



## ***Ericaria amentacea* (C. Agardh) Molinari & Guiry, 2020 continuous belt vs turf: possible amelioration effects?**

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Within the framework of the ECOCYST project (H2020-MSCA-IF-2020; proposal number 101026679), continuous temperature and light measurements were collected in algal communities of the infralittoral zone along rocky shores of the Ligurian Sea. This study compares continuous belts of *Ericaria amentacea* (CA5 according to the CARLIT index), non-continuous belts of *E. amentacea* (CA3) and algal turf communities across four sites (Genova Quarto, Genova Nervi, Bogliasco, and Recco).

Here, we present the temporal patterns of temperature and light recorded for the two most diverging communities (CA5 and TURF) over two consecutive years by *in-situ* sensors. From late spring to mid-summer, *E. amentacea* exhibits a buffering effect on temperature, with differences relative to turf communities that, in some cases, reach approximately 2 °C during daylight hours. This pattern corresponds to the period of maximum vegetative development of the species. The same trend is observed for light measurement. Conversely, during the frond-loss phase of *E. amentacea* (mid-summer to autumn), this trend appears to reverse: although turf communities lack highly three-dimensional frondose structures, their complexity, arising from being composed by numerous species, may contribute to moderating temperature.

In addition, we provide analyses of algal species composition and associated invertebrate fauna across the considered communities. Species correlation patterns are presented for all sites. CA3 exhibit the highest algal species richness among the communities examined, followed by algal turf, and CA5 continuous belts.

Regarding invertebrate assemblages, algal TURF displays unexpectedly high richness compared to the other communities investigated, at the present taxonomic resolution. CA5 evenness is lower due to the predominance of a few highly abundant invertebrate groups, such as Amphipoda and Polychaeta.