



CANADIAN SOCIETY OF SOIL SCIENCE SOCIÉTÉ CANADIENNE DE LA SCIENCE DU SOL

CSSS Newsletter

December 2019

PRESIDENT'S MESSAGE

Dear CSSS Members:

I am writing my final message to you as President of our truly great society. I feel very fortunate to have spent my career working as a soil scientist and having the great good fortune of connecting with other soil scientists across Canada through our society. The goal of the CSSS is to "nurture the discipline of soil science in Canada and ensure its relevance in the future." One might wonder how we could possibly fail in our goal. Surely, soil is the stuff of our very survival and in these uncertain environmental/economic/political times, soil and the discipline of soil science is more relevant than ever, now and in the future.

When I think of the work of CSSS and our goal, I think of how important our student and post doc members are to our future, and how much they contribute to our common goal of ensuring relevance. It strikes me that many of us (probably the vast majority) have been members of the society since our grad school days, and we are now in the position to encourage our own students to become members. To be relevant in the future, we must continue to support students and post docs, and encourage them to be active in the society and to spread the good word about soils and the CSSS.

I want to thank all of the council members for their support during this past year. It has been great working with this wonderful group of soil scientists. I also appreciate all of the support provided by former council members who are always ready to answer questions and provide insight and wisdom when needed. Special thanks to Joann Whalen, Maja Krzic, Barbara Cade-Menun and Dan Pennock who are always ready and willing to help out and provide great advice.

I also want to acknowledge the contributions of Noura Ziada, Past President, who steps down at the end of December. I have really appreciated her sensible and helpful advice and knowledge. Thank you Noura for your commitment to the CSSS. All other Council members remain in place, with Nathan Basiliko transitioning to President and a new President Elect to join us shortly. Thanks to Rich Farrell for agreeing to serve as the Western Councillor for a second term. His work on the webpage is greatly appreciated, as are his many other contributions to the society. The CSSS is in good hands.

I'll end with an interesting tidbit of information I recently came across while searching Web of Science. In the past 100 years, 27,048 publications have discussed "soil health" and all but 57 published since 1990. Interesting.

Fran Walley President, CSSS

CSSS Council

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2020 CSSS Council Elections for President-Elect

We have received two nominations for the President-Elect position on the CSSS Council for 2020. Below are the candidate biographies.

After reviewing the candidate biographies, please click on the voting link. You will be directed to a survey monkey question where you can vote for the candidate of your choice. You will be asked for your name and email address so we can verify your CSSS membership. This information will be kept confidential.

Voting is only open to members of The Canadian Society of Soil Science and members can only vote once. Voting closes at 4:00 pm (CST) on December 10, 2019.

CSSS President-Elect Candidates:

- Dr. Angela Bedard-Haughn
- Dr. Asim Biswas

Click here to vote:

https://www.surveymonkey.com/r/ZG2T8NP

Candidate Biographies

Dr. Angela Bedard-Haughn

Angela Bedard-Haughn is a Professor in the Department of Soil Science at University of Saskatchewan, where she has been on faculty since 2006. Born and raised in rural Saskatchewan, she completed her MSc in Soil Science at USask and her PhD at University of California - Davis. Her teaching and research are both field-focused, with emphasis on applied pedology: understanding how soils affect — and are affected by — climate and land use change. In recent years, her research and extension work has increasingly emphasized predictive soil mapping and soil information systems, recognizing that understanding the complex interactions between soils and their environment requires both refined spatially-referenced soil data (i.e., enhanced soil survey information in adaptable digital formats) and a mechanism for scientists collecting this data to share information regionally and nationally. In addition, Angela has served multiple administrative roles over the years, including Associate Dean Research and Graduate Studies, Department Head and Graduate Chair.

Angela has been a member of CSSS since 2001, and has only missed 4 annual meetings in 19 years (2002, 2004, 2005, and 2017, in case you were wondering). She has been committed to serving CSSS in various ways: on the executive of the Pedology Committee since its inception in 2005 (secretary 2005-2018, co-chair 2018-present), as an Associate Editor of the CJSS 2012-2017, on the Elections Committee in 2012 (reviewing rules and by-laws), as a member of the Education Committee since 2014, on the organizing committee for the 2010 annual meeting, and, most recently, as co-chair of the 2019 annual meeting in Saskatoon. In 2016, she was awarded the CSSS Pedology Travel Award. If elected, Angela will facilitate cross-sector communication, data-sharing and collaboration and raise awareness of how soil scientists can contribute to addressing today's greatest challenges: climate change, food security, and water security.

