28 February 2021

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NEWS

When devastation strikes the oceans, sharks can hold the key to recovery

25 February 2021, FIU News

A world without sharks is a world less resilient to extreme climate events, scientists say. According to a new study, they are critical in helping ecosystems recover when devastation hits from hurricanes or marine heatwaves. It's a basic food web problem. Grazing animals, including turtles and dugongs, eat seagrass. Sharks eat the grazers. Grazers fear the sharks. So, when sharks are around, the grazers often avoid the area. While the grazers are away, the aquatic plants have time to grow and recover.

In a unique experiment, a team of scientists tested whether an ecosystem could recover if sharks were no longer there to keep other animals in check. The answer is no, according to Mike Heithaus, a co-author of the study, marine ecologist and dean of FIU's College of Arts, Sciences & Education. The scientists conducted their study in Shark Bay, Australia, where tiger sharks like to spend their summers, making it quite uncomfortable for resident grazers, especially dugongs. The grazers prefer the shallow seagrass meadows. But dugongs head for safer waters until the sharks leave in winter and it's safe for them to return to the shallows. In 2011, a historic heatwave decimated much of the bay's seagrass. Recovery from the heatwave has been slow but aided by the seasonal presence of sharks.

The scientists, wondering what would happen if sharks didn't return during the summer, decided to create an 'eternally safe' Shark Bay. To do this, they used previous calculations of how many dugongs were around and how much they ate to perform the role of the grazer themselves, mimicking the way dugongs feed on the seagrass during the summer. The experiment left the area with no recovery time — meaning if the dugongs grazed year-round, they'd end up inadvertently destroying the critically important canopy species. The research shows that when top predators are gone, not only does the structure of the ecosystem break down, but it's also all-but-impossible for that ecosystem to stage a comeback.

more…….https://news.fiu.edu/2021/when-devastation-strikes-the-oceans,-sharks-can-hold-the-key-to-recovery

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Sharks can help marine ecosystems survive effects of climate change, FIU study finds (27 February 2021, Orlando Sentinel)
https://www.orlandosentinel.com/news/florida/os-nenewsnationsharks-can-help-marine-ecosystems-survive-effects-of-20210227-o4v6m3gklfewtbiik7p3r7pecu-story.html

Sharks can help marine ecosystems survive effects of climate change, FIU study finds (27 February 2021, The Bakersfield Californian)
https://www.bakersfield.com/ap/national/sharks-can-help-marine-ecosystems-survive-effects-of-climate-change-fiu-study-finds/article_fc2578c3-6bf2-5de1-b720-0403e52e81d6.html

FIU: When devastation strikes the oceans, sharks can hold the key to recovery (27 February 2021, PRNewswire)
https://www.prnewswire.com/news-releases/fiu-when-devastation-strikes-the-oceans-sharks-can-hold-the-key-to-recovery-301236591.html

New research demonstrates crucial role of World Heritage marine sites in fighting climate change (26 February 2021, India Education Diary)
https://indiaeducationdiary.in/new-research-demonstrates-crucial-role-of-world-heritage-marine-sites-in-fighting-climate-change/

Judgement on Freesoul Real Estate Development PTE Limited case next month (Fiji)

23 February 2021, by Vishaal Kumar, Fiji Times

The case involving Freesoul Real Estate Development (Fiji) PTE Limited was called today at the Suva Magistrates Court before Suva Magistrate Seini Paumau for oral arguments. State lawyer Shelyn Kiran argued that for count one, they took the digging of the channel to be as a development activity while for count two, the boardwalk, clearing of the mangroves and seagrass was recognised as a development as well.

For count one, Ms Kiran argued that the company had intention as this had been supported by the reply from the company to the Director of Environment after the prohibition notice had been issued where they had apologised for the work they had done. In response, Freesoul lawyer David Toganivalu told court that they had acknowledged that the channel was a development activity and the State had established the element of physical conduct. Toganivalu highlighted that for count two, they had conceded that it was a development activity undertaken by the company.

Freesoul was charged two counts of undertaking unauthorised developments and one count of failure to comply with a prohibition notice. For the charge of undertaking unauthorised developments, it was alleged that between June 8, 2017 and December 6, 2018, at Malolo in Nadi, Freesoul Real Estate Development (Fiji) PTE Limited carried out development activity on the dry land at Wacia and the foreshore facing Wacia and also on the dry land at Qalilawa and the foreshore facing Qalilawa which is subject to the Environmental Impact Assessment process without an approved Environment Impact Assessment (EIA) Report. The matter has been adjourned to March 12, for judgment.

more…….https://www.fijitimes.com/judgement-on-freesoul-real-estate-development-fiji-pte-limited-case-next-month/

Seagrass Is A Vital Weapon Against Climate Change, But We're Killing It (FL, USA)

21 February 2021, HuffPost

Florida has the most diverse seagrass meadows in the U.S. The state is home to 2.5 million acres of seagrasses, made up of seven different species. Dave Tomasko has studied seagrasses in Florida for almost 40 years and is now the director of the nonprofit Sarasota Bay Estuary Program, which helps protect and restore the bay off the central west coast of Florida. “Our general approach to managing seagrasses is managing water quality,” he said, so seagrasses can get the abundant light they rely on for photosynthesis. The key to this, said Tomasko, is reducing the amount of nutrients being washed into the bay from stormwater and wastewater.

