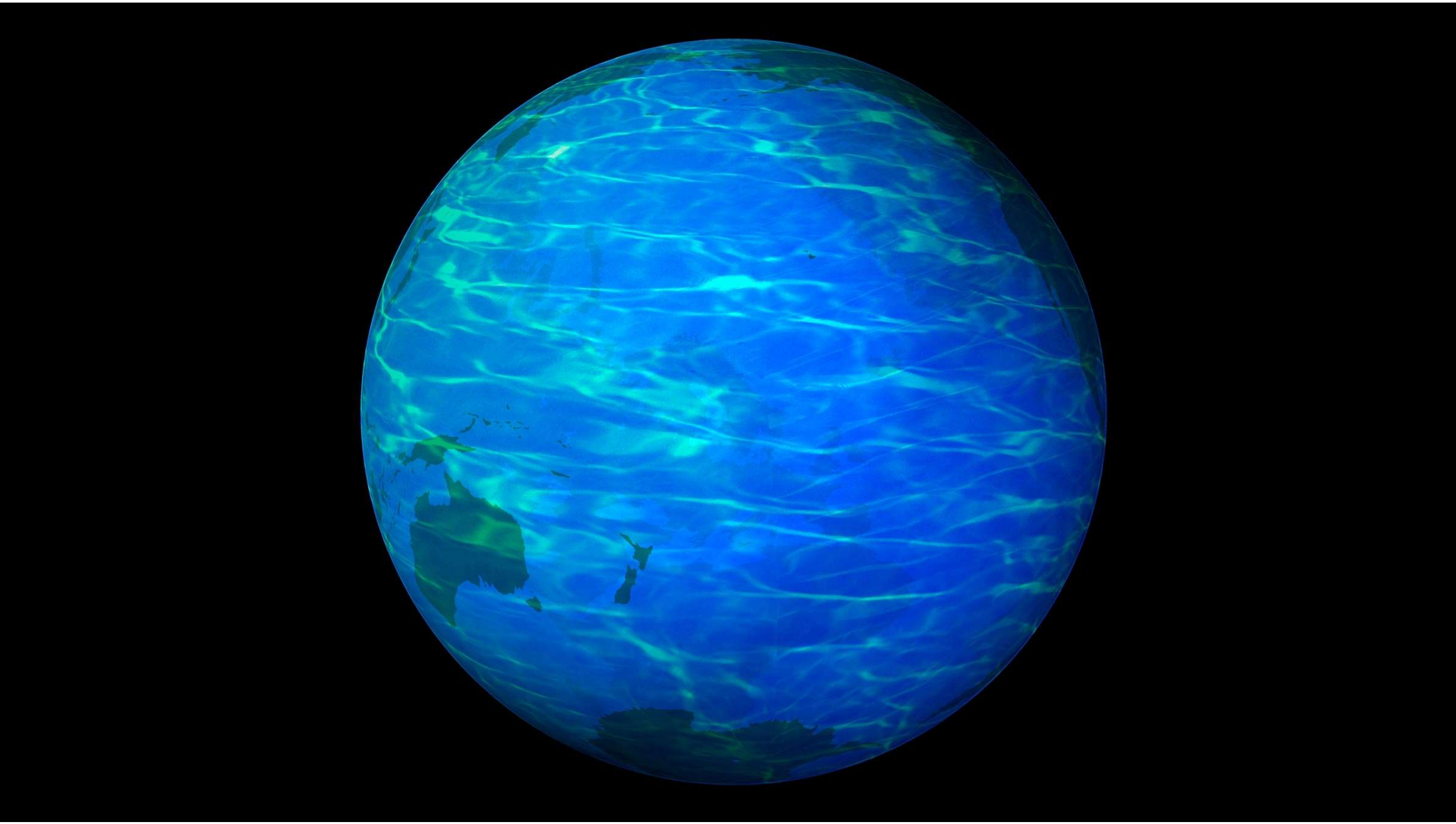
Mõtisklusi elust ja ilmast – Amazonasest Emajõeni

Priit Zingel

Eesti Maaülikool, Hüdrobioloogia ja kalanduse õppetool



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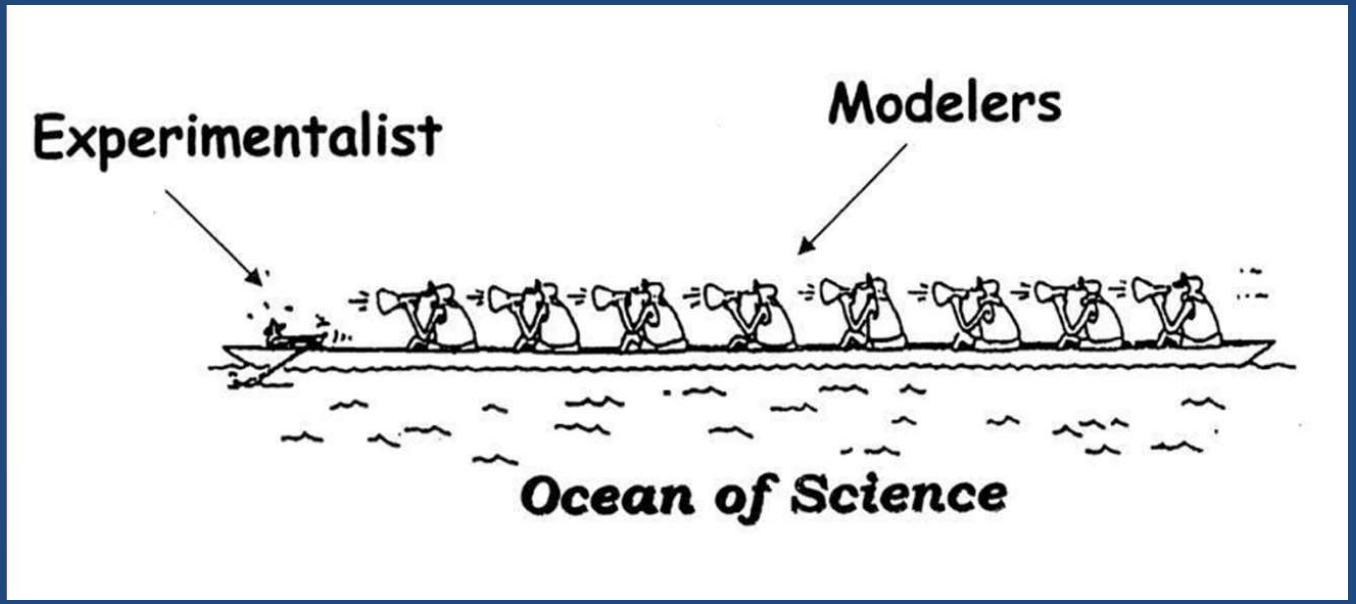