2020 CSSS Council Elections for President-Elect (Con't.)

Dr. Asim Biswas

Dr. Biswas is an Associate Professor of soil physics and hydrology at the University of Guelph. His research program on sustainable soil management is focused on increasing the productivity and resilience of our land-based agri-food production systems in an environmentally sustainable way while accounting for changing climate, economy and production methodologies. Currently, he runs a 21-member research team, funded by federal and provincial bodies as well as industries, grower's associations and international organizations. He has authored and co-authored 109 peer-reviewed journal papers including 21 in review, 155 conference abstracts, 12 proceedings, 15 book chapters, 2 popular articles, edited a book, delivered radio and TV interviews and granted a patent. He was invited to deliver keynote talks around the world and currently teaches multiple undergraduate, graduate and special courses. Currently, he is an AE for 4 journals including CJSS and guest editor for 3 journals. Recently, he has also been awarded 5 early career researcher/scientist awards. Dr. Biswas is a CSSS-member since 2007 and currently maintains membership for additional 13 societies. He has been involved in organizing CSSS annual meetings, scientific sessions and field trips and served as a judge for student competitions. He has led and been part of various committees within the university and various professional societies. For example, currently he is a member of 4 committees in SSSA, 2 committees in IUSS, the chair of soil and water management professional's community within ASA, and Canadian lead to the ISPA. He has also led other communities in ASA, SSSA and IUSS. With strong leadership experience, Dr. Biswas wants to increase our society's exposure and contribution at the international level, improve digital visibility and presence, promote involvement of young soil scientists and increase awareness about soil and our society among public in addition to maintain and continue our long-rich history.

Updates from the Awards Committee

Two graduate students in soil science program won awards for their oral presentations at the 2019 ASA-CSSA-SSSA International conference in San Antonio, TX.



Prof. Nathan Basiliko, Chantal Chizen (UBC student), Kiran Preet Padda (UBC Student), and Prof. Fran Walley

Kiran Padda (PhD student with Dr. Chris Chanway) won the 1st place award in the Soils in Ecological Restoration session, while Chantel Chizen (MSc student with Dr. Maja Krzic) won the 3rd place award in the Soil C and GHG Emissions session. Both Kiran and Chantel also won travel awards from the Canadian Society of Soil Science to attend this conference. Well done!

"I'm extremely thankful to CSSS and CJSS for presenting me with the 'CSSS-CJSS student travel award' since it provided me with significant financial support to present at the SSSA International Annual Meeting in San Antonio, USA and win first-place presentation award. I was highly motivated to apply for this student travel award since my fellow lab-mate won this travel award last year and went on to win a presentation award at the 2018-19 SSSA International Annual Meeting — which was truly inspiring! This travel award helped me in showcasing my PhD work at an international platform and receiving constructive feedback from established professionals in my research field. Networking with a diverse body of researchers from around the world helped me in broadening my horizons and embracing new research ideas. It truly was a great experience and I believe that travel awards like this, help in disseminating science and bridging the gap between research at the local and global scale - therefore, I would like to strongly encourage fellow soil science graduate students to apply for this travel award!"

Kiran Padda

Ph.D. Candidate | Soil Science Faculty of Land and Food Systems, The University of British Columbia

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Reasons to Publish in the Canadian Journal of Soil Science

Your research enhanced: All articles undergo rigorous peer review to ensure the highest editorial standards.

Your research, available faster: Accepted manuscripts are published online within 5 days of acceptance and are immediately citable.

Your research will always be yours: Our authors retain copyright and there are no fees for you to reuse your published material.

Your research promoted and shared: We actively promote journal content through various social media and news outlets and track the amount of attention articles received using Altmetrics.

Your research disseminated and discoverable: Our journals are indexed in major databases such as Web of Science, Scopus, Google Scholar, and MEDLINE/PubMed.

Your research, worldwide: Our journals are distributed in over 125 countries and include free or subsidized access for developing nations.

