Riunioni scientifiche dei Gruppi di Lavoro

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Mini lavori della Riunione scientifica del Gruppo di Lavoro per l'Algologia

(a cura R. Pistocchi)

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In copertina: aggregati di cellule di *Ostreopsis* cf. *ovata* (Dinophyceae) isolate nel Golfo di Trieste, con abbondante mucillagine formata da filamenti di tricocisti e polisaccaridi extracellulari (Golfo di Trieste)
foto di Giorgio Honsell

On the cover: aggregates of *Ostreopsis* cf. *ovata* (Dinophyceae) cells, isolated in the Gulf of Trieste, showing abundant mucilage composed of trichocyst filaments and extracellular polysaccharides (Gulf of Trieste)
photo by Giorgio Honsell

Citizens and scientists work together to monitor marine alien macrophytes

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The introduction of non-indigenous species (NIS) is an ongoing phenomenon which has been pointed out as a major threat to biodiversity at different levels (Wallentinus, Nyberg 2007, Katsanevakis et al. 2014, Vergés et al. 2016). NIS may in time become invasive (Invasive Alien Species "IAS") and may cause biodiversity loss and ecosystem service changes (Brunel et al. 2013, Giakoumi 2014, Vergés et al. 2016). The Mediterranean Sea is an important hotspot for marine NIS (ca. 1,000 such species recorded to date, Zenetos et al. 2012, Galil et al. 2015, Verlaque et al. 2015). To reduce the risk of future IAS introduction and to better understand their invasive potential and spread dynamics, monitoring and surveillance plans are required. The creation of permanent alarm systems and public awareness campaigns are crucial for reducing the risk of IAS introduction. Since intensive monitoring programs could be very expensive, citizen science, involving citizens (e.g. tourists, fishermen, divers) in the collection of data, could be a useful tool for providing data on IAS, that would otherwise be impossible to collect because of limitations on time and resources. Citizen science is having an increasing success worldwide. Citizen science projects has rapidly and enormously increased in recent years (Conrad, Hilchey 2011), also thanks to the wide availability of mobile technologies and internet access that enable an easy and cheap way to communicate, share and interchange data. The value of citizen science has been widely recognized. Of course, in order to be used for scientific purposes and management decisions, the collected data need appropriate quality assurance measures such as validation and verification by taxonomic experts. We report on the experience of two citizen science projects: the Project "*Caulerpa cylindracea* – Egadi Islands" and the Project "Invasive Algae", included within the "Seawatchers" platform. The first one, sponsored by the STEBICEF Department of the University of Palermo and by the Egadi Islands Marine Protected Area (MPA), aimed at creating a database on the spread dynamics of *Caulerpa cylindracea* Sonder within the Egadi Islands MPA (western coast of Sicily, Tyrrhenian Sea). Among IAS, *C. cylindracea*, introduced from Australia and New Caledonia (Belton et al. 2014), has raised serious concern due to its ascertained impact on Mediterranean communities (Klein, Verlaque 2008, Papini et al. 2013, Katsanevakis et al. 2014). The project, presented during the International Congress GeoSub2016 (Mannino et al. 2016), allowed to gather 156 sightings, mainly recorded by citizens (Fig. 1). Useful information on the behaviour strategies of the alga was also collected. The second one, coordinated by the Institute of Marine Sciences of Barcelona (CSIC, Spain), collects data on 10 marine IAS (*Acrothamnion preissii* (Sonder) E.M. Wollaston, *Asparagopsis armata* Harvey, *A. taxiformis* (Delile) Trevisan, *C. cylindracea*, *C. taxifolia* (M. Vahl) C. Agardh, *Codium fragile* subsp. *fragile* (Suringar) Hariot, *Halimeda incrassate* (J. Ellis) J.V. Lamouroux, *Lophocladia lallemandii* (Montagne) F. Schmitz, *Stypopodium schimperi* (Kützing) Verlaque & Boudouresque, *Womersleyella setacea* (Hollenberg) R.E.Norris). These projects highlight how important the contribution of citizen science campaigns is for collecting new data and information on marine NIS and to significantly improve the efficacy of monitoring and surveillance plans. Moreover, in areas particularly vulnerable to biological invasions, such as Sicily, they represent an opportunity to promote the creation of early-warning systems, and an effective tool in the management of present and future introductions of NIS within the Mediterranean Sea.

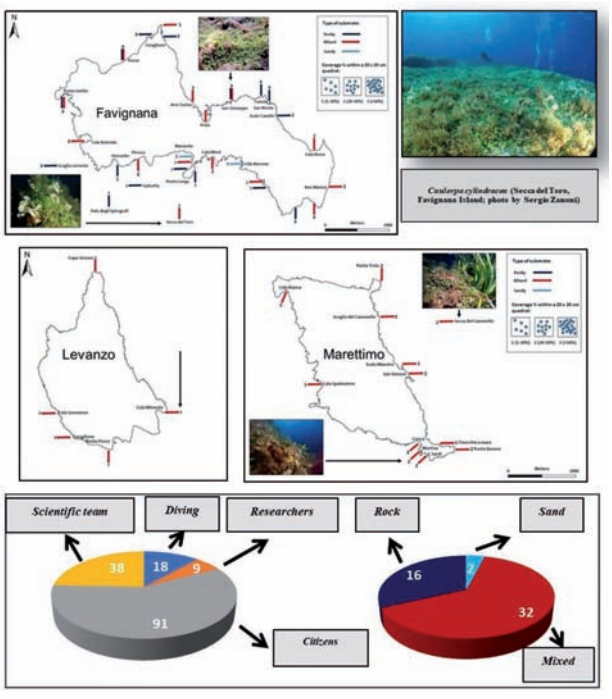

Fig. 1
Main results of the project "*Caulerpa cylindracea* – Egadi Islands": sightings recorded in the main islands, groups of volunteers involved in the project, substrates colonized by *Caulerpa cylindracea.*

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