31 January 2021

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NEWS

What's become of our local mermaids? (Sri Lanka)

02 January 2021, EconomyNext

Dugongs represent the last surviving species in a once-flourishing extended family. Dugongs and manatees together belong to the order Sirenia, so designated because ancient sightings of them may lie behind myths of sea sirens or mermaids—part woman, part fish—that entrance and bewitch sailors. The Malay word 'duyong' means 'mermaid.' As recently as a few decades back, numbering many millions, dugongs occupied a range covering littoral zones throughout forty countries from Mozambique in the west to Australia and nearby Pacific islands in the east. In recent decades, numbers appear to have declined drastically. They are considered extinct in nearby Maldives. There may be fewer than 100 left in Lankan waters. Once reported in swarms of hundreds, they are now generally spotted only one at a time and rarely.

One cause of dugong decline is heavy hunting. Fishing, even with traditional techniques, can also decimate dugong numbers. Perhaps the main ongoing threat to dugong survival lies in habitat destruction. Seagrass beds require particular conditions of light, sea floor composition and water chemistry. Assault on this requisite balance comes from many sides. Though dugongs have long been classified a protected species, protection of their habitat is a vast challenge. Sea-floor trawl fishing and dredging both damage seagrass beds directly and increase water turbidity detrimental to growth. Sewage, herbicide runoff from farms and heavy metals from mines pollute coastal waters. An estimated 7% of dugong habitat disappears every year.

On behalf of the United Nations Environment Project, Dr. Donna Kwan currently directs the 'Dugong, Seagrass and Coastal Communities Initiative' in Sri Lanka, coordinating with the Department of Wildlife Conservation, the International Union for Conservation of Nature and Dilmah Conservation. The Initiative aims to preserve and restore habitat by nudging coastal communities toward benign fishing practices and by engaging them in dugong and seagrass stewardship. In exchange for such service, the Initiative supports improved and diversified livelihoods for participating families. If successful, the Initiative could provide a pilot for similar efforts elsewhere. Otherwise, we may be witnessing the saddest Lankan wildlife story of all.

more…….https://economynext.com/whats-become-of-our-local-mermaids-there-are-heartbreaking-reasons-to-think-they-are-not-coming-back-77459/

Chesapeake Bay receives another D+ on health report (MD, USA)

05 January 2021, by Christine Condon, Baltimore Sun

For the second time in a row, the Chesapeake Bay Foundation scored the bay's health a D+ in its biennial report card released Tuesday. The poor grade for 2020 was "largely due to ineffective management of striped bass," also known as rockfish, said William C. Baker, president of the Chesapeake Bay Foundation, in the "State of the Bay" report. The Chesapeake Bay Foundation, which started its biennial report in 1998, grades the estuary based on 13 indicators, including everything from the health of oyster populations to the vitality of underwater grasses. The bay scored one fewer point out of 100 in 2020 than it did during the foundation's last assessment, which covered 2018.

Blue crabs received the highest score from the foundation — a 60 out of 100, which is considered a B+. Helping the crab population goes hand-in-hand with water quality improvements that would bolster the growth of underwater grasses and reduce the size of so-called dead zones in the bay. This year's dead zone, or area with dissolved oxygen levels insufficient to support marine life, was the second-smallest in Maryland's portion of the bay since 1985. All of the foundation's pollution indicators for the bay improved or stayed the same in 2020, and the bay saw reductions in damaging phosphorous and nitrogen.

The health of some bay habitats declined slightly between 2018 and 2020, including underwater grasses, which haven't recovered yet from 2018′s rainfall that caused water clarity issues, obscuring their access to sunlight. Overall, the report indicates that improvements are being made to key parts of the bay ecosystem, although climate change and inadequate state and federal policy are slowing progress, Baker said.

more…….https://www.baltimoresun.com/news/environment/bs-md-state-of-the-bay-2020-rockfish-20210105-dcxbljul2fd4jcqreke6ecwdvi-story.html

Fishermen release adult dugong, calf into sea (India)

05 January 2021, The Hindu

An adult dugong and its calf, which got entangled in a fishing net, were released into the sea by fishermen of Theruku Pudukudi near Jagadapattinam in Pudukottai district on Tuesday. Local fisherman K. Jegan, 24, and six of his colleagues were fishing in the sea near Jagadapattinam harbour when they inadvertently caught them in the net.

While the female adult weighed about 200 kg, the calf was around 40 kg. The fishermen subsequently pulled them gently to the shore and decided to release them into the sea. Since the adult was big in size, they cut the net

carefully so as to avoid causing injury to it. They then released it into the sea. The baby was also subsequently released into the sea, where its mother was swimming. The fishermen thereafter alerted forest personnel.

S. Ramasubramanian, Chief Conservator of Forest (in-charge), Tiruchi, told The Hindu that it was heartening to note that the fishermen acted quickly and saved them. The mammals might have come from Delft Island in Sri Lankan waters. The availability of seagrass in the sea along the coast of Jagathapattinam and Sethubavachathiram might have lured them. All seven fishermen would be suitably awarded, Mr. Ramasubramanian added.
more…….https://www.thehindu.com/news/cities/Tiruchirapalli/fishermen-release-adult-dugong-calf-into-sea/article33503992.ece

QR codes being installed around Ly Son Island (Vietnam)

07 January 2021, VietnamPlus

The installation of QR codes at tourism sites in Ly Son island district in central Quang Ngai province is being carried out by the management board of the Ly Son-Sa Huynh Geo-Park in coordination with district authorities, as part of efforts to promote digitalisation in the tourism sector.

Tourists visiting Ly Son can access information on cultural and historical sites, scenic spots, tourist attractions, specialties, trade villages, and the Geo-Park by simply scanning a QR code with their smartphones. Installation is to be completed before the Lunar New Year (Tet) holiday in early February and is hoped to help visitors, especially those without guides, learn more about the island.

