

G7 WORKSHOP ON INVASIVE ALIEN SPECIES – DECEMBER 3-4, 2025

CHAIR'S SUMMARY

On December 3 and 4, 2025, Canada hosted a virtual, technical-level G7 workshop on invasive alien species (IAS). On December 3, members heard from experts from Canada, Chile, South Africa, the United States, and the United Kingdom on the interactions between wildfires and other extreme weather events and IAS. Participants exchanged views on research gaps and opportunities to engage the wildfire response community and the general public, and ways to apply Indigenous perspectives to increase ecosystem resilience and reduce IAS as a source of fuel hazards. On December 4, members discussed the importance of biosecurity, and explored opportunities for the G7 to continue advancing cooperation on this issue, including under France's 2026 G7 Presidency and with external partners. Members that are also Party to the Convention on Biological Diversity (CBD) focussed on challenges and opportunities to achieve Target 6 of the Kunming-Montreal Global Biodiversity Framework (KMGBF). All G7 members were represented during the workshop.

Day 1: Interactions between IAS and Wildfires and Other Extreme Weather Events

Scene-Setter Presentations

Speakers provided an overview of the interactions between IAS and wildfires and other extreme weather events at the global, Canadian and local level respectively.

- **Dr. Aníbal Pauchard** discussed the complex relationship between IAS and other direct and indirect drivers of global biodiversity loss, drawing on findings from the IPBES Thematic Assessment of IAS and their Control. He explained how extreme weather events associated with climate change—such as wildfires, droughts, and storms—can facilitate the establishment and spread of IAS, sometimes creating positive feedback loops between fires and invasive plants, a phenomenon observed in regions like Chile and Hawaii. He emphasized the importance of preparedness, rapid response, and ongoing research on the interactions between extreme weather events and biological invasions, underscoring the need for proactive ecosystem management and effective post-event restoration.
- **Dr. Isabelle Aubin** and **Dr. Raphaël Chavardès** emphasized the growing threat invasive insects pose to Canadian forests, with climate change exacerbating both their spread and the vulnerability of trees to insect damage. Dr. Aubin spoke about her national assessment which revealed 14 invasive insect species threatening 65% of tree species key to forestry, especially in Western Canada and the St. Lawrence Seaway. Dr. Chavardès highlighted ongoing research on fuel sampling and fire simulations to improve wildfire behaviour prediction and management. He explained that infestations of Hemlock Woolly Adelgid on Canada's East Coast are influencing fuel structure in a region with an extensive vegetation-urban interface. He also described how outbreaks of the Mountain Pine Beetle, a species native to Canada's West Coast, have spread beyond the insect's historical range due to warmer temperatures. He noted that the outbreaks were likely facilitated by 20th Century fire suppression and are contributing to severe wildfires in Western Canada.

- **Dr. Terese McIntosh** outlined the Government of Ontario’s significant challenges with IAS, which are the second greatest driver of biodiversity loss in the province and cost the economy about \$3.6 billion (CAN) per year. She shared Ontario’s efforts to address this issue, from the development of legislations to the implementation of their Invasive Species Strategic Plan. She shared information about research and protocols undertaken by Ontario and how climate considerations are included in IAS risk assessments, noting the need to improve policies, equipment protocols, and interdepartmental coordination to better prevent and manage the spread of invasives, especially during wildfire operations.

IAS Considerations along Wildfire and Other Extreme Weather Events Management Cycles

Three presentations to address IAS considerations along the wildfire and other extreme weather events management cycles—prevention; risk reduction; and preparedness, response, and recovery, respectively—were provided.

- **Piero Genovesi** called for a shift from reactive to proactive strategies to tackle wildfire risks associated with IAS. Such strategies include regulating the import of high-risk species, enhancing early detection and rapid response systems, and improving coordination and accountability across agencies. He noted that advancing data collection and sharing, using tools like IUCN’s species databases and horizon scanning, would enable more effective action. He also outlined the key challenges facing these efforts, such as resource limitations, gaps in detection, unclear agency roles and regulatory obstacles, and stressed the need for anticipatory and collaborative management.
- **Dr. David Clements** highlighted how climate change-driven extreme events, such as floods and fires in British Columbia, amplify the spread of IAS like knotweed, especially after infrastructure repairs. He underscored the crucial role of Indigenous knowledge, illustrated by collaborative research that integrates Indigenous and Western approaches to fire and ecosystem management (i.e., Walking on two legs approach), revealing key factors often missed by conventional methods—such as impacts on culturally important plants and wildlife like deer. He noted that investment in IAS management remains low, despite significant economic losses resulting from these disasters.
- **Andrew Wannenburg** described how wildfires are vital for South African ecosystems but that invasive alien plants, which often thrive after fire, have increased fuel loads and fire intensity, complicating management. He explained that integrating fire with manual and chemical controls is key to clearing invasives, especially by focusing on recently burned areas to boost efficiency and reduce costs. He highlighted South Africa’s long-running labor-based and biological control programs, and noted innovative approaches like converting invasive alien plants into biogas as part of a comprehensive strategy.

