## Supporting Information

Table S1. Available literature on the coralligenous assemblages of Mesco Reef, with a short synopsis of the most relevant information.

| Year | References | Information type | Main results |
|------|------------|------------------|--------------|
| 1936 | Tortonese and Faraggiana [34] | Naturalistic observations. | Occurrence of *Petrostia dura* (= *P. fictiformis*), *Eunicella verrucosa*, *Paramuricea chameleon* (= *P. clavata*) and *Retepora cellulosa* (= *Reteporella grimaldii*). |
| 1958 | Motta [24] | Underwater observations by scuba. | Seabed profile to 50 m depth, reef morphology, list of the most conspicuous species. |
| 1958 | Roghi [35] | Underwater observations by scuba. | Abundance and large size of *Gerardia savaglia* (= *Savalia s.*). |
| 1959 | Rossi [36] | List of species, qualitative information on octocorals. | Abundance of *Eunicella stricta* (= *E. singularis*) at 20-25 m depth; dominance of *Paramuricea chameleon* (= *P. clavata*) at around 30 m depth, followed by *Leptogorgia sarmentosa*, *Eunicella verrucosa*, *Gerardia savaglia* (= *Savalia s.*), *Alcyonium coralloides* and *Rolandia coralloides*. |
| 1960 | Tortonese [37] | Naturalistic observations. | Abundance of *Eunicella stricta* (= *E. singularis*) in the ‘precoralligeneous’, and of *Paramuricea chameleon* (= *P. clavata*) and *Alcyonium coralloides* in the coralligenous; occurrence of *Gerardia savaglia* (= *Savalia s.*), *Eunicella verrucosa*, *Leptogorgia sarmentosa*, *Rolandia coralloides*, *Coenocyathus mouchezii* (= *Phyllangia americana m.*), and *Josephella marenzelleri*. |
| 1960 | Roghi [25] | Description of the underwater photographic survey methodology. | Abundance of *Paramuricea chameleon* (= *P. clavata*) and *Gerardia savaglia* (= *Savalia s.*). |
| 1961 | Rossi [38] | Influence of environmental factors on biotic assemblages. | Fine sedimentation favours the occurrence of *Eunicella verrucosa*, *Alcyonium coralloides*, *Cellaria fistulosa*, *Pteria hirundo*; some bryozoans and scleractinian corals are mud-tolerant; presence of sciaphilic species at depths lower than usual due to water turbidity. |
| 1961-62 | Rossi [44] | Photoquadrats, cover data. | Eight biotic assemblages based on substrate slope and depth; high cover of gorgonacea, mainly *Paramuricea chameleon* (= *P. clavata*), frequency of *Gerardia savaglia* (= *Savalia s.*). |
| 1975 | Associazione Parmasub [39] | Qualitative information, list of species. | No apparent pollution; little difference as compared to what previously reported by Rossi. |
| 1978 | Andreoli et al. [40] | Qualitative information. | Benthic assemblages in good conditions. *Paramuricea clavata* shallower than usual, sponges and scleractinian corals scarce, richness of bryozoans. |
| 1985 | Ardizzone and Belluscio [41] | ROV (Remotely Operated Vehicle) transects. | Short description of the coralligenous habitat as observed on videos. Presence of *Paramuricea clavata*, *Eunicella singularis*, *E. verrucosa* and *Leptogorgia sarmentosa* (= *Leptogorgia s.*). |
| 1985 | Relini et al. [42] | Qualitative descriptions. | Absence of *Gerardia savaglia* (= *Savalia s.*) and reduced frequency of *Eunicella singularis* and *Paramuricea clavata*, as compared to Rossi’s observations; turbid water below 25 m and high sedimentation rate at depth. |
| Year   | Authors                  | Methodology                        | Observations                                                                                                                                 |
|--------|--------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1988   | Peirano and Tunesi [46]  | Photoquadrats, cover data on anthozoans. | Increased cover of *Paramuricea clavata* and *Leptopsammia pruvoti* as compared to Rossi’s data. *L. pruvoti* also occurs in shallow waters. *Alcyonium coralloides* scarce. |
| 1989   | Tunesi et al. [43]       | Visual survey, distribution of gorgonians. | Schematic distribution maps of *Eunicella singularis*, *Eunicella verrucosa*, *Paramuricea clavata* and *Leptogorgia ceratophyta* (= *L. sarmentosa*). |
| 1990   | Peirano and Sassarini [47]| Photoquadrats, cover data.         | Dominance of *Paramuricea clavata*, *Parazoanthus axinellae* and *Leptogorgia sarmentosa*.                                                   |
| 1996   | Salvati [48], Peirano et al. [49], Bianchi et al. [50] | Photoquadrats, cover data. | Decreased algal cover and increased cover of *Parazoanthus axinellae* and *Leptopsammia pruvoti* in shallow water, as compared to Rossi’s data, putatively due to increased water turbidity. *Alcyonium coralloides* and *Eunicella singularis* not recorded anymore. |
| 2000   | Morri and Bianchi [29]   | Comparison of existing information on biotic cover and analysis of environmental data. | Great dissimilarity between biological data of the 1990s and the early 1960s; diminished water transparency between the 1950s and the 1990s; temperature increased between 1959 and 1996, much less so between 1990 and 1996. |
| 2008   | Roghi [51], Roghi et al. [52] | Photoquadrats, cover data. | Scarcity of massive sponges, change in bushy bryozoan species, and reduced gorgonian cover with respect to previous information; occurrence of the alien algae *Womersleyella setacea* and *Caulerpa racemosa* (= *C. cylindracea*). |