“Between 1988 and 2014,” he said, “we had a big nutrient reduction and seagrass coverage actually increased to levels above what it was in 1950.” During those years, Sarasota County consolidated around 70 smaller wastewater treatment plants, many of which were struggling to operate, into a series of larger plants. This, combined with the removal of thousands of septic tanks and banning fertilizer use on lawns during the rainy season, significantly reduced the amount of nitrogen entering the bay. Unfortunately, a lot of this progress was undone between 2013 and 2018. During these five years, a wastewater treatment plant in Sarasota County released more than 800 million gallons of sewage that were not properly treated. At the same time, there was increased rainfall as well as population growth in the area, which stressed aging infrastructure with more waste to treat, store and dispose of. In the southern part of Sarasota Bay, Tomasko said most of the increase in seagrass coverage is now gone.

Holly Binns, director of The Pew Charitable Trusts’ ocean and coastal conservation work in the Southeast, adds that “the need for water quality protections in Florida is growing more urgent with increasing nutrient pollution.” Between 2016 and 2018, scientists from the University of South Florida and the Florida Fish and Wildlife Conservation Commission visited 33 seagrass restoration sites around the state, some of which were more than three decades old. They found that almost 90% of the sites continued to support seagrass but when compared with natural seagrass beds, these restored beds were more sparse, with an average of one-third less coverage of seagrass. Protecting seagrasses in the first place is a much better strategy. Increasing awareness of the importance of seagrass ecosystems is one of the greatest challenges for its conservation. The Sarasota Bay Estuary Foundation coordinates citizen science efforts to monitor the seagrass. Tomasko said these volunteers can help fill crucial data gaps in the organization’s monitoring and restoration projects.

more…….https://www.huffingtonpost.com.au/entry/seagrass-ocean-climate-change-pollution-florida_n_602ced75c5b6cc8bbf3819ff?ri18n=true

Manatees are dying and we're losing ground. You can help. (USA)

20 February 2021, Daytona Beach News-Journal

The Indian River Lagoon is one of Florida’s most important estuaries and an essential home to thousands of Florida’s imperiled manatees. As the direct result of human derelictions over many decades, the lagoon has suffered massive losses in seagrass coverage and, in turn, the deaths of a heart-rending number of manatees. Since December 1, 2020, over 300 manatees have died on the greater Atlantic Coast of Florida, with 200 or more of those from the six Florida counties that make up the 156 miles of the lagoon.

The federally managed Manatee Recovery Program is underfunded and neglected, leaving manatees and manatee habitat to suffer the effects of habitat overdevelopment. Staffing for the manatee recovery program has been reduced, despite the growing problems manatees have faced since they were downlisted from “endangered” to “threatened” in 2017. Right now, record numbers of manatees need acute care, and these facilities do not have enough room for all of them. As a founding partner of the rescue and rehabilitation effort, Save the Manatee Club has increased matching funds to support rescues, rehabilitation, and release monitoring, but more must come from the Fish and Wildlife Service during this unusual mortality event.

The Fish and Wildlife Service should also ensure the U.S. Geological Survey continues their excellent research on manatee habitat use. With the current devastation of the aquatic plants that manatees feed on in the Indian River Lagoon, this research is especially critical for the foreseeable future. Understanding the causes and cures for the collapse of seagrasses and other forage need emergency priority. The Florida Fish and Wildlife Conservation Commission must also receive the resources and staffing necessary to carry out its historically strong role as the lead coordinator and supporting partner of the rescue and rehabilitation team. Because of increasing demands on the state agency overall, more funding is needed to ensure its essential manatee research and management responsibilities continue. Saving manatees and the seagrasses upon which so many species depend must be given higher priority if we are to reverse these devastating losses.

more…….https://www.news-journalonline.com/story/opinion/columns/2021/02/20/im-fighting-manatees-survival-and-losing-ground-you-can-help-pat-rose/4508554001/

Related articles

Dramatic rise in manatee deaths concerning experts (19 February 2021, WESH Orlando)

https://www.wesh.com/article/dramatic-rise-in-manatee-deaths/35570031

GICIA Mercabo Cove seagrass planting effort brought to light (FL, USA)

20 February 2021, Boca Beacon

In January 2016, the Gasparilla Island Conservation and Improvement Association successfully acquired the Mercabo property located at the entrance to Gasparilla Island. Following the successful acquisition, the GICIA's first effort was to demolish the 9 buildings and remove the concrete and asphalt from the site. When the upland restoration was completed in the summer of 2016, discussions turned to the possibility of a project that would enhancing marine habitat. The GICIA expanded the conversation to include coastal engineers and biologists and it quickly became clear that through thoughtful design and engineering the basin could be transformed into a marine sanctuary with improved fishery habitat and water quality.