Not only boasting great biodiversity, with ecosystems such as coral reefs and sea grass beds, Ly Son is also famous for its special cultural festivals, including “Le khao le the linh Hoang Sa” (Feast and Commemoration Festival for Hoang Sa Soldiers), a boat racing festival, and the An Hai village communal festival.
more…….https://en.vietnamplus.vn/qr-codes-being-installed-around-ly-son-island/194405.vnp

Sustainable ocean economy is the only way forward (Indonesia)

07 January 2021, by Mas Achmad Santosa and Stephanie Juwana, The Jakarta Post

The World Wide Fund for Nature (WWF), the Global Change Institute, University of Queensland and Boston Consulting Group estimated the economic value of the ocean at US$24 trillion in 2015, which came from marine resources, shipping lanes, productive coastline and carbon absorption. However, the wealth of the ocean depends on its health. At the same time, climate change impacts, overexploitation of marine resources, destruction of habitats and ocean pollution all together compound stresses on ocean health.

A panel of 14 world leaders from Australia, Canada, Chile, Fiji, Ghana, Indonesia, Jamaica, Japan, Kenya, Mexico, Namibia, Norway, Palau and Portugal was established in 2017 to build momentum for a sustainable ocean economy. On Dec. 3, 2020, the initiative, also called the Ocean Panel, launched a document titled “Transformations for a Sustainable Ocean Economy”. The document sets targets to be achieved by the panel members by 2030 in order to reinforce transformations in ocean wealth, ocean health, ocean equity, ocean knowledge and ocean finance.

Meanwhile, the seagrass ecosystem in Indonesia can potentially store 7.4 megatons of carbon every year (Ocean Science Journal, 2019). If the average global value of carbon is $15 per metric ton, the seagrass ecosystem in Indonesia could roughly yield $111 million. Indonesia’s performance in achieving Sustainable Development Goal 14 (life below water) is in the orange category, meaning that Indonesia is still facing some significant challenges to meet the goal. The state of the mangrove, seagrass and coral reef ecosystems in Indonesia was quite alarming. The consistent implementation of a sustainable ocean economy in Indonesia will have positive results. Acknowledging the significant role of the ocean in Indonesia’s national development and livelihood of the people, while also understanding the importance of maintaining the health of the ocean, a sustainable ocean economy is the only way forward in respect of ocean management.
more…….https://www.thejakartapost.com/academia/2021/01/06/sustainable-ocean-economy-is-the-only-way-forward.html

Diverse Strategies are Needed to Address Climate Change in Marine Ecosystems (Saudi Arabia)

08 January 2021, AZoCleantech

Carlos Duarte, a prominent marine ecologist from King Abdullah University of Science and Technology (KAUST), explained that “Conserving the world’s oceans and coastal ecosystems is a no-regrets strategy posing huge benefits for people and planet.” Blue carbon ecosystems, such as mangroves, saltmarshes, kelp forests, and seagrass meadows, act as carbon sinks by removing carbon from the atmosphere and storing it below ground in their sediments.

Marine ecosystems can mitigate climate change by sequestering carbon from the air and oceans and subsequently storing it in the same marine ecosystems in the form of blue carbon. Newly discovered options for sequestering blue carbon have demonstrated excellent potential—for instance, a previous study performed by Duarte and his

collaborators has shown that different types of macroalgae are capable of storing more carbon than the other coastal plants.

Duarte and his collaborators have now estimated the potentials of China and Australia to preserve organic carbon in seagrasses, salt marshes, mangroves and vegetated coastal systems. Moreover, Duarte's new study includes a strategy to reconstruct marine life by 2050 demonstrating, for instance, that restoring great whale stocks could sequester as high as 0.8 gigatons of carbon annually. But in spite of their significance, blue carbon ecosystems are facing a serious risk from marine pests, pollution, fishing, climate change and coastal urban development. For instance, nearly 50% of the mangrove ecosystems in the world have already been lost.
more…….https://www.azocleantech.com/news.aspx?newsID=28612

Dugong mating footage captured off Yeppoon beach 'remarkable' and 'rare' (QLD, Australia)

09 January 2021, by Edwina Seselja, ABC News

Petra was on her afternoon walk along a beach in Yeppoon, Queensland when one of her dogs noticed something in the surf. With her heart racing, the hobby photographer, scrambled to launch her new drone over the waves to see what was going on. Earlier that day, Petra had heard on the radio that dolphins had been dying due to an infection. "[But whatever was in the water] … certainly were not dying," she said. Instead, it seems, they were engaged in increasing their population. Petra had unwittingly been perving on two dugongs mating close to the Farnborough Beach shore.

To the delight of Sea World's Head of Marine Sciences Wayne Phillips, Petra managed to capture the rare scenes. "The footage itself is quite rare, the act of mating among dugongs not so much. Helene Marsh, a professor of environmental science at James Cook University, said while Australia's dugong population was not classed as vulnerable, Queensland's dugong population was. "The population in the Great Barrier Reef World Heritage Site, which includes Yeppoon, is one of the reasons it's listed on the World Heritage list," Professor Marsh said. "In recent years, there has been concern about a documented declining trend in the dugong population on the urban coast of the Great Barrier Reef, in particular, the mortality and the low calf counts associated with loss of seagrass habitats due to extreme weather events … such as cyclones or marine heat waves." Professor Marsh said dugongs were long living and slow to breed and tended to only breed once every three years, in good conditions. "If they are short of food, they effectively stop breeding," Professor Marsh said.