2016, 2019, 2023


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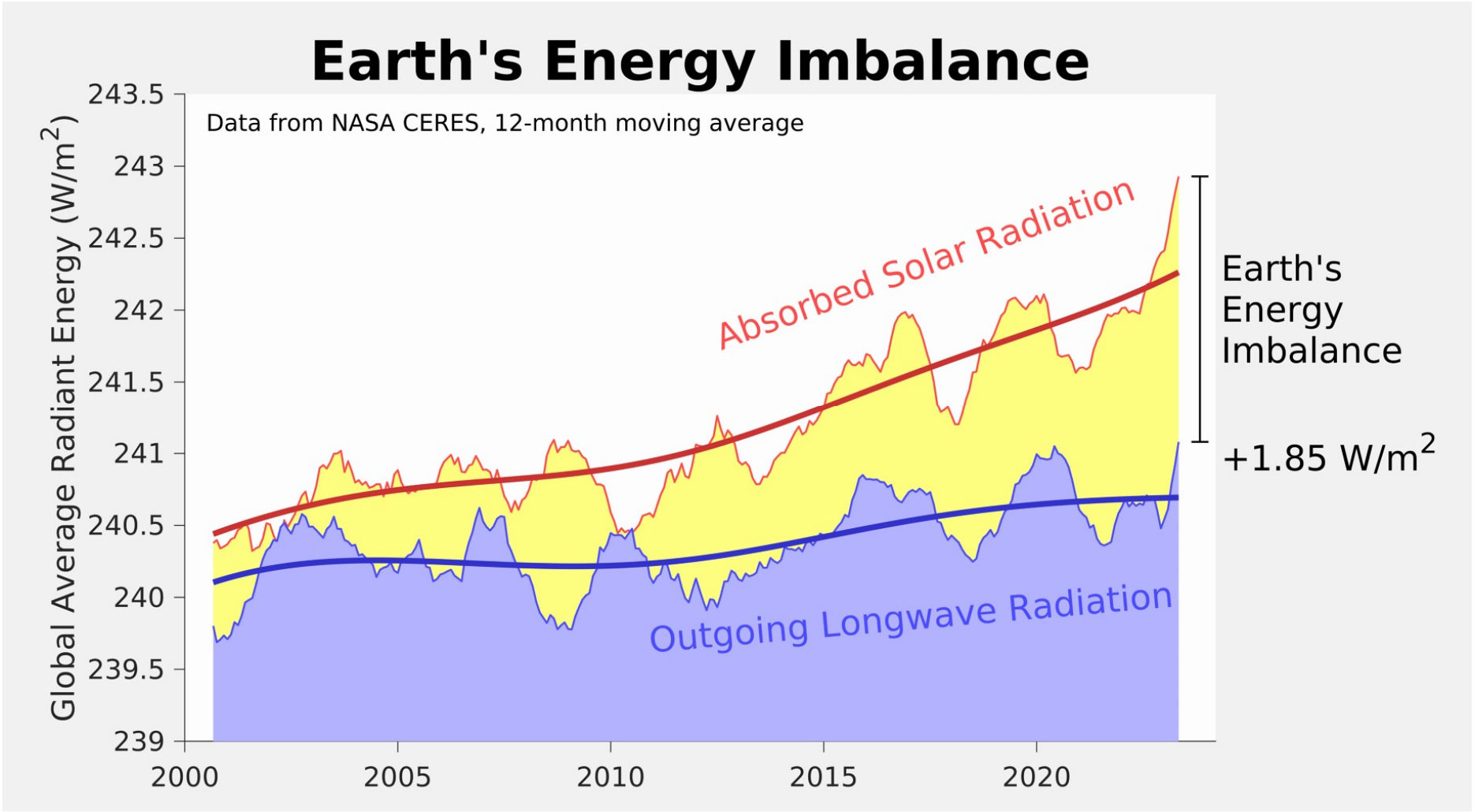
Earth's Energy Imbalance
Data from NASA CERES, 12-month moving average
Global Average Radiant Energy (W/m^2)
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Outgoing Longwave Radiation
Earth's Energy Imbalance
+1.85 W/m^2

The Guardian

Amazon rainforest

This article is more than 1 month old

Devastating drought in Amazon result of climate crisis, study shows

Extreme weather threatens world's biggest carbon store as the rainforest is already close to tipping point

Damian Carrington
Environment editor
Wed 24 Jan 2024 18.00 CET

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Floating homes and boats stranded on the dry bed of Puraquequara drought in October 2023. Photograph: Edmar Barros/AP

The climate crisis turned the drought that struck the A 2023 into a devastating event, a study has found.

MONGABAY
NEWS & INSPIRATION FROM NATURE'S FRONTLINE

Mongabay Series: Amazon Conservation

Amazon drought cuts river traffic, leaves communities without water

by André Schröder on 3 October 2023

- Falling water levels in the rivers and lakes of the Brazilian Amazon are restricting the flow of ships and boats, the main form of transport in the region and the only means of access to health and education facilities for many communities.
- This year's drought is exacerbated by two simultaneous natural events, the main one being El Niño, that inhibit the formation of rain clouds, further reducing the already low rainfall recorded during the dry season.
- More than 100 Amazonian river dolphins were found dead in a lake in Amazonas state, likely due to high water temperatures and low water levels, according to researchers.
- The state of Amazonas is preparing for the worst drought in its history, which will affect 500,000 people by the end of October; the federal government has created a task force to mitigate the impacts, promising to send water, food and medicine.

A severe drought has thrown the Brazilian Amazon into an emergency, with water levels in rivers and lakes across the basin falling to unprecedented lows in September. This has restricted the movement of people and goods by boat, making it even more

BBC

Amazon's record drought driven by climate change

24 January 2024

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By Mark Poynting, Climate and environment researcher, BBC News

Reuters

One of our planet's most vital defences against global warming is itself being ravaged by climate change.


