



Seagrass-Watch e-Bulletin

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NEWS

Marine protected areas (Malta)

30 July 2021, *Times of Malta*

The Ministry for the Environment Climate Change and Planning (MECP) and the Environment and Resources Authority (ERA) are committed to maintaining and preserving the Maltese natural heritage, both on land and at sea. This is why they are actively working to safeguard the biodiversity and health of various marine Natura 2000 sites, both within coastal and offshore areas, where sites have been designated as Marine Protected Areas.

Marine Protected Areas (MPAs) are fundamental to safeguard for the ocean habitats, including storm protection, erosion control, food production and jobs that support the tourism industry. In this regard Malta has reached an important milestone through the designation of 4,138km² as Marine Protected Areas. MPAs are managed with the aim of improving and maximising the contribution of the sites, to the maintenance and achievement of Favourable Conservation Status of the habitats and species listed in these directives.

MPAs can provide long-term protection for “blue carbon” – coastal habitats including seagrasses and mangroves that provide long term storage for atmospheric carbon. In fact, Malta’s MPAs seek the conservation of the Neptune seagrass (*Posidonia oceanica*) – which is an important habitat for coastal biodiversity, caves and reef habitats. Through the proper management of MPAs, therefore, we would be simultaneously conserving biodiversity and helping reach climate change mitigation and adaptation targets. While it is essential to designate MPAs, their effectiveness is strictly connected to the level of involvement of the local community in supporting marine protection policy and measures, as well as in committing to more sustainable solutions. We call upon you to recognise the importance of Marine Protected Areas. We need to help expand the role that the ocean plays for a better and healthier global environment.

[more.....https://timesofmalta.com/articles/view/marine-protected-areas.890230](https://timesofmalta.com/articles/view/marine-protected-areas.890230)

Studland Bay gains eco-moorings to protect seahorse habitat (England, UK)

29 July 2021, *Scuba Diver Magazine*

Charity The Seahorse Trust and national marina group boatfolk have joined forces to deliver a practical solution for saving Studland’s unique marine environment – eco-moorings. The two organisations have collaborated on a not-for-profit scheme to put ten ‘eco-moorings’ into Studland Bay to give boaters an attractive, environmentally friendly alternative to dropping their anchors. The dropping of anchors has damaging consequences for seabed environments, including seagrass meadows.

The scheme was recently approved by the Marine Management Organisation (MMO) following its designation in 2019 as a Marine Conservation Zone (MCZ) and installation of the new eco-moorings is now underway. The MCZ designation was made on the basis of Studland Bay’s seagrass meadows, which are an internationally important breeding ground for the spiny seahorse, one of Britain’s native seahorse species. The spiny seahorse was protected in 2008 under the Wildlife and Countryside Act following campaigning by the Seahorse Trust. The legal aim of the MCZ designation was to return both seagrass and seahorses to ‘favourable condition’.

Neil Garrick-Maidment, Founder and Executive Director of The Seahorse Trust and Michael Prideaux, Managing Director of boatfolk commented: “The Seahorse Trust and boatfolk are united in a clear belief that eco-moorings are the way forward for Studland, allowing boaters to continue enjoying the site while seagrass and seahorses thrive alongside. We were thrilled to secure MMO approval for our proposal, which we believe provides a practical and collaborative roadmap to finally giving Studland Bay the effective protection it deserves, and are delighted that installation of the eco-moorings is now underway following successful tests of the helical screw.”

[more.....https://www.scubadivermag.com/studland-bay-gains-eco-moorings-to-protect-seahorse-habitat/](https://www.scubadivermag.com/studland-bay-gains-eco-moorings-to-protect-seahorse-habitat/)

Underwater grass abundance, ‘critical’ to the Chesapeake Bay’s ecosystem, is down but may be stabilizing (USA)

29 July 2021, *Baltimore Sun*

The abundance of underwater grasses in the Chesapeake Bay declined for the second year in a row, according to the Chesapeake Bay Program. Surveyors mapped an estimated 62,169 acres of underwater grass in the Chesapeake Bay and its tributaries in 2020, down 7% from 2019 and 20% from the bay’s average expanse of underwater grass over the last 10 years, according to the bay program.

While the declines are not good for the bay’s overall health, the program noted that last year’s decline was not as severe as the year before when the grasses fell from 108,878 acres in 2018. “The silver lining is that the 2020 survey shows that underwater grasses are stabilizing following the losses experienced in the middle Bay in 2019,” said Chris

Patrick, head of the Chesapeake Bay restoration program at the Virginia Institute of Marine Science, which monitors underwater grass populations. “We are hopeful that this is a sign that we’re poised to start regaining that lost ground in coming years.”

The largest decline in underwater grass was seen in Tangier Sound, the Eastern Bay and areas of the Choptank River, all waters with moderate salt levels, according to the program. The program said these losses are likely due to a repeated decline in widgeon grass, a delicate seagrass with an often fluctuating population that doesn’t take kindly to extreme weather and changing water conditions. “We need to sustain the efforts we’ve already made — because we know those efforts have paid off — but in the face of climate change, we’re going to need to do more,” said Brooke Landry, chairperson of the Chesapeake Bay Program Submerged Aquatic Vegetation Workgroup and natural resource biologist with the Maryland Department of Natural Resources. “It’s not just about nutrient and sediment pollution anymore; it’s managing those things plus dealing with all of the other stressors associated with climate change. It’s daunting but saving the Bay’s underwater grasses is absolutely worth it.”

[more.....https://www.baltimoresun.com/news/environment/bs-md-underwater-grass-decline-20210729-snaqreqwjafbmjrhgzjana7by-story.html](https://www.baltimoresun.com/news/environment/bs-md-underwater-grass-decline-20210729-snaqreqwjafbmjrhgzjana7by-story.html)

Which countries are the wealthiest, when blue carbon is the currency? (Germany)

28 July 2021, *Anthropocene*

As the world struggles to tackle climate change, scientists and policymakers often use money to quantify the costs and benefits of climate change and potential solutions. While it’s one thing to tally up the value of homes lost to rising seas, putting a price on a tidal marsh is a bit trickier. Do you use the price of the real estate? Or the money you could earn selling credits in one of the fledgling carbon markets, in which polluters pay to preserve or improve carbon sequestration in ecosystems, such as forests? Wilfried Rickels, an environmental economist who helped lead the research through the Kiel Institute for the World Economy, turned to a statistic called the social cost of carbon – a sum of all the costs and benefits that come from puffing more carbon dioxide into the sky.

