LIFE Blue Natura

ANDALUCIAN BLUE CARBON FOR CLIMATE CHANGE MITIGATION: QUANTIFICATION AND VALORITATION

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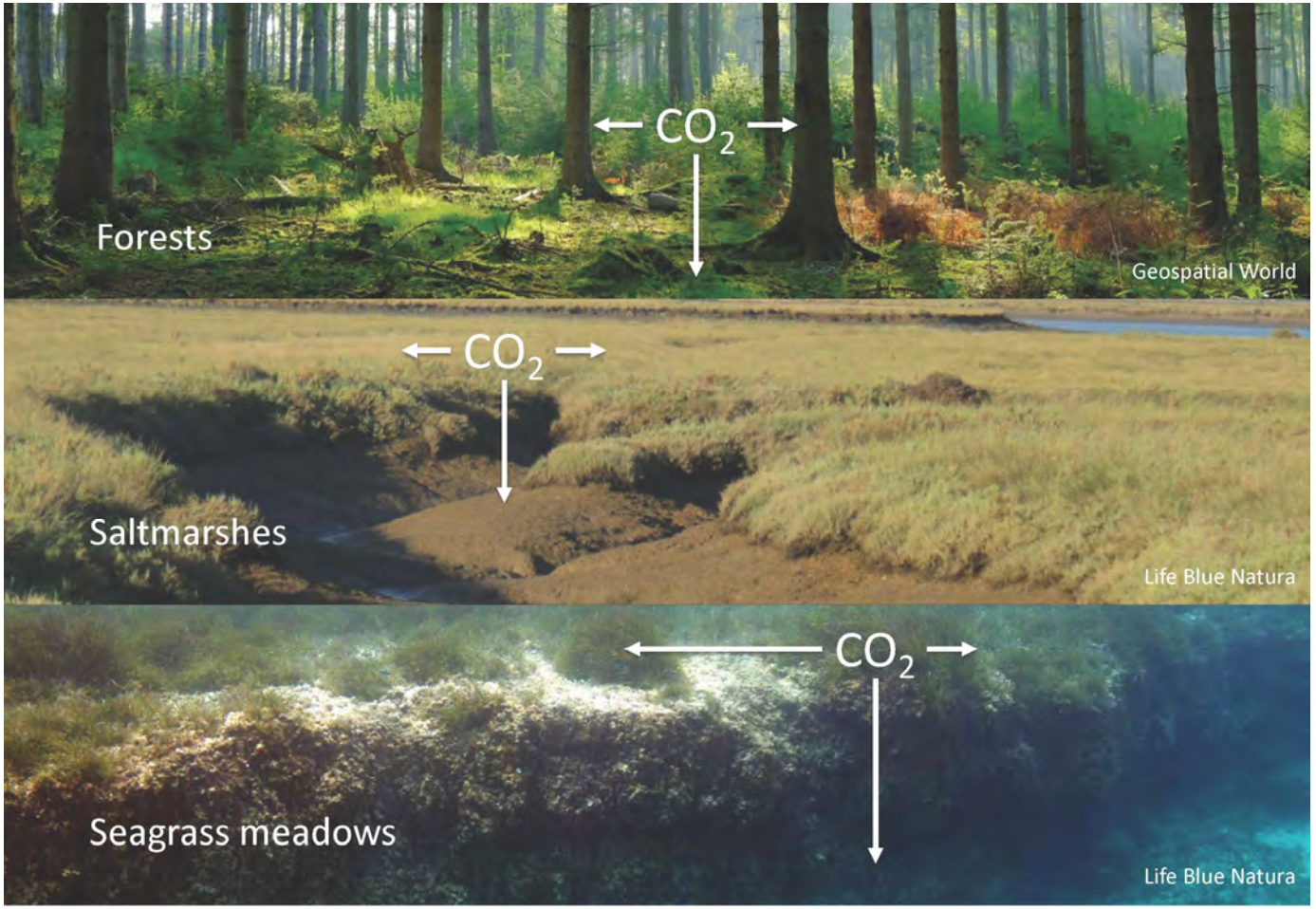
Workshop on Implementation of Nature-based Solutions to tackle climate change

Marseille (France)
22-24 January 2019

Introduction

Issue of Climate change: mitigation.

- **Type of ecosystem**: coast and marine.
- **Type of NbS**: Based on the carbon sequestration service
- **Calendar**: Information on the calendar of activities. 2016-2019
- **Funding:** Funding by Life EU programme, Foundation Cepsa and other co- funding (MAVA).



