Canadian Weed Science Society
Société canadienne de malherbologie
Bulletin

September 2025

Bull Thistle,
By Marinda DeGier

Contents

President's Message

I hope this message finds you well and that your field season has been both productive and rewarding, with some well-deserved rest along the way. It's hard to believe how quickly the summer has passed, but as always, our Society has remained active and engaged behind the scenes.

I'd like to take this opportunity to thank all Board members and volunteers whose time and dedication continue to shape and strengthen our Society. I'd also like to extend a warm welcome to Erin Zimmerman, who has been hired to assist with the design and production of our newsletters.

I am pleased to report that this past February we had a well-attended and engaging joint meeting with the WSSA in Vancouver, it was great to see all of the CWSS members in attendance. It is always a pleasure to join with other societies and gain new insights. I'm especially pleased to report that preparations for our **2025 Annual General Meeting** to be held **November 3–6 in Gatineau, QC** are well underway. This year's theme, "*Biocontrol, Biosurveillance and Biodiversity,*" promises a dynamic and interdisciplinary program. Expect an engaging plenary session and workshops that foster learning across weed science, invasive plant management, and the interconnected fields of biocontrol and biosurveillance. Our Local Arrangements Committee is putting together a thoughtful and inclusive agenda to appeal to our membership and hopefully also attract many new attendees.

New this year, we're excited to introduce a dedicated **Industry Updates** session. This will provide companies the opportunity to share relevant developments such as new minor use registrations, herbicide resistant seed research, or novel formulations. These talks are expected to be concise 5–10 minute presentations. We encourage presenters to focus on informative content and avoid promotional material or minor label updates. More academically focused presentations should continue to be submitted through the regular research sessions.

I'm also pleased to announce that the **call for award nominations** is now open. Please visit our website (www.weedscience.ca) for award descriptions and consider nominating a deserving colleague. We want to see nominations for all of our awards this year, especially the graduate student scholarships. **Submissions are due October 1, 2025**. We are proud to introduce a new award this year, the **CWSS-SCM Outstanding Early Career Professional Award**, created both to honour the memory of members we've lost and to recognize exceptional professionals who are still within ten years of completing their terminal degree.

Finally, we are in the process of hiring a new Executive Assistant. We're looking for a dynamic, well-organized individual to help support the Society's operations. If you or someone you know may be interested in the position, please reach out to me directly at Robert.Nurse@agr.gc.ca. The interviews will commence soon and we hope to be able to announce who the successful candidate is prior to the November meeting.

Meeting registration is now open, so please visit our website for more details. I look forward to reconnecting with you this November in Gatineau.

As always, if you have questions, comments, or suggestions, please don't hesitate to reach out.

~Robert Nurse

Submissions to the Canadian Weed Science Society Bulletin

The CWSS/SCM Bulletin will be published twice per year (March & September). Please submit items to be included in those issues by February 1st and August 1st, respectively.

Members are invited to send submissions in the form of news, upcoming events, notices, essays, articles, book reviews, photos, or other items related to weed science or the interests and activities of the membership.

Submissions should be sent to: Erin Zimmerman at weedbulletin@gmail.com

Please submit all images as separate jpeg files with related captions in the main text.

A word from Vice-President Andrew McKenzie-Gopsill:

"Members of the Global Plant Council, which Plant Canada is a member of and by extension the CWSS-SCM, recently published the attached editorial on the importance of joining scientific societies. They argue for the vital role scientific societies play in addressing the global challenges we face including climate change, food insecurity, and declining scientific funding. The authors present possible solutions to deal with declining society participation and how to increase the relevancy of scientific societies. See the link below for more information."

https://globalplantcouncil.org/strengthening-the-future-of-science-why-joining-a-scientific-society-matters/

Canadian Journal of **Plant Science**

Editor-in-Chief: Dr. Youbin Zheng, University of Guelph

Section Editors: Dr. Eric Page, AAFC (Weed Science); Dr. Bourlaye Fofana, AAFC (Horticulture Science); Dr. Ben Thomas, AAFC (Agronomy)

Proudly affiliated with the Canadian Weed Science Society / Société canadienne de malherbologie.

Visit our 2025 issue and follow us here: BlueSky, X (Twitter)

CJPS Publications by CWSS-SCM Members in Volume 105

Charles M. Geddes, Eric R. Page, and Jichul Bae. 2025. Forging new paths to manage herbicide-resistant weeds. https://doi.org/10.1139/cjps-2024-0190

Brent D. McCallum, Virginia Dickison, Charles M. Geddes, Vincent A.D. Hervet, Meghan Vankosky, David Kaminski, Martin Entz, and T. Kelly Turkington. 2025. A history of community-based initiatives that led to crop improvement and protection in the Canadian prairies. https://doi.org/10.1139/cjps-2024-0069

Sara L. Martin. 2025. Changing environment, changing genes: insights from weed genetics and genomics. https://doi.org/10.1139/cjps-2024-0186

Eric R. Page, Sydney Meloche, Alyssa Thibodeau, Meghan Moran, and Brian Caldbeck. 2025. Residue management and overwinter survival in winter canola (*Brassica napus* L.). https://doi.org/10.1139/cjps-2024-0079

Victoria A. Marchesini, Michelle Hubbard, Shaun Sharpe, Jeff Schoenau, Zakir Hossain, Mario Tenuta, Fernanda Gouvea Pereira, Sherrilyn Phelps, Sarah Anderson, and Mike Brown. 2025. Field surveys of chickpea plant damage and association with biotic and abiotic factors in Saskatchewan during 2021–2023. https://doi.org/10.1139/cjps-2024-0194

Janelle M. MacKeil, G. Christopher Cutler, and Scott N. White. 2025. Weed seed granivory by *Gryllus pennsylvanicus* and its population dynamics in lowbush blueberry fields. https://doi.org/10.1139/cjps-2025-0014

Maya Worthing, Aaron Mills, and Andrew McKenzie-Gopsill. 2025. Reduced canopy cover and development compromises weed suppression by buckwheat in cover crop mixtures. https://doi.org/10.1139/cjps-2024-0117

Charles M. Geddes, Mattea M. Pittman, Shaun M. Sharpe, and Julia Y. Leeson. 2025. Baseline survey of protoporphyrinogen oxidase inhibitor-resistant kochia (*Bassia scoparia*) in western Canada. https://doi.org/10.1139/cjps-2024-0219

Michelle Hubbard, Maria Erika Pamisaran, and Shaun M. Sharpe. 2025. Response of chickpea varieties to drought stress and Ascochyta blight, caused by *Ascochyta rabiei.* https://doi.org/10.1139/cjps-2025-0044

Tyler MacLean, Andrew McKenzie-Gopsill, Travis J Esau, and Scott N White. 2025. Confirmation of hair fescue (*Festuca filiformis*) suppression by clethodim in lowbush blueberry (*Vaccinium angustifolium*). https://doi.org/10.1139/cjps-2025-0040

SAVE THE DATE! ...for our 2025 CWSS-SCM Annual Meeting: Biocontrol, Biosurveillance and Biodiversity

What better way to celebrate the end of the field season than with the 2025 CWSS-SCM annual meeting?

