

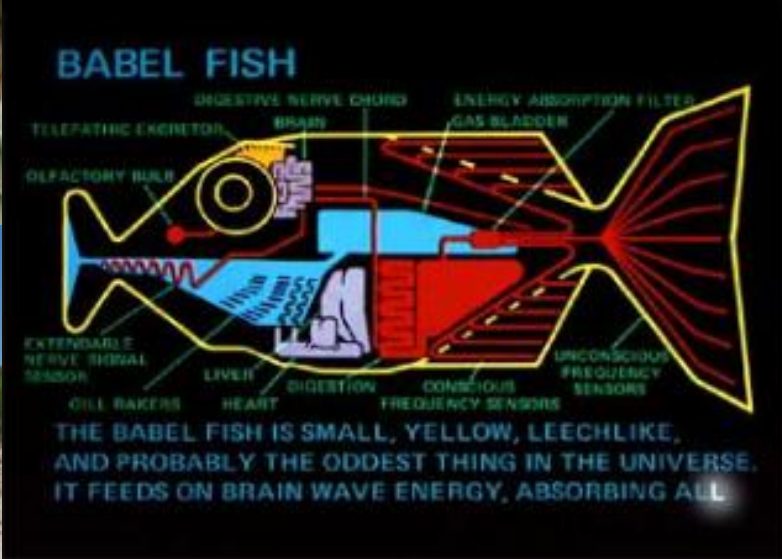
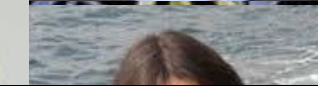
**PML**

Plymouth Marine  
Laboratory

Marine Matters

# **Ecosystem Service Valuation Explained**

**Nicola Beaumont and Tara Hooper**









# The Ecosystem Service (ES) Approach



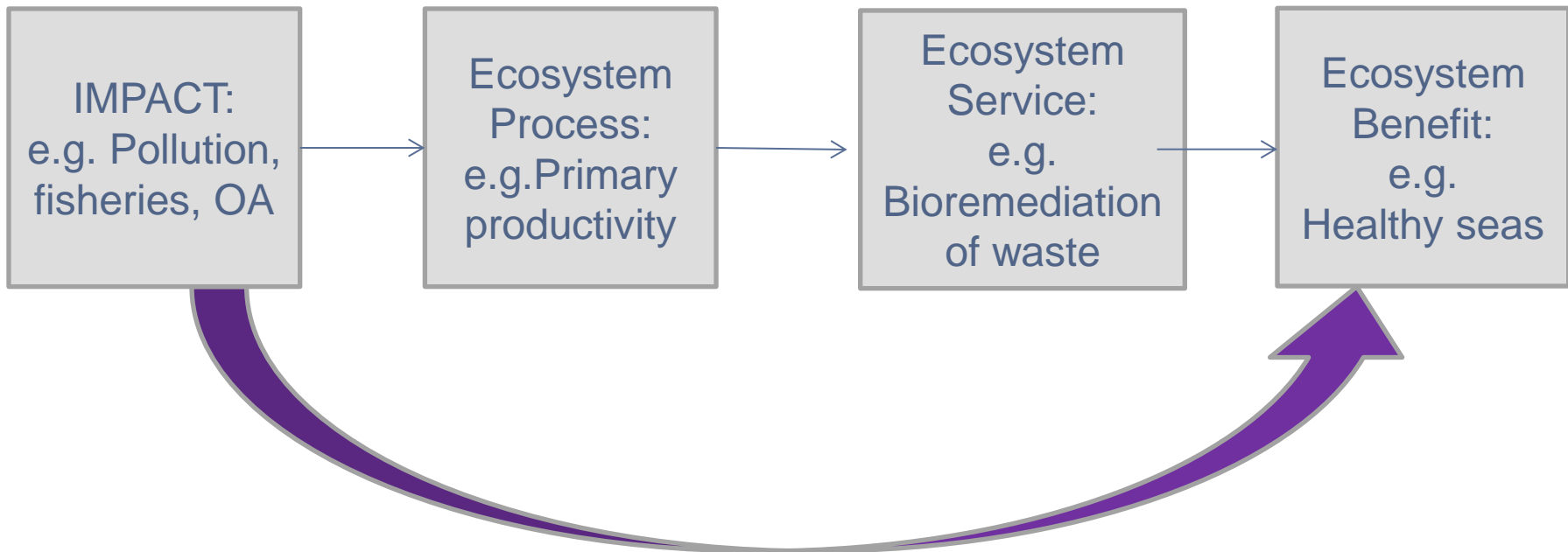
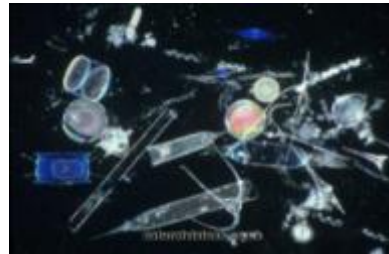
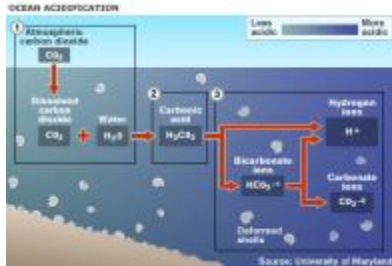
Conceptual diagram illustrating the ecosystem services provided by oceans and the ways in which humans depend on oceans.

