



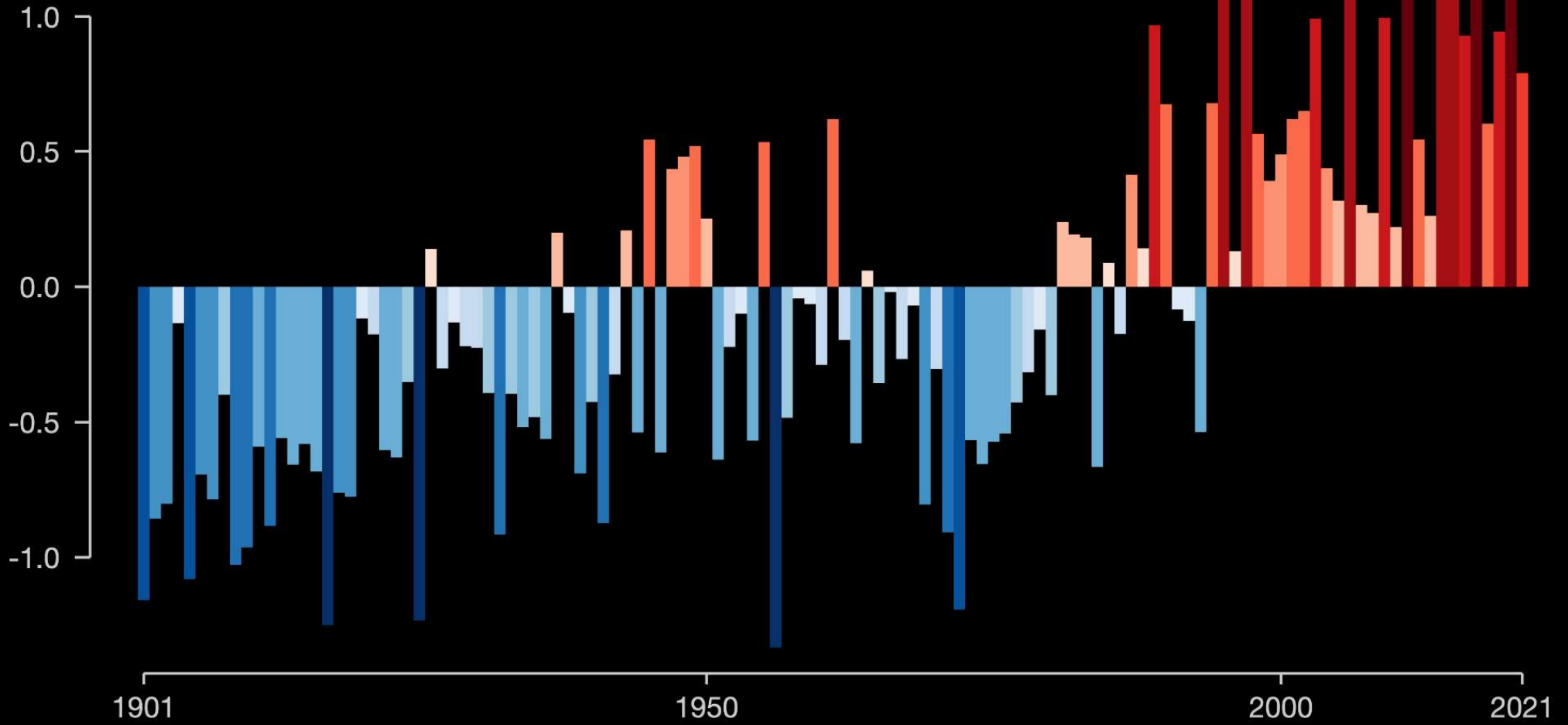
# Integrate and climate adaptation

A perspective from the European Commission

8<sup>th</sup> Annual Meeting of the Integrate Network  
Madrid, 19-21 October 2022  
European Commission, DG Climate Action  
Peter Löffler

