



Seagrass-Watch e-Bulletin

Le Morne, Mauritius

31 August 2019

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2017 - 2018 Reef Water Quality Report Card released (QLD, Australia)

30 August 2019, Dept Environment & Energy - Press Release

Federal Minister for the Environment Sussan Ley and Queensland's Minister for Environment and the Great Barrier Reef Leanne Enoch today released the Reef Water Quality Report Card 2017 and 2018. The report card outlines the progress of the Reef 2050 Water Quality Improvement Plan. This plan seeks to improve the quality of water flowing from the land to the Great Barrier Reef.

"This report card shows encouraging improvements in some areas, including some positive results in the Burdekin region where there's been intensive land-use for many years," Ms Ley said. "While improvements have been made, given the size of the area more work is needed across all catchments. Ms Enoch said this report specifically examines water quality in-depth, and that while it was encouraging to see projects working with Queensland farmers and industry were having a positive impact, the overall results demonstrate more urgent work is needed to improve water quality. "Peer reviewed science shows improving the quality of water flowing to the Reef is critical to improving its health, and assisting it to recover from the impacts of climate change.

Australia is committed to the Paris Agreement and is meeting its emissions reduction targets, with the Australian Government recently announcing a \$3.5 billion Climate Solutions Package to support this work. The Queensland Government is also playing its part – protecting the Reef is a key Advancing Queensland priority, with clear targets set to reduce carbon emissions and improve Reef water quality. The interactive Report Card 2017 and 2018 includes finer scale reporting along with more information about the Reef 2050 Water Quality Improvement Plan outcomes and is available at www.reefplan.qld.gov.au

[more.....https://minister.environment.gov.au/ley/news/2019/2017-2018-reef-water-quality-report-card-released](https://minister.environment.gov.au/ley/news/2019/2017-2018-reef-water-quality-report-card-released)

Great Barrier Reef long-term outlook 'very poor', Federal Government reef report finds (Australia)

30 August 2019, by Penny Timms & Laura Gartry, ABC News

For the first time, the long-term outlook for the Great Barrier Reef has been downgraded to "very poor" by the Federal Government, with the impacts of climate change deteriorating its overall health. The evidence-based report written by the Great Barrier Reef Marine Park Authority (GBRMPA) using more than 1,000 scientific reports, was described by its chairman Ian Poiner as "sobering findings". The five-yearly report said climate change is escalating and is the most significant threat to the Great Barrier Reef's long-term survival. Experts said strong mitigation actions "within the next decade" are necessary.

According to the report, without additional action, "the overall outlook for the Great Barrier Reef's ecosystem will remain very poor, with continuing consequences for its heritage values also". The downgraded outlook status comes after back-to-back coral bleaching events, cyclones and record-breaking warm water — particularly affecting the northern part of the reef, which had previously been considered to be pristine. Experts said the decline will continue unless there is urgent and coordinated action to curb greenhouse gas emissions. The findings come on the same day the Federal Government released its quarterly emissions data for the first three months of 2019. It shows that pollution for the year to March rose by 0.6 per cent. Australian emissions have risen for five years in a row.

The report said while the reef's value as a World Heritage Area remained "intact", its integrity is now "deteriorating". A condensed version of the report will be provided to the United Nations in December, so it can determine if the reef's health has improved enough since 2014 in order to retain its cultural heritage status. Poor water quality continues to affect many inshore areas of the reef, with researchers noting that improvement targets have not been met. The report also found reduction of pollutant loads has been slow, reflecting modest improvements in agricultural land management practices.

[more.....https://www.abc.net.au/news/2019-08-30/great-barrier-reef-report-long-term-outlook-downgraded-very-poor/11464294](https://www.abc.net.au/news/2019-08-30/great-barrier-reef-report-long-term-outlook-downgraded-very-poor/11464294)

Related article

Great Barrier Reef outlook now 'very poor', Australian government review says (30 August 2019, The Guardian)

<https://www.theguardian.com/environment/2019/aug/30/great-barrier-reef-outlook-now-very-poor-australian-government-review-says>

Great Barrier Reef outlook downgraded to 'very poor' as threats mount (30 August 2019, The Sydney Morning Herald)

<https://www.smh.com.au/environment/climate-change/great-barrier-reef-outlook-downgraded-to-very-poor-as-threats-mount-20190830-p52mb8.html>

Great Barrier Reef long term outlook downgraded to very poor (30 August 2019, The Australian)

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The Great Barrier Reef is not dead ... long live the reef (30 August 2019, The Age)

<https://www.theage.com.au/politics/federal/the-great-barrier-reef-is-not-dead-long-live-the-reef-20190830-p52mq0.html>

Australia downgrades outlook for Great Barrier Reef to 'very poor' (30 August 2019, The Straits Times)

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Climate change: Australia downgrades outlook for Great Barrier Reef to 'very poor' (30 August 2019, *The New Indian Express*)
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Future of Great Barrier Reef has never been bleaker after new downgrade (30 August 2019, *Metro UK*)

<https://metro.co.uk/2019/08/30/future-great-barrier-reef-never-bleaker-new-downgrade-10656480/>

Great Barrier Reef health outlook downgraded to "very poor" due to ocean warming (30 August 2019, *CBS News*)

<https://www.cbsnews.com/news/great-barrier-reef-australia-downgrades-outlook-coral-very-poor-ocean-warming-today-2019-08-30/>

Australia downgrades Great Barrier Reef's outlook to "very poor" (30 August 2019, *Euronews*)

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Outlook For The Great Barrier Reef Is Now 'Very Poor,' Australian Government Says (30 August 2019, *Huffington Post*)

https://www.huffingtonpost.com.au/entry/great-barrier-reef-outlook-very-poor_n_5d68a900e4b02bc6bb372c4a

Australia lowers outlook for Great Barrier Reef to 'very poor' (30 August 2019, *Aljazeera.com*)

<https://www.aljazeera.com/news/2019/08/australia-lowers-outlook-great-barrier-reef-poor-190830063344611.html>

The outlook for the Great Barrier Reef has worsened from 'poor' to 'very poor,' says the Australian (30 August 2019, *CNN International*)

<https://edition.cnn.com/2019/08/30/australia/great-barrier-reef-very-poor-scn-trnd/index.html>

Australia lowers Great Barrier Reef outlook to 'very poor' (30 August 2019, *China Daily*)

<https://www.chinadailyhk.com/articles/151/200/37/1567157565062.html>

Australia lowers Great Barrier Reef outlook to 'very poor' (30 August 2019, *Associated Press*)

<https://www.apnews.com/d2cb4e79356a4068a8c3d31163ed3ac8>

If dugong die out, it will be indictment on us all (UAE)

30 August 2019, By Jonathan Gornall, *Asia Times*

Before the discovery of oil liberated the peoples of the Arab Gulf region from the tyranny of the fragile, hand-to-mouth existence they had endured for countless generations, the dugong was fair game. As exhaustive research published in 2017 in the journal *Zoology in the Middle East* made clear, the large, docile, herbivorous marine mammal played a vital role in the seasonal cycle of subsistence that made life in the harsh desert environment possible. Prior to the discovery of oil in the region, tribes of dugong hunters "may have killed up to hundreds of dugongs each year," wrote the authors, from the Institute for the Oceans and Fisheries at the University of British Columbia.