From November 3-6, 2025 we look forward to seeing you all at the beautiful Hilton Lac-Leamy in Gatineau, QC. The venue is situated on the shores of Lac Leamy with direct connections to Casino du Lac-Leamy. The Canadian Museum of History is within five kilometres, and downtown Ottawa is seven kilometres away. The hotel features indoor and outdoor year-round pools, so be sure to bring your swimsuit.

While all perspectives and prospective speakers are welcomed, this year's Local Arrangements Committee chose to theme the meeting around the three B's of our professions: Biocontrol, Biosurveillance, and Biodiversity. We hope that you will find these topics engaging and varied enough to provide something for everybody!

We all know that this society thrives with new ideas and fresh perspectives, and as such we hope that each and every one of you will spread the word about this event. We want to see regular and new faces at this event, from graduate students to field technicians to industry professionals; the more the merrier! On top of our usual weed science community, we are inviting invasive plant researchers and investigators working at the intersection of weed-insect interactions, and other biotic interactions for the control of weeds and invasive plants.

This year's event will also feature: organized trips to the Ottawa Research and Development Centre and local attractions, speedy presentations, trivia night, plenary sessions, workshops, and the ever-popular photo contest with money prizes! Send your photos early!

- Room rates are anticipated to be approximately 289$ (two queen beds).
- Registration for the event can be done here.
- Calls for papers and presenters will go out shortly.
- Calls for Awards and scholarships can be seen here.

We look forward to seeing you all in November!

If you are a researcher, please think about nominating a colleague for one of the society awards, and encourage your students to apply for a scholarship (membership to the CWSS/SCM required) or award.

Dr. Peter Sikkema Honoured

By Nader Soltani

We are proud to announce that Dr. Peter Sikkema, a past president of the Canadian Weed Science Society, has been awarded one of the highest honors in Canadian agriculture: his induction into the Canadian Agricultural Hall of Fame.

Dr. Peter Sikkema dedicated his career to teaching diploma students, advising graduate students, and conducting applied field research to address weed management issues on Ontario farms. Through his research program, Peter developed crop-by-weed species specific weed management programs that minimize crop yield loss due to weed interference and increase net returns for producers.

Peter was the first to confirm a glyphosate-resistant weed biotype in Canada; glyphosate-resistant giant ragweed in Essex County, Ontario in 2008. Since then, his research has shaped best management practices for managing glyphosate-resistant weeds (Canada fleabane, common ragweed, giant ragweed, and waterhemp) in corn, soybean, and winter wheat. The weed management strategies developed by his team have been implemented on millions of acres across Ontario and beyond resulting in reduced weed seed return to the soil, increased crop yield, and higher net returns.

Peter is known internationally for his research on weed management in dry bean production. His innovative research demonstrated that dry bean market classes respond differently to herbicides, leading to market class-specific weed management programs. Peter's team has secured more than 100 registrations through Canada's minor use program, most of them for weed control in dry beans. These new registrations are of tremendous value to the Ontario dry bean industry.

Peter has completed important research on crop yield loss due to weed interference. Through field research, the rapid decline in corn and soybean yield due to early weed interference was documented. This information was used to transform weed management recommendations in the province.

Peter has been a dedicated educator and mentor. He has taught more than a thousand diploma students and advised more than forty graduate students. Many of the students Peter taught/advised have gone on to influential roles in Canadian agriculture. His students describe him as a demanding, engaging, and supportive professor.

For more than three decades, Peter has worked directly with farmers. Through one-on-one consultations, field visits, and hundreds of extension presentations, he has helped growers optimize herbicide inputs, improve weed control, increase crop yield, and enhance crop profitability. Farmers across Ontario and beyond respect him for his knowledge, honesty, and genuine commitment to their success.

Peter has published more than 450 peer-reviewed manuscripts in his career. He is ranked among the top researchers globally in terms of impact and productivity. Peter's achievements have earned him numerous national and international honours throughout his career, including the fellow award from four scientific societies.

Outside of his university responsibilities, Peter has given generously to his community. He has coached more than 30 youth sports teams (hockey, soccer, and baseball), served on church council, and was a member of the board of directors of Chatham Christian School for more than 15 years.

The Canadian Agricultural Hall of Fame celebrates individuals who have made exceptional, lasting contributions to Canadian agriculture. Dr. Peter Sikkema's induction stands as a testament to a career defined by scientific excellence, selfless service, and an unwavering commitment to farmers.

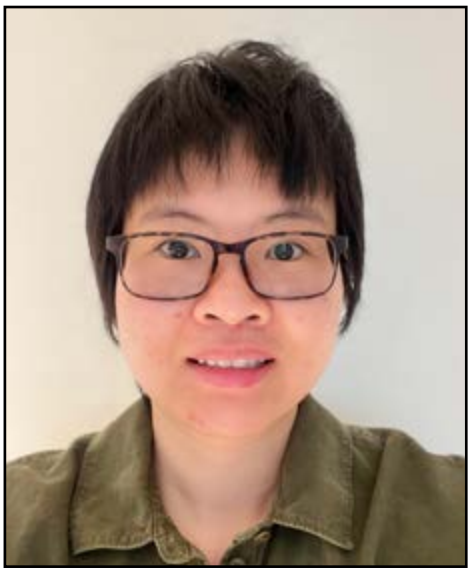
Member Profile – Dr. Isabelle Aicklen

I recently started my role as an assistant professor of field crop weed management at the University of Guelph Ridgetown Campus. My background as a weed science researcher has been primarily focused on characterizing new herbicide resistance cases, understanding molecular mechanisms of herbicide resistance, and identifying efficacious control strategies for challenging weed management issues. As part of my graduate studies, I characterized synthetic auxin herbicide resistance in a population of *Amaranthus powellii* (green pigweed) from Ontario. This project gave me the opportunity to investigate a herbicide resistance issue at the field level while also aiming to characterize the mechanism of resistance at the molecular level.

I look to continue this work in my current role with my research program focused on identifying and optimizing weed management strategies for dry bean, corn, soybean, and cereal production in Ontario. Dry bean weed management is particularly challenging due to significant herbicide limitations and crop sensitivity. Some of my current projects are focused on evaluating new herbicide options for weed efficacy and crop tolerance in dry bean market classes and evaluating desiccation tactics to improve harvestability. In corn, my current research is evaluating herbicide synergy between photosystem-II inhibitors and HPPD-inhibitors, and evaluating crop tolerance when too many spray additives are tank mixed. Finally, in soybean, my current projects are evaluating herbicide burndown options for glyphosate-resistant Canada fleabane, and control of volunteer Enlist corn in E3 soybean.

Looking to the future, I plan to build upon my current research program by incorporating herbicide strategies with other weed control tactics (i.e., cover crops, mechanical weed control, and new technologies) to preemptively identify solutions to emerging challenges. The continuous threat of herbicide resistance, changing climatic conditions, and new weed species, threatens the effectiveness of herbicides as a standalone solution to managing weeds, thereby creating a need for new solutions. My intention for the program is to help identify suitable tactics from existing tools and to advocate for the development of new tools to effectively manage weeds so that growers can maximize their crop yields and maintain profitability.

Member Profile – Dr. Huong Nguyen



Dr. Huong Nguyen has joined the Department of Plant Science at McGill University as an Assistant Professor in Weed Biology and Integrated Weed Management (IWM).

