



## CO-EVOLVE

*Promoting the co-evolution of human activities and natural systems for the development of sustainable coastal and maritime tourism*

# FACTSHEET #14

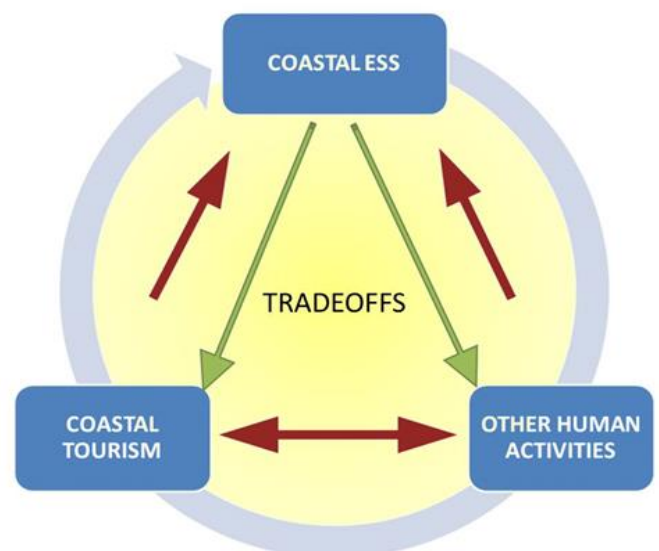
## Finding space for all parasols

*Coastal tourism and the other human activities occurring along the Mediterranean coastline share space and resources, fact that leads to conflicts for often divergent uses. In addition, the overexploitation of natural resources degrades and depletes coastal habitats, with feedback negative effects for all human activities. Hence, both tourism and the other activities have to consider their dependence on coastal ecosystem services, and act at technical and policy level to reach a compromise that preserves natural resources in the long term.*

The growing Mediterranean coastal tourism has to find a sustainable way to coexist with the other human activities - such as for instance industry, agriculture, and transport - and with coastal ecosystems, whose existence sustain through their services (COASTAL ESS) the whole functioning of our society.

On the one hand, tourism and the other human activities cause **environmental pressures** on coastal ecosystems (red arrows). On the other hand, the conflict for resources and space use among the human activities (tourism included) impairs the development of coastal tourism itself. Despite being threatened, **coastal ESS** deliver manifold benefits (green arrows) to coastal tourism and the other human activities, which cannot be ignored.

The figure on the right expresses this difficult coexistence and the urgent need to find a convincing compromise.





<i><b>CO-EVOLVE threats from Coastal Tourism</b></i>	<i><b>Examples of CO-EVOLVE threats</b></i>	<i><b>Examples of negative feedbacks to Coastal Tourism</b></i>
Solid waste	Marine debris produced by crowded beaches can directly damage the coastal flora and fauna and change the structure of the seabed.	Destinations hosting polluted habitats lose attractiveness, especially for ecotourism.
Water pollution	Pressure on existing sewage treatment plants and can lead to overflows during peak tourist times. Significantly high faecal coliform counts tend to be found in waters with a high recreational boating population during peak usage (summer).	Sea side resorts whose water bathing quality decreases are no longer competitive
Air pollution	Gas emission due to leisure travels by vehicles and airplanes.	Breathing problems, nuisance, loss of attractiveness, climate instability with increased risk of extreme events.
Resource use	Excessive water consumption in touristic facilities.	Destinations affected by water scarcity cannot thrive.
Ecosystem degradation and fragmentation	Land use and land cover changes due to tourist infrastructure development. Recreational boating can cause damage to marine habitat and animals such as seagrass beds with propellers or dragging anchor over the habitat. Littering and trampling on seabed.	Destinations hosting degraded habitats loose attractiveness.
Wildlife disturbance and exploitation	Recreational spear fishing, fauna and flora collection reduces population size and its vitality and it influences wildlife behavioural patterns and fitness.	Destinations whose economy is based on seafood resources can't sustain demand in the long term.
Alien species	Release of non native species through discharge of ballast water by cruise ships can alter communities and coastal food webs.	Alien species can clog water treatment facilities, compromising bathing in coastal waters.
Noise pollution	The noise made by boat engines and propellers interferes with sea mammals communications systems.	Popular ecotouristic activities such as whale watching are negatively affected.
Light pollution	Artificial light from coastal touristic infrastructures interfere/alter wildlife reproduction and nesting (eg. sea turtles).	Wildlife observation spots loose value; view of the Milky Way looses attractiveness.

A useful way to address the contrasting uses of resources and space among coastal tourism and the other human activities, and the resulting feedback effects on coastal tourism itself is offered by **spatial modelling tools** developed under the umbrella of Maritime Spatial Planning. These tools can simultaneously analyse multiple impact factors to coastal ecosystems and their services and identify trade-offs in line with the requirements of sustainable coastal tourism. Shifting to the policy level, we can identify two actions to face the above mentioned growing contrast and the related environmental pressures. First, there is a need to adequately inform decision makers on the existence of

spatial modelling tools. Second, we shall invest more effort in educating tourists on the irreplaceable value of coastal ecosystems, through relevant large scale initiatives such as the **citizen science** approach. In fact, only informed tourists have the potential to influence the market and thus decision making.



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