



Canadian Society of Soil Science

Société Canadienne de la Science du Sol

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# CSSS Newsletter

## President's Message

Colleagues, it's that time of year again – the 'dog days of summer' – with many parts of Canada being hit by high temperatures, a lack of adequate rain, and poor air quality due to wildfires. Notwithstanding, I hope all are keeping well and finding opportunities for some relaxation.

During this past spring, three virtual townhall meetings were held to discuss issues related to our ongoing review of the structure and governance framework of the CSSS, the idea of evolving a professional accreditation program for soil scientists in Canada, as well as to inform members of developments within the IUSS and our preparations for the 24th WCSS. Though turnouts were modest the discussions were robust. Discussions and efforts on these matters will continue.

In July, a survey was conducted among CSSS members to gain insight on their preferences related to various issues, including our annual conferences, our annual general meetings, quorum and voting procedures, virtual townhall meetings, student memberships, and our website. I would like to thank all who responded to this poll. If you were unable to participate, and would still like to express your thoughts, please reach to any Council member. Council will consider the feedback during its next regular meeting in September, after which a summary of results will be circulated to members.

July also saw the successful 2025 Soils For Our Future Joint Conference, which was hosted by the Manitoba Society of Soil Science in Winnipeg. In addition to the CSSS, this event involved the Soil Conservation Council of Canada, representing the Global Soil Security community, IUSS Division 1 "Soils in Space and Time", as well as the International Network for Black Soils. In total, 400 full and 52 one-day attendees participated in the conference - 52 of these were international and 153 were students. The large number and variety of technical sessions, keynote presentations, workshops, tours and a student soil judging contest resulted in a very informative and rewarding experience. I would like to express congratulations and appreciations to Mario Tenuta (Chair), Alan Kruszel, Inoka Amarakoon, Henrique Carvalho, Cristine Morgan, Megan Westphal, Marla Riekman, Alex Koiter, David Lobb, Daniel Saurette, Alexis Gloutney, Carlie Johnston, Amanda Desrochers and Tori Maxwell, and others, for their various roles in the conference organization. Special appreciation is also extended to our conference planner, Elena Gagliardi of Kelly Forgala Events – especially for the successful last-minute efforts to pivot from the RBC Convention Centre to the Delta Hotel, in response to the influx of wildfire evacuees.

## CSSS Council

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## President's Message (Con't.)

During the SFOF Conference, Senator Robert Black, an Honourary Life Member of the CSSS, was awarded the 2025 Distinguished Service Medal of the International Union of Soil Sciences, based on his nomination by the CSSS. This Medal is the



Dr. Richard Heck (CSSS President) & Senator Robert Black

highest recognition of the IUSS presented to world soil leaders who have translated the science of soil into action, including for the promotion and reinforcement of public policies for soil resource preservation. The citation which accompanied this award reads "for dedication and outstanding contribution to the promotion and development of legislation and public policies for the recognition, protection, conservation and enhancement of soils across Canada." Once again, to Senator

Black we extend our congratulations on this recognition and our appreciation for his ongoing contributions in support of soils in Canada.

Various other individuals were recognized during the SFOF Conference. Dr. Asim Biswas was made a Fellow of the CSSS, joining a distinguished list of former inductees. Dr. Daniel Saurette was selected as the 2025 recipient of the CSSS Early Career Award. Congratulations to Asim and Daniel, and to all the other 2025 CSSS award recipients. We look forward to your ongoing engagement in the CSSS and your contributions to professional soil science in and on behalf of Canada.

I would like to acknowledge and thank Dr. David Lobb for his contributions, as the Canadian representative, on the Intergovernmental Technical Panel on Soils. To quote our former President and CSSS Fellow, Dr. Daniel Pennock: "David was appointed as Deputy Chair of the ITPS in 2018 and worked closely with the Chair, Dr. Rosa Poch of Spain. His major role was as Chair of the Working Group for the 2025 for the 2025 Status of the World's Soil Resources report. David was the ITPS member with the most engagement with the report and was key to seeing the report through the many small hurdles it faced. He was also an active participant in the other work of the ITPS and had an important role in the still-under-development erosion initiative of the committee. He really raised the profile of Canadian soil science within the ITPS and its parent organizations, the Global Soil Partnership and the Food and Agriculture Organization of the United Nations." I would also like to wish Dr. Maja Krzic, who will be replacing David as our representative on this Panel, a very successful term.

As we move into autumn, there are a couple of items for members to keep in mind. As part of our ongoing revisions of the structure and governance framework of the CSSS, we will be re-engaging members through emails, virtual town hall meetings and perhaps a special virtual business meeting. At the same time, members are encouraged to think about the upcoming election for Council members. Please keep watch for relevant notifications and participate.

Finally, for those in the academic world, especially any of our graduate student members approaching their thesis defenses, I extend best wishes for a successful Fall'25 semester.

Richard J. Heck  
CSSS President

## Grounded in Soils Blog



Promote your work in CSSS' Grounded In Soils blog! The blog enjoys an average of 600 readers per month! In addition, blogs are promoted on our Twitter and Facebook social media channels.

Any members can participate in either category:

**Blog posts about your research projects!** Work with our social media manager to compile a relatable blog post about your research (at any level). The only requirement is that we need two photos for the blog (for graphic interest and social media promotion). Email [csss.soils@gmail.com](mailto:csss.soils@gmail.com) for more information! Example: <https://groundedinsoils.wordpress.com/2024/03/03/high-organic-matter-soils-in-southwestern-quebec-are-good-for-agriculture/>

**Life as a soil scientist** encourages students to pursue a career in soil science by showing what real-life soil scientists do! We need your help to let them know what it's like to be a professional soil scientist! Be like Maren Oelberman, Grace Gowera, Daniel Saurette and more by filling out a simple set of questions, and providing two photos of you in "action" shots. These can be in the field or lab. Here is an example: <https://groundedinsoils.wordpress.com/2023/11/04/life-as-a-soil-scientist-daniel-saurette/>. Email [csss.soils@gmail.com](mailto:csss.soils@gmail.com) for more information!

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## CSSS Soil Health Committee

### Soil Health Blog Content

The new Soil Health Committee would like to ask everyone working in Soil Health Research or Education to write a blog (500 words, popular media language) about their work for promotion on the CSSS website. We would like to have two new blogs every month, one from a graduate student and one from a professor, and then we will promote these through our social media feeds. Please let me know if you would like to participate by emailing your blog or questions to Derek MacKenzie ([mdm7@ualberta.ca](mailto:mdm7@ualberta.ca)).

### National Soil Health Strategy

The Soil Conservation Council of Canada (SCCC) has engaged all agricultural sectors of Canada on the need for a National Soil Health Strategy. They will release a report on what they heard in the near future. They have identified four foundational pillars for establishing a national strategy and are asking members of the CSSS for help to develop and deliver action items under these four pillars:

1. Evidence-Based Soil Health Actions (Research)
2. Learning, Education, and Technology Transfer of Soil Health (Education and Outreach)
3. Supporting Public & Private Sector Interests in Soil Health (Resources)
4. Public Engagement in Soil Health (Communication)

If you are interested in being involved in this work, please fill out a google form at the following link: <https://forms.gle/jd9kbKzczq1tWmnQ6>

We will then invite all interested parties to the December meeting of the CSSS Soil Health committee to discuss strategies and working groups.

# Life as a Soil Science Professional

## Life as a Soil Science Professional: Keith Reid

### When did you first learn about soil science?

My earliest awareness of soil as a child was riding on the back of the old seed drill as dad was planting grain in the spring, and noticing the changes across the field as I dangled my bare feet in the loose tilled soil. This translated into a fascination with landscapes and how the glacial landforms around home in Bruce County formed, but I really wasn't aware of soil science as a discipline until university.

### What interests you most about soil?

Soils are the ultimate integrators across disciplines, sitting at the intersection of the lithosphere, hydrosphere, atmosphere and biosphere. We all specialize in a particular space within this matrix, but without recognizing all of the elements our chances of successfully understanding what is happening beneath our feet, or effectively managing our soils to meet economic, social and ecological goals. This also means that someone with soil science training is an ideal candidate for any profession that requires integration of different elements.

### What was your path to becoming a soil scientist?

When I graduated from high school, I thought university was going to be my ticket away from the farm, so I had enrolled in geography. Two years later I re-assessed my direction and transferred from Waterloo to Guelph into the agriculture program with a major in soil science. Following graduation, I went to work for a local fertilizer and farm supply retailer and bought a farm just up the road from home...a time that was rich in practical learning but not in economic returns! Successive career moves have meant working for the provincial government, first as a soil conservation advisor and later as soil fertility specialist, and later as a soil scientist for the federal government.

Through my career, a big part of my role has been communicating the concepts underlying soil science to various audiences in ways that are understandable and relevant. This has opened up incredible opportunities to speak and write to diverse groups: farmers and agronomists at meetings and through columns in farm magazines; politicians and policy makers through work on Nutrient Management regulations; fellow scientists through peer reviewed papers; and to the general public through a book targeted at home gardeners.

### What is your favorite thing about soil?

We have literally just "scratched the surface" when it comes to understanding processes in the soil, and how they interact with the broader environment. It is an exciting time to be learning more about how carbon is sequestered in the soil, how we can better manage nutrients to support increased crop yields while minimizing our environmental footprint, how we can balance the needs for places for people to live and work while preserving spaces for agriculture and for nature...the list goes on. Success in the future will mean partnering with agronomists, hydrologists, chemists, biologists and economists, while bringing our unique understanding of soil processes to the table because the soil demands that we manage her according to where she is and not something out of a textbook!

## Student Photo Contest

Are you a student interested in visually projecting your research? Do you have interesting and memorable research photos you would like to share? Then look no further as the CSSS is accepting submissions for the [Canadian Journal of Soil Science \(CJSS\)](#) student photo contest.

Students may submit more than one image per competition and may enter more than one competition.

One photo will be selected each year for the cover of the CJSS. This photo will be used on the covers of all four issues for a given year.

Other photos may be used for promotional activities of the journal such as special collections or calls for papers.



### Submission deadlines

General submissions will be accepted at any time.

Submissions for the annual CJSS cover are required no later than October 1.

### Submissions specifications

- Image must focus on some aspect of soil science to reflect CJSS content.
- Image must not include people.
- Image size and resolution must be at least 8.5 x 11 inches at 300 dpi or better.
- Images must be a single photo; no collages.
- Cell phone photographs are acceptable as long as they meet the criteria.
- Acceptable image formats are .jpg, .png, or .tif.

### Submission contacts

All entries should be sent to

M. Anne Naeth ([anaeth@ualberta.ca](mailto:anaeth@ualberta.ca)) and Blake Weiseth ([blake.weiseth@gmail.com](mailto:blake.weiseth@gmail.com)).

### Prizes

The submission selected for the CJSS cover will receive a \$250 cash prize. The winning photograph will be featured on the cover of the Canadian Journal of Soil Science for all four issues of the year, and on the CSSS website. Up to four submissions per year will receive \$125 each if selected for other purposes of CJSS such to promote special issues or collections.

Students may submit more than one image per competition.

Send all entries to the CJSS Editor-in-Chief: Dr. M. Anne Naeth ([anaeth@ualberta.ca](mailto:anaeth@ualberta.ca)).

## CJSS Photo Submissions

If you are interested in submitting photos for consideration by the CJSS as an issue cover or as advertising material but not as part of the student photo contest please send directly to M. Anne Naeth ([anaeth@ualberta.ca](mailto:anaeth@ualberta.ca)). Any interested party can submit images provided that the images meet the criteria outlined for the student competition.

# Canada in the IUSS - Towards 24th WCSS and Beyond

Richard J Heck, Chair IUSS Division 1

**Foreword** – This represents the fifth installment of reflections and news items from the IUSS, with special attention to next year's 23<sup>rd</sup> World Congress of Soil Science-WCSS, as well as the ongoing IUSS general elections. Updates regarding our ongoing work to organize for the 24th WCSS are also provided.

## **Decade of Soil Science for Sustainable Development...**

2025 to 2034 has been declared by the IUSS as the Decade of Soil Science for Sustainable Development (DSSSD), in support of the International Decade of Sciences for Sustainable Development (IDSSD), led by UNESCO ([www.un-sciences-decade.org/en](http://www.un-sciences-decade.org/en)), which is aimed at strengthening worldwide scientific cooperation. Further information on the DSSSD can found at: [www.iuss.org/decade-of-soil-sciences-for-sustainable-development/](http://www.iuss.org/decade-of-soil-sciences-for-sustainable-development/)

## **IUSS World Soil of the Year...**

The Gleysol of the Carpathian Basin in Hungary was officially recognized as the 2025 IUSS World Soil of the Year during the 2025 Soils For Our Future Conference in Winnipeg. The nomination period for the 2026 IUSS World Soil of the Year remains open until the end of November 2025. Further information can be obtained at: [www.iuss.org/world-soil-of-the-year/](http://www.iuss.org/world-soil-of-the-year/)

## **23rd WCSS – Abstract Submissions, Registrations & more...**

As a reminder, the 23rd WCSS “Soils and the Shared Future for Mankind” will be held in Nanning, China, from June 7th to 12th, 2026 ([www.23wcsc.org.cn/](http://www.23wcsc.org.cn/)). The call for abstract submissions for the 23rd WCSS is now open until November 7th, 2025 ([www.23wcsc.org.cn/submission/index.html](http://www.23wcsc.org.cn/submission/index.html)), notification of acceptance will be send by February 7th, 2026. Early bird registration is also now open until March 7th, 2026 ([www.23wcsc.org.cn/IR/index.html](http://www.23wcsc.org.cn/IR/index.html)).

