

Climate risks in the City of Helsinki

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Helsinki

Helsinki, the most functional City in the world

Some facts about the City:

- Population 643 000, Helsinki region 1,5 million
- Helsinki is a fast growing city, population forecast to 2050: 758 000
- Languages: 80% Finnish, 6% Swedish, 3% Russian, 2% Estonian, 1% English, 1% Somali, 7% other
- Jobs: 426 500 (2017), employment self-sufficiency 130%, unemployment rate 8,4%

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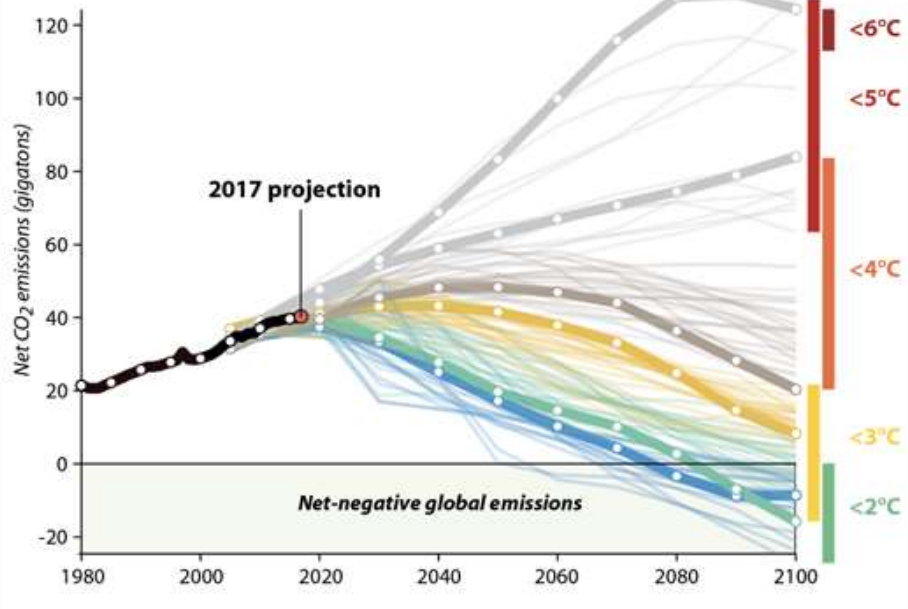


Some facts about climate: CO₂ emissions and concentration are rising

CO₂ Emissions Are Still Rising

Human-caused greenhouse gas emissions had appeared to be leveling off, but new research shows 2017 is headed for a new high. The future projections show how emissions levels translate to temperature rise.

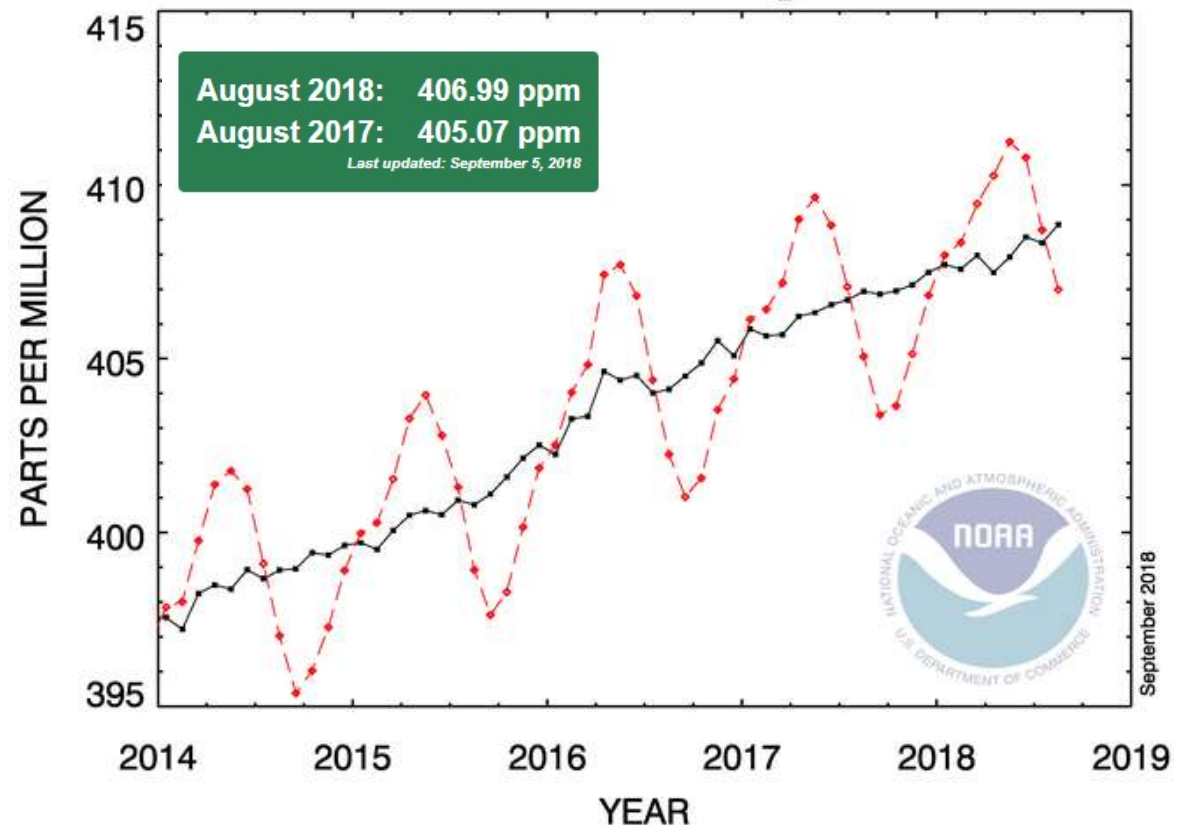
FOSSIL FUEL AND LAND-USE CO₂ EMISSIONS
In gigatons, with corresponding temperature rise, projected to 2100



