Environment

Marine knowledge now just a mouse click away

Alan Deidun

Besides maritime spatial planning and integrated maritime surveillance, the EU Commission considers marine knowledge as one of the three essential cogs for 'blue growth'. The importance that the Commission attaches to marine knowledge has crystallised in initiatives such as Emodnet, which holds a vast repository of scientific data on Europe's seas that may be consulted by maritime practitioners.

Besides such formal forms of marine knowledge dissemination, other informal channels of communicating scientific information about European seas to potential users exists. One of these – Massive Open Online Course (MOOC) will be launched on April 25. It is a joint initiative between the International Ocean Institute (IOI), Geomar, Kiel Marine Science Centre for Inter-Disciplinary Marine Science and SDSN-EDU. The latter organisation is a flagship initiative of the UN, affiliated to over 250 universities worldwide, which provides high-quality, mass online education to promote sustainable development.

"The online lessons will undoubtedly be an unparalleled asset to marine and maritime practitioners and educators"

MOOC will incorporate 10 different topics that will be tackled in 19 lectures. The marine-oriented topics are the ocean – our future; ocean circulation and physics; drivers of life in the ocean; ocean ecosystems; the deep sea; ocean governance; ocean wealth and sustainability; coastal change; human-ocean interactions; and ocean solutions.

The overarching goal of this groundbreaking MOOC initiative is to champion the UN Sustainability Development Goal (SDG) 14, which pledges to 'conserve and sustainably use the oceans, seas and marine resources'. On September 25, 2015, the UN General Assembly endorsed the 2030 Agenda for Sustainable Development, which will be implemented through the 17 SDGs, or global goals, which replaced the previous Millenium Development Goals (MDGs), which had been formulated under the auspices of Agenda 2000.

In distilling knowledge about such complex and elaborate marine-oriented topics into a language accessible to all, MOOC is also embracing the following seven ocean literacy principles: (1) The Earth has one big ocean with many features; (2) The ocean and life in the ocean shape the features of the Earth; (3) The ocean is a major influence on weather and climate; (4) The ocean made Earth habitable; (5) The ocean supports a great diversity of life and ecosystems; (6) The oceans and humans are inextricably interconnected; and (7) The ocean is largely unexplored.

The online lessons, which will undoubtedly be an unparalleled asset to marine and maritime practitioners and educators, will be available next week from www.oceanmooc.org/en/index.php.

An upsurge in immigrants

Migration from Asia and Africa across the seas to Europe has been hogging the headlines for the past few decades. And the odds are that the phenomenon will increase to new heights this summer.

A parallel but perhaps less noticed form of migration, which also makes use of the marine highway, is that of non-indigenous marine species, also known as 'alien' or 'exotic' species.

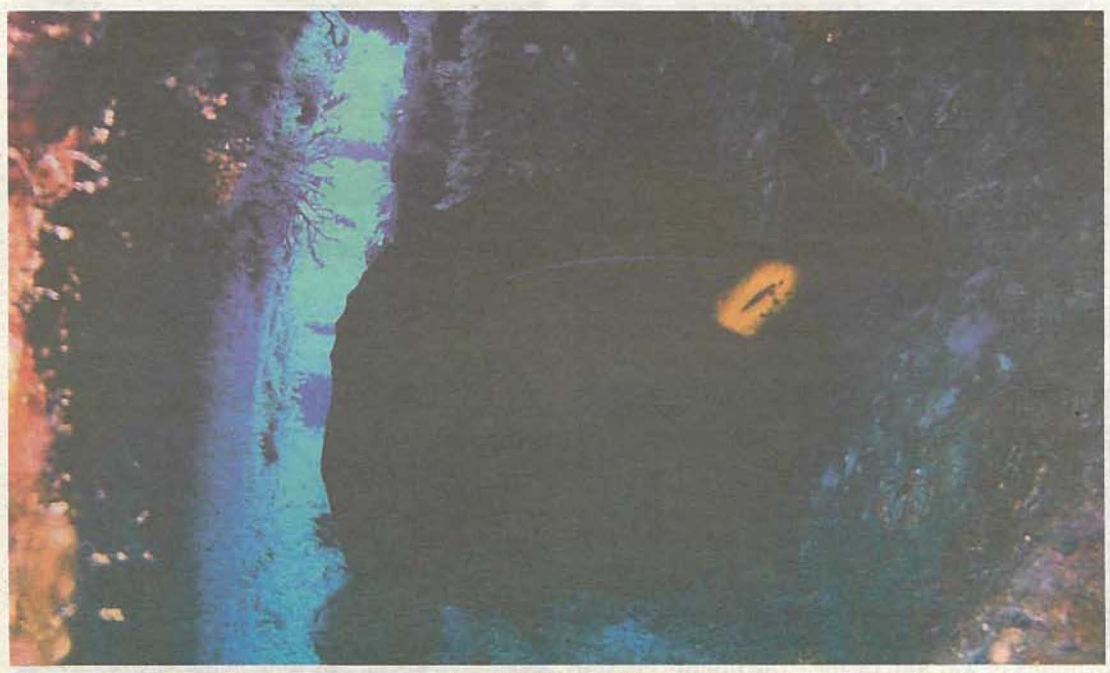
The combination of a range of factors has resulted in an unrelentling influx of marine alien species. These include an intensification of shipping traffic, which involves increased transfer of ballast water and fouling on ship hulls, the widening of the Suez Canal, the warming of the Mediterranean Sea and an upsurge in man-made structures such as oil platforms, offshore wind turbines, artificial coastlines and aquaculture facilities.

