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IN THIS BULLETIN

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NEWS

Volunteers needed for seagrass walk in Salamander Bay (NSW, Australia)

30 October 2019, Port Stephens Examiner

Volunteer 'citizen scientists' are being sought by the Department of Primary Industry as part of a delicate operation to collect seagrasses from Salamander Bay to be eventually transplanted across to Shoal Bay. University research assistant Maddy Langley said that there were many benefits of applying practical 'citizen science' to the restoration of seagrass habitat in and around Port Stephens. "Volunteers have collected and donated around 1500 posidonia fragments to the project so far. More than 1000 of these have been transplanted into six mooring scars in Shoal Bay. After four months, we observed a 70 per cent transplanted seagrass survival rate. Recently, we saw the transplanted shoots flowering for the first time."

Volunteers walk along Salamander Bay finding seagrass fragments and learning about their benefits. "The collected fragments will be transplanted around two of the newly installed Environmentally Friendly Moorings (EFMs) in Shoal Bay. We hope to demonstrate that the replacement of traditional moorings with EFMs, combined with restoration, can combat seagrass loss," Ms Langley said.

"These plants are still living when they come ashore and recovering them for transplanting is a valuable activity which residents can be of assistance. Those community members who walk the beaches of Port Stephens can join in the collection process and assist in this university project." Operation Posidonia is a joint program with the DPI, Fisheries at Taylors Beach, University of NSW researchers and volunteer members of the Port Stephens community, including the Salamander Bay Community Group.

more……..https://www.portstephensexaminer.com.au/story/6457662/volunteers-needed-for-seagrass-walk/

Improving Great Barrier Reef water quality - $141 million program open for business (QLD, Australia)

29 October 2019, The Hon Sussan Ley MP Minister for the Environment, Media release

Farmers and organisations working in the Mackay-Whitsunday and Fitzroy regions are invited to put forward their ideas for water quality improvement projects under the Australian Government's Reef Trust Partnership with the Great Barrier Reef Foundation. Project ideas can access funding of up to $42 million in the first two of seven Reef catchments identified by the Foundation as priorities for investment in water quality improvement. This funding forms the first tranche of $141 million allocated by the Foundation for regionally focused on-ground water quality improvement actions such as agricultural practice change and landscape remediation projects.

Clean water is crucial if we are to protect the Reef for future generations, which is why the Government is investing a total of $201 million in improving water quality under the $443 million partnership with the Foundation. Run-off of sediment, nutrients and pesticides into Reef catchments directly affects the health of inshore reefs and seagrass and also affects the Reef's ability to withstand and recover from disturbances like cyclones and coral bleaching. The recently released Great Barrier Reef Outlook Report 2019 states that water quality improvement at a regional scale is one of the most urgent actions to improve the long-term outlook for the Reef.

Many landholders are rising to this water quality challenge by changing their land management practices – and they are making a difference. The recently released Reef Water Quality Report Card 2017 and 2018 showed encouraging improvements, but also that more work is needed to accelerate progress towards meeting the Reef 2050 targets for water quality. In addition to these regional projects, the Foundation will soon open grants worth up to $10 million to explore innovative new approaches to improving water quality. People interested in this program are encouraged to register their interest to stay informed at www.barrierreef.org/contact/register-your-interest

more……..https://minister.environment.gov.au/ley/news/2019/improving-great-barrier-reef-water-quality-141-million-program-open-business

Related article

Improving Great Barrier Reef water quality – $141 million program open for business (27 October 2019, Mirage News)

https://www.miragenews.com/improving-great-barrier-reef-water-quality-141-million-program-open-for-business/

Townsville mayor says Strand turtles must be preserved (QLD, Australia)

25 October 2019, by Tony Raggatt, Townsville Bulletin

A concept to develop the largest saltwater swimming lagoon in the southern hemisphere off Townsville's Strand has foundered on environmental constraints from seagrass and turtles. The council commissioned consultants Pure Projects to develop a masterplan of initiatives to revitalise the city and the lagoon was a centrepiece of their report. In 2018 Cr Jenny Hill had said she was confident construction of a lagoon could start by 2020 if development approvals were secured and did not see "any trouble" with that timing. A 2018-19 budget allocation of about $900,000 was announced for a feasibility study.

Earlier in 2018 former CEO Adele Young told a property council luncheon the idea of a public-private partnership for a 6ha lagoon in the water opposite the Tobruk baths was in the market and the council was preparing a business case. The concept included a six-star overwater Bora Bora style resort, a bascule bridge linking to the casino, restaurants and cafes and a solar carpark to power the lagoon. But Cr Hill now says the council cannot upset nesting turtles. Cr Hill said there were also issues around seagrass beds.

Asked about the 2018-19 budget allocations, Cr Hill said the council had done some initial surveying. “Last financial year council did environmental surveys and began developing a concept plan for the lagoon,” Cr Hill said. “These environmental surveys identified seagrasses in the location we had proposed. “The remaining budget from last year has been reallocated and supplemented and the lagoon has funding of $1 million in this year’s budget. “Once a revised plan has been developed, we will go out to the community for consultation.” Cr Hill said the council had been trying to secure funding commitments to deliver the lagoon and to date no funding has been made available by the state or Commonwealth.
more……..https://www.townsvillebulletin.com.au/news/townsville-mayor-says-strand-turtles-must-be-preserved/news-story/acb0f952427952f5641b577bb3a60810

Before Human Activities Threatened Them, Coastal Seagrasses Persisted For Centuries (FL, USA)

25 October 2019, by Priya Shukla, Forbes

Using over 50,000 modern and fossilized shells from species associated with seagrasses in Florida and those in nearby areas of bare sand (40 percent of the shells analyzed were more than 500 years old and the oldest shell was almost 2,000 years old), scientists were able to assess how much the habitats had changed through time. For example, if the fossil shells in both habitats were similar, then it would show that either the seagrass bed had not historically existed there or that what is now a bare patch of sand once hosted a rich seagrass bed.

