



12<sup>th</sup> Annual Conference &  
AGM 2025



# MESSAGE FROM THE PREMIER OF ALBERTA

On behalf of the Government of Alberta, it is my pleasure to send greetings to the 2025 Alberta Invasive Species Council Annual Conference in Olds.

Managing invasive species is an important part of safeguarding Alberta's ecosystems and economy. I deeply appreciate the dedication of council members in helping to protect our province from the impacts of invasive species. I hope this event provides everyone with meaningful opportunities to connect with colleagues and share information while learning about the latest advances in research, early detection and response strategies.

Thank you for your work to educate and engage Albertans in the fight against invasive species in our province.

Best wishes for a productive conference.



*Danielle Smith*

**Honourable Danielle Smith, Premier of Alberta**





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*Office of the Minister*

**Greetings from the Honourable Rebecca Schulz  
Minister of Environment and Protected Areas**

I recognize the significance of the Alberta Invasive Species Council conference, in bringing together experts, stakeholders, and decision-makers to discuss critical topics related to aquatic invasive species and innovative management strategies.

I would like to extend my gratitude to the Alberta Invasive Species Council for its ongoing efforts and for working with government and other organizations to keep our lakes, rivers and waterways free of invasive species. I wish you all the best with the conference and look forward to updates about the outcomes and future initiatives.

Sincerely,

A handwritten signature in cursive script that reads 'Rebecca Schulz'.

**Rebecca Schulz  
Minister of Environment and Protected Areas**



Thanks for attending the Alberta Invasive Species Council's 12<sup>th</sup> Annual General Meeting & Conference!

We hope you enjoy the dynamic exploration of terrestrial and aquatic invasive species, communication strategies, vectors of spread, animal diseases, management tools and so much more at this year's event!

There are 20 sessions scheduled to run from March 5<sup>th</sup> to 6<sup>th</sup>, 2025. Earn certified pesticide applicator credits, CEU credits, and engage with researchers and experts at the poster sessions.

Thank you for joining us this year!!



***NOTE: Please park in Lot D - be sure to memorize your license plate number and register it at the registration table to avoid a parking fine.***

## Contact Us



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# Credit Instructions

ATTENTION - Please review the following to receive Certified Pesticide Applicator Credits:

1. See the [agenda](#) (or table below) for sessions that are approved for applicator credits. Note 'All Classes' includes aerial, agriculture, aquatic, biting fly, industrial, forestry, fumigation, greenhouse, landscape, structural, special: interior plantscape and special: seed protectant.
2. In order to receive a pesticide applicator credit, you must:
  - a. Be present for the **entirety** of the session and answer **all** polling questions.
  - b. Record your **name and birthdate** (month and year) on the Attendance List. Applicators not included on the Attendance List will NOT be recognized for credit.
3. Please DO NOT take photos of the Attendance Lists after signing them as there is personal information on these sheets.

Session Name	Presenter & Title	Concept Covered	Classes	Date
Invasive Plants	<b>KEYNOTE: Invasive Annual Grasses, a Perennial Problem – Dr. Jane Mangold</b> Dr. Jane Mangold, University of Montana	Pest Management	Aerial, Agriculture, Industrial, Forestry, Landscape	March 5
Invasive Insects	<b>Detecting Emerald Ash Borer in Vancouver via Branch Sampling</b> Troy Kimoto, Canadian Food Inspection Agency <b>Dutch Elm Disease and Edmonton's IPM Plan in 2024</b> Mike Jenkins, City of Edmonton	Pest Management	Landscape	March 5
Communications	<b>Engaging All Ages in the Fight Against Noxious Weeds: Creative Education Strategies that Stick</b> Pam Schwend, Montana Invasive Species Council <b>An Era of Influence in Science Communication</b> Lauren Rogers, Invasive Species Centre	Professionalism	Aerial, Agriculture, Industrial, Forestry, Landscape	March 5
Aquatic Invasive Species – Regional Updates	<b>AIS 2024 Year in Review</b> Nicole Kimmel, Government of Alberta <b>Watercraft Inspection at the International Border in Manitoba</b> Brendan Spearin, Department of Fisheries and Oceans <b>An Environmental DNA Monitoring Program Leads to the Discovery of Proliferative Kidney Disease in Alberta</b> Jacob Hambrook, University of Alberta	Pest Management	All Classes	March 6
Aquatic Invasive Species	<b>Invasive Species Management in the Face of Public Scrutiny</b> Craig Mushens, Worley Consulting & Jay White, Aquality Environmental	Pest Management	Aerial, Agriculture, Industrial, Forestry, Landscape	March 6
Aquatic Invasive Species – Prevention and Response	<b>California's Response to Golden Mussel (Virtual)</b> Martha Volkoff, California Department of Fish and Wildlife <b>Update on Quagga Mussel Response for the Mid-Snake River, Idaho</b> Nic Zurfluh, Government of Idaho <b>Rapid Response to Aquatic Invasive Species European Water Chestnut Rapid Response Program in Welland, Ontario</b> Katie Church, Invasive Species Centre	Pest Management	Industrial, Forestry	March 6

<b>Invasive Vertebrates and Diseases</b>	<b>Alberta's Wild Boar Control Program Update</b> Hannah Mckenzie, Government of Alberta <b>Tackling Chronic Wasting Disease in Wildlife Populations in Alberta</b> Anne Hubbs, Government of Alberta	Pest Management	Agriculture	March 6
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**CERTIFIED  
CROP ADVISER**

ATTENTION - Please review the following to receive Certified Crop Advisor CEU Credits:

1. See the table below for sessions that are approved for CEU credits.
2. In order to receive a CEU credit, you must:
  - a. Be present for the **entirety** of the session.
  - b. Record your **name, CCA, CPAg, CPSS or CPSC # and signature (in and out)** on the Attendance List OR you can download the [Certified Crop Adviser \(CCA\) app](#) on your mobile device to receive CEU credits immediately by scanning the QR code. Once scanned, the CCA app will automatically sign you in. Anyone not included on the Attendance List will NOT be recognized for credit.



