

Status of the hydrological challenges in a climate adaptation perspective





Droughts
(2018, 2023)

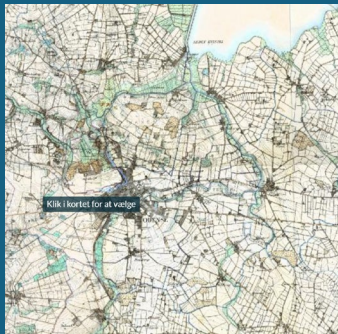


Floodings (e.g.
23/24)





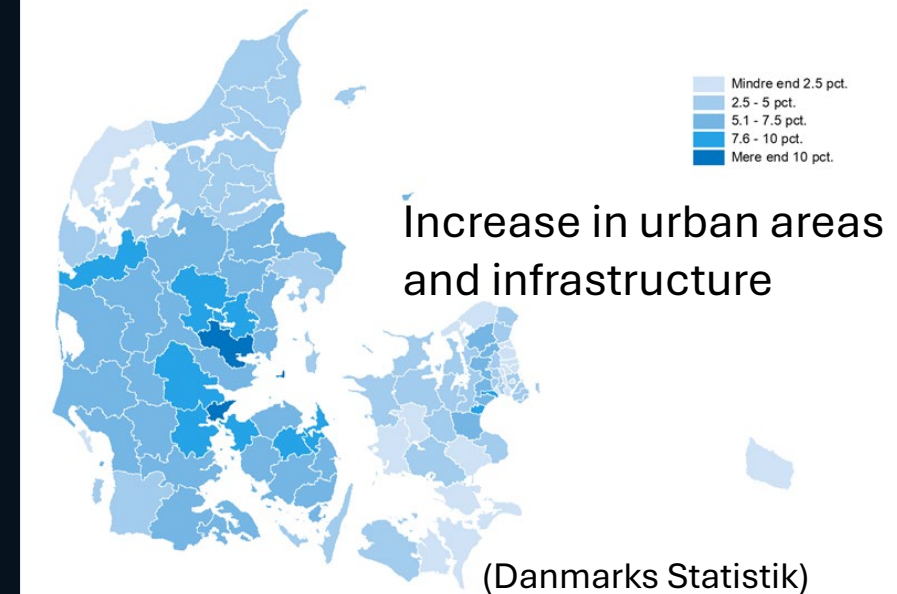
Landuse



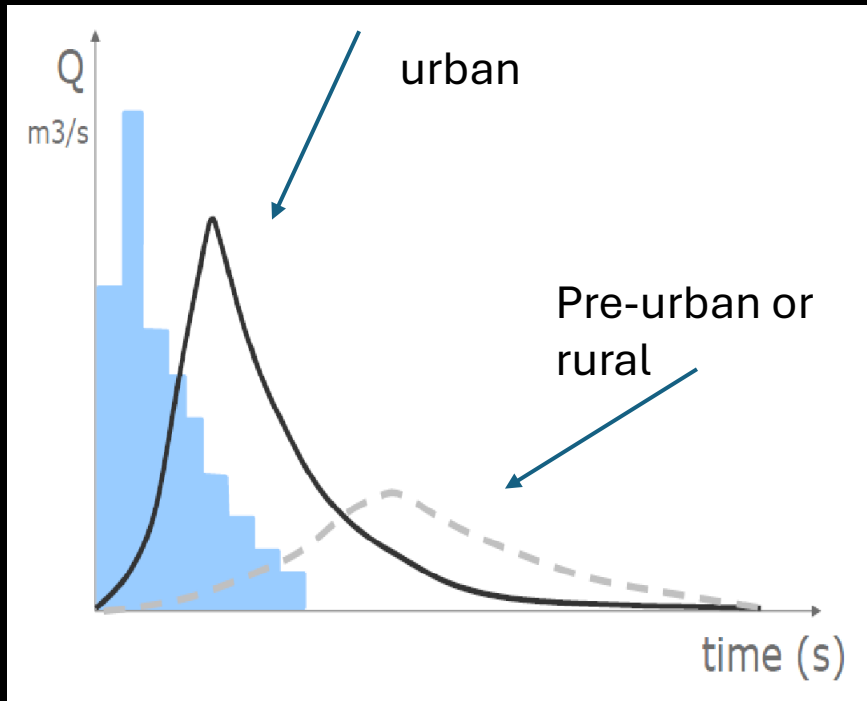
Odense

- Increased and denser urban area
- Intensive agriculture
- Intensive use of lowland areas
- Urbanization to the coast/shore line
- The houses are turned towards the water
- Use of water