Roundtable Discussion

During the roundtable, some G7 members noted that wildfires or other extreme weather events were a key concern for their country, and that the integration of IAS considerations in research or policy was still an emerging theme. Some G7 members shared tools, guidance and networks (e.g., Parks Canada’s National Best Management Practices for Fire Management Operations, and operational procedures for decontaminating wildfire equipment or the United States’ Joint Fire Science Program, Fire Science Exchange Networks, and Wildland Fire Leadership Council), which address research priorities, best management fire practices, equipment decontamination or cleanliness, risk mapping, and community and public engagement.

Opportunities for advancing knowledge and reducing risks before wildfire or other extreme weather events occur, aiding in restoration and monitoring efforts post events, and increasing engagement on this issue were identified:

- Deepening our understanding of the interactions between IAS and wildfires and other extreme weather events, and integrating this knowledge into risk assessments and policies, as well as developing guiding principles or best international practices to further support capacity building;
- Building connections and opportunities for collaboration across the invasive species, wildland fire, and disaster management communities;
- Enhancing data and knowledge sharing (e.g., through a common repository) and creating linkages with other organizations (e.g., UN FAO Fire Hub);
- Integrating Indigenous ways of knowing into land management;
- Leveraging non-governmental organizations' reach and networks; and,
- Applying insights from the social sciences and communicating successes.

Day 2: Progress Towards Target 6 of the KMGBF

International Updates

- **Marianela Araya Quesada** outlined activities undertaken by the Secretariat of the CBD since the 16th Conference of Parties (COP16), including strengthened collaboration via the Inter-Agency Liaison Group on IAS, capacity-building workshops, and technical resources to support Target 6. Recent activities focused on data sharing, integrated cross-sectoral approaches, and strategies for early detection and rapid response. Input from these collaborative activities informed deliberations during the recent intersessional meeting, deliberations which are expected to continue at COP17.
- **Kevin Smith** provided an update on the efforts of the IUCN to scale up global action on IAS, highlighting collaborative work with the CBD Secretariat, recent expansions of the Global Invasive Species Database, new resources in partnership with the European Commission, and the IAS Collaborative Initiative which is engaging the private sector. He noted that IAS was identified as a major focus within the new IUCN Programme, and that the organization is developing a four-year Union-wide IAS strategy, with input from its members, commissions, and partners. He shared plans to launch the strategy at the next CBD COP to be held in October 2026, aiming to secure further partnerships and funding.

Country Updates on Progress Towards Target 6

G7 members who are also Party to the CBD provided an update on their progress towards Target 6, highlighting key national or regional initiatives underway and noting the focus of their work to 2030. Several G7 members shared innovative approaches to address IAS. France highlighted the creation of a national resource center for IAS information and technical guidance, as well as efforts to prioritize metropolitan plant species based on their impacts. The United Kingdom reported on the implementation of a Non-Native Species Inspectorate to enforce compliance and support eradication efforts. Germany discussed research on species distribution models for IAS under climate change, alongside updates to its national action plan for unintentional IAS pathways. Japan provided information on regional expert meetings with neighboring countries on shared IAS challenges which will promote joint research initiatives and further cooperation. Italy reported on the successful eradication of at least three terrestrial IAS. The European Union

described “living labs” projects to advance eradication and management measures, as well as development and implementation of a rapid response fund managed by the IUCN.

Focused Discussion on Biosecurity

- **Dr. Andrew Rhyne** presented the Nature Intelligence System (NIS), a technology developed to improve the monitoring and enforcement of wildlife trade, with a particular focus on preventing the introduction and spread of IAS. He shared how the system extracts and standardizes data from shipping documents, invoices and regulatory lists to provide near real-time insights for border inspectors and policy makers, showing, through concrete examples, how the NIS provides significant improvement over current, fragmented data systems. He also noted that advances in artificial intelligence (AI) have drastically reduced operational costs, enabling efficient, standalone border solutions that enhance early detection of both wildlife crimes and IAS risks.

