Growing urban landscapes through afforestation

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Project lead for afforestation





The urban fringe around Aarhus, the second largest city in Denmark



Young forest landscape - agricultural drainage system has been dismanted and surface water is reemerging in the numerous depressions formed by dead ice kettles – Natures co-creation

Foto: Rasmus Hjortshøj





True Skov, Aarhus **2016**



True Skov, Aarhus **2000**

photo: Jørn Rønnau

1000 BC
~ 100% forest



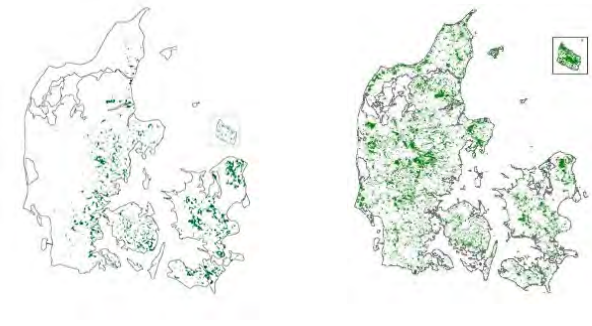
After the ice age, humans lived as hunter-gathererrs in harmony with the forest, which covered virtually the entire land area in DK

1800
2-3% forest

1923
7.5 % forest

1989
11 % forest

2026
15,4 % forest



At the beginning of the 19th century, only 2-3% of Denmark was covered by forest

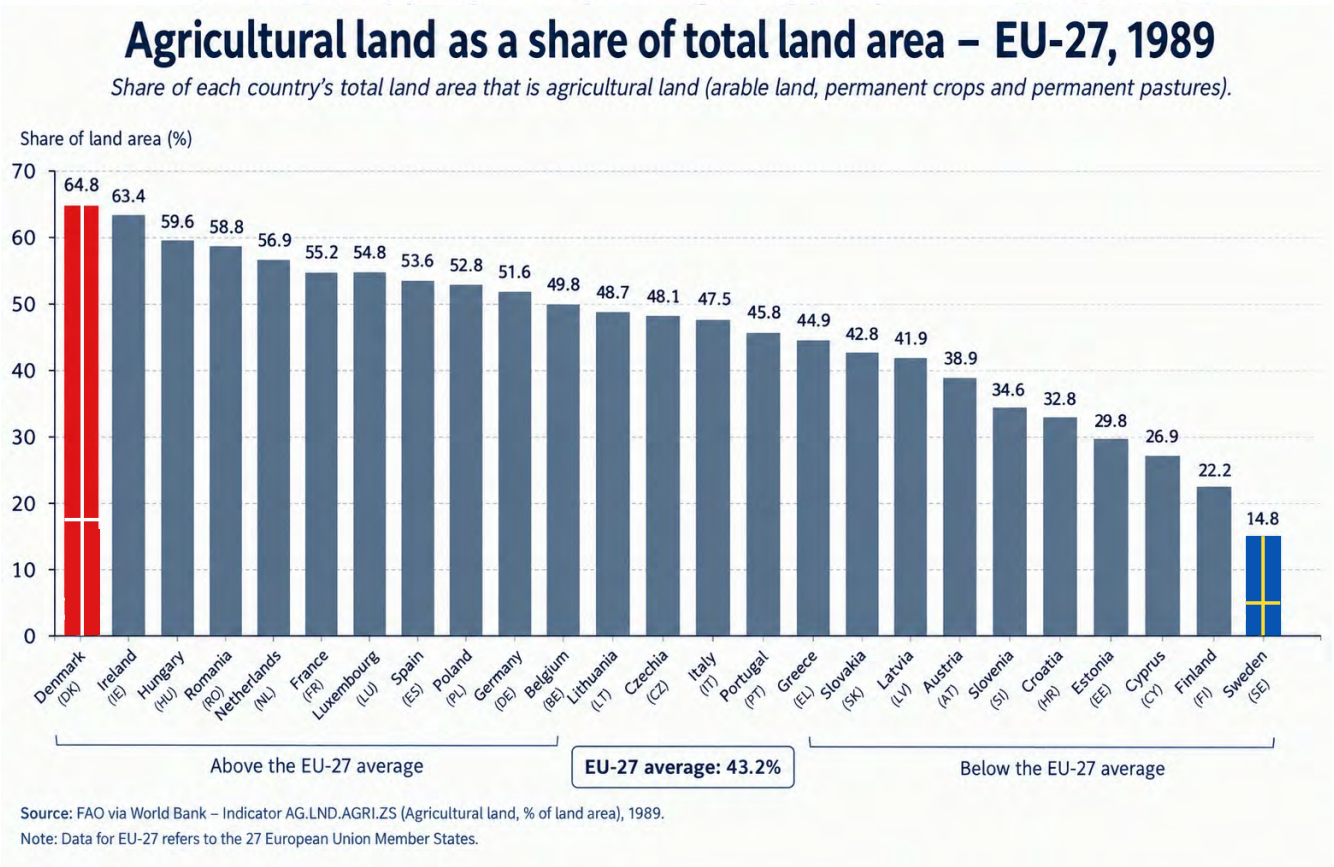
Since adoptation of the Danish Forest Act in 1805, forest clearance has been banned and the forest area in Denmakr has grown to 14%

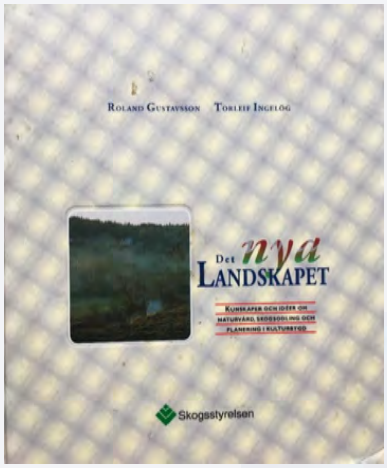
2100
20-25% forest

?