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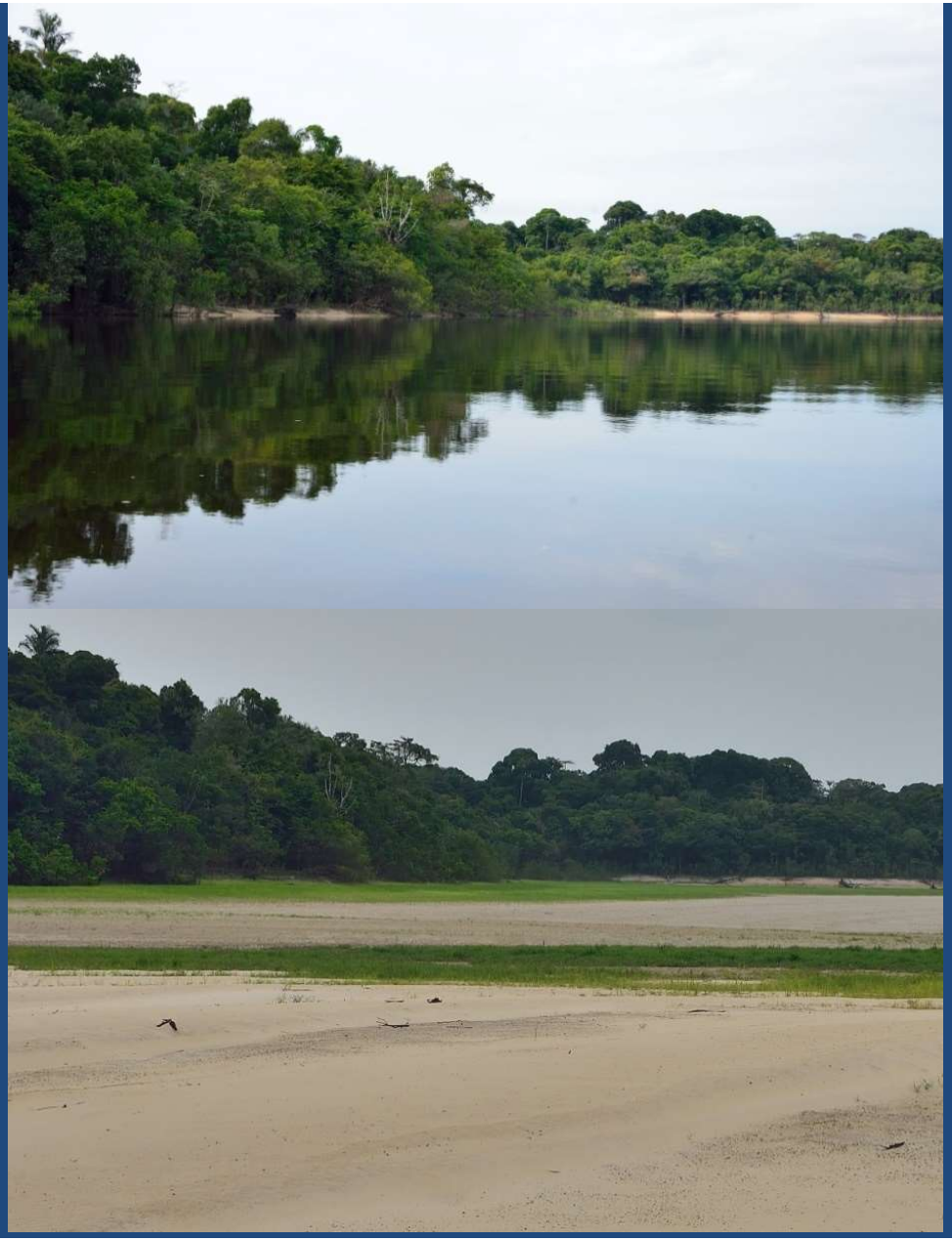

November 2019

November 2023

"WHEN THE ENVIRONMENT IS SICK, WE NEED AN ECOLOGIST", SAYS EXPERT ON LAKES IN THE AMAZON

CLIMATE | January 12, 2024

By Tiago da Mota e Silva, PhD in Communication and Semiotics from the Pontifical Catholic University of São Paulo (PUC-SP), graduated in Journalism from Faculdade Cásper Líbero (FCL) and researcher in Communication since 2012. He is a member of the Interdisciplinary Center for Semiotics of Culture and Media (CISC). He investigates topics related to Communication Ecology, environmental conservation and climate change.

Before starting the interview, Estonian ecologist Pritt Zingel asked the reporter if this would finally be his moment of fame. "That's all science is for!" he exclaimed in his deep voice. His acid irony highlights with good humor what is, in fact, the serious theme with which he works: how lakes considered shallow are, around the world, undergoing transformations and even disappearing.

Priit Zingel collects water from Lago do Prato in search of cyanobacteria, an organism with a fundamental role in the ecosystem's food chain

Priit was one of the 18 scientists who, on November 21, 2023, left Manaus (AM) on a boat for a 15-day scientific excursion along the Rio Negro and Rio Solimões. Among other objectives, the trip assessed the impacts of the historic drought that affected the state of Amazonas, with the level of the Rio Negro reaching below 13 meters in depth, according to the Port of Manaus.

"It touches me on an emotional level," says Priit. After all, this is his third time in the Amazon. In the last one, in 2019, the researcher was at Lago do Prato, in the Anavilhanas archipelago, also during the low rainy season. But nothing compares to this year: practically half of Prato Lake has disappeared.

Over the years, Pritt has specialized in shallow lakes. They are ecosystems spread across the world defined, of course, by their shallow depth, but also, and above all, by containing waters that mix easily. According to Priit, these lakes are very important in