Mr Phillips said the population was recovering and the video was a good indication that the numbers were healthy. Petra said she took her and her friend's dogs to Yeppoon's Farnborough Beach daily and while she had seen the occasional sea snake, she had never seen anything like this before. She captured the footage on December 23, 2020 but has not sighted any dugongs in the area since.
more…….https://www.abc.net.au/news/2021-01-09/dugong-mating-footage-captured-off-yeppoon-beach/13039378

Seeding the Ocean: Inside a Michelin-Starred Chef's Revolutionary Quest to Harvest Rice From the Sea (Spain)

09 January 2021, Time

There are very few things that Ángel León hasn't done with the fruits of the sea, serving them to unsuspecting diners at Aponiente, his restaurant in the southern Spanish port town of El Puerto de Santa María, just across the bay from Cádiz. The Spaniards call him the Chef del Mar, a man singularly dedicated to the sea and its bounty. But Aponiente isn't anything like other gilded seafood temples around the world. Unless you're an Andalusian fisherman it's unlikely you'll know most of the species León serves to his guests.

Now, he believes he's discovered the centerpiece of his ambitious dream: fields of rice stretched out for miles of paddies, the feathery stalks -protruding from the sea itself. Scientists have long identified seagrasses as one of the most vital ecosystems in the fight against climate change, but what few knew is that those blades of grass also contain clusters of small, edible grains with massive potential. Of all the dreams León has chased in this quiet corner of southern Spain, this is the one he plans to build his future around.

León remembered as a kid in Cádiz seeing vast fields of rice along the fringes of the bay. As he talked to his team, he realized that what he -recalled as rice was actually *Zostera marina*, eelgrass that grows in coastline meadows around the world. One day León showed up at Aponiente with a printout of a 1973 article in Science documenting the diet of the Seri, hunters and gatherers of Sonora, Mexico, who have eaten eelgrass for generations. Like many grains, it required an elaborate process of threshing, winnowing, toasting and pulverizing before being cooked into a slurry with water. The Seri ate the bland paste with condiments to punch up the flavor: honey or, preferably, sea-turtle oil. León's R&D team set out to study the plant in detail, signing an agreement with the University of Cádiz to partner on the research. "Zostera had been gathered and consumed before, but it had never been cultivated," said Martín. "That's a whole different proposition." They worked with the university to define the ideal growing conditions: water current, temperature, salinity, depth, sunlight.

In the summer of 2019, León and a small crew of cooks and scientists waded out into an estuary a few miles east of the restaurant and pulled bushels of eelgrass from the ocean bed. In total, they collected 50 kg of grains, more than enough to run nutritional analysis and experiments in the kitchen. They found a perennial plant with exponential growth and a stout nutritional profile, including a payload of fiber and omega-3 fats—and gluten-free. Zostera grains look more like amaranth or a chia seed than rice—a short, pellet-like grain with a dark complexion. As for the taste? The first thing you notice is the texture: taut-skinned and compact, each grain pops on your tongue like an orb of caviar. It tasted like the love child of rice and quinoa with a gentle saline undertow.

But before the world sees eelgrass baguettes and eelgrass wine, it will first need to see more eelgrass. León and his team have drawn up an ambitious plan for domesticating eelgrass. Rather than starting from seed, a process that requires patience that León doesn't have, they are harvesting eelgrass from different coastal areas around Spain and transplanting it to the Bay of Cádiz. If all goes according to plan, they will harvest 12 acres of eelgrass in the summer of 2021. León and team will use most of those seeds (about 22,000 kg) to expand the eelgrass significantly in 2022–2023, and he will keep about 3,000 kg to cook with at the restaurant and experiment with in the lab. Cádiz could soon be home to one of the largest eelgrass meadows on the planet.
more…….https://time.com/5926780/chef-angel-leon-sea-rice/

Endangered seahorses given sanctuary at 'SeaBNBs' beneath Sydney Harbour (NSW, Australia)

10 January 2021, by Andrew Taylor

Deep in the waters off Clifton Gardens Reserve in Mosman, the city's latest hotel is busy with guests. The steel mesh structures, which have been coined SeaBnBs, are designed to protect the White's seahorse, one of Sydney's most endangered inhabitants. David Booth, a professor of marine ecologist at the University of Technology Sydney, said the "hotels" will provide a temporary home for the endangered seahorse adjacent to the seagrass beds that provide its habitat, shelter and food.

"The seahorse is not the greatest of swimmers, and they prefer to live amongst seagrass and soft coral where it's easy for them to securely latch their tails onto," he said. Professor Booth, who is also a researcher at the Sydney Institute of Marine Science, said the temporary habitats also acted as a protective barrier from predators such as octopus. The SeaBnB campaign also aims to prevent the extinction of *Posidonia australis* seagrass in Sydney Harbour by raising $150,000 to restore seagrass meadows, including a $10,000 contribution from South Australian winery Taylors Wines.

Professor Booth said the decline of the seahorse was a direct result of the destruction of their natural habitat – the seagrass *Posidonia australis*. Climate change, storms and human activity such as coastline development and seabed damage from boat moorings have contributed to habitat loss and the declining population of the seahorse. "One of the leading human causes of the decline of seagrass is through the use of traditional block-and-chain boat moorings that scar the seabeds and disturb established seagrass beds," he said. "As the seagrass is very slow growing, it's taking far longer to recover these seabeds than it's taking to destroy them."
more…….https://www.watoday.com.au/national/endangered-seahorses-given-sanctuary-at-seabnbs-beneath-sydney-harbour-20210108-p56srx.html?ref=rss&utm_medium=rss&utm_source=rss_feed

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Endangered seahorses given sanctuary at 'SeaBNBs' beneath Sydney Harbour (09 January 2021, Brisbane Times)
https://www.brisbanetimes.com.au/national/endangered-seahorses-given-sanctuary-at-seabnbs-beneath-sydney-harbour-20210108-p56srx.html

Dead dugong sighting on waters near Big Sister's Island (Singapore)

10 January 2021, by Zhangxin Zheng, mothership

A dead dugong was found floating in the waters south of Big Sister's Island. A veteran naturalist, Ria Tan, posted the photo of the carcass on Jan. 10. The photo shows the motionless male dugong faced up in the water with parts of its skin on the underbelly bubbled up. The bloated carcass was spotted south of Big Sister's Island from a boat on Jan. 9 afternoon, according to Tan's post.