Stigning i areal til bebyggelse og infrastruktur fra 2011 til 2021



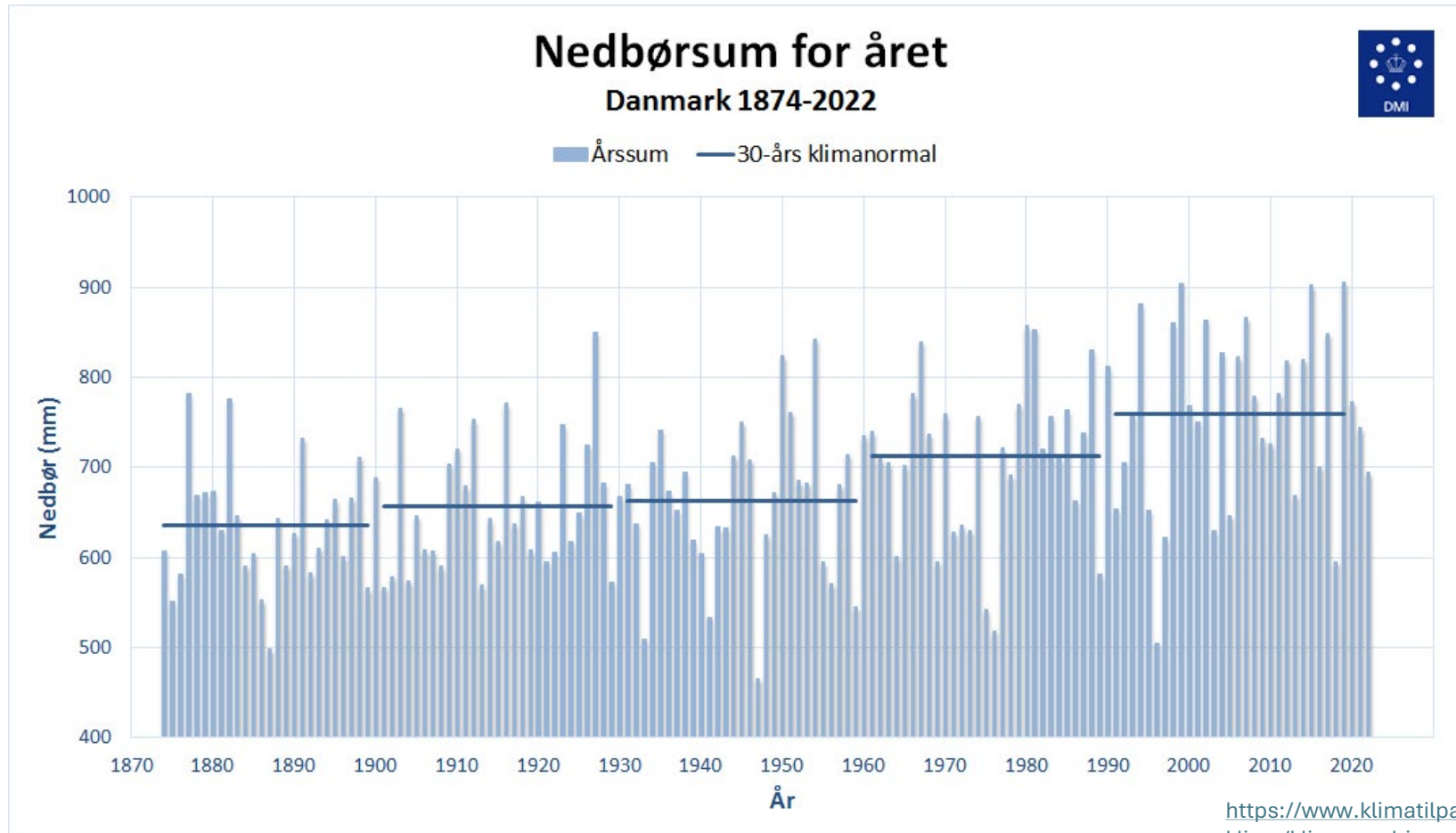


