



WORLD ASSOCIATION OF SOIL AND WATER CONSERVATION

HOT NEWS

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For ISWCR paper submission:

<http://www.keaipublishing.com/en/journals/international-soil-and-water-conservation-research/>

WASWAC Website: www.waswac.org

Pack your bags for the upcoming 2nd IYFSWC



Before packing your bags, you should think a question, have you booked the hotel yet? I hope that your answer will be definitely yes, however, once your answer is no, there is still a little time to make your reservation, as the deadline is **August 11, 2018**. After this date you will be able to make a reservation but without any guarantee of your first choice.

Please always remember that the **Promotional code** for your reservation is **IYFSWC**.



Radisson Slavyanskaya Hotel ****



Hotel website: <https://www.radissonblu.com/en/slavyanskayahotel-moscow>



Hotel Korston ****



Hotel website: <https://club.korston.ru/booking/en/>



Hotel Salut ****

Hotel website: <http://www.hotelsalut.ru/en/>

The **Opening Ceremony** for the forum will be on August 27, 10:30-11:30, tightly following the **Registration** that focus on the period on August 27, 09:00-10:30.

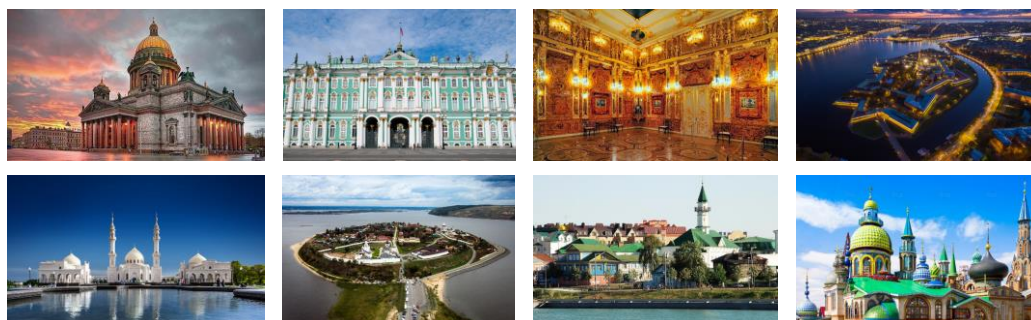
If you are interested in our training course *Water-related natural hazards: measurement and modeling*, you should make the registration advance via

<http://www.eng.geogr.msu.ru/IYFSWC/training/>

After this training, you will be able to get an official internationally recognized diploma of Moscow State University (1 ECTS point).

If you are going to know more about Russia, there will be a valuable chance to enjoy the beautiful scenery after this forum. The post conference tour will be held during September 1 to 3, 2018 for St. Petersburg and Kazan visiting. Learn more at:

http://www.eng.geogr.msu.ru/IYFSWC/post_tour/



Any further questions please contact: iyfswc-2018@geogr.msu.ru **SEE YOU SOON!**

From high pole to poles - TPE side meeting in OLAR2018

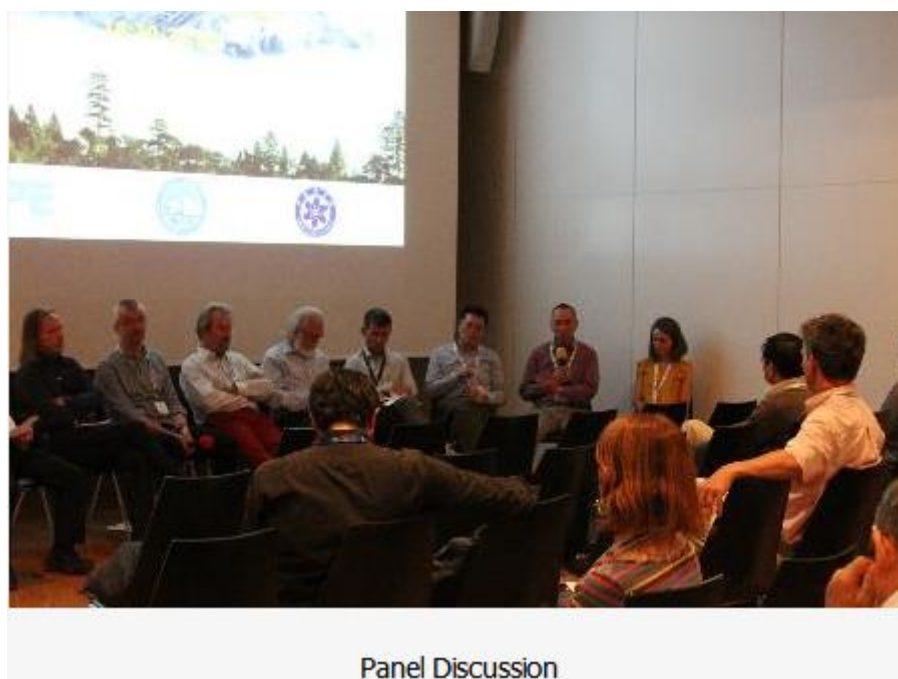
From June 19 to 23 of 2018, POLAR2018 Open Science Conference was held in Davos, Switzerland. This conference was co-organized by the Scientific Committee on Antarctic Research (SCAR) and the International Arctic Science Committee (IASC). The topics cover the most of fields on the earth system science in Polar region, such as atmosphere, climate, biology, ecology, ecosystems, biodiversity, cryosphere, ocean, environment, geology, geophysics, remote sensing, social sciences and humanities.



Prof. Tandong Yao gave a talk on "From High Pole to Poles".

A side meeting titled "From High Pole to Poles" was organized by the Third Pole Environment (TPE) programme in POLAR2018. There are more than 150 experts on Polar science attended this TPE side meeting. Though the oral presentations and panel discussion, ten world-renowned scientists were invited to discuss about the mutual interests and potential collaboration over Three Poles (the North pole, the South pole and the High Pole (Third) Pole). On this meeting, scientists got agreement that the Three Poles are the most sensitive regions to global climate change, and play important roles in moderating the global climate as well. Due to the lack of comprehensive observation and research, the links and differences of environment changes between Three Poles are not understood very well. The

suggestions include joint observation and research, sharing data and information, young scientists training and joint workshops and publications.



The future actions are also discussed during the side meeting. The 8th TPE Workshop will be organized by TPE and the University of Gothenburg, Sweden in early Oct 2018. During this TPE workshop, the relevant topics on Three Poles environmental changes will be discussed, the more detailed scientific issues, motivations, cooperation framework and action plan will be carried out.

About TPE:

The TPE program is dedicated to the study of the Third Pole Environment. This region is centered on the Tibetan Plateau and concerns the interests of the surrounding countries and regions.

The Third Pole region has gained growing attention due to its significant role in global atmospheric circulation and its sensitivity for providing a first indication in climate changes, and thus is vital for a better understanding of global climate and environment changes and their impacts on and interactions to human activities.

The TPE program intends to pool international efforts and make use of the multi-national resources for the interdisciplinary study of water-ice-air-ecology-human correlations. A more comprehensive study of these processes and interactions will address the influence of environmental changes on humans, and will provide timely adaptation strategies.



TPE also offers an open forum to study the Third Pole, and invites involvement from the general academic community. We welcome your suggestions and proposals for pushing forward regional climate and environmental research in the Third Pole Environment.