March 5 Sign-In Sheet



March 6 Sign-In Sheet

Presenter & Title	CEU Concept	CEU Credit	Date
<b>KEYNOTE: Invasive Annual Grasses, a Perennial Problem</b> Dr. Jane Mangold, University of Montana	Integrated Pest Management	1.5	March 5
<b>Worst Weeds to Watch For</b> Josh Wagoner, Montana Government			
<b>Developing a Provincial Invasive Species Indicator</b> Brendan Casey, Alberta Biodiversity Monitoring Institute	Integrated Pest Management	0.5	March 5
<b>Detecting Emerald Ash Borer in Vancouver via Branch Sampling</b> Troy Kimoto, Canadian Food Inspection Agency	Integrated Pest Management	0.5	March 5
<b>Dutch Elm Disease and Edmonton's IPM Plan in 2024</b> Mike Jenkins, City of Edmonton	Integrated Pest Management	0.5	March 5

<b>An Era of Influence in Science Communication</b> Lauren Rogers, Invasive Species Centre	Professional Development	0.5	March 5
<b>Engaging All Ages in the Fight Against Noxious Weeds: Creative Education Strategies that Stick</b> Pam Schwend, Montana Invasive Species Council	Professional Development	0.5	March 5
<b>Accelerating the development and deployment of biocontrol agents</b> Rick Niwa, MD of Ranchland <b><i>Caragana arborescens</i> in the Prairie Provinces: An Assessment of Invasiveness</b> Martin Hinojosa, University of Alberta <b>Establishing, Promoting &amp; Utilizing Weed Free Products to Prevent the Spread of Invasive Species</b> Lesley Beckworth, Teton County Weed & Pest District	Integrated Pest Management	1	March 5
<b>AIS 2024 Year in Review</b> Nicole Kimmel, Government of Alberta <b>Watercraft Inspection at the International Border in Manitoba</b> Brendan Spearin, Department of Fisheries and Oceans <b>An Environmental DNA Monitoring Program Leads to the Discovery of Proliferative Kidney Disease in Alberta</b> Jacob Hambrook, University of Alberta	Integrated Pest Management	1	March 6
<b>Invasive Species Management in the Face of Public Scrutiny</b> Craig Mushens, Worley Consulting & Jay White, Aquality Environmental <b>Lurking Beneath the Surface - New &amp; Emerging Invasive Threats to Albertan Waterways</b> Kallum McDonald, Government of Alberta	Integrated Pest Management	1	March 6
<b>California's Response to Golden Mussel (Virtual)</b> Martha Volkoff, California Department of Fish and Wildlife <b>Update on Quagga Mussel Response for the Mid-Snake River, Idaho</b> Nic Zurfluh, Government of Idaho <b>Rapid Response to Aquatic Invasive Species European Water Chestnut Rapid Response Program in Welland, Ontario</b> Katie Church, Invasive Species Centre	Integrated Pest Management	1	March 6
<b>Alberta Wild Boar Control Program Update</b> Hannah McKenzie, Government of Alberta	Integrated Pest Management	0.5	March 6
<b>Tackling Chronic Wasting Disease in Wildlife Populations in Alberta</b> Anne Hubbs, Government of Alberta	Integrated Pest Management	0.5	March 6

# Conference Details

## Poster Session (in Alumni Centre)

Please stay in the Alumni Centre on March 5<sup>th</sup> and 6<sup>th</sup> to see all the posters during the breaks from 3:10 to 3:30pm on March 5<sup>th</sup>, and from 10:15 to 10:40am and 2:05 to 2:30pm on March 6<sup>th</sup>.

### **Seasonal Movement and Reproduction in an Invasive Wild Pig Population**

<sup>1</sup>Hannah Bordin, <sup>2</sup>Ryan Brook, <sup>1</sup>Mark Boyce, <sup>1</sup>Department of Biological Sciences, University of Alberta and <sup>2</sup>Department of Animal and Poultry Science, University of Saskatchewan

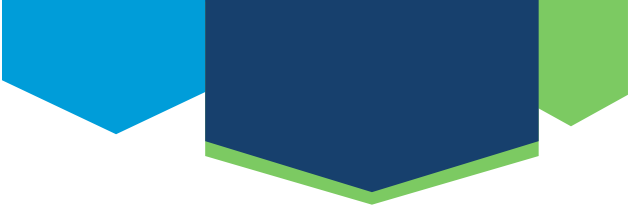
Animal movement is driven by physiological and environmental conditions, which change predictably across the year. Adjusting activity to align with these changes is critical for controlling energy balance, ensuring requirements are met for growth and reproduction. Wild animals generally exhibit seasonal patterns in reproduction, timing births with favourable conditions to meet the needs of both parent and offspring. Wild pigs (*Sus scrofa*) are prolific and invasive with spatial, dietary, and reproductive plasticity. Introduced in Canada in the 1980s, wild pigs are a concern because they pose risks to agriculture, livestock, public health, and the natural environment. They adapt to changing environmental conditions by altering movement rate and habitat selection and quickly establish across new landscapes due to an unusually high reproductive capacity. Although they can reproduce throughout the year, populations commonly display seasonal peaks in reproduction. Significant knowledge gaps remain in the fundamental ecological and biological requirements of wild pigs in Canada, including their spatial and temporal ecology and the effect of the environment on reproduction. Using a GPS-telemetry dataset of wild pigs collared in Saskatchewan from 2015 to 2017, we have studied seasonal movement patterns using Generalized Additive Mixed Modelling (GAMM) and have identified seasonal reproductive patterns by detecting abrupt changes in fine-scale movements, characteristic of ungulate reproduction. Preliminary results show significant drops in movement rate during winter months for both sexes, and a cluster of potential parturition dates have been identified in the spring.

### **Emerald Ash Borer (EAB), *Agilus planipennis*: Protecting Alberta's Urban and Rural Ash Trees**

Sacha Curran, Janet Feddes-Calpas, STOPDED

Emerald Ash Borer (EAB) is a highly destructive invasive wood-boring beetle that targets and fatally injures all species of ash trees in the *Fraxinus* genus. Within 8-10 years of establishment, up to 99% of ash trees perish. Ash trees in Alberta are foundational to urban canopies and are one of the most suitable, cold-hardy boulevard plantings available. Long-term costs associated with loss are measured in the billions. Municipalities have invested heavily in ash trees and face significant economic impacts should EAB become established. The Alberta Nursery Industry represents 65-75% of all tree production in the province with total annual sales in the millions of dollars. Agricultural operations have relied on shelterbelt programs since the 1930s with as many as 2 million ash trees having been planted. Alberta's shelterbelts and woodlots on farmlands would be an ample food source for EAB. Federally, EAB is a





regulated pest under the Plant Protection Act. Alberta has not yet declared EAB a pest under the Alberta Agricultural Pest Act (APA), “Pest and Nuisance Control Regulation” (PNCR). Since 2004, the Society to Prevent Dutch Elm Disease (STOPDED) has successfully maintained a disease-free status in Alberta with Dutch Elm Disease (DED) been a declared pest under the APA since 1975. This success underscores the importance of provincial pest regulations. Having EAB named as a declared pest under the APA allows for quick and decisive action by our municipalities, counties, and MDs. Once EAB is declared a pest, Alberta will be able to prevent and control EAB much like DED.