Calculations of things like the total value of blue carbon are useful because they help incorporate the full economic impacts of things that are often overlooked when measuring economic activity, says Rickels. While accounting for the social cost of carbon is fraught with uncertainty and fights over methodologies that give wildly different costs, Rickels’ team relied on 2018 estimates of a global social cost of carbon and similar cost for each country, calculated by a group of U.S. and European researchers. The German researchers combined this with data mapping the global distribution of three key near-shore ecosystems – mangroves, salt marshes and seagrass meadows – as well as estimates of how much carbon each type sequesters.

The blue carbon stored by these ecosystems totaled around 81 million metric tons of carbon per year – roughly the greenhouse gas emissions of France – with an estimated value of \$190 billion per year, according to the research, which appeared mid-July in the journal *Nature Climate Change*. But this blue carbon “wealth” isn’t spread equally. The scientists sought to account for these differences by showing which countries were the biggest exporters of blue carbon wealth – that is, those who stored the most blue carbon relative to the cost of carbon in their country. The most generous was Australia, followed by Indonesia and Cuba. Meanwhile, the five biggest beneficiaries – those with the highest social cost of carbon relative to their blue carbon capacity – were India, China, the U.S., Pakistan and Japan.

[more.....https://www.anthropocenemagazine.org/2021/07/which-countries-are-the-wealthiest-when-blue-carbon-is-the-currency/](https://www.anthropocenemagazine.org/2021/07/which-countries-are-the-wealthiest-when-blue-carbon-is-the-currency/)

Enlist the Ocean in Combatting Climate Change, Experts and Advocates Argue (UK)

27 July 2021, *Scientific American*

Climate scientists and marine advocates are calling on governments worldwide to look beyond green policymaking when it comes to climate change. They say a critical shade is missing in the fight against global warming. Blue. Countries must recognize the important role that oceans have in limiting climate change and enact policies to protect marine ecosystems, the U.K.-based Environmental Justice Foundation said yesterday in a report endorsed by environmental experts and advocates.

More than half of the world’s biological carbon is captured by animals and plants living in or around the oceans, but this so-called blue carbon and its associated ecosystems are mostly neglected in climate policy. The report highlights studies showing that seagrass meadows store nearly 20 gigatonnes of carbon worldwide. According to Conservation International, up to 10 times more carbon is stored in coastal habitats than in tropical forests. That means the oceans could soak up large quantities of atmospheric carbon if their ecosystems are restored and protected. Up to 200 million metric tons of CO₂ could be captured annually by blue carbon sinks like mangroves, seagrasses, salt marshes and kelp forests, according to the report.

Yet those ecosystems and the creatures they support are threatened by rising water temperatures, acidification, overfishing and commercial shipping, the report says. The letter urges leaders to set targets for protecting and restoring marine ecosystems as part of their commitments under the Paris Agreement. It also calls for expanding

marine-protected areas to cover at least 30% of the world's oceans and seas by 2030. Currently, less than 8% of ocean area is protected.

[more.....https://www.scientificamerican.com/article/enlist-the-ocean-in-combating-climate-change-experts-and-advocates-argue/](https://www.scientificamerican.com/article/enlist-the-ocean-in-combating-climate-change-experts-and-advocates-argue/)

In a first, small drones help study India's threatened marine species (India)

27 July 2021, *The Indian Express*

Along the coasts of Gulf of Kutch, Gulf of Mannar, Palk Bay and the Andaman and Nicobar Islands lives the seagrass loving dugong. Assessed as vulnerable by the IUCN Red List of threatened species, this 'sea cow' is also considered regionally endangered in India as only 200–300 individuals remain. But studying dugongs is easier said than done. Since 2019, India also adopted light-weight unmanned aerial vehicles for studying marine megafauna specifically dugongs.

The surveys, led by Sagar Rajpurkar from Wildlife Institute of India, Dehradun, were carried out along with others in Andaman and Nicobar Islands within the Marine Protected Areas of Mahatma Gandhi Marine National Park and Rani Jhansi Marine National Park, and adjoining areas. The paper detailing the survey was published recently in *Current Science*.

The researchers note that unmanned aerial surveys can help cover large spatial scales, reduce survey effort and time, and are cost-effective. "The lightweight drones we used were less noisy and did not disturb the marine mammals. It was flown at a height of about 200-300 meters to first scan an area for dugongs and then brought down to 80-100 meters to closely follow the species. Since the video resolution is high from even this height, it can be used in the future to identify individuals, track movements and monitor behaviour of individuals," explains Dr Anant Pande, one of the authors from the Wildlife Institute of India, Dehradun. Dr K. Sivakumar, Scientist and Project Coordinator of the Dugong Recovery Program at Wildlife Institute of India adds that future plans include drone surveys to map seagrass habitats, monitor marine megafauna, and conduct a spatial assessment of Marine Protected Areas.

[more.....https://indianexpress.com/article/technology/science/small-drones-study-indias-threatened-marine-species-7424249/](https://indianexpress.com/article/technology/science/small-drones-study-indias-threatened-marine-species-7424249/)

Seagrass is harmed by noise pollution (Spain)

27 July 2021, *Smithsonian*

Scientists have recently discovered that Neptune grass, a protected seagrass species native to the Mediterranean Sea, can experience significant acoustic damage when exposed to low-frequency artificial sounds for only two hours. The damage is especially pronounced in the parts of the plant responsible for detecting gravity and storing energy.

The research was led by bioacoustician Michel André, director of the Laboratory of Applied Bioacoustics at the Polytechnic University of Catalonia in Spain. "This totally shifted our vision and our approach to noise pollution," says André, because until that point, researchers had focused on concerns for whales and dolphins. But thousands of marine animals, possess statocysts, opening up the possibility that human-generated sounds could be having much farther-reaching effects. While seagrasses don't have statocysts, they do have a very similar sensory organ called an amyloplast. These gravity-sensing cellular structures help underwater plants push their roots down through seafloor sediments. That similarity led the scientists to want to test the effects of noise on plants.