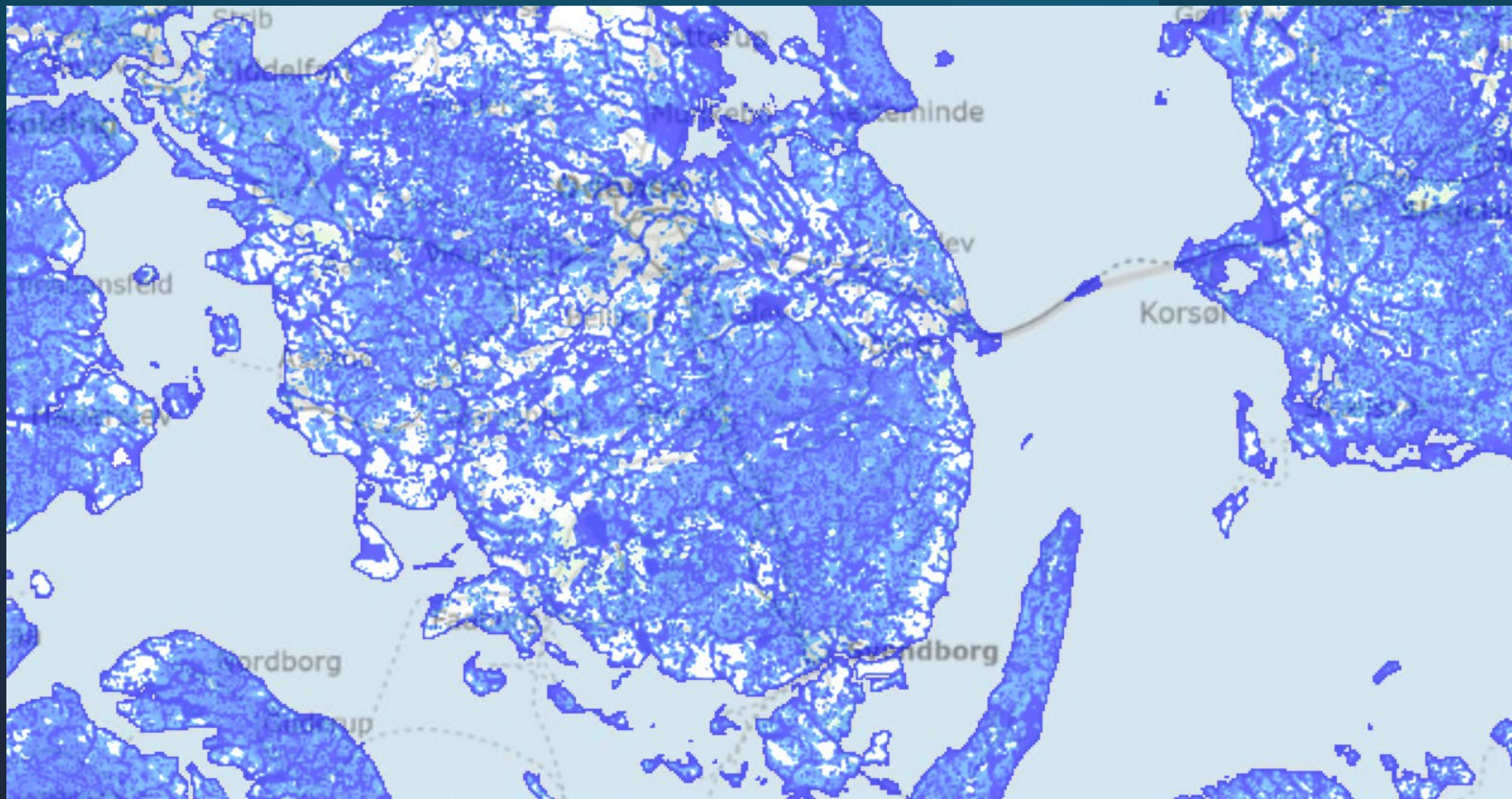


Climate changes
increases differences

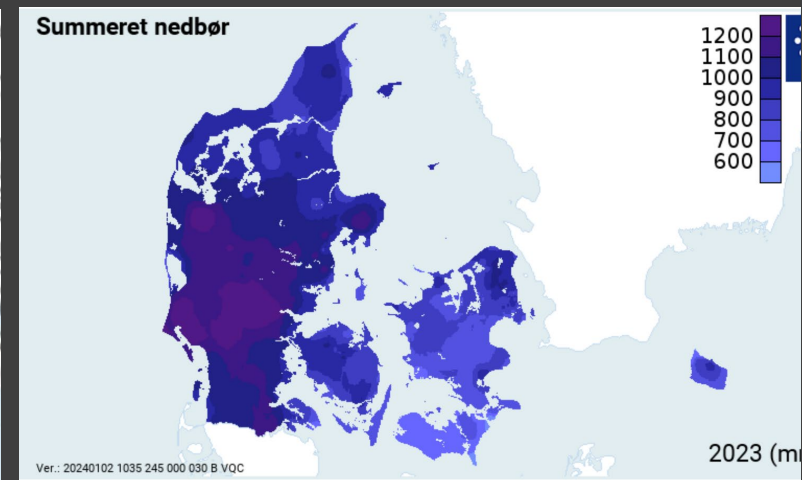