Your research, your choice: We publish a variety of open access and subscription-based journals, enabling you to publish your research your way.

Your research, funder compliant: Our journals offer a range of options for you to comply with the open access policies of all major research funding agencies.

Your research is secure: Our journal content is archived in both CLOCKSS and PORTICO to ensure its long-term preservation and availability.

Your research professionally presented: All journal content is copy edited, professionally typeset, and published on a highly functional website.

Publish your next paper in the Canadian Journal of Soil Science

www.cdnsciencepub.com/cjss

A textbook for the introduction to Soil Science course, entirely dedicated to Canadian soils!

Dear members and colleagues,

Did you know that 39 professors/researchers specializing in soil science are currently on their keyboard to deliver an introductory textbook on Soil Science with Canadian topics? With more than 20 chapters and regional examples that address various issues in a Canadian context, it is a major collective undertaking carried out by a group of soil scientists. The final version of the first edition will be presented and available to you in electronic format (open access E-book) by the end of 2020.

This project was made possible by, among other things, financial contributions from the Canadian Society of Soil Science (CSSS) and BCcampus. In addition, the Quebec University Network Development Fund (FODAR, UQAC) has recently agreed to provide partial funding (ca. 50%) so that we can disseminate the content in "la langue de Molière" French! Currently we are in the process of securing the 2nd half of the funding needed to achieve this objective.

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A textbook for the introduction to Soil Science course, entirely dedicated to Canadian soils! (Con't.)

This new textbook aims to meet the need to introduce basic soil science concepts into the university and college curriculum in disciplines such as agronomy, biology, environmental sciences, geography, and earth sciences. We hope that you will welcome this new textbook and integrate it into your teaching.

We wish you Happy Holidays and, most importantly, an excellent World Soil Day!

Your editorial committee,

- Maxime Paré, Associate Professor at the University of Quebec at Chicoutimi;
- Maja Krzic, Associate Professor at UBC;
- Rich Farrell, Associate Professor at the University of Saskatchewan;
- Fran Walley, Professor at the University of Saskatchewan;
- Amanda Diochon, Associate Professor at Lakehead University.

Un livre d'enseignement à l'Introduction à la Science du Sol entièrement Canadien!

Chers(ères) membres, Chers(ères) collègues,

Saviez-vous que près de 35 professeurs/chercheurs spécialistes en science du sol sont actuellement à leur clavier afin de nous livrer un livre d'Introduction à la Science du Sol aux couleurs Unifoliées? En effet, c'est plus de 20 chapitres et d'autant plus d'exemples régionaux qui seront abordés dans le cadre de cet ouvrage collectif d'envergure. Le résultat final de cette concertation vous sera présenté en accès libre et en format électronique (Ebook) au cours de l'année 2020.

Ce projet est rendu possible grâce à notamment la participation financière de la Société Canadienne de la Science du Sol (SCSS) et de l'Université de la Colombie-Britannique (UBC). De plus, nous sommes présentement en démarche pour compléter le financement nécessaire afin de diffuser le contenu dans la langue de Molière, en Français! À ce titre, la moitié du financement a été très récemment confirmé [Fonds de Développement Académique du Réseau UQ (FODAR, UQAC)], alors que l'AQSSS et la SCSS seront sollicitées durant les prochains mois afin de compléter l'autre moitié du financement. À suivre.

Nous espérons que vous saurez apprécier ce nouveau livre et que cet ouvrage sera intégré à la formation universitaire et collégiale de plusieurs disciplines telles que l'agronomie, la biologie, les sciences de l'environnement, la géographie et les sciences de la terre. Nous avons très hâte de vous présenter le résultat final.

Nous vous souhaitons de Joyeuses Fêtes et surtout, une excellente journée internationale des sols!

Votre comité de rédaction,

- Maxime Paré, Associate Professor at the University of Quebec at Chicoutimi;
- Maja Krzic, Associate Professor at UBC;
- Rich Farrell, Associate Professor at the University of Saskatchewan;
- Fran Walley, Professor at the University of Saskatchewan;
- Amanda Diochon, Associate Professor at Lakehead University.

