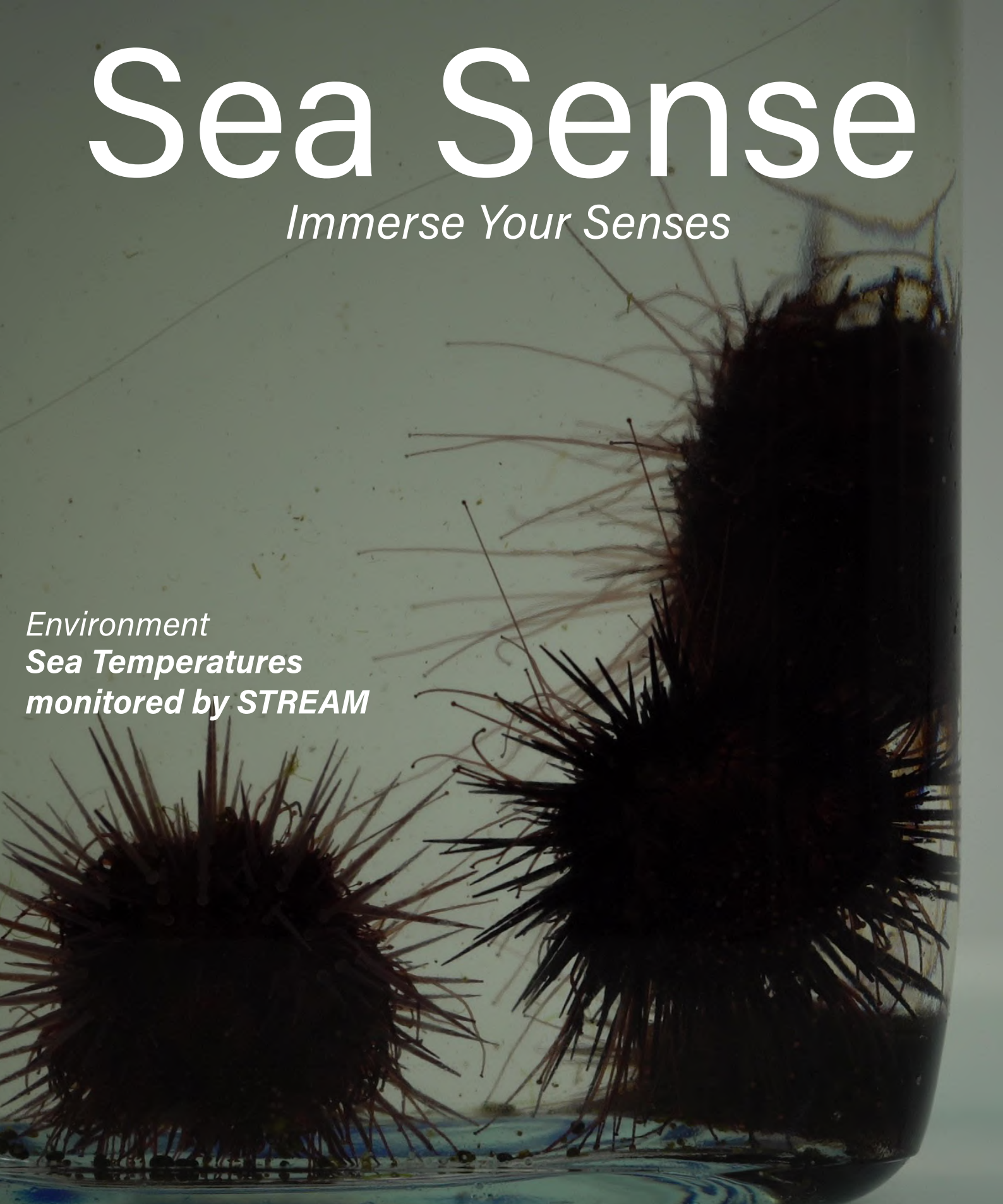
Sea Sense

Immerse Your Senses



Environment
Sea Temperatures monitored by STREAM

Up Close and Personal
Save Our Shores

Talking Sustainability
Sea Urchins - Reversing The Trend

ISSUE 4
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Editorial - Welcome to Sea Sense

Welcome
to another issue of Sea Sense, the e-magazine published by NGO Baħar Wieħed.

Now that we are mid way through the month of September , with Autumn quickly approaching we can look back at the summer of 2026 with a sigh of relief. August brought with numerous days of extreme heat not only in Malta but all over Europe. August was characterised with many consecutive days with record or near record high air temperatures. These extreme conditions have also affected the sea temperatures. Were these temperatures normal for this time of the year ? How is sea surface temperature measured ? What are Marine Heat Waves ? Prof Aldo Drago from the Malta College of Arts Science and Technology will go through the data of the sea surface recorded over the month of August in Malta

Over the years we have seen a rapid take over of the shoreline for various commercial and non-commercial activities which have been allowed to mushroom all over the island. This over exploitation and commercialisation is robbing the common law abiding citizens from their right of access and enjoyment of the sea and the shoreline. What was once considered a sanctuary for peace and tranquillity is being over exploited and rapidly degraded. Swim zones getting smaller and smaller to allow boats to approach the coast as much as possible , commercial activities like boat and jet ski rentals further taking over the little space left for bathers , overcrowded beaches covered with deckchairs and umbrellas, take away vans with an ever increasing number of tables sprouting all over the coastline , caravans permanently parked by the shoreline for months and years. Not only, but most venture to construct a patio and bbq area. The list goes on and people are saying enough. The Friends of the Earth Malta have launched a petition to the affect. We hope you will sign as well
NGO Bahar Wiehed strongly supports this project and we look forward to collaborate with Friends of the Earth Malta in this endeavour.
The petition can be signed on the web site www.saveourshores.eu

In this issue we are also following up on the previous article related to the “rizzi” and why these brainless creatures are important to the eco system. Yes even brainless creatures have an important role in our eco system! Dr. Adrian Love from the Malta Aquatic Resources Malta will guide us through the project currently being undertaken to help increase the population of Rizzi around the Maltese island.
As always we would like to express our gratitude to all contributors for their time and effort to help protect our marine environment.