To coordinate the participation of members of the CSSS in our promotion of the 24th WCSS (we will have a booth for this...see below), we are creating a registry of individuals who will be attending the 23rd WCSS. If you are planning to attend, please send a short email to me ([rheck@uoguelph.ca](mailto:rheck@uoguelph.ca)).

As in other recent WCSS's there will be an International Soil Judging Contest held during the 23rd WCSS. The deadline for registering to participate in the 2030 ISJC is December 31st, 2025. Any students who are planning to attend, and who might be interested in being part of a Canadian team are asked to contact either Daniel Saurette ([daniel.saurette@ontario.ca](mailto:daniel.saurette@ontario.ca)) or me, before October 31st, 2025.

## **2025-26 Elections for IUSS Division and Commission Officers...**

The nomination period for the 2025-26 Elections of IUSS Division Chairs, as well as Commission Chairs and Vice-Chairs, remains open until September 30th, 2025. Following scrutiny of nominees by the Divisional Nomination Committees and the Electoral Committee, ballots will be circulated to member societies. Following consultation with their membership, member societies will have until the end of April of 2026, to report their results to the IUSS Secretariat. **The announcement of results will occur by the end of May of 2026.**

All IUSS Full Members (including the CSSS), which are in 'good-standing', are allowed to nominate individuals for the positions of Chair and Vice-Chair of the Commissions. In the case of Division Chairs, the CSSS will not be eligible to nominate individuals during this next cycle, since, as hosts for the 24th WCSS in 2030, Canada is assigned the positions of 1st and 2nd Vice-Chair of each Division, as well as the position of Vice-President (Congress). Alternatively, nominations may be submitted by the current officers of any IUSS Division, Commission or Working Group, or other IUSS Council member. A special nomination form, a portion of which must be completed by the nominee, is required. I invite any members interested knowing more about these various positions, the process or actually being nominated to reach out to me or the IUSS Secretariat ([iuss.secretariat@crea.gov.it](mailto:iuss.secretariat@crea.gov.it)) directly.

As we progress into the autumn, we will be establishing a strategy to identify and nominate individuals for the Division 1st & 2nd Vice-Chair positions by March of 2026 – these individuals, upon ratification by the IUSS Executive Committee, will assume their positions starting at the closure of the 23rd WCSS and continue until the closure of the 24th WCSS. Details will be circulated to members by email. Again, I invite anyone interested in learning more about these positions to contact me.

## Canada in the IUSS - Towards 24th WCSS and Beyond (Con't.)

### 24th WCSS Updates...

With ratification, during the October 2024 Inter Congress Meeting of the IUSS Council, of our (CSSS) status as host of the 24th WCSS in 2030, the International Union of Soil Sciences and the CSSS were able to finalize and sign, this past March, the required Memorandum of Understanding. Subsequently, the CSSS negotiated and signed a Licensing Agreement with the Metro Toronto Convention Centre by the end of April, to secure our main conference venue. The next major administrative item on the agenda of the 24WCSS Committee will be the selection and contacting of a Professional Conference Organizer, which is being planned for early 2026.

As reminders, David Lobb is chairing the '24WCSS Technical Tours' Subcommittee and Daniel Saurette is chairing the '2030 International Soil Judging Contest' Subcommittee. Our 'Events Branding' Working Group is currently examining the possibility of developing an alternative logo for the 24th WCSS – while the current logo has been during our bidding processes, and subsequently, it will be 12 years old by 2030. Moving into 2026, the 24WCSS Committee will also be focusing on our plan for our promotional booth at the 23WCSS in Nanjing, next June. Anyone interested in participating in these various activities, or joining the 24WCSS Committee, are encouraged to reach out to the relevant chairs or myself. The website for the 24th WCSS can be found at:

[www.24wcsc.org](http://www.24wcsc.org).




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## CSSS representative to the North American Proficiency Testing (NAPT) Oversight Committee

The North American Proficiency Testing (NAPT) program operates the Performance Assessment Program (PAP), which is a voluntary program intended to help labs demonstrate that soil test analyses are being performed using validated testing methods. More broadly, the NAPT provides an external QA program for agricultural and environmental laboratories while developing a framework for long-term improvement of QA of the agricultural laboratory industry.

The NAPT was developed by and operates under the auspices of the Soil Science Society of America (SSSA) and is administered by an Oversight Committee comprised of volunteer representatives of Regional Soil and Plant Analysis Workgroups, scientific organizations, State/Provincial Departments of Agriculture, and private and public and plant analysis laboratories. Membership in the Oversight Committee includes one representative from the SSSA, the Soil and Plant Analysis Council (SPAC), and the Canadian Society of Soil Science (CSSS); one representative from each of the US regional research soil and plant analysis workgroups; one representative from state regulatory agencies that oversee soil/plant proficiency programs; and five representatives from the private/public laboratory sector.

## CSSS representative to the North American Proficiency Testing (NAPT) Oversight Committee (Con't.)

CSSS representation on the NAPT Oversight Committee has been provided by Dr. Keith Reid (AAFC, 2005–2012) and Dr. Craig Drury (AAFC, 2011–2013 & 2016–2021), and currently is represented by Dr. Richard Farrell (University of Saskatchewan, 2022–2026). Dr. Farrell will be stepping down from the Committee at the end of December 2025; thus, the CSSS is seeking a person with analytical laboratory experience and interest in soil/plant analysis to take his place on the Committee and provide representation for the CSSS. Interested persons can contact Dr. Farrell ([r.farrell@usask.ca](mailto:r.farrell@usask.ca)) for more information and can apply by providing a letter indicating your interest and describing any experience with the operation and/or management of an analytical facility with a focus on soil/plant analysis.

Applications can be emailed to Dr. Farrell with the subject line: "CSSS representative to NAPT". The deadline for applying is 12:00 AM (CST) Wednesday, October 15, 2025.

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## Contributions to a revision of the 2nd Edition of Soil Sampling and Methods of Analysis

The 2nd edition of Soil Sampling and Methods of Analysis, edited by Ed Gregorich and Martin Carter, was published by CRC Press (an affiliate of the Taylor & Francis Group, LLC) for the Canadian Society of Soil Science (CSSS) in 2008. As we approach the 20th anniversary of the book, the publisher has reached out to the CSSS to gauge interest in developing a new (3rd edition) of the book. Drs. Gregorich and Carter indicated their support for such an endeavor, but felt that it was best to "pass the torch" to a new editorial group, with Ed recommending Dr. Rich Farrell as an editor and contact person. Discussions with CRC Press followed and a decision was made at the Society's 2024 AGM to proceed with an open access version of the book.

The 2nd edition of the book consists of 87 chapters spread across seven sections (Soil Sampling and Handling; Diagnostic Methods for Soil and Environmental Management; Soil Chemical Analysis; Soil Biological Analysis; Soil Organic Matter Analysis; Soil Physical Analysis; and Soil Water Analysis) and with contributions from 139 authors from 10 countries. Some chapters in the 2nd edition need only minor to moderate updates, while some others can be deleted, and new chapters are needed in areas such as soil microbiology, soil organic matter characterization, and soil health evaluation. Moreover, there have been significant advances in analytical instrumentation that affect nearly all areas of soil analysis. Clearly, the task before us is challenging, but before we can proceed, the publisher has requested an updated table of contents . . . one that reflects the current state-of-the-art in soil analysis. With this in mind, we are soliciting the help of the CSSS membership to identify potential topics—and authors—for a new, 3rd edition, of the book. Likewise, we would like to hear from authors of chapters in the current (2nd) edition of the book who would like to update/replace an existing chapter.

If you are interested in contributing to the book as an author, co-author, or even as section editor, please contact Rich Farrell ([r.farrell@usask.ca](mailto:r.farrell@usask.ca)), Bobbi Helgason ([bobbi.helgason@usask.ca](mailto:bobbi.helgason@usask.ca)), Adam Gillespie ([agilles@uoguelph.ca](mailto:agilles@uoguelph.ca)), or Sylvie Quideau ([sylvie.quideau@ualberta.ca](mailto:sylvie.quideau@ualberta.ca)).

The table of contents for the 2nd edition of the book can be viewed at:

<https://www.routledge.com/Soil-Sampling-and-Methods-of-Analysis/Carter-Gregorich/p/book/9780849335860?srsId=AfmBOoogVkEBa0Rx-Gy4NUohvsIx76yuQXDJIsCqFo0rk0gMbksEckT>

## CSSS Awards

### CSSS Fellow Award - Dr. Asim Biswas



Dr. Asim Biswas

**Dr. Asim Biswas** is a Full Professor at the University of Guelph's School of Environmental Sciences. As the Canada Research Chair (Tier 1) in Digital Agriculture, OAC Research Chair in Soils and Precision Agriculture, and a member of the Royal Society of Canada College of New Scholars, he leads pioneering research in precision agriculture and sustainable soil management, integrating sensors, data analytics, and soil science to enhance agricultural productivity. Dr. Biswas has published over 290 peer-reviewed papers in prestigious journals including Nature, Science and their subsidiary journals, trained more than 125 students globally, and served (and serves) in leadership roles across major professional societies including as the President of the Canadian Society of Soil Science. He is also the first non-basic science researcher to receive the Steacie Prize, Canada's most prestigious early career award. His work not only advances scientific understanding but creates practical applications that benefit agricultural communities worldwide.

### CSSS Early Career Award - Dr. Daniel Saurette



Dr. Daniel Saurette

**Dr. Daniel Saurette** is a Land Resource Specialist with the Ontario Ministry of Agriculture, Food and Agribusiness and an Adjunct in the Department of Plant, Food and Environmental Sciences at Dalhousie University. Daniel obtained an M.Sc. in Soil Science from the University of Alberta (Supervisor: Dr. Scott Chang) and his Ph.D. from the University of Guelph (Supervisor: Dr. Asim Biswas). He has published over 37 peer-reviewed publications, with 33 published since 2018. Dr. Saurette was the recipient of several competitive scholarships during his Ph.D. studies, including an NSERC PGS-D and the Dr. Karl C. Ivarson scholarship (2019). Dr. Saurette leads applied research to deliver Ontario's soil survey and mapping program, including development of novel tools for soil survey data collection to update soil maps across agricultural regions of Ontario. Dr. Saurette is an active member of the soil science community as a member of the Canadian Society of Soil Science, co-chair of the Pedology Committee, chair of the Soil Classification Working Group, and member the Canadian Digital Soil Mapping Working Group.

### Karl C. Ivarson Scholarship - Levi Jonathan Lundell



Levi Jonathan Lundell

Levi was born, and grew up, in Saskatchewan on an acreage in the forest west of Prince Albert. He spent much of his youth either exploring the surrounding forest or tending the family's goats. He came to Saskatoon for university and completed an undergraduate degree in Environmental Science at the U of S, after-which he followed that well-worn path to the U of S graduate program in Soil Science. Being jointly supervised by Drs. Derek Peak and Katherine Stewart, his research attempts to use synchrotron techniques whenever possible, and it focuses on the ecological restoration of mine sites. Specifically, he is interested in understanding plant-metal(loid) interactions that occur between native boreal plants and mine tailings under anthropogenic or natural revegetation of metal mine tailings and how these processes affect metal(loid) movement and speciation.

## CSSS Awards (Con't.)

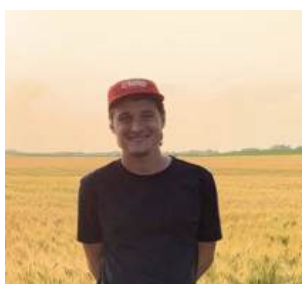
### CSSS Travel Award to Attend International Conference - Cindy Denoncourt



Cindy Denoncourt

I have been involved in agriculture since childhood, whether on my family's dairy farm, in horticultural and vegetable production, with agri-environmental advisory groups, and through my own small farm of rustic pigs. Over time, I developed a strong interest in soils and holistic farming. After earning a bachelor's degree in agronomy at Université Laval, I completed a master's with Agriculture and Agri-Food Canada on the nitrogen legacy of animal manure. I am now pursuing a PhD focused on validating a global conceptual model of soil organic matter formation and stabilization in agricultural soils, based on operational fractions, with a particular emphasis on the role of animal manure in carbon storage and nitrogen supply capacity.

### CSSS Travel Award to Attend International Conference - Jean-Dominic Côté



Jean-Dominic Côté

My name is Jean-Dominic Côté and I recently completed my Master's degree under the supervision of Professor Lotfi Khiari at Laval University in Québec City. My thesis focused on evaluating the agronomic performance of eight fertilizing residual materials on corn (both silage and grain), assessing their effects on yield and nutrient balance across two growing seasons and contrasting field sites. In September, I will begin my PhD studies at Laval University, this time under the supervision of Professor Jean-Pascal Matteau. My doctoral research will investigate the use of biostimulants to improve potato yield and resilience to water stress, with the overarching goal of reducing irrigation requirements without compromising productivity. My research interests lie primarily in field crop production, with a strong focus on precision agriculture. This summer, I'm involved in over fifteen field trials, including fertilization and genetic studies. I'm particularly interested in applying multispectral imagery and decision-support tools to optimize fertilizer use, reduce production costs, and enhance

the sustainability of Canadian agriculture. In September 2025, I will attend EuroSoil 2025 to present the results of my Master's research. I would like to sincerely thank the Canadian Society of Soil Science for supporting this opportunity.