Overall, the research team found that seagrass communities were stable over time and that seagrass meadows have likely grown in the same place for several centuries. In contrast, sandy habitats – which do not have seagrasses to absorb changes in wave energy – are subject to dramatic environmental change and have much more variable communities through time. "This study highlights how vital seagrasses are as habitats. Not only are they hotspots of biodiversity, but they're enduring and stable hotspots over time," said Alexander Challen Hyman, lead author of this study.

Despite the important ecosystem services that seagrasses provide and their persistence over time, these meadows are threatened by climate change, pollution, and coastal development. They are an important source of food for manatees and green sea turtles, but have decreased by almost 30 percent since 1879.
more……..https://www.forbes.com/sites/priyashukla/2019/10/23/before-human-activities-threatened-them-coastal-seagrasses-persisted-for-centuries/#4ec313d95dd0

Final report reveals likely impact of 'vital' $760m dredging project on water, marine life as GPC pushes ahead with harbour works (QLD, Australia)

24 Oct 2019, by Liana Walker, Gladstone Observer

A report on the expected impact of a $760-million proposed Gladstone Harbour dredging project has been finalised. Following months of public consultation Gladstone Ports Corporation released the final Environmental Impact Statement for the Port of Gladstone Gatcombe and Golding Cutting Channel Duplication Project. The project involves duplicating the Gatcombe and Golding Cutting channels to keep up with the predicted increase in export growth and allow better passage for ships. The project would involve dredging 12.85 million cubic metres to make the port's existing bypass channels 16m deep and 200m wide. The project would also include building bund walls to create a Western Basin Expansion reclamation adjacent to the existing Western Basin reclamation area.

The report said the project had the potential to impact water quality, seagrass, marine turtles, shorebirds and marine values. "The main impacts from the project are increased turbidity and sedimentation from dredging, and the potential release of contaminants,” it said. "These changes to water quality conditions have the potential to result in impacts to sensitive ecological receptors such as seagrass meadows, coral reef communities, marine flora and fauna as well as other environmental and recreational values. It said the likely short-term decline to water quality and increased turbidity could impact turtles and their habitats.

The report said the project was expected to cause the loss of 4.85 per cent of seagrass, and the establishment of the Western Basin Expansion reclamation area would likely have an adverse impact on migratory shorebird foraging habitat. GPC acting chief executive Craig Walker said the final EIS took into account comments received during consultation earlier this year. GPC hopes to start construction in 2023 and it would take 14 months.
more……..https://www.gladstoneobserver.com.au/news/760m-dredging-project-likely-to-impact-water-marin/3861507/

Marsaskala seabed to be reclaimed for waterpolo pitch (Malta)

24 October 2019, by James Debono, Malta Today

Over 2,300sq.m of Marsaskala's seabed will be reclaimed for a waterpolo pitch and clubhouse, but two biologists have warned of the negative impact on protected seagrasses due to changes in sedimentation and water circulation. The development, proposed by government agency Sports Malta, was triggered by the allocation of the national pool in Zonqor for the development of the American University of Malta campus.

According to a biological survey by Julian Evans and Joseph Borg, the EU-protected Posidonia meadows found just 20 to 50 metres away from shore include a small part earmarked for the development. The report warns that the construction will obliterate the habitats and the species they support "including a small area with the priority habitat Posidonia beds". The construction may also alter the sedimentation and hydrodynamic regime in its vicinity, with "the most likely negative impact on benthic habitats being a regression in the seagrass beds located outside of the footprint of the development but within its area of influence". The effects will likely be greater for Posidonia oceanica than on other grasses, as this is more sensitive to environmental changes.

The report shows that at present, the Posidonia meadows appeared somewhat stressed, with relatively short leaves. In its own report the Environment and Resources Authority has largely endorsed the concerns expressed in the Benthic Survey Report by the biologists. The ERA said the impact of the proposal on water circulation is still unclear and a hydrodynamic study will be required. ERA will only reach a definitive conclusion on the project's impact following the outcome of a number of requested studies including studies on water circulation, a traffic noise impact study and the determination of the nature of the dredged material.

more……..https://www.maltatoday.com.mt/news/national/98145/marsaskala_seabed_to_be_reclaimed_for_waterpolo_pitch#.XbFtCGZS-Uk

Seagrass nursery in central Queensland could offset carbon emissions (QLD, Australia)

24 October 2019, by Jacquie Mackay and Inga Stünzner, ABC Capricornia

A central Queensland seagrass nursery set up to propagate seeds and ultimately restore lost seagrass meadows could also be a tool to offset carbon emissions. About half the seagrass habitat has been destroyed in the port city of Gladstone over the past 20 years, impacting on fish stocks and coastal environments. But new research has found that seagrass, along with mangroves and salt marshes, absorbs millions of tonnes of carbon dioxide in Australia each year, and this nursery could play an important role.