Traditionally, the animals were herded into shallow water and clubbed to death, but this was not for sport. To the hunters, dugongs represented a vital source of meat, fat, hide and oil. A single dugong weighing up to 300 kilograms would provide as much as 56 liters of oil, "used for cooking, fuel for lamps, medicine, and as a sealant for wooden boats." The meat was eaten, or dried and traded, and even the bone marrow and tail consumed. The skin was used to make footwear and sword handles, and other objects were fashioned from the tusks. Almost no part of the dugong, in other words, went to waste.

Contrast this with the latest discovery of a dozen of the animals washed up on beaches along the shore of the United Arab Emirates. Trapped and drowned in discarded illegal fishing nets, these animals bring to 20 the total found dead in the UAE this year alone. Every year, many more are found dead. Dugongs are no longer hunted, for their food or for anything else, at least in the waters of the UAE, which passed a law protecting the animals in 1999. Regardless, still they are dying, and their numbers are declining.

The UAE, blessed with extensive seagrass fields off the shores of Dubai and Abu Dhabi, is home to the majority of the dugongs in the Gulf, and has done much to protect them. In 2007 it created the Marawah reserve, the world's first UNESCO-designated marine biosphere reserve. The 4,255-square-kilometer reserve includes numerous islands, 120 kilometers of coastline and several regionally important habitats, including seagrass beds, coral reefs and mangroves. As the researchers, one of whom is from Kuwait, point out, there is also plentiful seagrass off Kuwait, Iraq and parts of Iran, "but no reports of dugong populations in these areas since the 1950s." There is a lack of joined-up conservation cooperation, not just between Iran and the rest of the Gulf states, but also among the Gulf Cooperation Council states. This is bad for the dugong, but is also symbolic of a lack of collective environmental thinking across the board that is damaging the marine environment of the Gulf and threatening the many rare and endangered species hanging on in its waters. The disappearance of the dugong from the Persian Gulf would not only undermine the foundations of a fragile ecosystem that is already under great pressure. It would also be a shaming indictment of a modern world in danger of forgetting the lessons of a heritage it claims to respect.

[more.....https://www.asiatimes.com/2019/08/opinion/if-dugong-die-out-it-will-be-indictment-on-us-all/](https://www.asiatimes.com/2019/08/opinion/if-dugong-die-out-it-will-be-indictment-on-us-all/)

Sarasota Seagrass Survey shows decline (FL, USA)

29 August 2019, by Brynn Mechem, *YourObserver.com*

The results are in, and Sarasota Bay seagrass is in decline, according to an annual study. More than 100 volunteers turned out in May for the 2019 Seagrass Survey, hosted by Sarasota County and Sarasota Bay Estuary Program. After paddling out and diving into Sarasota Bay to collect data, researchers found that in the five years that seagrass has been surveyed, the seagrass beds in Sarasota Bay have become more sparse.

While examining Sarasota Bay's seven regions, researchers collected information on seagrass abundance, sediment characteristics and algal coverage. Beginning in 2015, seagrass beds were becoming more and more dense, topping out in 2018 when 60% of sites were considered "dense." However, in 2019, roughly 30% of sites were considered dense. Additionally, shifts in seagrass species abundance were also recorded. There are three main types of seagrass in Sarasota Bay: *Thalassia testudinum* (turtle grass), *Syringodium filiform* (manatee grass) and *Halodule wrightii* (shoal grass). Researchers recorded an increase of turtle grass and shoal grass but a sharp decrease in manatee grass from about 32% of coverage in 2018 to 12% in 2019.

Nearly 98% of sites had algae in 2015, and that number is now down to 52%. This decrease, Scolaro said, means there will be less harmful nutrients in the water, and seagrass will receive more sunlight. Epiphyte coverage has steadily increased since 2015. In its inaugural year, the survey indicated roughly 4% of sites had "extreme" epiphyte growth. Now that number sits at 22%.

Although the area is currently in decline, John Ryan, Sarasota County environmental manager for stormwater and utility, said it is normal for habitats to contract and expand throughout the years. What is most important is that the county is monitoring this trend, he said.

[more.....https://www.yourobserver.com/article/sarasota-seagrass-survey-shows-decline-in-sarasota-bay](https://www.yourobserver.com/article/sarasota-seagrass-survey-shows-decline-in-sarasota-bay)

Dugong deaths spark calls for plastic ban (Thailand)

26 August 2019, by Apinya Wipatayotin, Bangkok Post

Environmentalists have united in their calls for the government to take decisive action, including an across-the-board ban on single-use plastic bags, to mitigate the increasingly severe harm plastics are causing to the environment and sea lives. The calls are being echoed following the high-profile death of a baby dugong, Marium, which succumbed to an infection last Saturday exacerbated by ingesting marine plastic waste. Marium was the 16th dugong to have died in Thailand this year. This record high in deaths has sounded alarm bells for conservationists.

Thon Thamrongnawasawat, a marine ecologist at Kasetsart University, said the government should order an immediate ban on single-use plastic bags which make up a large quantity of plastic waste in the sea. He insisted it is the best and most effective action to deal with the problem. He cited a Department of Environmental Quality Promotion figure which showed the country's single-use plastic bag reduction campaign reduces the amount of plastic bags by about 1.3 billion bags per year. However, the department says Thais use on average three plastic bags per day per person, which means around 76 billion plastic bags are circulated in the environment every year.

Meanwhile, Tara Buakamsri, country director of Greenpeace Southeast Asia, urged the government to take the issue more seriously by strictly enforcing the law to suppress acts which endanger the environment and animals. People need to change their behaviour -- protecting the environment and animals goes beyond mounting an awareness campaign, he said. He added that EU countries have imposed a law on marine debris and plastic waste management. However, the Thai government has not done the same while the country's policies on plastic waste management are vague and difficult to implement. The cabinet has already approved a "roadmap" on plastic waste management, including plans to ban all cap seals in plastic bottle by this year as well as single-use plastic bags before 2022.