Endangered dugongs sighted in feeding on Singapore shores. Dugongs are one of the most highly endangered animals in the world. They are listed as Vulnerable on the IUCN Red List of Threatened Species, which means they are at high risk of extinction in the wild. The loss of feeding grounds, such as the seagrass habitats, is the main reason for their dwindling population, apart from the fact that they have a low reproduction rate. Therefore, protecting seagrass habitats has become important to ensure the survival of this species.

In Singapore, dugongs are spotted on northeastern and southern shores. While the sighting of dugongs is rare, many naturalists often spot dugong feeding trails in our seagrass meadows at areas such as Chek Jawa and Pulau Semakau. Conserving these seagrass meadows becomes vital for the wild dugongs in waters around Singapore.
more…….https://mothership.sg/2021/01/dead-dugong-sisters-island/

Someone Wrote 'Trump' on a Florida Manatee (FL, USA)

11 January 2021, by Johnny Diaz, The New York Times

The sighting in Florida this week of a manatee with "Trump" in block letters on its back has prompted an investigation and a plea for help from a nonprofit conservation group. The Center for Biological Diversity said it was offering a $5,000 reward for information leading to a conviction "for the cruel and illegal mutilation" of a threatened manatee in the Homosassa River in Citrus County, on Florida's Gulf Coast.

The U.S. Fish and Wildlife Service said that the manatee did not appear to be seriously injured "as it seems the word was written in algae on the animal's back." The U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission began investigating after the manatee was discovered on Sunday. The discovery was reported by the Citrus County Chronicle. The manatee was photographed and recorded by Hailey Warrington, a boat captain for a fishing charter company in Crystal River, Fla. Patrick Rose, the executive director of the nonprofit Save the Manatee Club, said he had seen the photos of the manatee earlier on Monday and was disturbed. His alarm was shared by other conservationists.

A beloved unofficial mascot of Florida, the manatee is a species of large, slow-moving mammal. There are about 6,300 manatees in Florida, according to the U.S. Fish and Wildlife Service. In colder weather, they tend to congregate near South Florida power plants, where they bask in the warm water discharge. They are federally protected under the Endangered Species Act and the Marine Mammal Protection Act. Manatees are also protected by the Florida Manatee Sanctuary Act of 1978, which states that "it is unlawful for any person, at any time, intentionally or negligently, to annoy, molest, harass, or disturb any manatee."

more……https://www.nytimes.com/2021/01/11/us/florida-manatee-trump.html

Related articles

Fact Check: Was 'TRUMP' Carved Into a Manatee in Florida? (12 Janaury 2021, NewsWeek)
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Investigation underway after report of someone scratching 'Trump' into a manatee (12 Janaury 2021, Tapa Bay Times)
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Florida Officials Investigate Report of Manatee With 'Trump' on Its Back (12 Janaury 2021, TIME)
https://time.com/5928844/florida-manatee-trump/

Leading Seagrass Experts Co-author Paper on Eelgrass Establishment (USA)

12 January 2021, GISuser.com

A new paper entitled: "Seed Burial Alleviates Wave Energy Constraints on Zostera marina (Eelgrass) Seedling Establishment at Restoration-Relevant Scales" (Marion, Orth, Fonseca, Malhotra) will appear in a special issue of Estuaries and Coasts dedicated to the memory of Dr. Susan Williams, a prominent seagrass ecologist. In this paper, the authors examined bottlenecks for eelgrass seedling establishment with a focus on the burial depths of seeds. Experiments were conducted between November 2009 and April 2011 at six sites in the lower Chesapeake Bay (York and Piankatank rivers, Virginia) with a range of potential wave exposures. The wave climate was assessed using WEMo, a hydrodynamic wave model co-developed by Fonseca and Malhotra. Seed burial was performed using the VIMS seed planting machine, which significantly increased seedling recruitment success relative to hand broadcast seeds. Sediment disturbance experiments showed that surface sediment disruption typically extended to a depth of 3 cm, indicating that seeds buried in the top 1–3 cm could experience high losses from being washed out.

WEMo forecasts of wave energy were not consistently correlated with seedling establishment using two methods of seeding; hand broadcasting seeds on the sediment surface or seeds mechanically injected 3-4 cm into the sediment. However, in many cases, high seedling success was seen at sites with lower wave heights, suggesting that some threshold level of wave energy leads to erosion and loss of seeds available for germination. In general, the results indicate that success of natural seed recruitment depends on the depth that seeds are incorporated into the sediment. As such, utilization of the VIMS device, which can deliver seeds deeper in the sediment, has promise of increasing the initial success of seed-based restoration efforts.

Eelgrass reliably produces large quantities of harvestable seeds and colonizes by both seed and vegetative expansion. Many studies over the years, have documented the rapid colonization of seafloor by eelgrass seedings. The authors also have produced seminal studies on the utilization of eelgrass relocation as a mitigation technique. Seedling colonization can be a very cost-effective way of establishing new seagrass beds.

more……https://gisuser.com/2021/01/leading-seagrass-experts-co-author-paper-on-eelgrass-establishment/

Yucatecan senator demands to undertake actions for the protection of the sea snail (Mexico)

12 January 2012, Yucatan Times

Senator Jorge Carlos Ramírez Marín undertook measures for the Mexican authorities to protect and publicize the actions they carry out to preserve various species of sea snails. In the session of the Permanent Commission of Congress that was held virtually, Ramírez Marín presented a Point of Agreement in which he exhorted the Ministry of Environment and Natural Resources (SEMARNAT) and the Federal Attorney for Environmental Protection (PROFEPA) to inform them of the actions they have taken to protect these species, but also to immediately reinforce the surveillance in the commercialization of marine fauna remains and stones from the coastal littorals, especially the "*Strombus gigas* or Queen Conch".