Soil Organic Matter (SOM) fractions for 186 LUCAS-2009 soil samples (grassland forest)

Land management for C sequestration is most often informed by bulk soil C inventories, without considering the form in which C is stored, its capacity, persistency and N demand. Recent frameworks suggest that soil C accrual, its persistence and response to N availability can be better described if SOM is broadly divided into a Particulate Organic Matter (POM) and a Mineral Associated Organic Matter (MAOM) pool. In the published study, LUCAS was used to determine topsoil C and N storage in European forests and grasslands on 9415 geo-referenced points and separate by size POM (2000-53 μm) and MAOM (<53 μm) in more than 180 subsamples. The methodology and more details can be found in the relevant publication in Nature Geoscience. Data and R scripts are available in ESDAC:

Read more: https://esdac.jrc.ec.europa.eu/content/soil-organic-matter-som-fractions

Soil Organic Carbon - Centered Sustainable Soil Management - An Affordable Solution

As part of a natural process, a healthy soil stores more carbon than the sum of the carbon contained in the atmosphere and vegetation. Based on soil organic matter's stabilization mechanisms (i.e., physical, chemical, biochemical, microbial and ecological), soil carbon can remain stored in the soil for thousands of years.

Read more: http://www.fao.org/3/i7235en/I7235EN.pdf?

fbclid=IwAR1H_gleQzyhzkE3DfiCmyu8b2Kap363Cl0dJky5cwknSuRO6aVE0fqcvMU

World Soil Day 2019 Take Action!

FAO is pleased to follow up with you about this year's World Soil Day campaign. Everything is ready to get started! The website has been updated with all brand-new World Soil Day 2019 visual and #StopSoilErosion and #WorldSoilDay are the official hashtags of the campaign. Attached you can find some ideas to "Get involved" with promotional activities around the world, as we are counting on the participation of all FAO offices with all partners to make the campaign a success.

Are you already planning to celebrate World Soil Day – 5 December? Don't forget to register your event on the global interactive map (http://www.fao.org/world-soil-day/worldwide-events/add-events/en/) to be part of the story!

There are a number of campaign materials available posters, infographic, key message cards, a video animation, animated giphies, information on actions in the field and digital and print assets. Most material is available in all UN languages.

Now, TAKE ACTION! Get involved in the Greening the Future: Photo Challenge (All UN languages): Cover the soil with plants and take a #StopSoilErosion pledge by sharing your photos on socials (using the campaign hashtags) and send it to us (World-Soil-Day@fao.org) by 5 December.

Last but not least, remember that the most exciting WSD 2019 celebration can candidate to win USD 15 000 for next King Bhumibol World Soil Day Award! http://www.fao.org/global-soil-partnership/resources/highlights/detail/en/c/1207801/

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International Union Soil Science President's Message

World Soil Day Message

Soil Science Society of Canada

Honorable members of the Soil Science Society of Canada.

Ladies and gentlemen,

It is a pleasure for me to have the opportunity to address you on this special day for all of us who love our Soils because we know it is central for the existence of life on land.

Today, December 5, WORLD SOIL DAY, we celebrate the existence of the soil resource because it allows us to have food, drinkable water, breathable air and enjoy many great environmental services, and because without soils, there would be no plants or animals to eat, there would be no water to drink, no oxygen to breathe: there would be no life or development to reach or sustain for humans. The soil is our essential natural resource to preserve.

Therefore, from the International Union of Soil Sciences (IUSS), I invite you to join the world celebrations that have been organized by FAO and IUSS for that special day; but above all, I congratulate you because through your daily work, all of You contribute to the knowledge and strengthening of soil science (see article below entitled: "World Soil Day 2019 – Take action!")

For the "International Decade of Soil" (2015-2024) the IUSS has two fundamental objectives: first, to STOP land degradation; and second, to educate and raise awareness among elementary school students about our first goal, because 10 years from now, they will be the young adults of the planet (see below the article entitled: "STOP SOIL DEGRADATION and the IUSS's educative project to achieve it")

Therefore, children and teenagers are our priority, and my commitment as President Elect is to invite you to celebrate this World Soil Day 2019, joining the fight to preserve soil and to join the educational activities throughout the year 2020 which support learning pedology and school awareness in order to achieve the preservation our natural resources:

Twitter: @IUSS_ORG

Facebook: IUSS President Elect

Spreading around the world in your language the Hashtag: #TheSoilIsLife

Thank you,

Happy World Soil Day !!!

