

# 2023 Joint Annual Meeting of the Entomological Societies of Canada and Saskatchewan

Saskatoon, Saskatchewan

Sunday, October 15 – Wednesday, October 16, 2023

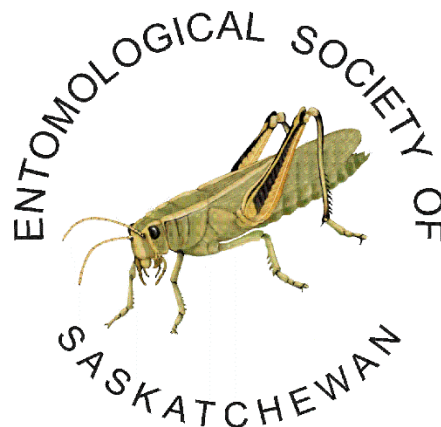
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Réunion annuelle conjointe des Sociétés d'entomologie du  
Canada et de la Saskatchewan

Dimanche 15 octobre – mercredi 18 octobre 2023

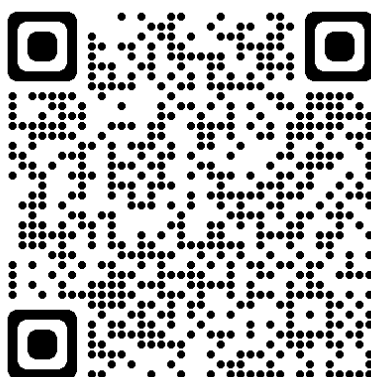
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**Figure 1.** Map of the Convention Level at Delta Hotels Saskatoon Downtown; all events in the Scientific Program will take place on the Convention Level.

**Use this QR Code to view the Full Scientific Program online:**



## ESC-ESS Joint Annual Meeting 2023: Short Program

\*Only presenter names and presentation titles are given in the Short Program. The full authorship and abstracts can be found in the long program, online.

### Sunday, October 15, 2023.

08:00 ESC Governing Board Meeting. Room: Florence.

13:30 Opening Ceremony. Room: Michealangelo A/B.

14:00 Gold Medal Address: Dr. Maya Evenden. The IPM pyramid applied to a career of teaching, research and service in entomology in Canada. Room: Michealangelo A/B.

15:00 Plenary 1: Doug Emlen. Room: Michealangelo A/B.

#### 16:00 Coffee Break

**Graduate Student Showcase. Room: Michealangelo A/B. Moderators: Matthew Muzzatti and Rowan French**

16:30 Aaron Bell. Temporal and spatial pyrodiversity, not island area or nearness, begets biodiversity of beetles on boreal lake islands

17:00 Saif Nayani. Bovine mastitis, *Staphylococcus aureus* and stable flies: Evidence for a (not so positive) positive feedback loop

17:30 Asim Reynard. Decision-making and coordination of foraging and defence in ants.

18:00 Berenice Romero. Host plant use in a phytoplasma vector.

19:00 **Welcome Reception. Room: Pre-Function Area.**

### Monday, October 16, 2023.

**President's Prize 1: Behaviour. Room: Naples. Moderator: TBA**

08:00 Andrew Colton. Investigating the efficacy of male aggregation pheromone and volatile organic compound combinations for attraction of adult Colorado potato beetle.

08:15 Basirat Liadi-Azeez. Effects of sublethal dose of pesticides on visually guided behaviour of bees.

08:30 Benny Acorn. Impact of linear anthropogenic disturbance on butterfly abundance, diversity, and movement in the Canadian boreal forest.

08:45 Cailyn R. McKay. Heat stress experienced during metamorphosis: Impacts on subsequent pheromone mediated mating in the true armyworm (*Mythimna unipuncta*) (Lepidoptera: Noctuidae).

09:00 Caleb Bryan. Complex responses to plant stress by bumble bee (*Bombus impatiens*) foragers and impacts on colonial fitness.

09:15 Claire Gooding. Ticks utilize a saprophytic fungus to identify suitable resting sites.

09:30 Emmanuel Hung. The presence of flies increases the attractiveness of objects to host-seeking stable flies, *Stomoxys calcitrans*.

#### 09:45 Coffee Break

10:00 Erik. A. Etzler. Exposure to traffic noise during development increases baseline auditory neural activity and decision-making time in adult female crickets.