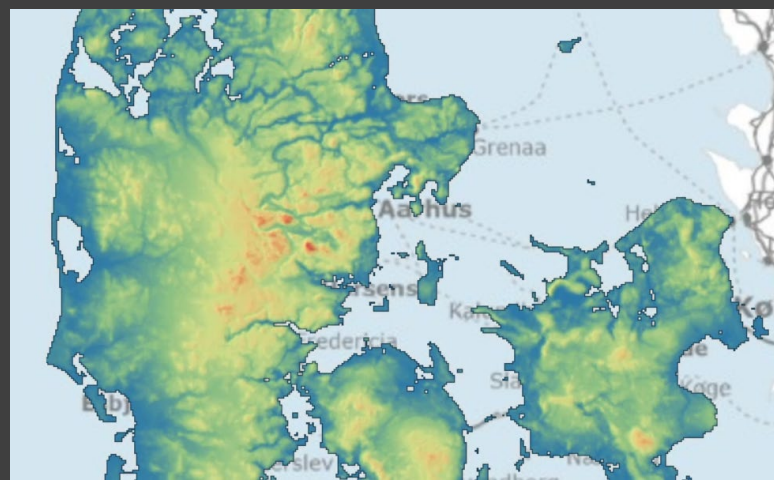
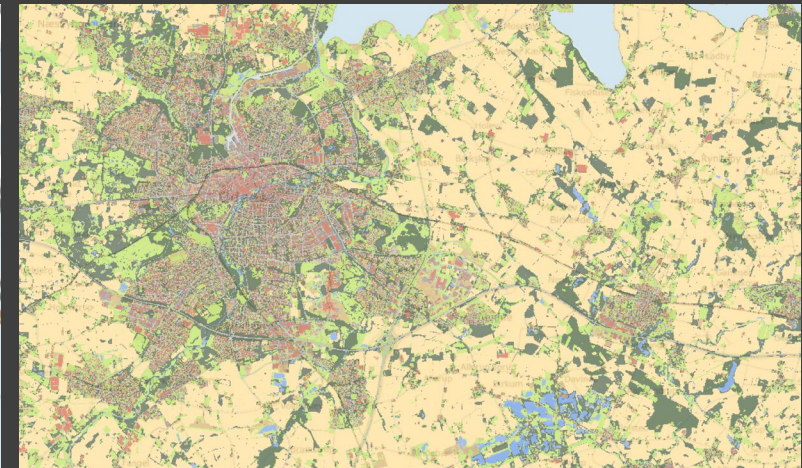