Prosit

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Sea Urchins - Reversing the Trend

Dr. Adrian Love, Aquaculture Research and Development , Aquatic Resources Malta

Sea urchins are a bit of an enigma; they have no heart, no brain, no limbs, yet are a remarkable biological success, having been around for hundreds of millions of years before the dinosaurs and colonised every part of our planet's oceans. Yet now, this true survivor is facing one of its greatest challenges, and a project in Malta is giving a helping hand.



An Adult Specimen Paracentrotus lividus, more commonly known as the purple or stony sea urchin, or ir-rizzi
Photo Courtesy : Edward Vella

Sea urchins are part of a group called Echinodermata – literally the spiny skinned ones. The group includes starfish, brittlestars and sea cucumbers. The whole group has about 10,500 species, 900 or so of which are sea urchins or their close relatives, sand dollars. The group are only found in salt water because they have very poor capacity to regulate their internal concentration and freshwater would dilute them too much.

Incredibly, they probably date even before the existence of rivers by about 50 million years so were very established before freshwater ecosystems really existed. In contrast, within the seas they are found in every habitat – from the deep sea (sea urchins have been found at 7340 meters) to the shore, from the Poles to the tropics.

The largest species of sea urchin is the red sea urchin (Mesocentrotus franciscanus), found in the north-eastern Pacific Ocean with a diameter of up to 26cm which is also one of the longest lived – some are estimated to exceed 200 years old and, biologically, don't appear to age. The world's smallest species of sea urchin is Echinocyamus scaber, which is native to Australia - it has a test (shell) diameter of only 5.5 mm.

Probably one of the most familiar in the Mediterranean (though it can be found right up to Northern Europe) is Paracentrotus lividus, more commonly known as the purple

or stony sea urchin, or ir-rizzi. This species reaches a size of around 7cm and favours rocky shores, particularly where there are nooks for it to crawl into. The purple sea urchin is extremely important to the marine ecosystem. It can be called an 'ecosystem engineer' because, through the action of grazing on algae, it can determine the amount of vegetation in a habitat, which has repercussions for all other species that may colonise the environment. It also is an important food source – both at the adult stage which may be eaten by several fish species, and particularly the larval stage where, as plankton, they feed the ocean. And of course, they aren't just a delicacy for marine animals; for thousands of years they have been an important fishery – the Romans, for instance, were partial to pigs udders stuffed with salted urchins. However, this popularity has led to the downfall of populations.

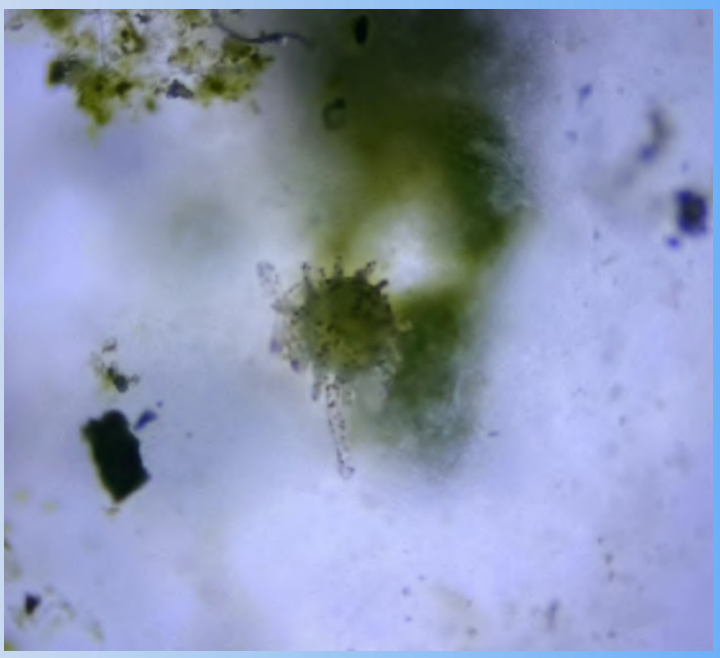


Photo : Planktonic Larvae Photo Courtesy : Aquatic Resources Malta)

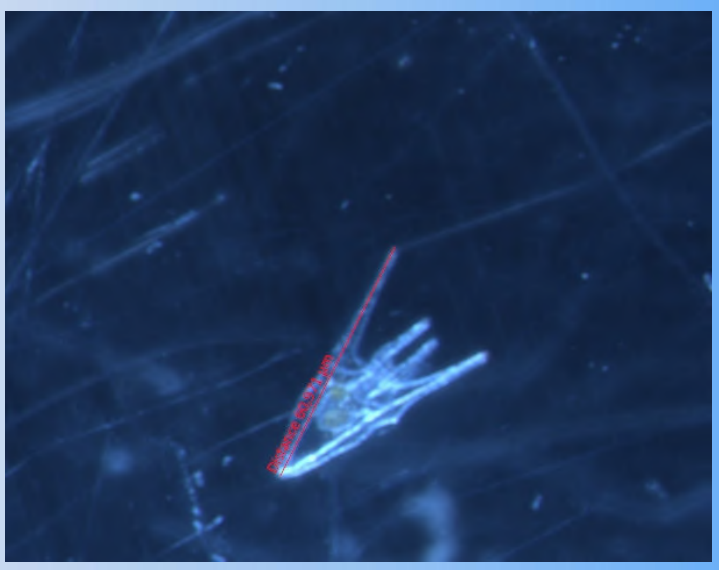


Photo- Juvenile settling at the bottom Photo Courtesy Aquatic Resources Malta)