Central Queensland University researcher, Emma Jackson, has been leading the seagrass propagation team and compared their work to land restoration, where plants are grown from seed and put back into native systems. Over the past six years, the Coastal Marine Ecosystems Research Centre in Gladstone has been growing seagrass successfully and is now collecting seeds from the flowers. Dr Jackson and her team have run a number of trials and have determined how the seeds germinate and how to sow them. One flower can produce 15 seeds, and one seed planted in the right conditions can create a hectare of seagrass. "What we'll be able to do is work out what's the best method for each location and go out en masse and do large-scale transplants," Dr Jackson said. She said the next step would be to commercialise this and get companies on board to provide mass plantings.

This fits in with new Australian research that looks at the potential of the 'blue economy', where conserving the marine environment could be worth millions of dollars a year in carbon credits. Researchers from Edith Cowan University, in a world first, have accurately measured the amount of greenhouse gases — 'blue carbon' — being absorbed and emitted by Australian marine ecosystems. Australian seagrass, mangroves and salt marshes each year absorb 20 million tonnes of carbon dioxide annually — the equivalent of emissions from five million cars. These 'blue ecosystems' absorb the carbon dioxide at rates up to 40 times faster than land forests, mainly due to their enormous capacity to store carbon in soils.

more……..https://www.abc.net.au/news/2019-10-24/seagrass-propagation-project-and-blue-economy/11631944

Pinellas County bans horseback riding near Skyway bridge (FL, USA)

23 October 2019, by Catherine Hawley, FOX 13 News

The Board of County Commissioners voted Tuesday night to ban horseback riding near the Sunshine Skyway Bridge. Officials say the hobby is damaging seagrass and causing water quality issues. For the last six years, C Ponies has offered hour-long rides in the water and along the sandbars on the east side of the north Skyway fishing pier.

"We are very disappointed. We feel like not only have we lost it for our own business, we've lost it for all the horse owners who go to this beach and ride an enjoy a little piece of heaven," said Carmen Hanson, owner of C Ponies. Hanson's company is listed as the number-one outdoor activity in St. Pete on Trip Advisor, with more than 2,400 reviews. All of C Ponies' 23 horses are rescues.

The problem is, where the horses are riding is an aquatic preserve. There are 41 such federally protected areas in the state, and two in Pinellas County. Experts say the horses are causing public health and water-quality issues due to manure and urine. “Water testing has shown increases in fecal indicator measurements in the area the horses are ridden, which can lead to recreational beach closures,” said Heather Young with the Tampa Bay Regional Planning Council. The county also presented aerial photos they say shows significant damage to the seagrasses caused by the horses. “I’m convinced that it’s the horseback riding that’s producing the bulk of the damage we see out there,” Florida Department of Emergency Protection Aquatic Preserve manager Dr. Randy Runnels said.
more……..https://www.fox13news.com/news/pinellas-county-bans-horseback-riding-near-skyway-bridge

Aerial view of seagrasses show signs of hope (QLD, Australia)
23 October 2019, Noosa News

The seagrass beds in the Noosa River estuary do not attract much attention by either locals or visitors, but they are critical food and shelter resources for the young fish and crabs that people get more excited about. So it makes sense to monitor the health and extent of these complex ecological features of the waterway, because their decline would indicate our failure to maintain the health of the river and its catchment.

Conventional seagrass monitoring was conducted for several years by NICA volunteers as part of a national program conducted by Seagrass-Watch. Unfortunately funding for this activity was terminated in 2015 due to the dwindling number of volunteers qualified to undertake the work. In 2017 a grant from the Wettenhall Foundation enabled NICA to run a trial to see if drones could be used to monitor the health and extent of seagrass beds in the Noosa estuary. This work was carried out by Dr Javier Leon of Sunshine Coast University, who was able to obtain high-resolution images of local seagrass beds. He also produced a detailed manual for the procedures needed to produce accurate maps from the image data, and gave some NICA members basic lessons in drone operation.

At the end of the trial, it was felt that volunteers would be unlikely to achieve the skills in drone operation and image manipulation that were needed to produce maps like those assembled by Dr Leon. The technique, with some modifications, would, however have great potential for enabling efficient seagrass monitoring. NICA plans to seek funding to enable this research to be developed into a routine tool for monitoring of river quality, and welcomes any input and suggestions to assist such a program.
more……..https://www.noosanews.com.au/news/aerial-view-of-seagrasses-show-signs-of-hope/3860739/

Rivers report card reveals flow-on effect of less rainfall in Brisbane (QLD, Australia)
22 October 2019, by Tony Moore, The Sydney Morning Herald

Moreton Bay conditions have improved and seagrass beds are now flourishing in several sections of the bay. However the upper Brisbane catchment - from Brisbane's western suburbs towards Ipswich - has again declined and remains in a poor condition. About 80 per cent of the sediment flowing into Moreton Bay originates in agricultural areas upstream in the Lockyer Valley.

The 2019 Healthy Land and Water report card – an annual check on the health of Greater Brisbane’s rivers and streams – shows mud has shifted to the deepest parts of the bay and declined overall throughout Moreton Bay. Professor Stuart Bunn said the 2019 outcome was much-improved Moreton Bay water quality with good, healthy seagrass beds. “This highlights the resilience of Moreton Bay to recover from land-based pollution, so long as the bay has respite from these pressures,” Professor Bunn said. “We are excited to see that seagrass has returned to the most degraded parts of Moreton Bay.” “There has been significant recovery of seagrass meadows in Southern Deception Bay, which were lost entirely in 1996. “In addition, seagrass meadows in Bramble Bay, which have not been seen since the 1950s, are also recovering,” Professor Bunn said.

