

# BLUE CARBON IN EU CLIMATE POLICY



BIODIVERSITY  
WORKING GROUP

27 NOVEMBER 2018  
09:00-10:30  
ASP 3H1  
EUROPEAN PARLIAMENT

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THE EUROPEAN PARLIAMENT INTERGROUP ON  
"CLIMATE CHANGE, BIODIVERSITY & SUSTAINABLE DEVELOPMENT"



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#BLUECARBON

*"A context for the Blue Carbon ecosystems in the EU: Initial results coming from the project LIFE Blue Natura"*

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1. The BC ecosystems in the EU
2. The size of the carbon sink
3. The project LIFE Blue Natura





# Anthropogenic CO<sub>2</sub>

Fossil Fuels: 7.8 GtC

Soil use change: 1.2 GtC

TOTAL: 9.0 GtC / year



Oceans  
2.4 GtC / year

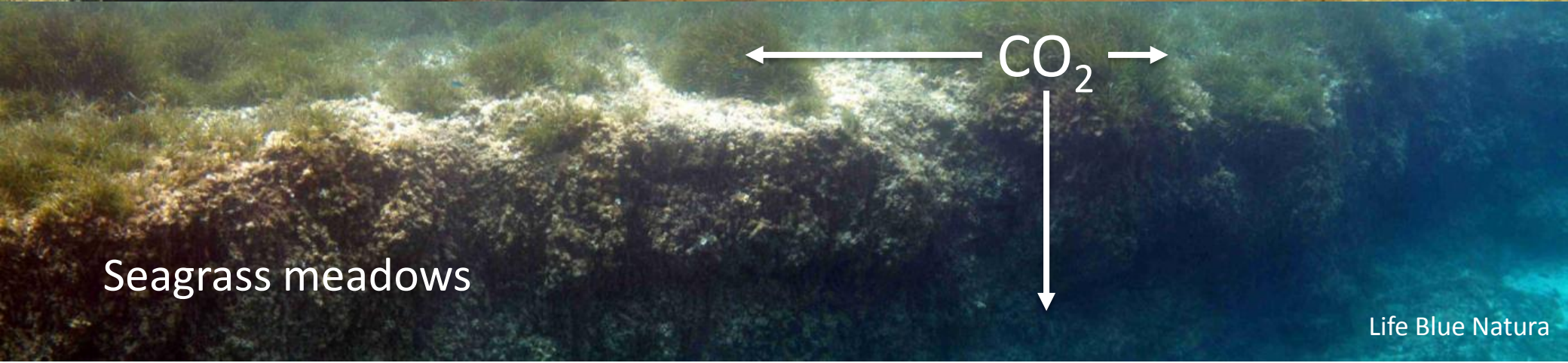
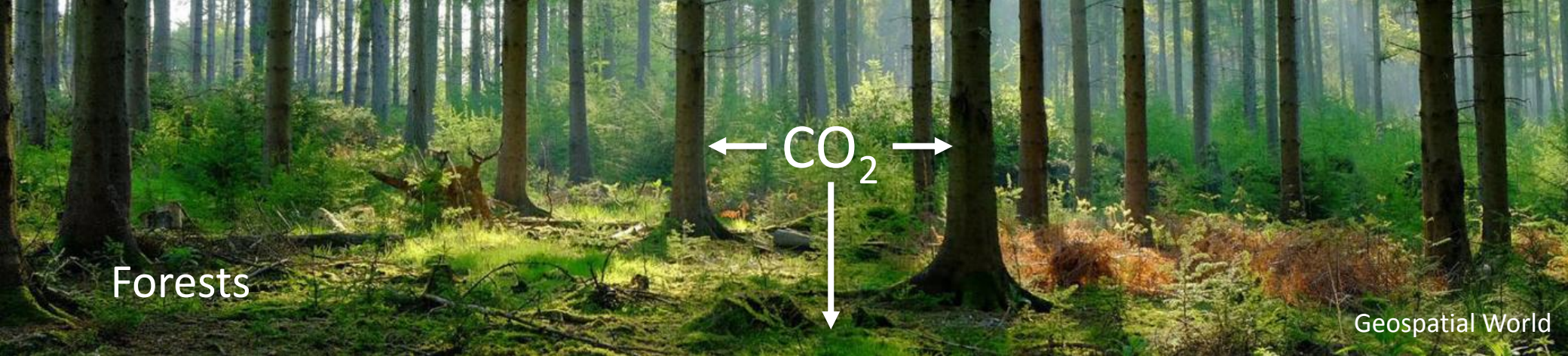
Forests + Soils  
2.6 GtC / year

