



Stockholm
University

Bolin Centre for Climate Research

A collaboration between Stockholm University, KTH and SMHI

Week 48, 2021

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The Bolin Centre is a multi-disciplinary consortium of over 400 scientists in Sweden that conducts research and graduate education related to the Earth's climate.



Research expedition to Antarctic prepares for future climate change

Arjen Stroeven and Ian Brown are each leading a research team in the expedition DML 2021/22 to Antarctica. During the austral summer in December to February, the expedition will be collecting data to help climate researchers monitor and assess changes in the ice sheet.

The picture shows living modules with sledges at the Swedish research station Wasa in Antarctica. The modules offer solid protection against weather and wind and a warm place to sleep, as well as the opportunity to heat food and store technical equipment.

Read more on [Stockholm University's website](#) »



Microbiome enables new strategies for healthy and climate-resilient crops

A new study shows that apple trees inherit their microbiome to the same extent as their genes. The results lay the foundation for new breeding strategies for healthy

and climate-robust fruit and vegetables. DEEP researcher Ayco Tack and former DEEP researcher Ahmed Abdelfattah now at TU Graz, were co-authors of the study.

[Read the article on the Department of Ecology, Environment and Plant Sciences' website »](#)



Bolin Centre Seminar Series | Research Area 7

Title: Ecological rehabilitation of river ecosystems in a future climate

Speaker: Roland Jansson, Department of Ecology and Environmental Sciences (EMG), Umeå University

Time: 7 December, 14h00-15h00

Venue: De Geer lecture hall and [Zoom »](#)

There is a need to reconsider the practice of ecological restoration in the light of climate change: Restoration methods, how they are implemented and prioritized as well as evaluated may need to change in the future.

Roland Jansson discuss the role of ecological restoration and rehabilitation of riverine ecosystems in a future climate, using examples from his research on boreal river systems. This includes implementing environmental flows to river systems regulated for hydropower production, structural restoration of streams channelized for timber floating, and using scenarios of future run-off to predict the effects on riparian vegetation and project the consequences of implementing environmental flows in a future climate.

[Read more on the Bolin Centre's website »](#)

Arctic Avenue

Dear members of the Arctic Avenue community,

You are warmly welcome to participate the 3rd annual Arctic Avenue meeting. The meeting will be held in Stockholm on the 27th-28th of January 2022 (noon to noon). This meeting will focus on the future direction and funding possibilities of Arctic Avenue and hence takes the form of a brainstorming workshop. A more detailed agenda will be distributed in December.

To register for the January workshop, please send an email to kaarina.weckstrom@helsinki.fi and annika.granebeck@su.se

We will have the final Arctic Avenue meeting during the 21st - 25th of August at the Kilpisjärvi Research Station, where the focus will be on Arctic Avenue research & the exciting outcome of Arctic Avenue projects.

Welcome!

The Nobel Lectures 2021

Watch the Nobel Lectures 2021 with this year's Laureates in Physics, Chemistry and Economic Sciences. The lectures will be delivered digitally on December 8.

Excerpt from the program:

09.00

Welcome address

Dan Larhammar, President of the Royal Swedish Academy of Sciences

ca 09.05–11.00 THE NOBEL PRIZE IN PHYSICS

Physical Modelling of Earth's Climate

Syukuro Manabe, Princeton University, USA

The Human Footprint of Climate Change

Klaus Hasselmann, Max Planck Institute for Meteorology, Hamburg, Germany

Multiple equilibria
Giorgio Parisi, Sapienza University of Rome, Italy

Watch the webcast on www.kva.se, www.nobelprize.org and SVT Play.

Research Area 8 seminar published online

The Bolin Centre Seminar with speaker Aelys M. Humphreys, titled **Variation in the thermal tolerance of plants at global and local scales**, is published online.

[Watch the seminar via the Bolin Centre website »](#)



The Climate Festival Grande Finale - now available on UR Play

Due to unforeseen circumstances, the grand finale of the Climate festival in the spring was cancelled. Instead, UR Samtiden taped the 6 popular science presentations that had been planned, in Aula Magna in October.