The goal of the National Forest Program is that forest landscapes should cover at least 20 % of Demark's area by the year 2100

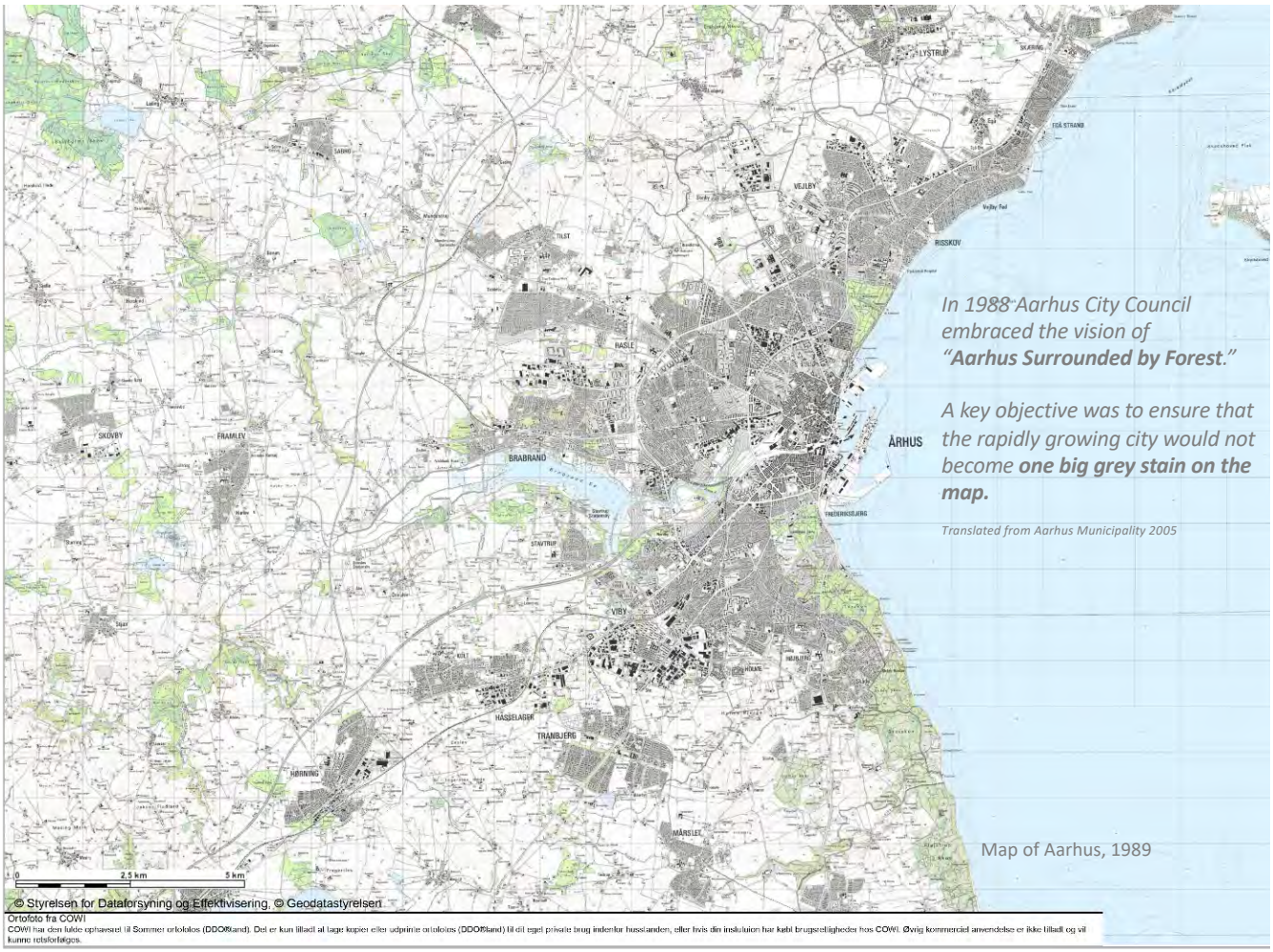
In 1989 the Danish Parliament (Folketinget) voted for a declaration to double the national forest cover and reduce the agricultural landarea. The aim was that forest should cover 20 -25% of Denmark's area within one tree generation.