Atmosphere  
4.0 GtC / year



Simplified from IPCC AR5 and various sources







# 1. The BC ecosystems in the EU



Dijkema et al 1984

Boorman 2002



Life Blue Natura

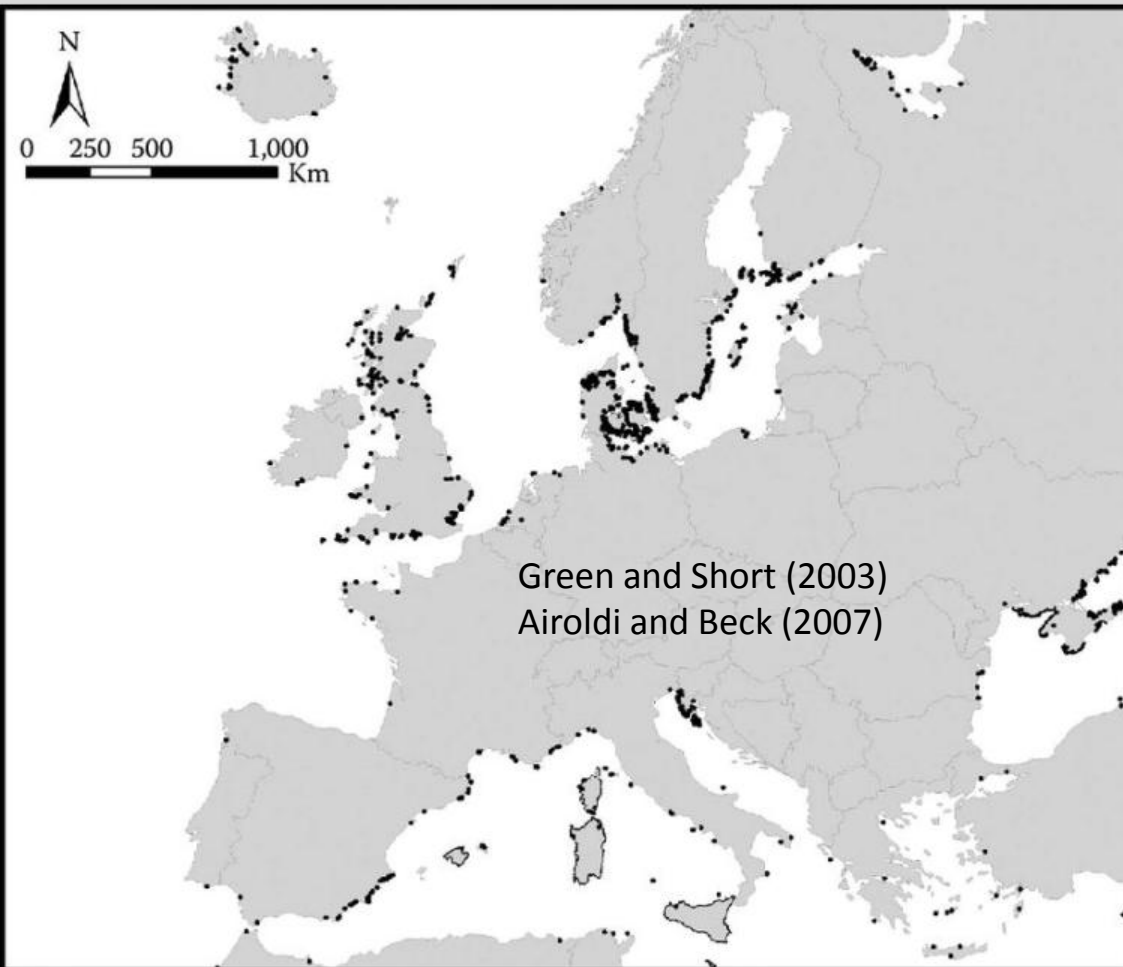


Dijkema et al 1984, Mcowen et al 2017, Sousa et al 2017, Davidson et al 2018

## Saltmarshes in Europe

- Around **5,000 km<sup>2</sup>** in Coastal brackish to saline wetlands
- **4 main regions:**
  - Reed, grasses, shrubs, and herbs
  - High biodiversity
  - High productivity
  - Ecology driven by the degree of inundation and temperature
- **Major complexes**
  - Baltic and Boreal Regions
  - North Atlantic
  - South Atlantic
  - Mediterranean
- **Isolated sites > 500 ha**
- **Small < 500 ha / scattered**

