



Med Sea Life in a Warming World

CALENDARIO 2021

(English translation)



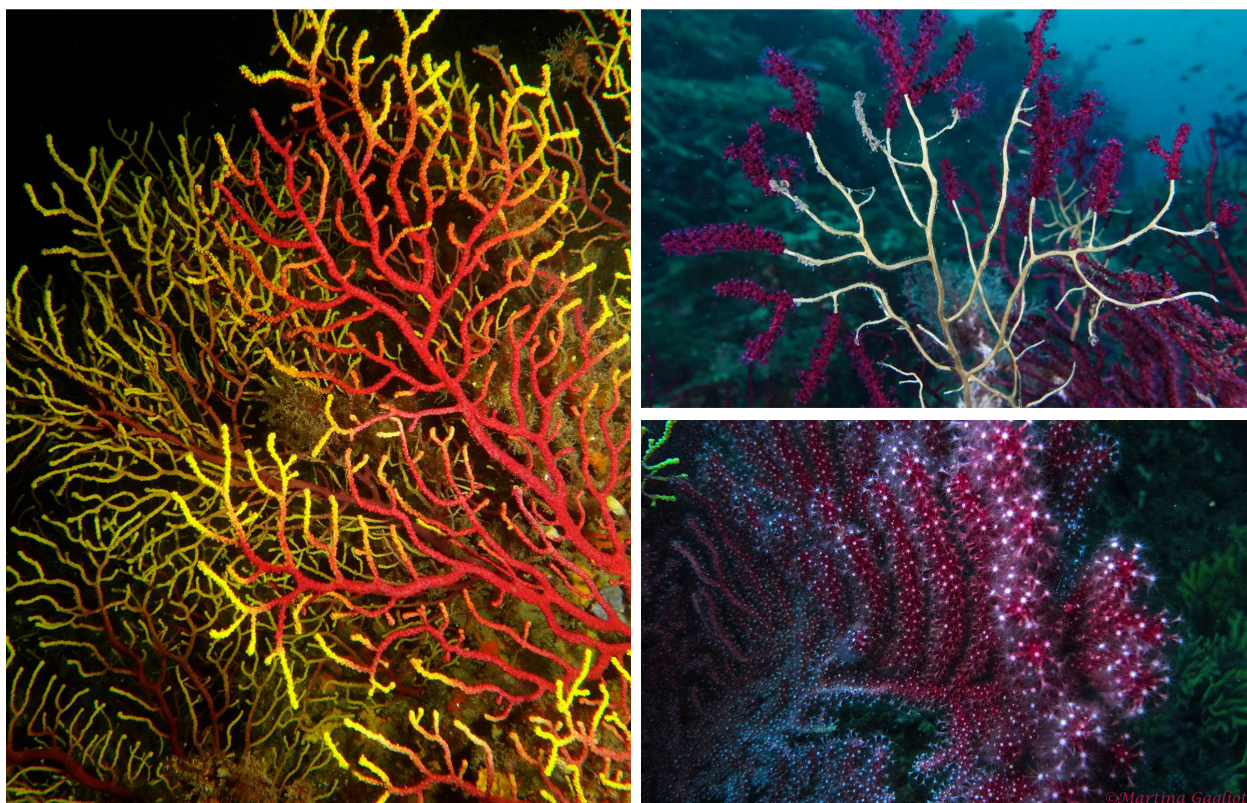
Astroides calycularis (Orange scleractinia)

Aegadian Islands Marine Protected Area FAVIGNANA- Punta Sottile

The main threats for this species are related to illegal sea date fishing (*Lithophaga lithophaga*) whose withdrawal implies the removal of large rocky surfaces and determines the destruction of its preferential habitat. Also, the recreational diving can accelerate the colonies damage through accidental contact. As other scleractinian species *Astroides* can undergo bleaching events already documented also in other Mediterranean areas. A recently published study highlighted cooperation phenomena between polyps, which allow them to prey on *Pelagia noctiluca* jellyfish to feed on them.

January 2021

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
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4	5	6	7	8	9	<u>10</u>
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Paramuricea clavata (Red mediterranean gorgonian)

Medes Islands Marine Reserve (Spain); Banco di Santa Croce (Campania, Southern Tyrrhenian Sea)

The gorgonian are filter-feeding animals and they form real submerged forests. They are shelter for several marine organisms and represent keystone species within the Mediterranean coralligenous habitat. Gorgonians can be used to evaluate the state of health of the seabed habitats and quantify the effects of climate change on marine ecosystems functioning. Prolonged thermal anomalies and water overheating can lead to mass mortality events of colonies and tissue necrosis with consequent loss of the polyps that make up the filtering portion of the colony.