Healthy Land and Water board chairman Stephen Robertson repeated the message that planners needed to invest to reduce sediment, not rely on reduced rainfall. “Despite the improvement of mud in Moreton Bay, without further investment in reducing sediment pollution, our waterways will continue to deteriorate, along with the many environmental, social and economic benefits they provide.”
more……..https://www.smh.com.au/environment/sustainability/rivers-report-card-reveals-flow-on-effect-of-less-rainfall-in-brisbane-20191022-p5332c.html

Pockets of anoxic water still threaten f1sh and crustaceans in the Mar Menor (Spain)
18 October 2019, Murcia Today

Analysts warn another episode of phytoplankton growth could turn the lagoon green again as seagrass vegetation alters. The layer of anoxic water (i.e. water lacking in oxygen) which caused the mass death of tens of thousands of fish and crustaceans on the beaches of the Mar Menor last weekend is reported to be still present in the lagoon, although according to the scientists monitoring the situation the probability of a second episode like that of a week ago has decreased significantly.

The latest data reveal that the oxygen level in the Mar Menor is still very low at depths of greater than 5 metres in a couple of areas· where the water is at its deepest in the north and the centre of the lagoon but it is also believed that lower air temperatures and an increase in wind speeds have contributed to an improvement as they help different layers of water to mix. However, the danger is far from over. Freshwater continues to run off into the lagoon due to the rise in the water table after the heavy rain and flooding of September, much of it bearing nitrates from the crop land of the Campo de Cartagena, and the level of salinity in the Mar Menor is still lower than usual. These conditions, the experts warn, could lead to a massive growth in the amount of phytoplankton in the water - in other words, the lagoon could see the process of eutrophication which turned the water green in 2016 repeated as 2019 draws to a close.

The regional government continues to attribute the recent deterioration in the condition of the Mar Menor almost exclusively to the gota fria storm of last month, but others insist that the storm was merely a catalyst and that all of the ingredients for the disaster have been steadily accumulated over a period of decades. Some sources report that in 90 per cent of the area where Cymodocea sea grass normally grows it has been replaced over the last month by Caulerpa, that mud is forming on the sea bed where it is not usually seen, and that needlefish, prawns, crabs and other species are gathering on or close to rocks so that when a wave breaks there is more oxygen in the water. With another gota t ria storm possibly on its way to the Costa Calida next week there are worries that. as government sources warned earlier this week, the worst may yet be to come.
more……..https://murciatoday.com/pockets-of-anoxic-water-still-threaten-fish-and-crustaceans-in-the-mar-menor_1149395-a.html

Saving the world's last remaining mermaids in Peninsular Malaysia (Malaysia)

13 October 2019, By Elena Koshy, New Straits Times

In a world saturated with mermaid stories and legends, not much is really known about the dugong population that resides in Malaysian waters, according to Fairul Izmal Jamal Hisne, marine biologist and co-founder of MareCet - a non-profit, non-governmental organisation dedicated to the research and conservation of marine mammals in Malaysia. “We estimate that we have less than a hundred dugongs left in our waters,” he stresses. Dugongs, he adds, are also found in Sabah, where they’re recorded around Mantanani, Bangi and Mengalum Islands, and in Sarawak, in the waters of Brunei Bay, Lawas. However, he says they have yet to estimate the populations in those areas. In Peninsular Malaysia, dugongs are largely found in the southern state of Johor, historically in Sungai Johor and Sungai Pulai as well as the Mersing islands. The highest concentrations of dugongs are located where there’s presence of seagrass meadows, and the species of seagrass that’s consumed extensively by dugongs are found in these areas off Johor.

In Peninsular Malaysia, dugongs are protected under the Fisheries Act 1985 Part VI and the Fisheries (Control of Endangered Species of Fish) Regulations 1999. The Department of Fisheries formulated a National Plan of Action for Dugongs in 2011 to protect, conserve and manage dugongs and their habitats. Additionally, Malaysia is committed to the Convention on Biological Diversity, with a target of having 10 per cent of its marine environment protected by 2020, particularly areas that are important for threatened species. To date however, about 1 per cent of Malaysia’s marine area is protected. Seagrasses are protected only in areas where they fall within marine parks, but they’re now mentioned in the revised National Policy on Biological Diversity. “Dugong ‘hotspots’ where groups of 30 to 40 animals have been seen to congregate were identified, and these areas fall outside of the existing marine park borders,” he says. “These areas aren’t protected.”

MareCet’s research project is aligned with the National Plan of Action for dugongs focusing at the Johor Mersing islands by working together with local communities, fishermen, tourism operators as well as state and federal government agencies. “In consultation with government agencies, local communities and other stakeholders, we’ve prepared a proposal to establish a dugong sanctuary in Johor,” he reveals, adding that they’re currently lobbying for the Federal Government to push this agenda forward. While the Mersing islands host the most significant congregation of dugongs in Peninsular Malaysia, these areas are, however, affected by vessel traffic, trawl fishing as well as agricultural plantations and mixed coastal developments. These have been known to cause habitat degradation and water pollution which can affect seagrass meadows and endanger marine life.
more……..https://www2.nst.com.my/lifestyle/sunday-vibes/2019/10/529417/saving-worlds-last-remaining-mermaids-peninsular-malaysia

State-Federal Partnership Monitoring Seagrass Habitats Along NC Coast (NC, USA)

11 October 2019, By Jared Brumbaugh, Public Radio East

A recently published map gives scientists a better understanding of the density of submerged seagrass habitats along North Carolina's coast as well as a baseline for measuring changes in the ecosystem. “We’re trying to figure out how this environment is doing in North Carolina,” said Bill Crowell, the director of the Albemarle Pamlico National Estuary Partnership (APNEP), a cooperative program hosted by the N.C. Department of Environmental Quality. “Seagrasses are an indicator species for us to tell us how the overall system is doing. If we have a lot of grass, we know that water quality is pretty good."