The Human Factor

The demand for sea urchins for human consumption has increased dramatically.
In 2013 the Mediterranean fishery provided 66 tonnes of P. lividus. Within 6 years it had increased to 387 tonnes, a six fold increase.
Unsurprisingly, the fishery collapsed.
With each weighing a few grams, can you imagine the sheer amount of sea urchins required to generate 387 tonnes
Populations have suffered from climate change; the optimum temperature of the purple urchin is less than 22 deg C. While they can tolerate higher temperatures, the longer they are at these temperatures the more they are stressed, which has implications for their growth, reproduction, and survival. Probably linked to this is the incidence of a fatal bacterial infection called bald-sea-urchin disease, which has also increased in the last few years. Combined, these pressures have been catastrophic for P. lividus populations. In the 1990s studies indicated they averaged approximately 6 sea urchins per square meter; the most recent surveys around Malta have recorded a national average of 0.004 individuals per square meter.

"In 2013 the Mediterranean fishery provided 66 tonnes of P. lividus, within 6 years it had increased to 387 tonnes. Unsurprisingly, the fishery collapsed. "

The Project

To halt the decline, in 2023 Malta legislated a 2-year moratorium which made it illegal to collect rizzi in Malta. Based on the results of subsequent surveys, this was repeated last year, until 2027. This pause in fishing pressure will hopefully allow populations to recover by letting enough adults to sexually mature, spawn and repopulate depleted areas.
But to give them a helping hand, Aquatic Resources Malta - the national agency for conducting research into the nation's aquatic habitats and species – has been working on an exciting captive breeding project.



Photos: A group of 'rizzi' underwater

"In the 1990s studies indicated they averaged approximately 6 sea urchins per square meter; the most recent surveys around Malta have recorded a national average of 0.004 individuals per square meter."

Aquatic Resources Malta is working with the University of Corsica, who have a long history in repopulating sea urchins on their own shores, to boost rizzi populations around Malta's coast. In March this year, Aquatic Resources Malta collected 50 urchins from around Malta and spawned them at their facilities in Tori San Lucjan, Marsaxlokk. The fertilized embryos were then flown to a marine laboratory in Corsica to be grown under in specialised facilities, while the adults are maintained in optimal conditions in Malta to be spawned again. After hatching, sea urchin embryos enter a planktonic stage, floating around in the ocean looking like a microscopic Eifel tower.

"It will take 5-7 years before they become an adult."

After a month and several moults, they eventually settle on the bottom as very miniature (around 1mm diameter) but fully formed urchins. From that point, if given perfect conditions and abundant food, they may reach 10-15mm diameter within their first year, and grow only 10mm per year after that. It will take 5-7 years before they become an adult. So, in March 2027, approximately 50,000 tiny sea urchins will be packed into specialised boxes and transported back to Malta. Before they arrive, ARM will conduct surveys and gain the permission of the Environmental Resources Agency to select the best sites for the release of the rizzi. Immediately following their release, and at regular intervals for a year, the population will be checked to measure their survival, growth and dispersal.



An Adult Specimen Paracentrotus lividus, more commonly known as the purple or stony sea urchin, or ir-rizzi

Through the results of this project, we will understand the potential of captive breeding and repopulating the Maltese rizzi populations. If all goes well, the concept can be repeated in subsequent years throughout Malta. While this will hopefully boost the native populations, it will only be worthwhile and sustainable if matched with long-term protection, such as no-take zones, a restricted fishing season, or a limited catch size (both in number and size of rizzi), all of which will need surveillance and enforcement. But there are reasons to be positive: the latest surveys have identified significant increases in the urchin populations in some areas and recent headlines have reported the capture and prosecution of illegal collectors. With the vigilance and cooperation of the public, and continued conservation efforts, there is every reason to expect a positive future for the rizzi.

**Aquatic Resources Malta is open every Tuesday and Thursday between 10-11am to provide tours of the facilities. Visits must be pre-booked via https://www.servizz.gov.mt/en/services/web-04328*

SOS - Save Our Shores ...and Seas

Dr Suzanne Maas – Climate Coordinator, Friends of the Earth Malta

On the 12 June 2026 Friends of the Earth Malta (FoEM) launched its Save Our Shores campagn with an exhibition and petition in Triton Square, Valletta. Save Our Shores (SoS) is an FoEM-led campaign that calls for the protection of public access to Malta's coast and sea, the protection of people from pollution and the protection of natural ecosystems. The campaign also highlights the social and environmental impacts of Malta's growing tourism , over commercialisation, marinas and cruise liner industries on coastal communities and marine ecosystems.
The petition can be signed on the web site www.saveourshores.eu



Photo: Darrin Zammit Lupi

The exhibition was officially launched through a press conference led by FoEM Climate Coordinator, Dr Suzanne Maas, together with representatives from partner organisations and community groups supporting the campaign. The conference featured speeches by Clean Air for the Grand Harbour, Manoel Island: Post Għalina, Wirt Għawdex, and the Marsaskala Residents Network, all of which have been directly affected by the increasing commercialisation of Malta's shores.

The Save Our Shores exhibition is the result of a year-long investigation and collaboration between FoEM, photographer Darrin Zammit Lupi, and journalist Julian Delia. The exhibition sheds light on the realities faced by coastal communities across Malta and Gozo. Over the past year, FoEM has met with resident groups and individuals from various coastal localities to better understand and document the social and environmental impacts they are experiencing firsthand

Rory Apap Brown, from Clean Air for the Grand Harbour, stated: "Almost daily, cruise liners dock in the Grand Harbour and keep their engines running for hours — floating power stations burning fuel metres from front doors in Floriana, Bormla, Valletta, and Senglea. And it's not just the exhaust. It's the noise — onboard parties echoing across the harbour and amplified music."