- 10:15 Genavieve Desjardin. Egg size, the forgotten life history trait, using the Asian lady beetle as a model.
- 10:30 Kirra Kent. Improving the retention rate of spiders captured in pitfall traps within agroecosystems.
- 10:45 Kyle Van Camp. Optimizing techniques for *Contarinia brassicola* population monitoring using pheromone-baited traps.
- 11:00 Leanne Petro. Hunger and haste: Effect of energetic condition on mountain pine beetle response to semiochemicals.
- 11:15 Olajide Fatukasi. Bottom-up effect of *Rhizobium* strains on pea leaf weevil (Coleoptera: *Sitona lineatus*) herbivory and development.
- 11:30 Xander Slowenko. Response of a locust motion-sensitive neuron to object motion in the rear visual field.

**President's Prize 2: Pest Management. Room: Michealangelo A/B. Moderator: TBA**

- 08:00 Tyler Hartl. Assessing the impacts of climate change on pea aphid habitat suitability at a global scale: A species distribution modelling approach.
- 08:15 Tobyn Neame. The effects of non-crop vegetation areas on the potential for pest control ecosystem services using trait-based analysis of ground beetles (Coleoptera: Carabidae).
- 08:30 Teresa Aguiar Cordero. Quantifying the relationship between *Lygus* feeding and faba bean seed damage.
- 08:45 Sylvia Jensen. Predation of sentinel eggs as a measure of biocontrol.
- 09:00 Shayla Woodland. Higher plant density increased canola yield independently of flea beetle management strategies across the Canadian prairies.
- 09:15 Priyatha Chennamkulangara. Evaluation of capture methods and seasonal movement of alfalfa weevil in alfalfa fields grown for seed in Alberta.
- 09:30 Midhun Sebastian Jose. Does antimicrobial therapy eradicate *Melissococcus plutonius* from adult bees?

**09:45 Coffee Break**

- 10:00 Meganne Harrison. Life on the edge: Do forested areas impact insect assemblages in agroecosystems in central British Columbia?
- 10:15 Marina Carla Bezerra da Silva. *In vitro* gonadotoxicity model for drones: Effects of chronic drone larval and pupal exposure to amitraz.
- 10:30 Jose M. Correa Ramos. The impact of peaola intercropping on the capture of diamondback moth and parasitoids in commercial fields in Alberta.
- 10:45 Jeremy Irvine. Development of economic thresholds for lesser clover leaf weevil (Coleoptera: Curculionidae) in red clover seed production systems.
- 11:00 Ilan Domnich. "What's Bugging You?" A survey of entomological extension in agriculture in Alberta.
- 11:15 Aldo Rios Martinez. Exploring edge effects and sampling method complementarity on arthropod assemblages in central Alberta canola fields.

- 11:30 Alannah Penno. Using digital records to assess insect pest threats to wild and cultivated *Vaccinium* species in Canada.
- 11 :45 Abbe Pawluk. Evaluating edge effects on the abundance and biodiversity of parasitoid hymenopterans in canola crops.

**President's Prize 3: Taxonomy, Genetics & Diversity. Room: Venice. Moderator: TBA**

- 08:00 Shawn Abraham. Genomics and adaptive morphology of shore flies (Diptera: Ephydriidae).
- 08:15 Georgiana Antochi-Crihan. Investigating the distribution patterns of ground-dwelling arthropods throughout Saskatchewan's prairie landscape.
- 08:30 Zach Balzer. Untangling the origins of *Dendroctonus ponderosae* in Cypress Hills.
- 08:45 Donovan Bosnich. Ultra-conserved elements reinforces the evidence of polyphyly within the *Ericaphis* aphid group.
- 09:00 Thilina Hettiarachchi. Three new species from a problematic species complex of *Lasioglossum* in North America (Hymenoptera: Halictidae).
- 09:15 Mackenzie Howse. An under-sampled oasis: Forest pollinator assemblages on British Columbia's fire-prone plateau.
- 09:30 Leah Jackson. The genetic and phenotypic evolution of *Speyeria cybele*.