The new map, which shows the location of seagrass beds along nearshore waters of the Outer Banks, Pamlico Sound, Albemarle Sound, and Bogue Sound, was compiled using aerial images and boat based surveys conducted from 2012 through 2014. Now that the updated map has been released, APNEP plans to compare the new data with images from 2006-2008 to determine how the density of submerged seagrass has changed.

The growing season for SAV is late spring to early fall. A number of other factors, including water clarity, cloud cover, and wind limit how often aerial surveys can take place. This summer, APNEP completed aerial photos and boat-based surveys to gather data for a third map. Additional flights and boat surveys are planned for spring 2020.
more……..https://www.publicradioeast.org/post/state-federal-partnership-monitoring-seagrass-habitats-along-nc-coast

Broome environmental group protecting Roebuck Bay dugongs and shorebirds from toxic algae bloom set (WA, Australia)

11 October 2019, Mirage News

An environmental group responsible for protecting Roebuck Bay's pristine ecosystem from toxic run-off pollution will represent WA after winning the Virgin Coastcare Award at the 2019 Western Australian Landcare Awards. Establishing the Keep Our Bay Clean campaign in 2005, Roebuck Bay Working Group have significantly reduced the serious threat of surface and groundwater nutrient enriched pollution and *Lyngbya majuscula* blooms through their tireless efforts.

Blue green *Lyngbya majuscula* blooms pose a serious threat to the marine environment. Thick anaerobic mats over seagrass threaten threadfin salmon populations while blooms also effect feeding grounds for dugongs and migrating shorebirds. And coming into contact, humans can experience rashes and breathing difficulties. Linked to runoff and pollutants such as fertiliser, chemicals, animal waste and detergents entering the ecosystem through stormwater drains, the Keep Our Bay Clean campaign encouraged industry and community to manage and dispose of their waste and waste water responsibly with educational programmes, planting of endemic species to catch runoff and lobbying Broome Shire to re-engineer/replant degraded stormwater drains.

'Partnering with Broome Shire, schools and Yawuru Rangers, RBWG has an unsurpassed community engagement communications strategy which has improved the upper catchment of stormwater drain by planting endemic bushtuckers in the riparian zone, making a film about the plantings days and installing friendly Keep Our Bay Clean signage in the amenity.' said project manager Kandy Curran. RBWG will go on to represent WA while competing for the Virgin Coast Award at the National Landcare Awards in 2020.
more……..https://www.miragenews.com/broome-environmental-group-protecting-roebuck-bay-dugongs-and-shorebirds-from-toxic-algae-bloom-set/

Two more Thai marine parks declared ASEAN heritage parks (Thailand)

11 October 2019, The Thaiger

Two southern Thailand national parks have been recognised as ASEAN heritage parks at this week's 15th ASEAN environment ministers' meeting in Siem Reap, Cambodia. Warawut Silpa-archa, Thailand's Minister of Natural Resources and Environment, told reporters the ASEAN environment ministers voted unanimously to designate Haad Chao Mai-Koh Libong No-hunting Zone and Ang Thong marine parks as the 45th and 46th ASEAN heritage parks.

Haad Chao Mai-Koh Libong No-hunting Zone Marine Park, off Trang province, is rich in seagrass and corals and is the feeding ground of dugongs. The two marine parks are Thailand's fifth and sixth to be given the status of ASEAN heritage parks after Khao Yai National Park, Tarutao, Surin-Similan-Similan-Phang-nga Bay marine parks and the Kaeng Krachan forest complex in Kanchanaburi province.

To qualify as ASEAN heritage parks, they must meet certain criteria, such as ecological richness, natural characteristics, regional representation, high conservation importance, proper management, cross-boundary characteristics and connectivity between cultures and the ecological system and natural diversity.
more……..https://thethaiger.com/hot-news/environment/two-more-thai-marine-parks-declared-asean-heritage-parks

Decline of carbon-capturing seagrass concerning, says Coastwatch Ireland (Ireland)

09 October 2019, by Kevin O'Sullivan, Irish Times

The decline of carbon-capturing seagrass, evidence of sea level rise caused by climate change, and major structural faults in coastal defences are among key initial findings of the 2019 Coastwatch Ireland survey. The decline of seagrass, "which is perhaps the most important carbon sink in our marine areas" is especially worrying, Coastwatch director Karin Dubsky said. This has been pronounced in Dublin Bay. Seagrass there was "highly stressed" this summer with temperatures of over 30 degrees found in coastal mudflats where it lives.

Surveyors were asked to look out for "dwarf seagrass", known as *Zostera noltii*, as Coastwatch fears "all beds outside Sandymount Merrion gates and in Malahide estuary" are at risk. "This grass looks like a wet lawn lying mid shore. It is

a very important carbon sink, holds sediment together and is a Brent goose treat. So even small patches are valuable," noted Coastwatcher Rita Hagan who is studying the grass. A brown-coloured opportunist algae – *Ectocarpus* – has invaded the ecosystem. It reduces light and impairs the ability of seagrass to thrive and generate oxygen. Enrichment of the water due to run-off from the land and sewage discharges is also upsetting the biological balance as it causes dense growth of plant life of the wrong kind. Coastwatch is particularly keen on locating long seagrass, *Zostera marina*, along the west coast as they are important fish nurseries.