[more.....https://www.bangkokpost.com/thailand/general/1736703/dugong-deaths-spark-calls-for-plastic-ban](https://www.bangkokpost.com/thailand/general/1736703/dugong-deaths-spark-calls-for-plastic-ban)

Related article

Thailand steps up efforts to cut ocean plastic waste and conserve endangered marine life (26 August 2019, The Straits Times)
<https://www.straitstimes.com/asia/se-asia/thailand-steps-up-efforts-to-cut-ocean-plastic-waste-and-protect-endangered-marine>

'Red lights' as over-tourism threatens Corsican nature reserve (France)

25 August 2019, by Maureen Cofflard, Agence-France Presse

"It's nature's magical design," says a tourist guide, waxing poetic as he comments on the impressive red cliffs plunging into a turquoise sea at the Scandola nature reserve on France's Corsica island. The park, created in 1975, is an ecological dream, being a nature reserve and a protected marine zone that is listed by France's coastal protection agency and Natura 2000, in addition to its recognition by UNESCO. It is a prime destination for the some three million people who visit Corsica each year, 75 percent of them in the summer.

The paradox is that growing numbers of tourists are drawn to Scandola's pristine waters and stunning geological vistas, endangering its fragile ecosystem. The park, reached only by boat some 40 minutes from the tiny port of Porto, stretches over 10 square kilometres (nearly four square miles) of sea, and a somewhat smaller area of land.

"The reserve is a jewel for Corsica and the Mediterranean, but several red lights are flashing," says marine biologist Charles-Francois Boudouresque, listing flora and fauna at risk, including ospreys, seagrass and fish species such as the brown meagre. Boudouresque says the seagrass "is not in the best shape," blaming the anchors dropped by the many boats -- some of them private vessels without authorised guides. "It's bizarre for a nature reserve to see all

these boats," said Pierre Gilibert, a 65-year-old doctor, who is a regular visitor. "It might be wise to allow access only to professional boats." Many share the opinion that private boats are not sufficiently monitored or informed of ecological concerns.

[more.....https://au.news.yahoo.com/red-lights-over-tourism-threatens-corsican-nature-031932831--spt.html](https://au.news.yahoo.com/red-lights-over-tourism-threatens-corsican-nature-031932831--spt.html)

Mapping seagrass in the Philippines (Philippines)

24 August 2019, by Mavic Conde, Rappler

The status of seagrass in the Philippines remains widely unknown, although their importance both for food security and mitigating the impacts of climate change have been acknowledged.

In Catanduanes, a handful of locals go to Puraran Beach with a net, a hook and line, or a spear, and a small pail. Locals call them "mangingilaw." They are seafood hunters who look for edible vertebrates at night during low tide, when they could see their catch through the seagrass meadows. Their seafood finds serve as their food the next day. This reliance on seagrass-dependent organisms in this coastal community in Catanduanes is also true in neighboring villages. For instance, a community in Matnog in Sorsogon use "bobo" (trap with food bait) to catch small crabs. They live near a mangrove forest planted on seagrass beds. In Guimaras, where there's an ongoing research on seagrass, 8 out of the 10 fishes consumed by households are seagrass-associated.

A 2017 report of the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) recommended that blue carbon be included in the national reporting of greenhouse gas emissions and sinks. But first, seagrass in the Philippines have to be mapped. Project Seagrass, a global nongovernmental organization that advances seagrass conservation through research, education, and action, is holding a photo competition for the best seagrass and seagrass-related sightings from July until August this year. According to Mary Rose Lopez who heads the Guimaras research for Seagrass Project-Philippines, reporting seagrass sightings helps track seagrass locations for proper monitoring and maintenance; raises awareness of its status; and can be used to develop healthy seagrass meadows and to promote sustainable fishing economy, as more people become aware of its importance.

[more.....https://www.rappler.com/science-nature/environment/238445-mapping-seagrass-philippines](https://www.rappler.com/science-nature/environment/238445-mapping-seagrass-philippines)

Second dugong calf washed ashore dies in Thailand (Thailand)

23 August 2019, by Tan Hui Yee, The Straits Times

An orphaned dugong under the care of Thai veterinarians died on Thursday (Aug 22), less than a week after the loss of another calf which became a social media darling for its human-friendly antics. Jamil, a three-month-old male dugong, was found washed ashore in the southern province of Krabi on July 1 with abrasions on his body, and had been kept under close watch in an enclosed pond at the Phuket Marine Biological Center.

Thailand's Department of Marine and Coastal Resources (DMCR) announced on its Facebook page that the mammal had been sent for surgery to Vachira Phuket Hospital on Thursday evening to remove seagrass that had clogged his stomach after his intestines stopped working. That had caused a build-up of gas in his intestines and was putting pressure on his lungs, making breathing difficult. But Jamil stopped breathing after he was returned to the nursery pond. "The medical team tried to save him with CPR, but couldn't bring him back. Jamil died peacefully at 21.43 hours," the DMCR wrote in its Facebook post.

Just five days ago, another orphaned dugong about twice his age died in another nursery tank in Trang province. Mariam was found ashore, also in Krabi, in April, and became the darling of the nation after marine officials decided to broadcast online their efforts to nurture her in the protected waters off Koh Libong in Trang. Mariam, however, was attacked by an adult dugong and suffered from muscle trauma that eventually worsened to an infection. She was moved to a tank for her protection, but stopped eating and became dehydrated. After Mariam died on Aug 17, a necropsy revealed that her intestines had been clogged by eight pieces of plastic. Mariam's death sparked soul-searching in Thailand, where wide-spread use of disposable plastic items has made it one of the world's largest sources of plastic trash in the ocean.

[more.....https://www.straitstimes.com/asia/se-asia/second-dugong-calf-washed-ashore-dies-in-thailand](https://www.straitstimes.com/asia/se-asia/second-dugong-calf-washed-ashore-dies-in-thailand)

Related article

Yamil is dead (23 August 2019, The Phuket News)

<https://www.thepuketnews.com/yamil-is-dead-72605.php>

Baby dugong in Thailand dies from heart failure after surgery (23 August 2019, AsiaOne)

<https://www.asiaone.com/asia/baby-dugong-thailand-dies-heart-failure-after-surgery>

A second dugong dies in Thailand in blow for vulnerable species (23 August 2019, Los Angeles Times)

<https://www.latimes.com/world-nation/story/2019-08-23/dugong-dies-thailand-surgery>

Young dugong dies in Thailand in blow for vulnerable species (23 August 2019, Washington Post)

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Yamil 17th dugong to die this year (23 August 2019, Pattaya Mail)

<https://www.pattayamail.com/featured/yamil-17th-dugong-to-die-this-year-262774>

Environment Ministry wants to increase dugong populations by 50% over a decade (Thailand)

20 August 2019, *The Thaiger*

Pinsak Suraswadi, deputy director-general of the Marine and Coastal Resources Department, says the Ministry of Natural Resources and Environment wants to increase the population of dugong in Thailand's waters by 50% in the next ten years. The effort will be applied to areas other than Koh Libong in the southern province of Trang, which is home to most of the dugongs, such as Koh Phra Thong in Phang Nga province, Koh Si Boya in Krabi province, Koh Lidee and Koh Sarai in Satun province, Koh Kood, Koh Mark and Koh Kradan in the eastern province of Trat, Kung Krabane bay in Chanthaburi, the Prasae estuary in Rayong province, Sattahip bay in Rayong and Pattani bay in Pattani province.