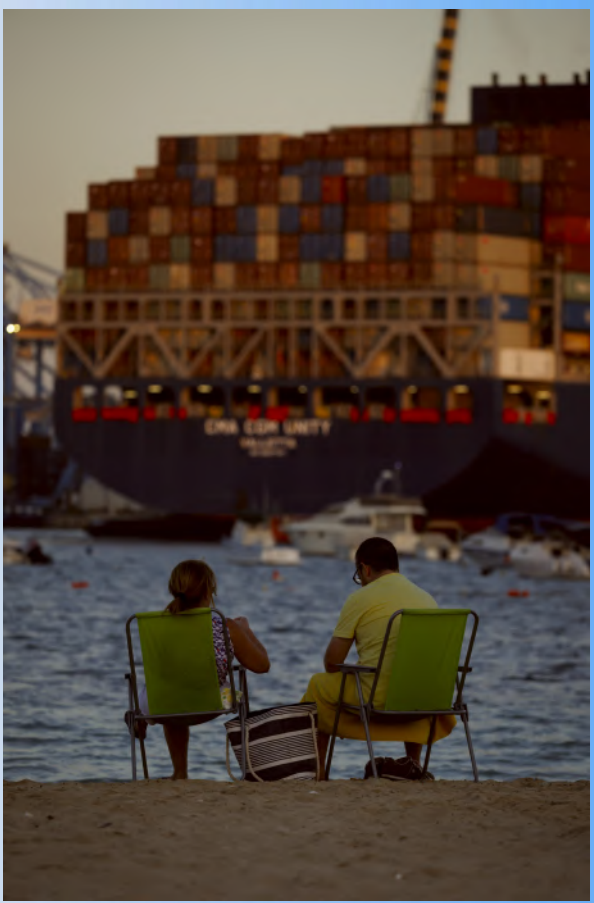


Photo: Darrin Zammit Lupi

Meanwhile, shore-to-ship power infrastructure remains underutilised, with only 1 in 10 ships connecting. Cruise liners are keeping their engines running while docked, emitting pollutants into nearby residential areas. As a result, respiratory illnesses in the region have increased.

Nevertheless, data from FoEM's sensor already shows that emissions exceed both World Health Organization guidelines and EU legal limits. He concluded with a plea: "The communities around this harbour deserve clean air and quiet nights." In his speech, Apap Brown continued that shore-to-ship power should be mandatory.

On the other hand, Marie Claire Gatt, from the Manoel Island: Post Għalina campaign, began on a positive note. "At the same time last year, the public witnessed how community perseverance and collective action can bring about meaningful change" referring to the campaign's major victory



The struggle, however, is not over, as concerns regarding potential illegalities remain. Gatt emphasised that Maltese shores have much to offer, even within urban environments, and that these spaces should be protected and preserved. "Democracy doesn't end with the electoral campaign, but is lived everyday, through community and action. By being active in the fights against over-commercialisation and privatisation. And by supporting the organisations, people and communities that are leading our fights. So that which is ours, remains ours." Gatt stated.

Josmar Azzopardi, from Għawdix, recalled how much Gozo has changed since his childhood, noting that anyone walking along the island's coastline today would witness the effects of commercialisation. His account begins with Xlendi, "and witnesses the problem of over-commercialisation, of the sea occupied by jetskis... of a bay that no longer exists."

Photo: Darrin Zammit Lupi

Azzopardi's journey then reaches Dwejra and the ongoing efforts to protect its Dark Sky heritage status, with the aim of safeguarding birds and the pristine environment from artificial light pollution. "Then you'd realise," Azzopardi said "that from Dwejra you can't continue walking along the shoreline due to closed off areas. The same can be said for Ta' Cenc Cliffs.

Bays that were once relatively untouched, such as Wied il-Għasri, are now occupied by illegal kiosks and four-wheelers driving across the garigue, damaging fragile ecosystems. Moreover, applications have been submitted to install kiosks permanently on natural terrain, further increasing pressure on Gozo's coastal and marine environment. Azzopardi continued:
"If we stop to think for a second, if we remove the capitalistic lens then maybe we can understand that what this campaign is asking for is very simple.... That everyone has access to clean air and coast , access not only to us humans, but that there is a balance with the ecosystem. These are honest and simple terms that our politicians should listen to and implement as soon as possible."