February 2021

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Posidonia oceanica

Aegadian Islands Marine Protected Area: FAVIGNANA

Posidonia is an endemic Mediterranean seagrass. The submerged meadows have a functional role analogous to those of terrestrial forests: they provide shelter to many species of organisms, producing oxygen, absorbing large quantities of CO₂, stabilizing the seabed through the roots. The foliar residues that often accumulate through storm surges (banquette) protect the coasts by dampening the erosive action of the waves. Depending on the environmental conditions the species can reproduce by fragmentation or sexually producing floating flowers and fruits (*sea olives*).

March 2021

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Bycatch and beach litter

Marine Protected Area “Regno di Nettuno”: SANT’ANGELO, Ischia Island (on the left)

Aegadian Islands Marine Protected Area: FAVIGNANA (up)

Circeo Man and Biosphere Reserve UNESCO: Sabaudia (down)

The use of non-selective collection methods may contribute to the accidental capture of non-target species with scarce commercial interest (bycatch). The abandonment or loss, even involuntary, of fishing gear can lead to a long-term damage. Some nets remain entangled on the seabed like ghost nets continuing to fish even after their time of conventional use, or they can turn into beached waste (beach litter).

April 2021

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Seabed cleaning activities

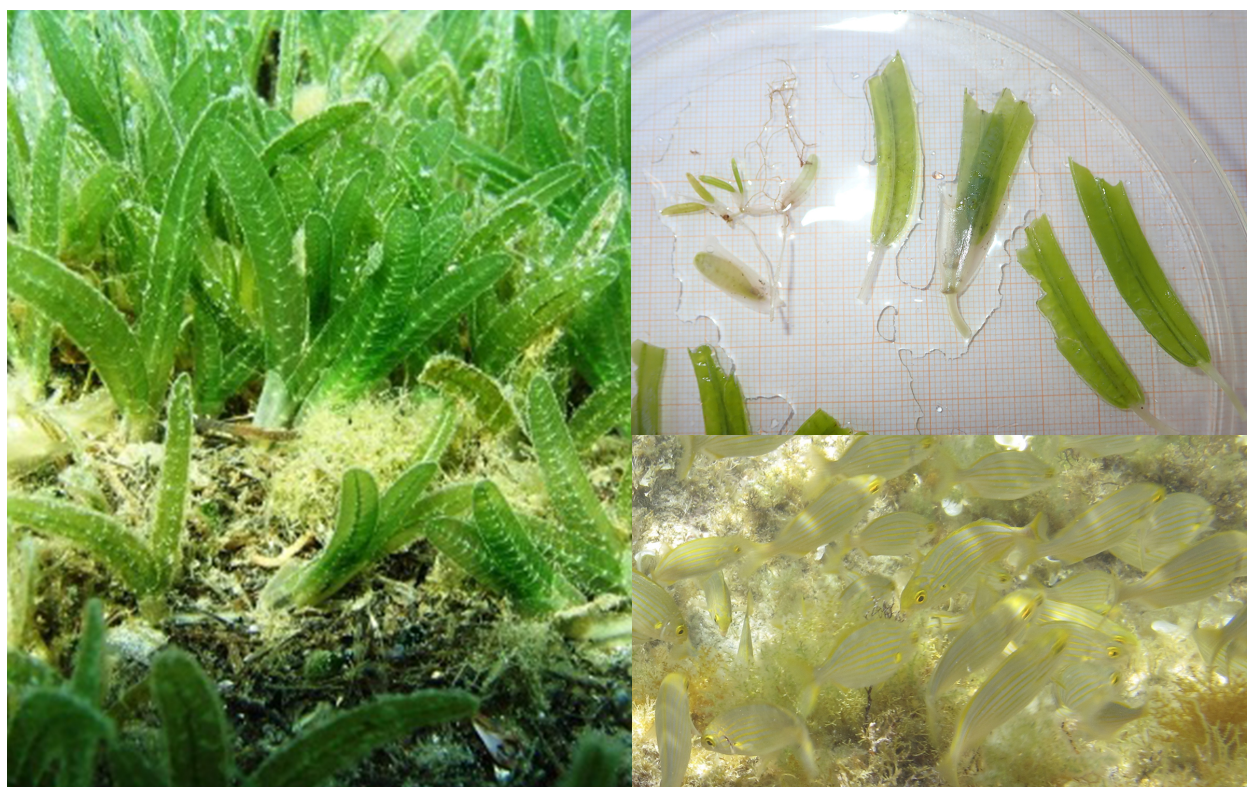
Aegadian Islands Marine Protected Area: FAVIGNANA (Cala Graziosa)

The abandoned wastes that we find on the beach or lying on the seabed as well as being a form of direct pollution can act as vectors of non-native organisms, pathogens and invasive species.