# Temperature change in Spain

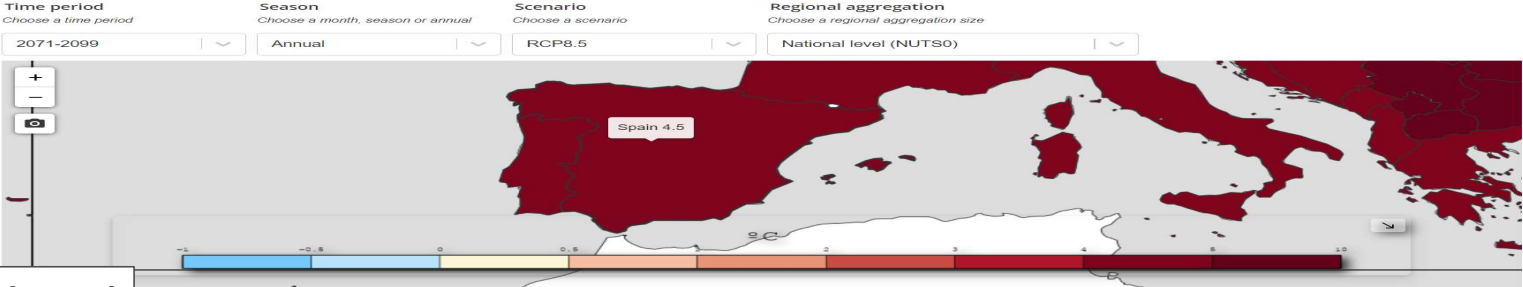
Relative to average of 1971-2000 [°C]



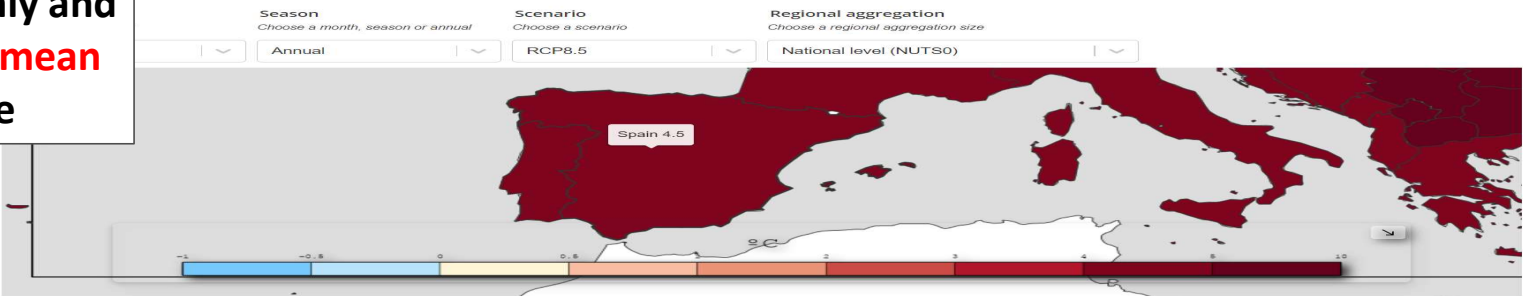
# An (un)exceptional summer in Europe



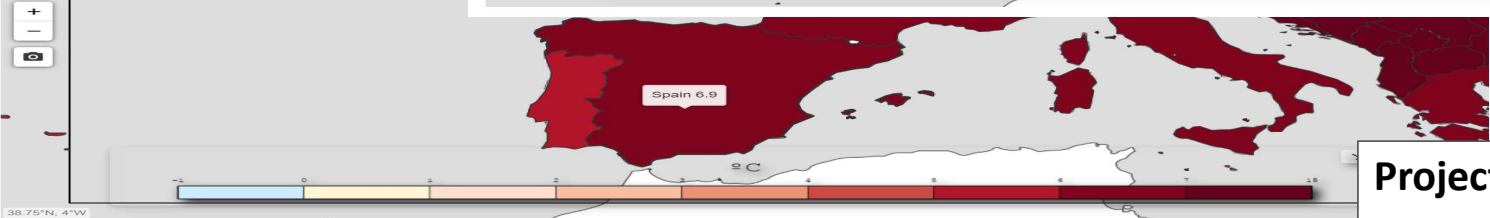
Source: European Climate Data Explorer  
<https://climate-adapt.eea.europa.eu>