***Plenodomus tracheiphilus*, but not *Dothiorella ulmi*, causes wilt disease on elm trees in Alberta, Canada**


Janet Feddes-Calpas, STOPDED, Yalong Yang, Heting Fu, Kher Zahr, Shiming Xue, Dr. James Calpas, Krista deMilliano, Dr. Michael W. Harding, Dr. David Feindel, and Dr. Jie Feng, Government of Alberta

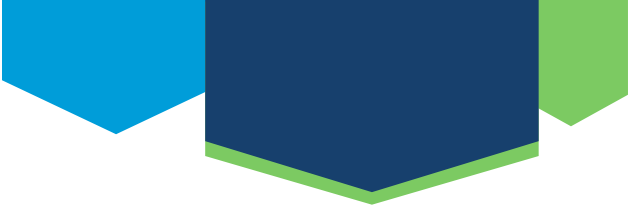
Annual monitoring of wilt pathogens on elm trees in Alberta is part of a provincially regulated prevention and control program for Dutch elm disease. Over the past nine years (2016–2024), twig samples with wilt symptoms from 274 elm trees across Alberta were tested for the presence of wilt pathogens. *Plenodomus tracheiphilus*, the causal agent of Mal secco disease of citrus trees, was isolated from 158 out of the 274 elm trees. The identification of this fungus was confirmed morphologically by comparison with the type culture, and sequencing the internal transcribed spacer region, the  $\beta$ -tubulin gene, the DNA-directed RNA polymerase II second largest subunit gene, the actin gene and eight protein-coding genes exclusively present in the *P. tracheiphilus* genome. The pathogenicity of *P. tracheiphilus* isolated from Alberta was tested by artificial inoculation on elm trees to fulfill Koch’s postulates based on symptom observation and fungal re-isolation. Data indicated that *P. tracheiphilus* is commonly present in Alberta’s elm trees especially in the the Edmonton area and that the previously described Dothiorella elm wilt is actually caused by *P. tracheiphilus* and not *Dothiorella ulmi*. Edmonton area and that the previously described Dothiorella elm wilt is actually caused by *P. tracheiphilus* and not *Dothiorella ulmi*.

***Tubifex tubifex* Host Specificity to *Myxobolus cerebralis* and Its Influence on Transmission in Alberta**

Dani Jakovljevic, Alyssa Turnbull, Patrick Hanington, School of Public Health, University of Alberta

Since its initial discovery in Canada in 2016, efforts have concentrated on understanding the transmission dynamics and host specificity of *Myxobolus cerebralis* in Alberta. Early responses to the invasion have specifically given insight into how the definitive host, *Tubifex tubifex*, acts as an ecological barrier to transmission of the parasite. *Tubifex* sampling has allowed us to complete comprehensive phylogenetic analyses using completed mitochondrial genomes. This work has revealed that the formerly used lineage groupings of *Tubifex* are irrelevant within Alberta populations. A comparison of the mitochondrial genomes of representative worms sampled from several populations of *Tubifex* collected throughout Alberta suggests five unique phylogenetic groups of *Tubifex*, termed T1-T5. An in-vitro challenge to *M. cerebralis* was conducted on the five phylogenetic groupings of *Tubifex*. When exposed to the worm-infective stage of *M. cerebralis*, T3 *Tubifex* released fish-infective stage of the parasite, triactinomyxons (TAMs), in the thousands. T1 and T4 released hundreds of TAMs, while T2 and T5 groupings did not release TAMs. Field observations in Alberta match these findings, with areas of high *M. cerebralis* transmission having high proportions of T3 *Tubifex* worms. These Alberta specific *Tubifex* findings paired with molecular techniques including environmental DNA monitoring and





metabarcoding will allow us to stay on the leading edge of invasion into British Columbia and throughout Alberta and predict areas of risk to inform stocking and wildlife conservation efforts.

### **Detection of invasive Northern Crayfish (*Faxonius virilis*) via eDNA analysis**


Brandi Moody, Patrick Hanington, Mark Poesch, and Jacob Hambrook, School of Public Health, University of Alberta

Traditional practice in identifying the presence of numerous aquatic invasive species involve physical trapping methods, which have various limitations including both time and cost associated with sample collection. This is the case for Northern Crayfish (*Faxonius virilis*) which are one of many crayfish species present across Canada. While originally found in habitats spanning Quebec to Saskatchewan, *F. virilis* was accidentally introduced to Alberta in the 1990s. As an aquatic invasive species, *F. virilis* are highly adaptable to various environments and enact wide range of negative effects on native species by competing for resources such as food and habitat. This research proposes an alternative identification method to traditional capture-based monitoring via the use of eDNA analysis. Through species-specific qPCR, *F. virilis* presence may be identified in non-native habitats. The use of eDNA to detect invasive crayfish may streamline data collection, reduce time in the field, and we hypothesize an increase in identification precision. To date, we have developed the first known species-specific qPCR assay for the detection of Northern crayfish and have demonstrated its ability to detect *F. virilis* DNA from tissue samples collected from various locations across Alberta and Michigan. Future work will seek to compare trapping data with eDNA positivity. Ultimately, our test will be employed towards the rapid detection of Northern Crayfish in novel waterbodies throughout Alberta's watersheds.

