

# SSE RIGA Food for Thought

## Climate Change in Latvia and Elsewhere, is it that Bad?

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# SSE Riga Food for Thought

**Feb. 11, 16:00-16:30**

Kata Fredheim and Zane Varpina - 'Leaving on a jet plane? School – life transition and migration: the case of Latvian youngsters'

**Feb. 18, 16:00-16:30**

Sabīne Sīle-Eglīte – 'Uncovering Crime and Corruption through Journalism'

**Feb. 25, 16:00-16:30**

Rihards Garančs – 'How Data Science & Analytics Uncovers Insights and Drives Storytelling - a Case of Riga Real Estate Market'

- Advisor at the Happiness Research Institute (Copenhagen, Denmark)
- Visiting lecturer at Stradins University, Sciences Po Lille
- Courses:
  - *Academic Studies and Critical Thinking;*
  - *Ethics and Sustainable Business;*
  - *Happiness: Philosophy, Economics and Politics;*
  - *Climate Change;*
  - *Welfare State*
- Research interests:
  - Politics, welfare state
  - Subjective wellbeing
  - Climate change





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  - **Climate change (geoengineering)**





# Climate Change in Latvia, and Elsewhere: not that Bad, right?

1. Latvia, and other Northern countries, will experience higher temperature increases than the global average
2. Latvia will face risks linked to this temperature increase, but also to changes in climate/environmental conditions
3. Latvia will be confronted with socio-political threats resulting from a more unstable world
4. Climate change is combining with other challenges (plastic pollution, the rise of populism, international tensions) to create conditions for a 'perfect moral storm' (Gardiner)

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# Actually, it could be that bad

Depending on emission pathway, global temperatures could rise by (much) more than 2° Celsius



Worse: temperatures in the Northern latitudes will most likely increase by more than global average, up to 5 times

Albedo

# The Deep Past

Current concentration of CO<sub>2</sub>?

415 ppm (NASA, 11/2020)

Pre-industrial concentration?

ca.270 ppm

When was last time such a level was reached?

3-5 million years

How does the earth look like back then?

3-4 °C warmer

Trees in Antarctica

Seas 10-20m higher

Last time CO<sub>2</sub> levels were this high, there were trees at the South Pole

Pliocene beech fossils in Antarctica when CO<sub>2</sub> was at similar level to today point to planet's future

Damian Carrington  
Environment editor  
@dpcarrington

Wed 3 Apr 2019 17:22 BST



5,852



▲ Leaves of the extinct southern beech (*Nothofagus beardsmorei*) found at Oliver Bluffs, in the Transantarctic mountains, Antarctica. Photograph: J Francis, A Ashworth

Trees growing near the South Pole, sea levels 20 metres higher than now, and global temperatures 3C-4C warmer. That is the world scientists are uncovering as they look back in time to when the planet last had as much carbon dioxide in the atmosphere as it does today.