Dr. Nguyen's research program focuses on developing cropping system strategies that reduce herbicide reliance while maintaining long-term farm sustainability and ecological services. Her work emphasizes weed community dynamics and diversifying the weed control toolbox. She uses field experiments, lab and greenhouse trials, and modeling to support integrated weed management in diversified systems.

Dr. Nguyen is especially interested in cross-disciplinary work. Her lab aims to create practical tools that support real-world decision-making, especially in the context of Quebec's evolving agricultural landscape. She is currently seeking collaborators interested in:

- Cropping system diversification (e.g., crop rotations, cover crops, intercrops, livestock integration) and biological approaches (e.g., allelopathy, microbial inoculants),
- Incorporation of robotics and precision technologies into weed management,
- Effects of weed management practices on beneficial organisms and ecosystem services, and
- Weeds as resources: ecological roles and potential valorization

Her research philosophy emphasizes holistic approaches that integrate ecological understanding with practical tools. In mentorship, she values clarity, accessibility, and modeling the behaviors she hopes to see in her group, fostering an environment where students feel supported and empowered to take ownership of their work. More details on her research philosophy and mentorship structure are available at: https://www.mcgill.ca/plant/nguyen-huong

Student Profile – Saanchi Singh

My name is Saanchi Singh, and I'm a first year master's student jointly working with the Canadian Food Inspection Agency (CFIA) and Carleton University. I work under the supervision of Dr. Leonardo Galindo-Gonzalez (CFIA) and Dr. Catherine Cullingham (Carleton). I completed my undergrad in Biochemistry at the University of Waterloo, where I gained experience working in agricultural research labs through the co-op program.

My research focuses on developing a DNA metabarcoding protocol to detect noxious weed seeds in the soil seed bank and bulk, commodity seeds, with the goal of improving weed seed detection efficiency using high-throughput sequencing technologies (HTS). Noxious seeds pose a significant threat to Canadian trade and agriculture, costing an estimated $2.2 billion annually in weed management. The current regulatory framework relies on morphological characterization of noxious seeds for their identification, which is technically challenging since commodities and closely related species often produce phenotypically similar seeds. When seeds are indistinguishable, they are often germinated to determine their identity, prolonging an already time-sensitive process. This also makes morphology-based identification of noxious seeds difficult to implement for soil seed banks, which in turn prevents farmers from using in-season management practices. DNA metabarcoding, on the other hand, uses unique polymorphisms in standardized gene regions for unambiguous simultaneous multi-species identification.

As I work through this project, some key questions that I am interested in answering include: how many samples can we test together without compromising resolution while still taking advantage of HTS multiplexing? Will we still able to detect noxious weed seeds at the highest dilution if bulk seeds are also mixed with close relatives of noxious seeds? Can this methodology be applied to degraded seed samples from the soil bank? As a first step, we identified and validated barcode regions for several of our target species. Currently, I am performing spike experiments to determine the technology's limit of detection by testing dilutions of weed seeds mixed in bulk, commodity seeds. After sequencing these seed mixes with Illumina, we found that we were able to reliably detect our target weed even at the highest tested dilution of 1:500. I am now continuing to test higher dilutions to determine the true limit of detection. Once established, I will be adding close relatives of the targets and species of other genera to the seed mixes to determine the sensitivity of the technology. Additionally, I plan on applying the methodology to identify seeds from the soil bank to evaluate its efficacy on potentially degraded samples. Some of the species I'm testing the metabarcoding protocol on include jointed goatgrass, false cleavers, wild mustard, and wild oat.

Another project I am working on is designing extended DNA barcodes (kb long) that span multiple gene regions and can be sequenced as a single fragment using long-range sequencing technologies like Oxford Nanopore. We are calling these extended DNA barcodes macro-barcodes. This approach will streamline noxious seed detection by avoiding the need to amplify and sequence conventional barcodes separately, which is often required since there is no universal DNA barcode for plants. We tested this methodology with eight *Amaranthus* species and we found that we can distinguish all eight species. For more robust testing, I am currently macro-barcoding several accessions of multiple other *Amaranthus* species. Eventually, I am interested in implementing macro-barcoding within the metabarcoding pipeline.

I'm looking forward to being part of CWSS and meeting fellow weed science professionals!

Student Profile – Jacob Weedmark

Jacob and his 11-week-old puppy Mapple

My name is Jacob Weedmark, and I completed my undergraduate degree in Biochemistry and Biotechnology at Carleton University. I am currently conducting my master's research through Carleton's Research Affiliate Program, in collaboration with the Canadian Food Inspection Agency (CFIA). My work takes place in the Molecular Identification Lab, under the supervision of Dr. Leonardo Galindo Gonzalez, the Principal Investigator. My research focuses on the development of molecular diagnostic tools for herbicide resistance in wild oat (*Avena fatua*), a major agricultural concern in Canada's prairie provinces.

Herbicide resistance in wild oat (*Avena fatua*) poses a significant challenge to agriculture in the prairie provinces of Canada. This largely affects cereal crops like wheat and barley. Annual economic losses attributed to wild oats are estimated to reach as high as $500 million, reflecting the cumulative losses across all affected sectors. The most pressing concern lies in resistance to Group 1 and Group 2 herbicides, driven largely by the repeated and prolonged use of these chemical controls. Group 1 herbicides inhibit acetyl-coenzyme A carboxylase (ACCase), while Group 2 herbicides target acetolactate synthase (ALS), both essential enzymes in plant metabolism. A comprehensive survey conducted between 2014 and 2017 (Beckie *et al.,* 2019) found that 69% of wild oat samples collected and received from fields across the prairie provinces exhibited herbicide-resistant biotypes. Among these, 62% were resistant to Group 1 herbicides, 34% to Group 2 herbicides, and 27% exhibited multiple resistance to both groups.

Currently, resistance is diagnosed through laboratory testing of farmer-submitted seeds, where dose-response curves are generated to determine resistance levels. This process can take up to six months, limiting the ability to implement timely in-season management. Our current research focuses on developing molecular diagnostic tools for the early detection of herbicide resistance in wild oat populations by investigating known mechanisms of resistance, including target site resistance (TSR) and non-target site resistance (NTSR). Target site resistance arises from a mutation in the gene encoding the herbicide's target protein. This mutation alters the protein's conformation just enough to reduce the herbicide's binding efficiency, while still preserving the protein's normal function in the plant. Non-target site resistance enables plants to survive herbicide application without mutations in the target genes. Instead, it involves changes in gene expression that lead to enhanced herbicide metabolism, reduced translocation, or altered movement within the plant, all of which decrease the herbicide's effectiveness.

Preliminary findings from dose-response experiments revealed that 10 wild oat populations, collected from Alberta, Saskatchewan, and Manitoba, exhibited different levels of resistance to various herbicides. Dose-response data indicated that specific populations showed resistance primarily to group 1 herbicides, with notable resistance observed in populations exhibiting known mutations at positions 2088 (Cys to Arg) and 2078 (Asp to Gly) in the ACCase gene. Nanopore sequencing confirmed these mutations and provided allele-specific insights, revealing their allelic frequencies. The hexaploid nature of wild oats complicates herbicide resistance, underscoring the need for advanced molecular diagnostics to manage this issue effectively.