In the GICIA's effort to improve water quality in the dead-end canal of the Mercabo site several strategies were implemented to increase water flow and circulation. The shallower areas will support better flushing and will also support a planned effort to reintroduce seagrasses to the Cove. Seagrass is temperamental and will only grow in shallow, clean, clear water but once established seagrass beds are considered one of the most productive ecosystems in the world.

The GICIA will work with biologists from Sea & Shoreline, a Florida-based aquatic restoration firm that has two decades of experience restoring fresh and saltwater habitats, to plant 3,400 units of seagrass within the cove area. Divers, over the course of a week in March will plant each grass unit by hand. Once the planting is completed the biologists will monitor and maintain the grass for 12 months, which will give each small grass unit time to become fully established. As the GICIA celebrates 50 years working with the Boca Grande Community to preserve island life, the Board of Directors and staff are grateful for the continued support of the island's residents in all GICIA's efforts.
more…….https://bocabeacon.com/wordpress/news/gicia-mercabo-cove-seagrass-planting-effort-brought-to-light/

New UCF study examines leeches for role in major disease of sea turtles in Florida (FL, USA)

18 February 2021, EurekAlert

University of Central Florida researchers are homing in on the cause of a major disease of sea turtles, with some of their latest findings implicating saltwater leeches as a possible factor. The disease, known as fibropapillomatosis, or FP, causes sea turtles to develop tumors on their bodies. While the cause of FP isn't known, saltwater leeches have been suspected to play a role due to their frequent presence on areas of sea turtles where FP tumors often develop, such as on their eyes, mouths and flippers. The results, which were published recently in the journal Diseases of Aquatic Organisms, are the first evidence of a significant association between leeches and the disease in sea turtles, according to the researchers.

To find a possible connection between leeches and FP, the researchers documented the presence of leeches on green and loggerhead turtles captured from the Indian River Lagoon and also used genetic analyses to determine if leeches collected from the turtles contained chelonid alphaherpesvirus 5, or ChHV5, the virus most likely responsible for disease development in an individual turtle. "Our historical data, collected by the UCF Marine Turtle Research Group between 2006 and 2018, revealed that leech parasitism was significantly associated with FP in green turtles but not in loggerhead turtles," the study's lead author Leah Rittenburg says. "For the genetic analysis, about one-fifth of the leeches we collected were positive for ChHV5, and one leech species trended towards coming from FP-positive turtles, further supporting the hypothesis that leeches may act as ChHV5 transmitters," she says.

Now that the researchers have demonstrated a relationship between FP and leeches, they want to evaluate more specifically if leeches transmit the turtle herpesvirus, which would provide stronger evidence that the virus in an underlying cause of FP.
more…….https://www.eurekalert.org/pub_releases/2021-02/uocf-nus021821.php

North Carolina's seagrass habitat is declining, state-federal partnership data show (NC, USA)

18 February 2021, EIN News

The Albemarle-Pamlico National Estuary Partnership (APNEP) has published a report showing a net loss in the extent of high-salinity submerged aquatic vegetation (SAV) or seagrass habitat in North Carolina's sounds between 2006 and 2013. While the data also confirm that the state possesses the largest acreage of seagrass along the east coast of the United States, around 100,000 acres, the overall extent of seagrass meadows in the Albemarle-Pamlico estuary decreased by 5,686 acres or 5.6% between 2006 and 2013 despite the availability of suitable habitat for expansion of the resource.

The observed decline in seagrass was not evenly distributed – within the southern end of the study area, which includes Back and Bogue Sounds, seagrass acreage decreased by 1.5% per year compared to a decline of 0.5% and 1.1% per year in the central and northern portions of the study area, respectively. It is likely that increased water pollution within the relatively highly-populated, densely-developed southern region contributed to its higher observed

rate of seagrass decline. Further mapping of seagrass extent is essential to clarify the current status and long-term trends of this resource in North Carolina. Additionally, integration of seagrass mapping with other collaborative environmental monitoring programs is critical to identifying and managing the causes of seagrass decline.