Kunskaper och idéer om naturvård, skogsodling och planering i kulturbygd



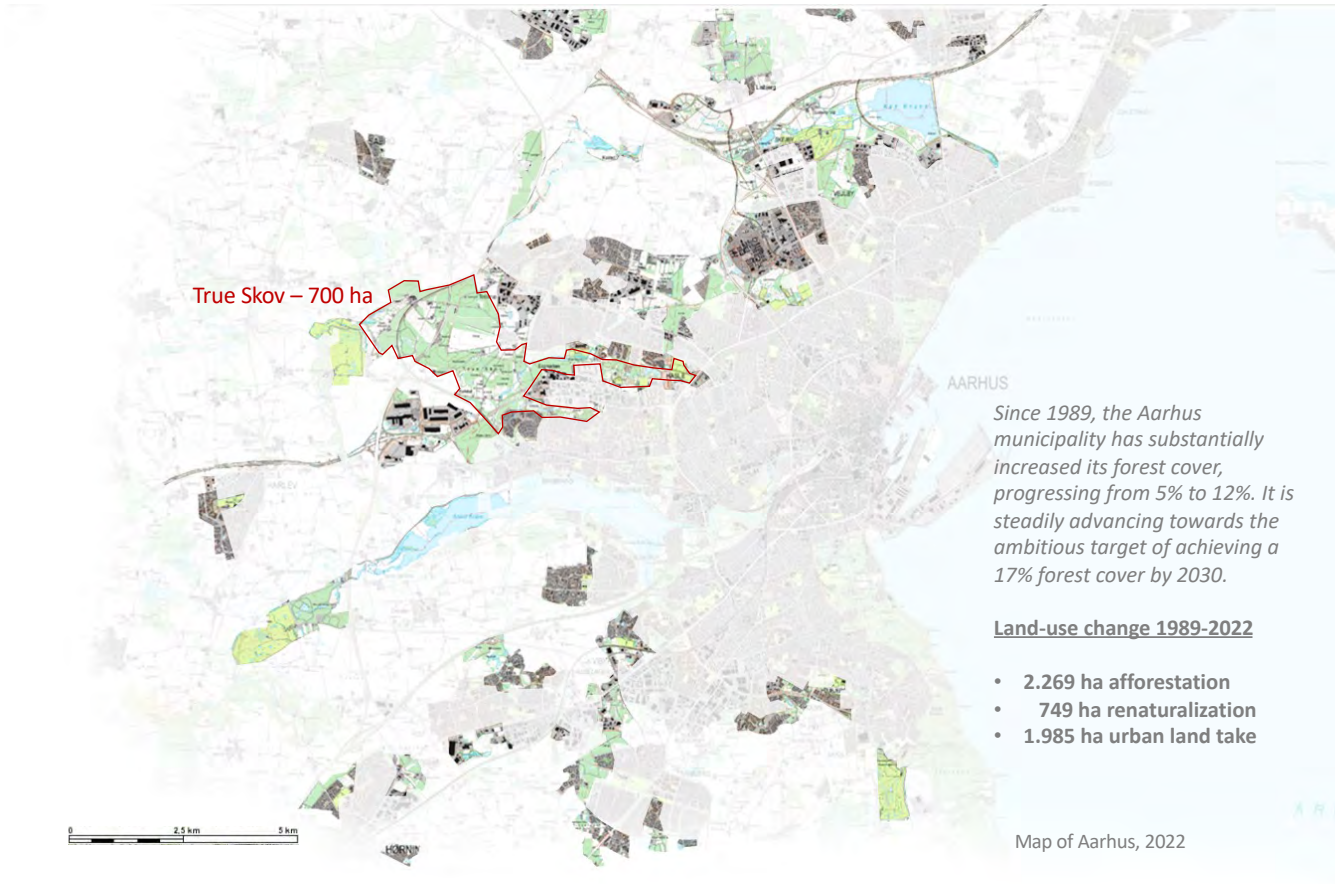


*In 1988 Aarhus City Council embraced the vision of "**Aarhus Surrounded by Forest**."*

*A key objective was to ensure that the rapidly growing city would not become **one big grey stain on the map.***

Translated from Aarhus Municipality 2005

Map of Aarhus, 1989



Since 1989, the Aarhus municipality has substantially increased its forest cover, progressing from 5% to 12%. It is steadily advancing towards the ambitious target of achieving a 17% forest cover by 2030.

Land-use change 1989-2022

- **2.269 ha afforestation**
- **749 ha renaturalization**
- **1.985 ha urban land take**

Map of Aarhus, 2022

Map of Aarhus in 2022, highlighting the transformative journey of integrated urban and nature development from 1988 to 2022.
The restoration and establishment of new forests, lakes and other natural areas has outpaced the simultaneous expansion of the urban area.



CEO of Aarhus Water drinking water utility celebrates the 2020 extension of True Forest with another 69 hectars



Drinking water interests governs the location of new forest to the urban fringes



Clean drinking water from the subsurface

In Denmark we protect our groundwater by preventing contamination from pollution. In other words Danish groundwater policy is based on prevention rather than treatment. This means that Danish drinking water is produced from the cleanest possible groundwater

From policy to partnership

Water supply companies and local municipalities co-finance the Nature Agency's acquisition of land at the urban fringe for afforestation

https://eng.mst.dk/nature-water/water-at-home/

The world's first-ever climate telethon

14 September 2019















Lea Wermelin, Minister of Environment is planting one out of 100.000 trees from the Climate Telethon togehter with a helpful boy