In their latest experiment, André and his colleagues used a loudspeaker to blare tanks of Neptune grass with a dynamic mix of artificial sounds with frequencies from 50 to 400 hertz, spanning the range typically associated with human activity. After exposing the seagrass to two hours of this low-frequency mixed tape, the team used electron microscopes to examine the amyloplasts inside the seagrass's roots and rhizomes, the underground stems that store energy as starch. The acoustic damage was acute, and worsened over the next five days. Starch levels inside the seagrass's amyloplasts dropped precipitously. The symbiotic fungus that colonizes Neptune seagrass's roots, and is likely involved in boosting nutrient uptake, didn't fare well in response to the din either. According to André, the discovery that noise pollution affects seagrass is just the beginning. "There is no reason to think that other plants should not suffer from the same trauma," he says.

[more.....https://www.smithsonianmag.com/science-nature/seagrass-harmed-noise-pollution-180978290/](https://www.smithsonianmag.com/science-nature/seagrass-harmed-noise-pollution-180978290/)

Multi-acre seagrass restoration project underway in St. Andrew Bay (FL, USA)

23 July 2021, *Eminetra*

After years of planning, a seven-acre seagrass restoration project is underway in the western part of St. Andrew's Bay. The Florida Fish and Wildlife Conservation Commission awarded the contract to Sea and Shoreline to assist in this large-scale project. The crews have been working on the herbarium installation for the past two months. Becca Hatchell, director of the St. Andrew's Bay oyster habitat restoration project, said the restoration took years of planning.

Hatchell said the pilot study ran from 2019 to 2020 and after planting is complete they will continue to monitor the site for three years. "We hope that after even this project and we get more information that you know, you may be able to

install more seagrass in the future.” Marine and Coastal Biologist Katie Kramer said it was one of the biggest projects they’ve worked on.

Crews harvest small amounts of grass over large areas in order to have minimal impact on the healthy seabed already there. Then they use twist ties to tie the grass to the metal staples. In order to protect new seagrass sites, FWC officials encourage boats to be aware of the shallow water. They suggest if you need to anchor, to do so in the sandy parts of the water.

[more.....https://eminetra.com/panama-city-fl-multi-acre-seagrass-restoration-project-underway-in-st-andrew-bay/655276/](https://eminetra.com/panama-city-fl-multi-acre-seagrass-restoration-project-underway-in-st-andrew-bay/655276/)

69 environmental infringements in two weeks (France)

23 July 2021, *Superyacht News - The Superyacht Report*

Why are so many superyachts ignoring the law when it comes to not anchoring in protected seagrass areas in France? Various associations representing the yachting industry were received by Mr Laurent Lisnard, vice admiral and Préfet Maritime of the Mediterranean on 15 July to discuss the problems related to anchorages in France and the actions that should be implemented to provide solutions. The major question, however, is why are so many superyachts ignoring the law when it comes to not anchoring in protected seagrass areas?

The Préfet Maritime has sent the various associations a list of offences recorded between 6 and 20 July. Among the vessels that violated the anchorage regulations, 58 vessels were in violation only once, with 11 vessels infringing on a series of occasions. This situation is alarming and shows that in less than two weeks an abnormally large number of infractions have taken place in French waters. According to Thierry Voisin, who was present at the discussions in his capacity as president of ECPY, the maximum fine for repeated infringements for anchoring in the protected seagrass areas could be up to €150,000. While he stresses this is an extremely unlikely outcome, it nonetheless highlights the perceived severity of these infringements.

“The law is the law, whether you like it or not,” says Voisin. “It may be that some people simply don’t care about the seagrass or the law, but there are also other concerns. That the crews associated with the infringing superyachts were not able or unwilling to respond to the VHF calls is a concern. Voisin explains that many of the vessels were anchored right on the limit of the protected zones, obviously trying to get as close as possible without breaking any laws, or otherwise thinking the infringement would be so marginal as to not raise eyebrows. Had these superyachts moved just 50m or so, they would have been perfectly within their rights to anchor.

[more.....https://www.superyachtnews.com/business/58-environmental-infringements-in-two-weeks](https://www.superyachtnews.com/business/58-environmental-infringements-in-two-weeks)

Project Seagrass: Restoration underway to bring back plant to UK coast (England, UK)

23 July 2021, *ITV News*

A team of scientists on the Isle of Wight are researching seagrass as a natural remedy for climate change. It's the only flowering marine plant and has a remarkable ability to suck up carbon quicker than trees. However, seagrass meadows across the UK coast are disappearing at an alarming rate, which is why restoration projects have been set up to bring back thousands of hectares.

Dr Richard Unsworth, Director, Project Seagrass says although they are currently working at the rate of allotment gardening, they are working on ways to try and restore large areas of the plant. The scientists spend a lot of time monitoring the seagrass meadows and collecting specimens. These seagrass samples are taken back to base and are analysed by the rest of the team. The seeds will then be used and planted in areas where it has been lost.

Yasmin Meeda, Marine Biologist says there has been a 92% loss of seagrass in the UK since the last century. This is due to mining, dredging and pollution that's gone into the oceans. She says: "These restoration projects will help to replant some of these seagrasses to actually be able to mitigate the impacts of climate change as they are able to take up carbon in the process of photosynthesis and can also protect the coastlines from storm surges and sea level rises." Seagrass restoration projects are still in their early stages, but if they're successful, we could be seeing a lot more of it on our coastline.

[more.....https://www.itv.com/news/meridian/2021-07-22/restoration-project-to-bring-back-seagrass-to-uk-coast](https://www.itv.com/news/meridian/2021-07-22/restoration-project-to-bring-back-seagrass-to-uk-coast)

On Posidonia watch (Spain)

22 July 2021, *Euro Weekly News*

Mireia Molla, who heads the Generalitat's Environment department, recently visited Balears, where she visited the islands' Posidonia Meadows' Monitoring Service, accompanied by her Govern counterpart Miquel Mir. The service was launched five years ago and will serve as a model for the Valencia region, Molla said, after having seen Balears' good results. The Valencian Community's own service will be introduced next year, she confirmed.