As storm and heavy rain episodes have cut into survey days, the survey has been extended until October 21st and Coastwatch is also looking for extra volunteers. More information is available at www.coastwatch.org.
more……..https://www.irishtimes.com/news/environment/decline-of-carbon-capturing-seagrass-concerning-says-coastwatch-ireland-1.4045607

San Diego has unique edge to tackle climate change (CA, USA)

07 October 2019, By Deborah Sullivan Brennan, The San Diego Union-Tribune

The Earth's coastal and polar areas are on thin ice, a new climate report warns, but San Diego may be in a better place than others to weather those changes if it acts swiftly, several authors said. "The Ocean and Cryosphere in a Changing Climate," released last week by the Intergovernmental Panel on Climate Change, explored the effects of warming on the world's oceans and frozen places.

San Diego is grappling with rising seas, coastal erosion and marine heat waves, periods when seawater hits record-high temperatures. However, natural variability in the region's sea level, ocean temperature and chemistry may position coastal cities to stay ahead of future changes, several authors said. "Every community has different vulnerabilities, so it's useful to downscale these risks to your specific communities," said Mark Merrifield, a contributing author of the report and director of the Climate Change Impacts and Adaptation Center at Scripps Institution of Oceanography in La Jolla. "Marine heat waves, periods of extremely high ocean temperatures, have negatively impacted marine organisms and ecosystems in all ocean basins over the last two decades, including critical foundation species such as corals, seagrasses and kelps," the report states.

One of the more upbeat notes in the report concerns the role of "blue carbon," the restoration of marine plants to help slow climate change and safeguard coastlines. Kelp forests, seagrass beds, mangroves and wetlands all sequester carbon, shelter young fish, balance ocean chemistry and buffer inland areas, scientists said. "Seagrass beds and kelp are generally a net sink for carbon," said Raphael Kudela, an author of the report and professor of ocean sciences at UC Santa Cruz. "They adjust the pH of the water so you don't have to. If we protected these areas and helped them expand, we can mitigate the effects of ocean warming and de-oxygenation." "The report makes really, really clear, that if we act now and take on mitigation, we can limit the results of climate change," said Lisa Levin, an author of the study and a professor of biological oceanography at Scripps. "And things can be really severe and catastrophic in the future, with a lot of loss of life and money, if we don't act."
more……..https://www.sandiegouniontribune.com/news/environment/story/2019-10-07/report-san-diego-has-unique-edge-to-tackle-climate-change

Related article
Report: San Diego has unique edge to tackle climate change (09 October 2019, Phys.Org)
https://phys.org/news/2019-10-san-diego-unique-edge-tackle.html

Seagrass meadows harbor wildlife for centuries, highlighting need for conservation (FL, USA)

07 October 2019, by Natalie Van Hoose, Coastal New Today

While scientists have documented the health of seagrass meadows over several years or decades, assessing these habitats at the scale of centuries or millennia has been a much greater challenge. University of Florida researchers used modern and fossil shells from seagrass-dwelling animals to estimate the age of these meadows, showing that, far from being transient patches of underwater weeds, they are remarkably stable over time.

To understand how meadows have changed over time, scientists turned to the emerging field of conservation paleobiology. "We don't have a time machine to visit coastal regions of the past and verify that seagrass was there," said Michal Kowalewski, Thompson Chair of Invertebrate Paleontology at the Florida Museum of Natural History and the study's principal investigator. "But we can use shells as a way of glimpsing how these habitats functioned before the Industrial Revolution and whether they persist over time or pop up and then vanish." The team collected and identified more than 50,000 shells from seagrass meadows and open sandy areas in Florida's Big Bend region on the Gulf Coast, one of the most pristine coastal ecosystems in the U.S. Radiocarbon dating showed that 40% of the shells were more than 500 years old, with the oldest shell being nearly 2,000 years old. By comparing the abundance and type of old shells with living species, the team could get a sense of whether a particular habitat had changed.

The researchers found that living and dead mollusk communities in seagrass meadows matched one another, suggesting that the seagrasses they sampled have grown in the same location for centuries or longer, Kowalewski said. "The patchwork of open sandy bottoms and seagrass meadows that we see today is not a transient, ever-

shifting mosaic," he said. "Our data suggest that seagrasses are not dramatically shifting around and changing location." The study's findings have profound conservation and management implications, said Florida's Chief Science Officer Tom Frazer, who co-authored the paper. "If we are unable to prevent seagrass loss in a particular area, we may not be able to make up for that loss by trying to establish a new meadow elsewhere," he said. "This realization only heightens the need for immediate action aimed at improving water quality in estuaries and coastal waters around the state."
more……..https://www.coastalnewstoday.com/post/seagrass-meadows-harbor-wildlife-for-centuries-highlighting-need-for-conservation

Related article
Seagrass meadows harbor wildlife for centuries, highlighting need for conservation (03 October 2019, ScienceBlog)
https://scienceblog.com/511027/seagrass-meadows-harbor-wildlife-for-centuries-highlighting-need-for-conservation/

Dugong tears and dusty DNA (New Zealand)

03 October 2019, by Farah Hancock, Newsroom

Museums collections of old bones are fast becoming treasure troves of genetic information which can guide conservation efforts. Genetic analysis completed at the University of Auckland discovered the threatened Madagascan dugong diverged from other dugong populations millions of years ago.