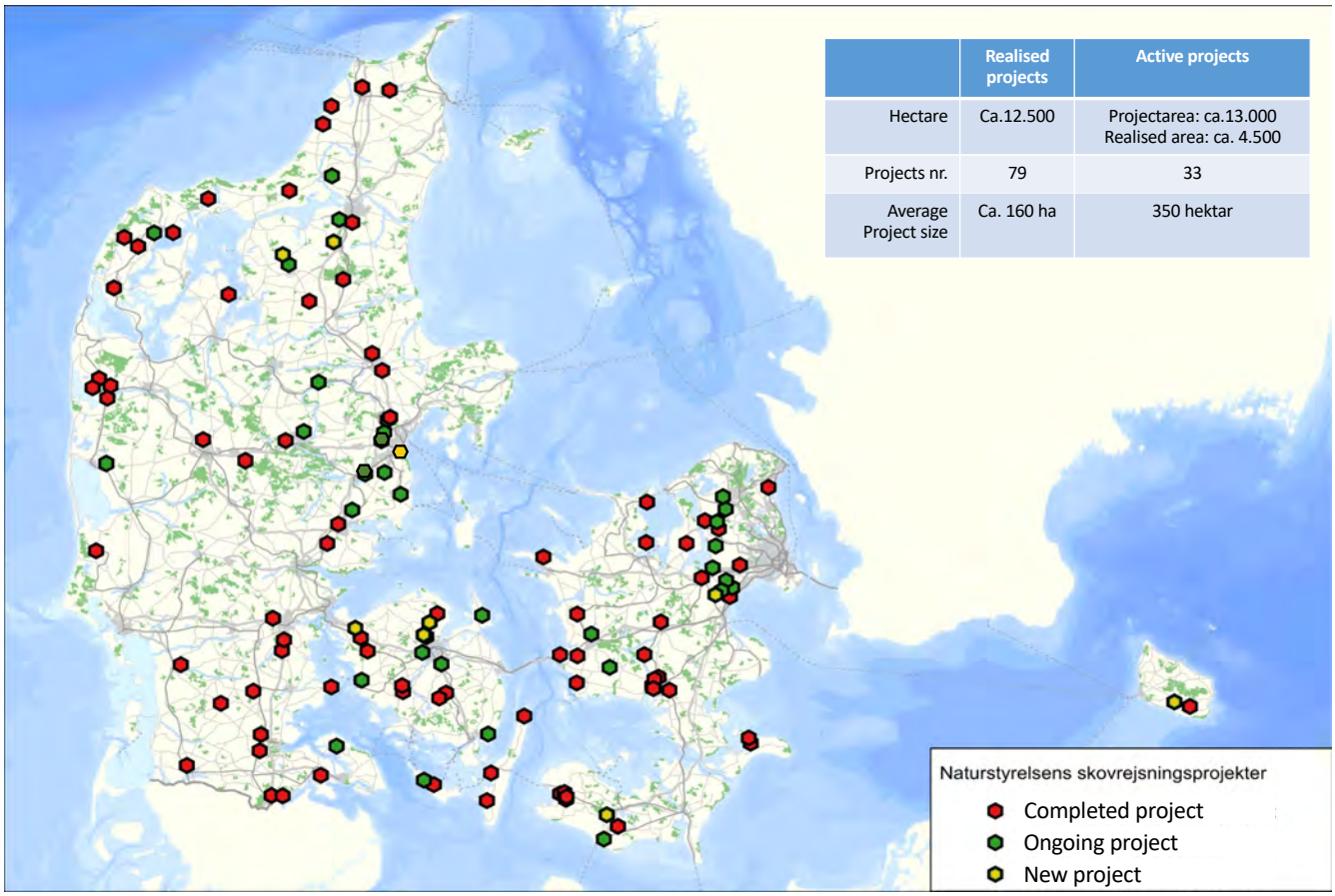


Testing the climate bench in True Forest

CO2 sequestration in True Skov: estimated to 4,000 ton annually - being part of Aarhus municipality's policy target of CO2 neutrality by 2030



The Danish Nature Agency afforestation 1989-2025



	Realised projects	Active projects
Hectare	Ca.12.500	Projectarea: ca.13.000 Realised area: ca. 4.500
Projects nr.	79	33
Average Project size	Ca. 160 ha	350 hektar

Söndagslandskap och Måndagsstädar

Kåseri i arkitekturföreningen oktober 1965, Professor Sven-Ingvar Andersson

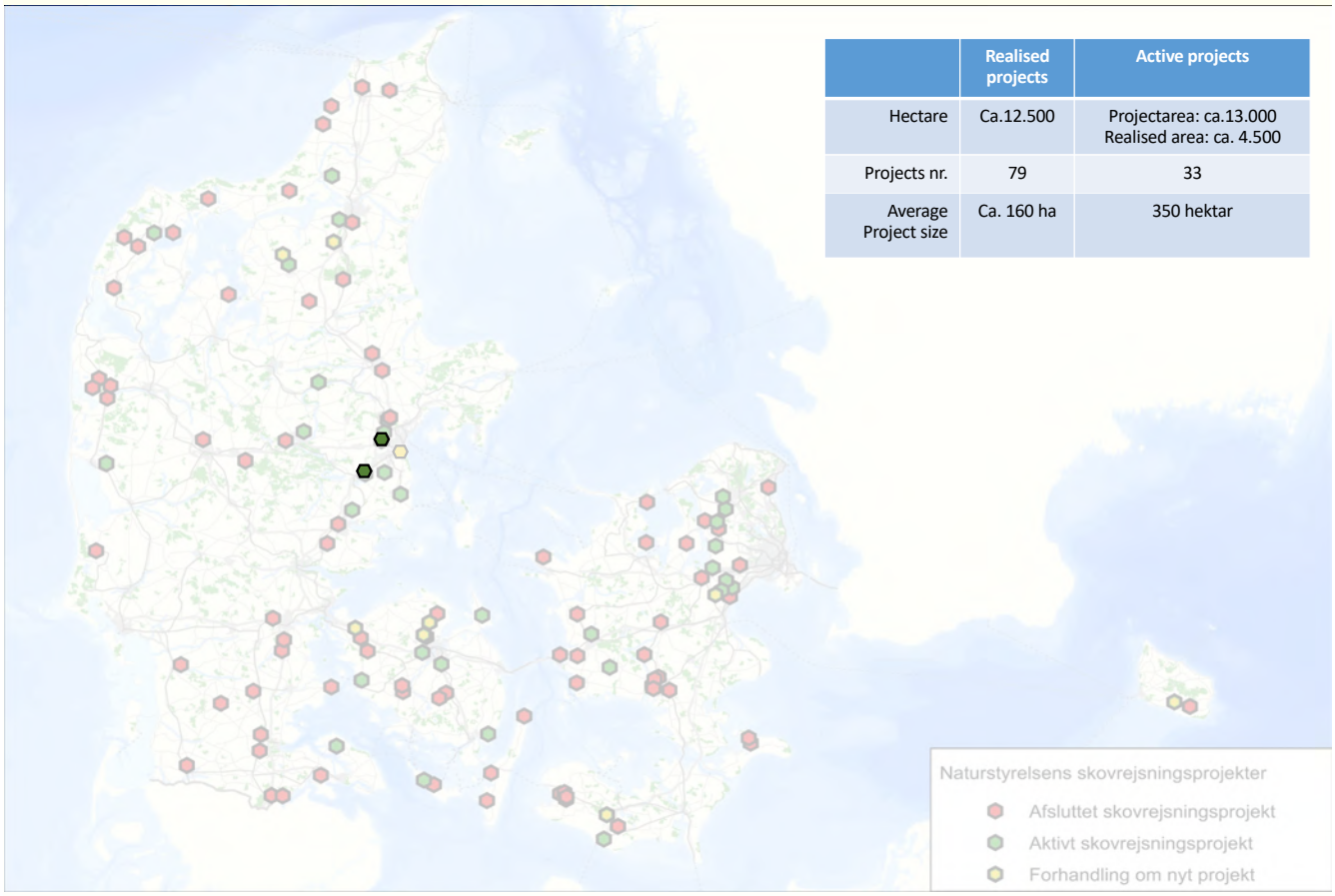
Danmark har sina långa kuster, sina åsar och som ett tredje element någonting som det är helt ensamt om, ***Skogsbrynen.*** Jag skulla önska att jag kunde lära danskarna förstå att uppskatta sina skovbryn. Skovbrynet är förutom horisonten och himlen det enda landskapselement, som i skala svarer till stor nutidig bebyggelse, till trafikanläggningar och till de stadsenheter jag drömmar om.