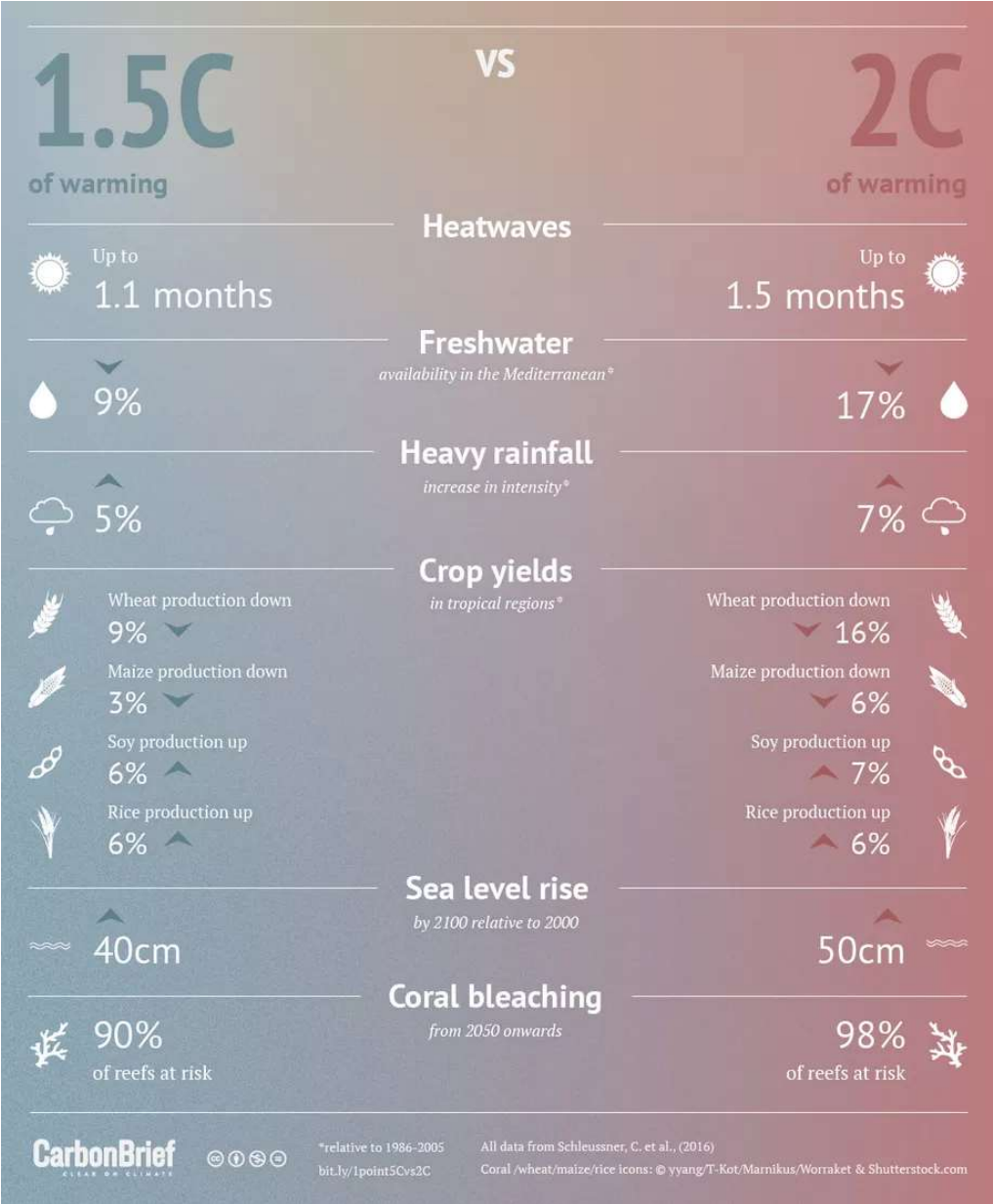
SOURCE: Global Carbon Project 2017

InsideClimate News

RECENT MONTHLY MEAN CO₂ AT MAUNA LOA



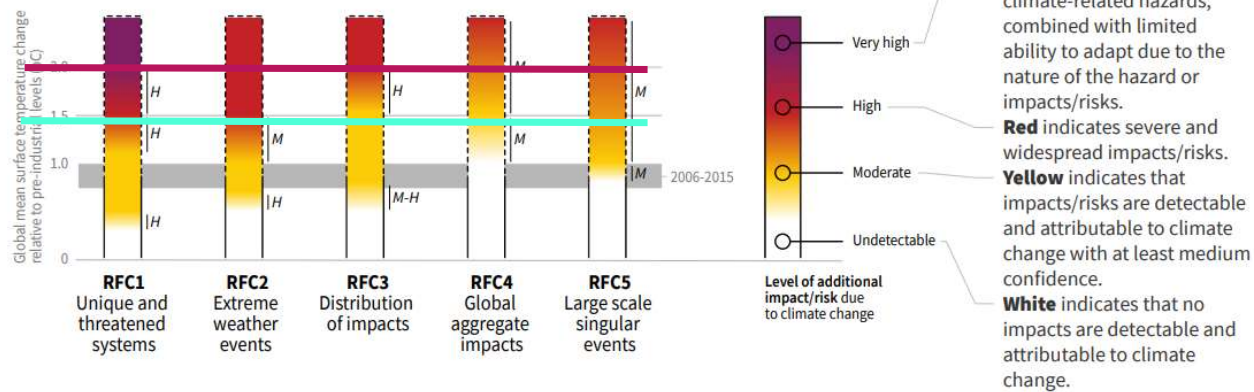
As temperatures rise, so do the risks



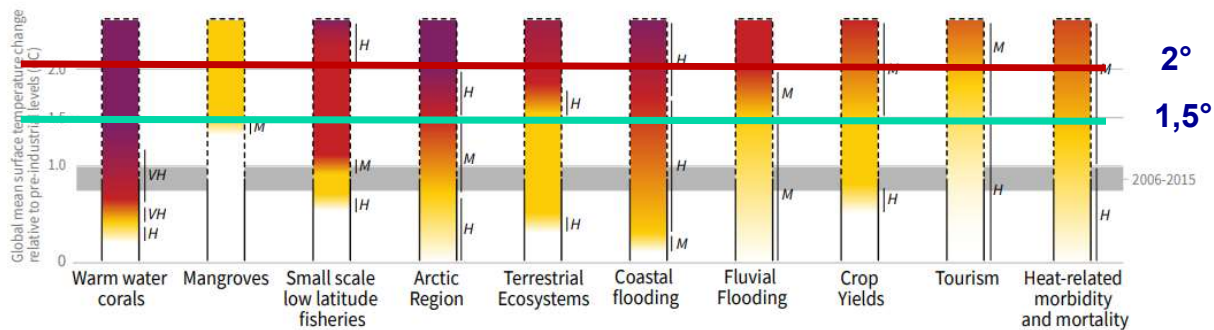
Impacts and risks of global warming (IPCC)

Five Reasons For Concern (RFCs) illustrate the impacts and risks of different levels of global warming for people, economies and ecosystems across sectors and regions.

Impacts and risks associated with the Reasons for Concern (RFCs)



Impacts and risks for selected natural, managed and human systems



Maapallon keskilämpötilan väliaikainenkin nousu yli 1,5 asteen aiheuttaa muutoksia, joista osa on pysyviä.

