NOVEMBER 19, 2024

FIRES, FORESTS, AND THE FUTURE:

IDENTIFYING ACTIONS TO MITIGATE THE TRIPLE-THREAT OF WILDFIRES, CLIMATE CHANGE AND INVASIVE SPECIES.

WILDFIRES, CLIMATE CHANGE, & INVASIVE SPECIES

NATIONAL CONFERENCE EVENT REPORT

Canadian Council on Invasive Species

CONFERENCE SUMMARY

Record-breaking wildfire seasons, ecosystem shifts driven by invasive species, and the accelerating impacts of climate change highlight the urgent need for an integrated approach to fire and invasive species management.

To foster dialogue on these interconnected challenges, the Canadian Council on Invasive Species (CCIS) hosted the Wildfires, Climate Change, and Invasive Species Conference on November 19, 2024. This virtual event brought together experts, researchers, policymakers, and community leaders to explore the critical intersections of these global issues.

The conference served as a vital platform for knowledge-sharing, collaboration, and cross-border communication to develop prevention and management strategies. Discussions centered around three key themes:

- **Emerging Threats:** How invasive species are intensifying wildfire risks and the role of climate change in accelerating their spread.
- **Collaborative Solutions:** Opportunities for governments, industry, and Indigenous leaders to develop cross-sector strategies.
- **Alternative Tools & New Technology:** Innovative approaches to invasive species control, wildfire prediction, and climate adaptation.

CONFERENCE SNAPSHOT

OVER 300 ATTENDEES FROM ACROSS:

3 COUNTRIES

11 U.S. STATES

13 ALL 13 CANADIAN PROVINCES AND TERRITORIES

22 SPEAKERS FROM:

- ACADEMIA
- NON-GOVERNMENT ORGANIZATIONS
- GOVERNMENT AGENCIES
- INDIGENOUS COMMUNITIES
- AND INDUSTRY

SESSION HIGHLIGHTS

KEYNOTE ADDRESS

DR. AMY CARDINAL CHRISTIANSON,
Métis scholar and leader in wildfire resilience and Indigenous fire stewardship, delivered the keynote address, emphasizing the importance of cultural fire practices and Indigenous-led land management strategies in mitigating wildfire risk.

"We need to learn to live with fire while restoring landscapes to be more resilient. Indigenous fire stewardship provides critical lessons on how fire can be a tool for landscape health."

Dr. Christianson also highlighted the value of engaging Indigenous communities in wildfire management discussions and strategies, advocating for collaboration and inclusivity:

"It's not too late – partnerships, collaboration, and being allies is a good way to start moving forward."

TO START THE DAY, SESSIONS SHARED HOW CLIMATE CHANGE IS RESHAPING WILDFIRE PATTERNS, FOREST RESILIENCE, AND INVASIVE SPECIES DYNAMICS.

DR. MIKE FLANNIGAN,
BC Innovation Research Chair, Thompson Rivers University, noted how the average area burned in Canada in the past decade has quadrupled since the 1970s and emphasized that human-caused climate change is a major driver behind the increase in extreme wildfires:

"We are creating our own mess. These high-intensity fires are not just natural occurrences; they are exacerbated by human-caused climate change."

ELLEN WHITMAN,
Forest Fire Research Scientist, Natural Resources Canada, discussed how the combination of more frequent and intense fires, shifting temperatures, and invasion by non-native species are pushing ecosystems toward irreversible transformations:

"The fire regime is changing, and some forests may not come back."

SESSION HIGHLIGHTS

PRESENTATIONS BUILT ON OUR UNDERSTANDING OF ECOSYSTEM VULNERABILITIES TO WILDFIRES AND INVASIVE SPECIES, AND HOW THESE THREATS SYNERGIZE WITH EACH OTHER.

DR. MICHELE CRIST,
Wildland Fire Science Program Manager, US Geological Survey, highlighted the grass-fire cycle in ecosystems across North America, showing how invasive grasses accelerate fire frequency and intensity, creating a positive feedback loop that makes fire-prone landscapes even more vulnerable.

"Invasive species are fundamentally changing fire regimes, leading to more frequent and severe wildfires in historically fire-resistant ecosystems."

DR. EVELYN BEAURY,
Assistant Curator, Centre for Conservation & Restoration Ecology, The New York Botanical Garden, shared insights on policy and management strategies, highlighting the urgency of proactive policy-making to reduce the spread of invasive species, especially as climate change alters their potential ranges:

"This is something that we have a real opportunity to do something about now, to try to get ahead of this curve and slow species from spreading to new areas of climate change."

DR. LAURA CHASMER,
Associate Professor, University of Lethbridge, addressed how tree mortality caused by invasive insects can lead to fuel redistribution and more intense wildfires.

"When trees die because of mountain pine beetle, they become really dry... When they burn in a high-severity fire, they lose all their branches too, which contributes to the fuels within the canopy."

EXPERTS PRESENTED SOLUTIONS INTEGRATING WILDFIRE MANAGEMENT WITH INVASIVE SPECIES STRATEGIES TO ENHANCE ECOSYSTEM RESILIENCE AND RECOVERY, SUCH AS TARGETED GRAZING, INVASIVE PLANT PREVENTION DURING WILDFIRE RECOVERY, AND THE USE OF BIOLOGICAL CONTROL IN FIRE-PRONE ECOSYSTEMS.