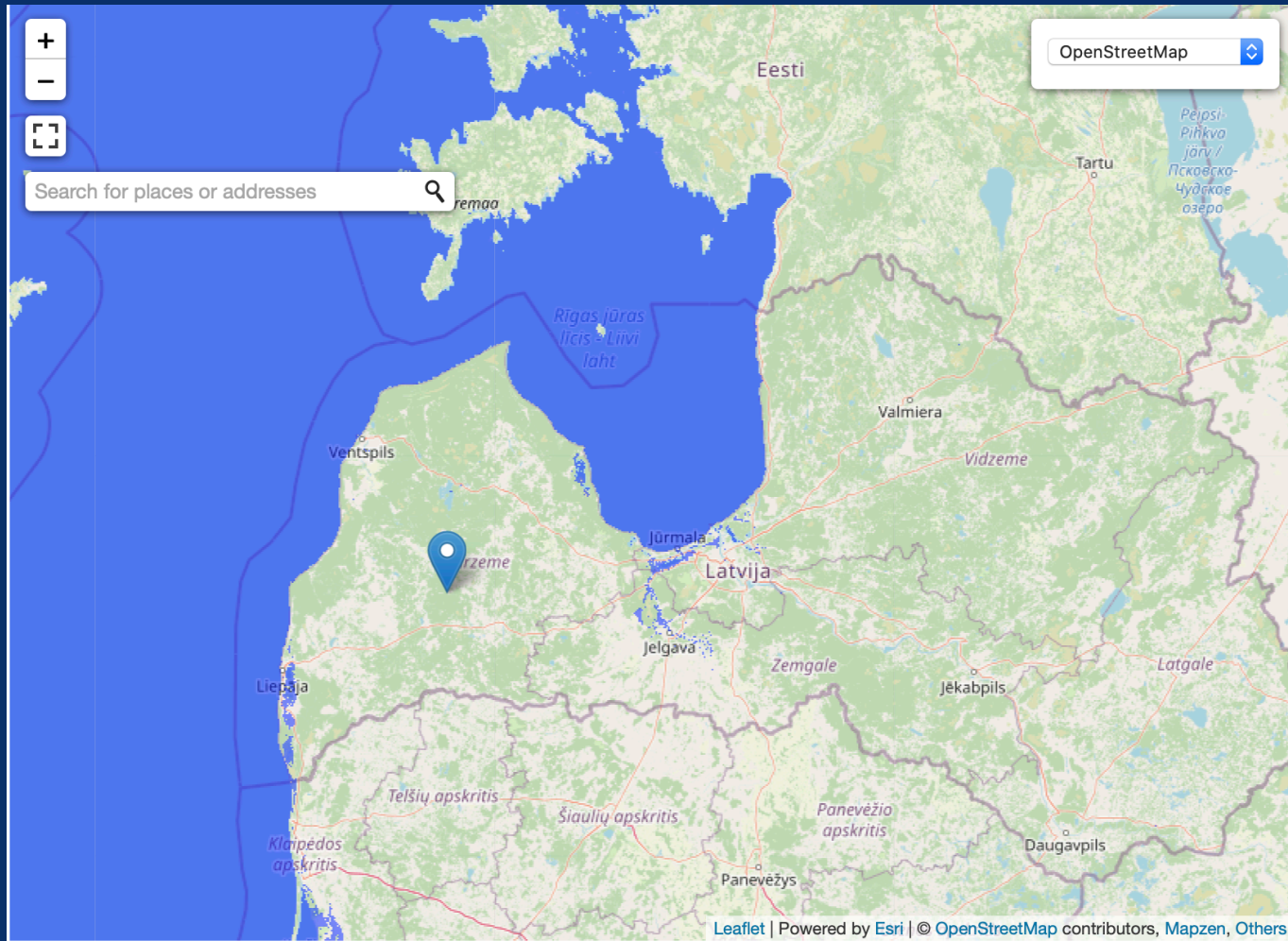
Using sedimentary records and plant fossils, researchers have found that temperatures near the South Pole were about 20C higher than now in the Pliocene epoch, from 5.3m to 2.6m years ago.

Many scientists use sophisticated computer models to predict the impacts of human-caused climate change, but looking back in time for real-world examples can give new insights.

The Pliocene was a “proper analogy” and offered important lessons about the road ahead, said Martin Stenert, a geophysicist and climate change