The quality of the Yucatecan coasts was classified by the National Coastal Resilience Laboratory as "fair", in a general aspect, however, it is classified as "bad" in the cases of Progreso, Chicxulub and Telchac; "Regular" for Celestún and Sisal; and only Dzilam de Bravo, San Felipe and Río Lagartos are in the "good" range, hence the urgency to take immediate measures so that levels do not continue to degrade. "The Queen Conch feeds on algae and detritus in its adulthood, while in its youth, it feeds on seagrass and microalgae. In both stages it contributes to the health of the ecosystem, influencing benthic productivity and regulating seagrass", Ramírez Marín details in the text.

In order to protect the natural heritage of the Mexican coasts, according to the Convention on International Trade in Endangered Species of Wild Flora and Fauna and the 2030 Agenda, Ramírez Marín presented the Point of Agreement that will be analyzed by Congress for approval.

more…….https://www.theyucatantimes.com/2021/01/yucatecan-senator-demands-to-undertake-actions-for-the-protection-of-the-sea-snail/

CSIRO illuminates 'bright spots' in coastal ecosystem restoration (Australia)

13 January 2021, Spatial Source

CSIRO scientists have articulated a strategy by which efforts to restore degraded coastal ecosystems could be expanded over vast scales. The research, published in Current Biology in December, identified successful restoration efforts globally that could be replicated and implemented in similar environments. "Coastal ecosystems across the globe including saltmarshes, mangroves, seagrasses, oyster reefs, kelp beds and coral reefs have declined by up to 85 per cent over decades," said Dr. Magan Saunders, CSIRO Oceans and Atmosphere Senior Research Scientist. "Identifying bright spots that have delivered successful coastal and marine restoration in the past enables us to apply this knowledge to help save marine areas that are struggling to recover from degradation.

Globally, at least 775 million people have a high dependency on coastal ecosystems, whose restoration has recently been recognised by the UN, which declared the Decade on Ecosystem Restoration to start from 2021. Coastal ecosystems can also form a nature-based response to climate change, removing carbon dioxide from the atmosphere whilst protecting and stabilising shorelines from erosion. The study found that by learning from and applying successful restoration programs appropriately, restored areas could be expanded by up to a factor of ten, delivering positive impacts and employment opportunities for decades.

Professor Brian Silliman, co-author and CSIRO Distinguished Fulbright Chair in Science and Technology and Professor at Duke University, USA, said investing into coastal restoration creates jobs and can be used as a strategy to boost economic recovery and coastal marine health. "In the USA, the propagation and dispersal of seagrass seeds resulted in seagrass meadows recovering in areas where they had been lost many decades ago, removing an estimated 170 tonnes of nitrogen and 630 tonnes carbon per year from the atmosphere," he said. The study was a collaboration between CSIRO, Duke University, The Nature Conservancy, The University of Queensland, University of New South Wales and the Sydney Institute for Marine Science.

more…….https://www.spatialsource.com.au/government-policy/csiro-illuminates-bright-spots-in-coastal-ecosystem-restoration

Scientist says cutbacks on Lake O releases will improve Caloosahatchee ecosystem (FL, USA)

13 January 2021, Wink News

As the U.S. Army Corps of Engineers cuts back on water releases from Lake Okeechobee feeding into Southwest Florida, will this help the Caloosahatchee River bounce back? Over the past weekend, it was clearly visible where freshwater from the Caloosahatchee met the Gulf. Darker water is a mixture of lake water and runoff, but a plume is expected to recede as dry season begins.

The Sanibel-Captiva Conservation Foundation works to protect the environment for all to enjoy. It plays a big role in restoring parts of the ecosystem such as oyster and seagrass beds. "We've been getting excess amounts of freshwater for a number of months, and it's been really affecting the seagrass and the oysters," said Richard Bartleson, a research scientist with SCCF. Now that we're getting less freshwater from Lake Okeechobee releases,

Bartleson says the ecosystem can recover. “The grass that’s there can grow much faster when it’s not being stressed every low tide by low salinity water,” Bartleson said.

The SCCF scientist says there will be quick changes to water conditions. “That’s going to be the most immediate change is the water clarity should increase, so we should see blue water at the beach instead of the brown water,” Bartleson said. “That will just depend on how much rain we get.” For oysters and seagrass that have remained, they should recover quickly. However, if they have disappeared from the area, it will take at least a year for them to grow back or respawn.
more……https://www.winknews.com/2021/01/13/scientist-says-cutbacks-on-lake-o-releases-will-improve-caloosahatchee-ecosystem/

UN-funded project initiated to protect seagrass in Ayvalık Islands (Turkey)
14 January 2021, Hurriyet Daily News

A U.N.-funded project started on Jan. 12 in the Ayvalık district of the northwestern province of Balıkesir against the ghost nets and other illegal fishing gear threatening seagrass that preserve ecological balance. “With the support of the U.N. Global Environment Facility, we have started the project to map the seagrass in the Ayvalık Islands Nature Park,” said Koray Gerçe, the project coordinator of a local organization called Aegean Ecotourism Society.