Dugong live in scattered populations from Australia, the east coast of Africa, the Western Pacific and the Indian Ocean. Habitat loss, pollution and hunting have seen their numbers decline. Slow and simple to catch, dugong are easy prey for hunters. As well as flesh, there are uses for their fat, skin, bones, and teeth. Even their tears are sought-after. In parts of SouthEast Asia some people believe the best ingredient for a love potion are tears from a dugong calf who has lost its mother.

University of Auckland's Dr Shane Lavery said former student Dr Stephanie Plön, who is now based in South Africa, hit a snag trying to source genetic samples for her study. "It was almost impossible to collect samples from live animals because there were so few left." She turned to bones from museum collections around the world for help. Using a 1.5mm drill bit, small samples were carefully taken from the bones of 177 dugong held in 14 different museums. These bones had been collected over 250 years. "Initially, we were expecting to see that Indian Ocean dugong were just a small subset of the biodiversity that we already knew about in the Western Pacific. But it turns out that they make up an entirely different distinct lineage that probably diverged something like 10 million years ago." The study's findings help focus conservation efforts to the most at-risk population.
attention than they have to date.
more……..https://www.newsroom.co.nz/2019/10/03/830074/dugong-tears-and-dusty-dna#

21st dugong found dead in fish nets off Phang Nga (Thailand)

02 October 2019, The Thaiger

Another dugong, the 21st this year, has been found dead, trapped in fish net in the sea off Khura Buri district in Phang Nga. Marine biologist and vice dean of the Fisheries Faculty at Kasetsart University, Dr. Thon Thamrongnawasawat, reported today that 21 deaths was the highest number recorded in one year for the endangered sea mammals in Thailand.

Thai PBS World reports that Dr. Thon says the dugong found in the sea off Laem Mai Tai, Ban Thung Rak in Khura Buri district, which is abundant with seagrass is one of the 12 zones under the new "Mariam Project" which works towards the conservation of the region's dugongs. Dr. Thon said the latest dugong victim drowned after becoming ensnared in the fish net, adding that dugong breathe air and will drown if trapped under water for too long.

Since 90% of dugong fatalities have been caused by humans, mostly by fishing equipment discarded near protected dugong feeding grounds, Dr. Thon stressed the need for proper planning to ensure better co-existence with sea mammals and other marine creatures He expressed hope that the Mariam Project, named after the baby dugong 'Mariam', will be approved by the cabinet so that there will be funding to implement the project to protect dugongs in the 12 proposed protected zones.
more……..https://thethaiger.com/hot-news/environment/21st-dugong-found-dead-in-fish-nets-off-phang-nga

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Thai marine biologist pleads for dugong conservation plan (01 October 2019, Washington Post)
https://www.washingtonpost.com/world/asia_pacific/thai-marine-biologist-pleads-for-dugong-conservation-plan/2019/10/03/4cb10122-e5b8-11e9-b0a6-3d03721b85ef_story.html
Thai marine biologist pleads for dugong conservation plan (01 October 2019, KOKI FOX 23)
https://www.fox23.com/news/thai-marine-biologist-pleads-for-dugong-conservation-plan/993064082
Thai marine biologist pleads for dugong conservation plan (01 October 2019, 10TV)
https://www.10tv.com/article/thai-marine-biologist-pleads-dugong-conservation-plan-2019-oct

Coastal planning leaders awarded for innovation and commitment (WA, Australia)

01 October 2019, Mirage News

A tourist trail, coastal transformation project and research into the health of seagrass are some of the initiatives recognised in the 2019 Western Australian Coastal Awards for Excellence. The coastal champion was awarded to Environs Kimberley in recognition of its outstanding efforts facilitating over 12 years of the Broome Community Seagrass Monitoring Project.

The awards are held every two years to celebrate the achievements of groups and individuals involved in protecting and managing Western Australia's coast.

For more than 12 years, the Broome Community Seagrass Monitoring Project has been gathering data about the health of seagrass in Ramsar-listed Roebuck Bay, making it one of the longest running community seagrass monitoring projects in Australia.

more……..https://www.miragenews.com/coastal-planning-leaders-awarded-for-innovation-and-commitment/

Scientists assess storage value in blue carbon ecosystems (GA, USA)

01 October 2019, by Alan Flurry, University of Georgia

When Hurricane Dorian roared up the East Coast during the first week of September, the places where people live and work in several states were under threat. The first line of protection against storm damage was made up of coastal vegetated ecosystems, including nearly 300,000 acres of salt marshes in Georgia. The salt marsh, seagrass, and mangrove ecosystems that bore the brunt of pounding waves are not, however, immune from damage. Increasingly frequent and intense storms, coupled with rising sea levels, break apart and erode these ecosystems, threatening their ability to protect coastal communities and act as a globally important soil carbon reservoir.

Coastal salt marsh, seagrass and mangrove ecosystems – known as blue carbon ecosystems – account for a small fraction of the world's land surface but store more carbon per unit area than forests. A new University of Georgia-led research study explains the significance of blue carbon ecosystems and the need to better understand the processes that promote soil carbon storage and how disturbances, such as hurricanes, impact long-term preservation. This information is critical for predicting how well blue carbon ecosystems will protect coastal communities in the future and provide other ecosystem services, such as habitat for recreationally and commercially valuable fish and shellfish species.