Fixation >1 ton C per ha
Sink Capacity >1 million tons C per year
Store >1 500 tons C per ha

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Introduction

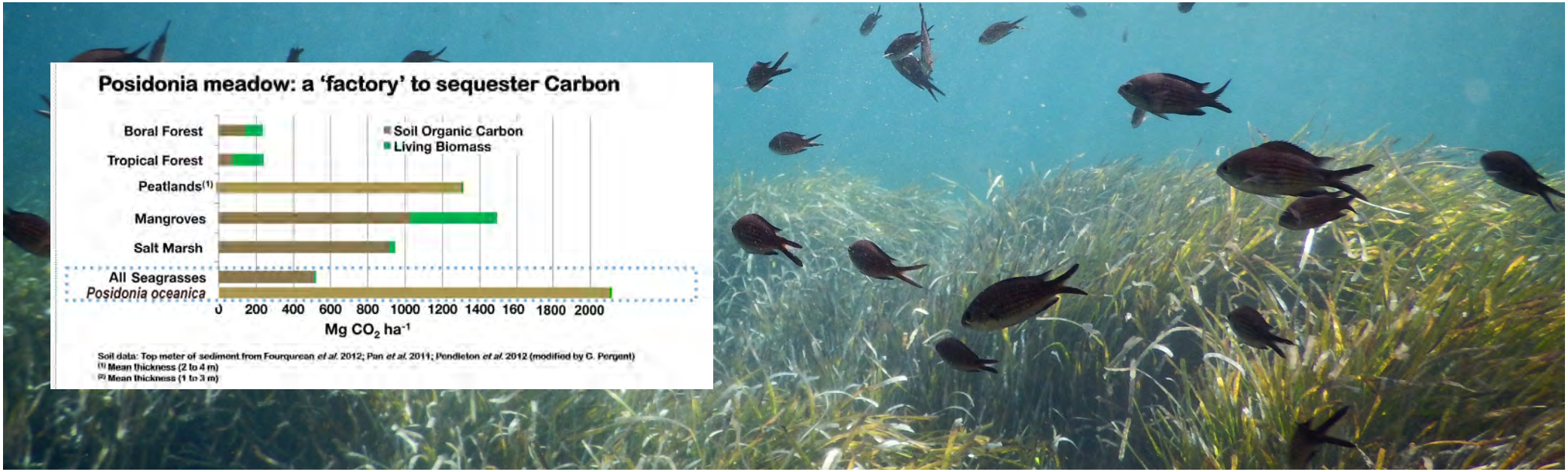
Globally, 0.15-1,02 billion tons of CO_2 released from BC ecosystems (Pendleton et al, 2012)

Andalucía (Southern Spain) has a significant extension of coastal marshes and seagrass meadows along the Atlantic and Mediterranean coasts.