Pinsak said that the efforts to increase the population of dugongs would be jointly undertaken by officials and communities, with a plan to ban the use of fishing gear which poses a threat to endangered marine animals, including dugongs, in order to reduce the fatality rates from such fishing gear. They also plan to preserve seagrass, the main source of food for dugongs.

Nanthrika Chansue, director of the Veterinary Medical Aquatic Animals Research Centre at Chulalongkorn University, said at the meeting that plastic waste in the feeding grounds of the dugongs must be removed before they pose an even greater threat to the rare animals. Dr. Thon Thamrongnawasawat, vice dean of the Fisheries Faculty at Kasetsart University, said that trash in the seas was the main cause of the death of many endangered marine species, adding that about 80% of the trash in seas around Thailand originated from the mainland and has been washed into the sea in rivers.

[more.....https://thethaiger.com/hot-news/environment/environment-ministry-wants-to-increase-dugong-populations-by-50-over-a-decade](https://thethaiger.com/hot-news/environment/environment-ministry-wants-to-increase-dugong-populations-by-50-over-a-decade)

Summer seaweed invasion taking a toll on Mexico (Quintana Roo, Mexico)

18 August 2019, by Mary Beth Sheridan, *The Washington Post*

It started washing ashore in the Caribbean eight years ago, the smelly, yellow-brown seaweed known as *Sargassum*. Then, just as mysteriously, it disappeared. Now the avalanche of algae is becoming an annual event - with increasingly dire consequences. This year, tons of the seaweed have fouled white-sand beaches from Miami to Mexico's Mayan Riviera. Local officials are fretting about economic fallout. Scientists are warning of harm to the largest reef system in the Americas. In some places, the famously clear Caribbean water turns so murky it resembles gas-station coffee.

The scale of the sargassum invasion is immense. In the past three months, more than 57,000 tons has been raked and scooped up on Mexico's Caribbean coast alone. Even the Mexican navy has joined the battle, sending ships to fish the seaweed out of the water. The sargassum is highly unpredictable, its movement dependent on the winds and currents. In late July, the onslaught of seaweed suddenly eased along the Mexican coast, disappearing in some areas. But by mid- August, it was again sullyng many of the country's loveliest beaches. Scientists were stunned this year to see the algae had grown so explosively that it had formed a 5,500-mile archipelago spanning the Atlantic, from West Africa to the Gulf of Mexico.

Scientists worry the damage could go well beyond the tourist industry. They say the coastline itself could be in jeopardy. That's because sargassum is weakening the coral reefs that serve as a buffer to waves, and the seagrass that anchors the sand. That means future hurricanes could take increasingly big bites out of Caribbean beaches, said Brigitta van Tussenbroek, a marine biologist at Mexico's National Autonomous University. The sargassum kills seagrass - an underwater meadow that holds sand and sediment in place. If both coral reefs and seagrass are damaged, hurricanes can whisk away bigger chunks of beach.

Scientists are only beginning to figure out what's causing the massive bloom. A key culprit, they believe, is the increased flow of nutrients such as nitrogen and phosphorus into the ocean. Those are superfood for sargassum. One suspected source is fertilizer washed into the Amazon and then the ocean, due to increased farming and deforestation in Brazil. But nature could also be contributing to the sargassum bloom - with strong winds churning up nutrient-rich material from the ocean floor off West Africa. This is a multinational problem. And it's critical.

[more.....https://www.thetelegraph.com/news/article/Summer-seaweed-invasion-taking-a-toll-on-Mexico-14341951.php](https://www.thetelegraph.com/news/article/Summer-seaweed-invasion-taking-a-toll-on-Mexico-14341951.php)

Beloved baby dugong 'Mariam' dies in Thailand with plastic in stomach (Thailand)

17 August 2019, *The Associated Press*

A sick baby dugong whose fight for recovery won hearts in Thailand and cast a spotlight on ocean conservation has died from an infection exacerbated by bits of plastic lining her stomach. Mariam washed up in shallow waters off southwestern Thailand months ago and photos of her nuzzling playfully next to rescuers quickly went viral. The discovery soon after of another orphaned dugong brought the sea cows celebrity status, the attention of a Thai

princess – who named the second one “Jamil” – and round-the-clock webcasts giving viewers a front-row seat to feedings and treatment.

But Mariam died just after midnight after going into shock and efforts to resuscitate her failed, Chaiyapruk Werawong, head of Trang province marine park, told AFP. “She died from a blood infection and pus in her stomach,” he said, adding they found small amounts of plastic waste in her intestinal tract. An autopsy showed the plastic had caused obstructions in the animal’s stomach, leading to inflammation and gas build-up, veterinarian Nantarika Chansue posted on Facebook. “We could partially treat the respiratory infection but the obstruction of plastic rubbish... could not be cured,” she said in the post, calling for her death to serve as a lesson.

The dugongs are the latest marine creatures to make headlines in Thailand, whose plastic-choked waters are also a threat to habitats. Both the animals were found in southern Thailand, home to about 250 of the sea cows, which are closely related to the manatee and classified as vulnerable. Jamil, whose name translates to “handsome sea prince”, is being cared for separately in Phuket. Mariam’s death was also announced on the Facebook page of the Department of Marine and Coastal Resources.

[more.....http://www2.nst.com.my/world/2019/08/513486/beloved-baby-dugong-mariam-dies-thailand-plastic-stomach](http://www2.nst.com.my/world/2019/08/513486/beloved-baby-dugong-mariam-dies-thailand-plastic-stomach)

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Thailand's 'sweetheart' dugong dies with plastic in stomach (17 August 2019, The Guardian)

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Beloved Thai baby dugong dies with plastic in stomach (17 August 2019, Aljazeera)

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Thailand's lost baby dugong dies of shock, ingesting plastic (17 August 2019, CityNews Vancouver)

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Thailand's beloved baby dugong dies of shock, plastic in stomach (17 August 2019, India TV)

<https://www.indiatvnews.com/news/world-thailand-s-lost-baby-dugong-dies-of-shock-ingesting-plastic-542960>

Famous rescued sea cow dies from plastic pollution (17 August 2019, Metro UK)

<https://metro.co.uk/2019/08/17/famous-rescued-sea-cow-dies-plastic-pollution-10585954/>

This baby sea mammal captured people's hearts. She just died from eating plastic (17 August 2019, Washington Post)

<https://www.washingtonpost.com/science/2019/08/17/this-baby-sea-mammal-captured-peoples-hearts-she-just-died-eating-plastic/?noredirect=on>