Laura Bertha Reyes Sánchez

President of the International Union of Soil Science (IUSS)

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1000 days until the World Congress of Soil Science in 2022 (WCSS22)

The logo of the WCSS22 was launched by the British Society of Soil Science on Nov. 4.



What is it? The WCSS is a leading international soil science conference, held every 4 years in different countries and attended by over 3000 soil scientists from around the globe. The next Congress is being organised by the British Society of Soil Science on behalf of the International Union of Soil Sciences. The Congress theme, 'Soil Science – crossing boundaries, changing society' will focus on the link between soil and society, with sessions covering soil systems, soil processes, soil management and how we interact with and use soils around the world. There will be opportunities for specialist workshops and discussion sessions across a wide range of soil disciplines. The core programme is supported by tours and a cultural and arts programme for delegates and the wider public to explore our diverse environment and culture.

Where and when is it? The Congress will take place at the award winning and world-class Scottish Event Campus, a riverside venue minutes from central Glasgow in Scotland, UK. The Congress is between 31st July - 5th August 2022.

Who should attend? Research scientists, policy makers, regulators, NGOs and anyone who has an interest in the sustainable use of soils.

Why should I attend? At a time of global concern for our planet and its growing population, managing our soils sustainably has never been as important. 90% of our food comes from soil, as does all of our timber and other fibre. Soil, and the ecosystems it supports, have a huge role in mitigating against climate change, is a vast reservoir of biodiversity, plays a significant role in flood management and contains key evidence of past civilisations. Our understanding of the importance of these functions is developing rapidly and the Congress provides the ideal setting to discover the international state of the art in these critical global issues and an opportunity to connect across all who work with and rely on soils.

Follow us on Twitter: @Soil_Science and @WorldSoils2022

Read more: https://www.soils.org.uk/wcss2022

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Soil Your Undies' Test

Uncovering how microbes in the soil influence our health and our food

When Bill Robertson, a soil scientist at the University of Arkansas, wants to check whether a field is healthy, he doesn't reach for some high-tech gadget. He grabs a pair of men's 100 percent cotton underwear.

"I call it the 'Soil Your Undies' test," he said, describing how he buries the underwear two to four inches deep, leaving the waistband showing so he can find them and dig them up five weeks later.

"Soil creatures — bacteria, fungi and nematodes — eat cellulose, and those briefs are basically cellulose," Robertson explained. "If that soil is alive then, after five weeks, [the underwear] should fall apart like a wet newspaper." If, on the other hand, the soil isn't thriving, then what is left is a dirty, but intact, set of briefs.

Read more: https://www.washingtonpost.com/science/uncovering-how-microbes-in-the-soil-influence-our-health-and-our-food/2019/09/27/81634f54-a4ba-11e9-bd56-eac6bb02d01d_story.html?
fbclid=IwAR03EuWWqONfhjYbT1pDGbq8mETs7tRTBGYymx6osprWqqUbsmtq_rSbXWs



Daphne Miller holds up two pairs of underwear. The one on the left was buried in a well-worn garden path. The one on the right was buried in microbially rich soil of a permaculture garden. The microbes broke down the fibers of the underwear while the infertile dirt did not. (Philip B. Stark)

STOP SOIL DEGRADATION and the IUSS's educative project to achieve



4th Soil in the Environment Conference: SITE 2020

The Soil Science Society of Poland invites you to participate in the "4th Soil in the Environment Conference: SITE 2020", this invitation going especially to Young Researchers involved in soil science. The Conference will be held on 28th June – 1st July 2020 in Toruń, a beautiful medieval city in the north of Poland. https://sites.google.com/view/site-torun-2020

Challenge stop soil erosion

The Spanish Soil Science Society organizes a school contest "Challenge stop soil erosion". IUSS invites you to send your drawing to edafoeduca@upv.es

Conferences, Meetings and Workshops

The 2020 CSSS Annual Meeting will take place in Charlottetown, PEI, from June 21-25, 2020.