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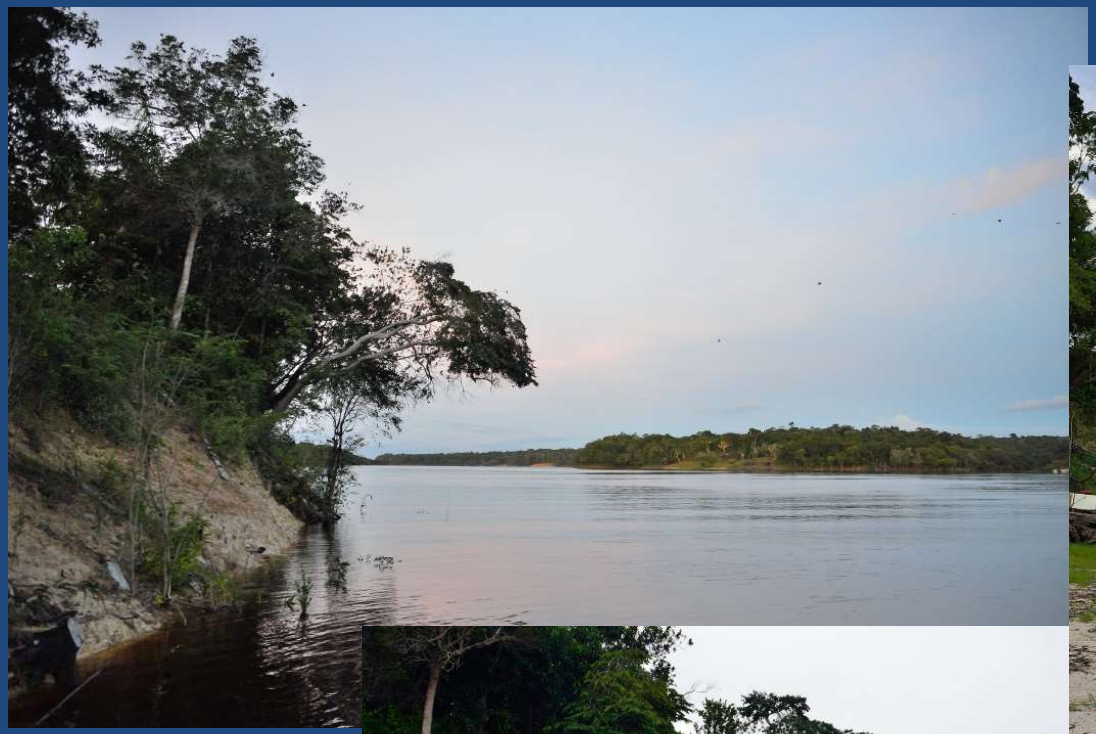

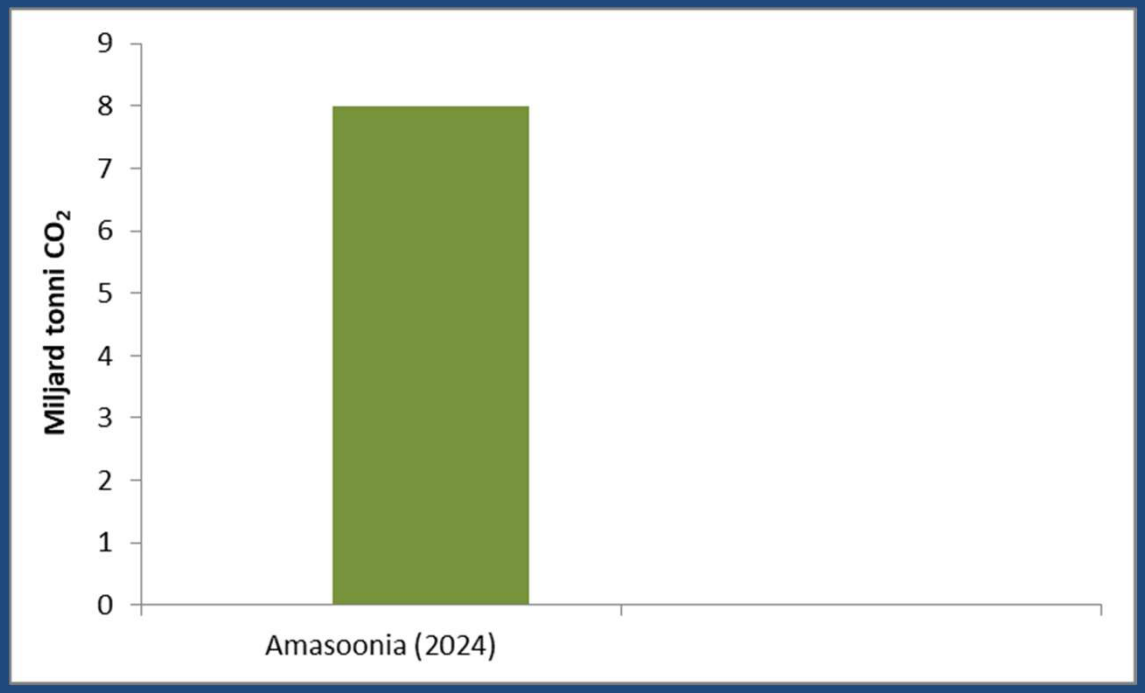
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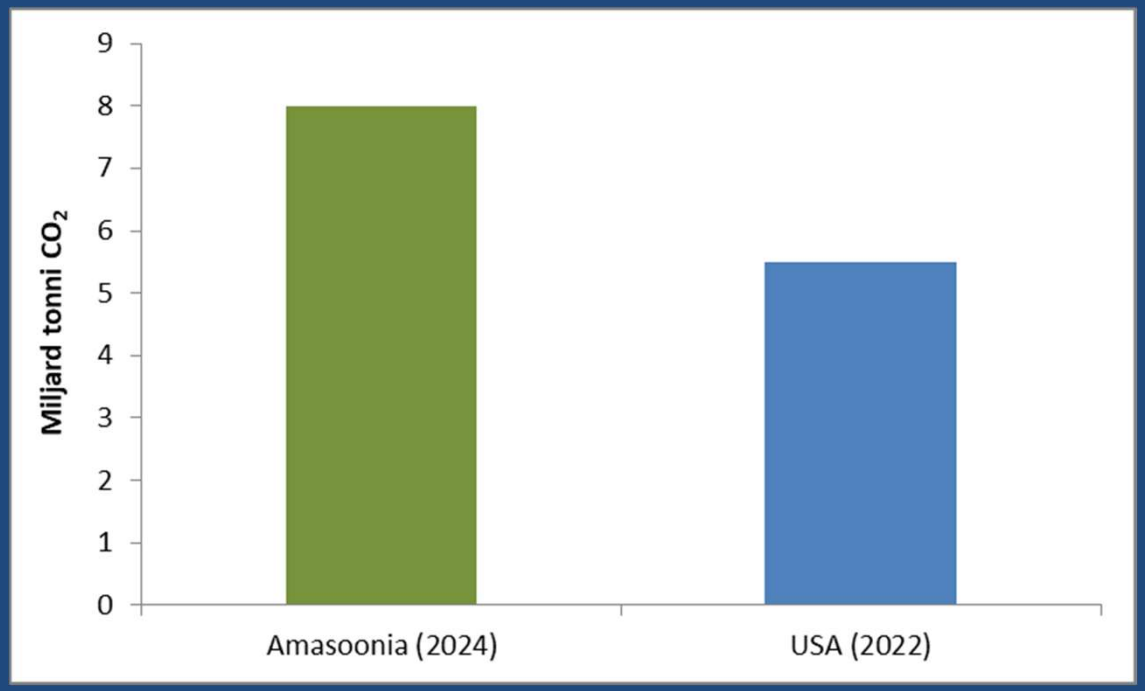
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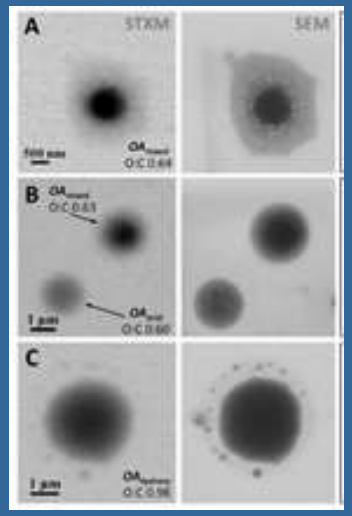


› Science. 2012 Aug 31;337(6098):1075-8. doi: 10.1126/science.1223264.