Leonardo DiCaprio Shares Photo of Thailand's Marine Mammal 'Mariam' That Died Due to Plastic (25 August 2019, LatestLY)

<https://www.latestly.com/social-viral/leonardo-dicaprio-shares-photo-of-thailands-marine-mammal-mariam-that-died-due-to-plastic-waste-in-stomach-1132481.html>

Free of toxic algae: Seagrass growth on Treasure Coast shows sign of restoration (FL, USA)

16 August 2019, by Denise Sawyer, WPEC

Local estuaries are on the road to recovery after years of polluted, algae-laden water had led to an ecological collapse in some parts of South Florida. Seagrass, which is a keystone of the marina food cycle, is growing back. The restoration of seagrass is a promising sign for those who have witnessed past seagrass die-offs on the Treasure Coast. "This summer, we've been seeing a lot more seagrass out in the lagoon," said Kathryn Tiling, research assistant at Florida Oceanographic Center in Martin County. "A lot of that is attributed to the fact that we have not had any major discharges this summer."

In 2016, toxic blue-green algae suffocated more than 30,000 acres of seagrass, according to the water quality advocate group Surf Rider. Now, there's no toxic algae insight on the Treasure Coast (because of very little to no Lake Okeechobee discharge into the St. Lucie estuaries) and more seagrass has been spotted in the Indian River Lagoon. "It's actually the natural recovery of seagrass in those areas," Tiling said. She and a team at the Florida Oceanographic Center are continuing a seagrass restoration program. Researchers at the facility are growing 500 meters worth of seagrass. Tiling said that grass is then replanted in the Indian River Lagoon. "We're still nowhere near where we were 10 years ago with the amount of seagrass in the area," Tiling said. "We are at about 50 percent of what we used to have. We're at least seeing a little of it come back."

[more.....https://cbs12.com/news/local/free-of-toxic-algae-seagrass-growth-on-treasure-coast-shows-sign-of-restoration](https://cbs12.com/news/local/free-of-toxic-algae-seagrass-growth-on-treasure-coast-shows-sign-of-restoration)

Baby dugong Mariam safe in her own nursery pond (Thailand)

15 August 2019, by Khanitta Sitong & Jitraporn Senwong, The Nation Thailand

The orphaned baby dugong Mariam has been moved to a temporary nursery pond in Trang province where she is being monitored round the clock, with her heartbeat and respiratory system being checked hourly, Koh Libong Wildlife Sanctuary chief Chaiyapruk Weerawong said. Mariam was moved to the 7-metre-radius pond in the Duyong Bay area on August 14, and a blood sample was taken for lab tests at the Rajamangala University of Technology's Nakhon Si Thammarat campus, so she can be provided with the correct treatment. Veterinarians reported that Mariam was calm and in a stable condition with a heart rate of 85 beats per minute and three breaths every five minutes.

The baby dugong was moved because it had gone into shock – refusing milk and consuming very little seagrass – after being chased by a male dugong looking to mate during low tide on August 7. On August 10, Mariam suffered a cardiac arrest, prompting veterinarians to give her a cardiac stimulant, and was later found to have a blood infection. Noting that many dugongs were swept ashore lately, Natural Resources Minister Warawuth Silpa-archa said a national plan for the protection of these animals was being considered, adding that it would require participation from coastal residents and fishermen for peaceful co-existence with Thailand's 250 dugongs.

[more.....https://www.nationthailand.com/news/30374835](https://www.nationthailand.com/news/30374835)

Baby Dugong on Sick Watch After 'Hope' the Whale Dies (Thailand)

13 August 2019, by Asaree Thaitrakulpanich, Khaosod English

The nation is holding its breath to see if a baby dugong will recover after being attacked by another fully grown dugong. Mariam, a 7-month-old rescued female dugong, is under intense care from veterinarians as of Tuesday at Duyong Bay in Koh Libong. Just yesterday, a dwarf sperm whale calf named Hope died while under watch in Phuket.

On Wednesday Aug. 7, an adult dugong aggressively chased and attacked Mariam, sending her into a depressive state where she stopped eating and exhibited irregular breathing. On Friday, her condition worsened, with her whole body shaking in stress. She remained weak on Sunday but began eating sea grass on Monday. Veterinarian Nantarika Chansue, who has treated aquatic animals all over the Kingdom, has diagnosed Mariam with a bloodstream infection, fever, pneumonia, dehydration, and mouth sores. Mariam is being treated with antibiotics, vitamins and mineral supplements, as well as salves for her wounds.

[more.....http://www.khaosodenglish.com/news/2019/08/13/baby-dugong-on-sick-watch-after-hope-the-whale-dies/](http://www.khaosodenglish.com/news/2019/08/13/baby-dugong-on-sick-watch-after-hope-the-whale-dies/)

Residents say boats are a danger to swimmers and destroying seagrass NE of Dunedin Causeway (FL, USA)

10 August 2019, by Wendi Lane, ABC Action News

Some Dunedin residents are concerned that motorboats northeast of the Dunedin Causeway are a danger to swimmers and are destroying protected seagrass beds. Dunedin resident Sandie Selvaggio, who has lived in Dunedin for more than 40 years, says no motorboats should be allowed in the shallow area northeast of the Causeway.

"The northeast end here is the beginning of one of the largest seagrass meadows in Florida, extending for 15,000 acres all the way to Anclote Key," said Kim Begay, conservation advocate. Begay says the boats are not only a danger to swimmers and fishermen who use the shallow water, but the boats are tearing up the protected seagrass beds. The city of Dunedin allows boats to launch on the south side of the causeway. But Begay says when the launching area is backed up, people come to the north side to launch, ripping up the protected seagrass beds that take years to grow back. On Tuesday the Dunedin Causeway Coastal Waterway Committee will vote whether or not to put signage up restricting motorboats from entering the shallow area.

[more.....https://www.abcactionnews.com/news/region-pinellas/residents-say-boats-are-a-danger-to-swimmers-and-destroying-seagrass-ne-of-dunedin-causeway](https://www.abcactionnews.com/news/region-pinellas/residents-say-boats-are-a-danger-to-swimmers-and-destroying-seagrass-ne-of-dunedin-causeway)

Turtles eating plastic bags and fishing rope are mistaking it for seagrass (Cyprus)

09 Aug 2019, by Lucy Middleton, Metro

Green turtles are ingesting bits of plastic that most resemble their natural diet, new research has revealed. Scientists examining the guts of turtles washed up on beaches in Cyprus found the animals had mostly eaten plastic that looked like seagrass. The creatures frequently ingested long thin lengths of the material that were either black, clear or green in colour, potentially from bin bags, and fragments of fishing rope and carrier bags. All of the turtles examined were found to have swallowed plastic, while one animal contained 183 pieces. Dr Emily Duncan, of the University of Exeter, said: 'Previous research has suggested leather-back turtles eat plastic that resembles their jellyfish prey, and we wanted to know whether a similar thing might be happening with green turtles.'