We are currently extending this analysis pipeline to investigate resistance to Group 2 herbicides through mutational analysis of the same populations at the ALS gene. A nanopore pipeline, as previously mentioned, has been developed for identifying mutations in ACCase and assessing allelic variation based on mutations reported in the literature. We also plan to generate faster pipelines using technologies such as SNapShot.

Non-target site resistance will also be investigated using RNA-seq to analyze gene expression in wild and susceptible populations, both with and without herbicide application. These populations will be selected from those that exhibited resistance but lacked target site mutations, as determined by our nanopore analysis. The resulting data, alongside previous findings, will be the foundation for the development of molecular tools for identifying NTSR mechanisms.

Taken together, this research marks a pivotal step in modernizing herbicide resistance diagnostics in wild oats. The resulting molecular tools will reduce turnaround times and enable more precise, field-relevant interventions, helping to mitigate economic losses.

The Molecular Identification Research Lab (MIRL) team.

Left to right: Saanchi Singh, Noah Armstrong, Jacob Weedmark, Gillian Cloot, Andrée Ann Dupras, Leonardo Galindo Gonzalez

Posting: Master's Student in Weed Science – 2026

Research project: Palmer amaranth in Canada: Competitiveness and early detection

Rationale: Amaranth species are prevalent in warm-seasoned row crops like corn (*Zea mays*) (Heap, 2025a) and soybean (*Glycine max*) (Heap, 2025b). The northward expansion of prolific herbicide-resistant amaranth species into Canada is a threat to crop production (Agriculture and Agri-Food Canada, 2025). Water stress could limit the growth and reproductive potential of waterhemp (*Amaranthus tuberculatus*) (Sarangi et al., 2016), while temperature could limit the growth of Palmer amaranth (*Amaranthus palmeri*) (Ward et al., 2013). Palmer amaranth photosynthetic rates are most efficient at temperatures around 38°C, but when temperatures drop to about 24°C, Palmer amaranth's photosynthetic rates are reduced by 50% (Ward et al., 2013). This research aims to collect relevant information to evaluate competition between *A. palmeri* and *A. tuberculatus*. Another objective of this research project is to advance methodologies for detecting the invasive Palmer amaranth and existing waterhemp pollen using environmental DNA (eDNA) analysis for early detection.

References

Agriculture and Agri-Food Canada, 2025. The amaranths are coming. URL: https://agriculture.canada.ca/en/science/story-agricultural-science/scientific-achievements-agriculture/amaranths-are-coming (accessed 6.21.25).

Heap, I., 2025a. Herbicide resistant weeds in corn (maize) globally. Int. Herbic.-Resist. Weed Database. URL: https://www.weedscience.org/Pages/crop.aspx

Heap, I., 2025b. Herbicide resistant weeds in soybean globally. Int. Herbic.-Resist. Weed Database. URL: https://www.weedscience.org/Pages/crop.aspx

Sarangi, D., Irmak, S., Lindquist, J.L., Knezevic, S.Z., Jhala, A.J., 2016. Effect of water stress on the growth and fecundity of common waterhemp (*Amaranthus rudis*). Weed Sci. 64, 42–52. https://doi.org/10/f77rdb

Ward, S.M., Webster, T.M., Steckel, L.E., 2013. Palmer Amaranth (*Amaranthus palmeri*): A Review. Weed Technol. 27, 12–27. https://doi.org/10/gddc7p

Goals:

1) Compare the competitiveness of palmer amaranth (*A. palmeri*) vs. waterhemp (*A. tuberculatus*) in canola (*Brassica napus*), wheat (*Triticum aestivum*) and soybeans (*Glycine max*).

2) Develop species-specific (between *A. palmeri* and *A. tubeculatus*) markers to be tested on environmental DNA (eDNA) as early warning system of invasion by palmer amaranth

Supervisor: Dr. Huong Nguyen. McGill University, Sainte-Anne-de-Bellevue, Québec.

Co-supervisors: Dr. Marie-Josée Simard and Dr. Martin Laforest (Agriculture and Agri-Food Canada (AAFC) St-Jean-sur-Richelieu. Saint-Jean-sur-Richelieu Research and Development Centre | Directory of scientists and professionals

The student must be available to conduct sampling during the summer (mid-April – mid-September) at the AAFC research center in Saint-Jean-sur-Richelieu. Limited assistance from AAFC technicians is available.

Experimental sites: Greenhouses (St-Jean-sur-Richelieu), about 50 km from McGill University Macdonald campus.

Master's project duration: 2 years (2026–2028). The student may join the project in January or May 2026.

Start of the Master's program: To be determined with the student (January or May 2026).

Salary: minimum $20,000/year for 2 years. However, the student will be encouraged and supported to apply for additional Master's scholarships. Tuition and fees will be covered.

Desired qualifications:

- Interest and experience in research: attention to detail, organizational skills, and commitment to high-quality work.
- Valid driver's license and interest in working in greenhouses.
- Bachelor's degree in agronomy or any other relevant field.
- Excellent academic record (GPA > 3.5/4.33 an asset).

How to apply: Submit a cover letter, a curriculum vitae and an unofficial transcript at https://forms.office.com/r/56rfZkcdye

Deadline: **September 1, 2025 (applications received after this date will be considered until the position is filled)**. **Note: Only selected candidates will be contacted for an interview.**

All qualified applicants are encouraged to apply; however, in accordance with Canadian immigration requirements, Canadians and permanent residents will be given priority.

Photo Contest

The purpose of the contest is to encourage CWSS/SCM members to hone their photographic skills and to make excellent weed and weed management images available for use by CWSS/SCM members and in CWSS/SCM publications. It is sponsored by Corteva.

Pictures are judged on their originality, visual quality, subject relevance, and impact. The three best photos submitted in each of three categories are recognized. First, second, and third place winning photos are selected by a panel of judges selected by the Photo Contest Coordinator of the LAC. The following are this year's winners.

CATEGORIES:

1. Agriculture and Forestry: Includes general agriculture and forestry pictures in which an individual botanical subject is not the prime theme of the image. For example: production activities (seeding, spraying, cutting, cropping, etc.), forestry activities or general views (landscapes, sites, etc.). The strongest entries in this category will have an obvious tie to agriculture or forestry as opposed to being just nice landscapes.

1st – Good Timing by Jichul Bae

2nd – Clover in soybean by Sandra Flores Meija

3rd – Canola in April by Jichul Bae

2. Weeds: Includes pictures of plants (patches, whole individual or parts) considered as weeds. Images should demonstrate morphological characteristics and/or weed invasion/competition. For example, weed dispersal, vetch on evergreen, soybean field with common ragweed, resistant vs susceptible, etc.

1st – Common lamb's quarters by Gabriel Verret

2nd – A new friend by Sandra Flores Meija

3rd – Bull thistle – Gabriel Verret

3. Research in Action: Includes pictures of research activity whether it be in the lab, or in the field.

1st – How many weed scientists do you need to clean a harvester? by Sandra Flores Meija

2nd – Snow sniper by Jichul Bae

3rd – Canola weeds by Sandra Flores Meija

Overall People's Choice: Canola in April by Jichul Bae

Want to be part of the next photo contest?