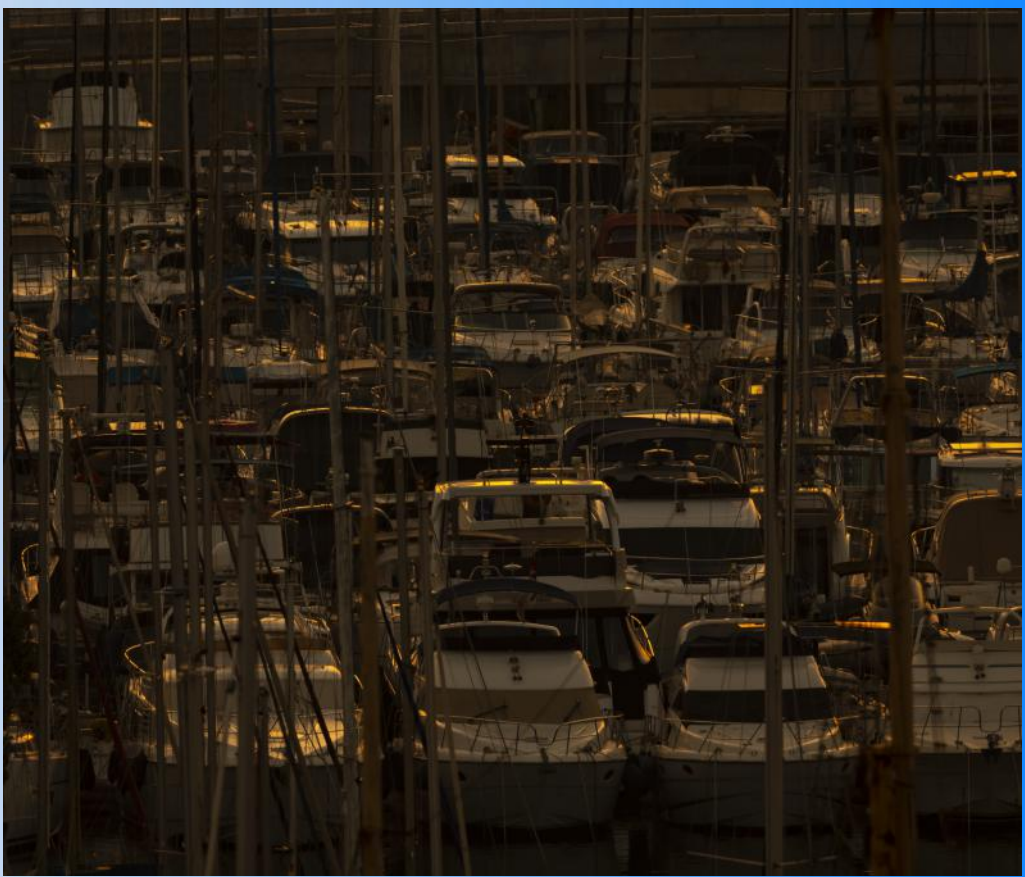


Photo: Darrin Zammit Lupi

Caroline Caruana from the Marsascala Residents Network empahsized the issues being faced by the residents of Marsascala.

"Public spaces are gradually being taken over by catering establishments. Access to our coastline is becoming more restricted. Areas that should remain open and accessible to the public are being occupied, fenced off, or made inaccessible under one excuse or another."

This reflects the reality experienced by many coastal communities across Malta and Gozo. "The result is always the same: less space for residents and more space for private interests." Residents are the ones paying the price for concessions granted to private businesses, often at the expense of their physical and mental wellbeing. Daily life is increasingly affected by noise, pollution, and congestion.



Photo: Darrin Zammit Lupi

As a small island nation, Malta has long depended on close-knit communities that supported one another. However, increasing privatisation and overtourism are eroding this sense of community. "Tourism can be beneficial. No one is denying that. But when tourism becomes the justification for losing a locality's identity, character, environment, and sense of community, then something has gone wrong." Caruana said.

Residents are being pushed out of their homes, yet there are increasingly fewer places left on the island where they can find peace and quiet. In some cases, long-term residents of coastal towns such as Bormla are being displaced from their rental homes to make way for tourist accommodation.

The demands of Save Our Shores are simple. Together, we are calling to save our shores for the common good, not for the wealthy few.

Sign the petition now at https://www.saveourshores.eu.

Sea Temperatures and Marine Heat Waves – monitored by STREAM

By Prof. Aldo Drago Inst. of Engineering & Transport Malta College of Arts, Science & Technology

Data on its own cannot be fully exploited until it is transformed into actionable information that is shaped and served to users to support and enhance their everyday engagements. Marine digital services are advanced tools and platforms that collect, process, analyse, and distribute information about the marine environment. By integrating data from satellites, oceanographic instruments, numerical models, and monitoring networks they create virtual representations of the marine environment