**09:45 Coffee Break**

- 10:00 Jessica Lario. Oribatid diversity, distribution, and dispersal along Alberta's North Saskatchewan River.
- 10:15 Elyssa Loewen. New fossil ants in Saskatchewan amber inform the timing and ecological evolution of modern ants.
- 10:30 Claire Paillard. Urban diversity on the fly, what scuttle flies can tell us about a small British Columbia city.
- 10:45 Tiffany Pan. Investigating the evolution of the loss of blood-feeding in Sabethini mosquitoes.
- 11:00 Cassandra Penfold. Developing RNA interference (RNAi) as a biopesticide for mountain pine beetles (*Dendroctonus ponderosae*).
- 11:15 Karolina Pusz-Bochenska. The importance of rapid pathogen detection in insect vectors: Insights from aster yellows phytoplasma and its vector *Macrosteles quadrilineatus*.

**President's Prize 4: Ecology & Evolution. Room: Florence. Moderator: TBA**

- 08:00 Genevieve van der Voort. Pollinator biodiversity assessments in wetlands of northern British Columbia.
- 08:15 Tianyi Ren. Non-crop vegetation enhances volunteer canola seed predation by invertebrates in wheat and barley fields.
- 08:30 Rowan Rampton. Does removing invasive plants risk degrading structural integrity of plant-pollinator networks?
- 08:45 Nicola Pollock. Pan trapping for bees and wasps in the Canadian Prairies: A comparison of trap placement.
- 09:00 Rachael Pizante. Treed field borders have fewer hover flies but supply more individuals to canola crops than herbaceous field borders.

- 09:15 Matthew Muzzatti. A thorn in the side of cricket farming – how do *Dermestes ater* affect *Gryllodes sigillatus*?
- 09:30 Cecil Montemayor Aizpurua. Assessing the effects of flowering plant mixtures on beneficial arthropods and pests in experimental plots.
- 09:45 Coffee Break**
- 10:00 Campbell McKay. Effect of larval host plant on development and migration of the monarch butterfly (*Danaus plexippus*).
- 10:15 Alexe Indigo. The effects of *Eurosta solidaginis*-induced stem galls on botanical dyes extracted from goldenrod.
- 10:30 Thomas Hall. Mowing regime effects on stem-dwelling insect mortality and community structure in an urban meadowscape.
- 10:45 Mahsa Hakimara. Vertical stratification effect on insect herbivory patterns in sugar maple (*Acer saccharum*) forests in Quebec.
- 11:00 Olivia DeBourcier. Flight of the water boatman: How urban wetland proximity affects water boatman community composition in Edmonton.
- 11:15 Pedro Conceição. The influence of environmental factors on predatory mite (Mesostigmata) communities in Ontario's peatlands.
- 11:30 Scout Butler-Siemens. Impacts of cattle grazing on the assemblage of ground beetles (Coleoptera: Carabidae) in riparian areas.

**12:00 Lunch served in Pre-Function Area**

**12:00 TCE Editorial Board Meeting in Naples Room**

**12:00 Trivia Contest in Venice Room**

**13:00 Plenary: Dr. Kyle Bobiwash. Entomology and agricultural research as a tool for reconciliation. Room: Michealangelo A/B.**

**Symposium: Aphids & Psyllids & Leafhoppers. Oh My! Routes of transmission of plant diseases in agriculture. Room: Michealangelo A/B**

- 14:00 Introduction. Bryan Brunet and Michelle Franklin (Organizers and Moderators)
- 14:05 Eric Gerbrandt. Taxonomic resolution of aphid species mediating spread of Blueberry Scorch Virus (BIScV) in BC blueberry fields as an integrated component of multi-disciplinary research.
- 14:30 Dinesh Babu Paudel. Protecting pulses from vector-borne virus diseases in Canada.
- 15:00 Grace Onu-Odey. Documenting symptoms of pea seed-borne mosaic virus in Saskatchewan pulse crops.
- 15:30 Coffee Break**
- 15:45 Meghan Vankosky. Biological control of disease vectors in urban communities: Asian citrus psyllid management in southern California.
- 16:15 Tyler Wist. Still Watching the Winds: Migratory aster leafhoppers and aster yellows phytoplasma.
- 16:45 Berenice Romero. Combining field surveys with molecular gut content analysis of insect samples to identify potential hosts involved in a vector-borne plant pathosystem.

17:15 Tim Dumonceaux. Leafhoppers: Sentinels of the impact of climate change on agriculture.