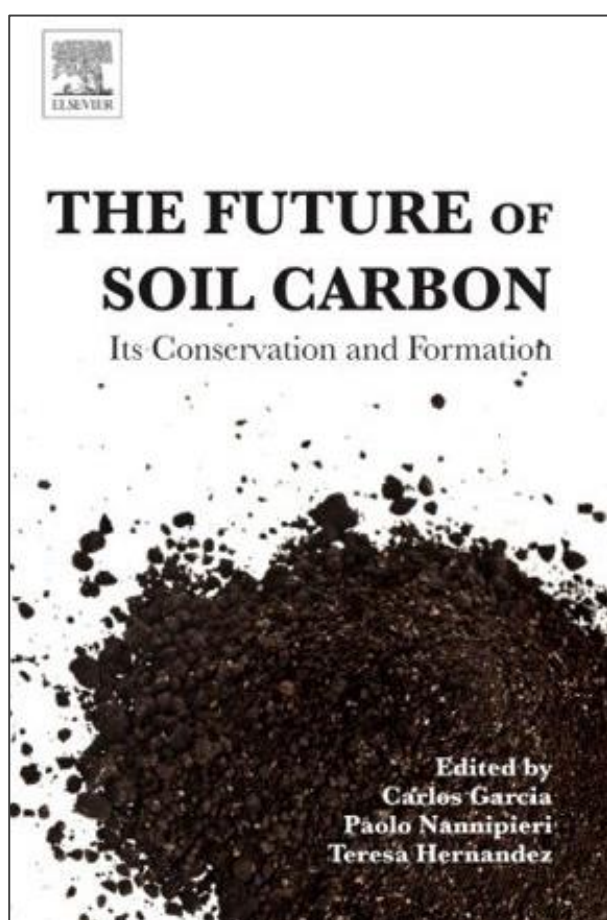
General Goal: The Third Pole Environment (TPE) program aims to attract relevant research institutions and academic talents to focus on a theme of ‘water-ice-air-ecosystem-human’ interaction in the TPE, to reveal environmental change processes and mechanisms on the Third Pole and their influences and regional responses to global changes, especially monsoon systems, and thus to serve for enhancement of human adaptation to the changing environment and realization of human-nature harmony.

Scientific Goal: To reveal and quantify, from the perspectives of earth system sciences, the interactions among atmosphere, cryosphere, hydrosphere, biosphere and anthroposphere on the Third Pole and their influences on the globe in order to assess the likely future impacts of global change.

Details please visit: <http://www.tpe.ac.cn/index.jsp>

New Book: The Future of Soil Carbon

Soil organic carbon (SOC) is a vital component of soils, with important and far-reaching effects on the functioning of terrestrial ecosystems. Human activities over the last several decades have significantly changed the regional and global balance of SOC, greatly exacerbating global warming and climate change.



BASIC INFORMATION:

Edited by Carlos Garcia,
Paolo Nannipieri, Teresa
Hernandez.

1st Edition published in
April 2018, by Academic
Press, 288 pages,

Paperback ISBN:

9780128116876,

eBook ISBN:

9780128116883

The Future of Soil Carbon: Its Conservation and Formation provides readers with an integrative approach to understanding the important role of organic carbon in soil functioning and fertility. Terrestrial interactions between SOC and complex human-natural systems require new fundamental and applied research into regional and global SOC budgets. This book provides new and synthesized information on the dynamics of SOC in the terrestrial environment. In addition to rigorous state-of-the-art on soil science, the book also provides strategies to avoid risks of soil carbon losses.

Higher ambition needed to meet Paris climate targets

With current climate policies and efforts to increase clean power generation, the remaining use of fossil fuels in industry, transport and heating in buildings will cause enough CO₂ emissions to push climate targets out of reach, according to a study co-authored and co-designed by the JRC.

Accelerated energy efficiency improvements and a widespread electrification of energy demand are needed.

Otherwise, the world will become increasingly dependent on carbon dioxide removal to hold warming to well below 2°C, and the 1.5°C target for this century is likely to be unachievable.

A team of scientists from across the world set out to identify bottlenecks towards achieving the internationally agreed Paris climate targets.

They found that even with very strong efforts by all countries, including early and substantial strengthening of the intended nationally determined contributions, residual carbon emissions will reach around 1000 gigatons of CO₂ by the end of the century.

This goes considerably beyond the level that emissions must be limited to in order to achieve the 1.5°C target.

Carbon dioxide removal is therefore no longer a choice, but a necessity for limiting warming to 1.5°C.

None of the scenarios the scientists modelled were able to achieve this target without the availability of a negative emissions technology, such as bioenergy with carbon capture and storage technology.

The researchers also found that a failure to ramp up mitigation efforts now will increase the dependence on carbon dioxide removal as it locks in even more investments in infrastructures and leaves the world unprepared to make the changes needed to decarbonise.

The research has been published in Nature Climate Change.