Biogenic potassium salt particles as seeds for secondary organic aerosol in the Amazon

Christopher Pöhlker [1], Kenia T Wiedemann, Bärbel Sinha, Manabu Shiraiwa, Sachin S Gunthe, Mackenzie Smith, Hang Su, Paulo Artaxo, Qi Chen, Yafang Cheng, Wolfgang Elbert, Mary K Gilles, Arthur L D Kilcoyne, Ryan C Moffet, Markus Weigand, Scot T Martin, Ulrich Pöschl, Meinrat O Andreae

Affiliations – collapse

Affiliation

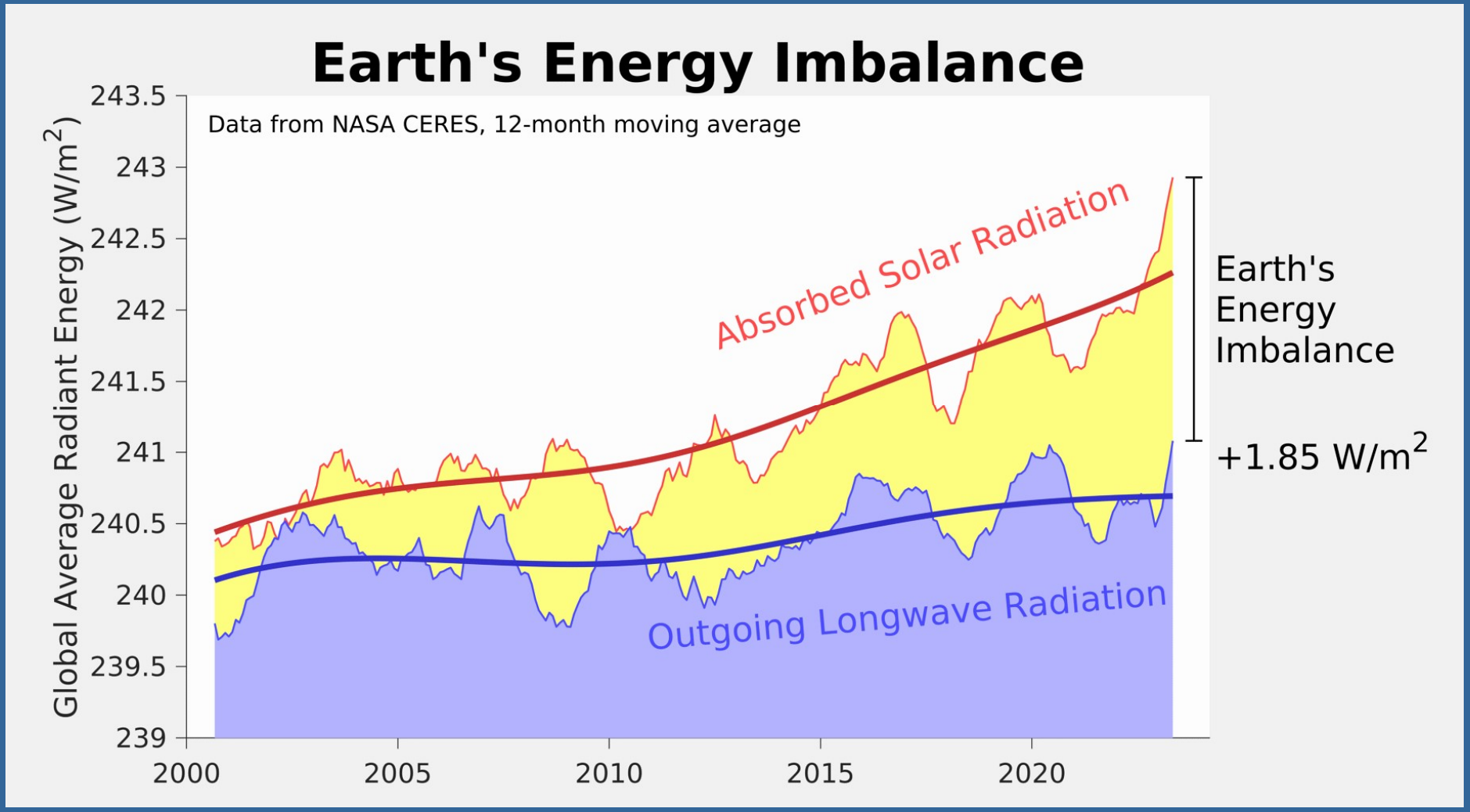
1 Biogeochemistry Department, Max Planck Institute for Chemistry, Mainz 55020, Germany. c.pohlker@mpic.de