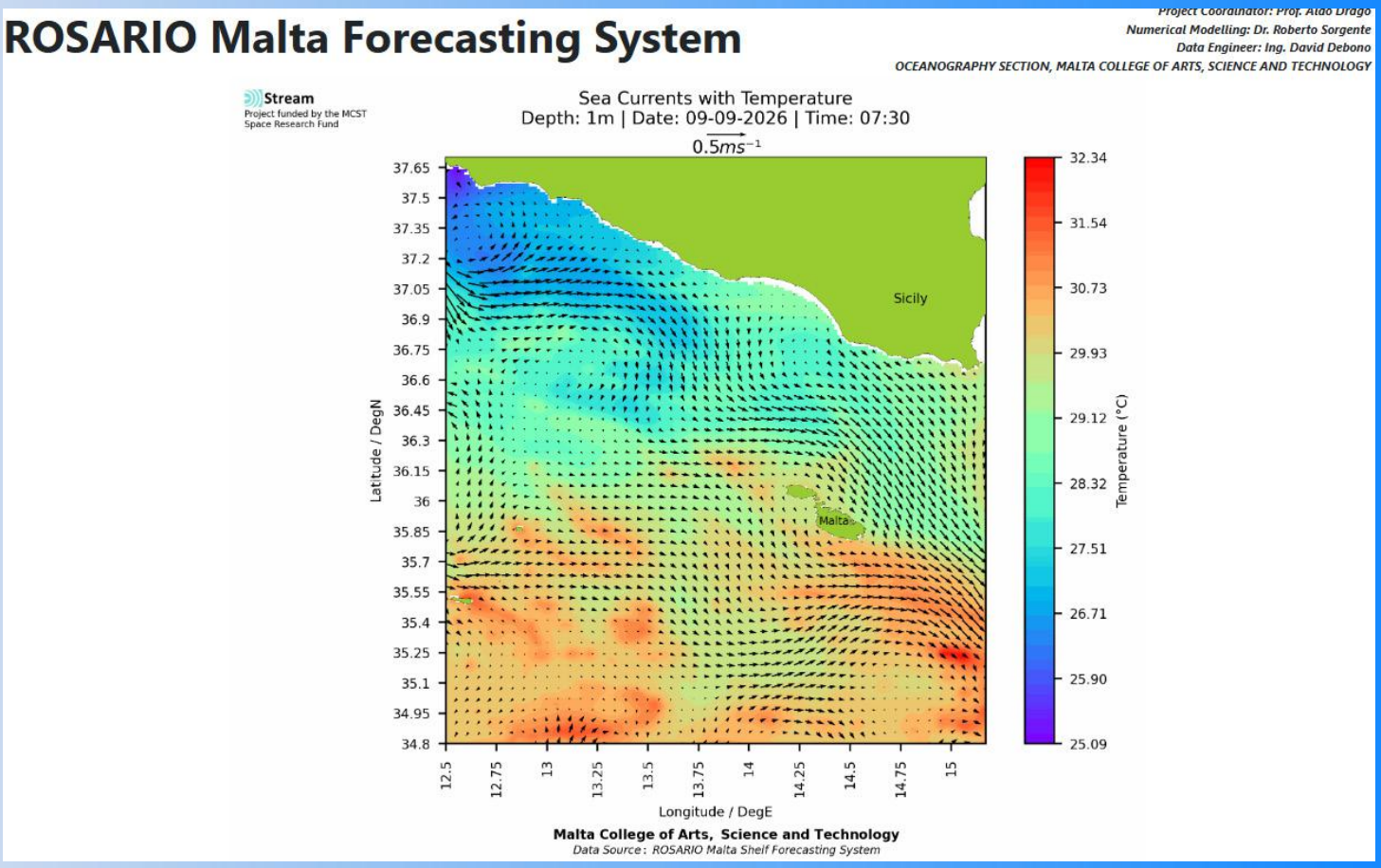


Photo: Sea currents and Sea Surface Temperature forecasts around the Maltese island - Source Rosario Forecasting system

Malta has a long-standing, though often underappreciated and unsupported, history of developing and using marine digital services. Over the past three decades, efforts to run operational forecasting systems and integrated digital platforms have evolved through the Physical Oceanography Unit (PO-Unit) at the Malta Council for S&T (now Xjenza Malta), subsequently within the University of Malta, and now through the Malta College of Arts, Science and Technology (MCAST).

The ROSARIO forecasting system currently running at MCAST (backend.stream-srf.com/rosarioms.html) providing routine forecasts of key marine physical parameters several days in advance.

Another platform, the STREAM platform (https://app.stream-srf.com/auth/welcome), uses Satellite data to provide daily maps of sea surface temperature at midnight and chlorophyll concentration at noon. Users can also explore the changing sea conditions in real time, zooming in on the areas and time periods that matter most to them. This platform was used to track the persisting record-breaking sea surface temperatures (SST) around the Maltese Islands in August this year

What are Marine Heat Waves?

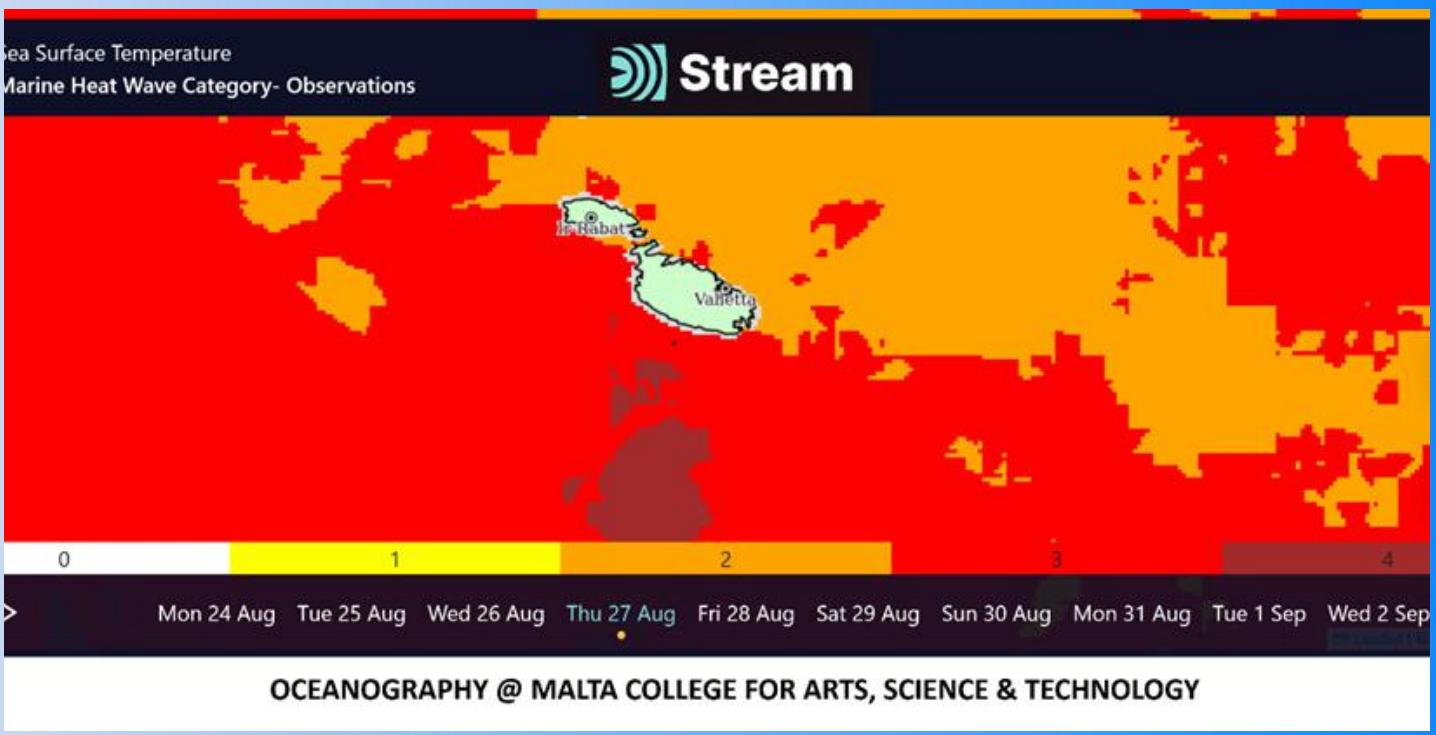


Figure 2: Snapshot of the marine heat wave intensity pattern on 27th August taken from the STREAM marine digital service by MCAST. White refers to areas with no heat waves. The colour shades refer to the heat wave intensity that is related to the size of the SST anomaly from the climatological mean: yellow = moderate; orange = strong; red = severe; brown = extreme.