Details: <https://ec.europa.eu/jrc/en/news/higher-ambition-needed-meet-paris-climate-targets>

What we can learn from China's fight against environmental ruin

by Brett Bryan and Lei Gao

(excerpt from THE CONSERVATION)

A good news story about China's environment is something you don't hear every day. But a major review published today in Nature has found that China has made significant progress in battling the environmental catastrophes of the past century. Our team, which included 19 scientists from 16 Australian, Chinese and US institutions, reviewed China's 16 major programs designed to improve the sustainability of its rural environment and people.

We wanted to tell the story of China's progress, so that other nations may learn from its experience as they strive towards the United Nations' Sustainable Development Goals.

A monumental effort

From 1998, China dramatically escalated its investment in rural sustainability. Through to 2015, more than US\$350 billion was invested in 16 sustainability programs, addressing more than 620 million hectares (65% of China's land area). This effort, while imperfect, is globally unrivalled. Its environmental objectives included:

- ✚ reducing erosion, sedimentation, and flooding in the Yangtze and Yellow rivers
- ✚ conserving forests in the north-east
- ✚ mitigating desertification in the dry north and rocky south
- ✚ reducing the impact of dust storms on the capital Beijing
- ✚ increasing agricultural productivity in China's centre and east.

Just as important were the socio-economic objectives of poverty reduction and economic development, particularly in western China.

Programs improved livelihoods by paying farmers to implement sustainability measures on their land. Providing housing and off-farm work in China's booming cities also boosted household incomes and reduced pressure on land.

An environmental emergency

Following the 1978 economic reforms, six sustainability programs were established, but with only modest investment conditions continued to deteriorate. By the 1990s natural forest cover was below 10% and around 5 billion tonnes of soil eroded annually, causing major water quality and sedimentation problems.

In the Loess Plateau, the worst-affected parts were losing 100 tonnes of soil per hectare each year to erosion, and the Yellow River that flowed through it had the dubious honour of being the world's muddiest waterway.

Agricultural soils were exhausted and productivity was down, grasslands were overgrazed, and more than a quarter of China was desertified.

In the late 1990s, China experienced a series of natural disasters widely believed to have been caused by unsustainable land management, including the Yellow River drought in 1997, the Yangtze River floods in 1998, and the severe dust storms that repeatedly afflicted Beijing in 2000.

This sustainability emergency triggered a great acceleration in investment after 1998, including the launch of 11 new programs. The portfolio included iconic programs such as the Grain for Green Program, the Natural Forest Conservation Program, and the Three North Shelterbelt Program which aimed to slow and reverse desertification by planting a 4,500km Great Green Wall.

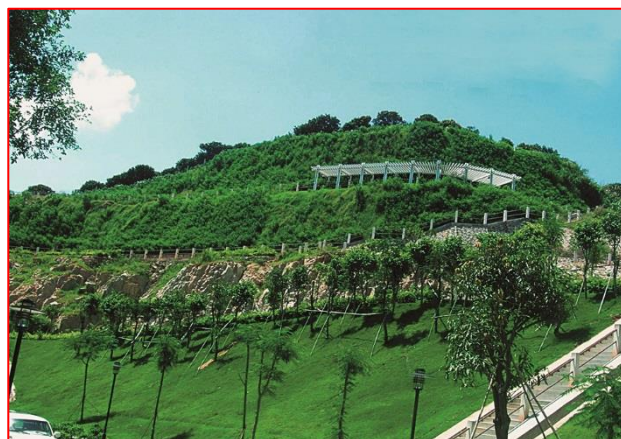
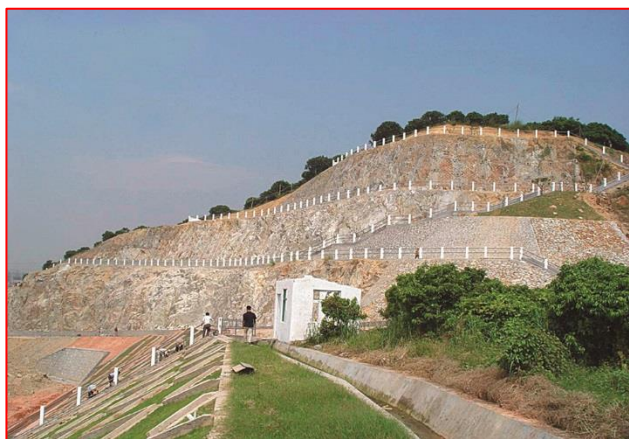
The Results

After 20 years the results of these programs have been overwhelmingly positive. Deforestation has declined and forest cover has exceeded 22%. Grasslands have expanded and regenerated. Desertification trends have reversed in many areas, and while mostly driven by climatic change, restoration efforts have helped.

