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# A framework linking ecosystem services and human well-being: an application to saltmarsh

Olivia Rendón, Sea and Society, Plymouth Marine Laboratory, UK Valuing Nature Annual Conference, Royal Society-London, 28-29<sup>th</sup> October 2019



### Background (1/2)

- The ecosystem services (ES) approach links nature and human well-being (HWB)
- HWB is a multi-dimensional concept, with no universally accepted definition
- Inclusion of HWB in the ES approach is still vague





## Background (2/2)

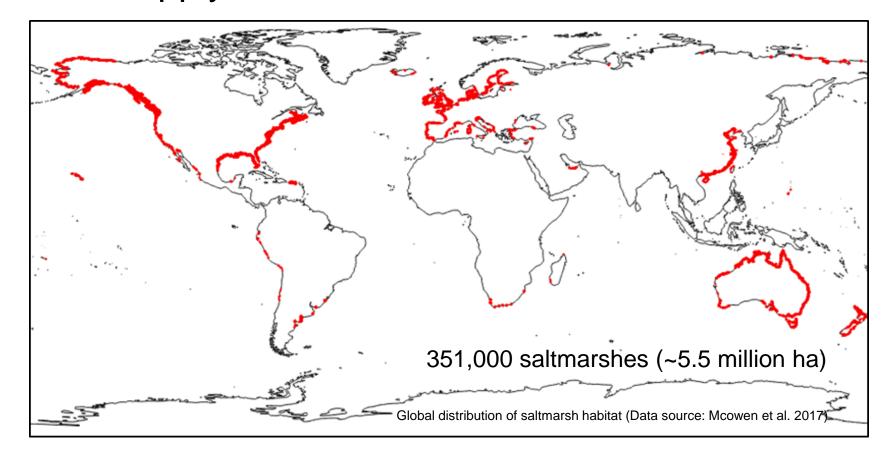
- Why HWB remains poorly understood in the context of ES:
- a) ES frameworks do not mention HWB
- b) HWB not divided into different components
- c) varied classifications/recognition of (dis-)benefits
- d) frameworks not applied in practice
- e) the ES-HWB linkages not clear



### **Objectives & case study**

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to provide a framework linking ES and HWB
To apply the framework to saltmarsh



#### **Framework design**

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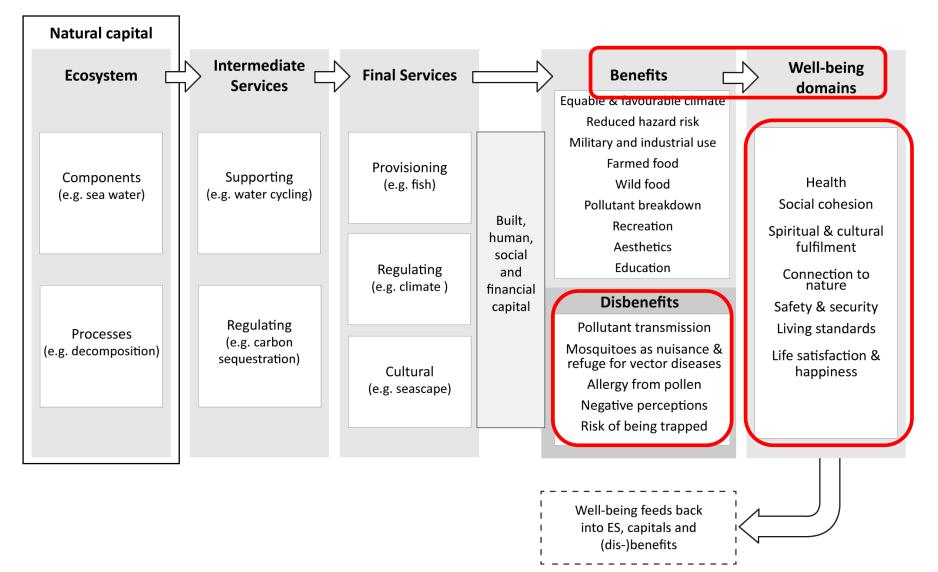
 Developed by adapting the UKNEA-FO framework and Wellbeing domains - Smith et al. 2013

Wellbeing domains (Smith et al. 2013)						
Spiritual and Cultural Fulfillment (importance of arts, culture and religion, visits to museums, natural/historic sites)	Social Cohesion (connectedness, identity, participation, trust and obligation, volunteering)	<b>Health</b> Physical and psychological human health (behaviour, mental health, emotional health, nutrition)				
Living Standards (household and community debt, food availability and access, mean income, poverty)	Safety and Security Freedom from harm, both perceived and actual	Education Outcomes derived from formal and informal transfer of knowledge and skills				
Connection to Nature The innate emotional affiliation of humans to other living organisms	Life Satisfaction and Happiness Contentment with our life (life evaluation, optimism, and self- reported happiness)	<b>Leisure Time</b> Amount and quality of time spent outside of obligations to work and home				

#### **Proposed framework: Three key additions**

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#### Saltmarsh: Scale, impact and relevant parties

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Recreation	♡₩₹₽☺	Sub-cateo	ories
Wild food	♡ł	£₹Ø@)	
Reduced hazard risk 🗍	♡≞ŵ© <mark>Te</mark>	mporal shifts	Benefits
Farmed food	♡습)	Trade-offs	(H, LS, SS)
Aesthetics		♡¥Ø©	
Pollutant breakdown	Dichotomie	S	
Military & Industrial use		۵ <sup>.</sup>	
Pollutant transmission	Equable	e climate	
Education	(Equality (回)		
Mosquitoes 🛔 🛛 🕅 🖉 1	ते <sup>©</sup>		
Negative perceptions		Well-being dom	
Risk of being trapped	<u>ික</u> Disbenef	Image: Benefit	
Allergy 🛇			
Local			Global
(Visitors, residents)			(Ex-situ)

#### **Some limitations**

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- Complexities of linking/measuring ES-HWB
- Potential reductionist approach
- Ensuring an integrated approach with all sectors
- Apply to other habitats and cultural contexts





#### Take home messages

- 1. HWB was missing previously
- It is very important to include HWB for: management decisions incorporate other sectors stakeholder engagement
- 3. We propose a solution to the inclusion of HWB...as a stepping stone



Rendón *et al.* 2019. *People and Nature* 00:1-11 ore@pml.ac.uk Twitter: @coastwellbeing https://www.pml.ac.uk/CoastWeb/Home