Projected change in monthly and seasonal statistics of daily **mean** 2m surface air temperature

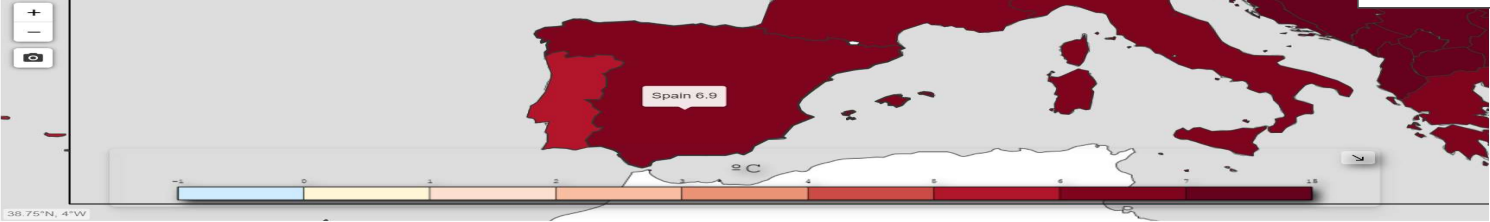


Statistic: Mean of daily maximum temperature  
Time period: 2071-2099

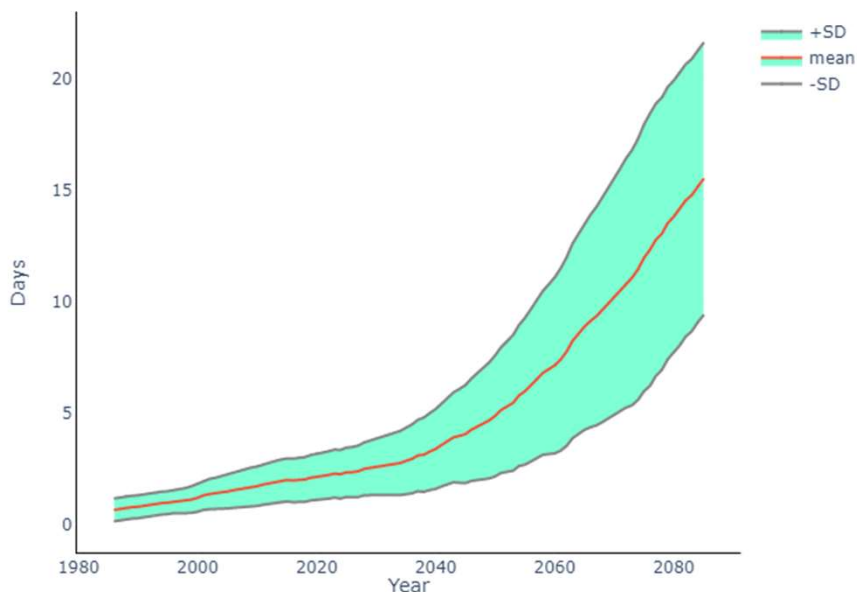


Projected change in monthly and seasonal statistics of daily **maximum** 2m air temperature

Statistic: Mean of daily maximum temperature  
Time period: 2071-2099  
Season: July  
Scenario: RCP8.5  
Regional aggregation: National level (NUTS0)