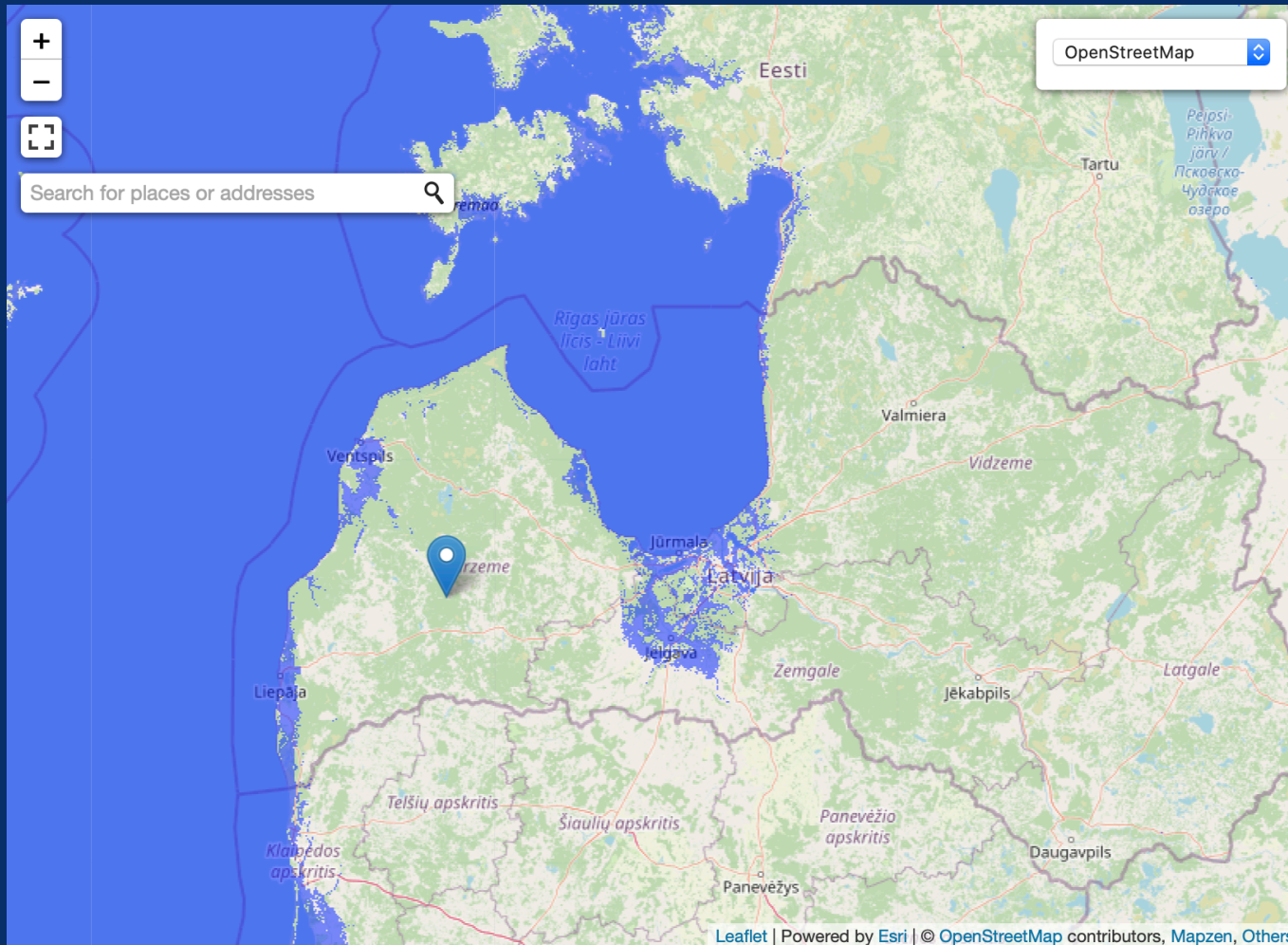


# Latvia: Today



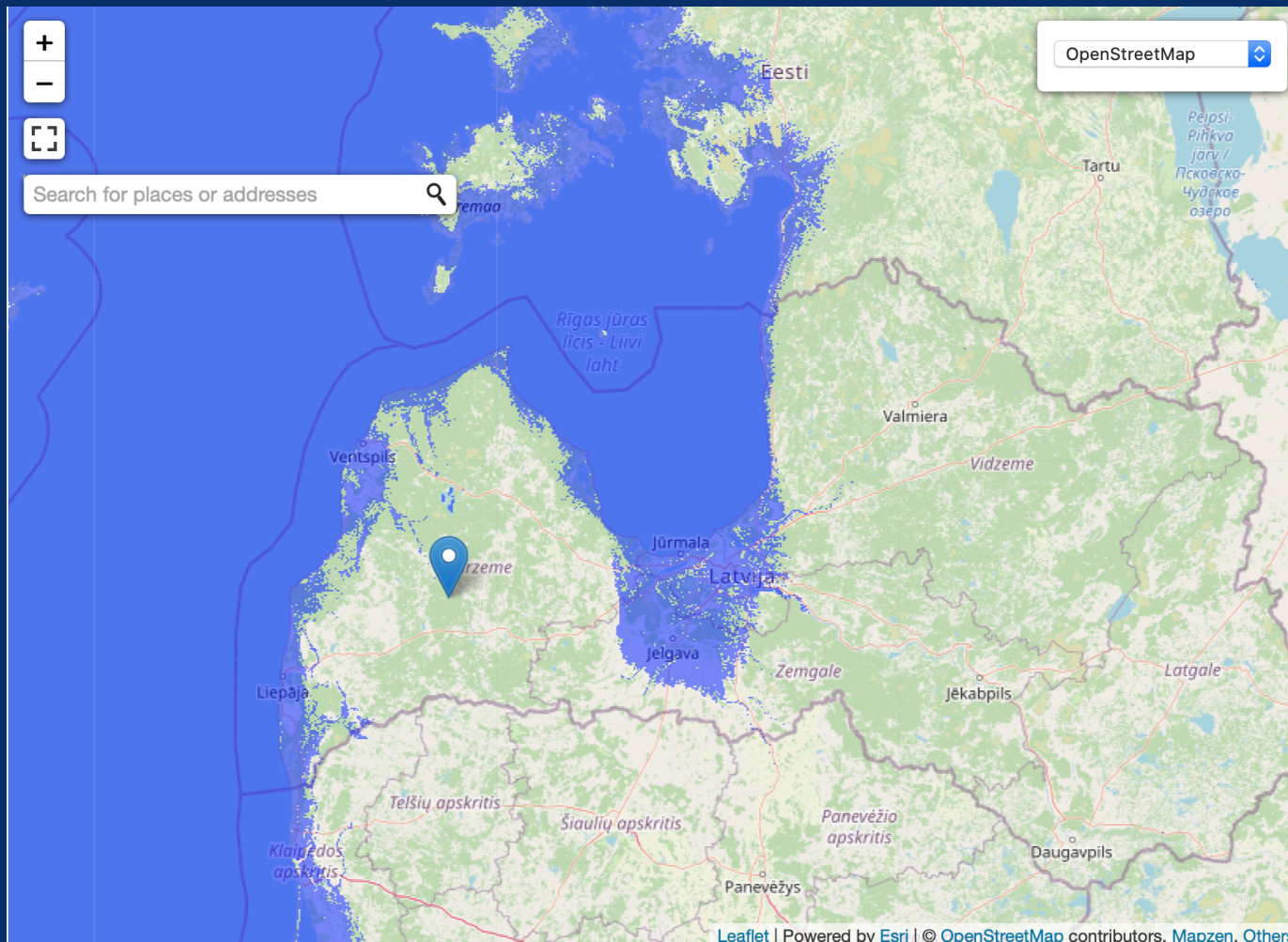
Source: <https://www.floodmap.net>

# Latvia: 10m



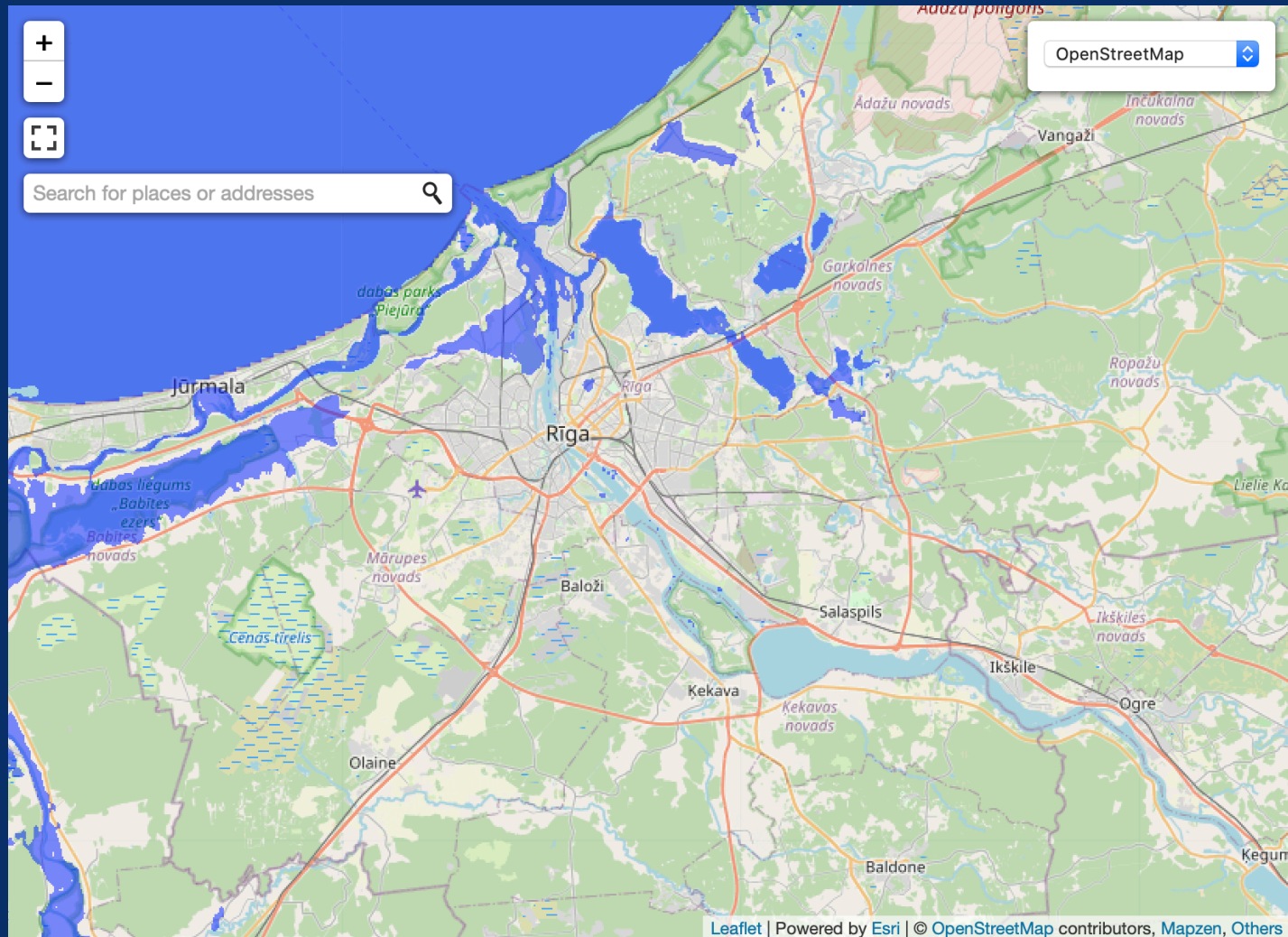


# Latvia: 20m



Source: <https://www.floodmap.net>

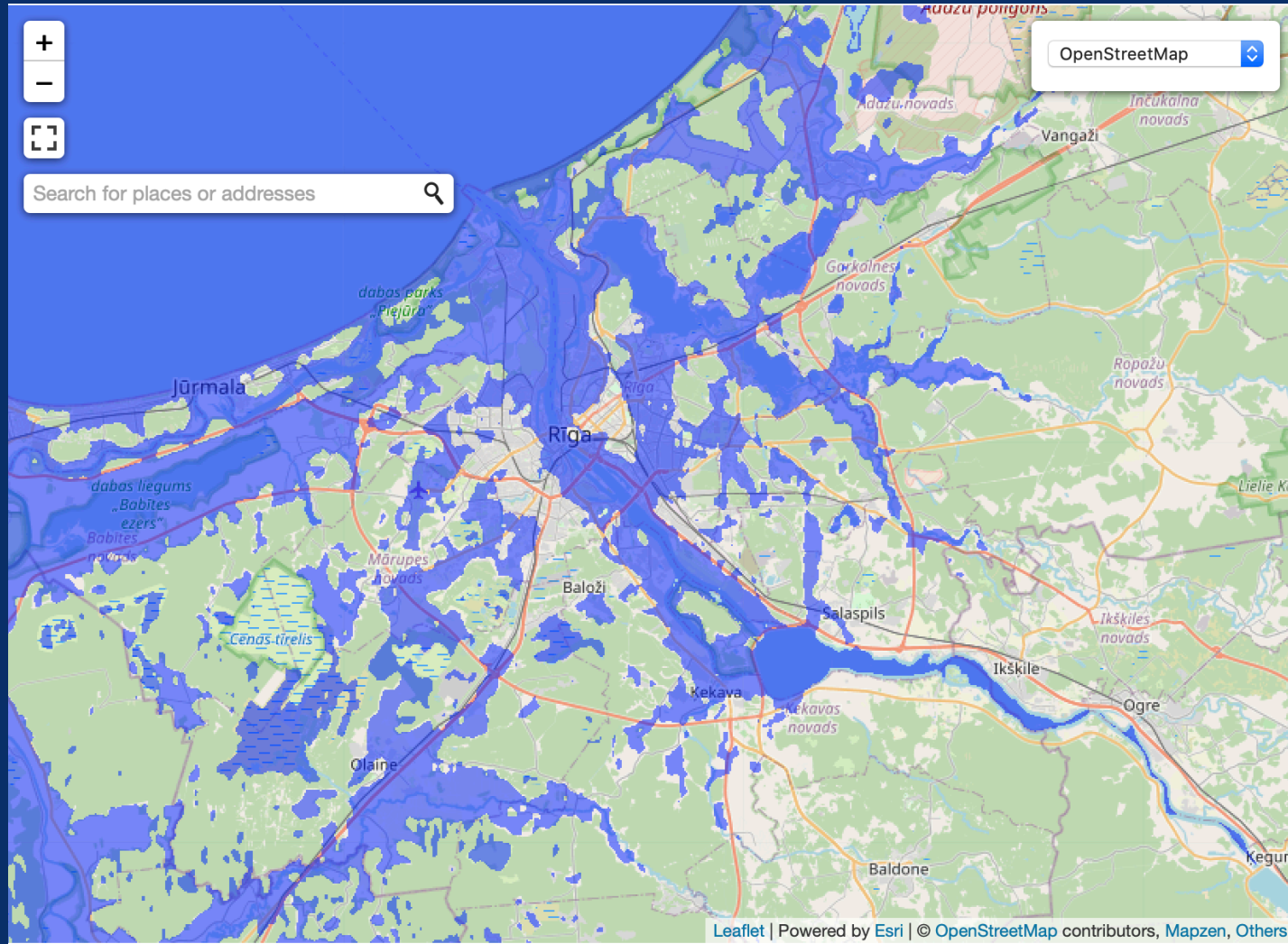