The meadows of *Posidonia oceanica* (Neptune Grass) lying off the Spanish coast have been described as “the lungs of the Mediterranean” as they are one of the most important source of oxygen for coastal waters. “*Posidonia* forests are 20 time more efficient at capturing carbon dioxide than land-based forests and are a structural habitat that must

www.seagrasswatch.org

be protected,” Molla said, referring to the marine creatures that live there permanently as well as those that reproduce or seek refuge in the underwater meadows.

“We must all get involved in protecting these marine meadows in a network that goes beyond institutional level,” she declared. “We are only two communities that have introduced specific regulations for safeguarding sea grass,” Molla said. “The State should now take steps to demonstrate its commitment to marine biodiversity by protecting Posidonia.”

[more.....https://www.euroweeklynews.com/2021/07/22/on-posidonia-watch/](https://www.euroweeklynews.com/2021/07/22/on-posidonia-watch/)

Dumaguete reclamation to devastate nearby protected areas, marine biodiversity—conservation (Philippines)

22 July 2021, ABS-CBN News

A conservation group has warned of the proposed land reclamation in Dumaguete City in Negros Oriental, as the project would devastate the town's marine biodiversity and nearby protected areas. In a statement, the World Wide Fund for Nature (WWF) Philippines pointed out that the planned 174-hectare offshore island construction would negatively impact the city's marine life.

The proposed 174 hectare land reclamation project fronting the city's shoreline, aims to build a 5G-ready “Smart City” under a private-public partnership. It also plans to build a coastal wastewater treatment/wave protection facility, esplanade, marina, modern ferry port and raw reclamation and horizontal development. But the WWF emphasized that some 36.15 hectares of seagrasses and 36.20 hectares of coral reef would also be “lost” to the project.

The Silliman University's board of trustees cited the environmental degradation it could cause to the city's 4 MPAs that are “functional.” The marine protected areas are located in barangays Bantayan, Lo-oc, Mangnao and Banilad. “These MPAs are part of a system of protected coral reefs, seagrass beds and soft-sediment ecosystems in Negros Oriental that is meant to boost fisheries productivity, conserve marine biodiversity and support tourism,” the statement from the university's board of trustees released on July 20 read. Dumaguete City Mayor Felipe Antonio Remollo said the project is still “open, this is not a done deal.” He said he would “personally hand over to the deciding authorities” the opposition to the project to show his transparency, urging the sectors and environmentalists concerned to come forward with their inputs.

[more.....https://news.abs-cbn.com/news/07/22/21/wwf-concerned-dumaguete-proposed-land-reclamation-project](https://news.abs-cbn.com/news/07/22/21/wwf-concerned-dumaguete-proposed-land-reclamation-project)

Seagrass suffers red tide kills fish faster than crews can remove them (FL, USA)

19 July 2021, FOX 13 Tampa Bay

As the race to remove hundreds of tons of dead fish from Tampa Bay continues, there is rising concern about the health of seagrass as red tide devastates the waterway. It was just beginning to rebound after red tide in 2018. Now it's being devastated by a new bloom of algae blocking sunlight which keeps the grass alive.

Peter Clark with Tampa Bay Watch says, so far, there's been another 18% loss in seagrass, and there's not much that can be done, other than removing the dead fish. According to St. Petersburg city officials, more than 1,200 tons of dead fish have been removed from waters around the city.

[more.....https://www.fox13news.com/news/seagrass-suffers-red-tide-kills-fish-faster-than-crews-can-remove-them](https://www.fox13news.com/news/seagrass-suffers-red-tide-kills-fish-faster-than-crews-can-remove-them)

Oil spill fine grossly inadequate (Taiwan)

20 July 2021, Taipei Times

Following last month's oil spill at CPC Corp, Taiwan's Dalin refinery in Kaohsiung, thousands of people from various organizations have helped with the emergency response as the oil slick moved with the currents to threaten two protected marine areas. A few days ago, the Ocean Conservation Administration fined CPC NT\$1.5 million (US\$53,472) for the spill, the highest amount allowed by the Marine Pollution Control Act.

The latest spill affects not only sea turtles and coral reefs in Pingtung County's Siaoliuciou, it also threatens the precious but little-known “blue carbon” ecosystem, an area of seagrass beds of roughly 5.3 hectares in Siaoliuciou, Checheng Township and Nanwan in Pingtung County's Kenting National Park. Seagrass, in addition to its outstanding ability to absorb carbon, is also a staple food for green turtles, and it has an average annual economic value of about NT\$1.4 million per hectare.

The oil spill threatened the coastal ecosystem and revealed the lack of systematic long-term monitoring and research. After the disaster, it was impossible to gain a clear understanding of the species and number of them affected, not to mention the inability to calculate losses. The government should focus on coastal ecosystems and take action to establish comprehensive long-term monitoring and research to protect blue carbon ecosystems. If there is a cap on penalties, the government should propose amendments so that fines are commensurate with losses and sufficient to intimidate those who destroy the environment.

[more.....https://www.taipeitimes.com/News/editorials/archives/2021/07/20/2003761138](https://www.taipeitimes.com/News/editorials/archives/2021/07/20/2003761138)

State researchers conducting seaweed biodiversity assessment in Verde Island Passage (Philippines)

16 July 2021, Manila Bulletin

State researchers are conducting biodiversity surveys on seaweeds in some areas in four provinces bordering the Verde Island Passage (VIP) through the assistance of the Department of Science and Technology (DOST). Seaweeds biodiversity surveys were conducted in selected sites in the provinces (Marinduque, Batangas, Romblon, Occidental Mindoro) bordering the Verde Island Passage (VIP). Surveys were conducted to determine and compare the seaweed and seagrass cover in pristine and impacted or disturbed sites during the northeast monsoon (amihan).

The "Marine Biodiversity Assessment in Selected Areas in the Verde Island Passage (MBio Assess-VIP)" is being carried out by the BSU in partnership with Marinduque State College, Occidental Mindoro State College, Mindoro State College of Agriculture and Technology and Romblon State University.

"Overall, in all of the sites surveyed during the northeast monsoon, seaweeds were found to be dominant in the selected impacted sites," said DOST Secretary Fortunato "Boy" T. de la Peña. He noted that only Sitio Dumanod in Barangay Udalo, Abra de Ilog in Occidental Mindoro was a seaweed-dominated site among the pristine areas in the current survey.