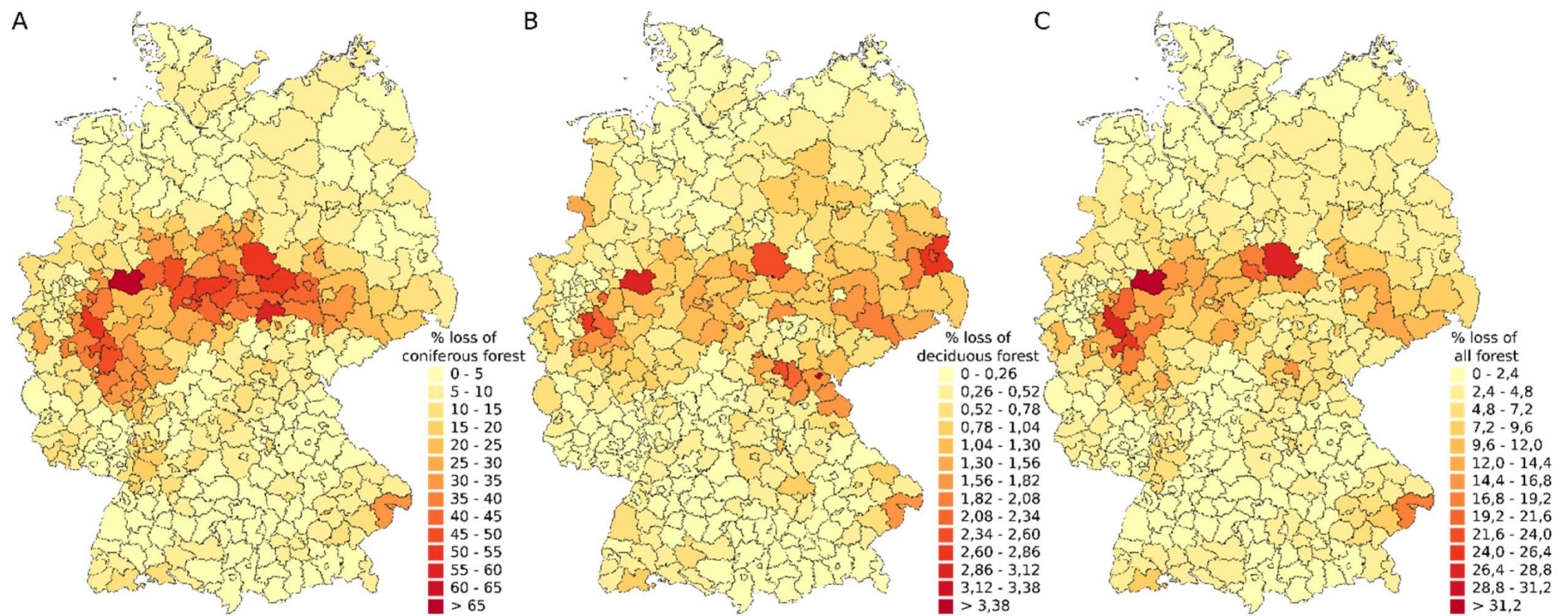
# A worrying outlook



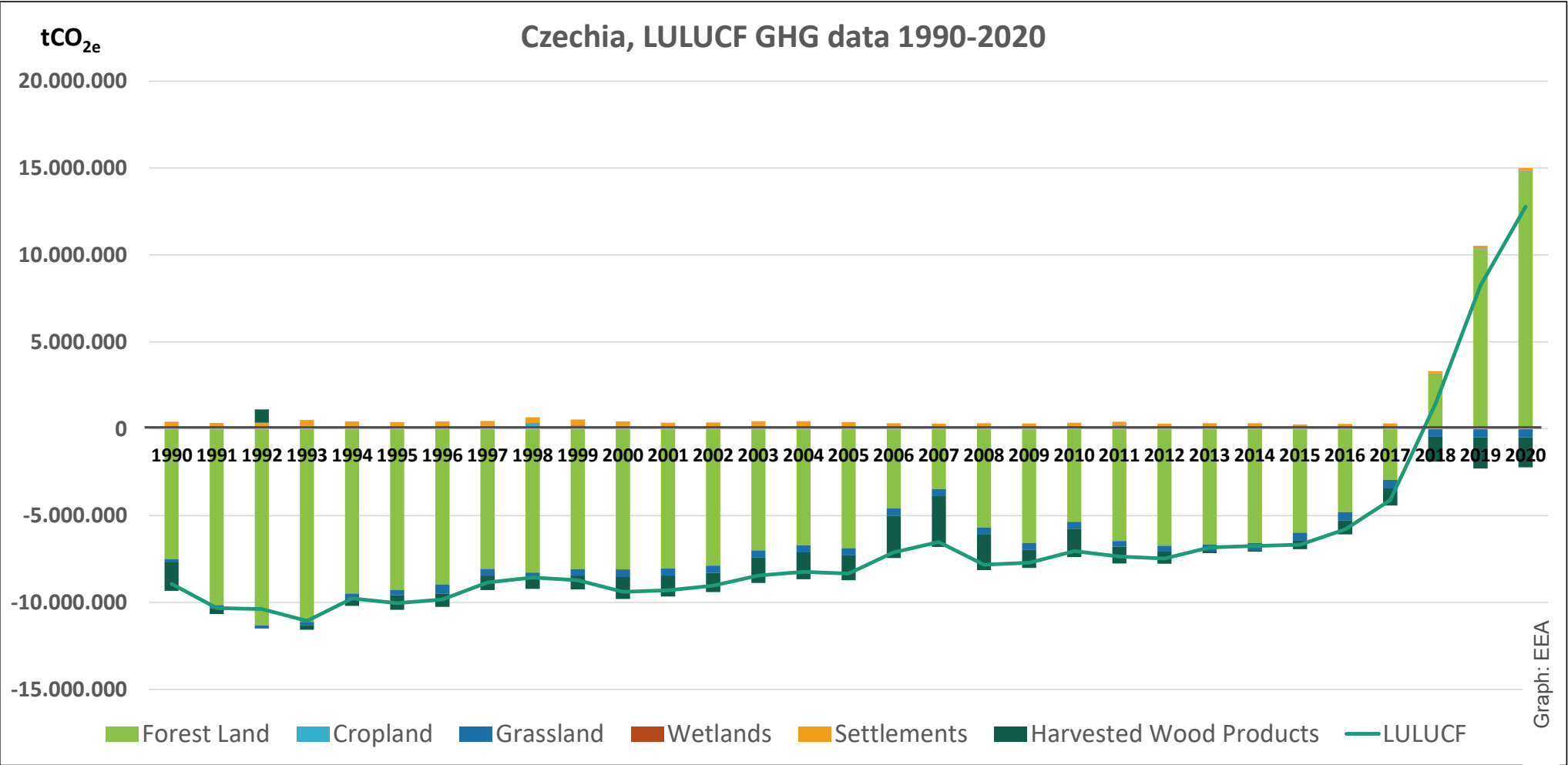
Average number of heatwave days in Europe under the RCP8.5 scenario

- ~70% of tree species vulnerable to extraordinary drought conditions
- 60% of the biomass in Europe's forests vulnerable to fires, insect outbreaks, wind throws
- Fast forest 'regime shifts' in reaction to sudden warming in the past
- Size and intensity of bark beetle outbreaks, wildfires and drought dieback likely to increase