Through the phenomenon of biofouling, many species of crustaceans, microorganisms or plants, finding solid substrates on which to take root, settle and are transported by currents spreading even in areas very far from their usual distribution range. In the long run, this can lead to significant alterations in the functioning of the ecosystems in which they spread.

May 2021

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31						



**New tenants in our sea: the alien seagrass *Halophila stipulacea*
Cilento National Park- Palinuro Harbor**

The introduction of alien species for accidental transport or human-driven voluntary introduction is the other side of the ongoing climatic emergency. Finding favorable environmental conditions some alien organisms can settle by competing with local native species. This is what has recently been documented in some areas of the Mediterranean basin, for some tropical seagrass (*Halophila spp.*) whose stable presence has now also been confirmed by interaction phenomena with native species and predation by local herbivorous fishes (*Sarpa salpa*). Where the introduced species does not find natural competitors, it can proliferate in an uncontrolled way giving rise to significant invasive phenomena, with consequent management problems and in some cases causing the disappearance of one or more native species.

June 2021

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Codium fragile and cuttlefish eggs

Circeo Man and Biosphere Reserve UNESCO: Latina littoral area (Central Tyrrhenian Sea)

Even apparently uninteresting species can sometimes provide us with useful clues on what happens underwater and on the mechanisms of interaction that involve organisms that are also very different from each other. This is the case of this *Codium fragile* thallus, washed up after an autumn storm. Thanks to its three-dimensional structure, seems to have adapted well to play the ecological role of habitat former, becoming a useful substrate for the deposition of cuttlefish eggs.

July 2021

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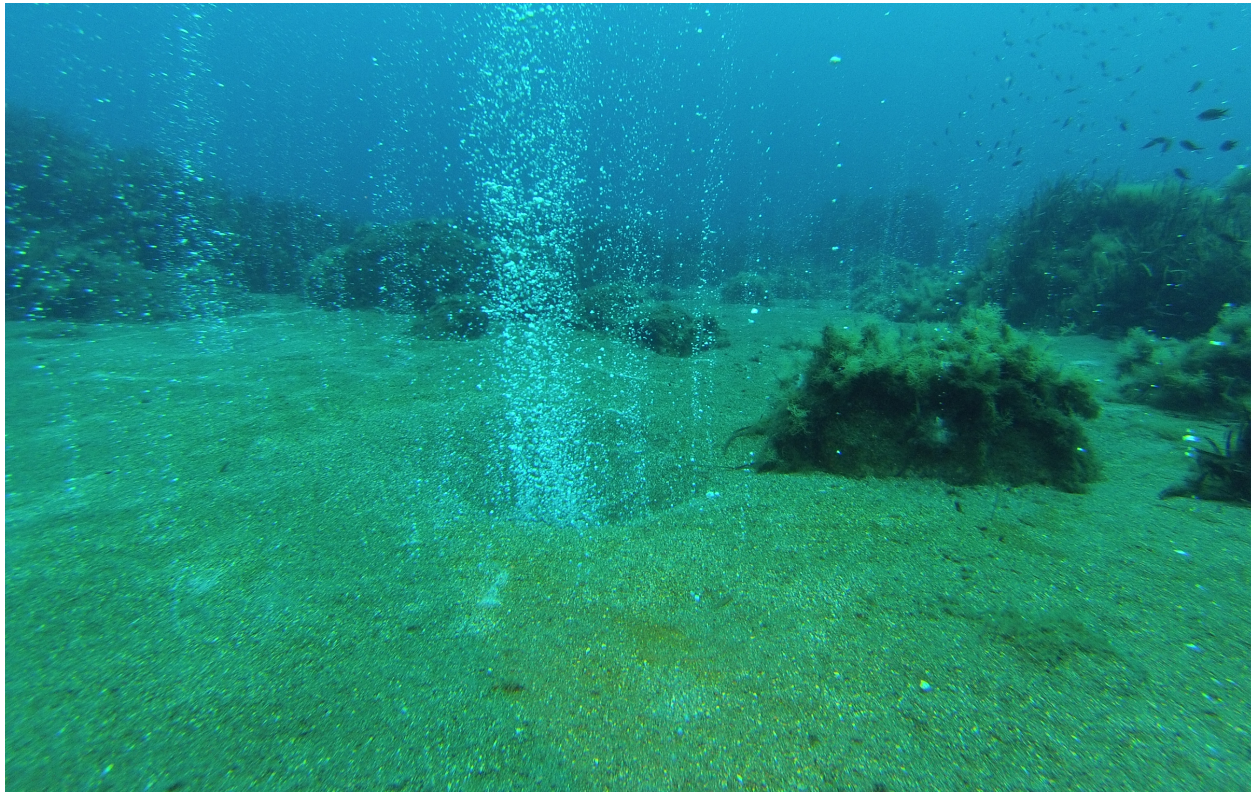