Taking the first step, volunteers of the project dived into the depths of the park region and got rid of pieces of fishing equipment entangled in the seagrass, cleaning the area completely. Ayvalık is home to a variety of sea creatures due to the presence of seagrass, Gerçe said, adding that until the project started, the organization worked with academics and conducted around 93 dives into the park region. The ghost or dead nets damage the coral reefs and pose threat to seafloor habitat, Gerçe said, adding that they witnessed a lot of marine creatures stuck inside these nets.
more……https://www.hurriyetdailynews.com/un-funded-project-initiated-to-protect-seagrass-in-ayvalik-islands-161602

Navico partners with Ozfish Unlimited (SA, Australia)
14 January 2021, Fishing World

NAVICO, parent company to the Lowrance, Simrad, B&G and C-MAP brands has announced a partnership with Ozfish Unlimited, a not-for-profit charity helping Aussie recreational fishers get active to improve the health of their local waterways through restoring fish habitat.

The bulk of recreational fishers in Australia live in metropolitan areas and because of the urban development, have experienced historic losses of fish habitat. Most of these losses have been driven by poor management of water quality in the past and although that has improved most of the habitats; shellfish reefs, seagrass beds, saltmarshes will not come back without assistance. Navico says it has partnered with Ozfish to help build a program of fish habitat restoration in urban areas.

Seeds for Snapper, a seagrass restoration initiative, in South Australia was the first project to be funded by Navico. Seagrasses are vital marine plants which are important habitats and nursery areas for countless marine organisms, including the popular fishing catches such as snapper, King George whiting, blue swimmer crabs, king prawns, southern rock lobster, Australian herring and squid.
more……http://www.fishingworld.com.au/news/navico-partners-with-ozfish-unlimited

Help UK seas recover to deliver £50bn in benefits, report urges (United Kingdom)
14 January 2021, Aberdeen Evening Express

Restoring the UK’s seas from their damaged state could give a £50 billion boost to the economy, create thousands of new jobs and help the climate crisis, a report says. The study by WWF and Sky Ocean Rescue warns that a third of the UK’s fisheries are overfished, while there have been huge declines in important habitats such as seagrass meadows, oyster reefs and salt marshes.

Just 1% of the waters around the UK are fully protected and in 2019 the seas failed to meet Government standards on good environmental health in 11 out of 15 areas, including those relating to birds, fish and seabed habitats. If the UK carries on with business as usual, the loss of coastal ecosystems and fisheries would cost the UK £15 billion a year by 2050, the report warned.

WWF and Sky Ocean Rescue are calling on UK Governments to commit to a 10-year ocean recovery strategy in the first half of 2021, with a vision and action plan to deliver the required recovery by 2030. The strategy must include action on restoring lost coastal habitats, fully protecting a third of the UK’s seas, making fisheries and seafood production nature and climate friendly and supporting net-zero climate action in shipping and offshore renewables, they urge. Overall, the report estimates that restoring the UK’s seas could provide 100,000 new jobs by 2050, mostly in marine renewables.
more……https://www.eveningexpress.co.uk/news/uk/help-uk-seas-recover-to-deliver-50bn-in-benefits-report-urges/

Seagrass 'Neptune balls' sieve millions of plastic particles from water, study finds (Spain)

15 January 2021, The Guardian

Underwater seagrass in coastal areas appear to trap plastic pollution in natural bundles of fibre known as “Neptune balls”, researchers have found. With no help from humans, the plants may collect nearly 900m plastic items in the Mediterranean alone every year, a study reported in the journal Scientific Reports said. “We show that plastic debris in the seafloor can be trapped in seagrass remains, eventually leaving the marine environment through beaching,” lead author Anna Sanchez-Vidal, a marine biologist at the University of Barcelona, told AFP. This clean-up “represents a continuous purge of plastic debris out of the sea,” she added.

To better understand the plastic bundling capabilities of seagrass, Sanchez-Vidal and her team studied a species found only in the Mediterranean sea, *Posidonia oceanica*. In 2018 and 2019, they counted the number of plastic particles found in seaballs that had washed up on four beaches in Mallorca, Spain, which has large seagrass meadows offshore. There was plastic debris in half of the loose seagrass leaf samples, up to 600 bits per kilogram of leaves. Only 17% of the tighter bundled seagrass fibre known as Neptune balls contained plastic, but at a much higher density – nearly 1,500 pieces per kilogram of seaball.

Using estimates of seagrass fibre production in the Mediterranean, the researchers worked up an estimate of how much plastic might be filtered in the entire basin. The oval orbs – the shape of a rugby ball – form from the base of leaves that have been shredded by the action of ocean currents but remain attached to stems, called rhizomes. As they are slowly buried by sedimentation, the damaged leaf sheaths form stiff fibres that intertwine into a ball, collecting plastic in the process.

more…….https://www.theguardian.com/environment/2021/jan/15/seagrass-neptune-balls-sieve-millions-of-plastic-particles-from-water-study-finds

Related articles

Posidonia marine seagrass can catch and remove plastics from the sea (14 January 2021, Science Daily)
https://www.sciencedaily.com/releases/2021/01/210114130151.htm

Chilika has 22% of India's sea grass area, says survey (India)

16 January 2021, The Hindu

The Chilika Development Authority (CDA) on Friday said scientists and government officials sighted 156 endangered Irrawaddy dolphins in Chilika, Asia’s largest brackish water lagoon. “The annual survey was conducted by ‘Transact Survey Method’ followed worldwide for population of aquatic mammals. Each survey team was equipped with binoculars, GPS, range finder and data recording sheets.