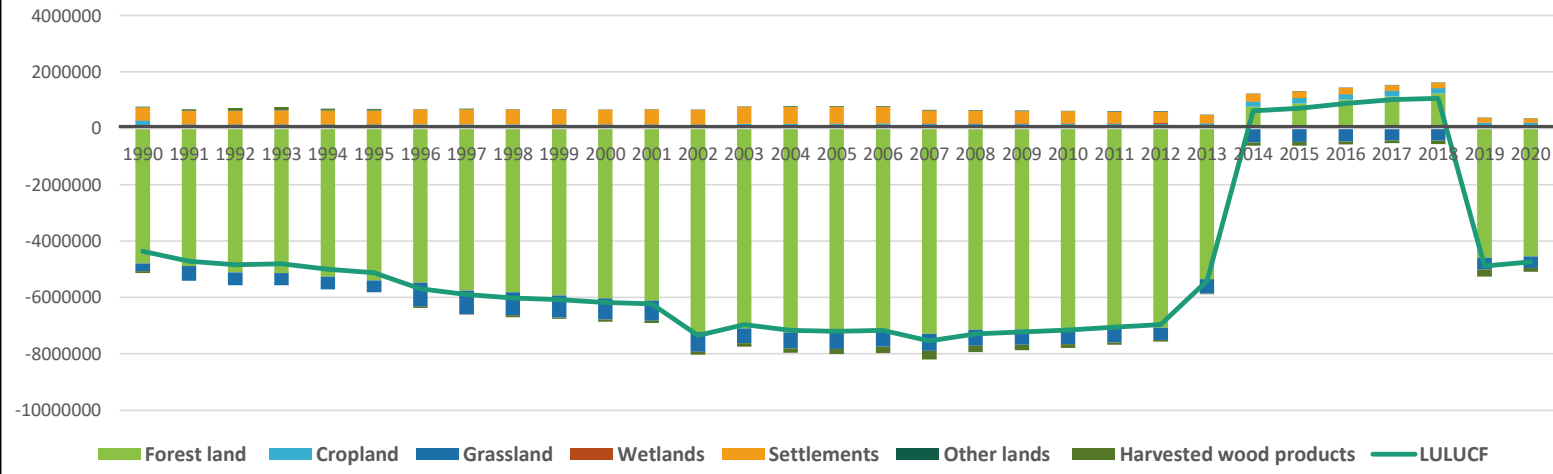
# Drought years 2018-20: First assessment of canopy cover loss in Germany