**Contributed Talks: Agriculture I. Room: Florence. Moderator: Roselyne Labbé**

- 14:00 Marcelo Polizel Camilli. Yellow and green horizons: Honey bee hives productivity on Saskatchewan landscapes.
- 14:15 Roselyne Labbé. Exploring the greenhouse biological control potential of native hemipteran predators in eastern Canada.
- 14:30 Daniel Peck. Introduction to Spear-Lep and Spear T, novel peptide-based insecticides recently approved for use in specialty ag and greenhouse crops.
- 14:45 Ian Scott. Combinations of *Metarhizium brunneum* and cover crops: A novel wireworm management strategy.
- 15:00 Jean-Philippe Parent. Vibrational waves through space and time: Scaling up vibrational pest control of aphids in both duration and size.
- 15:15 Thanuri Edirithilake. Does propolis protect honey bee larvae from European Foulbrood Disease?
- 15:30 Coffee Break**
- 15:45 Tracy Hueppelsheuser. Japanese beetle (*Popillia japonica*) in British Columbia: Progress towards eradication.
- 16:00 Emilio Enrique Tellarini Prieto. Effect of incremental doses of vaporized oxalic acid on honey bee workers and queens.
- 16:15 Gail MacInnis. Regenerative farming increases wild bee diversity in northern Alberta agroecosystems.
- 16:30 Suzanne Blatt. European apple sawfly shows cultivar preference but does it show preference for rootstock?
- 16:30 Jill Sauter. An update on the Field Heroes Campaign.

**Contributed Talks: Forestry. Room: Venice. Moderator: Brian Van Hezewijk**

- 14:00 Sara Edwards. Early Intervention Strategy for spruce budworm: Can we contain outbreak spread?
- 14:15 Leah Flaherty. Climate change-mediated diet shifts for an outbreaking forest defoliator: Direct effects and interactions with insect disease.
- 14:30 James Hammond. Do arthropod communities assemble according to ecological land classification of upland forests in the boreal mixedwood region of Alberta?
- 14:45 Brian Van Hezewijk. Multi-scale response of generalist predators helps keep western spruce budworm populations at endemic levels.
- 15:00 Atta Ur Rehman. Fruit fly threat to peach production and quality in District Swat KPK Pakistan.
- 15:30 Coffee Break**

**17:00 Poster Session. Room: Michealangelo C. President's Prize entries in BOLD font.**

1. Abraao Almeida Santos. Environmental niche overlap, similarity, and species richness of economically important leafhoppers in North America.
2. Amélie Morin. Conservation of biodiversity and endangered bumblebee species: Effects of flower strips in agricultural landscapes.

3. **Bennet Grappone.** Habits, habitats, and taxonomy of carrion beetle associated mites (Mesostigmata: Parsitidae: *Poecilochirus* spp.) in Alberta.
4. **Bryan Fisher.** Gut microbiome diversity in ground beetles (Coleoptera: Carabidae).
5. **Diana Wilches Correal.** Assessment of the *Aphodius fimetarius* and *Aphodius pedellus* (Coleoptera: Scarabaeidae) species complex in Canada.
6. **Héctor Cárcamo.** *Peristenus* (Hymenoptera: Braconidae) parasitism of lygus bugs in field crops: from plots to fields.
7. **Héctor Cárcamo.** A comparison of PCR screening, dissection and rearing methods to assess parasitism of lygus bugs by *Peristenus* wasps.
8. **Jess Vickruck.** Using metabarcoding to examine collembola community composition in Atlantic Canada.
9. **Katelyn Stokes.** The impact of insect activity on greenhouse gas fluxes from the dung of domesticated and wild mammals.
10. **Lesa S. Giesbrecht.** Rearing *Cicindela repanda* (bronzed tiger beetle) larvae in the laboratory.
11. **Meghan Vankosky.** Invasive insects to watch out for: A Canadian Plant Health Council initiative.
12. **Muhammad Fahim Raza.** The germination of *Paenibacillus* larvae spores improves the efficiency of qPCR-based quantification method.
13. **Rosemarie De Clerck-Floate.** A revisit of *Longitarsus* species (Coleoptera: Chrysomelidae) introduced or relocated in Canada for tansy ragwort biological control.
14. **Ryan Oram.** Royal Saskatchewan Museum Invertebrate Zoology Collections: An overview.
15. **Sainey Ceesay.** Investigating the role of phytoplasma infection and different host plant in the aster leafhopper microbiome.
16. **Samuel Robinson.** Precision yield data can make crop insect studies easier, more powerful, and more general.
17. **Wei Han Lau.** Methods for quantifying elytral pattern variability in the *Cicindela formosa* species complex.