During the flora and fauna monitoring of Chilika on Friday, five species of seagrasses were reported. “Sea grass species such as *Halodule uninervis, Halodule pinifolia, Halophila ovalis, Halophila ovata* and *Halophila beccarii* were recorded during the survey. This occurs over an area of 155 sq. km., an increase from 152 sq. km. of last year. These ecosystem engineers have brought cheer against the declining trends throughout the world, and now Chilika has 22% of India’s seagrass area,” said the CDA.

more…….https://www.thehindu.com/news/national/chilika-has-22-of-indias-sea-grass-area-says-survey/article33584284.ece

Dugong found disembowelled off Krabi islands (Thailand)

19 January 2021, AsiaOne

The disembowelled carcass of a dugong was found floating in the sea near the twin islands of Ko Lao Ka in Krabi province, authorities said on Monday.

According to the Department of National Parks, Wildlife and Plant Conservation’s Facebook page, the dead dugong was discovered on Sunday by a travel boat operator, who informed officials of Than Bok Khorani national park.

The carcass was retrieved from the sea and taken to a research centre in Trang for post-mortem examination. Dugongs are an endangered species, with only around 200 thought to remain in Thai waters.

more…….https://www.asiaone.com/asia/dugong-found-disembowelled-krabi-islands

The Grass Is Greener in Virginia (VA, USA)

22 January 2021, Hakai Magazine

Vast meadows of eelgrass once covered the muddy bottoms of Virginia’s coastal lagoons. Fishermen plucked bay scallops by the thousands from these underwater prairies, and companies chopped down the long ribbonlike stalks to make home insulation and men’s hats. Then, in the early 1930s, a slime mold disease, followed by a hurricane, killed off nearly every last blade. Now, almost 90 years later, scientists say they have successfully restored more than 3,600 hectares of eelgrass in Virginia’s lagoons.

Thirty years after the slime mold attack, eelgrass did return to many areas along the Eastern Seaboard—but Virginia's lagoons remained barren of the plant. For decades, scientists thought poor water quality was to blame. But, in 1997, a local resident told Robert "JJ" Orth, a marine ecologist with William & Mary's Virginia Institute of Marine Science, about a remnant eelgrass patch in Virginia's South Bay. Surprised and thrilled at the discovery, Orth and his team soon realized the problem wasn't related to water quality but to seed dispersal.

So in 2001, the scientists began harvesting shoots from the South Bay patch. Once they separated the seeds from the plants, they tossed handfuls into South Bay and other nearby lagoons. In time, the eelgrass beds became self-sustaining. A recent study showcases the project's enormous effect. After eelgrass meadows sprouted, the water became clearer. Wildlife returned, including the blue crabs, silver perch, and bay scallops that use eelgrass beds as nurseries. Conservationists are hopeful the brant goose, which once wintered in the lagoons and feasted on the eelgrass stems, will also come back. Perhaps most exciting is that, after just two decades, carbon and nitrogen sequestration rates in the restored eelgrass beds are comparable to those in undisturbed ecosystems.
more…….https://www.hakaimagazine.com/news/the-grass-is-greener-in-virginia/

Seagrass disappears from muddy Motupipi estuary in Golden Bay (New Zealand)
22 January 2021, Stuff.co.nz

Seagrass appears to have disappeared from the Motupipi estuary in Golden Bay, says Tasman District Council resource scientist Trevor James. In 2007, there was 700 square metres of seagrass, which dropped to 100sqm in 2015 and to none in the latest report from 2019. The findings of four surveys conducted at two sites in the estuary reveal a "continued steady increase" in sediment accumulation since 2007.

There had been a rapid rise in sedimentation in the Motupipi estuary since 2010, which was believed to be linked to floods in December 2011. Seagrass was sensitive to light in the water column, "If it gets too diminished, the seagrass will likely disappear," James said. There had been some algal blooms in the estuary. "That is related to nutrients, so it's not a sediment problem that's extinguishing the light but more of an indirect thing from having high levels of nutrients and then having these phytoplanktons sloshing around." However, despite the loss of seagrass and build up of sediment, "generally the Motupipi estuary is in reasonable health through those sites", James said.

Councillor Dana Wensley said she had "huge concerns" about aspects of James' presentation, including the disappearing seagrass. "Niwa information says the rate of carbon sequestration is estimated at up to 100 times faster in coastal vegetation than in terrestrial forests. Carbon sequestered by coastal vegetation can be stored for millennia if undisturbed," Wensley said. "How can we take it further?" James said he was aware of an application to study blue carbon, particularly in the Waimea Inlet.
more…….https://www.stuff.co.nz/environment/123991035/seagrass-disappears-from-muddy-motupipi-estuary-in-golden-bay

Hijo Resources Corp grows Tagum's new gen of seagrass meadows (Philippines)
25 January 2021, Sun.Star

When Jose "Boy" Tuason acquired Hijo in 1968, one of his many prides was the rich biodiversity of the rivers and ocean surrounding the vast estate. Situated north of the property is the Libuganon River and to the south is the Madaum river. The Hijo coastline, which sits in the heart of the Davao Gulf, was home to a rich marine ecosystem, with seagrass meadows in the coastal seabed. However, when the boom in shrimp and fish farming came in the 60s and 70s, many of the Mangrove trees in the Libuganon and Madaum riverbanks were cleared to give way to shrimp and fish ponds. Without the dense Mangrove roots to help filter and slow down the flow, significant amounts of silts were excreted from the river and onto the Davao Gulf. The storms and monsoons, buried the weakened but abundant seagrass meadows in river silts, and with the addition of illegal bottom trawling, left the ocean floor barren for decades.

In 2015, hope came anew when Hijo Chief-Executive-Officer Rosanna Tuason Fores asked marine biologist Harry Morris to bring back life into the Hijo coastline. But after failed attempts of transplanting and re-growing, the rehabilitation proved to be no easy feat. Until in 2016, he successfully grew *Halophila ovalis*. Morris continued to experiment with different seagrass species found in other areas of the Davao Gulf until he was able to successfully grow 4,000 square meters of seagrass meadows. By 2018, the 8,000 square meters of healthy seagrass were destroyed because of illegal bottom trawling.