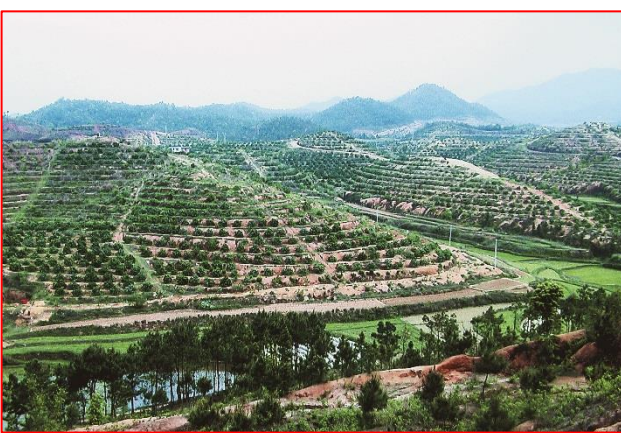
Lessons from China's experience

While the context of China's path to sustainability is unique, other countries can learn from its experience. Nations must commit to sustainability as a long-term, large-scale public investment like education, health, defence, and infrastructure. China's vast investment has made great strides towards improving the sustainability of rural people and nature.

China's path towards sustainability is clearly charted in the 13th Five Year Plan where President Xi's Chinese dream for an ecological civilization and a "beautiful China" is laid out.



Before and after erosion control in Shenzhen, China



Before and after erosion control in Jiangxi, China

73rd SWCS international annual conference



When

11:00 AM - 6:00 PM, Sunday, July 29, 2018 - Wednesday, August 1, 2018

Where

Albuquerque Convention Center, 401 2nd Street NW, Albuquerque, New Mexico
87102, USA, 505-768-4575

Culture, Climate, and Conservation

Join us at the 73rd SWCS International Annual Conference, July 29 - August 1, 2018, in Albuquerque, NM, as we celebrate past conservation accomplishments and share science-based knowledge on critical and current issues facing soil, water, and environmental sustainability. The conference includes workshops, breakout sessions, symposia sessions, poster presentations, plenary sessions, and tours designed to raise the awareness of recent developments in the science and art of natural resource conservation and environmental management. For complete conference details, visit www.swcs.org/18AC

Contact

Courtney Slagle
events@swcs.org

Invitation to review the IPCC special report on climate change and land



Sir/Madam,

I have the honour of addressing you on the matter of the Expert Review of the IPCC Special Report on Climate Change and Land: An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems.

At the 43rd Session of the IPCC (Nairobi, Kenya, 11-13 April 2016), the Panel agreed to prepare a Special Report on Climate Change and Land. Following an IPCC call for nominations in April 2017 to member governments and observer organizations for experts to participate in the Special Report on Climate Change and Land, Coordinating Lead Authors, Lead Authors and Review Editors were selected by the Working Group I, II and III Bureaux from the large number of nominations received. The authors are now working on a first draft report [First Order Draft (FOD)] of the Special Report on Climate Change and Land, which will be available for expert review **from 11 June 2018 to 5 August 2018, 23:59 (CEST)**.

The expert review of the FOD is a key element of the IPCC assessment process. The purpose of this expert review is to help ensure that the report provides a balanced and comprehensive assessment of the latest scientific findings. The IPCC Procedures state that the expert review process shall be objective, open and transparent, with a wide circulation that aims to involve as many independent experts as possible in the IPCC process, seeking a range of views, expertise, and geographical representation.

In addition, the review shall be undertaken by experts nominated by governments and observer organizations.