The data were collected using two aerial surveys from 2006-2007 and 2013. A third survey coordinated by APNEP and partner organizations, including the N.C. Division of Marine Fisheries, was completed in 2019-2020. Analysis of these additional survey data are underway and will enable APNEP to provide a more complete picture of seagrass status and trends in the Albemarle-Pamlico estuary. These findings will provide guidance for the development of protection and restoration strategies for the region's underwater grasses, including conservation and management actions supported by the N.C. Coastal Habitat Protection Plan.
more…….https://www.einnews.com/pr_news/535624629/north-carolina-s-seagrass-habitat-is-declining-state-federal-partnership-data-show

Seagrass feeds marine life while helping our water quality (FL, USA)
16 February 2021, Wink News

Seagrass can be found in multiple Southwest Florida waterways including Estero Bay. Just like warm water helps manatees escape the cold, visitors embrace the Florida heat. Aside from the warm water, there's something else that manatees love – seagrass. Luckily, it also plays a key role in the underwater environment and in improving our water quality.

"Seagrasses themselves are food for manatees and green sea turtles, so it's both a food and a habitat," James Douglass, an Associate Professor of Marin Science at FGCU'S Water School said. "So it's both a food and a habitat, and seagrasses also improve the water quality by absorbing nutrients and preventing harmful algae blooms." Douglass keeps tabs on different grasses found in our waterways, including Estero Bay. "We use the amount of seagrass to gauge how polluted the environment is getting, so we can track the seagrass year by year and see if it's going down, and if it is, we understand that we need to do more to clean up our pollution," Douglass said. So, by keeping the grass greener on our side, we're also protecting Southwest Florida's water so that all can enjoy it.
more…….https://www.winknews.com/2021/02/16/seagrass-feeds-marine-life-while-helping-our-water-quality/

Yarmouth mooring trials to protect seagrass beds (United Kingdom)
16 February 2021, Isle of Wight Observer

Two types of environmentally friendly moorings, known as Advanced Mooring Systems (AMS), have been installed near Yarmouth Harbour. They are part of a trial, being carried out by the LIFE Recreation ReMEDIES project, a marine conservation scheme to protect and restore the seabed, at five areas along England's south coast. It is funded by the LIFE programme and led by Natural England in partnership with The Royal Yachting Association, Marine Conservation Society, Ocean Conservation Trust and Plymouth City Council/Tamar Estuaries Consultative Forum.

The two new moorings, provided by the manufacturers of the Seaflex and Stirling systems, will be used in place of two of Yarmouth's existing chain moorings which can damage important seabed habitats like seagrass meadows. Fiona Crouch of Natural England, who manages the LIFE Recreation ReMEDIES Project, said: "Our project focuses on improving the condition of sensitive habitats such as seagrass. Advanced Mooring Systems are one of the practical, innovative ways we're exploring to reduce any seabed damage which can occur. "Watching how these AMS perform in Yarmouth, where the tide and weather will provide a rigorous test, is an exciting development that will provide vital information for how we introduce them more widely."

Seagrass meadows are a declining habitat which are easily damaged – it is estimated that as much as 92 per cent of the UK's seagrass has been lost over the last century. The Island is home to important seagrass beds and Hampshire and Isle of Wight Wildlife Trust (HIWWT) are monitoring seagrass as part of their Secrets of the Solent project.
more…….https://iwobserver.co.uk/yarmouth-mooring-trials-to-protect-seagrass-beds/

New study reveals biodiversity important at regional scales (VA, USA)
11 February 2021, Phys.Org

New research shows that biodiversity is important not just at the traditional scale of short-term plot experiments but when measured over decades and across regional landscapes as well. The findings, published in a recent issue of Frontiers in Ecology and the Environment, can help guide conservation planning and enhance efforts to make human communities more sustainable.

The multi-institutional team reached their findings by compiling, analyzing, and modeling data collected over decades and across both aquatic and terrestrial ecosystems. The analysis focused on abundance and diversity trends within 50 families of terrestrial beetles from the Sonoran Desert, 25 species of submerged aquatic vegetation or SAV within the Chesapeake Bay, and 56 species of fish from small streams in Maryland. The threats posed by low biodiversity

are exemplified by a recent drop in coverage of SAV within the Chesapeake, as recorded by VIMS' long-term monitoring program. "For the past few years, our gains in seagrass coverage were mostly due to the expansion of one species, widgeon grass," says study lead Dr. Christopher Patrick of William & Mary's Virginia Institute of Marine Science. "That made us vulnerable. When widgeon grass had a bad year in 2019, we saw the single biggest drop in Chesapeake Bay SAV in the history of the VIMS monitoring program."

