lakes' experience with EAB. He identified eight areas which were critical in implementing an effective response: early detection and rapid response, incident command systems, partnerships, communication, budget, personnel, legislative and regulatory authority, and formal opportunity to review lessons learned.

Collaborative Efforts to Protect and Restore High-elevation 5-needle Pines Issues

Diana Tomback, University of Colorado Denver, presented on how a small group of researchers, managers, and concerned citizens worked together and formed a non-profit around addressing the threats to high-elevation five-needle pine trees. She briefly summarized those threats: white pine blister rust, mountain pine beetle, altered fire regimes, and climate change. She then spoke about the Whitebark Pine Ecosystem Foundation (<http://www.whitebarkfound.org/index.html>), of which she is the Director. She noted that the Foundation has been completely volunteer-run up until this point, though the Foundation is currently exploring other organizational models. She emphasized that the window of opportunity to take action to save these species is very short.

Possible Responses to Cumulative Threats to High Elevation Pines

Rob Mangold, USFS Forest Health Protection, spoke to the group about the actions the USFS is undertaking in partnership with other agencies and organizations to respond to the threats to high-elevation pines. The USFS has worked with its partners to: develop restoration strategies; research how to use fire as a restoration and management tool; carry out range-wide genetic variation studies; undertake gene conservation; and screen for resistance to white pine blister rust. Dr. Mangold provided an overview for some of the restoration activities that his office has supported.

Facilitated Discussion

During the discussion, members focused on the threats to the high-elevation pines and activities to address those threats. Dr. Mangold informed the group that the USFS was not looking into genetic modification to produce trees resistant to white pine blister rust. He noted that Eastern white pine is susceptible to the disease, but has not seen the wide-spread mortality that has been exhibited by the high-elevation pines. One member informed the group that trees that have been impacted by the mountain pine beetle, not just the high-elevation pines, have been used harvested for local use. Small amounts have been shipped outside the region, but only to areas that have been impacted by mountain pine beetle.

In response to a question about the organization of the Whitebark Pine Ecosystem Foundation, Dr. Tomback explained that in order to move forward with fundraising and outreach and education, the volunteer staff felt it needed to move towards a more mainstream NGO model with a paid staff and director.

D. Breakout Sessions

At the conclusion of the panels, the participants moved into breakout groups generally focused on the Dialogue's Initiative efforts and how to advance those Initiatives in 2012. There were two sessions, each with three concurrent groups meeting. The group reconvened in plenary to hear brief reports on each breakout and specifically the next steps they planned to take.

i. Breakout Session: Certification of Firewood

Leigh Greenwood, The Nature Conservancy, reported out for the Certification of Firewood breakout session. The group was updated on the firewood certification effort to date, and planned next steps. Members agreed to check-in as the certification progresses, and the representative from the American Firewood Producers Association agreed to keep the members updated and seek their input as needed.

ii. Breakout Session: Citizen Science in Our Urban Forests

Bill Toomey, The Nature Conservancy, reported out for the Citizen Science in Our Urban Forests breakout session. Jerry Boughton, USFS, presented the urban forest framework, which both complements and expands on the citizen science approach the Dialogue had been exploring over the past year. The group agreed the initiative should continue and explore opportunities to implement the framework in more urban settings.

iii. Breakout Session: "Apocalypse Now" – How can we effectively and collaboratively address introduced forest pests when funding for federal and state agencies is being cut?

Faith Campbell, The Nature Conservancy, reported out for the "Apocalypse Now" breakout session. The group discussed both ways to more efficiently use existing funds, such as early detection, and to lobby for more funds, including Farm Bill money. The group also identified the strategy of engaging in the federal funding process earlier, and talking with the Office of Management of Budget before the budget gets to Congress. The members discussed engaging groups that can leverage grassroots membership to raise the issue with their elected representatives, and creating an online repository of information and data to support invasive species programs

across the country at the federal, state, and local levels.

iv. Breakout Session: Firewood Outreach Coordinating Initiative (FOCI)

Ann Gibbs, Maine Department of Agriculture, reported out for the FOCI breakout session. She noted that the group contained mainly new members who were not very familiar with the FOCI, and it was good to engage more firewood outreach practitioners. The group discussed the new database currently being developed as part of the Don't Move Firewood website that would serve as a user-generated repository of firewood outreach materials and information. Members identified categories for the database, including evaluation tools, and outreach venues. The group identified the importance of linking outreach efforts to economic data, and developing talking points to ensure common messages. Ms. Gibbs encouraged members to participate in the next FOCI call, scheduled for December 9, 2011.

v. Breakout Session: Proactive Outreach and Communication

Sarah Volkman, The Nature Conservancy, reported out for the Proactive Outreach and Communication breakout session. The group discussed what messages the Dialogue would communicate. She noted that the group generated many ideas but were not able to come to agreement on the goal of an outreach campaign during the session, and that the issue needed more exploration before it could move forward.

vi. Breakout Session: The Future Direction of the Dialogue

Michael Buck, National Association of State Foresters, reported out for The Future Direction of the Dialogue breakout session. The group focused its discussion on the strengths and weaknesses of the Dialogue, the unique niche it operates in, and opportunities for the Dialogue to become economically sustainable. Members came to agreement on verbs to describe the Dialogue's activities: convene, educate, implement, support existing programs, and lobby.

IV. Summary and Next Steps

Paul De Morgan informed the group that the Dialogue Steering Committee will meet following the Dialogue meeting to determine priorities for the coming year. The Initiative leads will communicate with their groups about activities for 2012. He invited those who were interested in remaining involved in an Initiative or the Dialogue in general to formally sign-up to participate on the Dialogue website <http://continentalforestdialogue.org/>.

Bill Toomey concluded the meeting by thanking the meeting attendees for their participation, and the presenters for sharing their knowledge. He acknowledged the planning group and RESOLVE for coordinating the meeting. He thanked Kathleen Alexander and Ned Tisserat for their help in planning the field trip the morning of October 5th. He expressed the hope that the attendees found the meeting valuable, and will continue to remain engaged with the Dialogue.