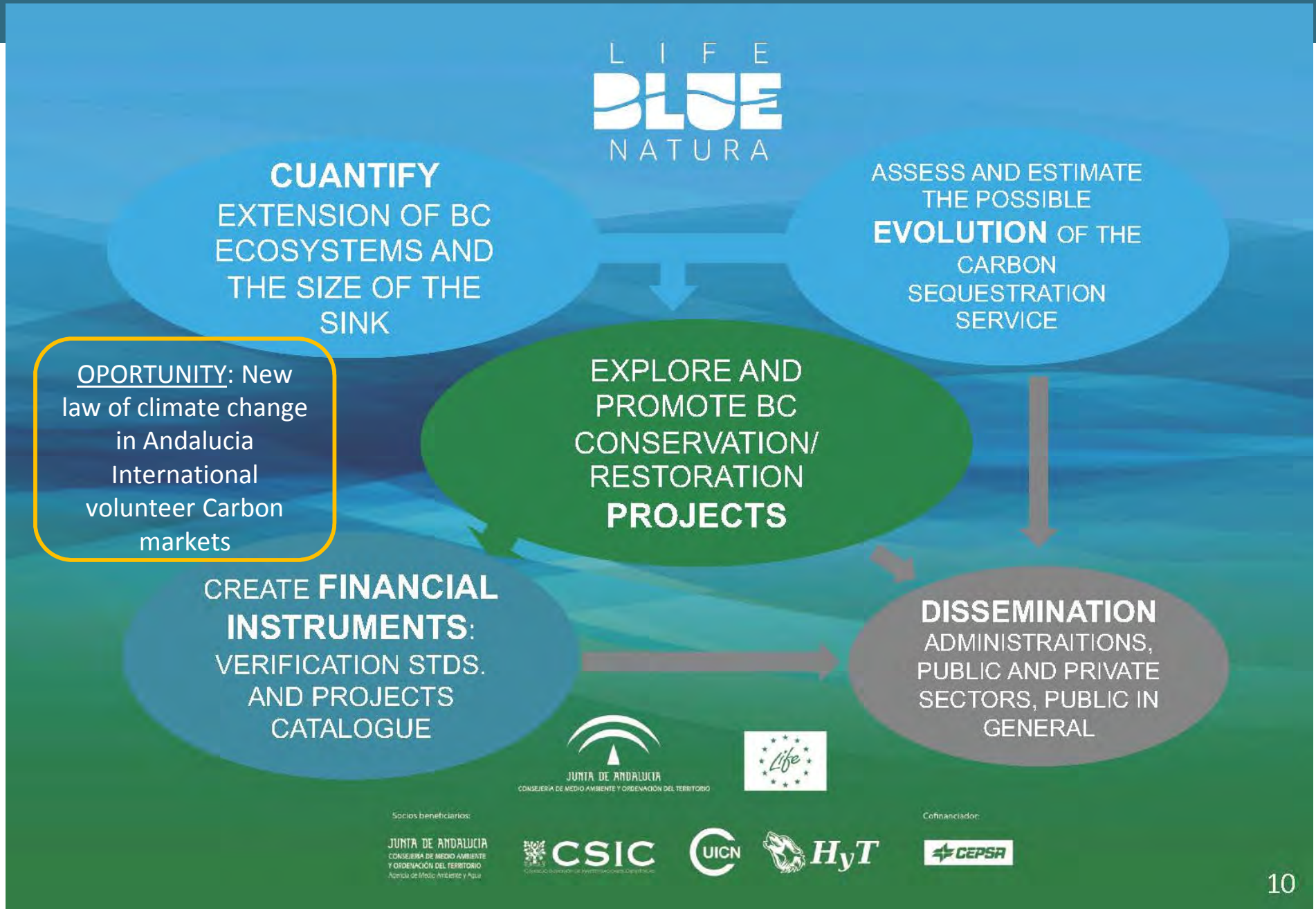
Pioneer on targeting climate and carbon policies for coastal carbon ecosystems in Europe

1. to a better understanding of these carbon sink habitats in Andalusia, as well as to its characterization, state of conservation and evolution in the coming decades.

2. to finance conservation projects and the restoration of habitats of blue carbon sinks in ANDALUSIA assisting implementation of policies for mitigation and adaptation to climate change, and carbon offsetting markets