Due to Malta's location close to the boundary between the western and eastern halves of the Mediterranean basin, the islands' waters are increasingly hosting both eastern Atlantic species that have extended their range to the Mediterranean through the Straits of Gibraltar as well as species native to the Red Sea or the Indo-Pacific region, which come via the Suez Canal.

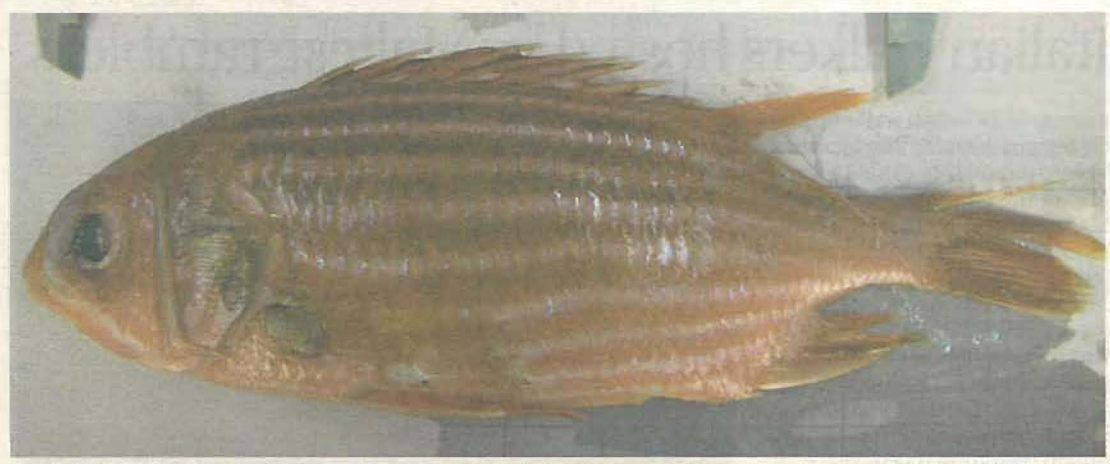
To give an indication of the scale of the influx, since the start of this year alone, at least four new alien fish species have been reported for the first time in Maltese waters through publications in scientific literature. The species in question are the Arabian angelfish (*Pomacanthus asfur*), a member of the squirrel fish family (*Sargocentron sp.*), the Monrovian surgeonfish (*Acanthurus monroviae*) and the African Sergeant (*Abudefduf hoefleri*).

The Arabian angelfish, which is native of the western Indian Ocean, is popular in the aquarium trade, so the found in local waters may possibly have been released into the wild from captivity.

The Arabian angelfish, a native of the Indian Ocean, which was first recorded in local waters last January. ***Photo: Clint Bonnici***



The Monrovian surgeonfish, a native of the eastern Atlantic, first recorded in local waters last month. ***Photo: Alexander Valenzia***



A squirrelfish family representative, possibly a red coat, first recorded in local waters last January. ***Photo: Alan Deidun***

The only squirrel fish representative in the Mediterranean – the red coat – is restricted to the eastern half of the basin, and is frequently caught in places like Lebanon.

Meanwhile, the Monrovian surgeonfish and the African sergeant are native of the eastern Atlantic. The former had been previously recorded in local waters, but it had never been published or substantiated by photographs or specimens.

In an updated review of marine alien species published by the University of Malta's Department of Biology last year, which therefore did not include the abovementioned new arrivals, 66 species were listed as 'alien' and a further seven were considered to have expanded their natural range through the Straits of Gibraltar.

www.alandeidun.eu
alan.deidun@gmail.com