For photos corresponding to one of the categories described above, please submit according to the following rules:

- Entries must be digital images in either jpg or gif format. Images must be large enough to produce an 8x10 print (3 megapixels). If using a phone camera, check to ensure that it will produce a file of 3 megapixels or more.
- Photos can be uploaded through the Annual Meeting registration process, accessed through the CWSS/SCM website. Photos can be uploaded during initial registration for the Annual Meeting and can be changed or uploaded later.
- If photos are submitted by email, each picture must be identified as: category_number_name_of_picture_name_of_photographer (e.g., 2_giant_ragweed_John_Smith.jpg). The filename must not contain spaces; underscores are to be used to separate words in the filename. The name of the picture should help to "tell the story".
- Cropping of pictures to improve composition is allowed, but photos should contain the original content only.
- Members of CWSS/SCM can submit a maximum of 3 pictures per category.
- Entrants agree to give non-exclusive rights of use of their photos to the CWSS/SCM.

Prizes: 1st place: $100, 2nd place: $50, 3rd place: $25, in each of the three categories. $100 for the People's Choice award.

Deadline: October 15th, 2025.

Photos can be sent to: Ethan Bertholet at ethan.bertholet@basf.com

"Soybean harvest with fall colour," by Laurence Durocher

From the 2023 Photo Contest.

CWSS-SCM Award Recipients at the CWSS-SCM/WSSA Joint Annual General Meeting in Vancouver BC, February 2025

Scholarships for PhD Students

1st Place Sponsored by Bayer Crop Science Canada

William Kramer, Colorado State University

2nd Place by Syngenta Canada

Natalie LaForest, University of Alberta

3rd Place Sponsored by CWSS-SCM

Joseph Zvomuya, University of Manitoba

Scholarships for MSc Students

1st Place Sponsored by Bayer Crop Science Canada

Uthpala Ekanayake, University of Manitoba

CWSS-SCM Outstanding Industry Member

Industry members comprise a significant part of the CWSS-SCM membership. Their contribution has been and will continue to be of great importance to the Society. Their interaction with members from the academic and public sectors is paramount to the well being of the weed science discipline.

Awarded to Chris Budd.

Excellence in Weed Science Award

To recognize excellence among active scientists, educators, regulatory and extension personnel in the area of weed science in Canada. Their contributions must be judged to have had a major impact on weed science or the agricultural industry in Canada. Sponsored by Corteva.

Awarded to Marie-Josée Simard.

CWSS-SCM Fellow

To honour members of CWSS-SCM who have made outstanding contributions to weed science and to the CWSS-SCM throughout their careers.

Awarded to Nader Soltani.

Nader Soltani speaks upon accepting the CWSS-SCM Fellow Award.

Canadian Journal of Plant Science Outstanding Weed Science Paper Award

Sulzback JRM, Borgato EA, Cutti L, Hill EC, Burns EE, Patterson EL (2024) Optimizing molecular assays for glyphosate and ALS-inhibitor resistance diagnostics in four weed species https://doi.org/10.1139/cjps-2024-0020

The Canadian Journal of Plant Science (CJPS) is the CWSS sponsored journal. The establishment of this award will help to encourage the CWSS membership to choose CJPS for publication of their research. This will also help increase our profile within the journal while potentially increasing the quality of the weed science manuscripts that are submitted.

Eric Patterson accepted the CJPS Outstanding Weed Science Paper Award from Rob Nurse.

Best Student Presentation Award

There are three student presentation awards and all CWSS–SCM student members giving an oral presentation will be automatically considered for this award. The winning presentations will be selected by a panel of judges appointed by the Local Arrangements Committee. Sponsored by Bayer Crop Science Canada.

1st Place – Vanessa Jones for "Understanding the role of soil microbiomes in invasive dynamics and ecological restoration outcomes in the Pacific Northwest." University of British Columbia, Vancouver, BC.

1st Place – Avi Goldsmith for "Evaluation of *Brassica carinata* A. Braun Crop Safety to Potential Herbicide Programs." Carolina State University, Raleigh, NC.

2nd Place – William Kramer for "Enhancing Herbicide Metabolism in Winter Wheat with Cloquintocet-mexyl." Colorado State University, Fort Collins, CO.

3rd Place – Pantha Azad for "LiDAR in Precision Agriculture: An Emerging Tool for Weed and Crop Growth Monitoring" University of Manitoba, Winnipeg, MB.

Best Poster Award

This award is to recognize the best posters presented at the CWSS–SCM annual meeting. All posters presented by members of the CWSS–SCM are automatically eligible for this award. The winning posters will be selected by a panel of judges chosen by the Local Arrangements Committee. Sponsored by BASF Canada.

1st Place – Transgressive segregation and the inheritance of paraquat resistance in Canada fleabane (*Conyza canadensis*). Hayley Hickmott, François Tardif, Martin Laforest, Istvan Rajcan, Sydney Meloche, Alyssa Thibodeau, Emma Beda, Eric Page.

2nd Place - False Cleavers (*Galium spurium*) Biology: Understanding the Biology and the Populations. Breanne Tidemann, Charles Geddes, Sara Martin, Shaun Sharpe.

3rd Place - The Importance of Species Selection in Cover Crop Mixture Design. Andrew McKenzie-Gopsill, Aaron Mills.

CWSS-SCM Travel Enrichment Scholarship

The CWSS/SCM Travel Enrichment Experience Award(s) will provide CWSS/SCM graduate student recipients with a five-day, four-night educational experience of their choosing as described by each participating host. The award will broaden the recipient's exposure to weed science beyond their educational institution and provide the opportunity to experience weed science in a different province, research program, and/or organization. Each of three awards will consist of $5000 CAD to cover expenses related to the travel enrichment experience.

The objectives of the CWSS/SCM Travel Enrichment Experience Award(s) are:

- To provide CWSS/SCM graduate students with the opportunity to participate in a five-day, four-night educational experience with weed science professionals in a different province than that of their educational institution.
- To enhance the exposure of CWSS/SCM graduate students to different research programs, farming systems, and/or organizations.
- To develop and encourage networking opportunities between CWSS/SCM graduate students and weed science professionals.

2025 Recipients –

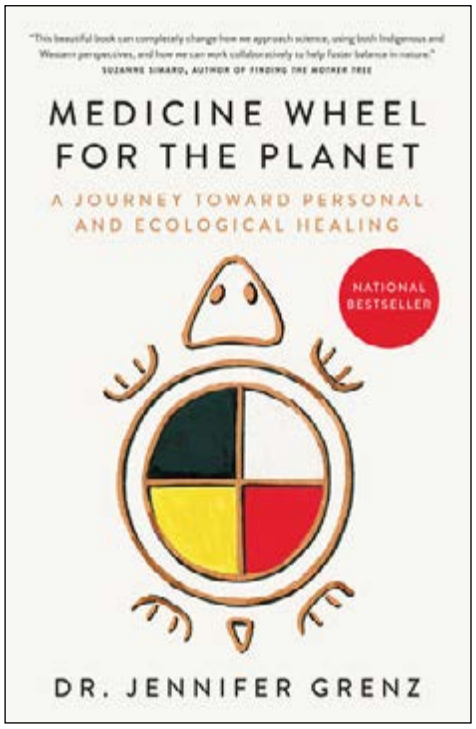
William Kramer, Colorado State University

Natalie LaForest, University of Alberta

Natasha Djuric, Cornell University

Review of *Medicine Wheel for the Planet*

"*Hello lambsquarters, why are you here and what's your story? What do you think of potato production and crop rotation in PEI?*"



These are not questions one typically hears when walking a crop field. In fact, that kind of talk might get you laughed out of a grower meeting or kicked off the farm. Yet in her new book, *Medicine Wheel for the Planet: A Journey Toward Personal and Ecological Healing*, Dr. Jennifer Grenz suggests that these are exactly the kinds of questions we need to start asking if we are to address the complex challenges facing agriculture and our world today.