### CSSS Pedology Travel Award - Dr. Solmaz Fathololoumi



Dr. Solmaz Fathololoumi

Dr. Solmaz Fathololoumi is a Postdoctoral Researcher at the University of Guelph, holding a PhD in Soil Physics and Conservation. Her research focuses on digital agriculture, integrating remote sensing, digital imaging, and sensor technologies to monitor soil health, map soil properties, and predict crop yields. She aims to advance precision agriculture by developing data-driven tools that support field-scale decision-making, improve soil productivity, and enhance the sustainability of agricultural systems."

## CSSS Awards (Con't.)

### CSSS Student Travel Award

This award category provides financial support valued at \$700 to Canadian Students wishing to attend and present at the annual meeting. The 2025 recipients are:

Anshu Beri, PhD, University of Guelph  
 Daphnée Ferland, PhD, University of Saskatchewan  
 Harnoordeep Sing Mann, PhD, University of Guelph  
 Alessia Marchesan, PhD, University of Alberta  
 Dillon Brian Muldoon, PhD, Trent University  
 Mojtaba Naeimi, PhD, University of Guelph  
 Takudzwa Nawu, PhD, University of Manitoba  
 Temitope Olufemi, MSc, University of British Columbia, Prince George  
 Travis Pennell, PhD, Dalhousie University  
 Vishvam-Porwal, MSc, University of Guelph  
 Erica Prins, PhD, University of Alberta  
 Cosmas Ugwu, PhD, University of Alberta

### CSSS Society Book Award

This award recognizes undergraduates at Canadian Universities who demonstrate excellence in Soil Science Courses. Award winners receive a printed copy of the book entitled "Digging into Canadian Soils". Recipients are nominated by their academic department. The 2025 recipients are:

Paul Aboumerhi, McGill University  
 Ty Anaka, University of Saskatchewan  
 Aman Dhindsa, University of Waterloo  
 Cameron Donnelly, University of British Columbia  
 Thomas Dupuis, Université Laval  
 Jansen Henaff, Université Laval  
 Mia Lavoie, Université de Québec à Chicoutimi  
 Emily Robb, University of Manitoba  
 Grace Stephens, University of Alberta  
 Elsa Vaillancourt-Vigneault, Université de Québec à Chicoutimi  
 Camilla Villa Escobar, University of Toronto Scarborough

### Bentley Award for Oral Presentation

This award was initiated in 1983 to encourage and recognize excellence in oral presentations by students at the CSSS Annual Meetings. It honors Dr. Fred Bentley who was CSSS President in 1956-57 and nominated CSSS Fellow in 1973. The award winner receives \$500, the first runner-up \$300, and the second runner-up \$200. Fifty eight students competed for oral presentations and recipients in 2025 are:

1st: Amy Wells (MSc), University of British Columbia  
 2nd: Samantha Earl-Goulet (PhD), University of Guelph  
 3rd: Kristen MacMillan (PhD), University of Manitoba

## CSSS Awards (Con't.)

### President's Award for Poster Presentation

This award was established in 1992 to foster excellence in student poster presentations as a means of disseminating research results. Each award winner receives \$500, the first runner-up \$300, and the second runner-up \$200. Thirty nine students competed for poster presentations and recipients of these awards in 2025 are:

- 1st: Takudzwa Nawu (PhD), University of Manitoba
- 2nd: Rucchini Sovis (MSc), University of Winnipeg
- 3rd: Jedida Chirchir (PhD), University of Alberta

### Steve Pawluk Scholarship

An annual scholarship valued at \$2000 is given to support graduate students in programs focused on soil science. Interested students can send their application to [Judith.nyiraneza@agr.gc.ca](mailto:Judith.nyiraneza@agr.gc.ca) by September 30th, 2025. For more information, check the award criteria at the link below:

<https://csss.ca/awards-criteria/>



## 2025 CSSS Conference Summaries

### 2025 CSSS Soil Judging Contest

Daniel Saurette (Ontario Ministry of Agriculture, Food and Agribusiness), Megan Westphal (Manitoba Agriculture), Alex Koiter (Brandon University), Richard Heck (University of Guelph), and David Lobb (University of Manitoba)

The Soils for Our Future conference wrapped up with the 2025 CSSS Soil Judging Contest, held on Friday July 25th. Soil judging is an event where students participate as teams to develop and refine their skills at describing and classifying soil profiles. The contest started with a demonstration soil pit near Culross, MB, where pedologists Megan Westphal (Manitoba Agriculture) and John Galbraith (Virginia Tech University) provided participants with hands-on instructions on how to describe soil properties and features and a walkthrough of the contest guidelines. Once the participants had had a chance to get into the practice pit, the bus moved south to the University of Manitoba's Ian N. Morrison Research Farm in Carman, MB, for the official contest.



Photo 1. Soil judging participants and volunteers at the front entrance of the Ian N. Morrison research station.

This year's contest had four teams registered, with 14 participants and one coach from the Prairies to the Maritimes. The teams, affectionately named for soil orders in the Canadian System of Soil Classification (Brunisol, Chernozem, Podzol, and Vertisol) were challenged in many ways during the event. Four stations were designed to test their skills, including three soil pits (one called "Death Valley", oh my!) and one station designed by Dr. David Lobb (University of Manitoba) to provide insight on how to understand topography and effectively measure topographic features critical to understanding soil spatial variability, such as slope gradients, using several different approaches. In addition to the challenges of describing soil pits and landscapes, the team battled through the hottest day of the conference with the thermostat rising to over 30 degrees.



Photo 2. Team Brunisol (University of Manitoba) working hard in the Death Valley soil pit.

At the end of a long day, participants loaded the bus to return to Winnipeg as they awaited the scores from the judges for all their hard work. Arriving at the Delta Hotel, the tension was palpable. Only 13 points separated the teams, with Team Podzol (Nelum Jayarathna, University of Manitoba; Jeanne Durivage, Laval University; Bhashitha Konara, Memorial University) edging out the competition to win the test.

The organizing team for the soil judging event (Daniel Saurette, Megan Westphal, Alex Koiter, Richard Heck, and

David Lobb) would like to acknowledge the contributions of numerous volunteers who braved the intense heat and sunshine to make this such a successful event. We would also like to thank John Galbraith for sharing his expertise in soil judging with the team and spending two full days in the field to prepare and deliver the event. Finally, we would like to thank the sponsors for this year's soil judging event, the Manitoba Soil Science Society, University of Manitoba's Faculty of Agricultural and Food Sciences, Agvise Laboratories, Canadian Science Publishing, and the Canadian Society of Soil Science. Planning for the 2026 Soil Judging Contest in Guelph, ON, is already underway!!



Photo 3. Winners of the 2025 CSSS Soil Judging Contest – Team Podzol (Nelum Jayarathna, University of Manitoba, left; Jeanne Durivage, Laval University, centre; Bhashitha Konara, Memorial University, right).

The following teams and team members were participants in the 2025 Soil Judging Contest:

**Team Brunisol:** Emily Robb, Julia Beechinor, Nathan Lamb, and Shayla Trippier

**Team Chernozem:** Charitha Hansima, Faezeh Parastesh, Ashlyn Whetter, and Alexis Gloutney

**Team Podzol:** Nelum Jayarathna, Bhashitha Konara, and Jeanne Durivage

**Team Vertisol:** Breanna Barrett, Amanda Mitchell, Anushika Rathnaya, and Chatel Chizen (coach)

*Daniel.Saurette@ontario.ca*

## 2025 CSSS Conference Summaries (Con't.)

### Convened under the aegis of the International Union of Soil Sciences

#### Soils of the Past for Present and Future / Permafrost-Affected Soils: From Theory to Application And Permafrost-Affected Soils: From Theory to Application

The IUSS Commissions 1.6 Paleopedology and Commission and 1.7/3.8 Permafrost-Affected Soils (the later recently established and requalified from the Cryosols Working Group) jointly organized the 1.5 CSSS/IUSS Scientific Breakout Session:

**Conveners:** Maria Bronnikova (Texas Tech University) and Adrian Unc (Memorial University of Newfoundland)

The Paleopedology Commission proposed a breakout session focused on the evolutionary trajectory of soils—examining their development under past environmental conditions, their current states, and potential future pathways. The session aimed to highlight how soil-forming processes, and the resulting soils of the past have shaped today's soil systems and soil mantle, and how understanding both past and present can inform predictions of soil evolution under changing environmental conditions.

Commission 1.7/3.8 initially called for contributions addressing fundamental developments in the study of permafrost-affected soils and their practical applications. To optimize the program in terms of time and thematic coherence, the two sessions were merged. As the scope of Paleopedology includes long-term soil development in dynamic environments, the combined session allowed for a smooth and logical transition—from presentations on broad aspects of soil transformation over time to those focusing on the spatiotemporal dynamics of soils in permafrost-affected regions.

A further point of convergence between the two fields was the shared focus on soil mineral and organic carbon—viewed both as a record of past environmental conditions and as a key factor in contemporary global carbon cycling. The current carbon status of soils, particularly in permafrost regions, is of great concern due to their heightened sensitivity to global warming. These soils represent a significant potential source of carbon that could be mobilized into the active carbon cycle in the near future. Understanding the origin of permafrost-affected soil-sedimentary sequences, along with the content and variability of carbon forms within these pools, is essential for anticipating the behavior of paleocarbon and its contribution to the carbon cycle upon thawing. Accordingly, carbon-related dynamics in soils remain a pressing topic in both paleopedological and permafrost-focused research, with direct implications for global climate strategies and efforts to achieve future carbon neutrality.

#### Session Highlights

The first part of the session featured presentations on paleo-human impact as recorded in Holocene soil-sedimentary sequences in Colombia (E. Solleiro Rebolledo), followed by two presentations on environmental records in soil carbonates, with a focus on biomineralization processes contributing to these records (M. Bronnikova and C. Monger). Another presentation examined how soils formed by relict geomorphic processes capture regional-scale surface instability phases (B. Sion). The final talk in this segment, delivered by Daniela Sauer, focused on Holocene dynamics of erosion and sedimentation in Mongolia.

The second part of the session opened with a presentation by Adrian Unc, who provided an overview of soil-cryogenic complex studies in the context of climate-driven permafrost dynamics. This was followed by a presentation from Cezary Kabala on the spatial distribution of Cryosols in the East Pamir Mountains (Tajikistan) and its possible links to global climate change. The final presentation in the Permafrost-Affected Soils block connected fundamental research with practice, examining the impact of temperature on the remediation potential of various amendments in metal-contaminated lake sediments.

The last part of the session addressed the pressing issue of classifying paleosols and paleofeatures in polygenetic soils. This topic was introduced as a preliminary discussion, with plans for further exploration through upcoming online and in-person events of Commission 1.6. The discussion was led by two world-renowned experts in soil classification—John Galbraith (Soil Taxonomy) and Cezary Kabala (World Reference Base, WRB)—who provided a concise overview of how paleosols and relic features are currently handled within these systems and outlined potential directions for their future development.

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## 2025 CSSS Conference Summaries (Con't.)

### Sessions hosted by the Canadian Society of Agricultural and Forest Meteorology:

The Canadian Society of Agricultural and Forest Meteorology hosted 2 sessions of 6 presentations each at this year's Soils for our Future conference, the first session centered on observational studies of land-atmosphere interactions including the impact of cover crops on soil N<sub>2</sub>O emissions, the effects of peat harvesting on carbon balances, the impacts of soil salinity on greenhouse gas emissions, the impact of soil as a climate regulator and an exploration of new technology for soil moisture sensing. The second session was focused on providing a better understanding of past, present, and future effects of climate on agriculture, forestry, and water resources and included presentations describing the long term impact of adding perennials to grain rotations, the use of forecast weather data and observations to better predict crop disease risk, the use of modelling and machine learning techniques to better understand greenhouse gas emissions from agriculture, the impacts of salinity on microbial communities and in wetlands and the impacts of climate change on water resources. Both sessions were well attended and filled to capacity. In addition, 6 poster presentations were submitted covering the examination of peatland properties to better predict methane emissions, techniques to gap fill eddy covariance datasets, the methane response of restored wetlands, the impacts of land conversion from forest to agriculture, and the impacts of crop rotation on evapotranspiration rates.