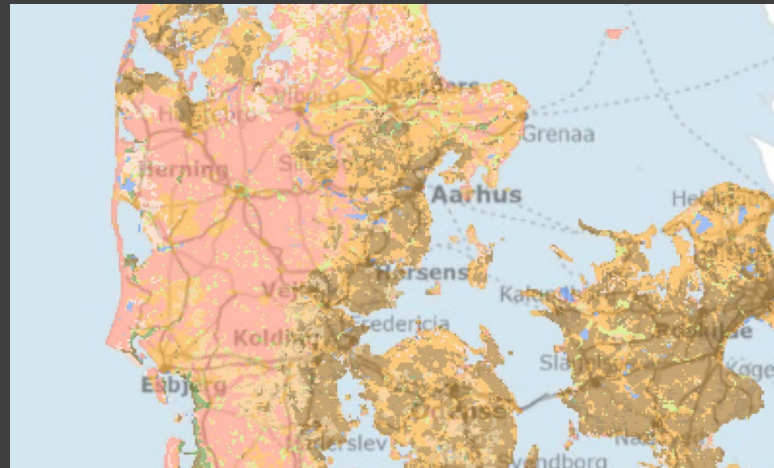
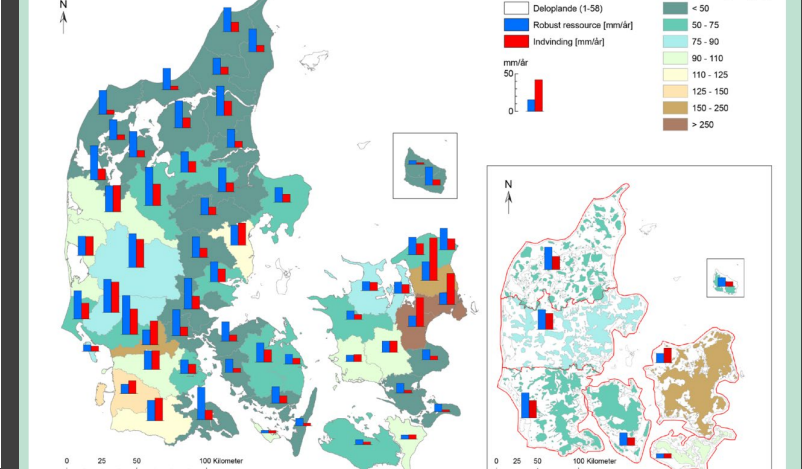
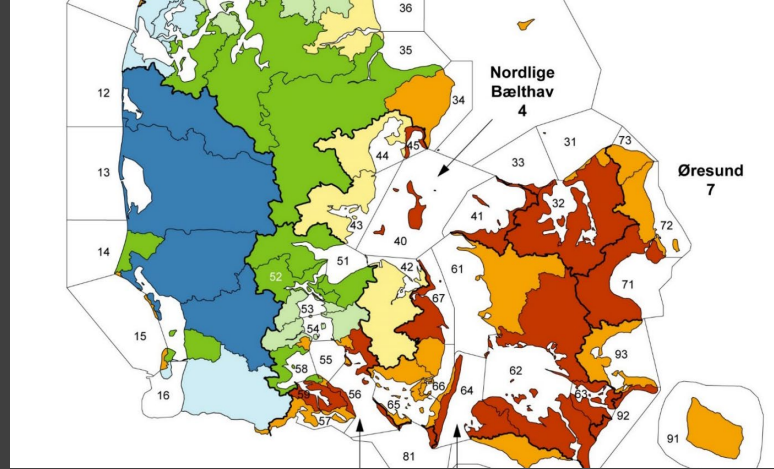