All those previously nominated for any role in the IPCC Special Report on Climate Change and Land, by governments and observer organizations, but not selected will be informed separately about the expert review and invited to participate. Governments and observer organizations are now asked to encourage additional experts to participate in the expert review of the Special Report FOD.

An online registration process has been developed and is now open for prospective expert reviewers via the IPCC web site. Registration will close on 29 July 2018, 23:59 (CEST):

<https://www.ipcc.ch/apps/comments/srccl/fod/register.php>

Additional information on the role of Expert Reviewers is available in Annex 1 of Appendix A to the Principles Governing IPCC Work. Please also see here an information note explaining the Expert Review process:

http://www.ipcc.ch/report/sr2/pdf/SRCCL_FOD_ExpertReviewer.pdf

If you have any questions about the process, please contact the IPCC Working Group III TSU at <tsu@ipcc-wg3.ac.uk>.

As a reminder, the expert review of the FOD starts on 11 June 2018, and ends on 5 August 2018, 23:59 (CEST), and is an expert review only. The government and expert review of the Second Order Draft of the Special Report on Climate Change and Land will follow in November 2018 (19 November 2018 to 13 January 2019).

Yours sincerely,



(Abdalah Mokssit)

Secretary of the IPCC

Quick soil test aims to determine nitrogen need

By Penelope Hillemann

Healthy soil contributes to healthy crops. Farmers know this, so they do what they can to ensure their soil is in good shape. They send samples of their soil for lab testing to find out if it is low in any important nutrients. If it is, they can take steps to improve the health of their soil. These might include adding fertilizers or growing cover crops that feed the soil.

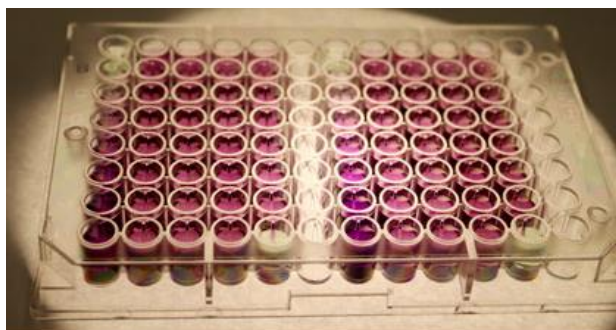
One of the essential nutrients for vigorous crop production is nitrogen. Yet most routine tests done in commercial soil testing labs do not measure available nitrogen in the soil. Tests for nitrogen exist, but for a variety of reasons they cannot be done quickly and cost-effectively. As a result, farmers may be left guessing about the health of their soil. They may apply more or less nitrogen fertilizer than is actually needed.

There are a couple of reasons this is not a good practice. One is the cost. Nitrogen fertilizer is one of the more expensive soil inputs, so farmers may be spending money they do not need to spend. Another reason is the environment. When more nitrogen is added than plants can use, it can run off the land and cause problems for bodies of water downstream.

The lack of a rapid, cost-effective test for soil nitrogen is clearly a problem. Soil scientists at The Ohio State University and Cornell University think they have found a solution. They have shown that a test originally developed for extracting a particular protein in soil is actually a good test for a variety of proteins. Proteins are by far the largest pool of available organic nitrogen in soil. A good, quick test for protein in the soil could also be used as a test for available nitrogen.

The process measures a protein known as glomalin. Glomalin is generally believed to be produced by a common soil microorganism that has a beneficial relationship

with plant roots. The tongue-twisting name for this organism is arbuscular mycorrhizal fungi.



Soil protein is measured in the lab using a color-reading process called colorimetric analysis. Photo credit Steve W. Culman.

An earlier study suggested that the glomalin extraction method might actually extract proteins from other sources. Steve Culman and his research colleagues decided to test that idea. They added a variety of sources of protein to soil samples. They used leaves from corn, bean, and common weeds (plant sources), chicken and beef (animal sources), and white button mushroom and oyster mushroom (fungi). They applied the so-called glomalin protocol to these soil samples and found that proteins from all of the sources were extracted via this method. The procedure was not, in fact, limited to extracting proteins produced by mycorrhizal fungi.

The researchers, therefore, recommend adoption of new terms such as soil protein, rather than glomalin, to more accurately describe the proteins extracted through this method.