# Worrying trends: forests becoming net source of emissions



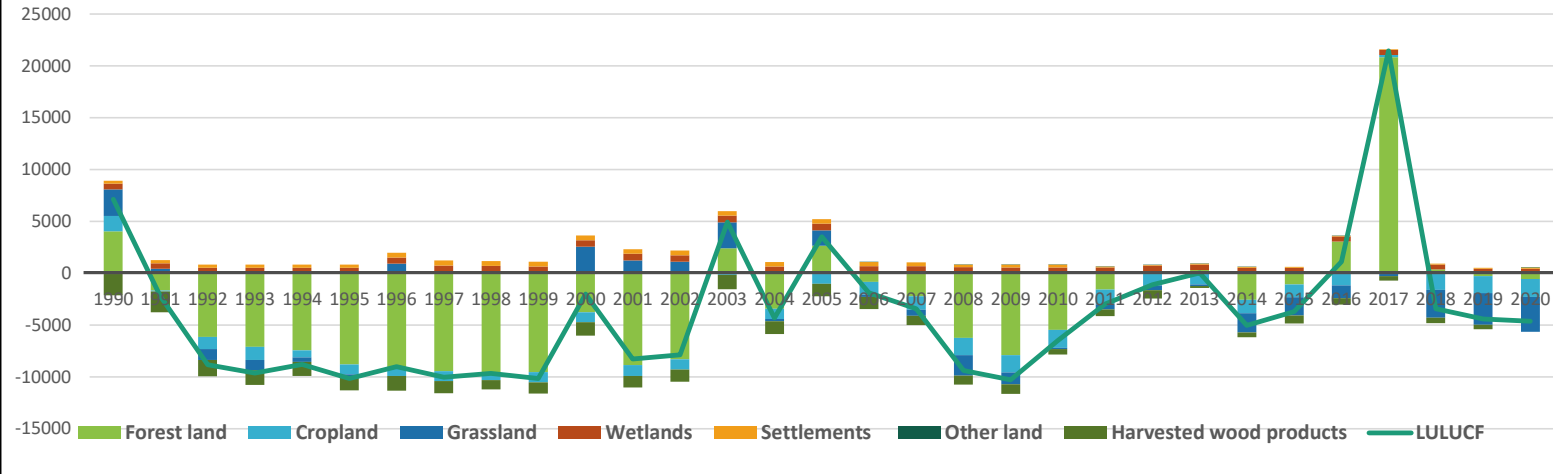
Slovenia, LULUCF 1990-2020



## Forests can recover if properly managed

- Slovenia – bark beetle infestations
- Portugal – forest fires

Portugal, LULUCF 1990-2020



Graph: EEA

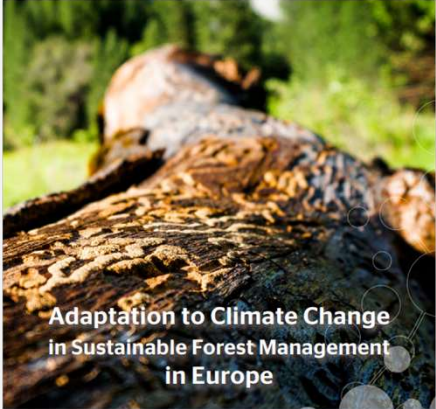




LE CHANGEMENT CLIMATIQUE  
ET SES IMPACTS SUR LES FORÊTS WALLONNES

Recommandations aux décideurs,  
propriétaires et gestionnaires

LOS BOSQUES Y LA BIODIVERSIDAD  
FRENTE AL CAMBIO CLIMÁTICO:  
Impactos, Vulnerabilidad  
y Adaptación en España



EUROPEAN FORESTS:  
TACKLING CLIMATE CHANGE

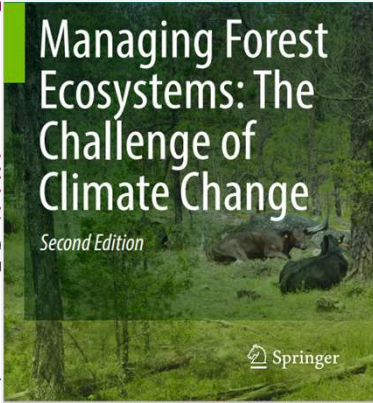
Best practices from state forest  
management organisations

www.eustafor.eu  
@eustafor

Wissenschaftlicher Beirat  
für Waldpolitik  
beim Bundesministerium für  
Ernährung und Landwirtschaft

Die Anpassung von Wäldern und  
Waldwirtschaft an den Klimawandel

Gutachten des Wissenschaftl  
Oktober 2021



**Closer-to-Nature  
Forest Management**

• • •

Jørgen Bo Larsen, Per Angelstam, Jürgen Bausch, João Fidalgo Ca  
Jurij Diaci, Dorota Dobrowolska, Anina Gazda, Lena Gustafsson,  
Frank Krumm, Thomas Knoke, Agata Konczal, Timo Kuuluvainen,  
Renzo Motta, Elisabeth Pötzelsberger, Andreas Rigling, Andreas S

**Forestry** *An International Journal of Forest Research*

Forestry 2014; **87**, 492–503, doi:10.1093/forestry/cpu018  
Advance Access publication 20 May 2014



**Suitability of close-to-nature silviculture for adapting temperate  
European forests to climate change**

Peter Brang<sup>1\*</sup>, Peter Spathelf<sup>2</sup>, J. Bo Larsen<sup>3</sup>, Jürgen Bausch<sup>4</sup>, Andrej Bončina<sup>5</sup>, Christophe Chauvin<sup>6</sup>, Lars Drössler<sup>7</sup>,  
Carlos García-Güemes<sup>8</sup>, Caroline Heiri<sup>1</sup>, Gary Kerr<sup>9</sup>, Manfred J. Lexer<sup>10</sup>, Bill Mason<sup>11</sup>, Frits Mohren<sup>12</sup>,  
Urs Mühlethaler<sup>13</sup>, Susanna Nocentini<sup>14</sup> and Miroslav Svoboda<sup>15</sup>





## Close to nature forestry: resilience/adaptative capacity benefits

- ✓ Mixed stands
- ✓ Preference for natural regeneration
- ✓ High genetic diversity
- ✓ Native or site-adapted tree species
- ✓ Continuous cover, no clear cutting
- ✓ Chemical pest control only last resort
- ✓ Limited machine operations: soil condition OK
- ✓ Preservation of natural biotopes

## European Climate Law, Article 5: ‘duty to adapt’

- Relevant EU institutions and Member States to ‘ensure continuous progress in enhancing adaptive capacity, strengthening resilience and reducing vulnerability’
- EU and Member States to adopt adaptation strategies
- Focus on most vulnerable and impacted populations and sectors (agriculture, water and food systems, nature-based solutions...)