Blue carbon ecosystems literally build up land by turning atmospheric carbon dioxide into plant biomass and trapping sediment particles washed in by tides. The organic carbon of this material may remain buried in this way temporarily or for thousands of years, depending on oxygen levels and water chemistry that in turn effect how bacteria access the carbon. The effectiveness of these decomposition mechanisms may also change following disturbances like large storm systems, encroaching development and sea-level rise. In effect, soil carbon storage is closely connected with the ability of marshland and mangroves to cope with rising sea levels.

more……..https://news.uga.edu/scientists-assess-blue-carbon-ecosystems/

Governor signs Petrie-Norris bill that will invest in projects to combat sea-level (CA, USA)

01 October 2019, Los Angeles Times

Gov. Gavin Newsom has signed a bill from Assemblywoman Cottie Petrie-Norris (D-Laguna Beach) that will invest in ecofriendly infrastructure projects designed to protect coastal communities from sea-level rise.

Assembly Bill 65 will support projects such as adding kelp and seagrass to protect against greater wave impacts, shoring up land marshes and restoring natural ecosystems.

"The California coast is home to 840 miles of breathtaking beauty and nearly 70% of all Californians," Petrie-Norris said in a statement. "And all of this is under threat from sea-level rise. We must be proactive and invest in smart solutions to safeguard our coast."

more……..https://www.latimes.com/socal/daily-pilot/news/story/2019-10-01/political-landscape-governor-signs-petrie-norris-bill-to-invest-in-projects-to-combat-sea-level-rise

Despite 'Enormous Potential' as Carbon Sink, Australia's Damaged Coastal Ecosystems Spewing (WA, Australia)

01 October 2019, by Jessica Corbett, Common Dreams

Australia's seagrass meadows, mangroves, and salt marshes absorb and lock away about 20 million tons of carbon dioxide each year, but damage to these vegetated coastal ecosystems is releasing three million tons of CO_2 back into the atmosphere and limiting their potential to prevent more planetary heating, according to a new study. The

"world-first research" on blue carbon was published in the journal Nature Communications. The study makes a case for restoring these areas across the globe to help combat the human-caused climate emergency.

The research brought together dozens of scientists from 33 institutions worldwide - including lead author Oscar Serrano, a fellow at the Center for Marine Ecosystems Research at Edith Cowan University's (ECU) School of Science. The researchers found that Australia's coastal zones capture about the same amount of carbon each year as the annual emissions of more than four million vehicles. However, Serrano said, "when these ecosystems are damaged by storms, heatwaves, dredging, or other human development, the carbon dioxide stored in their biomass and soils beneath them can make its way back into the environment, contributing to climate change." Serrano pointed out that "globally, vegetated coastal ecosystems are being lost twice as fast as tropical rainforests despite covering a fraction of the area." He added that "these ecosystems are also important as habitats and nurseries for fish and other marine life, helping prevent coastal erosion and improving water clarity."

The researchers hope the new study will help drive efforts to restore and protect such ecosystems in Australia—which, in turn, could inform similar efforts around the world. The researchers' call for restoring coastal ecosystems to address the climate crisis aligns with the Natural Climate Solutions campaign, which proposes "drawing carbon dioxide out of the air by protecting and restoring ecosystems" to battle climate and ecological breakdown. Last month—just ahead the global climate strike and the United Nations Climate Action Summit—youth climate activist Greta Thunberg and writer George Monbiot, a leader of the campaign, released a video on the proposal.
more……..https://www.commondreams.org/news/2019/10/01/despite-enormous-potential-carbon-sink-australias-damaged-coastal-ecosystems-spewing

Related article
Restoring Australia's coastal ecosystems reportedly equivalent to taking four million cars off the road (01 October 2019, SBS)
https://www.sbs.com.au/news/restoring-australia-s-coastal-ecosystems-reportedly-equivalent-to-taking-four-million-cars-off-the-road
Australia to become a world leader in protecting blue carbon ecosystems (04 October 2019, by Chrissy Sexton, Earth.com)
https://www.earth.com/news/australia-blue-carbon-ecosystems/

CONFERENCES

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

Theme: " Signs of Success "

The International Seagrass Biology Workshop (ISBW) is the only international meeting specifically tailored to seagrass scientists, professionals and students. The International Seagrass Biology Workshop (ISBW) provides an excellent opportunity for the scientists working on various aspects of seagrass ecosystems to come together and discuss their latest findings. The ISBW14 Chesapeake Bay 2020 will be held in August 2020 at the Graduate Annapolis Hotel, Annapolis, Maryland. This will be the first time ISBW has been hosted in the U.S.A. and the iconic Chesapeake Bay is the logical setting. Chesapeake Bay is an iconic estuary with a strong scientific and management history. The resurgence of seagrasses (including brackish water submersed aquatic vegetation) in the bay is the largest documented in the world, and clearly a "sign of success" to inspire seagrass scientists globally.

More information:
To get important updates, visit: https://isbw14.org/
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SEAGRASS-WATCH on YouTube

Seagrass: Pastures of the sea *http://www.youtube.com/watch?v=66Y5vgswj20* or
http://www.seagrasswatch.org/seagrass.html
Presentation on what seagrasses are and why they are important (over 50,411 views to date)

Seagrass & other matters

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

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

SeagrassSpotter https://seagrassspotter.org/

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

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

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

World Seagrass Association on Twitter @Seagrass_WSA

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.