This soil protein extraction procedure is a cost-effective, rapid method that could readily be adopted by commercial soil testing labs. It is possible, however, that some specific protein types may not be recovered by this method. More research on that point would be useful.

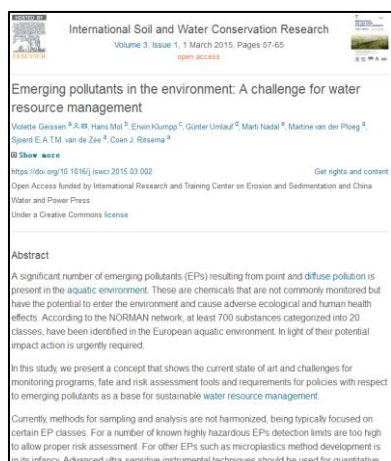
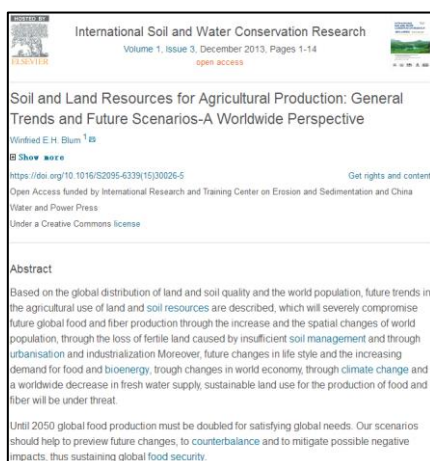
“We don’t have many rapid ways to determine how much nitrogen a soil can provide and store over a growing season,” said Culman. “This test is one way that might help us quickly measure an important pool of soil nitrogen. More work is needed to understand soil protein, but we think it has the potential to be used with other rapid measurements to assess the soil health of a farmer’s field.”

Details at: <https://www.soils.org/discover-soils/story/quick-soil-test-nitrogen-need>

The most-downloaded articles of ISWCR in 2017

The most-downloaded articles in 2017 for the official journal of WASWAC, *International Soil and Water Conservation Research (ISWCR)*, are as follows:

- [Conservation tillage impacts on soil, crop and the environment](#)
- [Soil and Land Resources for Agricultural Production: General Trends and Future Scenarios-A Worldwide Perspective](#)
- [Emerging pollutants in the environment: A challenge for water resource management](#)
- [Influence of salinity and water content on soil microorganisms](#)
- [Conservation agriculture in India – Problems, prospects and policy issues](#)



ISWCR is an Open Access journal from KeAi, the joint venture of Elsevier and CSPM (the publishing arm of Chinese Academy of Sciences).

This multidisciplinary journal publishes soil and water conservation research, practice, policy, and perspectives papers. It aims to disseminate new knowledge and promote the practice of soil and water conservation.

[Find out more](#) about the journal or [submit a manuscript](#).

*Most-downloaded papers in 2017, ScienceDirect 2018.



Drinking water and forest service research

Posted by Shannon Kelleher, Research and Development Knowledge Management and Communications, USDA Forest Service in Forestry Research and Science

Behind every drop of water from the tap is an entire forest ecosystem. And while it's easy to take drinking water for granted, you might be surprised to learn that **the nation's largest single source of water is the National Forest System**, the network of national forests stewarded by the USDA Forest Service. Many of these national forest lands overlay the source areas for important rivers and aquifer systems, and more than 60 million Americans rely on them for drinking water.

Scientists from Forest Service Research and Development, or R&D, investigate the quality and quantity of water from forests and conduct research that informs water stewardship and reduces costs. For example, one R&D study showed that nearly 21 million people in the South receive their drinking water from national forest lands – roughly equivalent to the population of Florida!

These study results can support efforts to conserve the forests that protect the area's clean water supplies. Sustaining forests both on and off national forest lands is an efficient and cost-effective way to protect critical water infrastructure compared to investing in flood control, water purification, and other man-made infrastructure.



A beautiful lake lies below the Minarets in the Ansel Adam Wilderness Inyo National Forest, California.
(Courtesy photo by Ediza Lake)

In partnership with NASA on the SnowEx project, R&D is helping improve forecasting of the production of water from spring snowmelt. **This research is significant because much of the western U.S.'s water supply is derived from mountain snow.** Better information about this water supply can improve hazard forecasting, water availability predictions, and agricultural forecasting.