# Riga: Today



Source: <https://www.floodmap.net>

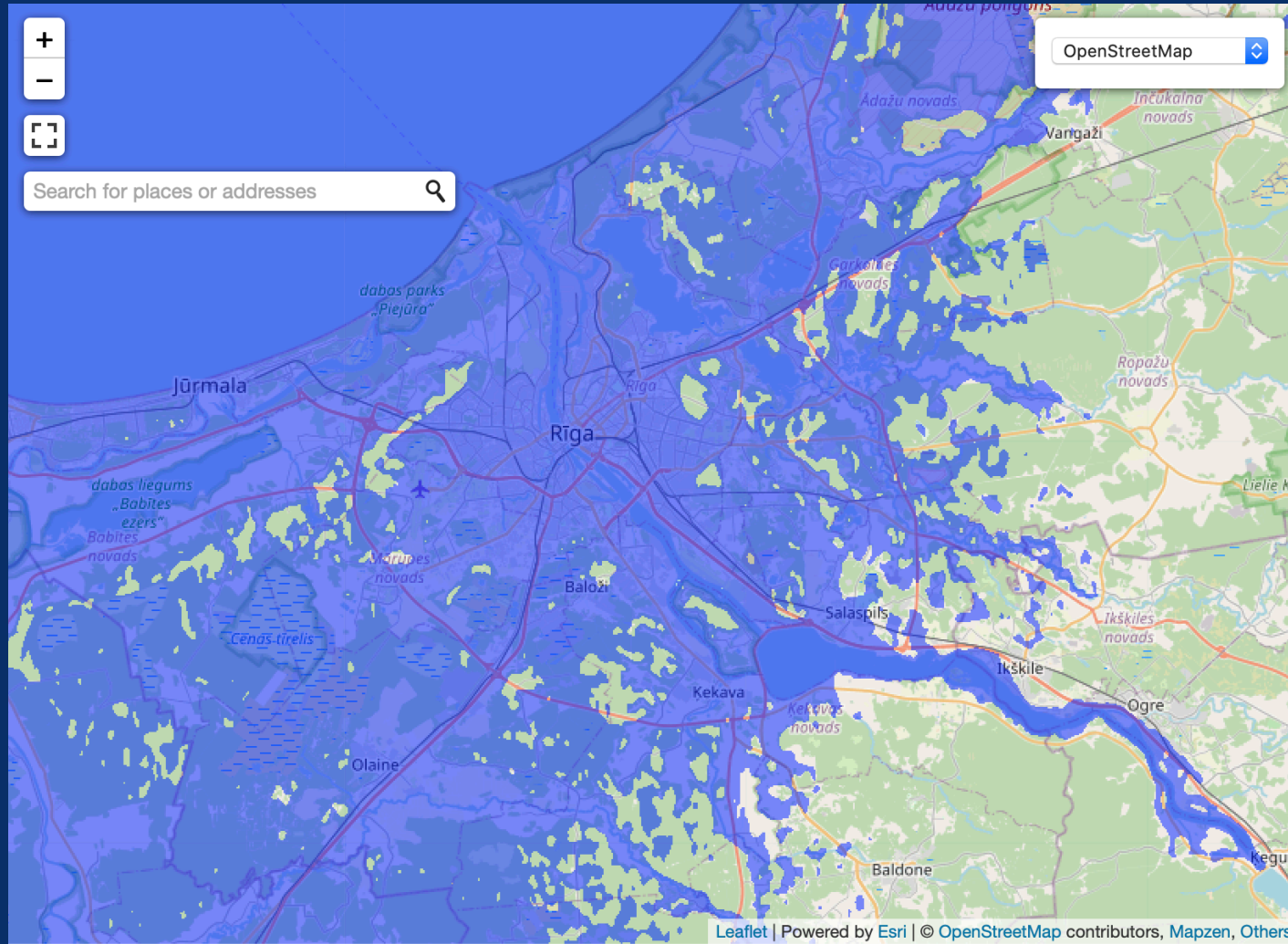


# Riga: 10m



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# Riga: 20m



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# Beyond Average Temperatures

- Higher heatwaves frequency
  - LV, 2080-2099: +5%-21% (RCP 8.5) [World Bank]
- Sea level rise, coastal erosion (e.g. Norfolk US Navy station)
- More frequent/severe extreme climate events such as storms, floods, etc.
- Forests and crops: Wildfires, droughts, new pests
  - EMBA thesis (2021): Māris Plūme and Mantas Krasauskas, 'Climate Change Scenarios for the Forestry in the Baltic Countries'
- Ocean acidification
- Exotic viruses and bacteria (e.g. dengue fever, west Nile virus)
- Y1 Students climate risk in Latvia/Baltics reports (spring)