Precipitation per year and 30-year climate means





Need for climate adaptation is site specific



Sources: ScalgoLive,
https://www.dmi.dk/fileadmin/user_upload/Afrapportering/Aarssammendrag/Sammendrag_2023.pdf, Thodsen et al. 2022,
<https://www2.mst.dk/Udgiv/publikationer/2023/12/978-87-7038-569-5.pdf>

Strategy tool box climate for adaptation

- Accommodate
- Protect
- Retreat

AND prioritization



20-21/10-23

Stormflod
20.-21. oktobe



Source: Naturskaderådet

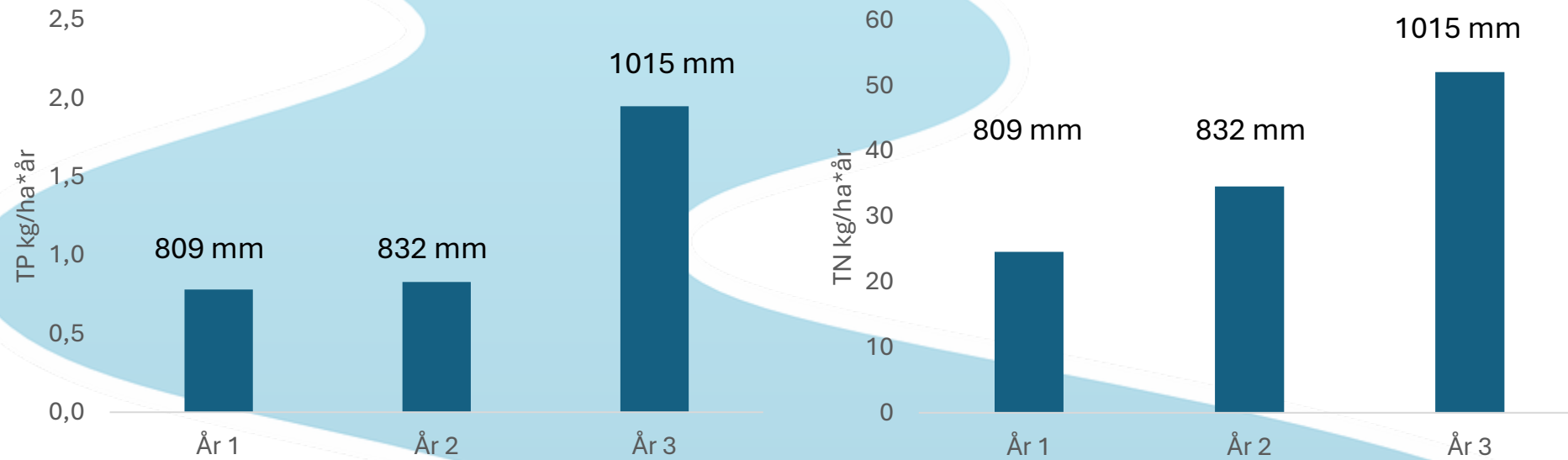




Effects also from an environmental perspective

- Increased and/or more intense discharge
- Hydraulic effects (floodings, erosion -> oxygen consumption, withdrawel of animals and plants)
- Increased nutrient discharge, organic matter, xenobiotics
- Processes accelerated, even more difficult to ensure good water quality
- Changed species composition, more tolerant species
- Species adapted to a warmer climate, new species, loss of species

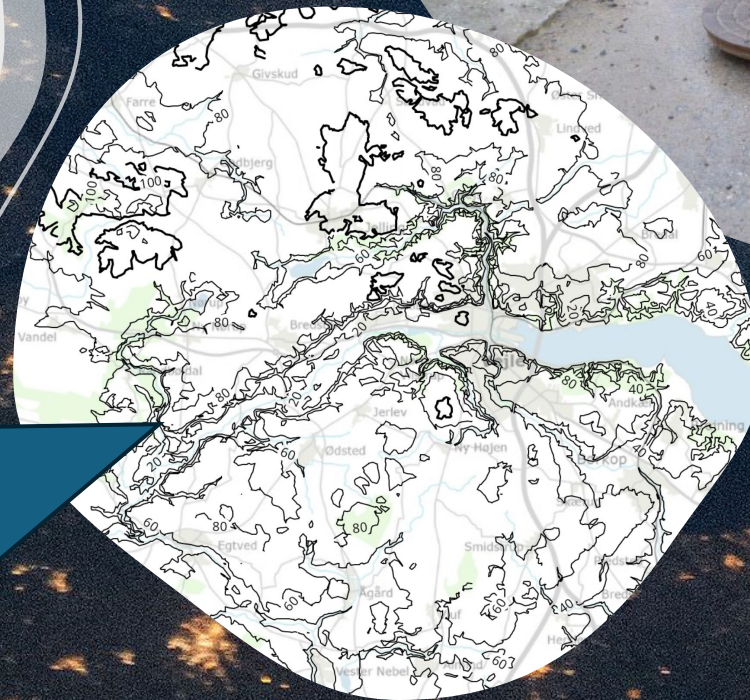
Nutrient discharge from an rural catchment



Denmark is full of coastal cities

Effects also based on geographical and historical reasons

Water from 2 sites



Expansion of sewer systems

Cooperation – interdisciplinarity – stakeholder engagement - adaptation across borders also inland



Regeringens udspil til Klimatilpasningsplan 1

Regeringen præsenterer her sit udspil til Klimatilpasningsplan 1.

Med planen tager regeringen først og fremmest fat på de strukturelle problemer, som blandt andre kommunerne efterlyser løsninger på, og der sættes tempo på vigtig kystbeskyttelse. Med udspillet vil regeringen iværksætte en række initiativer, der sikrer fremdrift i kystbeskyttelsen i de områder, hvor risikoen for oversvømmelser

er størst, forlænger kystbeskyttelsespuljen og fortsat beskytter vestkysten mod voldsomt vejr. Med denne plan løser regeringen også en central udfordring med håndtering af højtstående grundvand i byområder. Derudover sikrer regeringen et vedvarende fokus på området på tværs af sektorer. Regeringen foreslår at afsætte i alt 1,3 milliarder kroner til indsatsen.





Climate adaptation on which level?

- Local, discharge or catchment view
- Freshwater or marine recipient
- Nature considerations
- Health
- Infrastructure
- Security of supplies

-> PLANNING, PRIORITIZATION
AND PARTNERS

Thank you!