Objectives


LIFE BLUE NATURA
CUANTIFY
EXTENSION OF BC ECOSYSTEMS AND THE SIZE OF THE SINK
ASSESS AND ESTIMATE THE POSSIBLE EVOLUTION OF THE CARBON SEQUESTRATION SERVICE
OPORTUNITY: New law of climate change in Andalucia International volunteer Carbon markets
EXPLORE AND PROMOTE BC CONSERVATION/ RESTORATION PROJECTS
CREATE FINANCIAL INSTRUMENTS: VERIFICATION STDS. AND PROJECTS CATALOGUE
DISSEMINATION
ADMINISTRAITIONS, PUBLIC AND PRIVATE SECTORS, PUBLIC IN GENERAL
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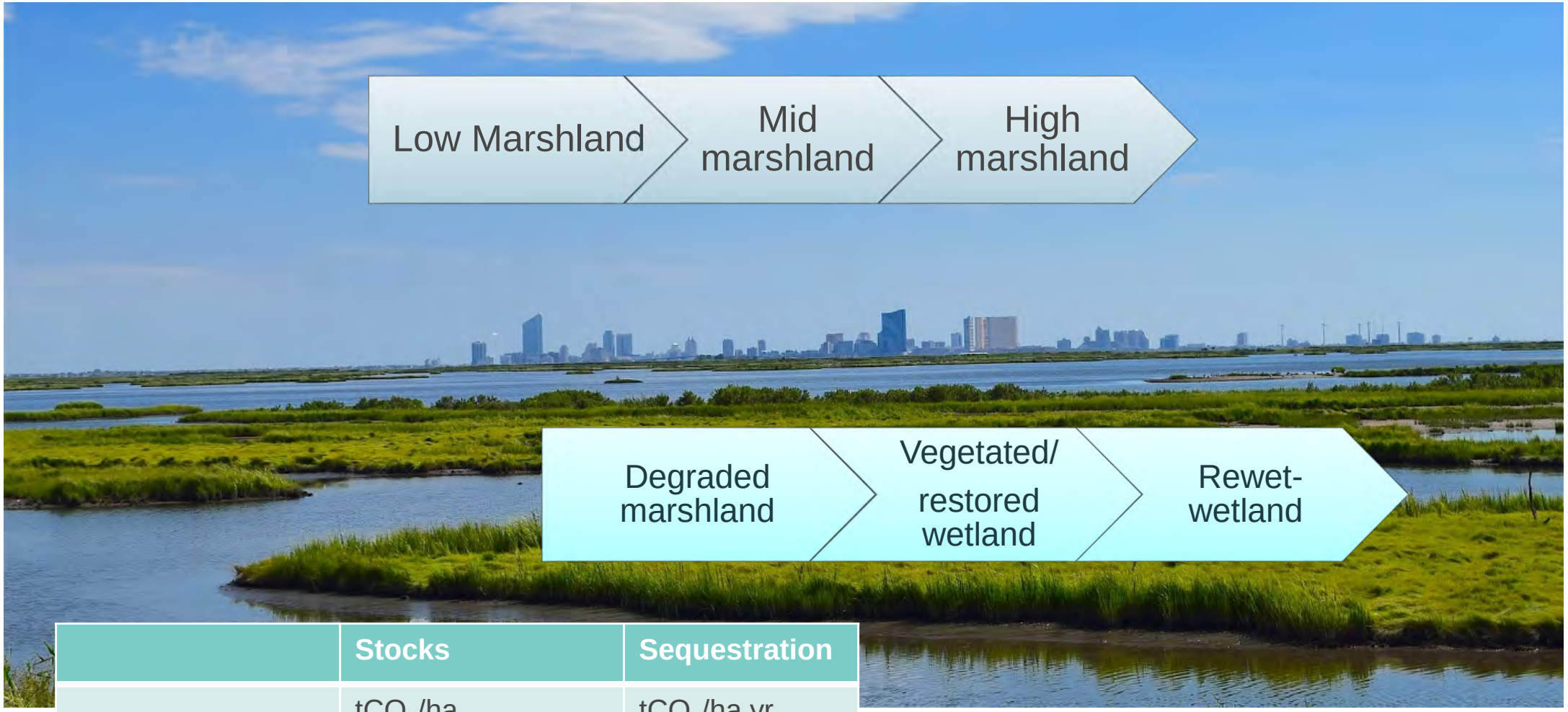
QUANTIFYING TO PREPARE THE INVENTORY OF ANDALUCIA BLUE CARBON

Strong science sampling design

11 sites, 50 stations
160 seagrass and soil marsh cores and aboveground samples
20 variables analyzed
In more than 7000 soil samples

Cartography of the wetlands and other seagrasses

- **Definition and prioritization of criteria for the definition of BC projects and selection of specific criteria for wetlands and Posidonia**
- **Definition of projects and prioritization**



	Stocks	Sequestration
	tCO_2/ha	tCO_2/ha yr
Posidonia SG	2,500	3.7
Saltmarshes	550	5.5

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

In marshes a priori the following eligible NBs projects:

- Restoration of marshes
- Artificial marshes (afforestation)
- Improvement of degraded marshes
- Creation of protected areas
- Conservation through preventive measures

The principles that we define for wetlands/ seagrasses ...

- Improvement of water quality or that quality is equal or superior to a control.
- No reduction of the water table.
- It does not generate negative effects (displaced emissions, displaced activities that impact elsewhere) or, if it generates them, they are quantified and compensated or their impact is corrected.
- Hydrological restoration to avoid methane emissions.
- The project can be replicable.
- Transparency and traceability
- Proceedings that use natural materials as much as possible

The criteria that we define for wetlands/seagrasses …..

- Size of the area of action.
- Long-term soil availability.
- After the execution of the project: project location, in the tidal area (meso or polyhaline places).
- The balance of all GHGs is quantified.
- Stabilization of the marsh in its natural hydrological or tidal system.
- The project is compatible with other ecological values and protected and priority species and habitats.
- If reforestation or forestation is done, it will be with native species or adapted to the place where the project is located.
- The project takes into account the effects of climate change and other hazards.
- The project includes dissemination, awareness and training actions for local stakeholders.
- The project will seek the participation of local stakeholders during the preparation and execution of the project.
- The project is measurable, verifiable and reportable.
- The project will reconcile the uses to ensure other objectives.
- Increase on ecosystem services
- Model/ Management plan
- Economic feasibility

In Posidonia meadows a priori the following eligible NBs projects:

Restoration of seagrass meadows

- Restoration of degraded áreas inside a live meadow
- Revegetation in degraded áreas
- Reduction of OM/ chemical intrussion in the área of influence
- Restoration of hydrodinamism (e.g. sediment capture from rivers)