[more.....https://mb.com.ph/2021/07/16/state-researchers-conducting-seaweed-biodiversity-assessment-in-verde-island-passage/](https://mb.com.ph/2021/07/16/state-researchers-conducting-seaweed-biodiversity-assessment-in-verde-island-passage/)

Nature in the UAE: How Abu Dhabi carefully conserved its native flora and fauna over the past five decades (UAE)

15 July 2021m Gulf News

The EAD has been protecting dugongs since 1999, conducting aerial investigations, mortality investigation and genetic studies. The population in Abu Dhabi now includes 3,000 dugongs, mostly in the waters of Marawah Marine Biosphere Reserve and Al Yasat Marine Protected Area. Bu Tinah island in the Marawah area has the densest dugong population in the world.

Dugongs are grey-brown marine herbivores, with powerful fluked tails and small front flippers that act like paddles to stabilise them when they swim. They are air-breathing mammals that are totally adapted to life at sea, and spend much of their time grazing on seagrass. Their numbers were mainly threatened due to entrapment in fishing nets, habitat loss, marine pollution and boat collisions. The largest number of dugongs in the world is today found in Australia, followed by Abu Dhabi.

[more.....https://gulfnews.com/uae/year-of-the-50th/nature-in-the-uae-how-abu-dhabi-carefully-conserved-its-native-flora-and-fauna-over-the-past-five-decades-1.80450538](https://gulfnews.com/uae/year-of-the-50th/nature-in-the-uae-how-abu-dhabi-carefully-conserved-its-native-flora-and-fauna-over-the-past-five-decades-1.80450538)

GeoCatch release report on seagrass monitoring program (WA, Australia)

16 July 2021, Busselton Dunsborough Mail

GeoCatch has released a report which shows the Geographe Bay seagrass meadows are in overall healthy condition. The report summarises 10 years of data collected by scientists as part of the 'Keep Watch' seagrass monitoring program. Each summer, scientists from Edith Cowan University join divers from the Department of Biodiversity, Conservation and Attractions to monitor the seagrass meadows at eight sites across Geographe Bay.

Edith Cowan University associate professor Kathryn McMahon says scientists have identified no major concerns regarding seagrass health. There have been fluctuations in seagrass shoot density but no significant trends of decline, and no management triggers breached, she said.

Seagrass mapping is also adding value by determining the extent of the overall meadows. The project will see the department assess seagrass cover using satellite imagery from Geographe Bay to the boundary of the Ngari Capes Marine Park. "It has been 13 years since mapping was undertaken in Geographe Bay so it is really important and complementary information for the program," Professor McMahon said.

[more.....https://www.busseltonmail.com.au/story/7344277/tick-of-approval-for-geographe-bay-seagrass/](https://www.busseltonmail.com.au/story/7344277/tick-of-approval-for-geographe-bay-seagrass/)

Cal Poly study reveals seagrass loss causes shift in fish populations (USA)

15 July 2021, Paso Robles Daily News

The loss of seagrass habitat caused a dramatic shift in fish species in Morro Bay, according to a recently published paper by Cal Poly researchers. Areas of the bay once covered with lush eelgrass meadows and unique fish species are now home to muddy-seafloor-loving flatfish. In 2007 the seagrass *Zostera marina* was found throughout Morro Bay, with abundant underwater meadows on the western edge of the estuary, between the dredged harbor channel

and the Sand Spit, stretching south from roughly Morro Bay State Park Marina to the back bay. Over the next 10 years it nearly disappeared, dropping from 344 acres to less than 15 acres in 2017.

Jennifer O'Leary, who led the research as a California Sea Grant extension specialist based at Cal Poly, and colleagues in the new study found that seagrass loss did not result in fewer fish but rather led to changes in the types of fish that live in the bay. The research team saw decreasing numbers of seagrass-specialist fish species, such as the bay pipefish (*Syngnathus leptorhynchus*). With long thin bodies and olive-green coloration, bay pipefish adapted to hide among the seagrass blades. In contrast, researchers observed an increase in flatfishes like the speckled sanddab (*Citharichthys stigmaeus*) and staghorn sculpin (*Leptocottus armatus*). With flat bodies that are ideal for life on the muddy seafloor. These species have moved into Morro Bay's denuded eelgrass habitats and now make up the majority of fish species present there.

The loss of eelgrass habitat along the California coast presents a larger problem for species that depend on seagrass. If seagrass doesn't recover, then the surviving meadows will be further apart and have a more fragmented, or patchy, distribution. This distance and patchiness of habitat may impact specialists, like pipefish, by impairing their ability to move to new habitats in search of food or mates. Over time this community isolation may alter the genetic structure and diversity of the overall pipefish population. Scientists remain hopeful as the remaining eelgrass is slowly expanding with protection and local planting initiatives, including successful transplant efforts led by the Morro Bay National Estuary Program. The mere 9.4 acres of seagrass left in Morro Bay in 2017 expanded to 36.7 acres by 2019. Researchers are still analyzing data from 2020 but are optimistic that the seagrass acreage continues to slowly increase.

[more.....https://pasoroblesdailynews.com/cal-poly-study-reveals-seagrass-loss-causes-shift-in-fish-populations/129292/](https://pasoroblesdailynews.com/cal-poly-study-reveals-seagrass-loss-causes-shift-in-fish-populations/129292/)

Seagrass can help reduce ocean acidification at local scales (CA, USA)

13 July 2021, Yale Climate Connections

The ocean absorbs about a quarter of the CO₂ emitted by human activity each year. Aurora Ricart of the University of California, Davis explains that increased concentrations of CO₂ cause water to become more acidic, which can harm marine animals. But her research indicates that in some areas, coastal seagrasses can help reduce that acidity.

As the underwater plants grow and photosynthesize, they absorb CO₂, which Ricart says can reverse ocean acidification at local scales. Over six years, she and her team monitored seagrass meadows along more than 600 miles of California coastline. They found that, on average, the water in these areas was less acidic than in areas without vegetation. The effect persisted even at night, when plants are not actively performing photosynthesis.

She says the findings suggest that seagrass meadows may be able to help alleviate ocean acidity and protect vulnerable species. So she says it's important to conserve these ecosystems and restore them when they have been damaged.