PMID: 22936773 DOI: 10.1126/science.1223264

Free article

Abstract

The fine particles serving as cloud condensation nuclei in pristine Amazonian rainforest air consist mostly of secondary organic aerosol. Their origin is enigmatic, however, because new particle formation in the atmosphere is not observed. Here, we show that the growth of organic aerosol particles can be initiated by potassium-salt-rich particles emitted by biota in the rainforest. These particles act as seeds for the condensation of low- or semi-volatile organic compounds from the atmospheric gas phase or multiphase oxidation of isoprene and terpenes. Our findings suggest that the primary emission of biogenic salt particles directly influences the number concentration of cloud condensation nuclei and affects the microphysics of cloud formation and precipitation over the rainforest.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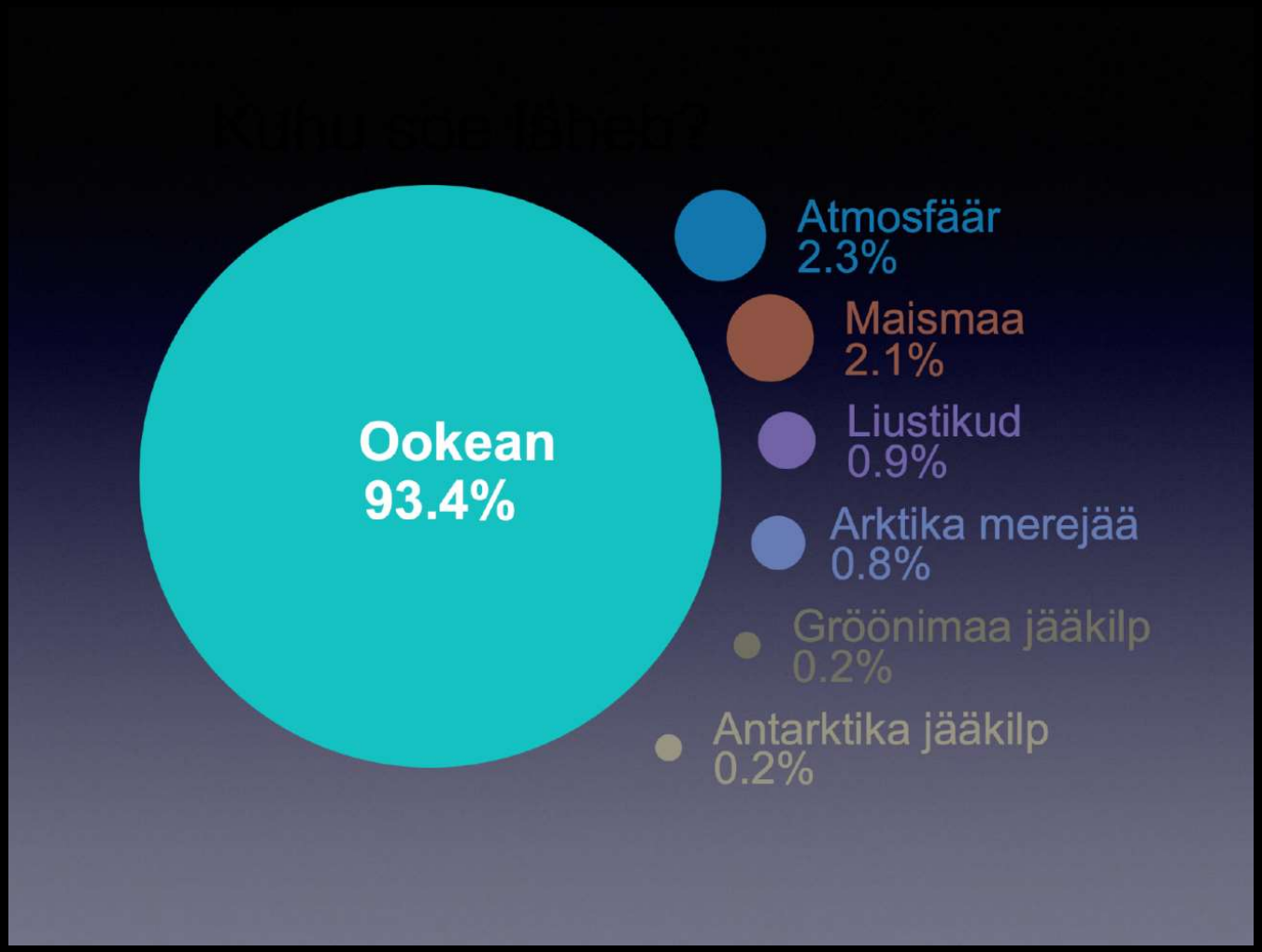
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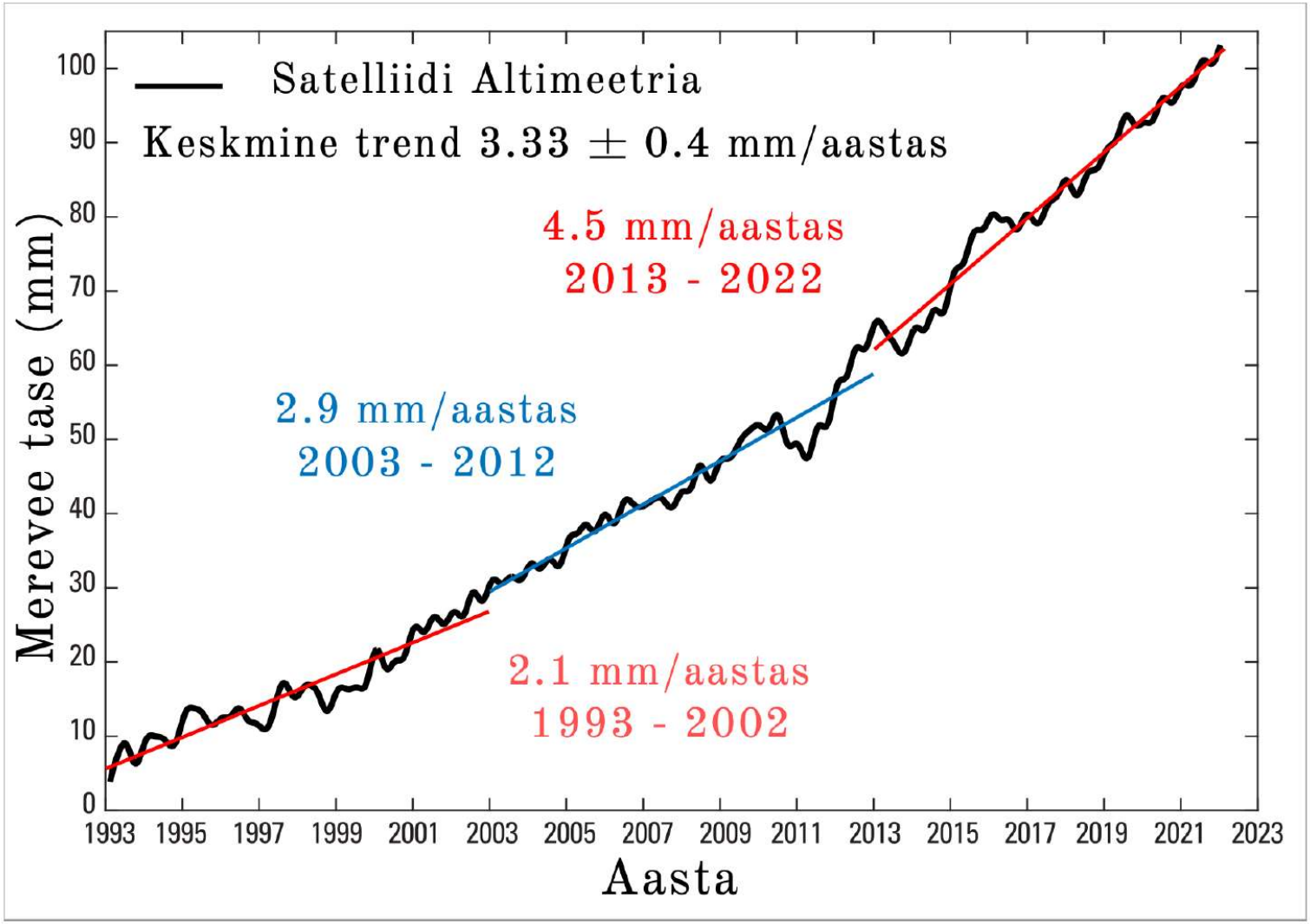
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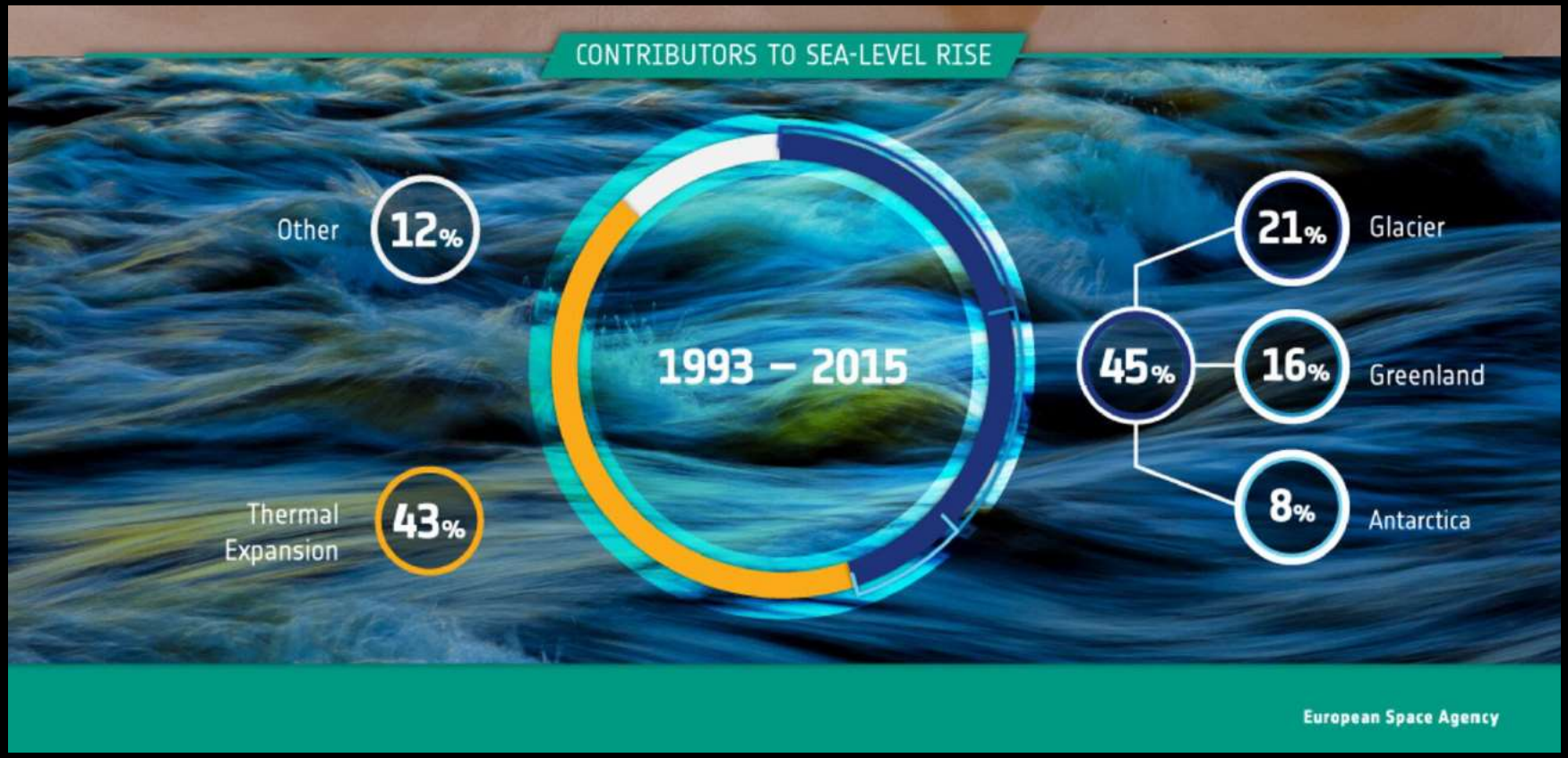
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12%
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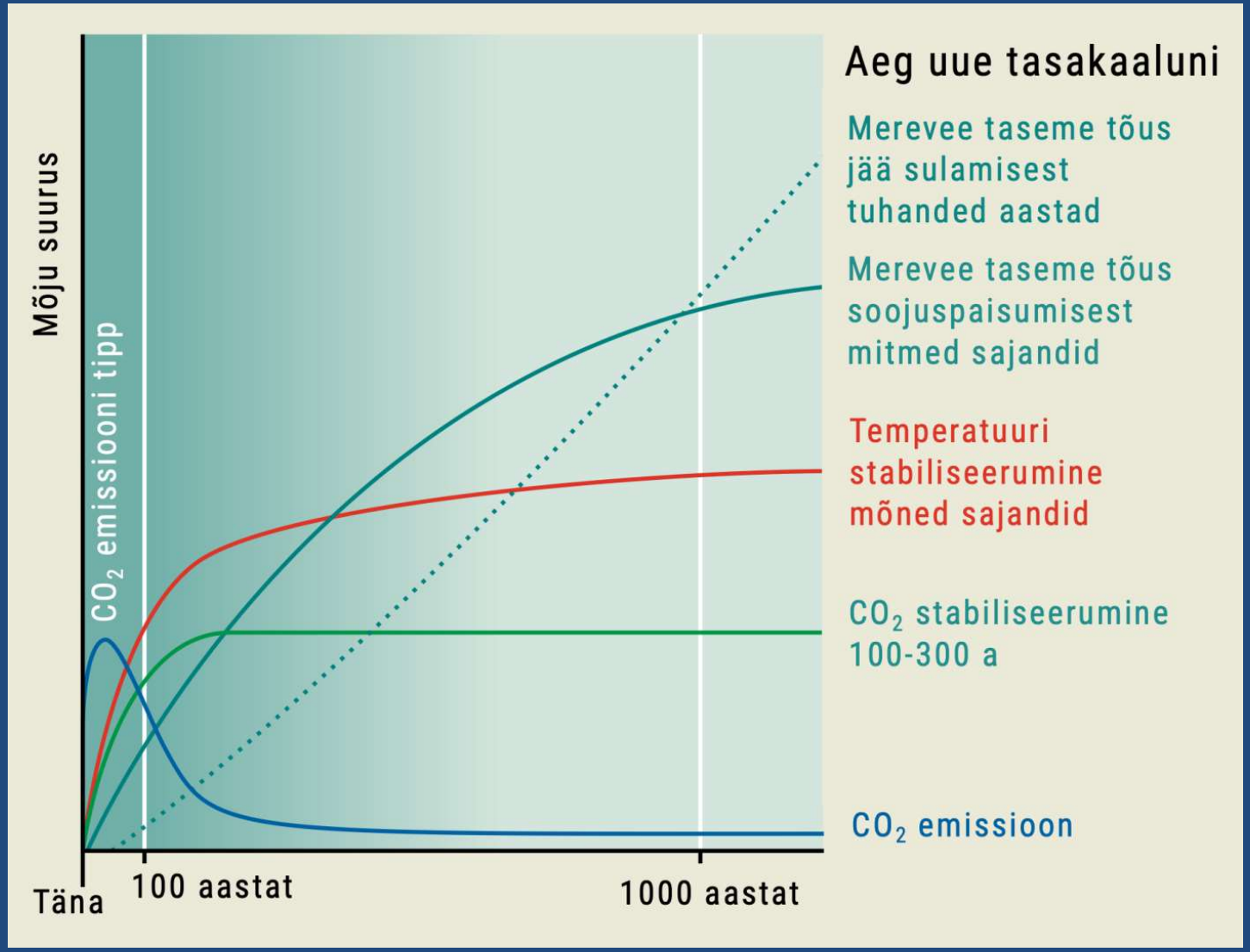
Mõju suurus
CO_2 emissiooni tipp