Morris, along with CEO Fores, also paved the way for the Hijo Coastline to become a Marine Protected Area (MPA). The MPA agreement expanded its protection in the Hijo coastline to include the rehabilitation areas for seagrass, as well as the artificial coral reef to provide stronger defense against poachers. Fast forward to 2020, a stronger species called *Halophila spinulosa* were able to thrive in the existing patches of seagrass. Today, a measured area of approximately 10 hectares or 100,000 square meters of seagrass meadows is growing healthily and continuously expanding.
more…….https://www.sunstar.com.ph/article/1883805/Davao/Lifestyle/Hijo-Resources-Corp-grows-Tagums-new-gen-of-seagrass-meadows

Dramatic increase in microplastics in seagrass soil since the 1970s (Spain)

25 January 2021, EurekAlert

Large-scale production of vegetables and fruit in Spain with intensive plastic consumption in its greenhouse industry is believed to have leaked microplastic contaminants since the 1970s into the surrounding Mediterranean seagrass beds. This is shown in a new study where researchers have succeeded in tracing plastic pollution since the 1930s and 1940s by analyzing seagrass sediments.

A new study from the area of Almería, also known as "the sea of plastic", shows that the intensive use of plastics in the greenhouse industry seems to have led to ever-increasing emissions of microplastics since the development of intensive greenhouse farming in the 1970s. The study was conducted by researchers from Stockholm University in collaboration with the Center for Advanced Studies of Blanes, the Spanish High Council for Scientific Research (CEAB-CSIC), the Swedish Environmental Research Institute (IVL) and Södertörn University.

Seagrass beds act as filters for coastal areas and can therefore capture particles, including microplastics, from land that get stuck on the leaves or end up in the sea bed. This makes seagrass beds interesting to study as they stabilize and build up thick sediment layers that can be used as historical environmental archives to, among other things, study the accumulation of microplastics over time. The researchers were able to find PVC and polystyrene used in greenhouse cultivation in Almería. Studying microplastics in seagrass beds is very new and this is the first study where dated seagrass sediments have been used to analyze the accumulation of microplastics over time.
more…….https://www.eurekalert.org/pub_releases/2021-01/su-dii012521.php

16 fishermen hailed for rescuing, releasing dugongs into sea (India)

26 January 2021, The Hindu

Sixteen fishermen of Pudukottai district who were involved in the rescue and release of dugongs in a span of one year have been appreciated by the district administration for their role in the conservation of the marine mammal and the marine ecosystem. While 12 fishermen are from Therkku Pudhukudi village, four others are from Vadakku Pudhukudi. Appreciation certificates were given to each fishermen on the occasion of the Republic Day celebrations for their guidance to the fishermen and their role in conservation of the marine mammal.

District Forest Officer, Pudukottai K. Sudhagar told The Hindu that four dugongs in three separate incidents got entangled in the nets of fishermen in a span of one year. In all these incidents, the fishermen rescued the four sea mammals and released them into the sea with the guidance of the Forest Department personnel. The Department had been driving home to the fishermen the need to protect the dugongs which play an important role in protecting the marine ecosystem, Mr. Sudhakar said adding that this awareness had prompted the fishermen to rescue and release the sea mammals back into the sea again.

By rescuing and releasing the dugongs back into the sea, the fishermen have not only played a vital role in the conservation of the marine mammals but also in protecting the marine ecosystem, Mr. Sudhakar further said. The Forest Department had recommended that the role played by the fishermen and the field-level forest department personnel should be recognised and the district administration appreciated the efforts taken by them by presenting each one of them with certificates. The appreciation certificates would motivate the fishermen and the field-level Forest Department staff in the conservation of the dugongs and the protection of the marine ecosystem, Mr. Sudhakar said.
more…….https://www.thehindu.com/news/cities/Tiruchirapalli/16-fishermen-hailed-for-rescuing-releasing-dugongs-into-sea/article33668200.ece

Conservation battle must continue, for the sake of the "mermaids" (Mozambique)

26 January 2021, BizNews

Marine mammal scientist Dr Vic Cockcroft fears that the "mermaids" he studies may be doomed. According to Vic, the battle to save the vulnerable dugong goes on all over the Indo-Pacific region, but he remains focused on a decades-old conservation campaign in Mozambique. At a workshop organised at Maputo in 2009 by the Mozambican National Directorate of Conservation Areas, Vic and his his colleagues suggested that a national Dugong Management Plan should be drawn up, to prevent deaths, preserve the habitat, and in the longer term to increase the population.

Vic said, "When we started, there were quite a few hundred dugongs. But by 2020 they are barely holding on – about 300 individuals. The dugongs are at risk every day – the seagrass areas they feed on are shrinking, and chemical pollution from the likes of fertilisers drains off the land. More pollution comes from passing ships, oil rigs and local fishermen, who are encouraged to illegally use gill nets which can drown dugongs in a matter of minutes when they get entangled."

Currently, Vic works with The Association for Conservation and Protection of Dugongs and Marine Mammal Species. Financial backing comes from the Western Indian Ocean Marine Science Association – as well as the Dugongs and

Seagrass Conservation Project. “Using past reported sightings and satellite imagery, we look for what we call ‘hot spots’ – places with plenty of seagrass. Then we go and talk to the local people. Depending on what they tell us, we use underwater recording devices which can pick up the sounds of browsing dugongs. And this gives us an idea of how many individuals there are in that location. We might try an aerial survey if funds permit. Then, in an attempt to save the dugongs in particular and marine biodiversity in general – we take our conservation message to villagers and the authorities.
more……https://www.biznews.com/good-hope-project/2021/01/26/conservation-dugong-africa

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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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 52,231 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.