**DELIVERING  
THE EUROPEAN  
GREEN DEAL**





# EU policies supporting forest adaptation

## Policy-setting

- EU Adaptation Strategy
- EU Forest Strategy
- EU Biodiversity Strategy
- EU Soil Strategy

## Legislation

- LULUCF framework & Carbon Farming
- Nature Restoration Law
- Forest reproductive material
- European Forest Monitoring and Strategic Planning



# EU policies supporting forest adaptation

## Funding, financing

- Structural and Investment Funds
- Recovery and Resilience Facility

## Capacity building, knowledge

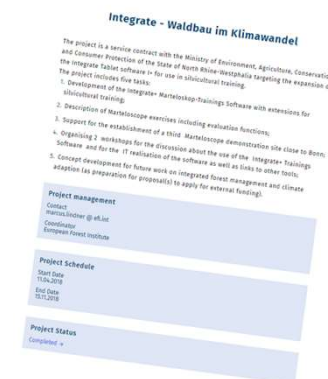
- Horizon Europe
- Mission 'Adaptation to Climate Change'
- LIFE Programme
- Climate-ADAPT
- Forest Information System for Europe (FISE)
- European Forest Fire Information System (EFFIS)

© picture: Peter Löffler

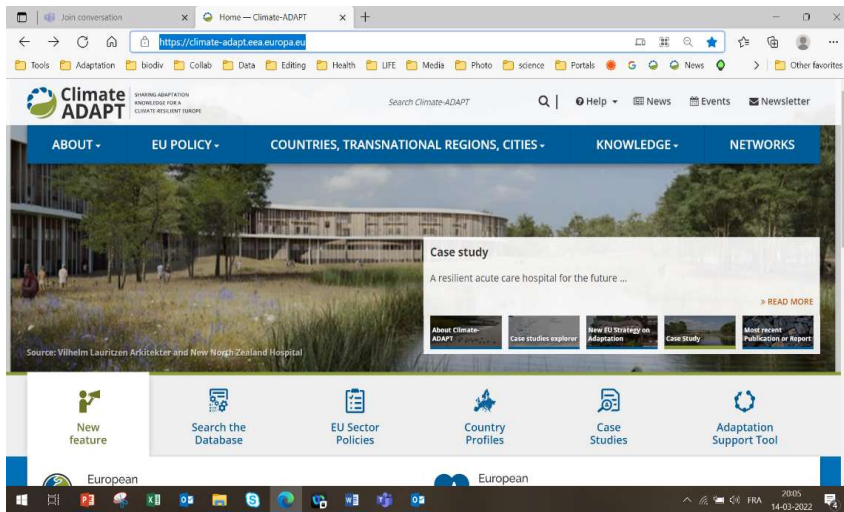
# INTEGRATE & climate risks, resilience and adaptive capacity



- Expand the Integrate approach to integrate (pun intended) these requirements, too?
- How could the methodology and tablet software reflect them?
- What about wicked problems and potential trade-offs (wildfire risks, habitat trees, planting and use of non-native trees...)?



# In the pipeline: Climate-ADAPT support for forest adaptation



<https://climate-adapt.eea.europa.eu>

## Objective:

collect, disseminate and promote knowledge on how to adapt forests to climate change and strengthen their resilience

## Wanted! knowledge resources and case studies on...

- good forestry practices which reduce vulnerability, enhance resilience and adaptive capacity ('no regret measures')
- Good practices of forest disaster prevention, preparedness, disaster response, and post-disaster recovery
- Good (financial) risk management and prevention practices

# Thank you

[peter.loeffler@ec.europa.eu](mailto:peter.loeffler@ec.europa.eu)