While waiting for the website to be ready, please click the link below for information on accommodations.

https://gallery.mailchimp.com/ca7fd4410b9dab34e3ef8b381/files/4faa8b37-bcb9-4d87-8bb2-16243c8c072e/2020CSSS Charlottetown Accomodations.pdf

IUSS Commission 1.4 Soil Classification Conference in Mexico

We would like to remind you on the following deadlines:

November 30: Final deadline for registration and payment for the Field Workshop.

December 15: Deadline for abstract submission for the Conference.

January 15: Notification of abstract acceptance.

<u>January 31</u>: Deadline for early-bird registration for the Conference.

For the participants the following dates are important:

April 16: Arrival at the airport of Monterrey. At 3 p.m., you will be collected for transport to Cuatro Ciénagas, where the Field Workshop starts.

April 21: The Field Workshop ends in Querétaro in the evening. People, who participate only at the Conference and not at the Field Workshop, should also arrive at this day in Querétaro, i.e. fly into Mexico City and take the bus to Querétaro.

April 22 – 24: Conference in Querétaro.

Read more: https://iscc2020.org/

2020 ASA, CSSA, SSSA Annual Meeting

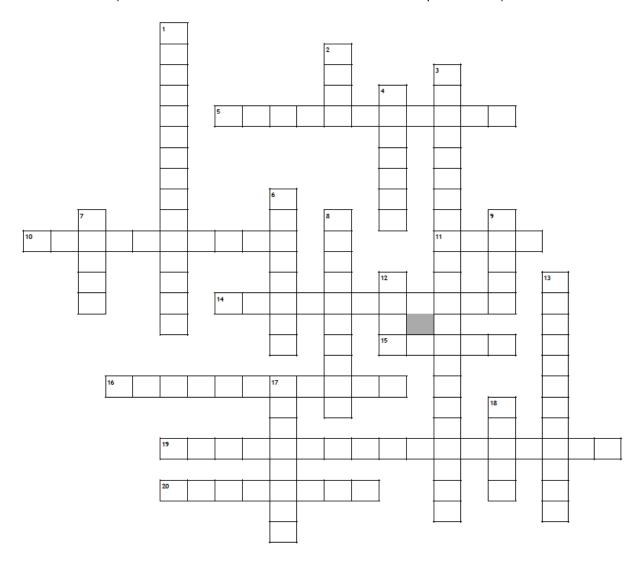
Nov. 8-11, Phoenix, AZ, USA

Share your Science at next year's ASA, CSSA, SSSA Annual Meeting in Phoenix, AZ, November 8-11. The meeting will feature over 3,500 technical presentations, along with a host of networking events and award ceremonies. It's the premiere opportunity for professionals working in agronomic, crop, soil, and related sciences to present, meet and learn from their peers, expand their knowledge base, and take advantage of an abundance of networking opportunities to enhance their career.

Please, save the date!

CSSS Crossword

(The answers are available on the CSSS website: https://csss.ca/)



Across

- 5. The opposite of saturated 10. The transportation of soil material in suspension or in solution within the soil by the downward or lateral movement of water
- 11. A size fraction of soil less than 0.002 mm in equivalent diameter
- 14. The science dealing with soil as a natural resource
- 15. Material transported and of predominantly silt-sized particles
- 16. The soil surrounding and directly influenced by plant roots
- 19. The organic fraction of soil
- 20. An order of soils having podzolic B horizons

Down

- 1. The gaseous loss of nitrogen deposited by wind and consisting by either biologocial or chemical mechanisms but exclusive of ammonia volatilization
 - 2. A soil separate consisting of particles between 0.05 and 0.002 mm in equivalent diameter
 - 3. The total amount of exchangeable cations that a soil can adsorb
 - 4. A consistence term pertaining to the ease of crumbling of soils
 - 6. A vertical section of a soil profile removed from the soil and mounted for display or study
 - 7. A tool for boring into the soil and withdrawing a small sample

- 8. The systematic examination, description, classification and mapping of soils in an area
- 9. One of the components of the Munsell colour system
- 12. Unstratified glacial deposit drift deposited directly by the ice and consisting of clay, sand, gravel, boulders intermingled in any proportion
- 13. The downward entry of water into the soil
- 17. The aspects of soil science dealing with the origin, morphology, genesis, distribution and classification of soils
- 18. A great group of soil in the Chernozemic Order



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