Dr. Grenz is an Indigenous scholar and ecologist from the Nlaka'pamux First Nation and the community of Lytton, British Columbia. The peoples of the Nlaka'pamux Nation lived and travelled throughout the Thompson and Fraser rivers and valleys prior to colonization and forced relocation. Dr. Grenz's ancestral story is one of many woven throughout the book, which invites the reader on a journey toward developing an Indigenous ecology, one that integrates a relational, reciprocal, and respectful worldview into restoration ecology, vegetation management, and Western science.

Fittingly, Dr. Grenz divides her book into four-sections, one for each quadrant of the medicine wheel, emphasizing storytelling as a foundational method of knowledge transmission and critique of Western science. North for the knowledge-keepers; East for the beginner's mind; South for being a young knowledge-holder who can change the language, and finally West for synthesis. These sections mirror the phases of both personal and ecological healing. Dr. Grenz uses these sections of the book to describe the journey of joining her Western science-trained mind with her Indigenous heart and places strong emphasis on the oral tradition as a vital form of ecological knowledge.

A major theme throughout Dr. Grenz's book is the unlearning of colonization and the restoration of an Indigenous ecology to vegetation management. Dr. Grenz argues that Western science no longer values the oral tradition and stories of Elders and knowledge-holders often reducing Indigenous consultation to a token gesture. This undermines conservation efforts and fosters conflict especially in our own discipline, where students are trained to view all non-crop plants as inherently bad.

Rightfully, Dr. Grenz challenges this dichotomy of good plant/bad plant so common throughout weed science, restoration ecology, and conservation efforts. One of the first examples Dr. Grenz shares is the story of removing Himalayan blackberry from nearby a sensitive forest habitat. Through a combination of herbicides and hand-pulling, she and her team removed all the blackberry from the area only to return in the fall and find the site overrun by an invasive *Impatiens* species. Her efforts to remove the 'bad' invasive plant and return the ecosystem to a legacy state failed. Later on Dr. Grenz shares the evolution in her journey when she approaches a new site for invasive species management only to leave without removing a single plant.

These examples and more strongly resonated with me and my own challenges with weed science as I believe many "weedy" species to be important. Many so-called "weeds" offer ecosystem services: they cycle nutrients, stabilize soil, contribute to organic matter, and provide food sources for granivores and pollinators. Dr. Grenz shares her own cognitive dissonance when, after multiple failed attempts to attract butterflies to her garden with native species, she plants the invasive butterfly bush and finally succeeds. This is where Dr. Grenz emphasizes the need to experience the "Time of the Eagle" and embrace multiple worldviews and knowledge systems.

The Eden Ecology narrative of restoration ecology is consistently challenged throughout the book as a product of colonial thought. It was assumed by Europeans that when they arrived to North America the landscape was wild, when in reality it was managed in a particular way to provide for the people living there. This misreading of the "legacy" state is held up as an Eden that restoration projects seek to attain. In reality, the leaving of conservation areas to "nature" is doomed to fail and ignores the human interventions that sustain these ecosystems.

Here, Dr. Grenz argues it is humans that are the great balancers of the ecosystem and are essential for creating these legacy states. Dr. Grenz illustrates this through the contrast of the sacred ancestral site of the Cowichan People, Ye'yumnuts, and an adjacent Garry Oak Conservation Area. While the latter appeared to be left in this "legacy" state, it was overrun by *Symphoricarpos albus*, which had been previously managed through traditional practices of controlled burns. This system requires human intervention to maintain the Garry oak system in a desired state.

This perspective challenged my own assumptions growing up and exploring the wilderness of Eastern Canada. I often believed I was exploring ecologically balanced systems devoid of human activity but perhaps this is a false narrative and I was walking in landscapes shaped by humans over generations.

Overall, I found Dr. Grenz's arguments compelling and I am really encouraged that someone within the weed science discipline has the courage to challenge some of our dogma. I hope that many of the CWSS-SCM membership will also find Dr. Grenz's story enlightening and relatable even as it goes against many aspects of our Western education. Our discipline could gain a lot from applying the relational ecology and worldview argued for by Dr. Grenz to deal with many of the issues currently facing the Canadian agricultural system from climate change and unpredictable weather to herbicide resistance.

Imagine sitting down with a kochia plant 25 years ago and asking for its story. It may tell you how it is learning to fight off our efforts to control it. It is learning that through recombination it can adapt to our chemical herbicides. By asking weeds for their story and applying a relational, reciprocal, and respectful lens to weed science we could all be better stewards of the landscapes and agroecosystems we work in.

Andrew McKenzie-Gopsill, PhD
CWSS-SCM Vice-President
Research Scientist – Weed Science
Agriculture and Agri-Food Canada
Charlottetown Research and Development Centre

An Abbreviated History of the Canadian Weed Science Society

By Breanne Tidemann

(*For a full accounting of the history, see www.weedscience.ca/history – Many thanks to the authors of the official history for all the leg work in pulling this together.*)

The Canadian Weed Science Society traces its roots back to October of 1929. A conference was held in Edmonton called the "Conference on the Destruction of Weeds by Means of Chemicals" (Figure 1). Prior to that time, there was no organization of weed scientists in Canada. At that meeting, the attendees asked the National Research Council to appoint a committee to find solutions for weeds as problems in agriculture.

The National Research Council Committee was known as the Associate Committee on Weed Control and had various sub-committees. Dr. Robert Newton (University of Alberta) was the chairman with 14 other members from Manitoba, Saskatchewan, British Columbia, Ottawa, federal organizations, universities, and provincial organizations as well as representatives from the railways, Consolidated Mining and Smelting, and the Canadian Seed Growers Association. The group functioned as a research coordinating group that would intake and discuss research reports on weed control projects and also provided grant funds to support weed control.

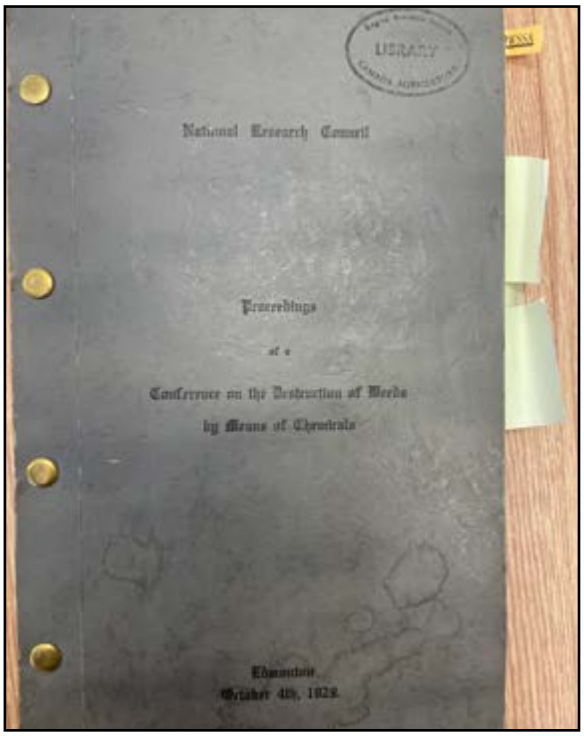


Figure 1: A photograph of the cover of the proceedings from the original 1929 meeting for weed science in Canada, held in Edmonton.