**19:00 Student Mixer at Winston's Pub.**

## **Tuesday, October 17, 2023.**

**08:00 Plenary: Dr. Diana Percy. Ecology and turnover: psyllids in space and time. Room: Michealangelo A/B.**

**Symposium: Policy and Emergency Preparedness. Room: Michealangelo A/B.**

09:00 **Introduction.** Joshua Pol (Organizer and Moderator).

09:15 **Troy Kimoto.** How the Canadian Food Inspection Agency is addressing invasive regulated pests in western Canada.

09:45 **Ken Fry.** Monitoring of elm bark beetles in Alberta: An overview of Dutch Elm Disease and vector occurrence.

**10:15 Coffee Break**

10:30 **Babita Bains.** The battle to keep B.C. spongy moth-free.



11:00 Jeri L. Geiger. Introducing Saskatchewan's Invasive Species Framework.

**Contributed Talks: Taxonomy & Genetics. Room: Venice. Moderator: Sean Prager**

09:00 Louwrens Snyman. A circumpolar parasite: Evidence of a cryptic undescribed species of sucking louse, *Linognathus* sp., collected from Arctic foxes, *Vulpes lagopus*, in Nunavut (Canada) and Svalbard (Norway).

09:15 Louwrens Snyman. A contribution to and review of molecular barcodes used for the identification of ticks in Canada.

09:30 Felix Sperling. Toward Transparent Taxonomy: Introducing a web tool for evaluating alternate classifications.

09:45 Jen Perry. The social lives of fruit flies: Identifying genes that govern interactions with kin in *Drosophila melanogaster*.

10:00 Dwayne Hegedus. Characterization of the swede midge, *Contarinia nasturtii*, first instar larval salivary gland transcriptome.

**10:15 Coffee Break**

10:30 Dezene Huber. Keys to the cabinet: Unlocking biodiversity data in public entomology collections.

10:45 Bryan Brunet. UCE Phylogenomics resolves relationships among pterocommatine aphid genera: resurrecting the Pterocommatini (Hemiptera: Aphididae: Aphidinae).

11:00 Boyd Mori. Population genomics reveals insights into alfalfa weevil strains in North America.

11:15 Gen Morinaga. Comparative genomics of *Aegypti*-group mosquitoes.

**Contributed Talks: Ecology, Evolution & Behaviour I. Room: Naples. Moderator: Leah Flaherty**

09:00 Chris Cutler. Why mild-stress stimulation of insects matters for entomologists.

09:15 Barry Cooke. Do cyclic systems yearn to align? Two historical experiments and one experience.

09:30 Jennifer Heron. British Columbia's community bumblebee project.

09:45 Robert Lamb. Relative population stability of a monophagous aphid, *Uroleucon rudbeckiae*, and its wildflower host, *Rudbeckia laciniata*, over 20 years.

10:00 Sophie M. Killam. Effects of lactic acid-producing bacteria supplementation on the hygienic behaviour of Western honey bees.

**10:15 Coffee Break**

**10:30 Coffee Break to continue due to withdrawn talk.**

10:45 Heather Proctor. I've got you under my skin: Morphologically reduced subdermal mites (Astigmata: Hypoderatidae) infesting gannets in Atlantic Canada.

11:00 Lisa Lumley. Effects of natural land cover, anthropogenic disturbance, space, and climate on oribatid mite communities in Canada's oil sands region.

11:15 Vivek Srivastava. Charting the course of invasion: Ensemble species distribution models predict the range expansion of *Metopolophium festucae cerealium* in North America.