Corallium rubrum (Red coral)

“Capo Caccia-Isola Piana” Marine Protected Area (Sardinian West coast- Central Tyrrhenian Sea)
Corallium rubrum is a Mediterranean endemic species exploited since ancient times for commercial purposes. What remains of the largest colonies of red coral in the Mediterranean is now found at ever greater depths. Colonies have a very slow growth rate, which can vary on average between 0.25 and 0.66 mm in basal diameter over a period of one year. The species is currently protected by various international instruments and is included in the list of protected species of the SPA/BIO Protocol of the Barcellona Convention (annex III), in the Berna Convention (annex II) and in the annex V of the Habitat Directive (92/43/CEE).

August 2021

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<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>
<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>	<u>28</u>	<u>29</u>
<u>30</u>	<u>31</u>					



Natural CO₂ emissions in hydrothermal fields of volcanic origin.
Aeolian Islands- Panarea

There are many Mediterranean areas characterized by the presence of volcanic activity. The secondary effect of this geological phenomena can be identified in gas emissions coming out from the sea bottom. In some cases, these fluid emissions consist mainly of CO₂ and have the same temperature as the surrounding waters. The study of organisms adapted to live in these systems called vents can help to understand in advance what the seas of the future will be and help us to predict possible future scenarios of climate change in natural conditions.

September 2021

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27	28	29	30			



Sampling activities and environmental restoration initiatives
Conero coast (Central Adriatic Sea- Italian coast)
Aeolian Islands-Panarea hydrothermal field (on the left)

The loss of biodiversity is inextricably linked to the loss of habitats and the associated ecological functions. For this reason, in recent times many research activities have been developed in the field of environmental restoration. Numerous habitat restoration projects are also ongoing in the Mediterranean, their aim is the recovery of damaged and declining habitats and the repopulation of declining key species are also ongoing in the Mediterranean. This kind of interventions, however, presuppose the carrying out of in-depth studies upstream, to know the conditions of origin of the investigated sites and to better evaluate the current conditions, correctly identifying the causes of the decline, natural or connected to anthropogenic activities. It is good to evaluate these aspects in order to avoid causing further damage, in an attempt to restore the sites in which action is taken to a qualitatively better ecological state.

October 2021

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Dissemination activities carried out as part of the self-financed project “MBioKids”.

The UN Decade of Ocean Sciences was inaugurated on 22 October 2020 with the event “Towards the Ocean Generation”. The initiative focused on safeguarding the marine life, as cited in the SDG 14 “Life below water” was promoted by UNESCO and other associations operating in the field of environmental disclosure. Among the central themes of the meeting, climate change, human health and food safety. If those who get off to a good start is half the battle, it is important to transmit this knowledge, starting with the little ones.

November 2021

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The equilibrium and the health status of the ocean are strictly connected to its complexity. Each species, from the smallest to the largest to the most colorful, has its own ecological role and contributes to the marine ecosystems balance. To date less than 10% of the blue portion of our Planet has been mapped and properly explored. We still know too little about the marine world: each of us can do his part to protect it and contribute to unveil the secrets it still hides.

December 2021

Lunes	Martes	Miércoles	Jueves	Viernes	Sábado	Domingo
		1	2	3	4	<u>5</u>
6	7	8	9	10	11	<u>12</u>
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20	21	22	23	24	25	<u>26</u>
27	28	29	30	31		



**WISHES FOR A GOOD 2021 LOOKING FOR A DECADE DEDICATED TO THE
PROTECTION OF THE BLUE PORTION OF OUR PLANET**

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