Phillip Harder, PhD; Research Director & Hydrological Scientist, Croptimistic Technology Inc. [swatmaps.com](https://swatmaps.com)

### Sessions hosted by the Canadian Soil Science Society

**Session:** Innovative Approaches in Soil Science Education

**Conveners:** Maja Krzic (University of British Columbia), Amanda Diochon (Lakehead University), and Tom Yates (University of Saskatchewan)

This session highlighted the diversity of educational approaches and experiences in teaching and learning of soil science ranging from the primary school to the postsecondary courses and even applications of emerging technologies in soil science education. **Tahmid Huq Easher** (Olds College of Agriculture and Technology) opened the session by sharing their experiences of integrating the 3,000-acre Smart Farm and data-driven learning into several courses and allowing students to evaluate soil and water quality as well as agricultural management practices. **Dale Hamilton** (Turtle Island Acres) informed us of her efforts to communicate the importance of soil health through Indigenous land-based learning and arts-based educational practices to intergenerational and intercultural rural and urban audiences. **Carol Smith** (Lincoln University, New Zealand) outlined some key findings regarding the 2024 Moana Oceania Soil Judging Competition held in New Zealand that involved over 200 participants (including 80 students) and 35 teams from 9 countries in the South Pacific region. Participants in this competition completed a survey indicating that they felt an increase in self-reported skills and knowledge regarding soil morphology and site interpretation. Takashi Kosaki (Aichi University, Japan) presented a general framework and soil education package for the primary schools in Japan. This package includes topics for stimulating the sense of wonder, for providing basic knowledge of soil forming processes with an aim to better understand soil management, nutrient cycling in an ecosystem and various aspect of ecosystems services, and for practical observations and experiments in a field and/or laboratories. Tom DeSutter (North Dakota State University, USA) informed us about development of a streamlined, quantitative CEC measurement method suitable for completion within a standard 2-hour soil science teaching lab. The method uses an electrical conductivity probe and was evaluated using North American Proficiency Testing program samples along with 0.05 M calcium acetate and 0.05 M sodium oxalate solutions. This technique offers an efficient, cost-effective, and reliable way to quantitatively assess soil CEC, making it a practical option for both educators and students. Amy Wells (University of British Columbia, Vancouver) closed the session by sharing ideas on application of emerging technologies such as Gaussian splats and machine learning for better communication and learning about the soil diversity, distribution, and land management histories. In soil science education, Gaussian splats could be accessed via web-browsers or virtual reality to allow students to practice soil identification skills before going on a field trip, or to explore the relationships between landscape and soil distribution. Current examples of the radiance fields for virtual soils developed by Amy are available at - <https://amywells.ca/Radiance-Fields.html>. The session generated numerous discussions and sharing of insights and ideas regarding pedagogies and technologies that continued well after session ended.

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## 2025 CSSS Conference Summaries (Con't.)

### Sessions hosted by the Canadian Soil Science Society (Con't.)

**Session:** Towards N<sub>2</sub>O emission reduction goals through enhanced communication, data sharing, and spatial integration of research

**Conveners:** Erin Daly and Claudia Wagner-Riddle

This two-part session brought together voices from academia, industry, and government to advance dialogue and action on reducing N<sub>2</sub>O emissions from agricultural systems. The discussions emphasized the need for enhanced cross-sector communication, open data sharing, and spatially integrated research to support evidence-based mitigation strategies. Invited speaker Dr. Klaus Butterbach-Bahl (Aarhus University) introduced SmartField, a European initiative that applies real-time monitoring and process-based modelling to optimize nitrogen management and reduce emissions. Invited speaker Karen Haugen-Kozyra, President of Viresco Solutions and a recognized leader in greenhouse gas accounting, underscored the importance of robust quantification protocols and industry collaboration to support credible emission reductions. Presentations also highlighted the Canada-wide collaboration network CanN<sub>2</sub>ONet, which aims to accelerate progress on N<sub>2</sub>O mitigation targets through coordinated research and knowledge mobilization. Other topics included the role of 4R nutrient stewardship in reducing emissions, the significance of freeze-thaw dynamics for N<sub>2</sub>O production and release, the critical involvement of the fertilizer industry in scaling up mitigation efforts, and the application of process-based modelling approaches and machine learning to better understand and predict N<sub>2</sub>O emissions under varying environmental and management conditions.

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**Session:** Micronutrients for Soil Fertility and Crop Production in Canada

**Conveners:** Xiaopeng Gao and Jeff Schoenau

This was the first time that CSSS included a dedicated section on micronutrients, which was highly successful with a full room and engaging discussions. The session highlighted emerging research on the role of micronutrients like zinc, iron, and copper in improving soil fertility, crop yield, and nutritional quality. Presentations explored innovative strategies including 4R nutrient stewardship, agronomic biofortification, disease management, and the benefits of organic farming. The talks emphasized the need for sustainable approaches to address micronutrient deficiencies in both crops and human diets, especially under changing environmental conditions.

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**Session:** Phosphorus – Balancing Plant Nutrition and Water Quality

**Conveners:** Joanne Thiessen Martens (University of Manitoba)

Phosphorus (P) management in agricultural systems requires a balance between the competing goals of supplying sufficient P for plant nutrition and limiting P loss to sensitive aquatic environments. This session explored multiple strategies to enhance the efficient supply of P to crops while reducing loss to the environment. Several presentations (oral and poster) focused on alternative P sources for crop production such as wastewater-derived struvite and P-enriched compost. Others discussed a wide range of practices to reduce P losses to runoff, such as applying soil amendments to retain P in forms less vulnerable to loss, managing fall weeds in agricultural fields, or grazing riparian areas to remove vegetation. New insights on methods to quantify and understand P dynamics in soil and runoff were also presented.

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## 2025 CSSS Conference Summaries (Con't.)

### Sessions hosted by the Canadian Soil Science Society (Con't.)

**Session:** Equity, Diversity, and Inclusivity: Perspectives from Women in Soil Science

**Conveners:** Yvonne Lawley, Joanne Thiessen Martens, Afua Mante and Inoka Amarakoon (University of Manitoba); Kim Schneider and Laura Van Eerd (University of Guelph); Melissa Arcand and Sirajum Munira (University of Saskatchewan).

Increasingly the role of equity, diversity, and inclusivity is being recognized as essential for advancing science, education, and innovation to solve complex local and global challenges. While this recognition is critical, implementation of these ideals is still ongoing and persons from under-represented groups face barriers and trade-offs as they navigate their careers. Building on the efforts of many members working within the Canadian Soil Science Society to make our scientific society a more welcoming community, the intention of this session was to create an intentional space to discuss equity, diversity, and inclusivity through the lens of women in soil science. A panel of women from a range of backgrounds and career paths in soil science were invited to share their experiences, identify challenges, and emphasize enabling strategies. Panelists were:

Afua Mante, Assistant Professor, Department of Soil Science, University of Manitoba; Annemieke Farenhorst, Associate Vice-President Research and Professor, Department of Soil Science, University of Manitoba; Lana Shaw, Executive Director, South East Research Farm, Saskatchewan; Maja Krzic, 3M National Teaching Fellow and Professor, Applied Biology/Forest and Conservation Sciences, University of British Columbia; Melissa Arcand, Associate Professor, Department of Soil Science, University of Saskatchewan. This session was a 90-min panel and round-table with at least 40 participants,



where everyone was welcomed. After panelists described their career path, a systems-thinking Impact-Gap Analysis was employed to empower women in soil science. Prepared discussion questions included career challenges and supports and how to support others. Audience questions centered around dealing with power imbalance of grad studies, managing culture shock, and how to enable international women. Ultimately, space was created for meaningful conversations that provided ideas for navigating challenges when they arise. Not only did the session provide an opportunity for networking, but the connections made within this workshop can help provide support or people to turn to for advice. We recommend this format as model for future events.

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**Session:** Management of Acidic Agricultural Soils.

**Conveners:** Miles Dyck and Linda Gorim (University of Alberta)

This session featured 5 oral presentations focussing on research in Alberta (3), North Dakota (1) and Newfoundland (1). Two poster presentations focussed on research in Alberta and Manitoba. A common theme among all of the presentations was the use of amendments for increasing soil pH for improved soil fertility and crop productivity. Significant knowledge gaps remain with respect to the effects of soil pH and amendments on agronomically significant processes such as biological nitrogen fixation, nitrous oxide emissions and carbon sequestration.

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## 2025 CSSS Conference Summaries (Con't.)

### Sessions hosted by the Canadian Soil Science Society (Con't.)

**Session:** Net-Zero Soil Management Using Regenerative Practices

**Conveners:** Laura L. Van Eerd (School of Environmental Sciences, University of Guelph, Ridgetown ON), Kate Congreves (Department of Plant Sciences University of Saskatchewan, Saskatoon, SK)

In Ontario and the Prairies, the impact of cover cropping on microbial communities, crop productivity and nitrogen fate were presented as was 4R-nitrogen management on nitrous oxide emission. Our understanding of carbon and nitrogen cycling was advanced. We look forward to future findings on how soil management can help achieve climate goals.

lvaneerd@uoguelph.ca

**Session:** Soil Data Governance and Information

**Conveners:** Tegbaru Gobezie (University of Guelph / Ontario Ministry of Agriculture, Food and Agribusiness); Asim Biswas (University of Guelph), Brandon Heung (Dalhousie University), Daniel Saurette (Ontario Ministry of Agriculture, Food and Agribusiness)

Approximately 50 participants attended, engaging actively with clarifying questions and discussions. Key concerns included inconsistencies in data collection and challenges in harmonizing soil data. Presentations highlighted ongoing efforts by institutions (e.g., University of Guelph and Natural Resources Canada) and initiatives (e.g., the National Soil Data Portal Project) to coordinate and align activities toward harmonized national soil data goals.

(Transforming Canada's Soil Data Landscape: The Canadian Soil Data Portal ; A Survey of Spatial Soil Data Use in Canada; An End-to-End Standardized NIR Spectral Data Management System for Enhanced Soil Data Governance; A Canadian Forest Soil Database – Building on the Past for the Future; Unlocking Canadian Forest Service Soil Data: Challenges and Opportunities in Building a Unified Soil Database; Digitizing the Canadian Soil Thin Section Collection)

Tegbaru.Gobezie@ontario.ca

**Session:** Future of Soil Analysis: Integrating Infrared Spectroscopy with AI/Digital Soil Mapping and Assessment at Different Scales – What Now?

**Conveners:** Anshu Beri (University of Guelph) and Tegbaru Gobezie (University of Guelph / Ontario Ministry of Agriculture, Food and Agribusiness); Asim Biswas (University of Guelph), Brandon Heung (Dalhousie University), Daniel Saurette (Ontario Ministry of Agriculture, Food and Agribusiness)

This session fostered dynamic discussions, particularly around the advancements and applications of soil spectroscopy and digital soil mapping from local to global scales. One particular focus of the presentations and follow-up discussions was on in situ spectroscopy: three presentations out of the total six geared to this theme. Additionally, based on the DSM focused presentations, the relevance of global DSM products for local use was explored, with concerns raised about data scarcity in regions like northern Canada. One presenter noted, "I may not use these global digital soil map products for northern Canada, where almost no datasets represent the region."

*(Sensing Tools Support Soil Monitoring in Space and Time; Integrating Mid-Infrared Spectroscopy and Machine Learning to Predict Soil Properties in Ontario Agricultural Lands; Soil Organic Carbon Prediction Using In-Situ Spectroscopy: A Feature Selection Approach; The Modified External Parameter Orthogonalization with Removed PC2 to Effectively Remove Moisture Effects on Spectra; Digital Mapping of Soil Drainage Using Remote Sensing; Global and Continental DSM Products and Their Assessment – Laura Poggio (ISRIC – World Soil Information)*

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## 2025 CSSS Conference Summaries (Con't.)

### Sessions hosted by the Canadian Soil Science Society (Con't.)

**Session:** Soil Physical and Hydrological Properties and Processes and Cropland Health

**Conveners:** Dr. Afua Adobea Mante and Dr Hailong He (University of Manitoba)

The relevance of Soil Physics and Hydrology in addressing the challenges of modern agriculture and their impact on soil health and the planet were once again brought to the fore during the “Soil Physical and Hydrological Properties and Processes and Cropland Health” session at the “Soils for our Future 2025 Conference: A Gathering of Global to Local Perspectives”.

Presenters in the session demonstrated how the soil science community is heading strongly towards addressing some of the issues plaguing the agricultural and environmental communities. The topics discussed included (1) “a new isotope mixing model for plant water apportioning” presented by Dr. Bing Si (Professor, College of Agriculture and Bioresources, University of Saskatchewan), (2) “generating interflow on a forested morainal hillslope” presented by Dr. Ivan Whitson (Senior Soil Scientist, I. Whitson Innovations Inc.), (3) “agricultural water runoff under tile drainage in an undulating landscape in southwest Manitoba: a summary of preliminary research findings” presented by Ashlyn Whetter (Undergraduate student, Faculty of Agricultural and Food Sciences, University of Manitoba, and Summer Agricultural-Environmental Technician, AgriEarth Consulting Ltd.), (4) “estimating hydraulic parameters of Manitoba’s Vertisolic soils using HYDRUS inverse modeling coupled with PEST” presented by Taurai Matengu (PhD Candidate, Department of Soil Science, University of Manitoba), (5) “short-term variability of saturated hydraulic conductivity in a Vertisolic clayey soil” presented by Ishmeet Kaur (PhD student, Department of Soil Science, University of Manitoba), (6) “characterizing the impact of dry-wet cycles on soil hydraulic properties” by Temetope Olufemi (MSc student, University of Northern British Columbia, and (7) “impact of tractor tire pressure and contrasting soil management history on soil porosity and void morphology” by Dr. Olatunbosun Ayetan (P.Ag., University of Guelph).