Patrick notes that he and others at VIMS are already starting to put the findings from the recent study into practice. Researchers from Patrick's lab are collaborating with colleagues at the Chesapeake Bay National Estuarine Research Reserve on a multi-species restoration of SAV in Broad Bay near the Chesapeake Bay mouth in Virginia Beach. "In the past we've only planted one species, eelgrass," he says, "so trying to plant both eelgrass and widgeon grass together is a big change and one that will hopefully enhance the long-term success of the restoration of SAV to Broad Bay." The team anticipates their findings will benefit conservation efforts within other ecosystems as well.
more…….https://phys.org/news/2021-02-reveals-biodiversity-important-regional-scales.html

More Florida manatees have been crushed by flood gates, contributing to a deadly year (FL, USA)

11 February 2021, Sun Sentinel

Florida's manatees had an especially deadly year in 2020, including flood gates closing and crushing the "gentle giants," and even decapitating one. Manatee deaths are common as their population increases, but the majority are caused by being struck by boats and cold-water stress. Out of 637 manatees killed in Florida last year, 11 were crushed or drowned by flood gates, according to a preliminary report from the Florida Fish and Wildlife Conservation Commission.

The 11 deaths caused by flood gates came as a surprise to Pat Quinn, Broward County's manatee manager. "I can't remember the last time we might have had a flood gate kill a manatee," he said. Rachel Silverstein, executive director of the non-profit preservation group Miami Waterkeeper, said most flood control structures have sensors that detect nearby manatees. But the state said some of the structures involved in manatee deaths in 2020 were not equipped with the sensors.

Despite a record number of boating-related deaths in 2018, the state's manatee population is healthy, including locally. Florida is believed to have more than 8,000 manatees statewide, according to the FWC. Awareness programs and efforts by the FWC and other groups have generally reduced deadly accidents. Broward and Miami-Dade counties have fewer manatees, as it is believed that food supplies such as seagrass keep manatees farther north, around Palm Beach County.
more…….https://www.sun-sentinel.com/news/environment/fl-ne-manatees-deaths-2020-20210211-iysem4xpbnetbfmkw77k6wg4k4-story.html

Marine conservationists uncover threatened wildlife carnage in killer Reef gillnets (QLD, Australia)

11 February 2021, Mirage News

Gillnet fishers in our Great Barrier Reef are hugely under-reporting the deaths of threatened and endangered species like dugongs, dolphins, turtles and sawfish which get entangled in their nets, the Australian Marine Conservation Society has found. Using the numbers of entanglements reported by independent fisheries observers, AMCS conservatively estimates that in 2019, 30 dugongs, 30 dolphins, 1066 turtles and 1888 sawfish were caught in the Queensland East Coast gillnet fishery. And yet fishers officially reported bycatch of just three dugongs, three dolphins, 10 turtles and 374 sawfish for the same period.

AMCS Great Barrier Reef Fisheries Campaign Manager Simon Miller said the huge disparity highlighted the need for urgent reform of Queensland's fisheries including getting cameras on all gillnet fishing boats to gain an accurate picture of the scale of wildlife deaths.

Mr Miller said the Queensland government had recently closed consultation on a Protected Species Management strategy, which is intended to reduce interactions with endangered species in the gillnet fishery. But he said the draft strategy would fail to ensure threatened species in our Reef are protected and ensure fishers are accurately reporting their interactions with them. The final strategy is due to be released in the coming months.
more…….https://www.miragenews.com/marine-conservationists-uncover-threatened-512753/

'Seagrasses are national assets which we must jealously protect' (Gambia)

10 February 2021, The Point

The director general at the Department of Parks and Wildlife Management (DPWM), has underscored the significance of seagrasses in the country's marine environment, saying seagrasses are national assets that 'we all should jealously protect and preserved.' Momodou Lamin Gassama was speaking yesterday at the opening of two-day training for university students. The Gambia including six other African countries are currently benefiting from the

Resilience Sea Project. The sub-regional project is being funded by MAVA and to be implemented by the DPWM, Wetlands Internationals and G.R.I.D Arendal.

“We want to create awareness about the significant of seagrasses and why this is a very important national asset that we should all defend with everything possible. Several countries in West Africa don’t have seagrasses. The Gambia has more seagrasses than many countries in the West African sub-region. Therefore, it’s important that we jealously guard this seagrasses as they are crucial and are mostly found in unique marine environment,” he said.

“We need to educate the masses and informed them on the importance of seagrasses and why we should sustainable utilise them. Protecting the environment is a “Jihad” that we should all aspire to do. This is the legacy that should define our lives than the amount of money that we kept at the Bank. So, it’s important that whatever we learnt from this training, we share it with our colleagues.”
more…….https://thepoint.gm/africa/gambia/national-news/seagrasses-are-national-assets-which-we-must-jealously-protect

How is Monaco protecting the large mother of pearl in the Mediterranean? (Monaco)
10 February 2021, Monaco Tribune

Plagued by infectious diseases, large mother of pearl is now at risk of extinction. In response to declining numbers, the Principality of Monaco has committed to new conservation projects. A few years ago in the Larvotto reserve, a marine protected area just northeast of Monte-Carlo, more than 1000 large mother of pearl could be found. However since then, their population has considerably fallen. Due to their ability to filter water, large mother of pearl, which is one of the largest molluscs in the world, plays a vital role in the marine ecosystem.