VÄLIAIKAISTA VAHINKOJA

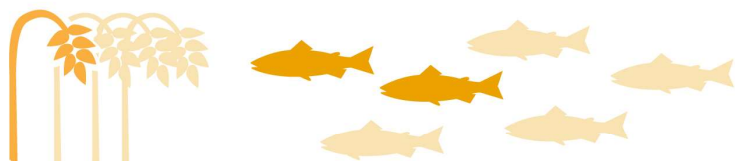
Sään ääri-ilmiöt yleistyvät



Kuumuuden terveyshaitat lisääntyvät



Maatalous ja kalastus vaikeutuvat



PERUUTTAMATONTA VAHINKOJA

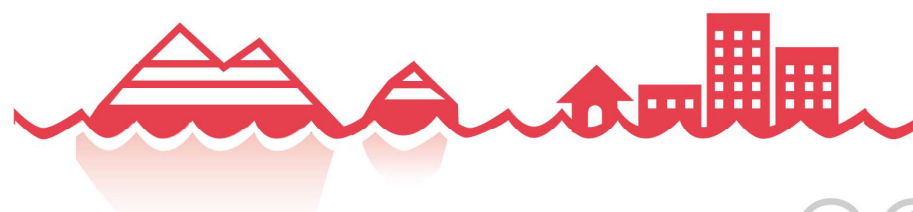
Koralliriuttoja tuhoutuu



Lajeja kuolee sukupuuttoon



Jäätiköt sulavat, rannikkotulvat yleistyvät



Maailman köyhät kokevat ilmastonmuutoksen pahimmat seuraukset.



Helsinki is adapting to climate change

- **Adaptation to climate change policy** (strategic guidelines) has been prepared, and will go to decision making at the end of this year
- **Weather and climate risks** have been assessed, report published (in Finnish) 2018
- <https://www.hel.fi/static/liitteet/kaupunkiymparisto/julkaisut/julkaisut/julkaisu-06-18.pdf>

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Kaupunkiympäristön julkaisu 2018:6