The presentations highlighted the relevance of the scientific community stepping back and viewing the agricultural and environmental challenges and their possible solutions from first principles. Responding to this call to action is critical as we acknowledge the extensive variability of the landscape, which adds to the complexity of the challenges and the strategies to address them.

The presenters acknowledged the limitations to the extent of field work and instrumentation for acquiring data that are representative of the variability in the landscape. These limitations can be overcome by relying on rigorous modeling and statistical techniques and adapting methodologies beyond Soil Science. The rigour is critical as we need to account for the non-uniqueness of solutions due to the complexities of soil and hydrological systems. With integrated methodology, we will be well-informed in our designing strategies to advance soil resource development and management.

The richness of the topics presented during the session was recognized in the discussions they sparked among experts and non-experts who attended the session and the feedback afterwards.

Presenters were grateful for the funding support received from a wide range of funding agencies and the contributions of collaborators cutting across institutions and the participation of food growers in reshaping the research lens for sustainable soil resource development and management for sustainable crop production and a healthy planet.

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## 2025 CSSS Conference Summaries (Con't.)

### Sessions hosted by the Canadian Soil Science Society (Con't.)

**Session:** Current Topics in Soil Nitrogen Cycling - Parts A and B

**Convener:** Adam Gillespie (University of Guelph)

Approximately 60 participants attended, engaging actively with clarifying questions and discussions. Key concerns covered a wide range of nitrogen fertility research, including microbial N cycling, assessment of 4R BMPs for greenhouse gas and nitrogen use efficiency, N modelling, and approaches to predicting N mineralization. Twelve oral presentations were delivered over two sessions in the order listed in the conference program:

*Cover crops, nitrogen placement and inhibitors reduce ammonia and nitrous oxide emissions and enhance corn yields - Craig Drury (AAFC); Development of a Potato Crop Nitrogen Prediction Model Using Digital Image Processing; Predicting Plant-Available Nitrogen Across Soil Types Using Pyrolysis-FTIR and KCl Extraction; Responses of soil microbial communities to chemical inhibitors of nitrogen transformations; Nature-based fertilizer to reduce Canada's agricultural GHG emissions; Deep nitrate accumulation in typical black soil critical zones of Northeast China; Are High Rates of Nitrogen Fertilizer Still Warranted for Dry Beans?; Linking Optimal Nitrogen Management Practices to Soil Moisture Conditions; Enhanced efficiency fertilizers and cover crops: Impacts on soil microbial functions; Precision 4R Management: Improving Nitrogen Use Efficiency, Greenhouse Gas Emissions and Production Economics of Canola; Simulating monthly nitrate leaching loss from Canadian soils from 1981-2021 using CANBNr models; Synthetic anhydrite increases pulp and paper mill sludge nitrogen use efficiency under wild lowbush production*

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**Session:** Carbon Cycling and Sequestration - Parts A & B

**Convener:** Adam Gillespie (University of Guelph)

This session covered a wide range of carbon study in a range of ecological systems. These included cropping, livestock, degraded and specialty crops. Topics included modelling, organic matter quality analysis, importance of different amendments, and controls over organic matter stability. Twelve oral presentations were delivered over two sessions.

*Soil Organic Matter is Responsive to Short-Term Climate Cycles; Linking thermal stability and organic chemistry with surface soil organic matter stability-A study across ecozones; Forest soil carbon following the regreening of a mining and smelting degraded landscape in Sudbury, Ontario; Soil Organic Carbon and Total Nitrogen Stocks in Contrasted Potato Rotations with Cover Crops in Prince Edward Island, Canada; Assessing the impact of adaptive multi-paddock grazing on soil organic carbon composition in temperate grasslands; Long-term manure application remodels microbial communities to drive SOC accumulation via shifting plant-versus microbe-derived carbon dynamics; Comparative study of using EPIC and DNDCv.CAN models for estimating cropland net ecosystem exchange of CO<sub>2</sub>; Aggregate Composition Response to Soil Disturbance by Land Management with a Past History of Manure Amendment; Harnessing the Potential of Subsoil to Store Stable Soil Organic Carbon in Agroecosystems; Land use changed soil organic carbon quantity and speciation in agricultural soils from southern Saskatchewan; Quantifying carbon under perennial biomass cultivation using natural abundance stable C isotopes and programmed pyrolysis; When Soil Carbon Isn't Everything: Impact of Regenerative Practices on Soil Health Metrics in the Semi-Arid West*

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## Article Submission

### **The role of legume-intensified cropping systems to optimize N supply in organic grain**

Authors: Sophia Partyka, Michelle Carkner, and Martin Entz

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The primary goal of this experiment is to explore the role of legume-intensified cropping systems and livestock grazing to optimize nitrogen (N) supply in organic grain production. Although incorporating a green manure crop into the crop rotation provides both soil and ecological benefits, the operating and opportunity costs associated with this practice create a financial barrier, making it a challenging practice for many organic farmers. As a result, it is desirable to identify alternative methods of adding N that do not require sacrificing an entire year of grain production. The main research question is whether a continuous grain production system that includes various forms of legume-intensification can match or exceed the N supply of a rotation that includes a full-season green manure crop. A second question regards the role of grazing on soil N status in both the legume intensified and traditional organic rotation.

The traditional organic grain rotation consists of a green manure composed of oats, subterranean clover, hairy vetch, and peas, followed by monoculture spring wheat and flax. The second rotation is legume-intensified, replacing the full-season green manure with various legume intercrops and cover crops. This includes an oat and pea grain intercrop under sown to hairy vetch and subterranean clover, spring wheat relay cropped with red clover, and a flax and lentil grain intercrop.

In addition to evaluating N supply, this research will assess productivity differences between these two systems while incorporating the effects of sheep grazing. For the traditional green manure system, soil N levels will be monitored under three grazing scenarios: grazing during both summer and fall, grazing only in the fall, and no grazing. These treatments will be compared to the legumeintensified rotation, where grazing occurs exclusively in the fall following the oat and pea intercrop harvest. I will also examine the impact of grazing the wheat and red clover system. Red clover grazing will be applied during the fall after the wheat has been harvested.

My main hypothesis is that intensifying legume use in a rotation will add as much or more N to the system as setting aside a full year to grow a green manure crop. My second hypothesis is that grazing will increase the availability of N to the following crop. N dynamics will be assessed using soil nitrate testing, soil ACE protein and crop N uptake. This research will be completed in the 2025 season and aims to further understand the impacts of a legume-intensified rotation and targeted grazing on N supply and productivity in organic grain systems.

## Article Submission (Con't.)

### Ontario Releases Soil Health Report to Support Sustainable Farming

The Ministry of Agriculture, Food and Agribusiness (OMAFRA) has released the Ontario Topsoil Sampling Project: Soil Health Baseline Study (OTSP), a new report that sets a benchmark for agricultural soil health across the province. The study provides valuable insights into how land management and environmental factors affect topsoil, helping farmers make informed decisions to improve soil health and productivity.

Launched in 2019, the OTSP involved sampling topsoil at over 500 farms across southern Ontario, with select sites in the north. Three samples were taken at each site to reflect landscape and soil variability, resulting in more than 1,500 samples collected. The project included land management surveys, soil and landscape descriptions, and laboratory analysis.

The report highlights results for key soil health indicators - such as soil organic matter and bulk density - and the factors that influence them, including soil texture, cropping systems, and landscape position. One key finding was that fine-textured soils often have higher-than-ideal bulk density, indicating widespread compaction. Compacted soils limit root growth, reduce water infiltration, and can lower yields and profits.

"This report represents a major step forward in our understanding of the status of Ontario's agricultural soils," said Daniel Saurette, Land Resource Specialist at OMAFRA. "Soil health is a generational challenge. Managing soil health today is an investment for future generations."

With this new baseline, producers can compare their own soil data, identify areas for improvement, and adopt best practices to enhance soil health over time.

View the report [here](#) or view the dashboard and other OMAFRA soil information products at the Ontario Soils Geohub. For more information, contact OMAFRA at [ontariosoilsurvey@ontario.ca](mailto:ontariosoilsurvey@ontario.ca) or (226) 979-4407.



## Call for Papers



### Canadian Journal of Soil Science

#### **CALLS FOR PAPERS**

#### **Soil Life and Function: Advances in Soil Microbiology and Biogeochemistry\***

\*cross-journal collection with *Canadian Journal of Microbiology*

This special collection aims to highlight current advances in soil microbial ecology, biogeochemistry, and their functional implications for both natural and managed systems.

#### **Guest Editors:**

**For *CJSS*:** Dr. Karen Thompson (Trent U.), Dr. Monika Gorzelak (AAFC)

**For *CJM*:** Dr. Kari Dunfield (U. Guelph)

**Submissions open:** Jul 31, 2025–Feb 1, 2026

**For details, please visit [canscipub.com/cjss](https://canscipub.com/cjss).**

#### **On-Farm Experimentation: Sustaining Soil Health and Productivity**

On-farm experiments are increasingly employed to transform agricultural research under real-world practices. Focusing on research conducted in commercial farmer fields or at the watershed scale, this special collection invites papers on soil processes, crop productivity, resilience, and sustainability.

**Guest Editors:** Dr. Mervin St. Luce (AAFC), Dr. Tandra Fraser (AAFC), Dr. Melissa Arcand (U. Saskatchewan)

**Submissions open:** Sep 1, 2025–Mar 30, 2026

**For details, please visit [canscipub.com/cjss](https://canscipub.com/cjss).**

# Call for Papers (Con't.)



Discover Soil

## Call for Papers

### **Collection: Integrating Soil Carbon Research Across Disciplines: Emphasis on Sources, Sinks, and Storage Dynamics in Unexplored Landscape**



This proposed collection aims to delve into the intricate spatial, thematic, and temporal patterns observed in soil carbon research, with a particular focus on understanding the dynamics of carbon sources, sinks, and storage mechanisms within various ecosystems. It will explore the evolving conceptual frameworks regarding soil carbon processes, highlighting how our understanding of these processes has changed over time. In addition, the collection will investigate the crucial role of interdisciplinary collaborations in advancing soil carbon science, examining how experts from diverse fields can work together to tackle complex issues. It will look into emerging trends in policy-making and the integration of sustainability considerations into soil carbon research, emphasizing the need for alignment with broader climate action and land restoration initiatives. The collection invites contributions that detail innovative methodological advancements, comprehensive data synthesis efforts, and global mapping initiatives that aim to enhance our understanding of soil carbon dynamics. Furthermore, it will feature modeling approaches that provide insights into effective carbon sequestration strategies applicable to both natural and managed ecosystems. By fostering a deeper understanding of these topics, the collection seeks to promote sustainable practices that can

significantly mitigate climate change impacts through improved soil carbon management.

**Keywords:** Agricultural Waste and Soil Carbon Management; Sustainable Land Management; Agricultural Big Data; Interdisciplinary Collaboration; Soil Health; Climate-smart Agriculture

#### Guest Editor:

Dr. Kingsley John, Ph.D., Dalhousie University, Canada.

Dr. Esther O. Ayito, Ph.D., Dalhousie University, Canada

*Discover Soil* is an open access journal publishing research from all fields relevant to soil science. Publication costs for *Discover Soil* are covered by Springer Nature until 31 December 2025. Authors whose articles are accepted for publication up to and including that date will not pay an article-processing charge. Current charge: £0/\$0/€0  
Standard charge: £1040.00/\$1390.00/€1190.00

- Indexed in DOAJ.
- Considers articles from a broad range of soil science disciplines.
- Topics include soil chemistry, physics and biology, soil conservation and more.



SPRINGER NATURE GROUP  
SDG Programme  
supporting the Sustainable Development Goals

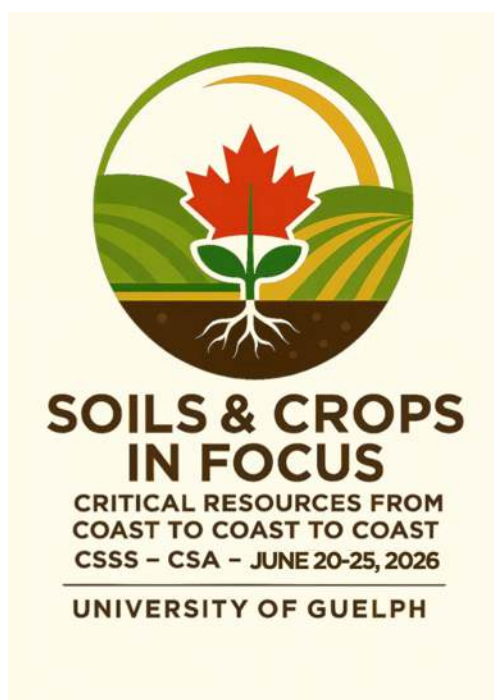


Please [click here](#) or scan the QR code to visit our Collections Website

Submission Deadline: **31 March 2026**

<https://link.springer.com/collections/hedghcibdj>

## Conferences | Events | Meetings



We are delighted to invite members of the Canadian Society of Soil Science (CSSS) and the Canadian Society of Agronomy (CSA) to join us for a joint annual meeting, to be held June 20–25, 2026, at the University of Guelph. This collaborative gathering will provide a unique opportunity to connect across disciplines, share cutting-edge research, and foster dialogue on the future of soils, crops, and sustainable land management in Canada and beyond. We warmly welcome all attendees and look forward to offering an engaging program of scientific sessions, workshops, field tours, and networking events designed to inspire collaboration and innovation.