Whether developing camp sites for visitors or restoring stream habitats, work on national forests sometimes involves disturbing the ground. In these, and similar projects, care must be taken to avoid sedimentation and other negative water quality impacts.

In fact, R&D pioneered the first national program to monitor the implementation and effectiveness of Best Management Practices, or BMPs, which are techniques that help control and reduce water pollution and protect aquatic ecosystems. The resulting consistency and streamlined approaches of BMPs throughout the National Forest System promise to improve water quality and save millions of dollars.

For instance, forest buffers are strips of vegetation along streams, lakes, and wetlands that stabilize banks and filter pesticides, animal waste, and sediment from agricultural runoff. A software tool produced by R&D helps land managers design buffers that are wider along banks where pollution inputs are higher. Such variable-width buffers can more effectively and cost-efficiently trap pollutants than standard, uniform-width buffers.

By investigating how forested landscapes foster watershed health and contribute to water supplies, R&D continues to build a solid scientific foundation for informed forest management decisions, including those designed to protect U.S. water supplies. We must understand the forest's role in supporting life on Earth so it can continue to sustain us.



A riparian buffer lines a waterway. (Courtesy photo from the USDA National Agroforestry Center)

Details: <https://www.usda.gov/media/blog/2018/06/07/our-drinking-water-and-forest-service-research>



WASWAC MEMBERSHIP APPLICATION/RENEWAL FORM (Issued 120501)

(For applicants from all countries)

Name: (Ms./Mrs./Mr./Prof./Dr.)..... Gender: ☐F ☐M
Institution:.....
Postal address:.....
State/Province:..... Zip/Postal code:..... Country:.....
Phone:..... Fax:.....
Emails (Please give at least 2 addresses to ensure uninterrupted contact): (1).....
(2)..... (3).....
My specialized field(s):.....
Please sign me up for the WASWAC membership in category*: ☐1(IM)☐2(LM)☐3(OM)☐4(SM&GM)
Membership for the year(s).....@US\$.....= US\$
Donation for developing country membership, etc. US\$
Donation to the Moldenhauer Fund US\$
Total US\$

***Membership categories & rates** from July 18, 2005, amended March 3, 2007 and March 4, 2010.

- 1.** IM (Individual membership): US\$20 for 5 years for developing countries **(In China, members pay 130 yuan RMB)**; US\$40 for 5 years for developed countries and persons working in international organizations worldwide.
- 2.** LM (Life membership): US\$80 for developing countries **(In China, members pay 520 yuan RMB)**; US\$160 for developed countries and persons working in international organizations worldwide. Persons who have passed their 60th birthday pay only half of these LM rates.
- 3.** OM (Organization membership): For universities, research and implemental institutions, government agencies, NGOs, societies, associations and international organizations, etc. Persons belonging to an Organization member will receive the same online products and services as the other two above categories: \$100/year for an organization with up to 150 persons; \$150/year for an organization with up to 300 persons; \$200/year for an organization with up to 500 persons; and \$10/year for an additional 100 persons or part thereof.
- 4.** SM&GM (Student membership & Gift membership): US\$5/year worldwide, to be purchased to give to colleagues, friends, students, etc.

For sending money by foreign wires through a bank, please give the following information to your bank:

Name of Receiver (A/C Holder's Name): World Association of Soil and Water Conservation

Bank Name and Address: China Construction Bank, Shoutinanlu Branch, Beijing, China, No. 9 Shoutinanlu Street, Haidian District, Beijing, P R China

A/C NO.: 1100 1042 7000 5301 6996

Message to write on the Bank Sheet: WASWAC Membership due for Ms./Mrs./Mr./Prof./Dr., Country

NOTE: **1.** Do not deduct the bank fee from the amount of money to send. **2.** For sending money by wire/bank transfer or check please add US\$7 per transaction to compensate for the charge at the receiving bank in Beijing. This additional charge does not apply for **WESTERN UNION** or any payment of US\$50 or more.