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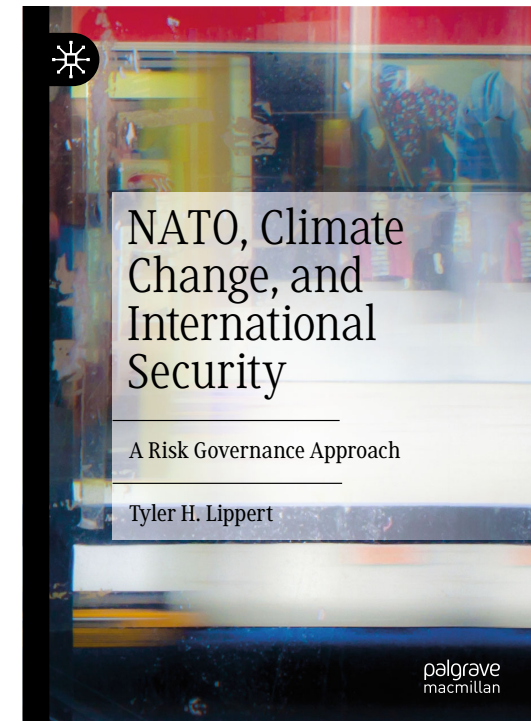
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# A More Unstable World

- Worsened migration patterns, e.g. civil war in Syria, droughts in Africa, Pacific islands, coastal areas (e.g. Bangladesh)
  - Not limited to developing countries (e.g. USA)
  - 2019: ca. 25 millions displaced people due to disaster
- Increased water stress (e.g. Mediterranean basin)
- Threatened food security (e.g. Africa, Russia)
- Rise of populism and political instability
- Strained international cooperation (e.g. NATO, EU)



In Kiribati, an island republic in the Central Pacific, large parts of the village Eita (above) have succumbed to flooding from the sea.  
Jonas Gratzner/LightRocket via Getty Images