Faced with a declining population, Monaco’s institutions are investing in conservation efforts as part of their mission to protect the environment. As a result of their collaboration, The Monégasque Centre for the Care of Marine Species (CMSEM), which forms part of the Oceanographic Museum, was established in 2019. Despite the Principality’s best efforts, they have not seen any rise in the population. Over the past two years many different projects have been launched, but the large mother-of-pearl is still endangered.

On Wednesday 10 February, divers will be called upon to help out with the latest conservation project. The biggest diving centres in the Principality will send members into the Mediterranean to observe the young mother of pearls. From mid-February to April, the seagrass known as *Posidonia* will still be quite short, meaning diving conditions will be optimal. Over the course of three months, data will be collected and sent to the Department of the Environment for analysis. It is hoped this will give a clearer picture of the current population of this beautiful species.
more…….https://www.monaco-tribune.com/en/2021/02/how-is-monaco-protecting-the-large-mother-of-pearl-in-the-mediterranean/

Do Manatees Control Their Buoyancy by Farting?
09 February 2021, Snopes.com

Manatees are incredibly intelligent marine mammals who show long-term memory and associative learning skills on par with dolphins. Butt here’s the kicker: There is scientific evidence to suggest that they regulate their underwater buoyancy by farting. Unlike fish, manatees lack a specially designed organ known as a swim bladder that uses gas to regulate their buoyancy. To save energy while moving through the water column, manatees fart “just like humans do,” according to a blog post shared by Nanyang Technological University in Singapore.

Manatees can consume up to 15% of their body weight in algae and seagrass every day. When this plant matter is broken down in the digestive tract, the production of methane occurs. According to the Columbus Zoo, manatees can hold in their manatoots to get lighter and float near the surface. Letting one rip, on the other hand, allows the animal to sink lower in the water. A study published in the peer-reviewed journal The Anatomical Record in April 2000 described observations showing that when manatees submerge, they are able to do so with minimal movement, indicating that there may be another force at play. And it goes both ways. Constipated manatees have also been recorded as lacking the ability to dive.

In addition to their flatulent talents, manatees hold a couple of specialized evolutionary tools up their flippers. With heavy skeletons and mostly solid bones, the added weight helps manatees to stay below water more easily. Additionally, the lungs and diaphragm of a manatee extend along almost the entire length of the animal’s back, essentially in the same plane as the manatee in water. Lastly, each lung is contained within a separate cavity, which also helps the manatee to both breathe and control its buoyancy.
more…….https://www.snopes.com/fact-check/manatee-farts/

Posidonia: the Mediterranean's 'super plant' (Spain)
05 February 2021, by Rafael Estefania, BBC News

With its turquoise waters and secluded shorelines, the small island of Formentera cast off the eastern coast of Spain boasts some of the most spectacular beaches of the world. Yet, most people don't realise that much of this beauty is due to the endemic *Posidonia oceanica*. Named after Poseidon, the Greek god of the sea, this is the most

widespread seagrass in the Mediterranean. Despite EU legislation to protect the species, *Posidonia* is in grave threat of disappearing in the next few decades. A combination of pollution, increased fishing activity, untreated sewage dumped into the sea, and anchor-dragging from of an increasing number of boats off the Formentera coast has wiped out more than 30% of the *Posidonia* meadows in the last few years and threatened the Mediterranean's ecosystem.

For the last 30 years, Spanish underwater filmmaker, diving instructor and marine biologist Manu San Felix has dedicated his life to saving the precarious plant. From his diving centre in Formentera, he has raised awareness about the necessity of preserving *Posidonia* meadows and worked to protect more than 13,000 hectares of the Ses Salinas Natural Park between Formentera and Ibiza. Most recently, San Felix has mapped the seabed off Formentera's coast and developed an app to show the location of *Posidonia* meadows so that boats can avoid mooring above.