In 1935, there was a move to two 'sections' of the committee, split geographically by East and West. We do not have a clear understanding of how that decision was made or who made it. From that time forward, the divisions held separate meetings. At that point, there was also a shift from it being the Associate Committee on Weed Control by the National Research Council, to being the Associate Committee on Weeds by the Dominion Department of Agriculture and National Research Council.

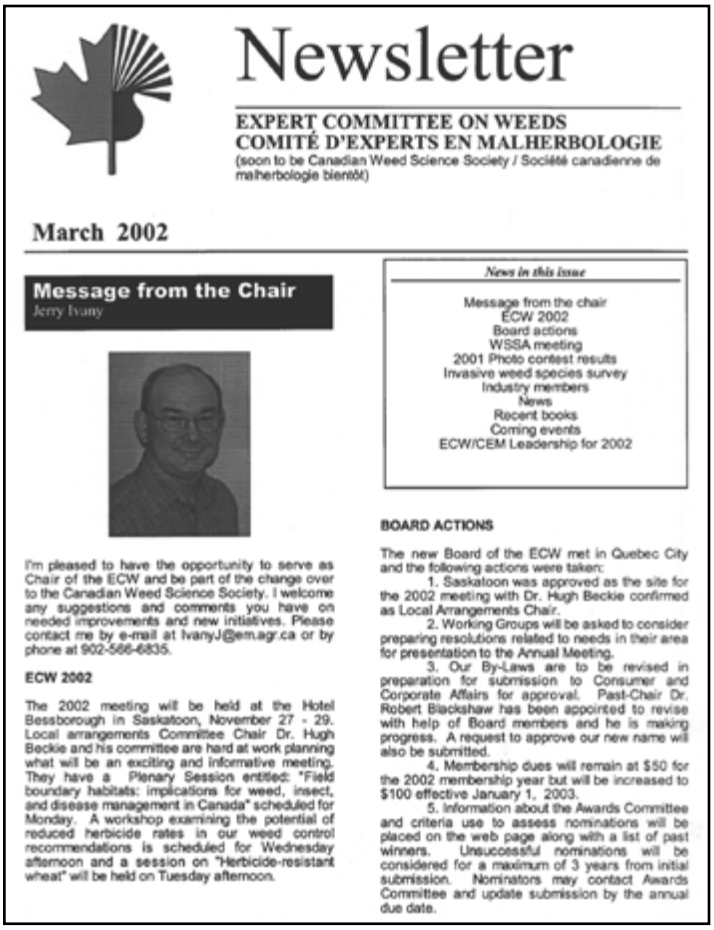
In 1939, the executive of the committee met and recommended to the Deputy Minister of Agriculture that the Associate Committee on Weeds should become a subcommittee of the National Advisory Committee on Agricultural Services. This recommended change was accepted. At this time, Dr. Robert Newton remained the chair of the committee, which was renamed again to the National Committee on Weeds, later shortened to the National Weed Committee. While there are conflicting reports on the membership, it appears that membership was reduced to representatives from universities and provincial and federal governments. In this iteration of the Committee, there was no one from industry. The National Committee on Weeds had also shifted away from the National Research Council and was a component of the Dominion Department of Agriculture through the National Coordinating Committee on Agricultural Services. Meetings were reduced by the group between 1939 and 1945, to the extent that the separate East and West sections had fallen out of use.

In 1947, the western section held its first meeting in Regina. They held meetings every year until 1953 and then every second year until 1961. The Eastern section held its first meeting in January 1948. Research reports from the Western and Eastern sections were published in 1954 and 1956, respectively. This concept appears to have been borrowed from the North Central Weed Control Conference. Within the geographic sections, there were two subcommittees – the Research Appraisal Committee and the Research Planning Committee.

In 1966, the National Weed Committee was transferred from the National Coordinating Committee on Agricultural

Services to the authority of the Research Branch of Canada Agriculture. In 1968, the committee was renamed the Canada Weed Committee with a lengthy list of terms of reference for the goals and objectives of the Committee. This committee had 15 members who were government appointed. In 1971, the fifteen member committee became known as the National Executive.

In 1977, there was yet another name change to being the Expert Committee on Weeds, and the committee reported to the Canadian Agricultural Services Coordinating Committee through the Canada Committee on Crop Production Services. While the membership did not fully agree with the Expert Committee name, it stayed in place for twenty-five years. The first computer-generated reports or abstracts were printed in 1978. The governing structure remained in place, providing some stability while other society-important happenings occurred. The Wild Oat Action Committee was appointed in 1973 and operated for 10 years. The Biology of Canadian Weeds series was started. The Quackgrass Action Committee was active with a workshop in 1987 and a symposium in 1990. A list of weed common names in Canada was published in 1969. In 1990, there was pressure to have the Expert Committee on Weeds merge with the Expert Committee on Pest Management (primarily insect-focused). Instead of a merger, some joint meetings were organized.



Newsletter

EXPERT COMMITTEE ON WEEDS
COMITÉ D'EXPERTS EN MALHERBOLOGIE
(soon to be Canadian Weed Science Society / Société canadienne de malherbologie bientôt)

March 2002

Message from the Chair
Jerry Ivany

News in this issue
Message from the chair
ECW 2002
Board actions
WSSA meeting
2001 Photo contest results
Invasive weed species survey
Industry members
News
Recent books
Coming events
ECW/CEM Leadership for 2002

I'm pleased to have the opportunity to serve as Chair of the ECW and be part of the change over to the Canadian Weed Science Society. I welcome any suggestions and comments you have on needed improvements and new initiatives. Please contact me by e-mail at IvanyJ@em.agr.ca or by phone at 902-566-6835.

ECW 2002

The 2002 meeting will be held at the Hotel Bessborough in Saskatoon, November 27 - 29. Local arrangements Committee Chair Dr. Hugh Beckie and his committee are hard at work planning what will be an exciting and informative meeting. They have a Plenary Session entitled: "Field boundary habitats: implications for weed, insect, and disease management in Canada" scheduled for Monday. A workshop examining the potential of reduced herbicide rates in our weed control recommendations is scheduled for Wednesday afternoon and a session on "Herbicide-resistant wheat" will be held on Tuesday afternoon.