'Sea turtles are primarily visual predators, able to choose foods by size and shape, and in this study we found strong evidence that green turtles favour plastic of certain sizes, shapes and colours. 'Compared to a baseline of plastic debris on beaches, the plastic we found in these turtles suggests they favour threads and sheets that are black, clear or green.'

Researchers from the University of Exeter and Society for the Protection of Turtles looked at 34 turtles, but could only examine the full gastrointestinal tracts of 19 turtles. The amount of plastic found in each turtle ranged from three pieces to 183. Scientists were unable to determine if the plastic had played a role in the turtles' deaths, with most having died after becoming tangled in fishing nets.

Smaller turtles appeared to have ingested more of the material, possibly because they are younger and less experienced in choosing the right foods to eat, the experts said. Their diet choices could also change as they grew

older. The research was supported by Plymouth Marine Laboratory, and also received funding from the Sea Life Trust and the European Union. Professor Brendan Godley, who leads the Exeter Marine research strategy, said: 'Research like this helps us understand what sea turtles are eating, and whether certain kinds of plastic are being ingested more than others. 'It's important to know what kinds of plastic might be a particular problem, as well as highlighting issues that can help motivate people to continue to work on reducing overall plastic consumption and pollution.'

[more.....https://metro.co.uk/2019/08/09/turtles-eating-plastic-bags-fishing-rope-mistaking-sea-grass-10543348/](https://metro.co.uk/2019/08/09/turtles-eating-plastic-bags-fishing-rope-mistaking-sea-grass-10543348/)

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Hungry green turtles fooled by plastic that looks like sea grass (09 August 2019, The Scotsman)

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A green turtle that washed up dead on a beach in Cyprus was found with 183 pieces of plastic in its gastrointestinal tract. (09 August 2019, Phys.Org)

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Green turtles are dying because they're eating plastic that looks like food (09 August 2019, Fox News)

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Dead green turtle found with 183 pieces of plastic in its gut in Cyprus (13 August 2019, Sky News)

<https://news.sky.com/story/dead-green-turtle-found-with-183-pieces-of-plastic-in-its-gut-in-cyprus-11780814>

Green turtles swallow plastic that looks like sea grass (09 August 2019, UPI.com)

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Green Turtles Are Mistaking Plastic for the Sea Grass They Normally Eat (09 August 2019, EcoWatch)

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Green turtles eat plastic that looks like their food (09 August 2019, Science Daily)

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Hungry green turtles 'are being duped by plastic that looks like their natural diet' (09 August 2019, Cambridgeshire Live)

<https://www.cambridge-news.co.uk/news/uk-world-news/hungry-green-turtles-are-being-16727204>

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<https://en.prothomalo.com/environment/news/200147/Green-turtles-swallow-plastic-that-looks-like>

More Resorts join Six Senses in the Maldives for Seagrass Protection (Maldives)

06 August 2019, by Özgür Töre, ftn News

The #ProtectMaldivesSeagrass campaign, headed by the Blue Marine Foundation and the Maldives Underwater Initiative (MUI) at Six Senses Laamu, has so far convinced more than 25 percent of resorts in the Maldives to protect their seagrass meadows. Charles Clover, executive director of the Blue Marine Foundation, said, "Many resorts have joined the campaign and are now protecting this critical habitat; however, some resorts are still continuing to remove their seagrass. Support from the government, resorts, organizations and tourists is evidence that the practice of seagrass removal is finally ready to be put to an end."

The country's Ministry of Tourism has also officially endorsed the campaign to stop the removal of seagrass beds. Seagrass is commonly removed in the Maldives when it is found near resort islands because operators believe it spoils the clear, picturesque lagoons that tourists expect on holiday. More than 30 resorts joined the campaign and collectively pledged to protect more than 8.9 million square feet (830,000 square meters) of seagrass around resort islands across the country.

Six Senses Laamu, the resort that inspired the campaign, has been protecting its seagrass since 2017 and has successfully shown that seagrass and tourism can coexist. The resort was used as a case study and was featured in a guide that demonstrated to resort general managers how seagrass can be an asset for positive guest experiences, encouraging them to protect at least 80 percent of their resort's seagrass meadows. Marteyne van Well, general manager of Six Senses Laamu, said, "It's inspiring to see so many resorts come together and advocate for seagrass. With the number of new resorts on the rise, it's vital that this expansion is done sustainably to protect our unique marine environment, which people all over the world come to visit."

[more.....https://ftnnews.com/other-news/37571-more-resorts-join-six-senses-in-the-maldives-for-seagrass-protection](https://ftnnews.com/other-news/37571-more-resorts-join-six-senses-in-the-maldives-for-seagrass-protection)

Conservationists denounce boat "saturation" (Spain)

06 August 2019, Majorca Daily Bulletin

The marine conservation association Mallorca Blue has produced a video said to be like any day in high summer in Palmanova. It highlights the number of boats moored in the bay and in some scenes shows *Posidonia* seagrass attached to anchors that are being hauled in. In one instance, a crew member removes the *Posidonia* and throws it back into the sea. Mallorca Blue have denounced what they say are daily "aggressions", such as deposits of water without adequate treatment, anchoring on *Posidonia* and the numerous bottles and other trash dropped into the sea. This is the price that Majorca pays, the association says, for being "a place for leisure", and it criticises work at ports and marinas which has a negative impact on the marine environment.

In May, the association indicated that there are some 40,000 boats in Balearic waters each summer season, and it draws attention to the "unsustainable" imbalance between the number of boats and plants for treating faecal water. This occurs at state ports and at those which are the responsibility of the regional government. Portocolom and Puerto Soller are specifically mentioned in this regard.

[more.....https://www.majorcadailybulletin.com/news/local/2019/08/06/56801/conservationists-denounce-boat-saturation.html](https://www.majorcadailybulletin.com/news/local/2019/08/06/56801/conservationists-denounce-boat-saturation.html)

Outer Banks seagrasses are declining, studies and observations show (NC, USA)

06 Aug 06 2019, By Jeff Hampton, *Virginian-Pilot*

Seagrass is more plentiful within the North Carolina Outer Banks than along any other eastern state's coast except Florida, but it is losing ground. State biologists are surveying seagrasses that prefer the saltier waters of the Pamlico Sound and waterways southward for the third time in a dozen years. A report is expected to come out early next year. Spotters are seeing areas where seagrass is not present in places where it should be, said Jud Kenworthy, a retired NOAA marine scientist who is a volunteer team leader on the seagrass survey for the Albemarle Pamlico National Estuary Partnership. Surveys in 2007 and in 2012 indicate the estuaries support about 150,000 acres of seagrass, but have declined at a rate of about a half percent to 1.5 percent per year, Kenworthy said.