[more.....https://yaleclimateconnections.org/2021/07/seagrass-can-help-reduce-ocean-acidification-at-local-scales/](https://yaleclimateconnections.org/2021/07/seagrass-can-help-reduce-ocean-acidification-at-local-scales/)

Dugong deaths in Sri Lanka lend urgency to calls for stronger protections (Sri Lanka)

12 July 2021, Mongabay.com

Samith Fernando runs a tour boat service in Puttalam Lagoon, a scenic spot about 130 kilometers north of Colombo, Sri Lanka's commercial capital. In 2017, he says, he spotted a family of five dugongs (*Dugong dugon*) before they quickly disappeared in the murky waters. He never saw any dugongs again after that, despite operating boat tours daily, and that lone encounter remains deeply etched in his mind. Then in March this year, a dead dugong had washed up dead in a different part of the lagoon. Two weeks later, there was another dead dugong. Fernando says he didn't go to see either, fearful they were from the family he'd spotted four years earlier.

Both dugongs were about 1.5 meters long and hence considered juveniles, about 7 years old, says Ranil Nanayakkara of Biodiversity Education and Research (BEAR). "The first dugong could be a victim of fish net entanglement, but the second one is definitely a victim of blast fishing, evident by the blood stains coming out of its eyes and nose," Nanayakkara, a member of the IUCN/SSC Sirenia Specialist Group, told Mongabay.

Amid these persistent threats, Sri Lanka has taken measures to protect its dugongs. From 2015 to 2018 it was part of the global Dugong and Seagrass Conservation Project implemented in eight countries. The project recommended several actions to reduce dugong mortality and ensure their long-term survival. Arjan Rajasuriya, coordinator of the coastal and marine program at IUCN Sri Lanka and a member of the dugong project management planning committee, said that while some actions were taken during the project's duration, many recommendations have still not been implemented. A proposal to establish three new marine protected areas (MPAs) covering 902 square kilometers of core dugong habitat is one such recommendation. Two of these MPAs were proposed for the Gulf of Mannar, and the third in Palk Bay. The upcoming update of Sri Lanka's red list, will for the first time change list the dugong as critically endangered, BEAR's Nanayakkara said.

[more.....https://news.mongabay.com/2021/07/dugong-deaths-in-sri-lanka-lend-urgency-to-calls-for-stronger-protections/](https://news.mongabay.com/2021/07/dugong-deaths-in-sri-lanka-lend-urgency-to-calls-for-stronger-protections/)

Seagrass Decline Affects More Than The Environment (NC, USA)

09 July 2021, Public Radio

Coastal North Carolina is home to over 130,000 acres of submerged aquatic vegetation. Some researchers say the coast might be in danger of losing up to half of that over the next decade. A decline in seagrass habitat affects more than the environment. It also has lasting economic impacts, according to a new study. Tim Ellis, an ecologist with the Albemarle-Pamlico National Estuary Partnership (APNEP), found that the amount of seagrass along our coast decreases between 0.5% and 5% each year.

Several factors contribute to seagrass loss, including coastal development and reduced water quality. The study found that a decline in submerged vegetation could cost the state nearly \$89 million over the next decade. Ellis said the reason for the study was to show North Carolinians the real costs of losing seagrass. The study considered four factors to calculate an estimate of the economic losses associated with the decrease in seagrass: commercial fisheries, recreational fishing, residential property values, and carbon sequestration. Researchers calculated a loss of income of up to \$10 million over the next decade for commercial and recreational fishers. According to Sara Sutherland, an environmental economist at Duke University, that is a conservative estimate.

Legislation and investments in new technology are some of the things David Eggleston, Director of NC State's Center for Marine Sciences and Technology said can be done to prevent seagrass die-off. But homeowners along our coast can also do their part. Eggleston said that North Carolinians can improve the state's water quality by upgrading their septic systems or managing the amounts of fertilizer that they use on their lawns. Small decisions like these can have a significant impact on a resource that is vital to the economy of Eastern North Carolina.

[more.....https://www.publicradioeast.org/post/seagrass-decline-affects-more-environment](https://www.publicradioeast.org/post/seagrass-decline-affects-more-environment)

Why the "Seagrass Tales, Dugong Trails" is a must visit exhibition in Qatar (Qatar)

05 July 2021, ILoveQatar.net

The National Museum of Qatar (NMoQ), in collaboration with ExxonMobil Research Qatar (EMRQ), has opened a special exhibit called "Seagrass Tales, Dugong Trails" dedicated to the dugongs you can find in Qatari waters. Watch their video and find out why this exhibit that is centered around this herbivorous marine mammal is a must-visit for adults and kids alike.

[more.....https://www.iloveqatar.net/videos/qatarEvents/seagrass-tales-dugong-trails-must-visit-nmoq-qatar-exhibition](https://www.iloveqatar.net/videos/qatarEvents/seagrass-tales-dugong-trails-must-visit-nmoq-qatar-exhibition)

Global study shows major seagrass losses around the world (BC, Canada)

06 July 2021, Simon Fraser University News

Jillian Dunic's curiosity about seagrass reaches all the way back to her high school science fair experiment on eelgrass, a species of seagrass. Now a PhD student in the Department of Biological Sciences at SFU, Dunic has leveraged the work of researchers around the world to create an exhaustive study on the state of 547 seagrass sites around the globe.

Dunic and her team applied time-series reconstruction to seagrass meadows of 547 sites worldwide that span the last 70 to 130 years and cover 29,283 square kms around the world. She found that declines in seagrass meadow area has been widespread and substantial over the last century — with 19 per cent of surveyed meadows lost since 1880. "The top two drivers of loss of seagrass meadows are coastal development and water quality," she says.

Of the seven bioregions that Dunic identified, only two (Mediterranean and Temperate North Atlantic East) have stabilized and have shown a recovery trajectory as of 2000. "The four bioregions with greatest net losses of area in our study are the Tropical Atlantic, Temperate Northern Atlantic East, Temperate Southern Oceans and Tropical Indo-Pacific." Dunic says that the paper also highlights the lack of information available on the status of seagrass beds world-wide. But she is hopeful that things will change, particularly in Canada. Co-author and supervisor Isabelle Côté says, "This is an important paper that will be cited for years to come. We hope it will put seagrass on the map – pun intended – for marine managers, decision-makers and everyone who cares about the ocean."