### **Using Solarization to Convert Smooth Brome into Foothills Rough Fescue Grasslands in Fish Creek Provincial Park**

Emma Stroud, Friends of Fish Creek

Historically, Fish Creek Provincial Park was used as the Bow Valley Ranch, leading to widescale introduction of agronomic and invasive species. Despite over half the park characterized as a Foothills rough fescue ecological site, only 1% (15 hectares) of Fish Creek Provincial Park contain native grassland species and the most common plant community is smooth brome-Kentucky bluegrass (Tannas 2023). The Friends have been managing grasslands in the historic Bow Valley Ranch since 2016, reintroducing native species that were lost through cultivation. Tackling invasive grasses must include treatment of the seedbank as well as the living plant material. Solarization is a technique that uses clear greenhouse plastic to force the invasive seedbank to germinate and then suffocate under high temperature and humidity between May and July. Solarization is a low-cost method that creates weed-free soil for native plants and seeds to be planted into. The Friends of Fish Creek Provincial Park Society have successfully used this process in the Bow Valley Ranch to convert over 2000 square meters of Smooth brome-Kentucky bluegrass to Foothills rough fescue grassland. Plants and seeds from the Foothills Parkland A1 native plant community were installed at a high density after solarization occurred, and plots were regularly weeded and watered in the first growing season. There was extremely high establishment and survival of native plants in the plots (80-100%), and they required no supplemental watering the second year. Plants produced seeds in the second year that were collected and used to create seed plugs for further restoration in the area. Seeds and plants were sourced from Eastern Slopes Rangeland Seeds and from plant rescues with the Alberta Native Plant Rescue.






**Invasive and Noxious Species Management in The Gaetz Lake Sanctuary, Red Deer, Alberta, Managed by the Waskasoo Environmental Education Society. Techniques Used and Success' Found Controlling Cicer Milk Vetch (*Astragalus cicer*), Canada Thistle (*Cirsium arvense*), and Common Toadflax (*Linaria vulgaris*) in Alberta's Oldest Federal Migratory Bird Sanctuary**

Thomas Wooff, Todd Nivens MA, and Jeannette Hall, Kerry Wood Nature Centre & Historic Fort Normandeau

The Gaetz Lake Sanctuary in Red Deer, Alberta is a Federally Protected Migratory Bird Sanctuary. Its status as a protected preservation area means that typical invasive or noxious plant control techniques including herbicides and heavy machinery cannot be used. This means that invasive species management, primarily of cicer milkvetch, Canada thistle, and common toadflax must be done with organic and non-destructive methods. Organic vegetation management is provided by BAAH'D Plant Management and Reclamation periodically through targeted browsing of problem areas by goats outside of nesting season. Those efforts are supplemented with a non-toxic natural weed spray as well as manual pulling and disposal of Canada thistle, cicer milkvetch, and common toadflax as well as occasional manual removal of less common invasive species such as black henbane (*Hyoscyamus niger*), lesser burdock (*Arctium minus*), common tansy (*Tanacetum vulgare*), oxeye daisy (*Leucanthemum vulgare*) and scentless chamomile (*Tripleurospermum inodorum*). Pulling and control of thistle patches accounts for the majority of efforts conducted primarily by individual volunteers and groups, the latter of which are able to remove roughly 160 cubic feet of plant material on average in a two-hour period. The invasive cicer milkvetch population has been kept in check through management by the goats from BAAH'D and its spread has slowed significantly thanks to their efforts. The Gaetz Lake Sanctuary has seen a significant decrease in noxious plant species populations due to these combined efforts despite the constant influx of seeds from uncontrolled populations outside the sanctuary boundaries.



# Day 1

March 5, 2025

## Conference Welcome and Announcements – 10:00AM to 10:15AM

## Invasive Annual Grasses, a Perennial Problem – 10:15AM to 11:15AM

Dr. Jane Mangold, Montana State University

Invasive annual grasses are an increasing problem on grassland systems of western North America. This presentation will focus on cheatgrass (*Bromus tectorum*), Japanese brome (*B. japonicus*), ventenata (*Ventenata dubia*), and medusahead (*Taeniatherum caput-medusae*) identification, biology, ecology, and the latest research into their management with insights shared from Montana, your neighbor to the south.

Jane Mangold is a professor and an extension invasive plant specialist at Montana State University in Bozeman, MT. She has been researching and teaching others about invasive plants on western rangeland for over 25 years. Many of her efforts have focused on invasive annual grasses, but she has also studied and written about many perennial invasive forbs on the Montana noxious weed list, like spotted knapweed and hoary alyssum.



## Worst Weeds to Watch for – 11:15AM to 11:45AM

Josh Wagoner, State of Montana

Distribution, identification, biology, ecology, and management methods for some of Montana's worst and highest priority invaders, including species like rush skeletonweed, dyer's woad, and Palmer amaranth. The weeds on Montana's EDRR list are major threats to Montana agriculture and wildland and are a danger to Canada too. This presentation will highlight how to spot them, why it's so important to keep these extremely difficult invaders out of Alberta, and as a last resort, what do if they're found.



Josh Wagoner has been Montana Department of Agriculture's Early Detection, Rapid Response Coordinator since the program's inception, just over three years ago. Prior to this role, Josh worked in weed management for Montana Fish, Wildlife, and Parks for eight years and for over a decade at the county and municipal level. His keen interest in weeds, habitat, and herbicide really started while trying to produce quality hay and grazing on his family's land, post-college. That enthusiasm has never wavered since.

### **Developing a Provincial Invasive Species Indicator – 11:45AM to 12:15PM**

Brendan Casey, Alberta Biodiversity Monitoring Institute

Brendan will present his work on co-developing an invasive species indicator with the Biodiversity Science Committee at Alberta Environment and Protected Areas (EPA), focusing on invasive vascular plants legislated under the *Weed Control Act*. He will discuss the project's goals, methods, and preliminary results.

Brendan is a Biodiversity Modelling Ecologist at the Alberta Biodiversity Monitoring Institute, specializing in species distribution modelling and remote sensing. He holds a PhD in Ecology from the University of Alberta, where he examined forestry impacts on bird communities, and an MSc in Biodiversity and Conservation from Trinity College Dublin.



--- LUNCH BREAK ---

### **Detecting Emerald Ash Borer in Vancouver via Branch Sampling – 1:10PM to 1:40PM**

Troy Kimoto, Canadian Food Inspection Agency

This presentation will provide an introduction to emerald ash borer including native and introduced distribution, hosts, signs, symptoms and impacts. It will also discuss the detection of this invasive wood borer in Vancouver via branch sampling. The pros, cons and lessons learned about branch sampling will also be discussed.

