

Theoretical and practical problems in defining habitat, ecosystem and related terms: the case of temporary saltmarshes

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The application in Europe of the “Habitats” Directive (HD) has accustomed us to consider the term “habitat” in a sense that is not the correct or the originary one. Although usually referred to as ‘habitats’ or ‘habitat types’, the ones listed in Annex I of the Directive are more correctly biotopes or biotope complexes [1], or ecosystems [2]. According to IUCN, ecosystem types are complexes of organisms and their associated physical environment within a specified area. During field investigations in the Trapani province (Western Sicily), we had the opportunity to observe that, in the same area, an aquatic seasonal coenosis (characterized by species such as *Ruppia maritima*, *Althenia* sp., *Lamprothamnium papulosum*) occurring during the winter season is replaced by another terrestrial seasonal coenosis, characterized by glassworts *Salicornia* sp. pl. and showing its peak in summer.

The vegetation dominated by glassworts is usually referred to the “Habitat” 1310 (“*Salicornia* and other annuals colonizing mud and sand”), while the vegetation dominated by *Ruppia*, *Lamprothamnium* and *Althenia* is usually referred to the “Habitat” 1150* (“Coastal lagoons”). The problem is that in this way, according to the HD, the same area is occupied in different seasons by two different habitats.

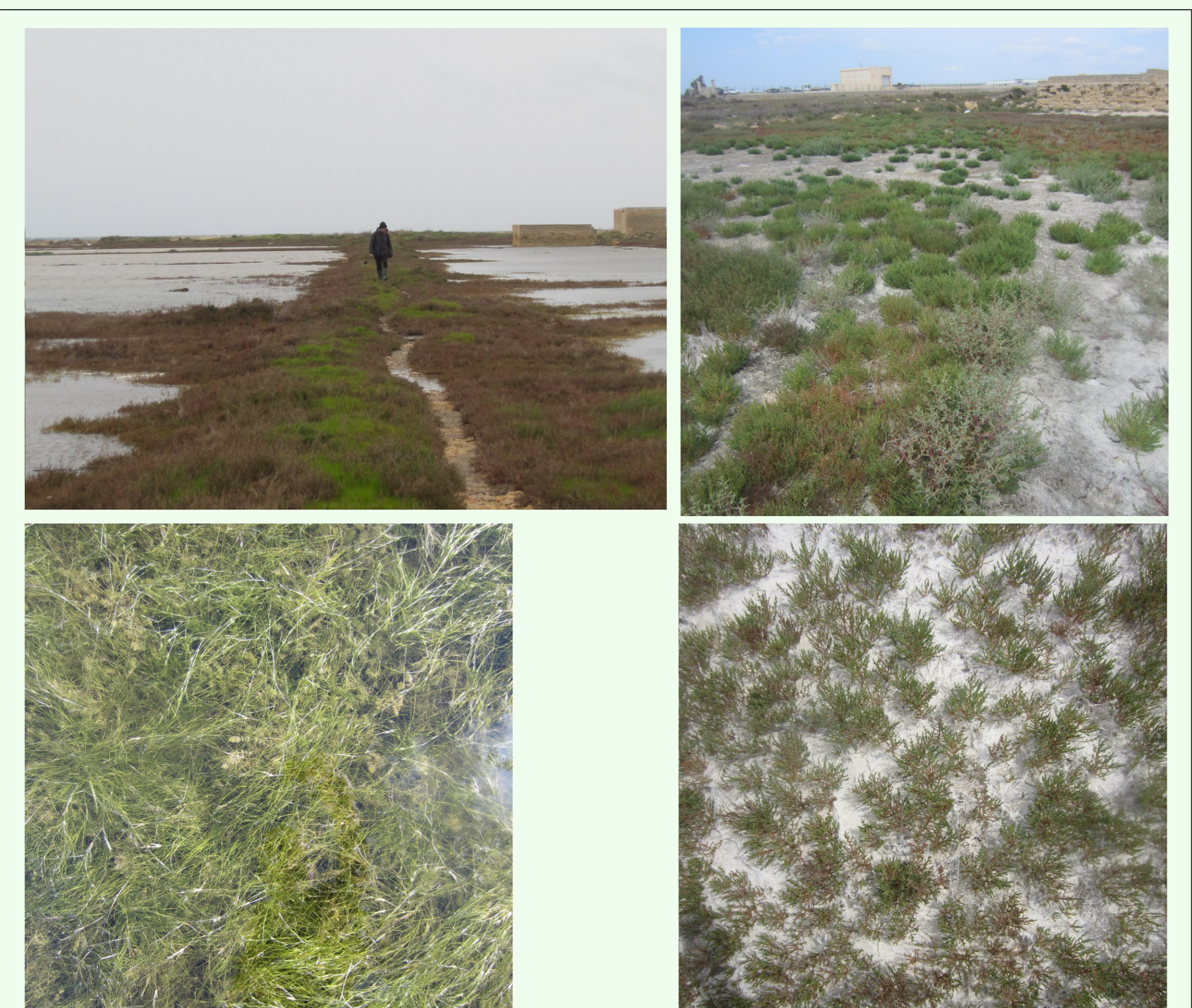
We think it is more correct to consider the two “habitats” as part of the same ecosystem. This is discussed according to theoretical and pragmatic aspects related to ecological successions, European legislation, and efficient conservation.

Temporary saltmarshes have been recently the subject of a paper by Latron et al. [3] where the authors propose to separate the temporary “lagoons” from the permanent ones. We agree on the separation, and we understand the pragmatic choice to keep the temporary “lagoons” within the habitat 1150*, but for the same reason we think they should be kept separated, and that the name “lagoon” cannot be used for a temporary basin.

Contacts between international governmental entities, research networks and international NGOs working in ecosystem/habitat conservation are needed, in order to clarify and improve the meaning of “habitats” in the European legislation.

References:

- [1] Evans D (2006) Biol. Environ Proc R Ir Acad, B, 106: 167–173.
- [2] Bagella S, et al. (2016) Hydrobiologia 782: 1–10.
- [3] Latron M., et al. (2022) J Nat Conserv 68: 126193.



Case 1: habitat 1150* Coastal lagoons (on the left/winter) vs. habitat 1310 *Salicornia* and other annuals colonizing mud and sand (on the right/summer)



Case 2: habitat 1150* Coastal lagoons (on the left/winter) vs. habitat 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetia fruticosi*) (on the right/summer)