A marine heatwave (MHW) is said to occur when sea surface temperature exceeds the climatological 90th percentile value for at least five consecutive days. The climatological 90 percentile value is an important value used in statistics. Its the value for which 90 percent of the sea temperature recorded over the years lie below while only 10 percent exceed this value. For Malta, the 90 percentile value for sea surface temperature for the month of August is around 28 deg C.
An intense marine heatwave ran practically uninterrupted through the month of August . with a Level 3 Marine Heatwave conditions occurring on eight days in total: 14th to 18th, 27th, 29th, and 30th, with exceptional intensity on the last days of the month.
Figure 2 shows a map of the heat wave categories around the Maltese islands on the 27th August. While Level 3 conditions were recorded along much of the Maltese coastline, Level 4 conditions hit the south of Malta. These conditions persisted until the end of the month.

The recorded SST data in a snap shot

The STREAM smart digital service provided the statistics for daily night-time SST averaged over a 2 km strip around the Maltese Islands. The SST at night exceeded 29°C on 87% of the days in August (27 days). During the day, the SST is even higher, at least 1°C warmer.
Until this year, averaged SST records measured by STREAM have never exceeded the 30°C mark in August. This year, the average SST went above the 30 deg C mark on eight days: 11th, 14th, 15th, 26th, and 27th to 30th August (refer to Figure 3). The highest daily average SST was recorded on 27th August at 30.35°C, with an absolute maximum of 30.86°C recorded in an area south of Gozo, the area shown in Figure 4.

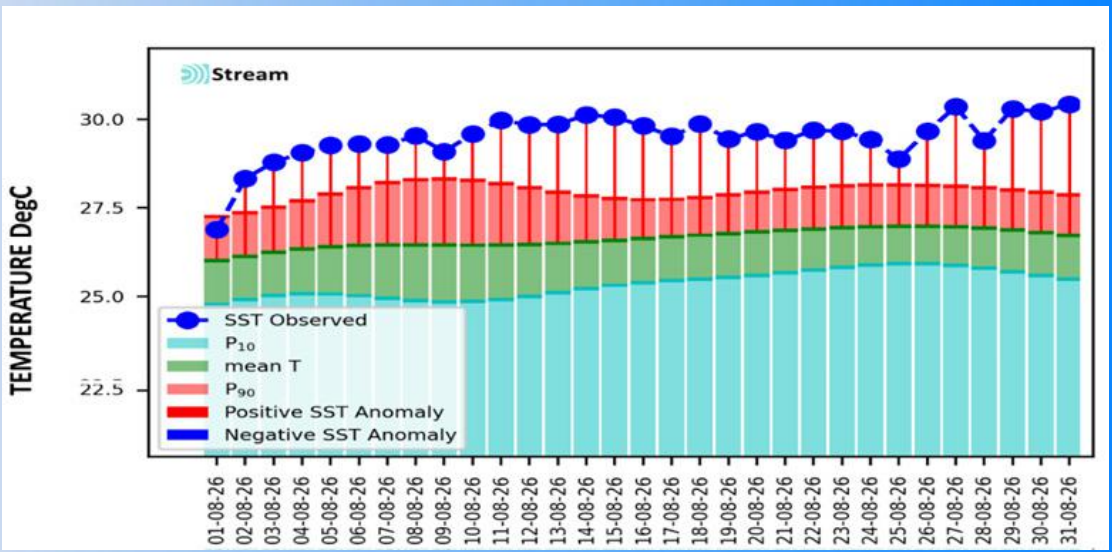


Figure 3: Daily averaged observations (in blue) of Sea Surface Temperature around the Maltese Islands in August 2026 showing the anomaly (vertical red lines) with respect to the average-of-day climatological values (green dotted curve).

The mean monthly Sea Surface Temperature for August 2026 was 29.51°C, which is 2.87°C above the climatological mean for this time of the year. This is well above the previous record of 28.75°C set in 2024, with had an anomaly of 2.11°C,.
It is normal for the sea to warm at this time of year. But the jump of 1.34°C in just one day, from 25th to 26th August, was phenomenal compared to the normal gradual increase of about 0.85°C expected over the whole month.

Because water has such a high heat capacity, the sea soaks up huge amounts of heat as it warms and gives it back very slowly. That's why it doesn't heat or cool quickly. To put it in perspective: heating a 12 km strip of sea around the Maltese Islands, just 1 meter deep, by 10°C takes about 30 billion kWh — the same electricity Malta uses in 10 years.

With many days of 30°C water like we had this August, that heat doesn't just sit on the surface. Wind and waves push it deeper, mixing it into the upper ocean. The sea becomes a massive reservoir, storing summer's heat like a battery on charge. This puts stress on fish farms and coastal ecosystems, with lower oxygen levels in warmer water and delayed spawning for species that reproduce in autumn. Beyond the biological impact, this situation is also expected to fuel autumn weather.