Protection and conservation of seagrasses

- Cleaning deposits and instalation of eco-buoys
- Instalation of artificial reefs
- Restoration of hydrodinamism (e.g. sediment capture from rivers)

Life Res maris

- Natural variability in carbon estimations (stocks and sequestration)
- Limitation of compensation projects to public lands.
- Buffer of guarantee required for the projects, which increases their cost.
- Developing well-designed projects, with the appropriate participation of civil society and professionals, implies costs that could be difficult to finance in current carbon market situation (min 30 or 35 € / ton of CO2)
- Flexibility
- Lack of data of benefit of NBs (in terms of C sequestration/ storing saving)

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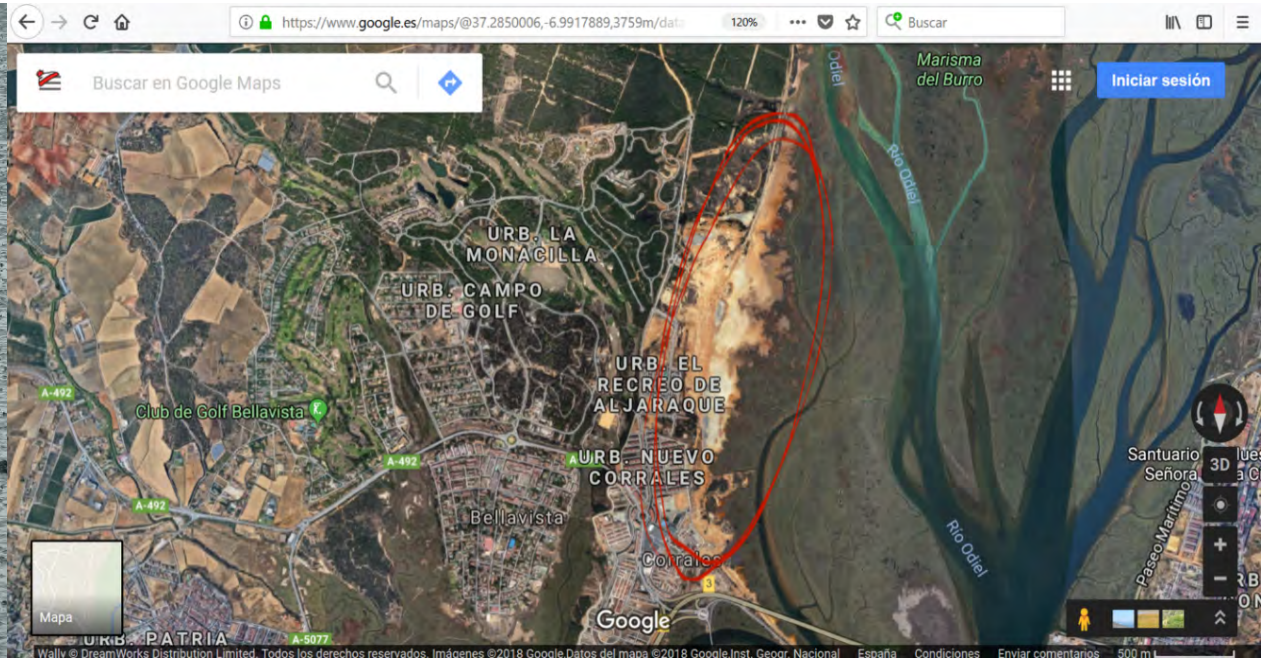
What is next

Feasibility studies for the preparation of NBS-carbon offsets projects in wetlands

COASTAL WETLANDS OF ODIEL AND BAY OF CADIZ

- Restauration of abandon salt pans
- Restauration of hydrodinamic regime.
- Movement of lands and planting of vegetation.

Adicionality, volumen of acreditation, risk factors, mitigation options, costs of development, cash flow over the time.



Conclusions

- NbS for climate change mitigation: Based on the carbon sequestration service

NbS based on carbon offset projects (additions + avoided emissions) could be feasible. This could potentially help on conservation of BC ecosystems, particularly if included in national carbon offset inventories and/or strategies with private industries.

Still a bit of a road ahead to learn how…

- Restoring 1 ha of saltmarsh in Andalusia, would add up to 1 – 2 tCO_2 annually to the BC sink.
- Restoring 1 ha of seagrass meadow in Andalusia, would add 0.15 – 1.5 tCO_2 annually to the BC sink.

Best practices

- A set of well defined criteria and indicators
- Science base and Monitoring
- Stakeholder engagement
- Feasibility studies to see economic aspects, to assess additional value to sell the projects

Brussels, Nov 2018

Thank you

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