In the late 90s, Troy did his Masters of Pest Management at Simon Fraser University in forest entomology, followed by 2 years of employment within the forest health industry. He started working for the Canadian Food Inspection Agency (CFIA) in 2001 and has been in his current role as Plant Health Survey Biologist since



2002. In July of that year, he met his career nemesis when emerald ash borer was discovered in Canada for the 1st time in Windsor, Ontario. Since then, the elusiveness of detecting EAB has shaped how he develops survey procedures for invasive pests. As a survey biologist, his responsibilities include: developing survey procedures for plant pests; survey planning and training; providing scientific support to CFIA staff and external stakeholders; coordinating invasive species research within Canada and overseas; and producing outreach products for regulated plant pests.

### **Dutch Elm Disease and Edmonton's IPM Plan in 2024 – 1:40PM to 2:10PM**

Mike Jenkins, City of Edmonton

Edmonton has long been considered one of the largest Dutch elm disease free stands of elm in the world, with nearly 90,000 trees in the public and private urban forest inventory. Elms make up a considerable portion of Edmonton's boulevard plantings, and represent an asset valued at over \$800 million. In 2024 the first cases of Dutch elm disease were detected in Edmonton. Mike Jenkins, Senior Scientist with the City of Edmonton's Pest Management Lab will go over the details of those first cases, from the first detection and the activation of the City's Integrated Pest Management Plan for Dutch elm disease through the removal of all confirmed infections and future plans.



Mike Jenkins was born and raised in the Edmonton area, where he started off collecting caterpillars and ground beetles with his brother. While studying paleontology at the University of Alberta, he got a summer job in 1991 with the City of Edmonton splashing in puddles and counting mosquitoes. This led to more summers researching biological controls of mosquitoes, and the diversity of non-target organisms, as well as monitoring for invasive insect and disease species in the urban forest. In 2005 Mike became the supervisor of the city's Pest Management Lab, and later became the coordinator for all of Pest Management Lab and Operations, responsible for surveillance, monitoring and management of invasive insects, aquatic invertebrates, tree diseases and vertebrates for Edmonton.

### **An Era of Influencers in Science Communication – 2:10PM to 2:40PM**

Lauren Rogers, Invasive Species Centre

Social media is a powerful tool for science communication as it's accessible, low-cost (and in several cases, free), and direct to consumer. With more than 33.1 million Canadian social media users, it has become a must for most organizations to have a presence on one or more platforms. However, with more social media users and organizations on these sites, it makes it harder to break through the clutter and have your posts seen – and even more importantly, engaged with. Add in a growing distrust among users for scientific information on the platforms, it's become difficult for science-based organizations to effectively communicate with their target audiences on social

media. Influencer marketing can be an effective way to reach target audiences on social media using a trustworthy source to spread accurate information and calls to action. Several surveys with marketing professionals indicate that influencer marketing is an effective way to create brand awareness, and posts made by influencers typically outperform traditional paid media ads. This presentation outlines the steps taken to identify the best influencers for your organization, get them to answer your requests, ensure accurate posts, and track return on investment. Several case studies and examples from the Invasive Species Centre will be used to illustrate the influencer marketing process from start to finish.

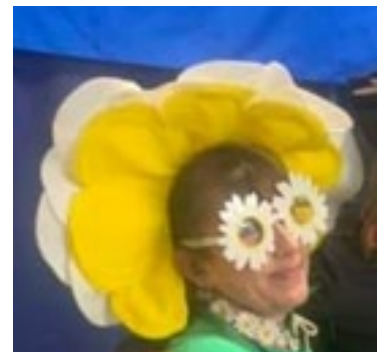


Lauren is the Senior Communications Coordinator at the Invasive Species Centre, where she leads the development and implementation of strategic and innovative communications to raise awareness about the impact of invasive species on ecosystems and biodiversity.

### **Engaging All Ages in the Fight Against Noxious Weeds: Creative Education Strategies That Stick – 2:40PM to 3:10PM**

Pam Schwend, Montana Invasive Species Council

Effective education is critical in raising awareness about the impact of noxious weeds on ecosystems, agriculture, and biodiversity. This presentation explores innovative and interactive methods to engage diverse audiences, from young students to adults. Highlights include the use of costumes, games, and storytelling to make learning about invasive species fun, memorable, and impactful. By leveraging creative approaches, we can foster curiosity and empower communities to take action against invasive plants. Attendees will leave with practical ideas to implement in their own outreach efforts, transforming education into a dynamic tool for conservation.



For 18 years, Pam Schwend, now retired Assistant Weed Coordinator at Carbon County Weed District, Montana, has been a dynamic force in environmental education. With a decade dedicated to invasive plant education, Pam employs imaginative methods like costumes and games to engage all ages. Her commitment to community education and innovative presentations leave enduring impacts on audiences at conferences, workshops, and educational events. Now, through her business, Invasive Awareness Connection, Pam continues her mission to educate schools and adults about the profound effects invasive species have on the environment, fostering greater understanding and stewardship.

**--- 20 MINUTE BREAK & POSTER SESSION ---**

### **AISC's Annual General Meeting (AGM) – 3:30PM to 4:15PM**

- Adoption of Agenda and 2024 AGM Minutes
- Introduction of Board and Staff
- Chair Report
- Financial Report
- Appointment of Auditor
- 2025 Budget
- Operations Report
- Communications Report
- New Business
- Director Recognition
- Elections
- Big EDD Award
- Adjournment

### **Accelerating the Development and Deployment of Biocontrol Agents – 4:15PM to 4:25PM**

Rick Niwa, MD of Ranchlands

An overview highlighting the formation of a biocontrol consortium aimed at developing a species priority list, securing financial resources, fostering industry collaboration, and accelerating the development and deployment of biocontrol agents. Rick will discuss the importance of biocontrol in managing invasive plant species, especially those that have surpassed the Early Detection Rapid Response (EDRR) stage and how a consortium could help advance biocontrol research.

Rick grew up on a mixed farm in the Acadia Valley/Empress area in southeast Alberta and got his first taste of invasive species management working as an Assistant Agricultural Fieldman with Special Areas No. 3. In 1995, Rick was promoted to Agricultural Fieldman at Special Areas No. 4 in Consort, he has since worked in Lacombe County as well as the MD of Acadia.

Rick completed his Agricultural Fieldman certification at Olds College and has over 30 years of experience in invasive species management. He currently serves as the Agricultural Fieldman with the Municipal District of Ranchland.