**12:00 Lunch served in Pre-Function Area.**

**12:30 ESC Annual General Meeting. Room: Michealangelo A/B.**

**14:00 Meeting of NEW ESC Executive (BOD2). Room: Naples.**

**15:00 Meeting of the Entomological Societies of Canada. Room: Naples.**

**Symposium: Tribute to John H. Borden. Room: Michealangelo A/B.**

- 14:00 Introduction. Maya Evenden and Deepa Pureswaran (Organizers and Moderators)
- 14:10 Gerhard Gries. John Borden's legacy and impact on today's innovative research.
- 14:45 Lorraine Maclauchlan. The practice of forest entomology in British Columbia: Integrating science into management.
- 15:00 Dezene Huber. Asking nature the right questions.
- 15:15 Maya Evenden. The influence of Dr. J.H. Borden on Chemical Ecology research in managed ecosystems in Alberta.
- 15:30 Deepa Pureswaran. Causes and consequences of forest insect outbreaks.
- 15:45 Coffee Break**
- 16:00 Therese Poland. Protecting North American ash trees in peril from the invasive emerald ash borer.
- 16:15 Robert Setter. A survey of the forest coleoptera in the Burns Bog Ecological Conservancy Area utilizing pheromone baited multiple-funnel and panel traps.
- 16:30 Jeanne Robert. John Borden: Mentor of pest management.
- 16:45 Ilesha Ileperuma-Arachchi. Continental variation in brood production by two non-native ambrosia beetles on native and non-native host trees.
- 17:00 Antonia Musso. Of mice and mountain pine beetles, from farms to forests.
- 17:15 Rylee Isitt. The many pheromone blends of the spruce beetle.

**Symposium: Invasives of the Urban Forest. Room: Florence.**

- 14:00 Introduction. Sydney Worthy (Organizer and Moderator).
- 14:15 Troy Kimoto. Summary of Asian long-horned beetle in Canada – Canadian interceptions and eradication in Toronto/Mississauga.
- 14:45 Tyler Wist. Invasion and life history of the cottony ash psyllid into western Canada.
- 15:15 Amanda Roe. Surprising lower lethal limits of the invasive spotted lanternfly.
- 15:45 Coffee Break**
- 16:00 Christian MacQuarrie. Emerald ash borer and the urban forests of western Canada.
- 16:30 David Ensing. Understanding variable biological control of invasive spotted knapweed (*Centaurea stoebe* ssp. *micranthos* Asteraceae) in British Columbia.
- 17:00 Philippe Berthiaume. Mosquito-borne diseases research in the Environmental Change One Health Observatory (ECO2) in Canada.

**18:00 Pre-dinner drinks and entertainment. Room: Michealangelo A/B.**

**19:00 ESC-ESS JAM Banquet. Room: Michealangelo A/B.**

**20:00 Heritage Lecture: Dr. Julie Soroka. Forage Entomology on the Prairies, Life Lessons, and a Tale of Two Insects. Room: Michealangelo A/B.**

## Wednesday, October 18, 2023.

### Contributed Talks: Agriculture II. Room: Naples. Moderator: Michelle Franklin

- 09:00 Michelle Franklin. Improving the search: Using climate analysis to guide surveillance to delimit the range of the invasive strawberry blossom weevil, *Anthonomus rubi* (Herbst).
- 09:15 Jeremy Irvine. Effects of phytoplasma infection on aster leafhopper (*Macrostelus quadrilineatus* Forbes) (Hemiptera: Cicadellidae) settling behaviour, oviposition, and development.
- 09:30 Kevin Floate. *Chilo thorax distinctus* (Coleoptera: Scarabaeidae): an occasional pest in agroecosystems on the Canadian Prairies?
- 09:45 Carol Frost. Mapping trophic connections between all crop pests and their natural enemies in Alberta major crops to predict indirect interactions.
- 10:00 John Soghigian. Recent detection and rapid expansion of the invasive mosquito *Culex pipiens* in Alberta
- 10:15 Chaminda De Silva Weeraddana. The effect of wheat nutrition on oviposition behaviour of orange wheat blossom midge, *Sitodiplosis mosellana* (Géhin) (Diptera: Cecidomyiidae).
- 10:30 Coffee Break**

### Contributed Talks: Ecology, Evolution & Behaviour II. Room: Florence. Moderator: Iain Phillips

- 09:00 Ryan McKellar. Toward a synthesis on western Canadian amber deposits and their faunas.
- 09:15 Delano Lewis. Central Alberta butterfly count shows decreasing diversity over time and yearly abundance fluctuation explained by dominant species decline.
- 09:30 Rémi Hébert. Wild Species 2020: The general status of species in Canada.
- 09:45 Abigail Cohen. How weather, climate, and landscape affect the provisioning of ecosystem services.
- 10:00 Stefani de Heij. Feeding behaviour and mobility of carabid beetles in response to perceived risk of predation.
- 10:15 Iain Phillips. Development and evaluation of artificial woody samplers for monitoring aquatic insect communities.
- 10:30 Coffee Break**

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