# 1. The BC ecosystems in the EU



## Seagrasses in Europe

- Temperate to boreal areas
- From intertidal up to 40 m depth
- Half of the Mediterranean coast
- High biodiversity
- length has not data on seagrass
- High productivity
- presence or extension (21,471 km)
- Ecology driven by irradiance, temperature, and hydrodynamism
- Information on the extension of smaller seagrasses is virtually lacking
- Profound lack of detailed information of global abundance in the EU
- A compromise value of 30,000 km<sup>2</sup> is used for the estimates that follow
- Estimates for Posidonia from 12,000 to 50,000 km<sup>2</sup>

## 2. EU Blue Carbon sink size



The most wanted / needed numbers... are not the ones below 😊

	Stocks		Sequestration	
	tCO <sub>2</sub> /ha	GtCO <sub>2</sub> /EU BC	tCO <sub>2</sub> /ha yr	MtCO <sub>2</sub> /yr EU BC
Seagrasses	2,500	7.5	3.7	11.0
Saltmarshes	550	0.3	5.5	2.8
<b>Total EU BC</b>	<b>3,050</b>	<b>7.7</b>	<b>9.2</b>	<b>14.0</b>

Source: Mateo et al 1997; Nelleman et al 2009; Mateo et al 2006; Mateo & Serrano 2012; Pendleton et al 2012; LIFE Blue Natura 2018

## 2. EU Blue Carbon sink size



### Contextualization / comparisons

> 1 year of USA CO<sub>2</sub> emissions

~ 1 year of China CO<sub>2</sub> emissions

10x CO<sub>2</sub> emissions of Germany

30x CO<sub>2</sub> emissions of Spain

57% of the carbon stocks in all EU forests

> Areal stock than the peatlands of the EU

3x the areal sequestration rates of EU forests

5x the areal sequestration rates of EU forest soils



## 2. EU Blue Carbon sink size



### Loss

2% annual loss of BC ecosystems ~ 90 Mt CO<sub>2</sub>

Similar to the annual CO<sub>2</sub> emissions of Belgium

> Annual CO<sub>2</sub> sequestration by Spanish Forests

150-200 M€ / year



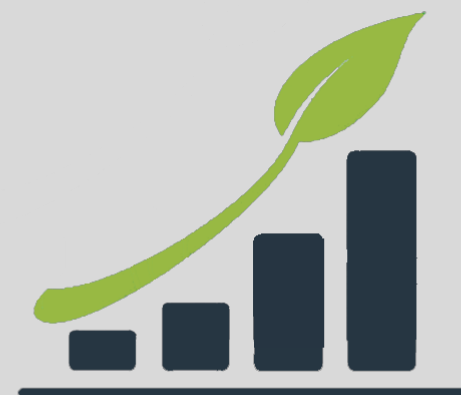




Even if very rough, the estimates presented here strongly suggest that even if only based on the carbon sequestration service...

The conservation and restoration of EU seagrass meadows and saltmarshes could be economically sustainable

... we are only starting to learn how



**CUANTIFY**  
EXTENSION OF BC  
ECOSYSTEMS AND  
THE SIZE OF THE  
SINK

ASSESS AND ESTIMATE  
THE POSSIBLE  
**EVOLUTION** OF THE  
CARBON  
SEQUESTRATION  
SERVICE

EXPLORE AND  
PROMOTE BC  
CONSERVATION/  
RESTORATION  
**PROJECTS**

CREATE **FINANCIAL**  
**INSTRUMENTS:**  
VERIFICATION STDS.  
AND PROJECTS  
CATALOGUE

**DISSEMINATION**  
ADMINISTRATIONS,  
PUBLIC AND PRIVATE  
SECTORS, PUBLIC IN  
GENERAL



JUNTA DE ANDALUCIA  
CONSEJERÍA DE MEDIO AMBIENTE Y ORDENACIÓN DEL TERRITORIO



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Agencia de Medio Ambiente y Agua



Cofinanciador:





# Quantifying = Inventorying Andalusian Blue Carbon

## ➤ Project facts:

11 sites

50 stations

160 seagrass and saltmarsh soil cores, 0.5 to 6 m long

45 aboveground biomass samples

> 200 m of soil profiles processed

20 variables analysed...

... in more than 7,000 soil samples



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# Andalusian Climate Law

## Measures to Combat Climate Change



TITLE VI: EMISSIONS MITIGATION

CHAPTER I: Objetivos y medidas de mitigación de emisiones

Article 37, item 2:

“It will be considered **carbon emissions offset projects**, all those dealing with the afforestation, reforestation, restoration, and conservation of the extant forests and wooded lands, littoral ecosystems, those dealing with the **conservation or restoration of wetlands, seagrass meadows and analogous áreas ...”**

Approved the 8th October 2018





# LIFE Blue Natura

(14CCM/ES/000957)

## Andalusian Blue Carbon for Climate Change Mitigation

Quantification and Valorisation Mechanisms

2015 - 2019



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