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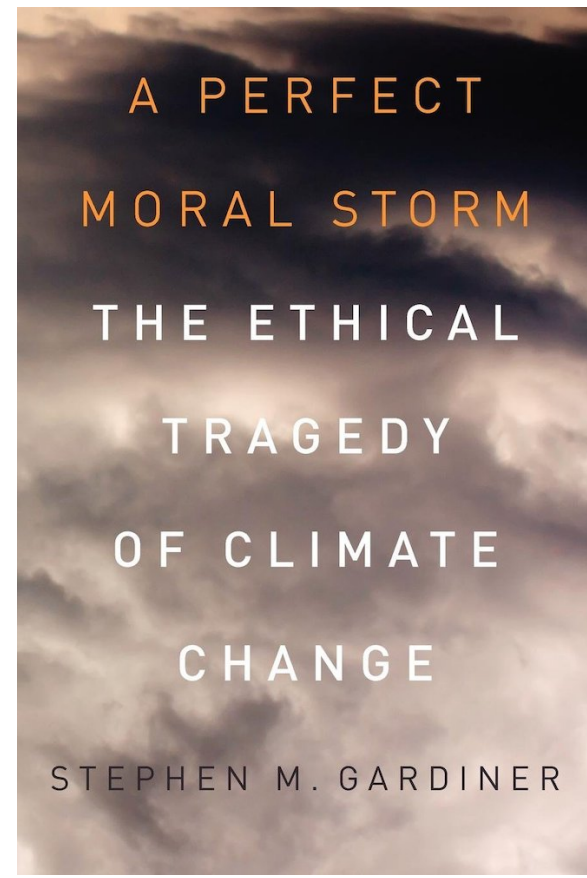
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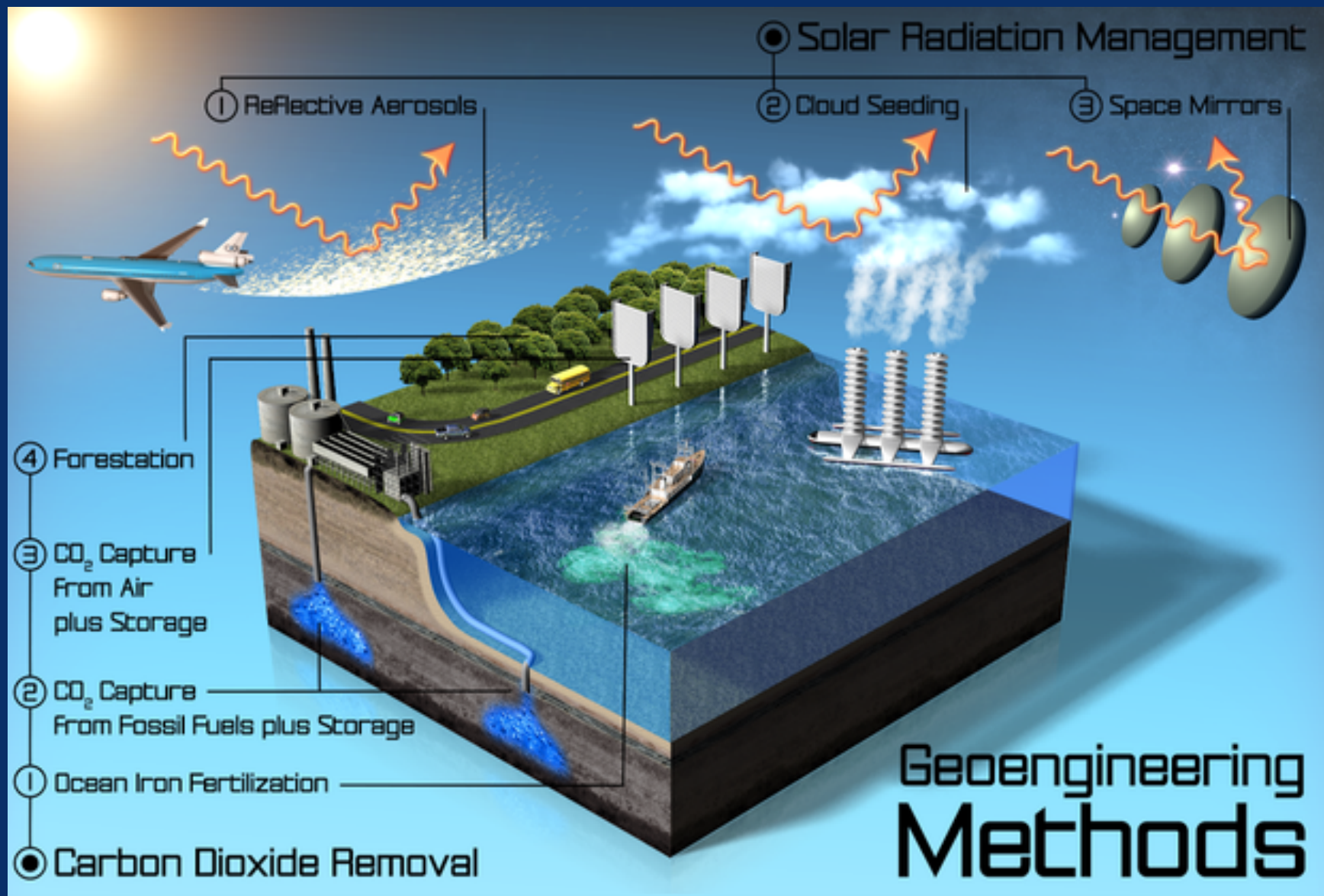
# ‘A Perfect Moral Storm’ (Gardiner)

**Combination of three mutually reinforcing storms**

1. Global Storm
2. Intergenerational Storm
3. Theoretical Storm



Therefore, geoengineering appears as a way out  
of this perfect moral storm



Sources: IPCC / Royal Society | More info: [www.get2.cc/5e](http://www.get2.cc/5e)

 [climatecentral.org](http://climatecentral.org)

# Few References

Environmental Migrants:

[https://www.europarl.europa.eu/RegData/etudes/STUD/2020/655591/IPOL\\_STU\(2020\)655591\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/655591/IPOL_STU(2020)655591_EN.pdf)

Gardiner, Stephen. 2011. *A Perfect Moral Storm: The Ethical Tragedy of Climate Change*. Oxford: Oxford University Press.

IPCC. 2014. *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.

NASA website: <https://climate.nasa.gov>

NOAA (National Oceanic and Atmospheric Administration): <https://www.climate.gov>

Shepherd, John, Ken Caldeira, Peter Cox, Joanna Haigh, David Keith, Brian Launder, Georgina Mace, Gordon, MacKerron, John Pyle, Steve Rayner, Catherine Redgwell and Andrew Watson. 2009. *Geoengineering the Climate: Science, Governance and Uncertainty*. London: Royal Society.

World Bank Climate Change Knowledge Portal.

<https://climateknowledgeportal.worldbank.org/country/latvia>