Skogsbrynen är för Danmark vad sjöarna är för Finland, bergryggarna för Italien och floderna för Frankrige.

Men fremför de geologiska landskapselementen har skogsbrynen den fördelen, att de kan skapas av os och inom överskådlig tid.

(side 63)

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Miljøministeriet
Naturstyrelsen

Anebjerg Skov

240 ha, 2024

Afforestation and urban development has enabled one and the other



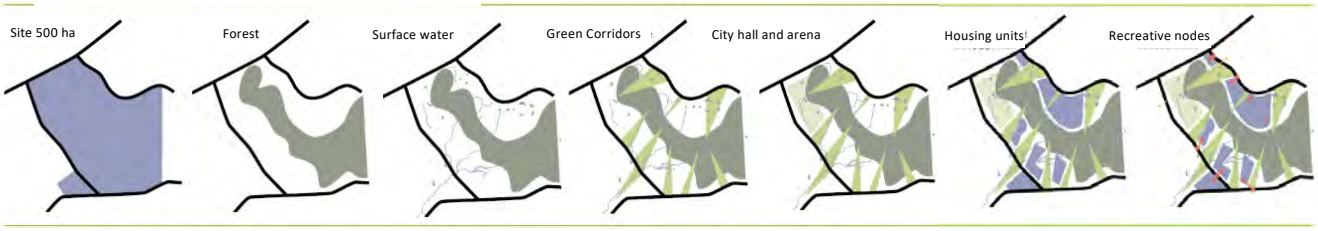
Afforestation as strategy for urban development

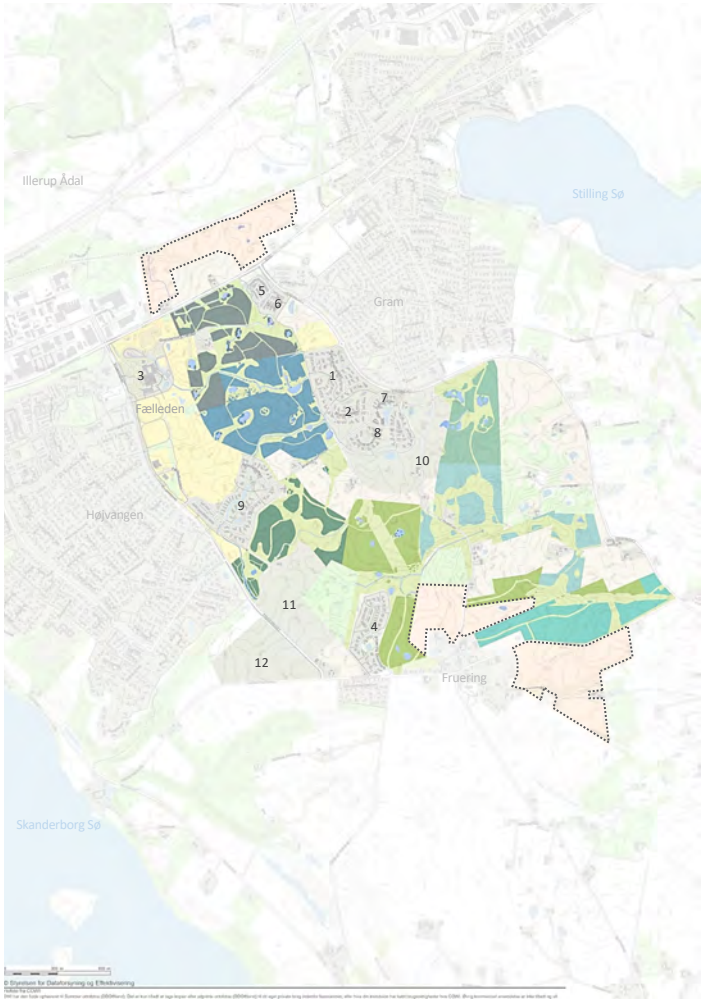
In 2007, the Nature Agency initiated a collaboration with Skanderborg Municipality and Skanderborg Water Supply, focusing on the integration of afforestation as a key element within the newly planned urban district named Anebjerg.

The objective was to ensure an appealing urban development that harmonized with climate adaptation, outdoor recreation, nature conservation, and the safeguarding of crucial groundwater resources within the area's subterranean layers.

The integrative planning approach aimed to establish a diverse forest landscape that would confer a distinctive identity upon the new district. Simultaneously, this landscape would serve the dual purpose of maintaining the visual separation between Skanderborg and Stilling/Gram while fostering recreational connectivity between existing urban communities and newly developed residential areas.