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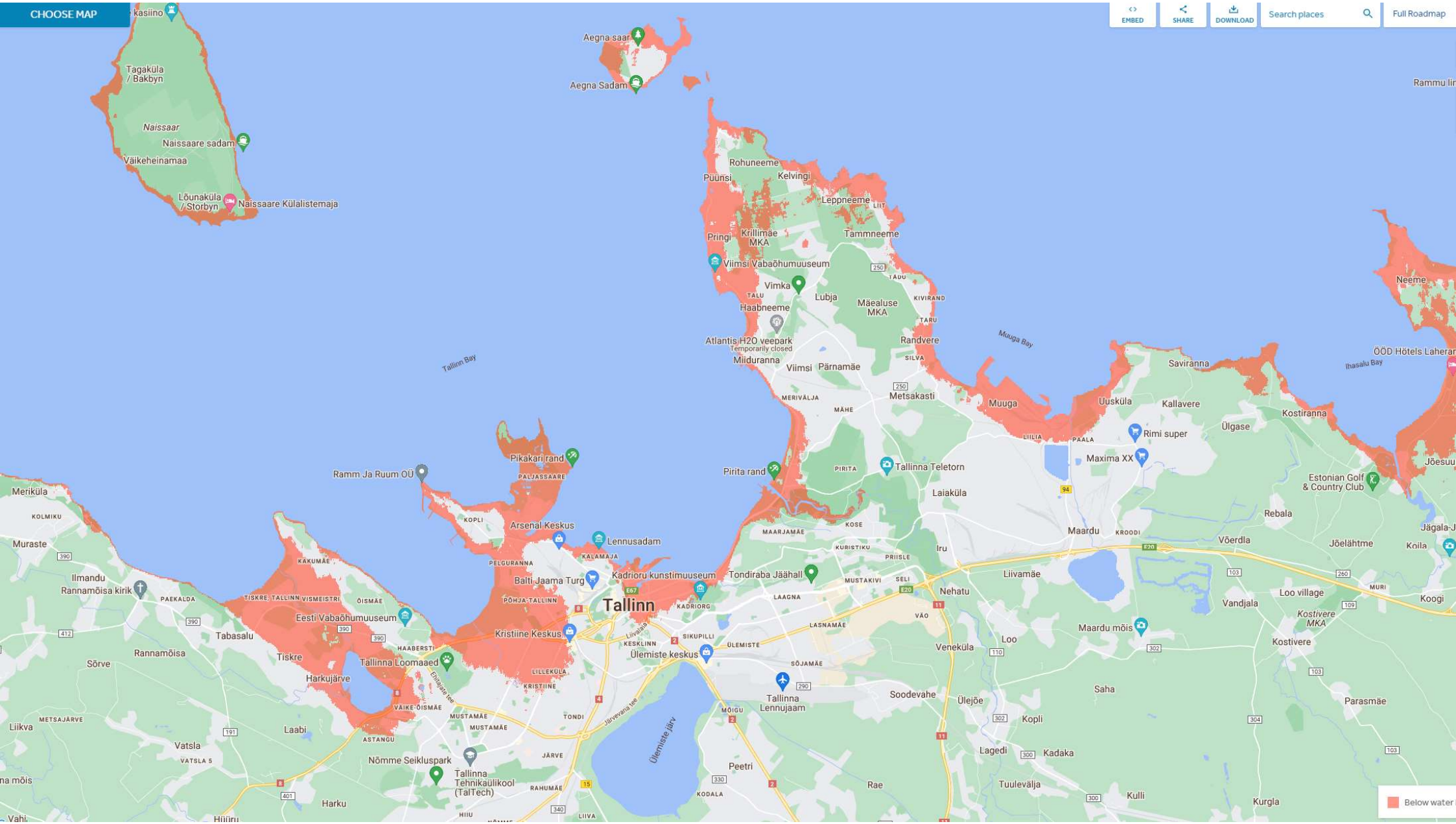
Merevee taseme tõus jää sulamisest tuhanded aastad
Merevee taseme tõus soojuspaisumisest mitmed sajandid
Temperatuuri stabiliseerumine mõned sajandid
CO_2 stabiliseerumine 100-300 a
CO_2 emissioon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Temporarily closed
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Loo village
Koogi
Eesti Vabaõhumuuseum
Tabasalu
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Laabi
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Peetri
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Tänud kuulamast!