SESSION HIGHLIGHTS

CRYSTAL CHADBURN,
Senior Invasive Plant Specialist, BC Ministry of Forests, highlighted the growing challenge of invasive species in post-fire landscapes, emphasizing the role of fire suppression activities in exacerbating their spread. She discussed how fire guards, access trails, and disturbed soil from suppression efforts create ideal conditions for invasive species to take hold.

"Perhaps the most concerning result of these wildfires is not the burn itself, but what we do as humans to try to stop these wildfires... We leave significant scars on the landscape that, if left unmanaged, become dominated by invasive species [like Cheatgrass]."

SPEAKERS SHARED INSIGHTS ON POST-FIRE RESTORATION AND PLANT RECOVERY STRATEGIES, FOCUSING ON INCREASING RESILIENCE TO INVASIVE SPECIES AND SUPPORTING NATIVE BIODIVERSITY.

JENNIFER ANDREAS,
Professor, Washington State University, and

JOSEPH MILAN,
Biological Control Specialist, Bureau of Land Management, discussed the role of biocontrol as a long-term strategy for managing invasive species in post-fire landscapes. Their presentation highlighted the importance of integrating biocontrol with other management strategies, such as mechanical removal and reseeding, to suppress invasive plants and restore ecosystem resilience after wildfires.

To end the conference **JENYA SCHNEIDER**, Owner-Operator, Cuyama Lamb LLC, highlighted the benefits of targeted grazing as a tool for reducing wildfire fuel loads and restoring native grasslands.

"Grazing helps create space between shrubs, which impacts how a fire moves through the area... Our fire departments see it as a crucial piece to manage the grasslands, even though it means we're managing them every single year."

RECOMMENDED NEXT STEPS

KEY TAKEAWAYS

Climate Change and Invasive Species Interact to Exacerbate Wildfire Risk and Damage	Warmer temperatures and shifting weather patterns are expanding the range of invasive species, while invasive plants alter fire behavior by increasing fuel loads, creating hotter, more frequent wildfires that further accelerate their spread.
Indigenous Fire Stewardship is Essential for Effective Fire Management	Keynote speaker Dr. Amy Cardinal Christianson emphasized the role of Indigenous fire stewardship, advocating for collaborative fire management strategies that recognize the value of cultural burning in addressing extreme wildfires.
Innovative Fire Management Tools Can Reduce Wildfires and Invasive Species	Targeted grazing, biocontrol, and prescribed burns are promising strategies for controlling fine fuels and invasive species that contribute to wildfires.
Collaboration is Key to Managing Wildfire, Climate Change, and Invasive Species	Addressing these interconnected issues requires integrated, site-specific strategies that engage experts, policymakers, and affected communities.
Post-Fire Recovery Must Address Invasive Species Risks	Fire suppression and recovery efforts should include invasive species management to prevent invasive plants from taking over disturbed landscapes.

NEXT STEPS

The conference concluded with an interactive session where attendees identified priorities for further research, policy action, and cross-sector collaboration.

PRIORITY ACTIONS

Enhance Collaboration Between Fire & Invasive Species Management	Agencies managing fire and invasive species often operate separately. Bridging this work through integrated management plans is important for addressing these global change stressors.
Strengthen Indigenous-Led Fire Stewardship Initiatives	Expand partnerships between Indigenous communities, land managers, and government to incorporate traditional knowledge into fire prevention, suppression, and recovery planning.
Expand Early Detection & Rapid Response Programs for Invasive Species	Invest in community-based monitoring programs and technologies to detect and manage invasive species before they become major wildfire hazards.
Scale Up Alternative Fire Prevention & Management Strategies	Increase the implementation of alternative strategies like targeted grazing projects, biocontrol, and prescribed fire programs, to improve wildfire mitigation and invasive species control efforts.
Advocate for Policy & Funding Support	Policies that prioritize wildfire prevention, climate change adaptation, and invasive species control should be advanced at all levels of government.
Reevaluating Invasive Species Management During Wildfire Suppression	Rather than prioritizing invasive species control during active fire suppression – where efforts may be deprioritized – resources should focus on prevention and post-fire detection and management, particularly for new invasions.

CONCLUSION

The knowledge and connections gained from this event will help shape future wildfire management strategies that prioritize Indigenous partnerships, incorporate invasive species prevention, and embrace innovative and alternative approaches. By aligning efforts, we can build more resilient landscapes and support the communities most affected by wildfires.

THANK YOU TO ALL SPEAKERS, ATTENDEES, AND SPONSORS WHOSE CONTRIBUTIONS MADE THIS EVENT A SUCCESS.

FEEDBACK FROM OUR AUDIENCE

"Wonderful integration of multiple perspectives. The presenters brought together three different topics and how they fuel one another very well."

"I liked the conference because it zeroed in on one of the most devastating effects of climate change – wildfires – which leave natural environments wide open to plant invasives."

"I have been involved in organizing a handful of online conferences, and I think this one was the best I have seen so far. Just great!"

"I learned that there are many factors affecting the spread of both plant and animal invasives and that we have to be aware of the many ways that invasives can spread."

"This conference opened my eyes to the urgency of these issues, and need for more cooperation among agencies"

THANK YOU

TO OUR 2024 CONFERENCE SPONSORS

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