Sään ja ilmastonmuutoksen aiheuttamat riskit Helsingissä



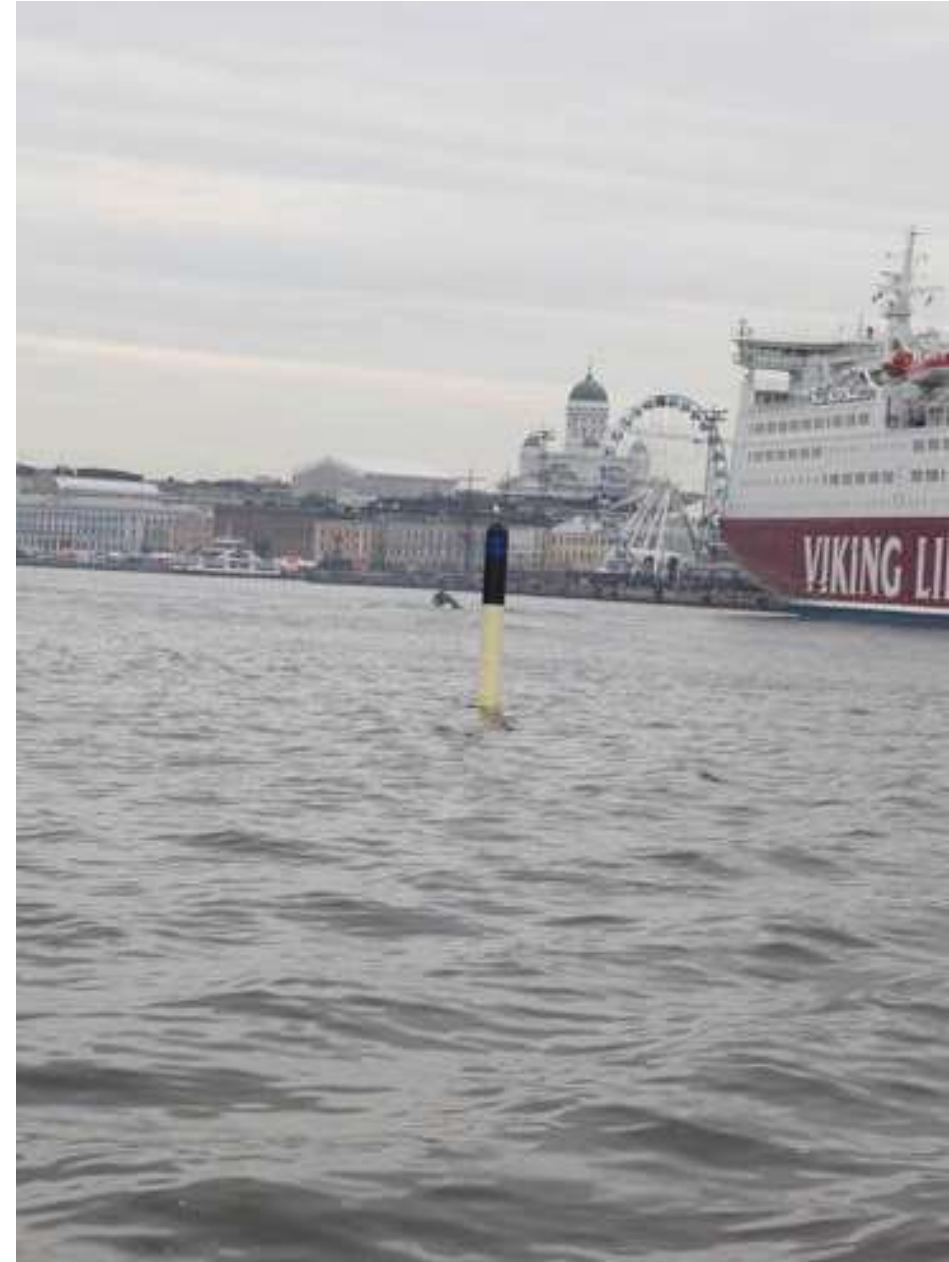


Flooding

- The risks **sea flooding** will increase
 - The coastal area of Helsinki is a significant flood risk area
 - A flood risk management plan is under implementation
 - Helsinki has built flood protection structures => currently few people live in flood risk areas, but the value of property is high
 - In new building areas, the lowest building height is 3 m

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Photo: City of Helsinki





Flooding

- The risk of **urban flooding** will increase – economic impacts may be significant
 - New storm water management programme is implemented
 - <https://www.hel.fi/static/liitteet/kaupunkiymparisto/julkaisut/julkaisut/julkaisu-03-18.pdf>
 - Land use planning is an important tool
 - Green-blue infrastructure and storm water management structures





Slippery conditions

- In close to 0° weather, accidents caused by slipping, increase significantly
- In milder winters, days with 0° weather, will increase
 - Management of roads, pavements, public outdoor spaces





Heat

- Highest temperatures will rise with climate change
- Finns tolerate heat badly, our optimal mean daily temperature is 14°C
 - Guidance for city workers
 - Land use planning and building start taking also heat into consideration
 - District cooling
 - Green and blue infrastructure

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Kuumuus ei ole leikin asia – Muista tauottaa työtä ja juoda riittävästi

Työntekijät altistuvat kuumuudelle yllättävän monissa työtehtävissä ympäri vuoden. Kuumuus rasittaa sydäntä ja nestehukka voi johtaa pahimmillaan lämpöhalvaukseen.

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UUTINEN TYÖELÄMÄ TYÖSUOJELU TYÖTERVEYS