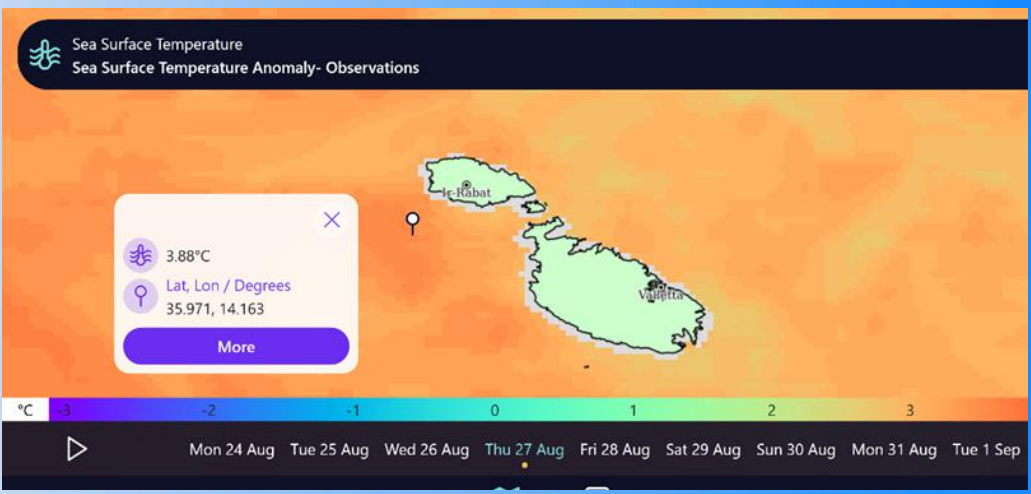


Figure 4: Location of the extreme SST anomalies on 27th August by using the STREAM mobile and web interface enabling pixel-based information in daily sequence

In spite of the success and benefits of STREAM we need to highlight a major bottleneck. Like other similar initiatives in the past, STREAM is still conducted in research mode. There is no mandated national coordinated effort, sustained by long-term funding, to build and deliver a marine observation and forecasting system that feeds operational data to digital services that fit the multiple needs of the nation for monitoring, ecosystem services, R&I, security, and economic development. That is definitely our next step. By leveraging cutting-edge technology and fostering cross-sector collaboration, we aim to unlock new potentials in marine data utilisation, contributing significantly to the marine value chain and propelling a diversified, sustainable ocean-based economy.
We need the national authorities with executive roles to open eyes, link the vision to the future, and switch from planning mode to the implementation phase.

Prof. Aldo Drago is a senior Professor in Oceanography currently engaged with the Malta College of Arts, Science & Technology

Curious Creatures

Yacopo Luigi Baldacchino - Esplora Interactive Science Centre

The sea around us is full of strange, wonderful, and sometimes slightly gross creatures. Some squirt, some hide, and some even turn themselves inside out to survive. If you look closely along the shore or just beneath the waves, you'll discover a whole world of tiny mysteries waiting to be explored.
Let's dive into some of these curious creatures you might find around Malta.



The Tiny Volcano of a Sponge

Maltese Name : **Sponża Ħamra**
English Name : **Oyster Sponge**
Scientific Name : ***Crambe crambe***

At first glance, this bright red sponge looks like a splash of paint on a rock. But if you look closely, you'll notice small holes called oscula. These are like tiny volcano craters where water shoots out after the sponge filters it for food. Even though it doesn't move, this animal is constantly busy, cleaning the sea one drop at a time.



What's Hiding Under the Shell?

Maltese Name: **Imħara**
English Name : **Limpet**
Scientific Name : ***Patella sp.***

The hard shell of a limpet protects a soft and squishy body underneath. This underside is called the foot, and it works like a super-strong suction cup. It helps the limpet cling tightly to rocks, even when strong waves crash over it. Without it, the limpet would be swept away in seconds.



The Shy Sea Tomato

Maltese Name : **Artikla Ħamra**
English Name : ***Beadlet anemone***
Scientific Name : ***Actinia equina***

When its tentacles are open, this creature looks like a colourful underwater flower. But when it feels threatened, it pulls everything in and turns into a slimy blob that looks a bit like a tomato. This helps protect its delicate parts from drying out or being eaten.



The Sea Cucumber's Sticky Defence

Maltese Name : ***Il-Bużżu tal-Baħar***
English Name : ***Sea Cucumber***
Scientific Name : **Holothuria sp.**

If disturbed, some sea cucumbers release a strange white, sticky substance. It might look like milk, but it's actually part of a clever defence system. These sticky threads can trap or distract predators, giving the sea cucumber time to escape. Not very pretty, but very effective.



Jellyfish with Frilly Arms

Maltese Name : **Il-Qassata**
English Name : **Fried Egg Jellyfish**
Scientific Name : **Cotylorhiza tuberculata**

This jellyfish is easy to recognise because it looks like a floating fried egg. Instead of long stinging tentacles, it has short, frilly arms covered in tiny mouths. These help it catch food drifting in the water. Luckily, it's mostly harmless to humans.



A Feast Under the Sea

Maltese Name : ***Bekkum***
English Name : ***Banded Murex***
Scientific Name : ***Hexaplex trunculus***

When a fish dies in the sea, it doesn't go to waste. These spiky sea snails gather together and begin feeding. They use a special tongue covered in tiny teeth to scrape and tear food. It may look a bit messy, but it plays an important role in keeping the sea clean.

Photo: Yacopo Baldacchino

Yacopo Luigi Baldacchino is Content Developer at Esplora Interactive Science Centre

As part of the Deep Blue Green : Exercise for Wellbeing project , Regjun Tramuntana together with NGO Bahar Wiehed will be organising a land clean up in Kennedy Drive Salina Saturday 19 September 2026 at 16.00 to 18.00
Further details can be found in the leaflet below.
Its a good opportunity to socialise and help out in the community whilst doing physical activity in the open spaces of Salina. Kindly register and see you there !!