[Read more on the Bolin Centre's website »](#)

[Watch popular science presentations on UR Samtidens website »](#)

New grants from Swedish Research Council

Beviljade projektmedel till Bolincenter-forskare

- Sara Cousins, Natgeo: 'Förlust av växtdiversitet och ekologiska funktioner: Hur mycket, hur snart?', 3 600 000 kr
- Karl Gotthard, Zoologiska inst.: 'Är evolutionen av säsongsmässig plasticitet beroende av genetisk variation för den cirkadiska klockan?', 3 400 000 kr
- Sarah Greenwood, Inst. för geologiska vetenskaper: 'Ett istäckes dödsbädd - issjöarnas roll', 3 779 000 kr
- Christoph Humborg, Östersjöcentrum: 'Antropogen ackumulering av kol i kustsediment - en betydelsefull men förbisedd metankälla under ett sekel framöver', 2 700 000 kr
- Martin Jakobsson, Inst. för geologiska vetenskaper: 'Den dynamiska reträtten av is längs norra Grönland: Extrem eller business as usual?', 3 779 000 kr
- Niclas Kolm, Zoologiska inst.: 'Konsekvenser av selektion på kognitiv förmåga', 3 600 000 kr
- Linda Megner, MISU: 'Atmosfäriska gravitationsvågor i observationer och modeller', 3 600 000 kr
- Uwe Ring, Inst. för geologiska vetenskaper: 'Berggrundsfontret Saih Hatat i Oman: Ett unikt och ytterst välblottat högtryckskomplex där transporten av djupt liggande bergarter tillbaka till ytan kan studeras i oöverträffad detalj', 2 910 000 kr
- Ayco Tack, DEEP: 'En ny syntes av mikro- och makrobiomet', 3 400 000 kr

Beviljade etableringsbidrag till Bolincenter-forskare

- Josefin Ahlkrona, Matematiska inst.: 'Effektiva metoder för storskaliga inlandsmodelleringar', 4 000 000 kr
- Valentina Di Santo, Zoologiska inst.: 'Fysiologiska och biomekaniska mekanismer som ligger till grund för transgenerationella anpassningar hos stimbildande fiskar som konsekvens av havsförsurning', 4 000 000 kr
- Fernando Jaramillo, Natgeo: 'Under trädens tak: Att kvantifiera osynliga förändringar av globala våtmarkers vattentillgångar', 4 000 000 kr

[See full list on the Swedish Research Council's website »](#)

New Formas grant

Gia Destouni (PI), with colleagues Carla Ferreira, Zahra Kalantari, and Samaneh Seifollahi, along with Lidingö Stad as external partner, have received a new Formas grant for a preparatory project in the Blue Innovation program. The project is on "Innovation and partnerships for effective programs of measures for good water quality and ecological status – with pilot study for Askrikefjärden" for the period 2021-2023 (SEK 1 500 000) in preparation of a bigger and longer-term full project.



The Bolin Centre's annual report 2020

Our annual report has been finalized. You can find a digital version on the [Bolin Centre's website](#) » or get a printed copy from the Bolin Centre's office in the Geoscience building.



Publications

Recent Bolin Centre publications

On bolin.su.se/publications you'll find a list of scientific journal publications by Bolin Centre scientists. Here are the most recent ones we have published on the website.

- Hylander, K., Greiser, C., Christiansen, D.M., Koelemeijer, I.A., 2021. Climate adaptation of biodiversity conservation in managed forest landscapes. *Conserv Biol.* doi: [10.1111/cobi.13847](https://doi.org/10.1111/cobi.13847)
- Hartley, I.P., Hill, T.C., Chadburn, S.E. and Hugelius, G., 2021. Temperature effects on carbon storage are controlled by soil stabilisation capacities. *Nature Communications*, 12(1), pp.1–7. DOI: [10.1038/s41467-021-27101-1](https://doi.org/10.1038/s41467-021-27101-1)
- Zhang, Z., Poulter, B., Knox, S., Stavert, A., McNicol, G., Fluet-Chouinard, E., Feinberg, A., Zhao, Y., Bousquet, P., Canadell, J.G., Ganesan, A., Hugelius, G., Hurtt, G., Jackson, R.B., Patra, P.K., Saunois, M., Höglund-Isaksson, L., Huang, C., Chatterjee, A., Li, X., 2021. Anthropogenic emissions are the main contribution to the rise of atmospheric methane (1993–2017), *National Science Review*, nwab200. <https://doi.org/10.1093/nsr/nwab200>
- Rocha, E., Gunnarson, B., Björklund, J., Zhang, P. and Linderholm, H.W., 2021. A Norway spruce tree-ring width chronology for the Common Era from the Central Scandinavian Mountains *Dendrochronologia*, 70. <https://doi.org/10.1016/j.dendro.2021.125896>
- Yu, Z., Zhou, G., Liu, L., Manzoni, S., Ciais, P., Goll, D., Peñuelas, J., Sardans, J., Wang, W., Zhu, J., Li, L., Yan, J., Liu, J., and Tang, X., 2021. Natural forests promote phosphorus retention in soil. *Global Change Biology.* <https://doi.org/10.1111/gcb.15996>
- Ahlström, H., Hileman, J., Wang-Erlandsson, L., García, M.M., Moore, M.-L., Jonas, K., Pranindita, A., Kuiper, J.J., Fetzer, I., Jaramillo, F., Svedin, U., 2021. An Earth system law perspective on governing social-hydrological systems in the Anthropocene. *Earth Syst. Gov.* 10, 100120. <https://doi.org/10.1016/j.esg.2021.100120>
- Schillereff, D.N., Chiverrell, R.C., Sjöström, J.K., Kylander, M.E., Boyle, J.F., Davies, J.A.C., Toberman, H. & Tipping, E., 2021. Phosphorus supply affects long-term carbon accumulation in mid-latitude ombrotrophic peatlands. *Communications Earth & Environment*: 2, 241. <https://doi.org/10.1038/s43247-021-00316-2>