The North Carolina estuary partnership is one of 28 programs established in the 1980s to research the health of water bodies including the Chesapeake Bay and the Pamlico Sound. Seagrasses are a key part of the research. Healthy grass beds should grow over large areas, said Anne Deaton, habitat assessment manager for the North Carolina Division of Marine Fisheries. "I have heard that the beds seem to be getting less continuous and more patchy in some areas," Deaton said.

North Carolina is unique in that its waters sustain warm-water subaquatic vegetation like shoal grass and cool-water species like eel grass. Only Florida has more seagrass on the East Coast, Kenworthy said. The surveys are time consuming. Biologists photographed the waterways from aircraft in the spring on clear days and at low tides for a better view into the water. Led by the marine fisheries division, dozens of people spent hours on the water to verify the aerial photography, Deaton said. Surveyors on the water record temperature, salinity and bottom composition. They measure water clarity by lowering a white disk below the surface until it disappears, then noting the depth. They set a device about two feet square made from plastic pipe onto grass mats below to record density. The surveys are setting a baseline, Kenworthy said. The work is well behind the success in the Chesapeake Bay, but the hope is to at least maintain what is there, he said. "The loss of grass habitat is going to affect a lot of fisheries," he said.

[more.....https://www.pilotonline.com/news/environment/article_93fb40a2-b7a9-11e9-a49f-63e97c1f8736.html-2](https://www.pilotonline.com/news/environment/article_93fb40a2-b7a9-11e9-a49f-63e97c1f8736.html-2)

Biscayne Bay Is In Danger Of A 'Regime Shift,' NOAA Study Finds (FL, USA)

05 Aug 2019, By Jenny Staletovich, *WLRN*

A new study from the National Oceanic and Atmospheric Administration looking at 20 years worth of data on pollution has found a new risk threatening Biscayne Bay. The study, published this month in the journal *Estuaries and Coasts* looked at water monitoring throughout the bay between 1995 and 2014. The data showed parts of the bay, gradually filling with chlorophyll and phosphorus. The pollution coincided with a cascade of worsening conditions, from spreading seagrass die-offs to persistent algae blooms. That suggests the bay's lush seagrass meadows and clear water could disappear in a soup of nutrient-rich green water and clumps of thick algae, and undergo what scientists call a regime change.

"Those are warning signs that it's already starting to happen," said Chris Kelble, a co-author and oceanographer at the NOAA's Atlantic Oceanographic and Meteorological Lab on Virginia Key. Once a water body switches, he says, it's almost impossible to switch back. Kelble said he started to notice warning signs in 2014 when an algae bloom erupted in the south end of the bay. In 2015, alarmed by the trend, NOAA designated the bay a special study area to try to get in front of the problems. There are only 10 such areas nationwide.

The data came from 48 stations monitored by NOAA, the South Florida Water Management District, Miami-Dade environmental regulators and Florida International University. It included only stations with at least 10 years' worth of data. It showed the highest spike in nutrients inshore, and in enclosed areas like the north end's Tuttle Basin. While researchers didn't pinpoint the sources of pollution, they say the location suggests pollution from land as the likely culprit. Based on the findings, NOAA is helping to advise cities ringing the bay on better pollution control practices - like fertilizer use, leaky septic tanks and stormwater drainage - to improve conditions. "When you switch from seagrass beds to essentially green water, it's very tough...to go back to seagrass beds," Kelble said. "It takes a much bigger reduction in nutrients to get back to seagrass beds than it does to just keep the seagrass beds as they are."

[more.....https://www.wlrn.org/post/biscayne-bay-danger-regime-shift-noaa-study-finds](https://www.wlrn.org/post/biscayne-bay-danger-regime-shift-noaa-study-finds)

Four pillars of green for Ibiza and Formentera (Spain)

05 August 2019, *Ibiza Spotlight*, by Hannah Starkie

The Ibiza Preservation Foundation (IPF) continues to invest in a green future for Ibiza and Formentera. Just over €140,000 has been earmarked to support four conservation pillars that the organisation believes will offer important

support to the islands. These four main projects include the Sustainability Observatory, Plastic Free Ibiza and Plastic Free Formentera, *Posidonia* Protection and Ibiza Produce.

Educating younger generations is a key concern and the *Posidonia* Protection project, carried out by Vellmari Association, is doing just that by working with schools. Children are taught about the role of the *Posidonia* seagrass meadows in supporting the eco-system and keeping the waters crystal-clear. Vellmari has already held snorkelling trips in order to introduce children first-hand to the meadows. Mapping out the meadows will also monitor pollution levels and climate change and help identify conservation requirements.

If you love Ibiza and Formentera, and like the work of the IPF, you can support the organisation through volunteering or donation. It's just a few clicks away!

[more.....https://www.ibiza-spotlight.com/magazine/2019/07/four-pillars-green-ipf-ibiza](https://www.ibiza-spotlight.com/magazine/2019/07/four-pillars-green-ipf-ibiza)

Legislator asking Port Canaveral to chip in \$2 million a year to help clean Indian River Lagoon (FL, USA)

02 August 2019, by Jim Waymer, Florida Today

Florida Rep. Tyler Sirois wants to make Port Canaveral chip in some \$2 million a year for three decades to clean up the Indian River Lagoon, doubling the budget of the program responsible for the task. Under his proposal, announced Thursday, the Florida Legislature would add to the Canaveral Port Authority's state charter a requirement that 2% of its gross revenue each year goes to investment in lagoon restoration for 30 years. The money — which Sirois estimates would total \$61 million — would go to projects that improve stormwater management, hook more homes to sewer systems and other lagoon restoration projects overseen by the Indian River Lagoon National Estuary Program.

The lagoon has struggled to recover after drought, then extreme cold set the stage almost a decade ago for severe widespread algae blooms that killed off 60% of the lagoon's seagrass, the key barometer of the estuary's ecological health. Continual algae blooms, at times resulting in fish kills, keep undermining the lagoon's recovery, despite tens of millions in state money spent on muck dredging and other lagoon restorations since the infamous 2011 algae "superbloom" decimated the lagoon's seagrass. Some lagoon activists have for years repeatedly urged the port to play a larger role in the recovery.

The Florida Department of Environmental Protection estimates each acre of seagrass is worth more than \$20,500 a year in commercial and recreational fisheries, as well as cycling of nutrients such as nitrogen, which can trigger algae blooms. In a letter Sirois wrote this week to port commissioners — a government special district — he cites the port having a record \$103.75 million in revenue last year, a 7.7% increase in cruise passengers and a 6.9% increase in cargo tonnage. The Indian River Lagoon National Estuary Program runs on about a \$2.2 million budget. But natural resource managers have long warned the lagoon's cleanup could take decades and in excess of \$1 billion. Port Commissioner Wayne Justice said the port supports helping the lagoon, but it's just a matter of figuring out how to fund it. He likened Sirois' proposal to "a new tax."