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Save the Date for the 4th Global Soil Biodiversity Conference  
Victoria, British Columbia, Canada  
April 12-15 2026!

<https://globalsoilbiodiversity2026.org>



## Conferences | Events | Meetings (Con't.)

### ICOBTE & ICHMET 2025

#### **A Joint Global Conference on Biogeochemistry and Heavy Metals**

**September 22-26, 2025  
Korea University, Seoul, South Korea**

The ICOBTE conference series is organized by ISTEb (International Society for Trace Element Bioavailability and Environmental Health), a non-profit organization founded in 1999 to advance research on trace elements. ICOBTE focuses on the bioavailability and environmental impact of trace elements, while ICHMET, first started in 1975 in Toronto, Canada, provides a global platform for discussing the presence and impact of metals and metalloids in the environment. agro-ecosystems.

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#### **2nd International Conference on Agriculture & Natural Resources**

**<https://agricultureconferences.com>**

**November 17-18, 2025  
Rome, Italy**

We are excited to announce the 2nd International Conference on Agriculture & Natural Resources (ICANR 2025), set to take place on November 17-18, 2025, in Rome, Italy. This prominent event will bring together agriculture professionals, natural resource experts, and environmental scientists from across the globe to discuss the theme "The Agricultural Sector's Challenges in Safeguarding Natural Resources and the Environment for Future Generations."

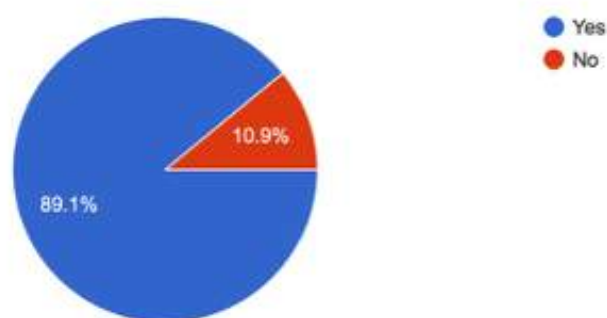
# CSSS Website Feedback Survey

55 responses | Survey closed Jul 17, 2025

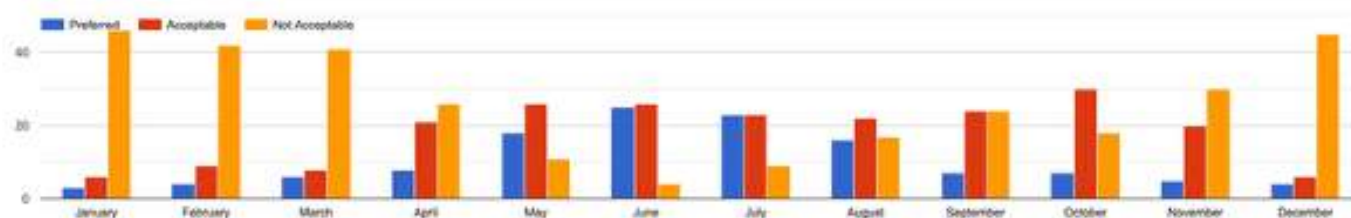
## CSSS Annual Scientific Gathering

1. Are you supportive of changing the moniker for the annual scientific gathering of the CSSS from Annual Meeting to Annual Conference?

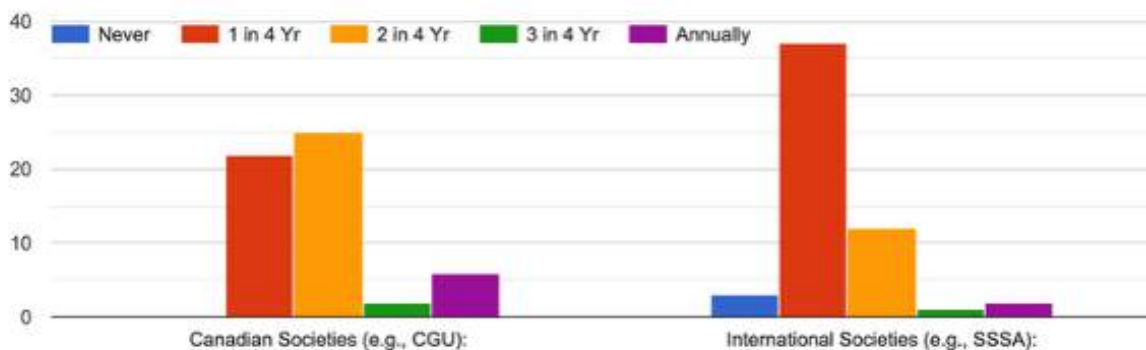
55 responses



2. Indicate your scheduling preference(s) for the CSSS annual scientific gathering



3. How frequently should the CSSS hold its annual scientific gathering jointly with other national or international organizations? Joint meetings with:



## CSSS Website Feedback Survey (Con't.)

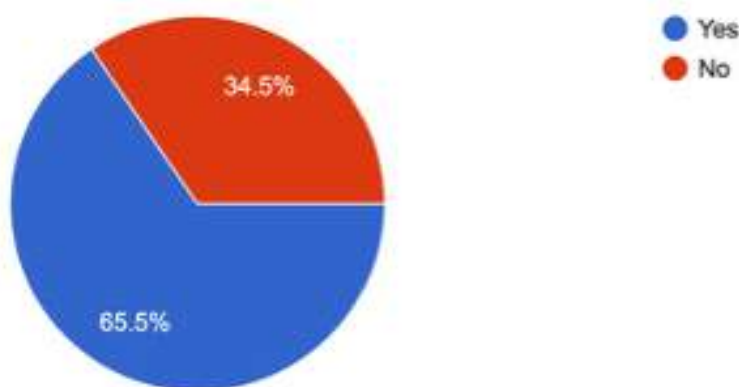
4. Do you have any additional comments for the CSSS Annual Scientific Gathering
- With the current political situation in the USA, any joint meetings should be held in Canada rather than the US
  - Meetings held with International Societies likely less than 1 in 4 Yr but no "Fewer" option available above.
  - Keep the separate evening banquet - it is valuable
  - No
  - I have no strong preference for joint mtgs.
  - Love the smaller scale/feel of the CSSS "conference"; great opportunity to connect with national colleagues that would be lost if meetings are held jointly too often
  - I love the CSSS meetings (soon to be conferences) and have been attending for 23 years. I would like to see more interaction with other Canadian Societies (certainly the CGU, but also maybe the CIF, CSEE or even CSM) rather than the SSSA (especially given challenges visiting the US and a strained US-Canada relationship). It might be logistically too challenging, but joint meetings with other non-US soil societies might be fun (e.g., back to back joint meetings in Ireland/Canada, etc. once in each country). In general, just keep up the great work :-)
  - should endeavor to provide some mode of virtual attendance at annual scientific gathering
  - Consider sponsoring a few participants from developing countries (depending on the financial availabilities)
  - Alternating joint meetings with CSSS-only meetings ensures we maintain our national identity and relationships while still providing opportunities to diversify networks (and share the planning responsibilities).
  - I'm retired, so my responses reflect my greater scheduling flexibility.
  - End of June into July is a reasonable time of the year, if not Sept. To Oct. Is also good. Any earlier or later gets complicated with weather.
  - If you alternate the Cdn and Intl joint society meetings (at 1in4 frequency) then you have joint meetings at 2 in 4 years (appropriate).
  - With respect to "meeting" versus "conference"; the terms have been used interchangeably for many Societies (e.g., ASLO uses "Meetings", as does SSSA). It seems like a trivial thing to worry about.
  - It is good to have some joint conferences to expand scope, but it is good to have some focused meetings as well. It would be interesting to try a similar tri-society approach like in the US.
  - It was also be nice to be able to participate in some virtual sessions if possible
  - Critical for networking at National scale; cohesion among Canadian soil scientists. Keep it affordable (city/venue/season held); Gov't travel restrictions are detrimental.
  - The CSSS Annual Scientific Gathering has been an inspiring platform for me as an international researcher from Sri Lanka. I am truly passionate about soil science and am actively seeking opportunities to pursue an MSc or PhD in this field at a Canadian university. Although I have applied in the past, I have not yet been successful in securing admission. As a CSSS member and active participant in the conference, I kindly ask that my sincere commitment and participation be considered by potential supervisors or programs when selecting students for graduate opportunities. I am eager to contribute to Canada's academic and research community in soil science.

## CSSS Member Survey Results (Con't.)

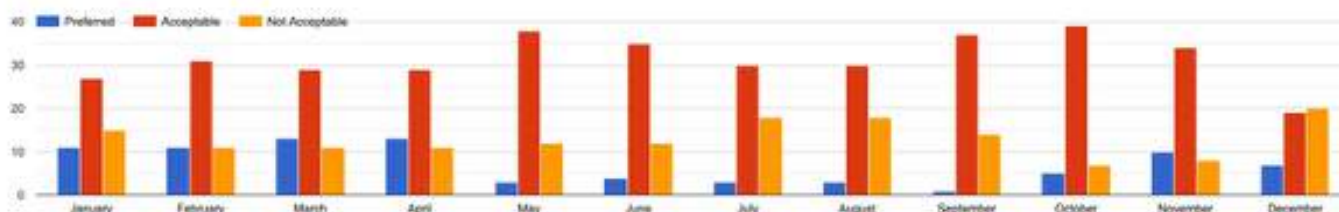
### CSSS Annual General Meeting (AGM)

5. Are you supportive of decoupling the CSSS AGM from the CSSS annual scientific gathering and running the CSSS AGM in purely virtual mode?

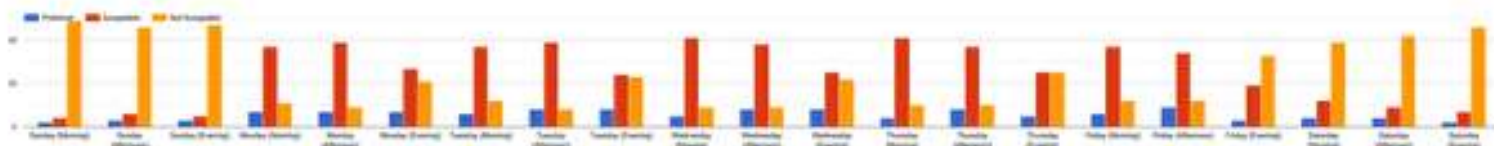
55 responses



6. If the CSSS AGM were to be decoupled from the CSSS annual scientific gathering and run in purely virtual mode, please indicate your month preferences for Scheduling.



7. Do you have a specific preference for time of day for the CSSS virtual AGM?



## CSSS Member Survey Results (Con't.)

8. Do you have any additional comments about the CSSS AGM?

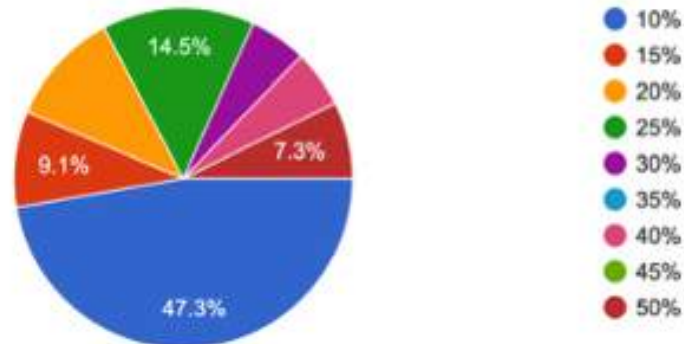
- The month of December is not listed above (I vote as not acceptable)
- AGMs more recently for Can. Soc. Agronomy have been done hybrid during Society conferences. Decoupling AGM from Meeting seems like more work for the (volunteer) executive.
- Consider a hybrid AGM. The advantage of the in-person meeting is having folks participate actively which is lost in a virtual meeting. Hybrid would allow folks not at the in-person meeting to participate.
- I suggest keeping it at the meeting/conference, but in a hybrid mode to allow remote folks to join too.
- Strongly support decoupling.
- I prefer in-person meeting due to digital fatigue and less opportunity to interact with people
- should be linked to change in the terms of councilors / presidents
- I would encourage the Society to continue incorporating more opportunities for student and early-career researcher engagement in future AGMs.
- Virtual meetings will have less discussions and generation of ideas, is that acceptable? Meeting preparations and structure should reflect that. Did you have more or less attendance at the two years of virtual meetings? Knowing that might better inform my decisions.
- I feel very strongly that the AGM should take place during the Annual Meeting/Conference. I would be unlikely to attend a virtual event. Based on very poor attendance at recent virtual events, I do not think that decoupling the AGM and Annual gathering will be successful.
- No, I am not in favour of this at all. The virtual AGM during COVID was one of the worst I have attended in my many years of membership. Virtual meetings in general can be useful for giving information but are problematic for any matter that requires discussion. And the many time zones across Canada are problematic for any virtual meeting. This is a very Ontario-centric idea, especially with respect to the times listed above.
- If you decouple the AGM from the conference, I think you will see less engagement from the members. I can appreciate the travel issue, but being part of other organizations I can see a clear difference in membership engagement when in person vs online, with in person far more engaged. Online, you will just get silence and cameras turned off.
- The CSSS Annual General Meeting (AGM) is an important platform to discuss the future direction of soil science in Canada. I appreciate the transparency and inclusivity of the discussions. As an international member, I would be grateful if opportunities for mentorship, student-supervisor matchmaking, or graduate program guidance could be integrated into the AGM agenda—especially to support passionate students like myself who are actively trying to join Canadian universities for MSc or PhD studies in soil science. Such initiatives would strengthen CSSS's role in fostering the next generation of global soil scientists
- Even if we moved the AGM virtually, I still think that we should have a maximum length of the meeting. People lose interest and connection with the meeting when it goes too long. Typically they are 2 hrs so I think it should remain that length in person or virtually.