## ***Caragana arborescens* in the Prairie Provinces: An Assessment of Invasiveness – 4:25PM to 4:50PM**

Martin Hinojosa, University of Alberta

Invasive non-native plants pose a threat to biodiversity, human well-being, and incur high economic costs. *Caragana arborescens* (hence: *Caragana*) was introduced to Canada and widely planted to mitigate soil erosion. It exhibits traits indicating potential as an ecosystem transformer, including an ability to fix nitrogen, cast shade, and produce allelochemicals. *Caragana*'s spread has been observed in national parks and major river tributaries in the prairie provinces, yet the magnitude of its invasion and the factors driving escape are not well understood. Our study aimed to quantify *Caragana*'s spread in the southern boreal forest and aspen parkland of Alberta and Saskatchewan, assess its establishment under various soil and light conditions, and compare its performance across different habitat types. Among 38 sites we surveyed, 89% featured *Caragana* escaping into natural areas, with an average invaded area of 1.77 hectares ( $\pm 3.2$  SD) and an annual spread increase of 10.5%. *Caragana*'s germination remained consistent across light and soil treatments, but increased light boosted rhizobia nodule production. Seedling biomass was significantly higher under loamy soil and full light treatments. Finally, we found that aspen forests had the highest germination, survival rate and seedling biomass. Our results reveal the first case of a successful woody invader in the southern boreal and aspen parkland region of Canada's prairie provinces. Future research must assess its impact on native plant regeneration and ecosystem functioning. Given how widely *Caragana* has been planted on private land, education and outreach to landowners will form important management components.



Martin is a graduate student at the University of Alberta, currently in the second year of his Master of Science program in plant ecology. He holds a Bachelor's degree in Ecosystem Engineering from Ikiam Amazon Regional University in Ecuador, where he participated in research projects at the interface of ecology and tropical forest biology. Martin's master thesis project aims to assess the degree of spread of *Caragana arborescens* and the factors that favor its invasiveness in the southern boreal forest of Alberta and Saskatchewan. Martin's broader interests lie in biodiversity management and conservation, with a focus on understanding and mitigating the ecological impacts of invasive species.

## **Establishing, Promoting, and Utilizing Weed Free Products to Prevent the Spread of Invasive Species – 4:50PM to 5:15PM**

Lesley Beckworth, Teton County Weed and Pest District

Human-caused spread of invasive species threatens thousands of hectares of agricultural and wildlands in North America. Weed Free Product certifications aim to reduce the potential of unintentional spread through forage, gravel, compost, and mulch. Establishing and utilizing these certifications both have

challenges. We will discuss regulations and requirements as well as assisting both supply and demand for Weed Free Products.

Lesley Beckworth is the Landowner and Outreach Coordinator at Teton County Weed and Pest District in Jackson, Wyoming. She studied Agriculture & Extension Education and Weed Science at Mississippi State University. In 2013, Lesley left graduate school and relocated from Mississippi to Wyoming to begin work in invasive species management. She has been with Teton County Weed and Pest since 2014 and has worked in her current position since 2016.



**Closing Remarks for Day 1 – 5:15PM to 5:20PM**

**Mixer and Dinner at The Crossing Pub – 6:00PM**

**--- *RAT ACADEMY* PERFORMANCE IN THE ALUMNI CENTRE AT 8PM ---**



# Day 2

March 6, 2025

## Welcome and Announcements – 8:55AM to 9:00AM

### AIS 2024 Year in Review – 9:00AM to 9:25PM

Nicole Kimmel, Government of Alberta

This year's Alberta Aquatic Invasive Species (AIS) review highlights key efforts and challenges in preventing, monitoring, and responding to AIS threats across the province. Enhancements included expanding watercraft inspection stations at provincial borders, increasing fines, boosting awareness efforts, and establishing an AIS Task Force. Notable events involved intensified monitoring of previous infestations, new invasive fish, responding to the spread of invasive aquatic plants, and a rotenone application that faced significant resident pushback. Collaboration with local communities, NGOs, and municipal partners has been essential. While progress has been made, AIS prevention, response, and reporting remain ongoing challenges that demand ongoing dedication, innovation, and vigilance from all Albertans.



Nicole Kimmel received a B.Sc. of Environmental Conservation Sciences from the University of Alberta in 2000 with a Specialization in Wildlife and Rangeland Sciences. She began working with Alberta Government upon graduation, as a research assistant. Her work involved addressing weed management issues in forages and non-traditional crops. After 10 years in agricultural research, her role evolved to Weed Specialist, for an additional 7 years of employment. In 2018, she moved departments to the Aquatic Invasive Species (AIS) Specialist. Now she supports the five elements of the AIS program: Policy & Legislation, Education & Outreach, Monitoring, Watercraft Inspections/Decontamination and Response. Nicole is approaching 25 years of service with the Government of Alberta.

## Watercraft Inspection at the International Border in Manitoba – 9:25AM to 9:50AM

Brendan Spearin, Department of Fisheries and Oceans

During the open water season (2022, 2023, and 2024), Fisheries and Oceans Canada has been conducting a watercraft inspection and decontamination pilot project at the Emerson-Pembina international border crossing. The inspection program and training are based on the Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels (UMPS) and the data collection mirrored that of the inspection programs of Western Canadian provinces (MB, SK, AB). Over 2,200 inspections have been conducted over two years with the dominant demographic being anglers originating in the West North Central Census Area (Minnesota, North Dakota, South Dakota, Nebraska, Iowa, Kansas, Missouri). The objectives of the pilot included analyzing the risk posed to Canadian freshwaters from American travellers and their watercrafts. The pilot found the majority (98%) of Americans self reporting themselves as “CDD”, but actual inspection compliance was much lower (69% in 2022, 53% in 2023). This presentation will discuss our findings on CDD compliance, points of failure for the CDD inspections, examples of AIS encountered, boater movement into Canada, and aquatic invasive species in source watersheds, and their likelihood of being found in the stowaway pathway.



Brendan Spearin is the AIS Regional Coordinator for Fisheries and Oceans Canada (DFO) in the Ontario and Prairie Region. Since 2017 he has worked with partners in Western Canada on outreach, early detection, response, and management activities, including with federal Fisheries Officers and federal partners in the Canada Border Services Agency. His professional work has focused on Zebra and Quagga mussels and their spread within Canada, but he has also worked on organisms in trade, including during the 2021 Moss Ball Response.