BOARD ACTIONS

The new Board of the ECW met in Quebec City and the following actions were taken:

1. Saskatoon was approved as the site for the 2002 meeting with Dr. Hugh Beckie confirmed as Local Arrangements Chair.
2. Working Groups will be asked to consider preparing resolutions related to needs in their area for presentation to the Annual Meeting.
3. Our By-Laws are to be revised in preparation for submission to Consumer and Corporate Affairs for approval. Past-Chair Dr. Robert Blackshaw has been appointed to revise with help of Board members and he is making progress. A request to approve our new name will also be submitted.
4. Membership dues will remain at $50 for the 2002 membership year but will be increased to $100 effective January 1, 2003.
5. Information about the Awards Committee and criteria use to assess nominations will be placed on the web page along with a list of past winners. Unsuccessful nominations will be considered for a maximum of 3 years from initial submission. Nominators may contact Awards Committee and update submission by the annual due date.

Figure 2: The front page of the 2002 newsletter containing the president's address that was issued prior to the meeting where the Canadian Weed Science Society was officially formed.

The first joint meeting of the Eastern and Western Sections took place in December of 1993. Discussions began in 1993 to begin exploring the possibility of merging the western and eastern sections and only having national meetings. This suggestion was made by the National Executive and would support more national interaction, while also allowing exploration of whether the committee could be separated from the government oversight and authority. The view began to emerge that more could be accomplished in the discipline if the organization were independent and free-standing. A survey was prepared with 83 percent in favour. Approval was confirmed by the sections in December of 1994 and January of 1995, and the work began to join the two sections. The new interim board was elected in 1995-96 with a 12 member executive, with a primary responsibility to develop operational

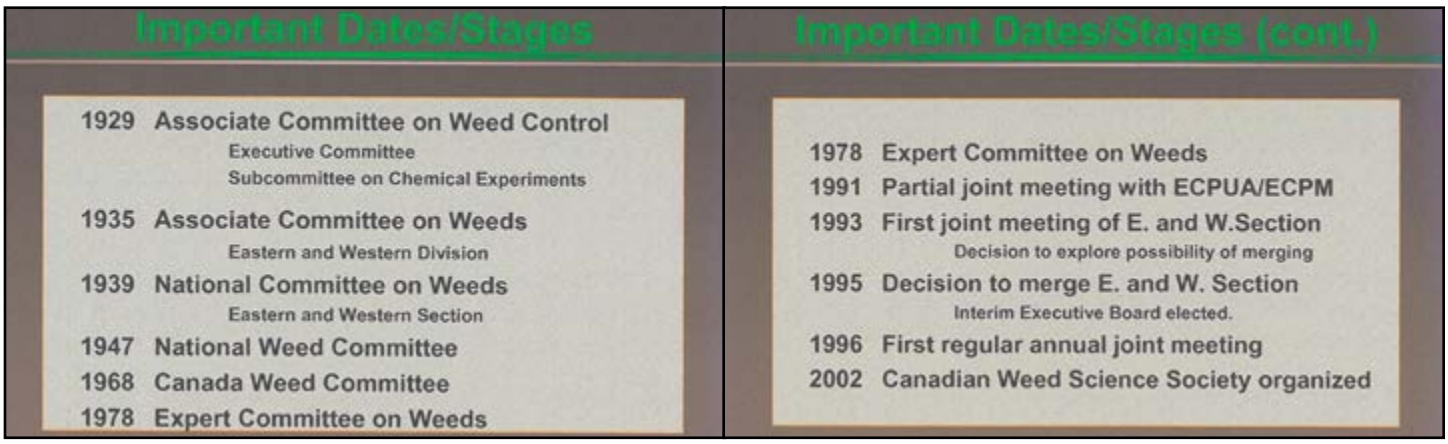


Figure 3: Slides depicting the important dates and stages of the CWSS from 1929-2002.

Figure 4: A picture of a slide showing the back of a herbicide canister with detailed depictions of optimal leaf stages for application timing.

Figure 5: A picture of a slide showing 4 jugs of "No-Weed" herbicide, formulations of MCPA, and possibly 2,4-D, based on the slide label.

Figure 6: A picture of a slide where the individual in the slide is surveying for weeds using a quadrat in a field, a scene familiar to all weed scientists.

guidelines. Working groups were established in 1997 and in 2000, nine groups were active.

In 2001 and 2002, much work was done in giving shape and content to a fully independent organization to be known as the Canadian Weed Science Society - Société canadienne de malherbologie (CWSS-SCM). The new name and by-laws were officially proclaimed on June 28, 2002. The inaugural meeting was held in Saskatoon in 2002 with a proclamation of the name via a de-topping of a Canada thistle. The newsletter prior to the meeting shows the excitement of the upcoming change to the society by the board and the membership (Figure 2). Meeting rotations between east and west, initiated with the first joining of the east and west sections continues (roughly) to this day. Occasional exceptions are made for joint meetings or other notable events.

From 2002-2011, the papers presented during the plenary session were published in a series call *Topics in Canadian Weed Science*. Working groups were disbanded in 2007 and replaced with program sections. Volunteer papers are presented annually. The Board of Directors underwent significant change in 2008 to improve the financial and structural stability of the society. The society has had small changes, but continues in this iteration to date. Since that time we've had a number of joint meetings, which helps draw more attendees, but also allows cost sharing as the expense of putting on annual meetings increases each year, while memberships shrink. The CWSS has had joint meetings with the Weed Science Society of America (2014, 2021 – virtual, and 2025), and the Canadian Society of Agronomy (2023), and has also hosted a joint plenary with Alberta Invasive Species Council (2015). There have also been expansions to host producer or agronomist focused sessions at the end of the conference like in Halifax in 2023.

Most of the people involved in the formation of the society have retired or are retiring, leaving the door open for a new generation of weed scientists to shape the direction of the society in the future, but resulting in a smaller society than we've had in the past. The CWSS-SCM has a storied past with many different names, structures and outputs (Figure 3). The future of the CWSS-SCM is being written by our members as the needs and knowledge of our discipline change.

Fun fact: The current logo appears to date back to 1998, based on newsletters found in the archives. Other notable archives finds are the herbicide staging figures on a herbicide canister (Figure 4), as well as the optimism in old herbicide names (Figure 5).

Through all the societal changes though, the science has remained robust, the passion has remained, and weed scientists still spend plenty of times kneeling in fields, counting weeds (Figure 6).

CWSS-SCM Board of Directors 2025

President	Robert Nurse AAFC
Past President	Jeanette Gaultier BASF
1st Vice-President	Andrew McKenzie-Gopsill AAFC
2nd Vice-President	Charles Geddes AAFC
Treasurer	Deanna McLennan FMC Canada
Secretary	Sara Martin AAFC
Regulatory Representative	Wendy Asbil CFIA
Regulatory Representative	Michael Downs Pest Management Regulatory Agency
Governance Director	Shaun Sharpe AAFC
Publications Director	Jichul Bae AAFC
Research Representative	Leonardo Galindo González CFIA
Crop Life Representative (East)	Meghan Dilliot Belchim Crop Protection Canada
Crop Life Representative (West)	Tyler Gullen Nufarm Canada
Communication Director	Tasha Wright BASF
Member-At-Large (East)	Martin Laforest AAFC
Member-At-Large (West)	Ethan Bertholet BASF
Graduate Student Representative	Currently unassigned
Local Arrangements Chair (2025 QC)	Leonardo Galindo González CFIA

We are always looking for board nominations!

If you would like to get involved, contact cwss.scm.assistant@gmail.com