Step-by-step development

Anebjerg Skov

- 2009
- 2010
- 2011
- 2012
- 2015
- 2017
- 2020
- Arealer hvor Anebjerg Skov udvides i 2024

Other landownership

- Kommunale arealer
- Fremtidig byudvikling
- Private arealer
- Anden skov/skovrejsning

Urban units

1) 2012, Agerhønebakken
2) 2015, Blishønedalen
3) 2015, Rådhus og Arena
4) 2018, Fruering Skovmark
5) 2018, Tårnfalkebakken
6) 2018, Skovsangervej
7) 2019, Følfodhøjen
8) 2019, Hvidkløverhøjen
9) 2020, Admiraltoften
10) 2024, Glentehøj
11) 2027



Ortofoto af Anebjerg området, sommer 2006. Hvid stiplet linje viser afgræsningen af det landbrugslandskab, der var udgangspunkt for byudvikling og Skovrejsning i Anebjerg området.



Ortofoto af Anebjerg området, sommer 2026. Den hvide stiplede linje viser Anebjerg området, inklusive de arealer, der udvider det oprindelige projektareal for skovrejsning.



Photo: Kim Aaen



About forest landscape

under the canopy

Between scattered trees

along forest edges

into a glade

out on open areas

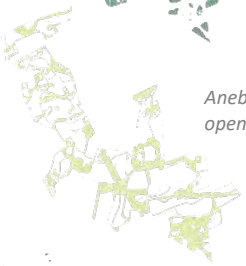
up *to the viewpoints*

down *to the water*

… synergy with biodiversity



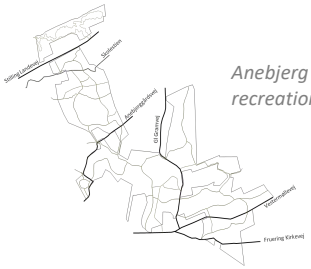
Anebjerg Skov: forested areas



Anebjerg Skov: open nature



Anebjerg Skov: ponds and streams



Anebjerg Skov: recreational infrastructure

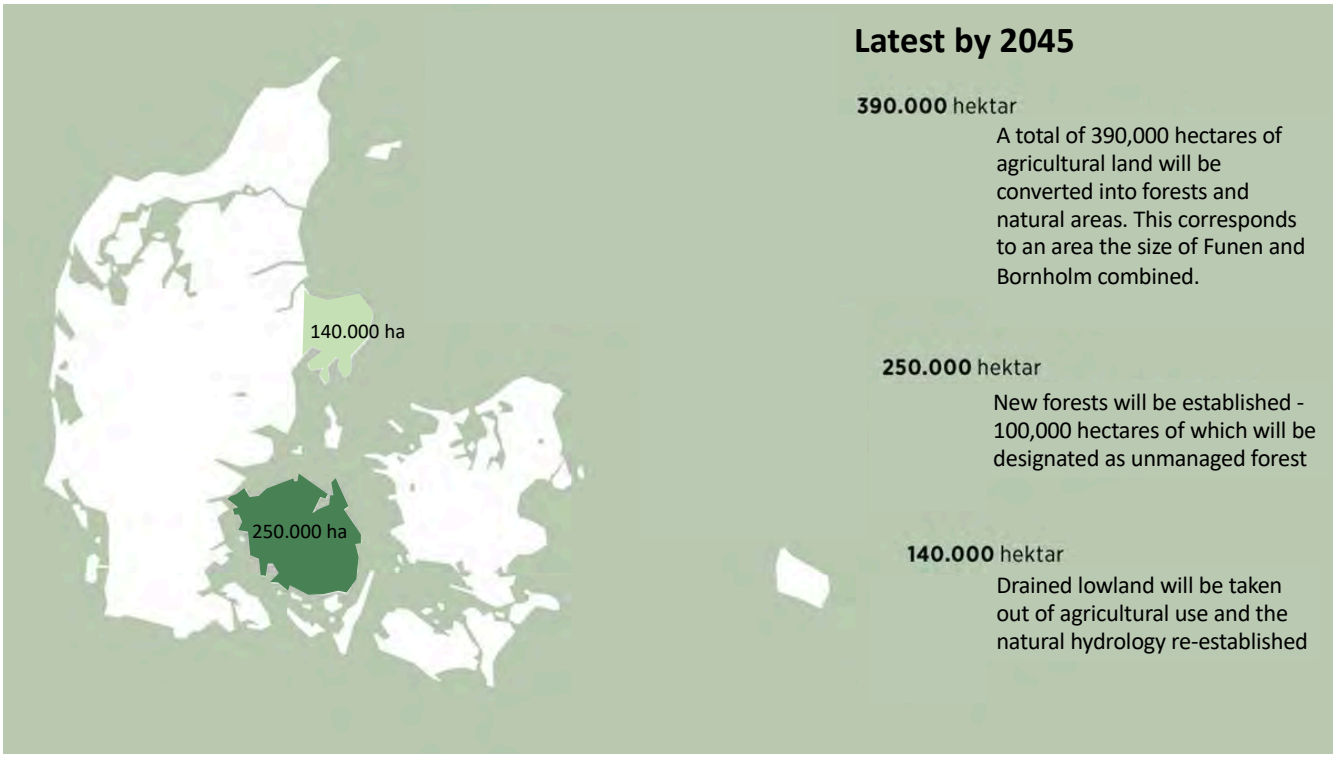


"In the Anebjerg area, new urban development and new woodland come together in an attractive and sustainable setting for the good life…
We have gained a wealth of valuable experience, all of which points towards the way we want to approach urban development and nature development in the future,"
Mayor Frands Fischer.