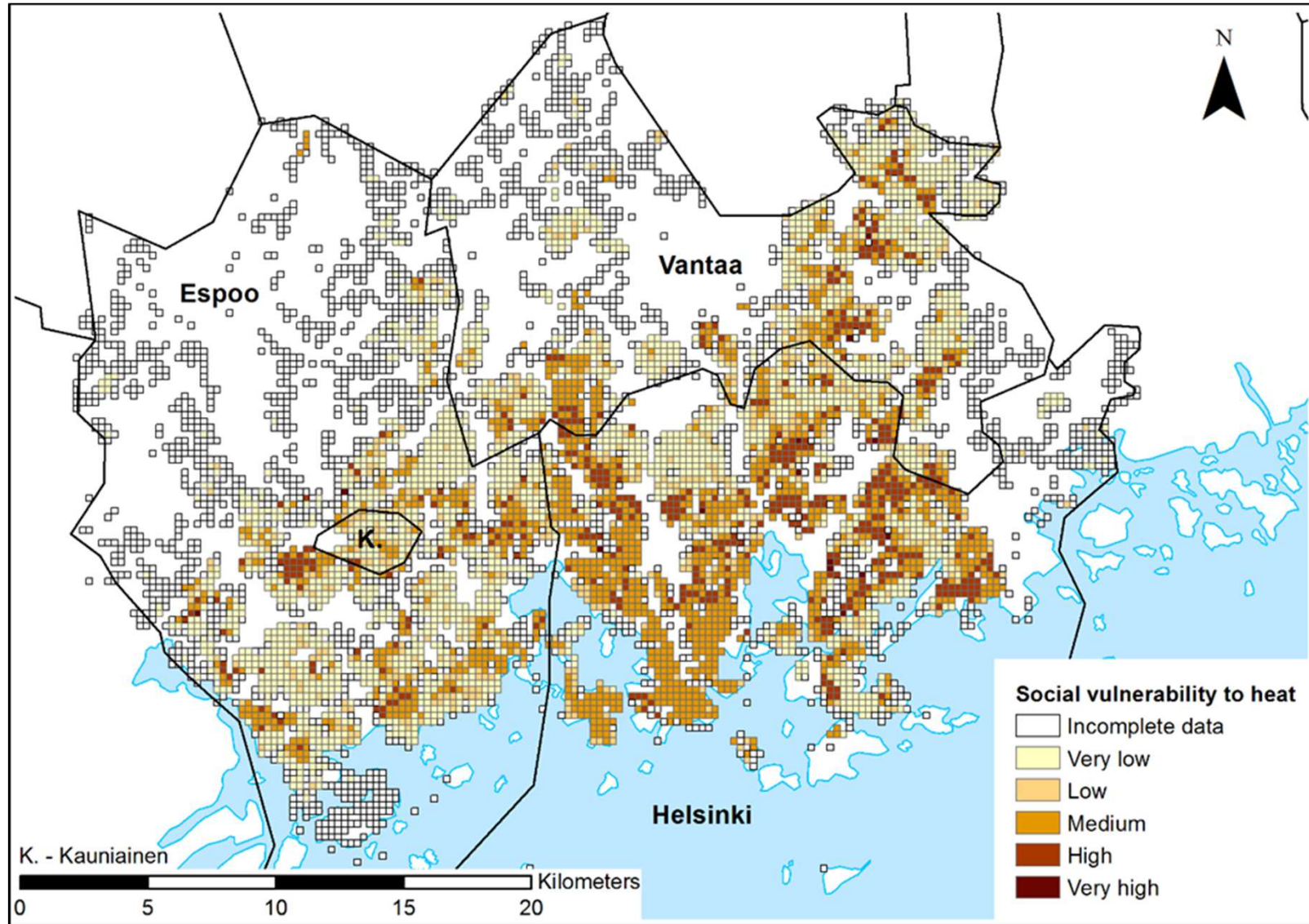


Ensimödon kettäjäntäjä Pirkka Heikkilä (vas.) ja Ensimödon ylläpiti Pirkko Heikkilä toivovat, että sukulaiset, tutut tai naapurit kävisivät tarkastamassa vanhusten asuinoloja erityisesti näin helteellä.

Vanhusten asuntojen kuumuus huolettaa

TILAAJALLE Kainuu Julkaistu 20.7.2018 klo 07:15 | 4

Social vulnerability to heat



Main weather and climate risks in Helsinki by 2050



Flooding

- The risk of urban and sea flooding will increase – economic impacts may be significant.



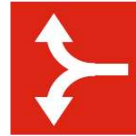
Biodiversity

- Biodiversity is threatened by several factors – combatting invasive alien species creates significant costs.



Traffic and slipping injuries

- The risk of injuries will increase in winter – road maintenance costs and injury compensations are likely to rise.



The cross-border impacts

- The cross-border impacts of climate change will reach Helsinki – security of supply must be paid attention to.



Heat-related health problems

- Heat-related health risks will increase – the well-being of the vulnerable groups must be looked after.



Storm impacts

- The risk of damages caused by strong winds and thunderstorms will not change significantly – it is still important to prepare for them.



Tick-borne diseases

- Tick-borne diseases, e.g. Lyme disease (borreliosis) will become more common – human behaviour is a decisive factor.

The risk of climate change must be considered in all decision making of the city – improved weather and climate risk management requires knowledge and adaptation measures.

- Helsinki is quite well prepared for **weather and climate risks in the short term**
- But how are we adopting to **long term climate change?**
 - Climate can become more unpredictable
 - Uncertainties can become larger
 - Indirect impacts, cascading impacts, interdependency
 - Our societies are changing too
 - How will climate policies change our societies, economies, our everyday lives?
- **How to adapt to the world of the future?**



Thank you!

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