[more.....http://www.sfu.ca/sfunews/stories/2021/07/global-study-shows-major-seagrass-losses-around-the-world.html](http://www.sfu.ca/sfunews/stories/2021/07/global-study-shows-major-seagrass-losses-around-the-world.html)

Warning Over Invasive Seaweed Threat to Ireland's Crucial Seagrass Meadows (Ireland)

01 July 2021, Afloat

Invasive seaweed is a growing threat to Ireland's vital seagrass meadows, according to Coastwatch Ireland. The Irish Times reports on concerns for the health of seagrass habitats around the coast affected by the presence of *Sargassum muticum* — a brown seaweed that originates in western Pacific waters and has spread in Europe since the 1970s.

In Kilmore Quay, Coastwatch says a large *Zostera marina* seagrass meadow is being killed off by a blanket of the seaweed. Seagrass meadows are 'blue carbon' habitats, acting as significant stores of CO2 captured from the atmosphere. But they are vulnerable and can be easily overrun, says Coastwatch's Karin Dubsky.

Last October, Afloat.ie noted findings in an Irish Wildlife Trust report that highlighted "significant declines in carbon-sequestering seagrass meadows" in four Special Areas of Conservation.

[more.....https://afloat.ie/marine-environment/item/50953-warning-over-invasive-seaweed-threat-to-ireland-s-crucial-seagrass-meadows](https://afloat.ie/marine-environment/item/50953-warning-over-invasive-seaweed-threat-to-ireland-s-crucial-seagrass-meadows)

Lesser known and unappreciated seagrass struggles for attention, conservation (Philippines)

01 July 2021, Philstar.com

For a country like the Philippines that is vulnerable to climate-related impacts, seagrass meadows provide opportunities to mitigate climate change. The Philippines has one of the highest seagrass species diversity in the world, with 18 known species across the archipelago. According to a World Bank study, there were 27,000 square kilometers of seagrass meadows in the country in 2015. An initial study of the National Mapping and Resource Information Authority in 2016 had a much lower figure of 4,700 square kilometers.

"Our efforts to validate and monitor on the ground are ongoing but definitely there's a decline," said Criselda Castor, senior ecosystems management specialist at the Biodiversity Management Bureau (BMB), an agency under the Department of Environment and Natural Resources (DENR). Coastal developments, nutrient run-off, unregulated fishing and boating activities, and climate change are among the main threats to seagrass meadows. These highlight the need for urgent conservation attention but seagrass remains an overlooked ecosystem.

Mapping seagrass meadows is an important step in any initiative to protect these habitats as it gives researchers an idea how big and how healthy the meadows are. The Berkeley, California-based nonprofit Seacology is spearheading the Philippine Seagrass Project, which aims to promote awareness of and conservation of seagrass species in local waters. It also mapped seagrass meadows in Puerto Galera in Oriental Mindoro. The data gathered will be incorporated in a mobile application that can be downloaded for free.

[more.....https://www.philstar.com/headlines/2021/07/01/2109461/lesser-known-and-unappreciated-seagrass-struggles-attention-conservation](https://www.philstar.com/headlines/2021/07/01/2109461/lesser-known-and-unappreciated-seagrass-struggles-attention-conservation)

CONFERENCES

14th International Seagrass Biology Workshop (ISBW14) (Annapolis, 07-12 August 2022)

Theme: " Signs of Success "

The International Seagrass Biology Workshop (ISBW) is the only international meeting specifically tailored to seagrass scientists, professionals and students. The International Seagrass Biology Workshop (ISBW) provides an excellent opportunity for the scientists working on various aspects of seagrass ecosystems to come together and discuss their latest findings.

The ISBW14 Chesapeake Bay will be held in Summer 2022 at the Graduate Annapolis Hotel, Annapolis, Maryland. This will be the first time ISBW has been hosted in the U.S.A. and the iconic Chesapeake Bay is the logical setting. Chesapeake Bay is an iconic estuary with a strong scientific and management history. The resurgence of seagrasses (including brackish water submersed aquatic vegetation) in the bay is the largest documented in the world, and clearly a "sign of success" to inspire seagrass scientists globally.

More information:

To get important updates, visit: <https://isbw14.org/>

Follow on

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58th Australian Marine Science Association conference (AMSA 2022) (Cairns, Australia, 07-11 August 2022)

Theme: " Change and Connections "

The annual Australian Marine Science Association conference (AMSA 2022) will enable you to share new experiences and advancements in knowledge and practice. The theme for the conference is to emphasize important linkages among environmental, ecological and social systems at a time characterised by rapid change across all these areas.

More information:

To get important updates, visit: <https://www.amsa2022.amsa.asn.au/>

15th International Coral Reef Symposium (ICRS 2022) (Bremen, Germany, 03-08 July 2022).

Theme: Tackling the Challenging Future of Coral Reefs

The ICRS is the leading global conference on coral reef science, management and conservation, sanctioned every 4 years by the International Coral Reef Society (ICRS). ICRS 2022 follows the success of the 14th ICRS Virtual event that was held in July 2021, and will be the key event to develop science-based solutions addressing the present and future challenges of coral reefs, which are globally exposed to unprecedented anthropogenic pressures. The five-day program will present the latest scientific findings and ideas, provide a platform to build the essential bridges between coral reef science, conservation, politics, management and the public, and will promote public and political outreach.