November 2024

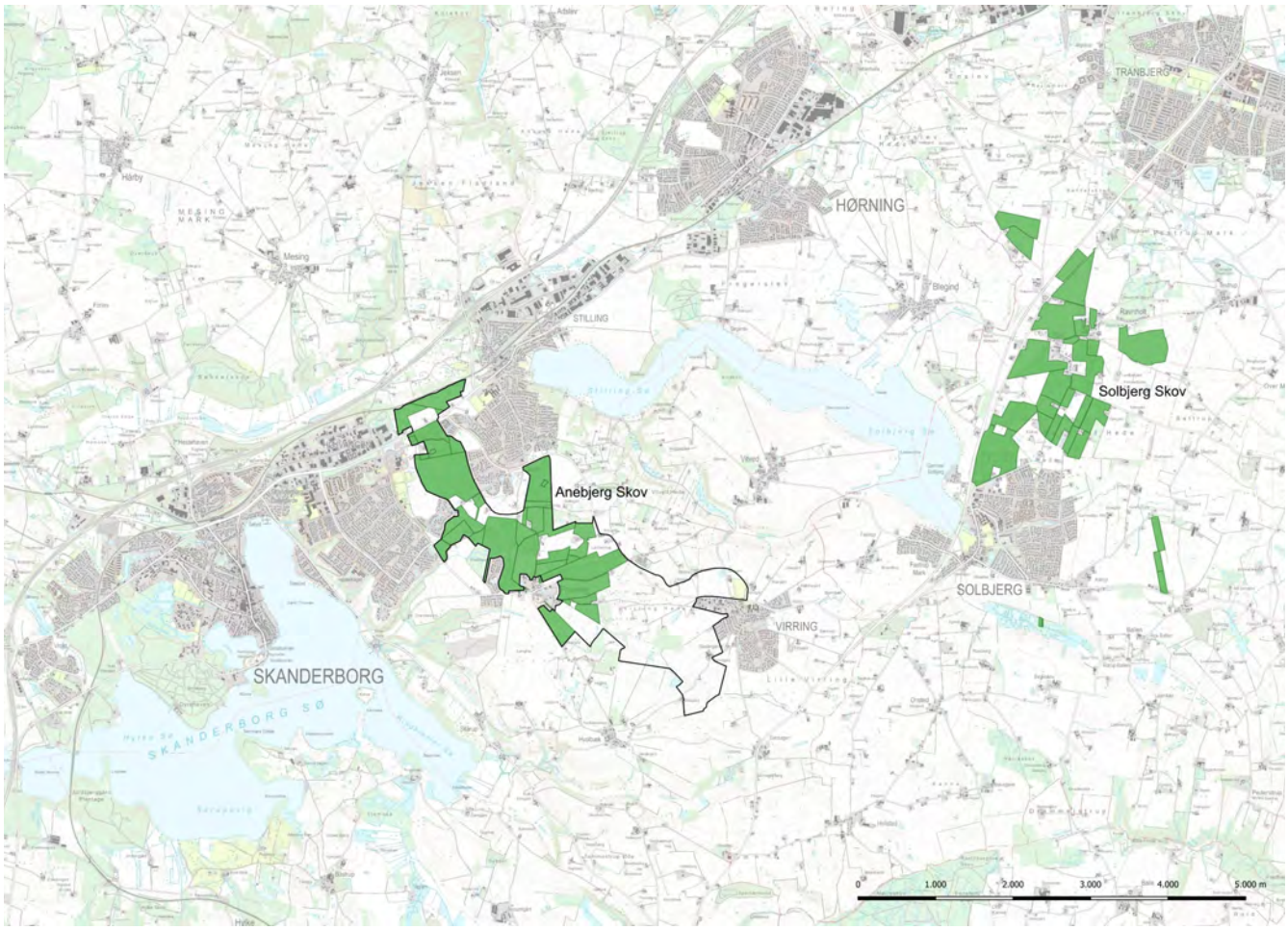
The Green Tripartite Agreement initiates a fundamental transformation of Denmark's land area, setting aside and converting more than 15 percent of Danish agricultural land into forest and nature



The Greatest change to the Danish Landscape in over 100 years

A broad majority of the Danish Parliament's parties have agreed on a political deal that will significantly transform the Danish landscape, create more nature, and ensure a healthy water environment.

