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University

Bolin Centre for Climate Research

A collaboration between Stockholm University, KTH and SMHI

Week 47, 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.



New research simulates Baltic algal blooms

Large accumulations of cyanobacteria, which benefit from ocean warming and are brought to the coast by wind-driven and turbulent currents, are not only inconvenient features for recreational plans along the Baltic coast in the summer. They consume oxygen during decomposition, can be toxic to humans and animals and also affect water quality. In a new interdisciplinary project, researchers will investigate the connection between physical and biological processes that affect algal blooms and develop tools that can predict how they change in a warmer climate.

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



New research centre to bring marine and atmospheric scientists together

Researchers Matthew Salter, Ilona Riipinen and Christoph Humborg from the Department of Environmental Science are behind a successful infrastructure funding application to the Swedish Research Council (VR) on the development of a new atmospheric science laboratory at Askö, a marine research station located within the Stockholm archipelago.

This funding is the latest milestone in the establishment of a multidisciplinary centre for coastal ecosystem and climate research called CoastClim, which is based on Baltic Bridge, a strategic cooperation research project between the University of Helsinki and Stockholm University launched in 2017.

[Read the article on the Department of Environmental Science's website »](#)



Mosaic brain evolution in guppies helps to explain vertebrate cognitive evolution

Researchers at Stockholm University have provided the first experimental evidence that brain regions can evolve independently of each other during cognitive evolution. This so called mosaic brain evolution was verified empirically in an artificial selection experiment with guppies (*Poecilia reticulata*) where telencephalon size (but no other regions) differed by 10 percent after only four generations of selection. The findings can have wide implications for the understanding of cognitive evolution in other vertebrates, such as primates and humans.

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



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 »](#)



Climate scientists present in Glasgow. How did the research contribute?

In what way did the research at Stockholm University contribute to the COP26 climate summit in Glasgow? Several of Stockholm University's climate researchers were present during the climate meeting. What was it like to sit in on the negotiations? What did the researchers take home?

[See four filmed interviews with Karin Bäckstrand, Alasdair Skelton, Suanne Segovia and Ayşem Mert »](#)



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.

- Thornton, B.F., Etiope, G., Schwietzke, S., Milkov, A.V., Klusman, R.W., Judd, A., Oehler, D.Z., 2021. Conflicting estimates of natural geologic methane emissions. *Elementa: Science of Anthropocene* 9(1). DOI: <https://doi.org/10.1525/elementa.2021.00031>
- Martínez Cortizas, A., López-Merino, L., Silva-Sánchez, N., Sjöström, J.K., Kylander, M.E., 2010. Investigating the Mineral Composition of Peat by Combining FTIR-ATR and Multivariate Analysis. *Minerals*: 11(10):1084. <https://doi.org/10.3390/min11101084>
- Fielding, C.R., Frank, T.D., Tevyaw, A.P., Savatic, K., Vajda, V., McLoughlin, S., Mays, C., Nicoll, R.S., Bocking, M., Crowley, J.L., 2021. Sedimentology of the continental end-Permian extinction event in the Sydney Basin, eastern Australia. *Sedimentology*: 68, 30–62. <https://doi.org/10.1111/sed.12782>
- Mays, C., Vajda, V., McLoughlin, S., 2021. Permian–Triassic non-marine algae of Gondwana—distributions, natural affinities and ecological implications. *Earth-Science Reviews*: 212, 29 pp. doi: [10.1016/j.earscirev.2020.103382](https://doi.org/10.1016/j.earscirev.2020.103382)
- McLoughlin, S., Nicoll, R.S., Crowley, J.L., Vajda, V., Mays, C., Fielding, C.R., Frank, T.D., Wheeler, A., Bocking, M., 2021. Age and paleoenvironmental significance of the Frazer Beach Member – A new lithostratigraphic unit overlying the end-Permian extinction horizon in the Sydney Basin, Australia. *Frontiers in Earth Science*: 8, 31 pp. doi: [10.3389/feart.2020.600976](https://doi.org/10.3389/feart.2020.600976)

Please send your newly published publication to bolin@su.se »

SEI – SU seminar on Innovation and Sustainable Development

Time: 30 November, 09h00-12h30

Venue: Aula Magna or zoom

Organizers: Lisa Dellmuth, Somya Joshi, Nina Kirchner

The SEI – SU seminar series aims at strengthening the relation between the Stockholm Environment Institute (SEI) and SU and to create a platform from which further collaboration can develop in areas where SEI and SU have common interest regarding climate change induced transformation. The seminar series' target audience is inclusive and not restricted to specific disciplines. We strive to de-emphasize siloed research perspectives by fostering perspectives and approaches crossing academic borders. This seminar is one iteration of hopefully many more insightful exchanges to come.

This event is open to staff, PhD students and Master students at all Departments and Centers at Stockholm University, and all Divisions & Centers at SEI.

To register, please send an email to nina.kirchner@natgeo.su.se no later than Friday 26 Nov 2021, 5 pm. Please state your name, affiliation, and indicate whether you will be participating on-site (Aula Magna, Stockholm University), or remotely (zoom link will be sent out later).

25

Nov

Research seminar: Interaction between Atlantic cyclones and Eurasian atmospheric blocking drives warm extremes in the high Arctic

Time: 25 November 2021, 14h15 - 14h45

Venue: Zoom <https://stockholmuniversity.zoom.us/j/68854296811>

Speaker: Sonja Murto, Phd Student at MISU

See all MISU seminars here <https://www.su.se/department-of-meteorology/calendar>

25

Nov

Research seminar: The Role of Atmospheric Blocking in regulating Arctic Warming

Time: 25 November 2021, 14h45 - 15h15

Venue: Zoom <https://stockholmuniversity.zoom.us/j/67881324552>

Speaker: Cheng You, Phd Student at MISU

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Nov

Webinar: Under the surface in Stockholm's archipelago

Time: 29 November, 13h00-15h30

The current status of the environmental condition of the Stockholm archipelago will be presented. There will also be presentations on the state of knowledge in research, what affects the environment today and what measures are available to improve the marine environment. [Read more on Baltic Sea Centre's website](#) »

Guest seminar: Challenges of modelling freezing across scales

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Nov

Date: 30 November**Time:** 11:15-12:15**Speaker:** Luisa Ickes Assistant Professor, Department of Space, Earth and Environment, Microwave and Optical Remote Sensing**Venue:** Hybrid – Rossbysalen and via zoom:<https://stockholmuniversity.zoom.us/j/68244464506>**Organizers:** Department of Meteorology

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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

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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

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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 an 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

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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 »](#)**OFFICE STAFF - BOLIN CENTRE AT CAMPUS**

Due to COVID-19, the Bolin Centre Office will be irregular 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.

Editor: Magnus Atterfors

Photo: Martin Jakobsson, Baltic Sea Center, Paul Bentzen, Christer Nilsson

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