Key Themes which include seagrass ecosystems:

Theme 3: Ecosystem functions and services

Theme 6: Unexplored and unexpected reefs

Theme 9: Global and local impacts

Theme 10: Organismal physiology, adaptation and acclimation

More information:

To get important updates, visit: <https://www.icrs2022.de/>

SEAGRASS-WATCH PUBLICATIONS:

Seagrass ecosystems of the Pacific Island Countries and Territories: A global bright spot

L.J. McKenzie, R.L. Yoshida, J.W. Aini, S. Andréfouet, P.L. Colin, L.C. Cullen-Unsworth, A.T. Hughes, C.E. Payri, M. Rota, C. Shaw, P.A. Skelton, R.T. Tsuda, V.C. Vuki, R.K.F. Unsworth

Seagrass ecosystems exist throughout Pacific Island Countries and Territories (PICTs). Despite this area covering nearly 8% of the global ocean, information on seagrass distribution, biogeography, and status remains largely absent from the scientific literature. We confirm 16 seagrass species occur across 17 of the 22 PICTs with the highest number in Melanesia, followed by Micronesia and Polynesia respectively. The greatest diversity of seagrass occurs in Papua New Guinea (13 species), and attenuates eastward across the Pacific to two species in French Polynesia. We conservatively estimate seagrass extent to be 1446.2 km², with the greatest extent (84%) in Melanesia. We find seagrass condition in 65% of PICTs increasing or displaying no discernible trend since records began. Marine conservation across the region overwhelmingly focuses on coral reefs, with seagrass ecosystems marginalised in conservation legislation and policy. Traditional knowledge is playing a greater role in managing local seagrass resources and these approaches are having greater success than contemporary conservation approaches. In a world where the future of seagrass ecosystems is looking progressively dire, the Pacific Islands appears as a global bright spot, where pressures remain relatively low and seagrass more resilient.

https://www.seagrasswatch.org/mckenzie-et-al_2021b-2/

Seagrass ecosystem contributions to people's quality of life in the Pacific Island Countries and Territories

L.J. McKenzie, R.L. Yoshida, J.W. Aini, S. Andréfouet, P.L. Colin, L.C. Cullen-Unsworth, A.T. Hughes, C.E. Payri, M. Rota, C. Shaw, R.T. Tsuda, V.C. Vuki, R.K.F. Unsworth

Seagrass ecosystems provide critical contributions (goods and perceived benefits or detriments) for the livelihoods and wellbeing of Pacific Islander peoples. Through in-depth examination of the contributions provided by seagrass ecosystems across the Pacific Island Countries and Territories (PICTs), we find a greater quantity in the Near Oceania (New Guinea, the Bismarck Archipelago and the Solomon Islands) and western Micronesian (Palau and Northern Marianas) regions; indicating a stronger coupling between human society and seagrass ecosystems. We also find many non-material contributions historically have been overlooked and under-appreciated by decision-makers. Closer cultural connections likely motivate guardianship of seagrass ecosystems by Pacific communities to mitigate local anthropogenic pressures. Regional comparisons also shed light on general and specific aspects of the importance of seagrass ecosystems to Pacific Islanders, which are critical for forming evidence-based policy and management to ensure the long-term resilience of seagrass ecosystems and the contributions they provide.

https://www.seagrasswatch.org/mckenzie-et-al_2021a-2/

SEAGRASS-WATCH on YouTube

Seagrass: Pastures of the sea <http://www.youtube.com/watch?v=66Y5vgswj20> or

<https://www.seagrasswatch.org/podsnmore/>

Presentation on what seagrasses are and why they are important (over 52,544 views to date)

Global distribution of seagrass meadows https://www.youtube.com/watch?v=OPbmam_sitk

Presentation on scientific paper examining the global distribution of seagrass meadows by McKenzie, Nordlund, Jones, Cullen-Unsworth, Roelfsema and Unsworth <https://doi.org/10.1088/1748-9326/ab7d06>

SEAGRASS & OTHER MATTERS

World Seagrass Day <http://wsa.seagrassonline.org/world-seagrass-day/>

A global campaign for World Seagrass Day: Raising public awareness on the importance of seagrass meadows is central to efforts in the protection and conservation of seagrass meadows worldwide. The international seagrass research and conservation community, together with the undersigned, call on the United Nations to declare a World Seagrass Day to recognize the importance of seagrass meadows to the health and well-being of the planet, as well as the people, communities, flora, and fauna that rely on them. Show your support by signing the petition.

SeagrassSpotter <https://seagrassspotter.org/>

SeagrassSpotter seeks to expand the number of people studying seagrass from a handful of scientists to hundreds and potentially thousands of 'citizen scientists'. As part of efforts to build a sustainable monitoring network, and by leveraging the enthusiasm of everyone from fishers to SCUBA divers to people on vacations at the beach, we'll create a more comprehensive picture of seagrass meadows around the globe. This in turn will inspire new scientific research and practical conservation measures that can help protect ocean habitats. Working together with citizen scientists all over the world, we'll accomplish big things for seagrass and other vulnerable marine species, but only with your help.

World Seagrass Association <http://wsa.seagrassonline.org>

Keep up to date on what's happening with the around the world from the WSA. The World Seagrass Association is a global network of scientists and coastal managers committed to research, protection and management of the world's seagrasses. WSA members come from many countries and include leading scientists in marine and seagrass biology. The association supports training and information exchange and raises global awareness of seagrass science and environmental management issues.

World Seagrass Association on Twitter [@Seagrass_WSA](https://twitter.com/Seagrass_WSA)

Everything seagrass related. World Seagrass Association official account. Follow to stay up-to-date with global seagrass info. Moderator: LM Nordlund

Dugong & Seagrass Research Toolkit <http://www.conservation.tools/>

Dugongs and seagrass are under threat from human activities. By using this Toolkit you should be able to gather information to:

- understand better the status of dugongs, seagrass and communities at your research site;
- understand threats to dugongs and seagrasses and help find solutions to those threats;
- understand the communities that value or may affect dugongs and seagrasses.

The toolkit will guide you to the techniques and tools most suitable to your team capacity, budget and timeline. By using the toolkit, you will also be helping to standardise data sets and methods across different countries and sites, allowing for better comparison of global dugong and seagrass conservation status. The Toolkit is designed for use by marine natural resource managers and decision-makers (government and non-government) and for dugong and seagrass researchers. The Toolkit will assist organisations to assess funding proposals by describing the scope of work, choice of techniques and tools, and budget.

FROM HQ

Past E-bulletins <https://www.seagrasswatch.org/ebulletin/>

Frequently Asked Questions <https://www.seagrasswatch.org/faq/>

Educational Videos <https://www.seagrasswatch.org/education/>

Magazine <https://www.seagrasswatch.org/magazine/>

Virtual Herbarium <https://www.seagrasswatch.org/herbarium/>

Future sampling dates <https://www.seagrasswatch.org/upcomingevents/>

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Seagrass-Watch E- Bulletin is compiled by Len McKenzie & Rudi Yoshida.