### **An Environmental DNA Monitoring Program Leads to the Discovery of Proliferative Kidney Disease in Alberta – 9:50AM to 10:15AM**

Jacob Hambrook, University of Alberta

In 2023, a multi-stakeholder environmental DNA (eDNA)-based monitoring program for aquatic invasive species (AIS) was established to evaluate the feasibility of combining community-based sampling efforts with DNA analysis at the University of Alberta. This program has enabled the first potential identification of Proliferative Kidney Disease (PKD), caused by the myxozoan parasite *Tetracapsuloides bryosalmonae*, in Alberta. Detection of parasite DNA was confirmed through two distinct quantitative PCR assays, and these detections were co-localized with DNA from its intermediate host, the freshwater bryozoan *Fredericella sultana*. Although PKD infections have been increasingly reported across North America, including recent widespread detections in Montana and Colorado, they do not consistently result in increased fish mortality. However, extended periods of intense heat appear to exacerbate mortality, as evidenced by a 2016 heatwave on Montana's Yellowstone River that led to mass die-offs of mountain whitefish and prompted heightened PKD surveillance. This study underscores Alberta's unique

potential to leverage eDNA-based monitoring to detect PKD early, thereby helping prevent its spread to vulnerable ecosystems and supporting the conservation of fish populations.

Dr. Jacob Hambrook is a Postdoctoral Fellow at the University of Alberta's School of Public Health, specializing in molecular diagnostics for invasive species and pathogens. His research integrates advanced molecular biology techniques, such as qPCR and dPCR, to support environmental DNA surveillance. His interest in invasive species began during an undergraduate thesis, where he investigated invasive nematodes in American eels, exploring their invasion and establishment in Atlantic Canada. Currently, he provides eDNA analysis for various partners, including the Government of Alberta, Parks Canada, and non-profit organizations, aiding in the detection of aquatic invasive species such as Goldfish, Prussian Carp, Zebra mussels, and various aquatic parasites. Dr. Hambrook lives in Edmonton with his wife and two children, who humorously serve as his personal invasive species.



--- 25 MINUTE BREAK ---

### **Invasive Species Management in the Face of Public Scrutiny – 10:40AM to 11:25AM**

Craig Mushens, Worley Consulting and Jay White, Aquality Environmental

The spread of aquatic invasive species is increasing and posing a risk to natural watersheds. Of particular concern is the introduction and spread of invasive carp (goldfish and Prussian carp) in stormwater management facilities in residential neighbourhoods which ultimately drain into our rivers. Eradication is the goal for these species as risk and cost associated with management is prohibitive. The current preferred method is treatment of the facility with a chemical formulation containing Rotenone. Since 2016, over 29 ponds and lakes in Alberta have been treated with Rotenone with favourable results while protecting the public and the local ecosystem. The approval process for rotenone treatments involves public engagement and notification. In the majority of instances, public engagement and feedback is supportive. However, there are instances where public pushback has been encountered. This presentation will review two case studies for treatments conducted in 2024, highlighting challenges and concerns, particularly with the effect of social media and mainstream media on the dissemination of misinformation, and society where there is an increasing distrust in information provided by agencies of authority.

Craig is a Senior Fish Biologist with Worley Consulting with over 24 years of environmental consulting experience. He received both his B.Sc. And M.Sc. in aquatic ecology at the University of Calgary. Craig



was introduced to the nefarious world of invasive species in 2015 assisting a client with goldfish in a local storm pond. Craig received his Pesticide Applicators Licence and training to apply rotenone and joined the crusade to control invasive fish throughout the province. Along with a love of the outdoors and Formula One racing, Craig has a passion for puzzles, and challenges and solving them; something that is encountered frequently within the environmental consulting world.

Jay White is the owner of Aquality Environmental in Edmonton and has over 30 years experience with wetlands and lakes in Alberta. He is a past president of the Alberta Lake Management Society and Alberta Society of Professional Biologists and is currently the Vice-President of the Alberta Water Council and is involved with the Provincial Aquatic Invasive Species Task Force. He is an expert on water regulations and policy and has been involved with treating Alberta lakes with peroxide, alum, phoslock and most recently rotenone.



### **Lurking Beneath the Surface - New & Emerging Invasive Threats to Albertan Waterways – 11:25AM to 11:50AM**

Kallum McDonald, Government of Alberta

Aquatic invasive species (AIS) threaten the health of aquatic ecosystems by outcompeting native species, disrupting food webs, and occupying or diminishing crucial habitats. Managing invasive species in aquatic and riparian environments poses unique challenges in terms of prevention, containment, and control. In addition to several well-established AIS in Alberta, multiple new or recently discovered AIS have been detected in recent years. These include plant, snail, and fish species such as curly-leaf pondweed, water forget-me-not, blue water-speedwell, flattened rush, big-eared radix, common carp, pumpkinseed, and largemouth bass. Other AIS encroaching but not yet present in Alberta include the New Zealand mud snail and the peach blossom jellyfish. The illegal release of fish, likely through deliberate live transfer, into lakes, rivers, and stormwater ponds is an increasing issue, with multiple new fish species reported this year. These AIS discoveries reveal significant gaps in monitoring, reporting, legislation, and public awareness, despite campaigns like Clean, Drain, Dry and Don't Let It Loose, which underscores the imminent threat that encroach species pose to Alberta's aquatic ecosystems. Fortunately, a citizen science platform called iNaturalist has provided a massive database of invasive species reports which has enabled early detection, rapid response efforts in several cases. The AISC is working to integrate this data into EDDMapS, to enhance dissemination of prohibited species reports to the appropriate authorities, to monitor for new threats.



Kallum was raised on a grain and buffalo farm near Grande Prairie, Alberta, and many long summer days were spent pulling and spraying weeds. In 2023, Kallum completed a Master of Science degree in Plant Biology, focusing on the molecular biology and genetics of oilseed crops. Kallum served for two years as the teaching assistant for the invasive plant course at the University and has continued to be a guest lecturer. After graduation, Kallum discovered an extensive invasive Phragmites outbreak in Central Alberta while working for Strathcona County's Agriculture/Environment division, which led to joining the AISC's Board of Directors and moving to the provincial Aquatic Invasive Species program in spring 2024. Kallum spends their free time identifying plants in natural areas and is passionate about protecting native ecosystems from invasive threats.