Symbols library courtesy of the Integration and Application Network ([ian.umces.edu/symbols](http://ian.umces.edu/symbols)), University of Maryland Center for Environmental Science.

Conceptual diagram illustrating the ecosystem services provided by oceans and the ways in which humans depend on oceans. Diagram courtesy of the Integration and Application Network ([ian.umces.edu](http://ian.umces.edu)), University of Maryland Center for Environmental Science. Source: Samonte G, Karer L, Orbach M, 2010. *People and Oceans*. Science and Knowledge Division, Conservation International, Arlington, Virginia, USA.

**“the aspects of ecosystems utilised (actively or passively) to produce human well-being” (Fisher et al. 2009)**

# Ecosystem Service Approach



## The big value approach

- Costanza et al. 1997  
Global ecosystem services
- Beaumont et al. 2007  
UK marine ecosystem services
- TEEB 2011
- ten Brink et al. 2012

Value of EU NATURA network £200 - £300 billion per year



## Contention

“We don’t protect what we don’t value”

Myers and Richert (1997)

“Valuation is neither necessary nor sufficient for conservation. We conserve much that we do not value, and do not conserve much that we value”

Heal (2000)

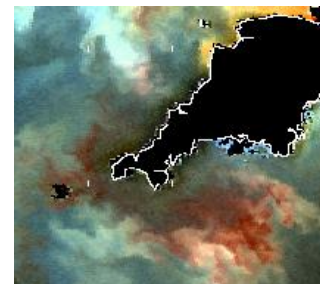
“There’s only three reasons you find out what something is worth: to sell it, to insure it, or to brag about it”

Radio 4 Now Show (2012)