## CSSS Member Survey Results (Con't.)

### CSSS Quorum

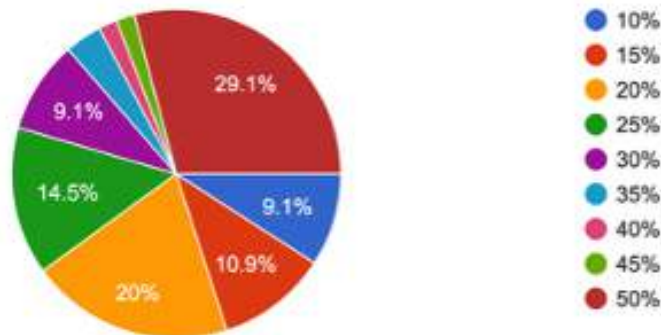
9. What should be considered quorum for solely in-person meetings of the CSSS membership?

55 responses



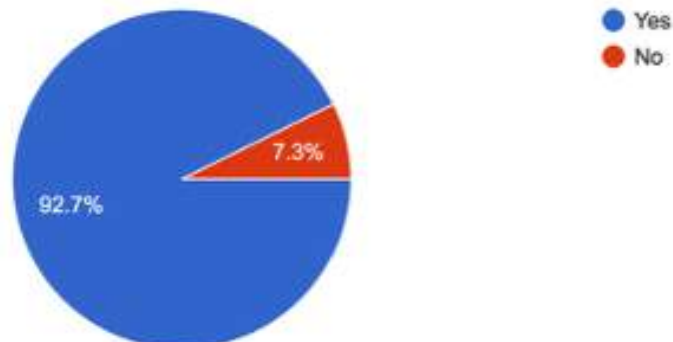
10. What should be considered as quorum for meetings of the CSSS membership held in hybrid or entirely virtual mode?

55 responses



11. Should the CSSS adopt a standard practice of using electronic asynchronous voting by members (those entitled to vote) on resolutions and other items of business requiring membership voting?

55 responses



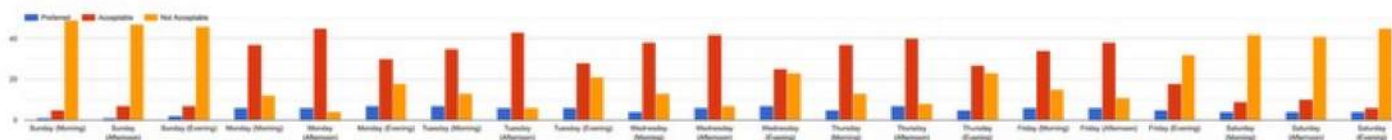
## CSSS Member Survey Results (Con't.)

12. Do you have any additional comments on the quorum for CSSS?

- Based on post-covid AGMs held at CSSS conferences, there was about 100 people, similar to e-voting. It might not be an issue if AGMs can be at the conference with virtual options.
- Don't take my answers too seriously.. I would defer to the Rules Committee/current council/whoever is leading this evaluation!
- I think an hybrid mode would be ideal for meetings, once quorum is established (at start), then meeting can continue to end of agenda, even if attendance subsequently drops below quorum.
- Electronic voting is more convenient to participate
- The current quorum allows decisions by too few members; consider hybrid or asynchronous voting to increase participation and representation.
- Moving entirely to e-voting goes hand-in-hand with moving to a virtual AGM, does it not?
- Attendance at conferences has always been biased to the region in which the meeting is held and so has never been representative of the CSSS membership as a whole. As such, the majority of items voted on at the AGM are acceptance of minutes and various reports. Any truly important issue affecting membership as a whole has always been conducted by asynchronous voting (including by mail-in ballots), and it is important that this continues.
- One option is to provide the information and allow digital voting just prior to the AGM, results can be presented at the AGM, and in-person voting could be held for any new business presented at the AGM.
- Quorum requirements should balance inclusivity with practicality. Given CSSS's diverse and international membership, flexibility in quorum thresholds depending on meeting format (in-person, hybrid, virtual) is essential to encourage participation while ensuring decisions are representative. Clear communication and reminders ahead of meetings can also help improve attendance and voting rates.

### CSSS Virtual Townhall Meetings

13. For future CSSS Virtual Town hall Meetings, please indicate your preferences for scheduling



14. Do you have any additional comments for CSSS Virtual Townhall meetings?

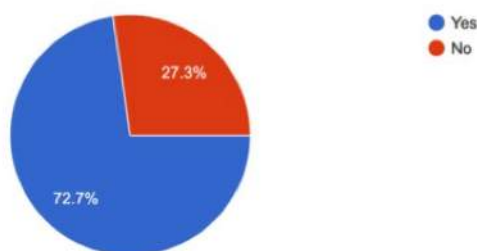
- At this moment, I don't remember it being offered.
- Consider scheduling Central time to facilitate participate E-W
- While evenings and weekends mean people are less likely to have a scheduling conflict with their professional calendars, I don't think it's reasonable to expect people to compromise their personal calendars.
- One meeting starting at 0800 PST should cover the whole country but I am ok with 2 meetings.
- Again, an impossible question to answer given the many time zones in Canada. And scheduling anything during work hours is problematic for many people.
- All members are likely involved both from personal interest as well as part of their position at work. I do not think it is an issue to have these town hall meetings during the work day. Also by splitting the town hall between east and west, you split the membership. I think you should offer it only once, but have multiple in the year (ex 2 per year, held 4 months from each other and the annual meeting). Some should be offered at a time better for Eastern Canada, and some offered at a better time for Western Canada. We are a national society representing a large geography, we can all help each other out.
- Virtual Townhall meetings are a great way to increase member engagement and provide timely updates on CSSS activities. To maximize participation, I suggest scheduling them at varied times to accommodate different time zones, and including interactive elements like Q&A sessions or polls. Recording the meetings and sharing summaries afterward would also benefit members who cannot attend live.
- I will not attend townhall events unless it is something very important to me. I would rather receive an email, or use a forum. I think that webinars would be a great addition to the CSSS; however, that is not a townhall.

## CSSS Member Survey Results (Con't.)

### Student Membership in CSSS

15. Do you agree that an increase to the graduate student membership fee is warranted?

55 responses



16. If you answered "Yes", what should the membership fee be set at?

55 responses



17. Is there anything the Society can do to enhance the graduate student experience in the CSSS?

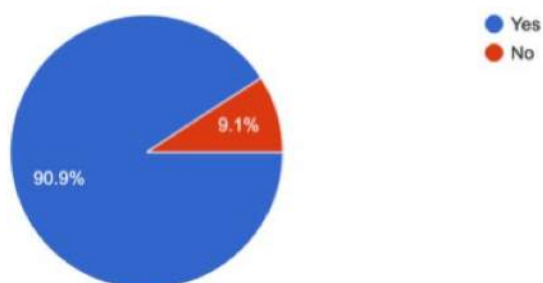
- Membership fee sponsorship for their study period.
- develop mentoring opportunities
- Sessions of interest specifically to graduate students such as professional development, employment, or navigating grad student life in the society, etc. Is a mentoring program possible?
- Work with CSP on workshops or mentorships. Provide networking opportunities virtually every other month or quarterly with lunch-and-learns or student presentations.
- Encourage/promote the use of virtual presentations for thesis defences across Canadian universities.
- Virtual presentation to members. Set a time and date once per month, for students to present research (40min) and answer questions.
- Special virtual workshops on soil science and scientific communication for students, increase the amount of travel awards
- Inviting them to share their research activities will be a good option
- Graduate student rep role/responsibility be reviewed
- Career networking and engagement opportunities.
- Student lead workshops
- Create a separate graduate executive committee that is represented on the main executive and put them in charge of organizing the poster competition judging.
- Students provide 4 policy briefs (or issue briefs) per year on soil related topics. Students would be coached, helped with more senior Members. Gives the students communication training and experience in addressing complex and perhaps big issues for the scientific community or public at large.

## CSSS Member Survey Results (Con't.)

- The society should give special consideration to graduate students to present their research at the conference. This will contribute to their career and professional development.
- Keep the membership fee frozen at \$10.00, annually. Just because other societies are increasing their membership fees does not mean that the CSSS has to as well.
- Offer paper writing sessions hosted by someone who has or is an editor at a journal, seminars on challenging aspects such as stats and scientific design, resume writing and career info (both public and private organizations).
- Dedicated sessions at the Annual conference.
- Soil science as a career as session at the Annual Gathering
- The CSSS can greatly enhance the graduate student experience by providing more travel awards and conference subsidies to help students participate in meetings and present their research. Organizing professional development workshops on essential skills such as scientific writing, grant applications, and career planning would also be valuable. Additionally, establishing mentorship programs that connect students with experienced researchers and professionals can offer guidance and support. Creating networking opportunities through social events and online platforms will help students build connections within the soil science community. Finally, offering virtual participation options is important to ensure that international and remote students can engage fully with CSSS activities
- Perhaps there could be events virtually throughout the year. E.g., webinar, panel discussion, etc.

18. Should the CSSS provide an option for undergraduate student membership?

55 responses



## CSSS Member Survey Results (Con't.)

19. If you answered Yes to above, what can the Society do to attract undergraduate students?
- Masters and/or PhD scholarship opportunities for best undergraduate poster/ oral presentations
  - in-school advertising
  - have soil judging as an annual event;
  - Social media postings highlighting undergraduate students and the CSSS
  - conference presentation opportunities, scholarship for attendance
  - Reach out to undergraduate programs, undergraduate soil clubs or agronomy groups
  - Make it free. Ask instructors of undergraduate soil science courses across Canada to advertise it to their students. Prepare a short video that instructors can show in their class, to explain why membership in a professional society/ professional organization is useful for students embarking on a professional career
  - Work with instructors of soils courses to make a connection. Have something specific to them on the webpage to connect with them and for them to connect with other undergraduates.
  - Having the category option shows that we welcome these students. What could CSSS offer undergrads? I'm not sure. If virtual lectures are occurring then they could participate.
  - Similar membership fee; potentially a separate category in poster competition if budget permits
  - The Society can attract undergraduate students by increasing engagement through hands-on learning opportunities, such as organizing workshops, field trips, or lab tours relevant to their field of study.
  - \$5 membership?
  - Letter to soil departments in Canadian universities
  - With nominal fee, volunteer opportunity and job shadowing
  - Work with Grad Student rep
  - Advertise in undergrad soils courses.
  - Free membership
  - Career networking and engagement opportunities.
  - Consider having student chapters (open to both undergrad and grad students) on individual campuses.
  - Offer Travel expenses
  - Advertise across universities and colleges through membership network.
  - Create bulletin board advertising to be sent to university departments and colleges with soils related programs. Encourage program faculty who are CSSS members to inform students of the opportunity.
  - Have a designated professor/graduate student for outreach at each university. Sponsor activities like poster competitions for UG or soil judging contests for UG.
  - It should be the same as graduate student membership. Why differentiate?
  - engage Universities/Colleges in relaying information about the Society (eg Introductory Soil Science/ Environmental Science courses; UG capstone/seminar courses)
  - The undergraduate membership fee should be free
  - Advertise, provide bursaries or scholarship opportunities, if possible and open doors for learning opportunities. If a young person is becoming a member of a society such as this, chances are they have a passion for soil. Make it worth their while.
  - Focus on the local university students and provide a limited number of free admission tickets through the university. This would go well with a career opportunity session for under grads to learn about options like employment but also for graduate student opportunities.
  - Feature CSSS members, showcase CSSS work
  - Liaise with Universities and local soil science/ag clubs
  - summer schools and workshops
  - Introducing undergraduate membership would help engage students early in their academic careers, fostering interest and involvement in soil science. To attract undergraduate students, the Society could offer discounted membership fees, access to tailored workshops or webinars, student-focused newsletters, and opportunities to participate in CSSS events or competitions. Creating mentorship programs that connect undergraduates with graduate students and professionals could also encourage long-term engagement.
  - Get universities to advertise.

## CSSS Member Survey Results (Con't.)

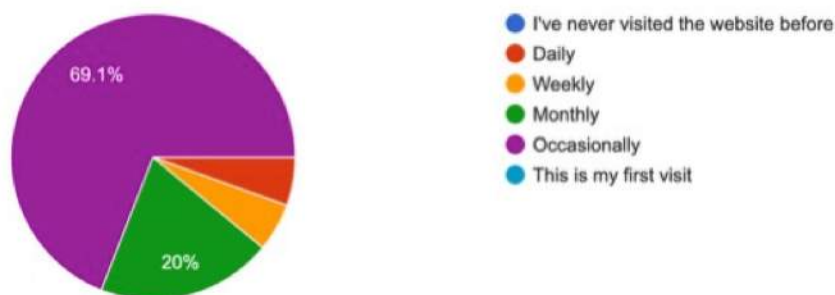
20. Do you have any additional comments about student memberships?