As San Felix explained, he fell in love with Posidonia the first time he saw it. "Since then", he said, "I am completely dedicated to the study, filming and spreading [of] the value of this plant," so that future generations may enjoy its many benefits.
more…….http://www.bbc.com/travel/story/20210204-posidonia-the-mediterraneans-super-plant

This Mediterranean seagrass filters plastic waste — but it's also under threat (Spain)
05 February 2021, by Basten Gokkon, MongaBay

Underwater meadows of *Posidonia oceanica* endemic to the Mediterranean appear to trap some plastic debris that would otherwise drift out into the open ocean and pollute the bottom of the sea, a recent study has found. Thanks to its long, ribbon-like leaves, *P. oceanica* may trap nearly 900 million pieces of plastic debris each year, and all without human intervention, the researchers wrote in the journal Scientific Reports. They found plastic debris in half of the loose seagrass samples, at up to 600 plastic pieces per kilogram of leaves. In addition, 17% of the Neptune balls contained plastic, but at a much higher density — nearly 1,500 pieces per kilogram of seaball.

"We knew that seaballs were trapping plastics but what we didn't expect were such high concentrations per kilogram of natural fibers," said lead author Anna Sanchez-Vidal, a marine biologist at the University of Barcelona. In Mallorca, these plastic-trapping Neptune balls get washed ashore during storm conditions, which are most frequent in autumn and winter. When the sea is calm, the seaballs remain on the seafloor, the researchers found. What's not clear at this point, they note, is whether acting as a natural filter for plastic damages the seagrass itself.

P. oceanica is estimated to have lost up to 50% of its potential initial area since 1960. The latest estimate puts the total extent of *P. oceanica* meadows at 1.2 million hectares (3 million acres). But even as the meadows shrink, the amount of plastic waste flowing into the Mediterranean continues to grow. The summer holiday season in Europe, when visitors flock to the seaside, results in around 150 million metric tons of plastic ending up in the Mediterranean in a matter of just a few weeks over the holiday season. "Given the ever-increasing plastic load reaching our oceans, seagrass ecosystems such as *P. oceanica* meadows will play a crucial role," Sanchez-Vidal said.
more…….https://news.mongabay.com/2021/02/this-mediterranean-seagrass-filters-plastic-waste-but-its-also-under-threat/

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Millions of plastic particles are being plucked from the water - by seagrass (05 February 2021, World Economic Forum)
https://www.weforum.org/agenda/2021/02/seagrass-ocean-pollution-plastic/
Can Seagrass Tackle Microplastic Pollution? (25 February 2021, International Environmental Technology)
https://www.envirotech-online.com/news/water-wastewater/9/breaking-news/can-seagrass-tackle-microplastic-pollution/54464

Indian River Lagoon report card: Seagrass still suffers from 2016 Lake O discharges (FL, USA)
05 February 2021, TCPalm

Poor seagrass quality in the Indian River Lagoon is a concerning trend that continues to appear on an annual report card released by a regional environmental nonprofit. As water quality throughout the lagoon remains either unchanged or improving over the last 23 years, habitat quality continues to receive low marks, an indication the lagoon's ecological health is suffering, the Marine Resources Council's 2020 report card shows.

The southern portion of the 156-mile-long lagoon, through St. Lucie and Martin counties, received an "extremely poor" rating for seagrass habitat quality. The council attributed much of the problem to Lake Okeechobee discharges in 2016. The area between the St. Lucie River's south fork to the north Palm Beach County line scored a 4 out of 100 for habitat quality, the first time since 2016 this section has seen a score of anything higher than 0, the council's report shows. "The water quality is not changing significantly, depending on where you are, and seagrasses are still disappearing, especially in the (southern lagoon)," Executive Director Leesa Souto told TCPalm Friday.

Despite poor habitat quality and lack of healthy seagrass throughout the lagoon, there's still a reason to be hopeful, Souto said. Effective clean-water advocacy from groups such as the Rivers Coalition are causing positive change for the fragile lagoon, Souto said. The coalition is a consortium of over 70 businesses, homeowners associations,

nonprofit agencies and fishing clubs dedicated to stopping Lake O discharges to the St. Lucie River, representing about 300,000 Treasure Coast residents.
more……https://www.tcpalm.com/story/news/local/indian-river-lagoon/2021/02/05/indian-river-lagoon-seagrass-habitat-suffers-lake-o-discharges/4402931001/

Jason de Caires Taylor's Underwater Museum of Cannes Opens (France)

04 February 2021, DivePhotoGuide.com

The Underwater Museum of Cannes, Jason de Caires Taylor's latest project, has opened in Cannes, France. The sculptor's first installation in the Mediterranean Sea, the museum was funded by the Mairie de Cannes and commissioned by mayor David Lisnard. The installation—situated just off the coast of Cannes, near the island of Sainte-Marguerite, one of the Lérins Islands—comprises a series of six monumental sculptures, each more than six-and-a-half feet tall and weighing 10 tons. Positioned in areas of white sand, between *Posidonia* seagrass meadows, off the protected southern part of the island, the artworks are in just 6–10 feet of water and therefore easily accessible to snorkelers and divers.

