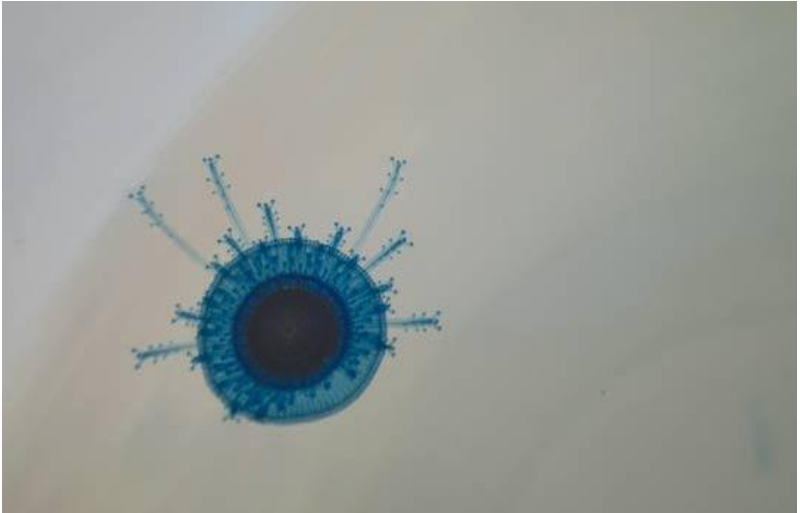


Unheralded stowaways



A blue button jellyfish found in Maltese waters.

Earlier this month, 18 Mediterranean countries - all signatories to the Barcelona Convention - agreed in Istanbul on the set of priority actions to be taken in order to address the ecological risks posed by the increasing volume of ballast water through enhanced maritime traffic.

Marine exotic (non-indigenous) species are introduced unintentionally - with ships, for example - or intentionally, for aquaculture purposes and re-stocking efforts.

In shipping, the prime factors for species transportation are ballast water and hull fouling of vessels. Furthermore, a considerable number of exotic species migrate through man-made canals.

Examples are the inner-European waterways, such as the Kiel Canal in Germany, connecting the Ponto-Caspian region and the Baltic Sea and the Suez Canal, which connects the Mediterranean to the Red Sea and beyond.

Ballast (formerly solid, but for the past 135 years liquid) is usually taken into dedicated ballast tanks or into empty cargo holds when offloading cargo, and discharged when loading cargo or bunkering (refuelling).

Ballast water therefore consists mostly of port or near-port waters. Water and sediment carried in ballast tanks, even after voyages several weeks long, have been found to contain many viable organisms.

Since the volume of ballast water accounts for as much as a third of the vessel's deadweight tonnage, it engenders considerable anxiety as a vector of introduction.

In fact, according to the International Maritime Organisation (IMO), vessels transport approximately 10 billion tons of ballast water globally per year.

More than 1,000 non-indigenous aquatic species, ranging from unicellular algae to vertebrates, have been found in European coastal waters, including navigational inland waterways for ocean-going vessels and adjacent water bodies.

Approximately half of all non-indigenous species recorded to date have established self-sustaining populations and these introductions are of high concern, as many cases have caused major economical or ecological problems.

Crabs appear to be most congenial for larval introduction through ballast water (especially since crab larvae are known to survive for at least a few months).

Examples abound, such as the American blue crab, *Callinectes sapidus*, native to the Atlantic coast from Nova Scotia to Uruguay and first recorded in the Mediterranean in the 1940s. The Indo-West Pacific portunid crab *Charybdis hellerii* was first sighted in the Mediterranean in 1920s and has since been reported along the Levantine coast from Egypt to Cyprus. In 1987

C. hellerii was collected in Cuba and in rapid succession in Venezuela, Colombia, Florida, and Brazil.

The most prodigious story of a ballast water migrant into the Mediterranean must certainly be that of the red king crab *Paralithodes camtschaticus*, a single individual of which was recorded in the southern tip of Italy in 2009, weighing four kilos and estimated to be 10 years old.

Such a species is normally typical of much colder waters and the distance to its native range in the Barents Sea is a staggering 7,000 km.

A veritable web

This column has, in recent months, been shifting the spotlight onto instances of unsustainability in our islands, within the ambit of our country pledging to embark on drafting a national environmental strategy.

One such instance concerns the ever-burgeoning road network on our islands, the expansion of which shows no signs of placating. In fact, the process to formulate the terms of reference for the expansion of the Coast Road in Baħar iċ-Ċaġħaq has kickstarted.

Little do we realise the extensive amount of land sacrificed to our road network. A simple statistic from Eurostat will help frame the issue in its proper perspective. The length in kilometres of national roads per square kilometre of land surface area is 617, compared with a starkly lower average corresponding figure for the 27 EU member states - just 91km of national roads.

Sea urchin harvesting

Of the 23 sea urchin species to ply our waters, undoubtedly the most familiar species is the rock sea urchin (*Paracentrotus lividus*), or rizza in Maltese. Contrary to widespread perception, some form of protection regime does apply to the species.

It is listed in Schedule VIII (Animal and plant species of national interest whose taking in the wild and exploitation may be subject to management measures) of the Flora, Fauna and Natural Habitats Protection Regulations, 2006, in Appendix III of the Bern Convention, and in Annex III of the Protocol for Specially Protected Areas and Biodiversity in the Mediterranean.

Such listing does not seem to spare the sea urchin species from the scourge of continuous and unregulated harvesting by individuals who literally scour every nook and cranny of rocky bottoms to bring up whole sacks of the coveted species, with apparent impunity.

Sites renowned for such harvesting include St Thomas Bay and Żurrieq - this exploitation reveals yet again the glaring lack of enforcement concerning our coastal and marine living resources.

EMAS renews itself

The EU Eco-Management and Audit Scheme (EMAS) is a management tool for companies and other organisations to evaluate, report and improve their environmental performance. The scheme has been available for participation by companies since 1995 and was originally restricted to companies in industrial sectors.

Since 2001, EMAS has been open to all economic sectors including public and private services. In 2009 the EMAS Regulation was revised and modified for the second time and last January 11, EMAS III came into force.

EMAS III aims to improve the application of the scheme and strengthen EMAS's visibility and outreach. For instance, EMAS is strengthened by the introduction of environmental core indicators through which environmental performance can be thoroughly documented.

The possibility to use a single corporate registration eases administrative and financial burdens on organisations with sites in more than one country. Furthermore, a single EMAS logo will help communicate EMAS in one coherent and distinctive way.

To apply to use the EMAS logo, an organisation must adopt an environmental policy; conduct an environmental review considering all environmental aspects of the organisation's activities, products and services; establish an effective environmental management system aimed at achieving the organisation's environmental policy defined by the top management; carry out an environmental audit; and provide a statement of its environmental performance which must then be approved by an accredited EMAS verifier. The validated statement needs to be sent to the EMAS competent body for registration and made publicly available.

A quick flit through European-wide EMAS statistics indicates that, in Malta, voluntary adhesion to the EMAS scheme is still spluttering, with just two sites and one organisation being registered within the scheme. Malta is ahead of just Latvia and Bulgaria.

Germany, Austria and Italy are the leaders in the list, having 1,408, 1,227 and 1,035 registered organisations respectively. Currently, more than 4,400 organisations and approximately 7,600 sites are EMAS-registered throughout Europe.