- As Faculty, I pay my student membership fees and I use PDR funds to pay for my membership fee.
- To attract undergraduate students, the society could offer discounted or free membership fees, Host mentorship programs, and organize accessible events and webinars such as careers in science studies or interdisciplinary research.
- International graduate students should also be specially considered for travel and accommodations assistance

### Website Feedback

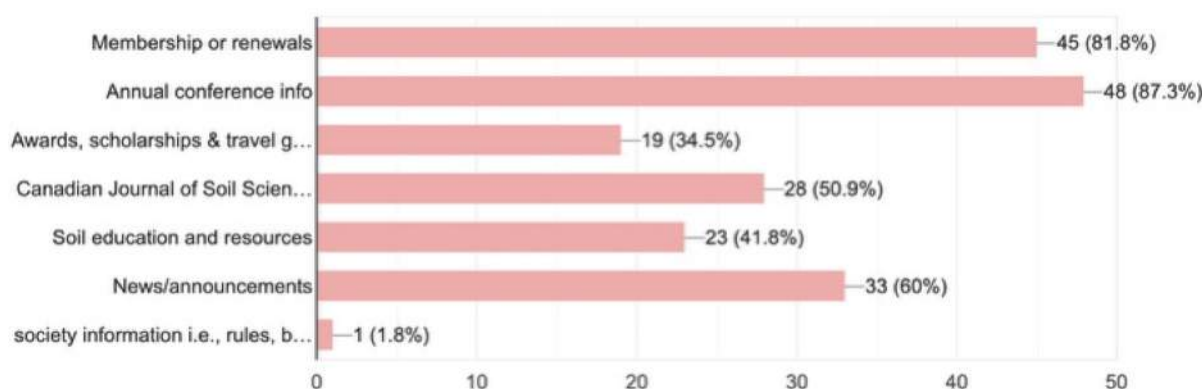
21. How often do you visit our website?

55 responses



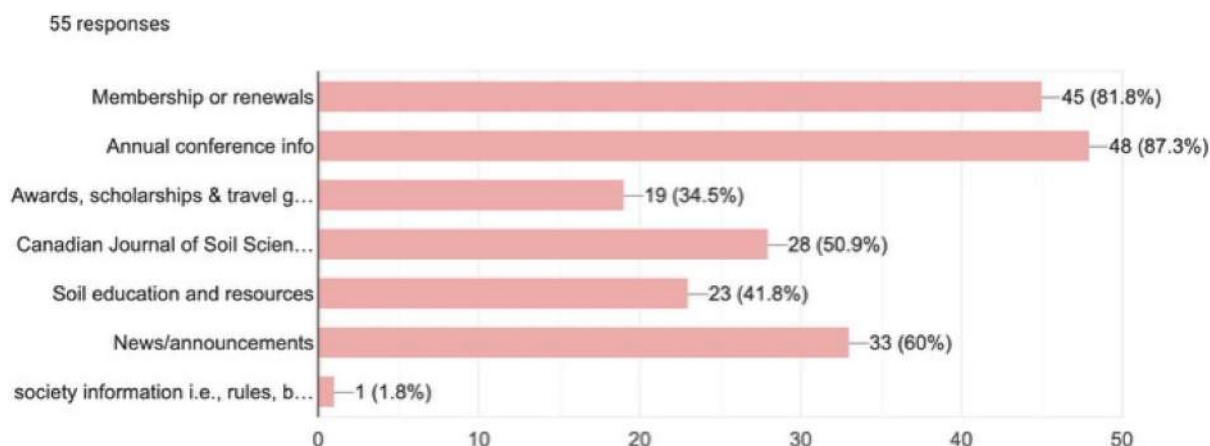
22. What do you usually visit our website for?

55 responses



## CSSS Member Survey Results (Con't.)

23. On a scale of 1–10, how easily do you find what you were looking for? (Linear scale: 1 = Not at all; 10 = Very easily)



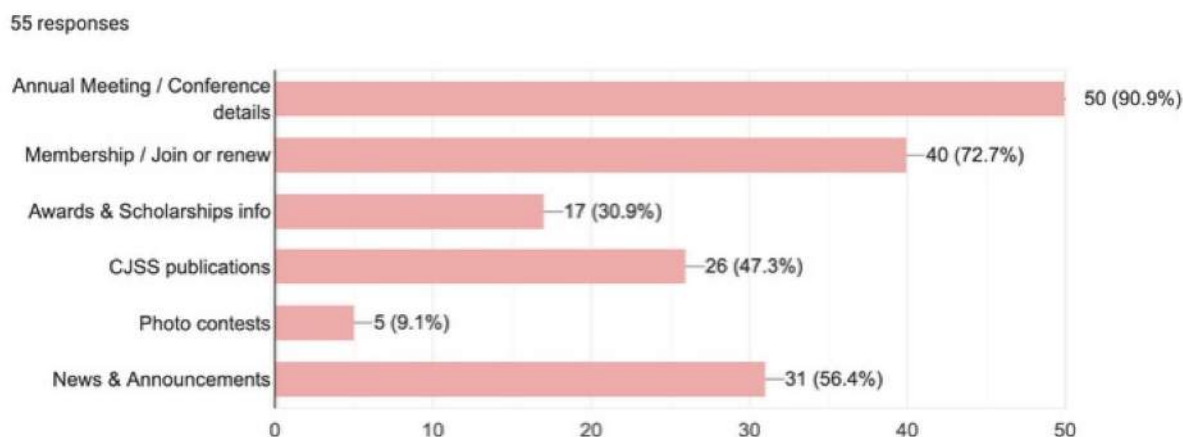
24. What do you like most about the CSSS website?

- Content, clear events info, educational content
- content
- design
- Both mobile experience, content and speed
- information about opportunities.
- Relevant information
- speed
- Quick access to resources
- Essential content; not too much extra unnecessary content
- easy to find what I am looking for
- It's been a while since I visited- I cant remember. I like the alerts I get in my email on News
- Content is good, enjoy seeing the updates on the home page. easy to navigate,
- It is easy to navigate
- Pretty up to date.
- find info easily
- quick links
- design, content, navigation
- Looks and functions decent to me.. I like the links to the blog and social media
- That it exists
- Nothing really, it should be a forward facing public as well as professional resource.
- Clear sections
- Soil Education and resources
- Features.
- Professional standard, inclusivity
- It's last redesign made most items generally easy to find.
- I don't use it very often, but I've never had trouble finding what I was looking for.
- Educational contents
- CONTENT AND INFORMATIVE
- It's ok not very eye catching.
- Appearance

## CSSS Member Survey Results (Con't.)

- Quick access to membership forms Simplicity Academic updates.
- Provides relevant information about the Society in a single place.
- The drop-down menus at the top and the quick searches on the right.
- Clear event information, design, contents, speed and the features as well
- quick access to membership forms
- The design itself is somewhat boring, however, I have never had any issues with navigation etc.
- Easy access to the latest newsletter and finding the annual meeting info.
- Navigation
- Newsletters
- simply design
- not sure
- Content
- Familiar. Know the layout already.
- What I like most about the CSSS website is its clear and well-organized events information and quick access to membership forms. The website's navigation is straightforward, making it easy to find conference details, membership options, and resources without confusion. I also appreciate the inclusion of educational content relevant to soil science, which supports both students and professionals. The site loads quickly and works well on mobile devices, allowing convenient access from anywhere.
- Easy to use
- It gets updated regularly

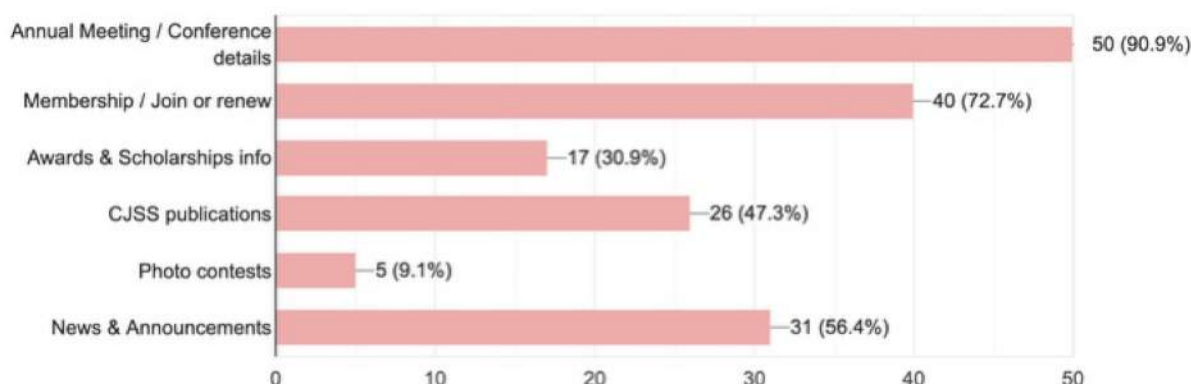
25. Which of the following content do you find most useful to you?



## CSSS Member Survey Results (Con't.)

26. Which of the following do you think we should keep for CSSS members?

55 responses



27. What frustrates you or doesn't work well on the CSSS site?

- No idea
- Nothing
- nothing
- Nothing.
- Design could be improved. And the functionality to reach out or chat with members would be ideal
- may provide more links for other relevant conferences.
- Annual meeting details on a separate website from the main CSSS website, with sometimes erratic links from the main website.
- navigation not intuitive
- Updates are infrequent so the "news" always seems out of date.
- Not always up to date - this is difficult to do, I realize. Sometimes the connections are cumbersome. Perhaps could be improved by adding more links within items, and by banner headings with topic links. If possible, to accommodate diverse searching approaches, make it possible to get to information in more than one way.
- Once, even as a member, posting a job and other information to the CSSS community was cumbersome and in the end was never posted.
- perhaps changing the yellow colour of the updates section on the first page.
- I don't know
- not much
- Front page is "cluttered"; consider opening photos or news highlight
- I haven't encountered any major issues with the CSSS site so far. Everything I've needed has been accessible and easy to navigate.
- Just lack of intuitive approach to where things are.
- The logo, can we get an update? Make it a competition within the society like the phot contest.
- The informations about the travel awards are inaccurate and incomplete
- Not one
- Navigating down through multiple layers to get to desired content.
- navigating for membership renewal.
- Sometimes there are lags in updates (for example, earlier in the year it was hard to find annual meeting info on the website even though the conference site was available), but I know it's being done off the side of someone's desk, so I don't let it bother me.

## CSSS Member Survey Results (Con't.)

- Nothing comes to mind, mostly because I seldom need to use it.
- Membership renewal, login and membership expires after one year. Membership and ID should be valid from day one and members could always login to renew their membership rather than creating a new account every year.
- Finding links to conferences is sometimes not clear.
- Nothing in particular.
- Works fine for me
- Limited content. Servicing the academic community. Soil science practitioners recognize the site as a good place to see what is happening with university academia but go elsewhere for other content.
- Too many layers of information to wade through to find relevant content
- It is not always kept up to date (varies from year to year).
- Finding award and scholar information, and finding sponsorships to attend annual conference
- CJSS publications access seems to be temperamental. Doesn't always work. Also needs to be more mobile friendly, meaning it is a lot of scrolling and info presented. Should be more of I click on what I want to see.
- maybe an update on the design would be nice
- It has a bit outdated design
- More info or links to other Canadian societies (e.g. CGU, CMOS, CSA, etc.)
- needs several clicks to get to the annual meeting
- Looks old.
- One frustration I've experienced with the CSSS website is that, despite being a member, I have not seen clear benefits or support in terms of opportunities for graduate studies or connections with potential supervisors. It would be helpful if the Society could provide more visible resources or programs to assist members, especially international students like myself, in advancing their academic careers.
- Seems okay
- It can be challenging to find the page that you want.

28. Are there other websites or societies websites you admire that we should use as reference? What do you like about it?

- The home page here is great (<https://www.sciencesocieties.org/>)
- The current CSA-CSSS-SSSA have added feature that could be used as a reference
- SSSA
- SSSA
- Can. Soc. Microbiol.,
- Every website has strengths and weaknesses. Never met one that wasn't at least a little annoying.
- Members portal for the SSSA website
- IUSS <https://www.grss-ieee.org/>
- CSSS is among the better ones

## CSSS Member Survey Results (Con't.)

29. Any other suggestions or ideas for csss.ca?

- Needs a "member information" section where members can provide info on their expertise. It should be searchable by anyone who is looking for information.
- Let's get an update, but maybe with a different consultant, the current one is stuck in the 90's based on the logo and page design.
- To include a section to download the logo with a good quality
- There is room for improvement
- Consider ways to further engage industry professionals in the society
- Thanks for seeking input on these key questions!
- perhaps a link page to other soil society pages; other soil science online websites that are noted for good content; etc. Or, is it just easier to google topics and sift through the junk to find the credible material? How about short reports from soils academics that have left Canada (e.g. pos docs)?
- Less text.
- It would be great if preferences are given to international graduates and researchers, especially in Africa with consideration for sponsorships.
- Thank-you!
- Update the CSSS symbol to something more current.



CANADIAN SOCIETY OF SOIL SCIENCE  
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