The six works are based on portraits of members of the local community, with a range of ages and professions, including an 80-year-old local fisherman called Maurice and a nine-year-old primary school pupil called Anouk. Each face is sectioned into two parts, depicting a "split mask," a metaphor for the ocean: on the one hand, powerful and resilient; on the other, fragile and decaying—continuously degraded and polluted by human activity.

The project involved removing old engines and pipelines littering the site, which is now cordoned off from boats, making it safe for divers and snorkellers, and preventing damage by anchors to the seagrass meadows. The artworks use pH-neutral materials designed to attract marine flora and fauna.
more……http://www.divephotoguide.com/underwater-photography-scuba-ocean-news/jason-de-caires-taylor-underwater-museum-cannes-opens

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Underwater museum is protecting marine life in the Mediterranean Sea (10 February 2021, Euronews)
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Sculptor Jason deCaires Taylor on His Underwater Sculptures and Environmental Art (03 February 2021, My Modern Met)
https://mymodernmet.com/jason-decaires-taylor-podcast/
Underwater museum is protecting marine life in the Mediterranean Sea (09 February 2021, Euronews)
https://www.euronews.com/living/2021/02/08/underwater-museum-is-protecting-marine-life-in-the-mediterranean-sea

Six-month ban on shrimping begins in Bahrain (Bahrain)

02 February 2021, ZAWYA, Gulf Daily News

A six-month mandatory ban on shrimping in Bahrain's territorial waters started yesterday in a bid to protect existing shrimp stocks and allow them to replenish ... and fishermen have been urged: 'Don't be shellfish'. Works, Municipalities Affairs and Urban Planning Minister Essam Khalaf issued an edict imposing the ban, which runs until July 31. Punishments highlighted in the 2002 Fishing Organisation, Practise and Protection Law would see offenders jailed up to a month, or fined between BD300 and BD1,000, or both, besides having their equipment and haul confiscated.

"The ban includes all shrimping nets, equipment or machines on board, as well as docking ships within shrimp-rich areas with the intent of fishing," said Ministry Agriculture and Marine Resources Under-Secretary Dr Nabeel Abu Al Fateh. Agencies across the Gulf region are calling on fishermen to comply with the fishing regulations to maintain the sustainability of stocks. Neighbouring Saudi Arabia's annual shrimp fishing ban also comes with the threat of hefty fines for those who break the rules. Saudi shrimp is sold in 32 countries.

The activity, in some circumstances, is considered to be one of the most damaging and non-selective fishing methods in the world with fishermen using a variety of gear, including small trawls, trammel nets and bag nets, to catch shrimp. Trawling also has one of the highest bycatch rates of all fishing techniques and often damages the seafloor. They also destroy important and sensitive habitats such as seagrass and corals that serve as avital nursery and spawning ground.
more……https://www.zawya.com/mena/en/legal/story/Sixmonth_ban_on_shrimping_begins_in_Bahrain-SNG_199332280/

Residents concerned with MODA pier proposal (TX, USA)

02 February 2021, by Greg Chandler KRIS Corpus Christi News

MODA Midstream's facility at Ingleside on the Bay is less than a mile from several homes, and a proposed improvement to that facility would move traffic about 1,000 feet closer to those homes. "Every time a boat comes up here to dock, the tugboats' prop wash comes across our seagrass, and it's degrading our seagrass," said Patrick Nye, who lives about 3,700 feet away from MODA's current dock. According to NYE, there are five species of sea

grass in the waters off Ingleside on the Bay, which serve as habitat for several species of marine life while also producing more oxygen than land-based grass. Nye says

In a statement, MODA didn't mention seagrass specifically, but did say that the company employs teams of professionals in all areas, including air and water quality in their permitting process. MODA also plans on moving 10 acres of seagrass it dredges as part of the project to the waters off nearby Portland. However, Nye says the affected area is more than double that, roughly 26 acres and moving the grass doesn't help marine life near Ingleside on the Bay.

The public comment period on the permit had passed, but MODA recently applied for an amended permit, restarting the comment period. "We're hopeful that we can stop the permit until we can get more of an understanding of what the entire cause and effects are going to be for our community," said Nye.
more……https://www.kristv.com/news/local-news/residents-concerned-with-moda-pier-proposal

CONFERENCES

The 14th International Seagrass Biology Workshop (ISBW14) (Annapolis, Maryland, USA Summer 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 2021 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/
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Facebook @ISBW14, twitter @ISBW14 , Instagram @isbw14 #isbw14

14th International Coral Reef Symposium (ICRS 2020) (Bremen, Northern Germany, 2021).

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). For the first time in its history, an ICRS will be held in Europe. ICRS 2020 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.icrs2020.de/

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 52,263 views to date)

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

Presentation on new 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

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