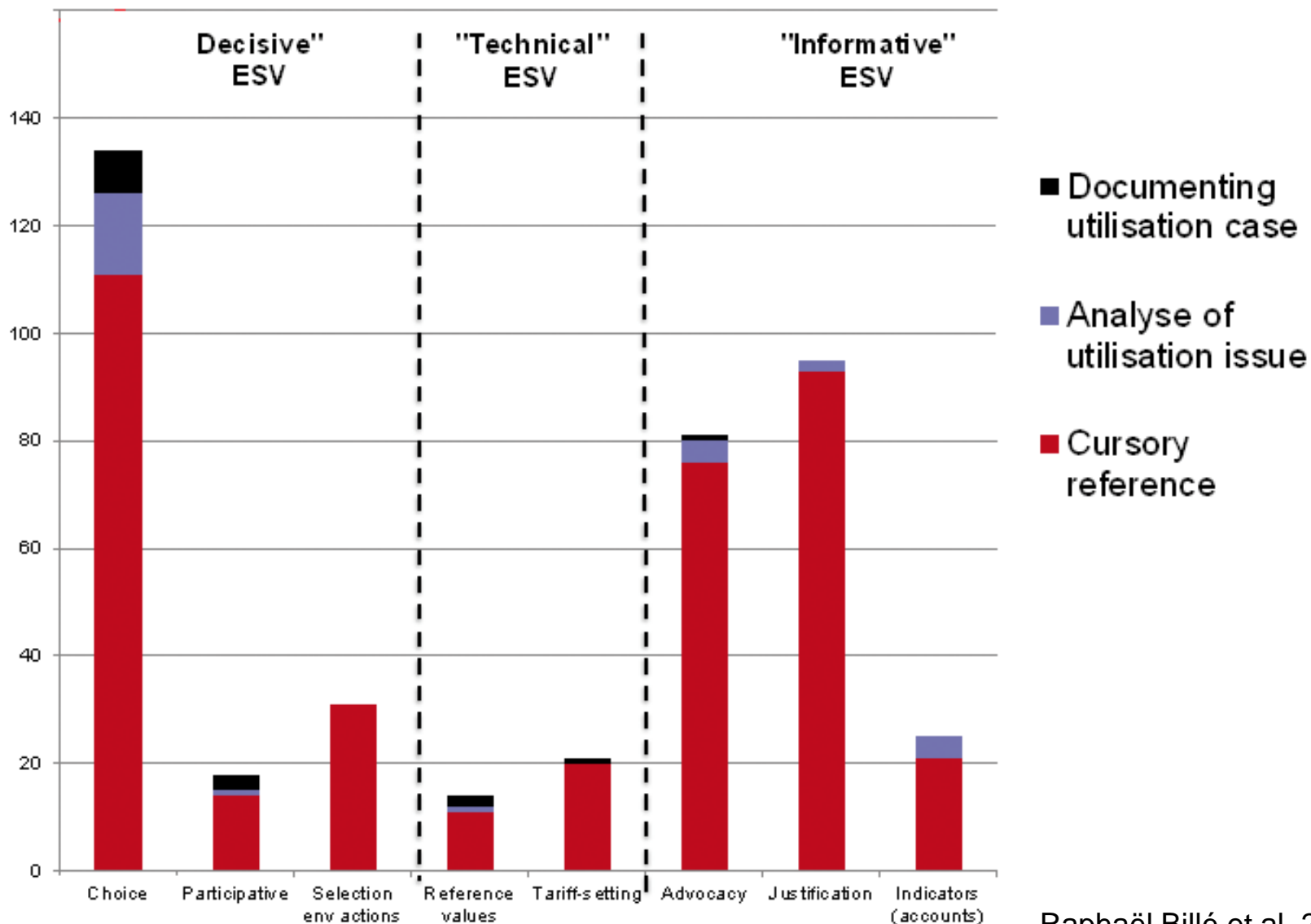


Service	Method	Units	Time Series	Values
Carbon sequestration – coastal margin	Avoided damage cost	tCO <sub>2</sub> /yr	1945 - 2060	Saltmarsh: <b>Decrease of 34, 774 tCO<sub>2</sub>/yr</b>
		£/ha/yr	2010	Saltmarsh: £60.63 – 622.30/ha/yr
		£/UK/yr	2010 - 2060	Saltmarsh: 2010: £11.93 million/UK/yr 2060: £63.22 million/UK/yr <b>Increase of £51.29 million/UK/yr</b>
Carbon sequestration - marine	Avoided damage cost	tCO <sub>2</sub> /yr	1961 - 2050	Variable, no clear trend
		£/UK/yr	2004 - 2050	2004: £6.74 billion/UK/yr 2050: £32.35 billion/UK/yr <b>Increase of £25.61 billion/UK/yr</b>

**UK National Ecosystem Assessment**



# Valuation without action?



# Barriers to use

- **Values not robust enough**
- **Poor understanding – particularly of uncertainties and aggregation issues**
- **Confusion in terminology – wordle slide**
- **Expectations**
- **Spatial, temporal and problem specificity**
- **Expense**
- **Inflexible regulatory frameworks**
- **Application poorly documented**

# Ecosystem Service Approach