[more.....https://www.floridatoday.com/story/news/local/environment/lagoon/2019/08/01/sirois-floats-plan-have-port-canaveral-help-save-lagoon/1876589001/](https://www.floridatoday.com/story/news/local/environment/lagoon/2019/08/01/sirois-floats-plan-have-port-canaveral-help-save-lagoon/1876589001/)

UT Marine Science Institute in Port Aransas receives \$5 million grant for new center (TX, USA)

01 Aug 2019, by David Silva Ramirez, Corpus Christi Caller Times

Researchers with the Mission-Aransas National Estuarine Research Reserve at the University of Texas Marine Science Institute (UTMSI) are learning about the value of seagrass to fisheries from the folks who fish almost daily. The United States Economic Development Administration awarded a grant of \$5 million to the UTMSI Thursday in an effort to continue Hurricane Harvey disaster relief for the satellite campus. The grant will help establish the Center for Coastal Ocean Science — which will further aid the campus' research — aimed at understanding biological, chemical and physical processes in coastal ecosystems. The grant was announced by EDA Deputy Assistant Secretary for Regional Affairs Dennis Alvord at the institute in Port Aransas.

UTMSI suffered extensive damages during Hurricane Harvey in 2017. The campus was temporarily closed to students following the hurricane, and the visitors and education centers remain closed. Before Harvey, UTMSI, which is the oldest marine laboratory in the Gulf Coast, saw over 25,000 visitors. The grant announcement included the UTMSI director Robert Dickey, State Rep. Todd Hunter and U.S. Congressman Michael Cloud. Cloud thanked the EDA for playing a part in the district's Hurricane Harvey recovery efforts by investing in the campus.

[more.....https://www.caller.com/story/news/local/2019/08/01/utmsi-port-aransas-receives-5-million-grant-new-center/1884582001/](https://www.caller.com/story/news/local/2019/08/01/utmsi-port-aransas-receives-5-million-grant-new-center/1884582001/)

CONFERENCES

OceanObs'19 (16-20 September 2019, Honolulu, Hawaii, USA)

Theme: Connecting Science and Society

The OceanObs'19 conference is a community-driven conference that brings people from all over the planet together to communicate the decadal progress of ocean observing networks and to chart innovative solutions to society's growing needs for ocean information in the coming decade.

As part of the decadal conference series, OceanObs'19 will galvanize the ocean observing community ranging from scientists to end users. OceanObs'19 seeks to improve response to scientific and societal needs of a fit-for-purpose integrated ocean observing system, for better understanding the environment of the Earth, monitoring climate, and informing adaptation strategies as well as the sustainable use of ocean resources. Overall, OceanObs'19 will strive to improve the governance of a global ocean observing system, including advocacy, funding, and alignment with best practices and to designate responsibility for product definition, including production and timely delivery at the appropriate scales (global, basin, regional, national) to serve user needs. The conference program will be built focusing on a single objective each day to provide adequate time to answer to the proposed questions.

More information:

To get important updates, visit: <http://www.oceanobs19.net/#main>

The 25th Biennial CERF Conference (Mobile, Alabama on 3–7 November, 2019)

Theme: "Responsive | Relevant | Ready"

CERF2019 endeavors to connect science and society in the collective goals of preserving the coastal and estuarine habitats, resources, and heritage. Through the conference, attendees will discuss the nature of research agendas that are directed at finding and solving problems, and how to engage stakeholders in that process. CERF2019 goal is to balance a natural and social scientific agenda with the food, music, and art emblematic of the central Gulf of Mexico. In keeping with tradition, CERF2019 hopes to create a seriously fun and memorable 25th Biennial CERF Conference.

Special session - Seagrasses: sentinel species in a changing world - a tribute to Dr. Susan Williams

Session co-chairs – Robert Orth and Ken Heck

Seagrasses are key sentinel species whose sensitivity to changing water quality is well known to warn of deteriorating conditions in coastal waters. The past five decades have seen great progress in understanding the biology of seagrasses, the ecology of the world's seagrass meadows and in valuing the many services they provide. During this time there have been paradigm shifts in our understanding of many fundamental processes that underpin the ecology of seagrass meadows. Among them is a revised understanding of the phylogeny and evolutionary history of seagrass lineages, the smaller role played by the consumption of detritus in seagrass food webs, and the larger role of direct consumption of seagrasses in energy flux. Additional advances include convincing evidence that seagrasses can be pollinated by small invertebrates, that microbial-seagrass interactions in the sediments and in the water column are a vast area only beginning to be explored and that individual seagrass clones can cover vast areas and exist for millennia. Other recent advances include a revised understanding of the widely varying dispersal abilities of different seagrass species, as revealed by the much improved ability to genotype seagrass clones and the rapidly advancing knowledge, aided by much trial and error, of how to improve the success of seagrass restoration efforts. We have also seen important advances in valuing the services provided by seagrass meadows, such as their important role as nursery habitat for a variety of economically important finfish and shellfish. In addition, their previously less well known services, such as their functioning as vast reservoirs of blue carbon, is becoming increasingly elucidated, with the implication that the continuing global decline of seagrass meadows has profound implications for earth's climate.

Seagrasses face many emerging challenges associated with our changing climate, including the effects of the alteration of temperatures, pH and dissolved oxygen, as well as the immigration and assimilation of tropical species, whose predatory, competitive and pathological effects on the ecology of seagrasses and their associated biotas may be enormous but which remain unknown and unpredictable.

This session will highlight the most exciting, recent advances in seagrass research by those at the forefront of the field, and is dedicated to Dr. Susan Williams, who, throughout her career, played a leadership role in seagrass ecology and mentored some of its leading practitioners. It will be of interest to researchers and resource managers faced with the challenge of preserving, restoring and managing seagrass resources.

To submit an abstract to this session, visit <https://cerf.confex.com/cerf/2019/webprogrampreliminary/Session2039.html>

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Schedule-at-a-Glance: <https://www.erf.org/2019-schedule-at-a-glance>

The 14th International Seagrass Biology Workshop (ISBW14) (Annapolis, Maryland, USA on 09–14 August 2020)

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 2020 will be held in August 2020 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://isbw.seagrassonline.org/>

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SEAGRASS-WATCH on YouTube

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

Presentation on what seagrasses are and why they are important (over 50,178 views to date)

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

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Virtual Herbarium <http://www.seagrasswatch.org/herbarium.html>

Future sampling dates <http://www.seagrasswatch.org/sampling.html>

Handy Seagrass Links <http://www.seagrasswatch.org/links.html>

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