Members discussed diverse approaches for enhancing biosecurity at borders, and for monitoring and early detection purposes. It was noted that existing “low tech” tools (e.g., detection dogs) continue to be effective, and that technology can help enhance those as well as create new application opportunities. Efforts shared include deploying AI, machine learning, digital imaging, eDNA assays, drones, and smart traps to detect and respond to IAS, as well as leveraging citizen science. Key common areas for further improvement included technology development, interagency cooperation, and mutual interest in learning from one another to strengthen future strategies for invasive species prevention and management.

Roundtable Discussion on Future Collaboration

Most members underscored the importance of continued engagement, learning from one another, and collectively exploring innovative platforms, events and partnerships to prevent and manage IAS worldwide. Canada committed to providing a package of information on Day 1 and Day 2 topics of this workshop to G7 members and to supporting the transition to France’s G7 Presidency.

France, as the incoming G7 Presidency, shared several options for maintaining momentum and information exchange, building on ongoing G7 efforts initiated in 2023. France sought G7 members’ views on organizing either an IAS Day or dedicated side-event at CBD COP17, and on an in-person expert meeting in Paris or an online one as an alternative. Some expressed interest for an IAS Day or side-event at COP17, and G7 members are encouraged to share their preferred option with France in terms of meeting format at their earliest convenience.

Additionally, various members noted that:

- Addressing IAS must remain a priority for G7 members, and collaboration is key for success;
- Reaching beyond the G7, for example through the G20 and other groups, could be helpful to address IAS and for capacity building purposes;
- Engaging the private sector in taking action in IAS management is important and knowledge from G7 members on this topic could be shared secretarily; and,
- There is continued interest in improving information and documentation exchange amongst G7 members while also considering internal policy constraints at play.

Participants and Invitees

G7 members

- France
 - Roseli Pellens
 - Nicolas Jolivald
 - Bruno Rouillet
 - François Delaquaize
 - Arnaud Albert
- United States
 - Stas Burgiel
 - Jennifer Shinen
 - Daniel Carl
 - Angela McMellen Branningan
- United Kingdom
 - Finn Eaton
 - Olaf Booy
 - Arthur Wroe
 - Rob Gazzard (Day 1)
- Germany
 - Clara Frasconi-Wendt
 - Jana Schön
- Japan
 - Harumi Nakashima
 - Tatsuro Sagawa
 - Yuka Ichitsuka
 - Kazuki Murasawa
- Italy
 - Renato Borelli
 - Carmelo Picone
 - Maria Giulia Baldinelli
 - Daniella Pasella
 - Piero Genovesi
 - Jon Marcho Church
- European Union
 - Daniel Nuijten
 - Leonardo Mazza
 - Jeroen Verhagen

Invitees

- Province of Ontario : Terese McIntosh; Alison Clark
- Co-chairs of the IPBES Thematic Assessment of IAS and their Control: Aníbal Pauchard; Peter Stoett; Helen Roy (Day 2)
- CBD Secretariat : Marianela Araya Quesada; Ana Isabel Gonzalez Martinez
- IUCN : Kevin Smith

Government of Canada Participants

- Andréanne Léger, Chair of the meeting, Director of National Biodiversity Policy, Canadian Wildlife Service, Environment and Climate Change Canada
- Tara Shannon, Assistant Deputy Minister, Canadian Wildlife Service, Environment and Climate Change Canada
- Elias Abourizk, Director General of Biodiversity Policy and Partnerships, Canadian Wildlife Service, Environment and Climate Change Canada
- Hugues Morand, Manager, National Biodiversity Policy, Canadian Wildlife Service, Environment and Climate Change Canada
- Rachel Ariey-Jouglard, Senior Policy Advisor, National Biodiversity Policy, Canadian Wildlife Service, Environment and Climate Change Canada
- Dr. Isabelle Aubin, Researcher, Canadian Forest Service, Natural Resources Canada (Day 1)
- Dr. Raphaël Chavardès, Researcher, Canadian Forest Service, Natural Resources Canada (Day 1)
- Dr. Amanda Roe, Researcher, Canadian Forest Service, Natural Resources Canada (Day 1)

Speakers biographies

Dr. Aníbal Pauchard, Professor in the Faculty of Forest Sciences, University of Concepción, Chile, Director of the Institute of Ecology and Biodiversity (IEB). Aníbal is the founding Director of the Laboratory of Biological Invasions (LIB) and co-founder of the Mountain Invasion Research Network (MIREN) and former co-chair of the IPBES report on IAS.