--- 1 HOUR LUNCH BREAK ---

### California's Response to Golden Mussel (virtual) – 12:50PM to 1:15PM

Martha Volkoff, California Department of Fish and Wildlife

Golden mussel (*Limnoperna fortunei*), an invasive, non-native freshwater/brackish bivalve, was discovered in the Sacramento-San Joaquin Delta (California, USA) in October 2024. This discovery is the first known occurrence of golden mussels in North America and was likely introduced by a ship traveling from an international port. Golden mussels pose a significant immediate threat to the natural ecosystems, water conveyance systems, infrastructure, agriculture, economy, and water quality in California and across North America. The California Department of Fish and Wildlife has organized a multi-agency Task Force to respond to golden mussel and prevent its overland spread to other, non-hydrologically connected waters.



Martha Volkoff is the Program Manager for the California Department of Fish and Wildlife's Invasive Species Program. The Program provides leadership and support across Department responses to invasive species, including past detections of nutria and Caulerpa, and leads and coordinates the Department's Quagga/Zebra Mussel Project which focuses on prevention, containment, early-detection monitoring, outreach and education, and coordination within California, as well as with national efforts. Martha holds a B.S. and M.S. in Conservation Biology and began her career as a fisheries biologist.

**Update: Quagga Mussel Response for the Mid-Snake River, Idaho – 1:15PM to 1:40PM**

Nic Zurfluh, Government of Idaho

This presentation will focus on the five main pillars of the Mid-Snake Quagga Mussel response, highlighting the strategies employed for verification of detection, communication, containment, delimit survey, and treatment plan.

Nic Zurfluh is the Bureau Chief for the Invasive Species, Noxious Weed and Range Programs for the Idaho State Department of Agriculture.



**Rapid Response to Aquatic Invasive Species European Water Chestnut Rapid Response Program in Welland, Ontario – 1:40PM to 2:05PM**

Katie Church, Invasive Species Centre

European water chestnut is an annual aquatic plant that was brought to North America to be used as an ornamental water garden plant. It has since spread throughout the eastern United States and populations continue throughout Quebec and Eastern Ontario. Most notably in the Ottawa River at Voyageur Provincial Park. The Invasive Species Centre created the European Water Chestnut Rapid Response Program in 2021. The program was a response to a local paddler EDDMapS report of European water chestnut (EWC) in 2020 in the Welland River in the Niagara Region on Ontario. Using a small team of five, manual removal takes place during peak growing season, pulling all visible annual growth which prevents seed drop. The program has successfully run for three years seeing over 50% reduction year to year. This presentation will highlight the building of a Rapid Response program and the ways in which local community and partner collaborations make the program possible.

Katie Church is the coordinator for the Invasive Species Centre's (ISC) European Water Chestnut Rapid Response Program in Welland, Ontario. She has worked in aquatic invasive plant monitoring and management for several years including supporting Hydrilla and Water soldier monitoring by the Ministry of Natural Resources and the Ontario Federation of Anglers and Hunters. Katie also coordinates the ISC's Don't Let it Loose campaign which prevents the introduction and spread of invasive species through the Aquarium and Pet Trade. She has also supported work on invasive species inventory data and the creation of multiple Invasive Species Management plans for municipalities across Ontario.



Katie holds a diploma as a Natural Environment Technician in Conservation and Management from Sault College and a Graduate Certificate in Ecosystem Restoration from Niagara College. Prior to working at the ISC, Katie was an Invasive Species Technician at the Royal Botanical Gardens in Burlington, Ontario and worked for the Hamilton Conservation Authority. Her extensive experience in the field and hands-



on conservation efforts through management and restoration fuels her passion to inspire individuals to actively participate in environmental stewardship in their local communities.

**--- 25 MINUTE BREAK & POSTER SESSION ---**

**Alberta Wild Boar Control Program Update – 2:30PM to 3:00PM**

Hannah McKenzie, Government of Alberta

This talk will provide an update on the Alberta wild boar control program, and an overview of wild boar in Alberta. Hannah will review how they got here, what we know about their current distribution, and the threat they pose to agriculture, the environment, and the health of both animals and humans. She will also talk about the collaborative actions the Alberta Government and other partners are taking to protect Alberta from this destructive invasive species.

Hannah graduated from the University of Alberta with an MSc in Mathematical and Statistical Biology and an MSc Applied Mathematics. Prior to taking on her current role as Wild Boar Program Specialist, Hannah worked with the Alberta Aquatic Invasive Species program along with her K9 partner, Seuss. Hannah employs her quantitative skills to support evidence-informed policy and program decisions. She lives on an acreage near Innisfree with her husband, dogs and chickens.



**Tackling Chronic Wasting Disease in Wildlife Populations in Alberta – 3:00PM to 3:30PM**

Dr. Anne Hubbs, Government of Alberta

Chronic wasting disease (CWD) is a fatal disease affecting deer, elk, moose, and caribou that can cause population declines in these wild cervids. The rate of spread and prevalence in Alberta is greater than that of some other jurisdictions in Canada and the U.S., with more than 70% of male mule deer CWD positive in some wildlife management units. Without effective management, the disease has the potential to threaten the health and sustainability of wildlife, food safety for Indigenous peoples and recreational hunters, success of commercial outfitters, government revenue for wildlife programs and the viability of the agricultural industry. Management of CWD is one of the greatest challenges facing wildlife management agencies today. In this presentation, she will discuss how the Alberta Government and university researchers are working together to develop innovative approaches and tools to address

the biological, social, and economic challenges of CWD. Anne will also briefly discuss findings from recent research on vaccines, CWD persistence in the environment, and more.

Dr. Anne Hubbs has worked for the Alberta government for over 20 years as a Senior Area Wildlife Biologist, Big Game Specialist for the province and most recently, as the Provincial Wildlife Science Specialist for Environment and Protected Areas (EPA). She works closely with wildlife managers and researchers across North America on species conservation issues, innovative approaches to monitor wildlife, and managing disease risk. She is co-lead of a team of university researchers, graduate students, and government biologists who are developing tools to help wildlife agencies effectively manage chronic wasting disease (CWD). Anne is especially passionate about conservation, bighorn sheep, travel, and outdoor adventure.



**Closing Remarks for Day 2 – 3:30PM to 3:35PM**

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