Graphic modified from Mandag Morgen 19 Oct, 2024



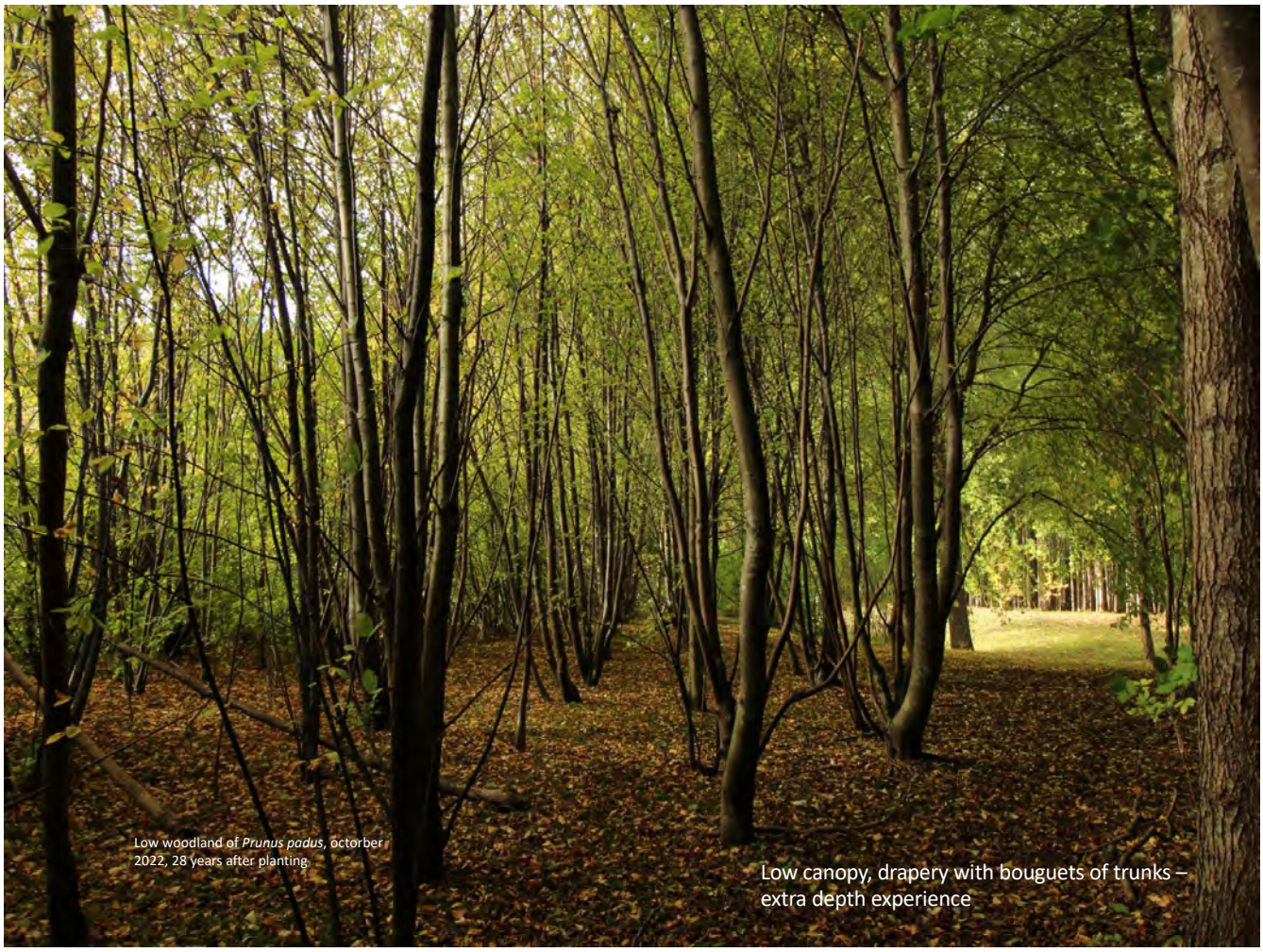


https://www.slu.se/om-slu/organisation/fakulteter/fakulteten-for-landskapsarkitektur-tradgards--och-vaxtproduktionsvetenskap/resurser/alnarps-landskapslaboratorium/





Low woodland of *Prunus padus*,
October 2003, 9 years after planting



Low woodland of *Prunus padus*, octorber
2022, 28 years after planting

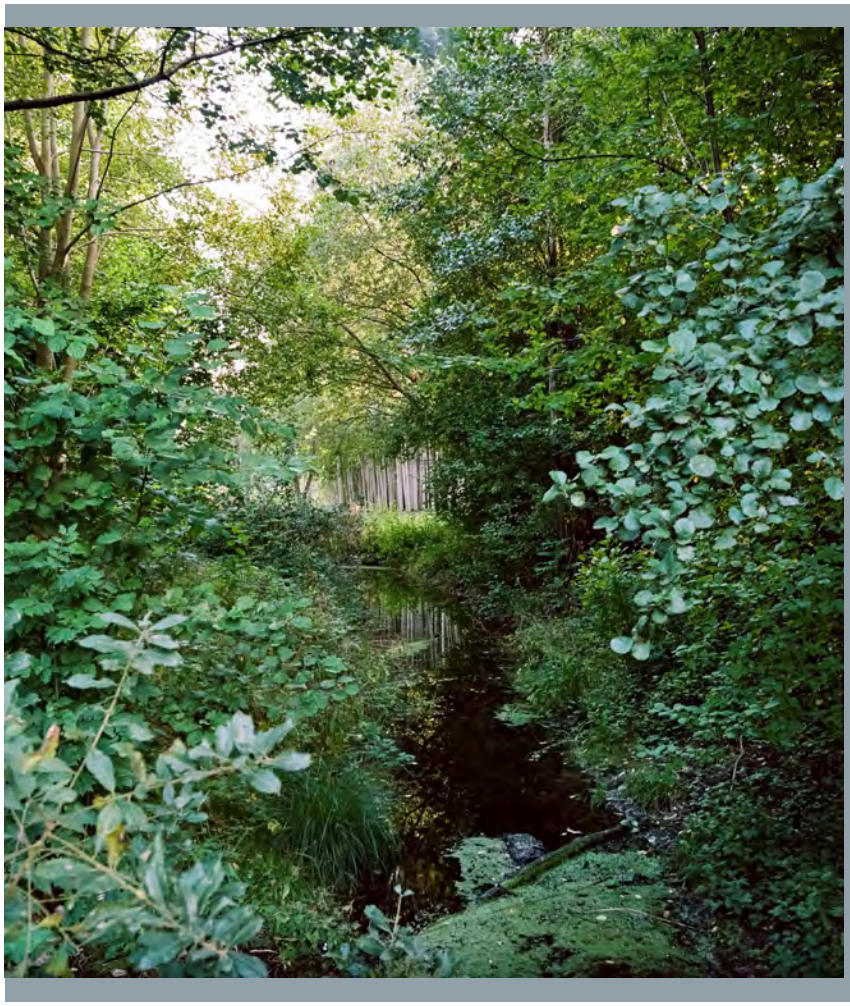
Low canopy, drapery with bouguets of trunks –
extra depth experience



Motion from low woodland into semi-open



October 2022



Alnarps Västerskog
The middle part of the stream in 1993 and 2019, a winding woodland stream. The wooded poles mark the position of a footbridge where the 2019 photo has been taken, looking south







Roland Gustavsson and Björn Wiström guides a group of visitors in Alnarps Västerskog, Oct. 2022