Dr. Isabelle Aubin, Research Scientist, Canadian Forest Service, Natural Resources Canada and Adjunct Professor, Université du Québec à Rimouski. Isabelle is research scientist at the Great Lakes Forestry Centre, which is part of Natural Resources Canada's Canadian Forest Service. She conducts research on how forest ecosystems respond to human-induced changes, with a particular emphasis on the impacts of global change, including the development of tools and adaptation strategy. She also collaborates with other researchers on projects related to invasive species threats to Canadian forests.

Dr. Raphaël Chavardès, Research Scientist, Wildfire Risk and Resilience, Canadian Forest Service, Natural Resources Canada. Raphaël's focus on fire science originated from his graduate studies at the University of British Columbia when he reconstructed fire regimes and tested fire-climate associations in seasonally dry forests of western Canada including montane forests of Jasper National Park. During his postdoctoral studies at the Université du Québec en Abitibi-Témiscamingue, Raphaël developed his research on fire regimes in similar dry forests of western North America and boreal forests of Canada. He then joined the Canadian Forest Service as a research analyst to reconstruct local fire regimes and conduct fire-growth modeling with residential structure loss rate estimation in the Acadian Forest Region.

Dr. Terese McIntosh, Manager, Fish & Wildlife Policy Branch, Ontario Ministry of Natural Resources. Terese has been with the Ontario Ministry of Natural Resources for more than 17 years, working to advance the ministry's biodiversity agenda, including natural heritage systems policy and planning, development of the province's wetland strategy, and shepherding implementation of Ontario's Invasive Species Act. Prior to joining government, Terese obtained a PhD in Ecology and Evolutionary Biology at Trent University, studying the effectiveness of elk re-introduction in Ontario.

Piero Genovesi, Head of Wildlife Conservation and Biodiversity Monitoring, Italian Institute for Environmental Protection and Research (ISPRA). In addition to his role at ISPRA, Piero also serves as the Chair of the IUCN Species Survival Commission (SSC) Invasive Species Specialist Group (ISSG). He has a long history of collaboration with major global fora, such as the CBD and the European Union.

Dr. David Clements, Assistant Dean, Faculty of Natural and Applied Sciences, Professor of Biology and of Geography and Environment, Trinity Western University. David is a plant ecologist at Trinity Western University in Langley, British Columbia, Canada. He has published more than 90 peer-reviewed works including many papers and book chapters on climate change and invasive species. He is a co-editor of the Biology of Invasive Plants series in Invasive Plant Science and Management and was the lead editor of the book Global Plant Invasions (Springer, 2022).

Andrew Wannenburg, Ecologist, Department of Forestry, Fisheries and the Environment, Republic of South Africa. Mr. Wannenburg holds a BSc in Forestry, MSc in GIS and is a registered natural scientist and geomatics professional. He has worked as a plant invasion ecologist in South Africa's National Department of Forestry, Fisheries and Environment for 31 years.

Marianela Araya Quesada, Secretariat of the Convention on Biological Diversity. Marianela is a biotechnology engineer with a MSc in Biosafety in plant biotechnology. She works for the Secretariat of the Convention on Biological Diversity, in Canada, as a program officer for Invasive Alien Species and Biodiversity and Health. In her current position, Ms. Araya supports the international negotiations on these two topics.

Kevin Smith, Head of Programme, Invasive Species and Wildlife Health, IUCN. Kevin's work focuses on supporting countries and civil society in meeting global, regional, and national targets on IAS through working closely with IUCN's Commissions and members. This includes the provision of data, guidance, and analyses, and the development and implementation of national strategies and policies. He also works on One Health issues, aiming to strengthen environmental and wildlife health within One Health policies and frameworks.

Dr. Andrew L. Rhyne, Professor of Marine Biology, Roger Williams University. Andrew spent a year working with the Canadian Border Services Agency to build the Nature Intelligence System for pilot scale deployment. He is an internationally sourced expert on wildlife trade, and his research focuses on applying technology and data analytics to support sustainable trade, reduce risks, and inform conservation policy.