2 Dec	Research seminar: Sensitivity of modeled microphysics to stochastically perturbed parameters Date: 2 December, 14h15 -14h45 Speaker: Aleksa Stankovic, Phd Student at MISU Venue: Hybrid – Rossbysalen and via zoom: https://stockholmuniversity.zoom.us/j/63454326834 Organizers: Department of Meteorology
2 Dec	Research seminar: Effects of secondary ice processes on a stratocumulus-to-cumulus transition during a cold-air outbreak Date: 2 December, 14h45 -15h15 Speaker: Michail Karalis, Phd Student at MISU Venue: Hybrid – Rossbysalen and via zoom: https://stockholmuniversity.zoom.us/j/4924415340 Organizers: Department of Meteorology
3 Dec	Dissertation, Guillaume Vigouroux Title: Managing coastal eutrophication: Land-sea and hydroclimatic linkages with focus on the Baltic coastal system Time: 3 December, at 13h00-15h00 Venue: Högbom hall, Earthscience building, or online via Zoom Read more on Department of Physical Geography's website »
3 Dec	Lecture: The Cambrian Explosion and its consequences Time: 3 December, at 13h00-15h00 Location: Room U13, Geoscience building Lecturer: Dr Christian Skovsted from The Swedish Museum of Natural History Read more the Department of Geological Sciences' website »
3 Dec	Seminar: Revisiting the Cause of the 1989-2009 Arctic Surface Warming Using the Surface Energy Budget: Downward Infrared Radiation Dominates the Surface Fluxes Date: 3 December, 13h00 Speaker: Antonios Dimitrelos, Phd Student at MISU Venue: Hybrid – Rossbysalen and via zoom: https://stockholmuniversity.zoom.us/j/62936539812 Organizers: Department of Meteorology
7 Dec	Informal seminar about Oden Time: 7 December, 11h15-12h15 Title: On the need to break ice Speakers: Sonja Murto Phd student MISU, John Prytcherch, Michael Tjernström, professor at MISU Location: Rossbysalen and via Zoom »
7 Dec	Bolin Centre Seminar Series RA7 Title: Ecological rehabilitation of river ecosystems in a future climate Date: 7 December Time: 14h00-15h00 Speaker: Roland Jansson, Department of Ecology and Environmental Sciences (EMG), Umeå University Location: De Geer lecture hall and Zoom » Read more on the Bolin Centre's website »
9 Dec	Guest seminar: Continuous Data Assimilation at ECMWF in IFS CY46 Time: 9 December, at 14h15-15h15 Speaker: Professor Heikki Järvinen, University of Helsinki, Finland Location: Rossbysalen Read more on Dep't of Meteorology's website »

OFFICE STAFF - BOLIN CENTRE AT CAMPUS

Due to COVID-19, the Bolin Centre Office will be irregularly staffed at the University. Like many of you, we work from home. Don't hesitate to get in touch with us via mobile or e-mail.

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The **Bolin Centre Weekly News** provides you with a selection of our current activities and latest news and is sent to all members of the Bolin Centre. If you have suggestions that you would like to include or **research that you would like to**

share in coming Weekly News, please contact bolin@su.se.

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