30 June 2020

IN THIS BULLETIN

Please note: links to sources were active on date of publication. Some sources remove links periodically.

NEWS

New Aquatic Preserve Off Florida Is Big Win for Wildlife, Habitat, and Long-Term Economy (FL, USA)

29 June 2020, by Holly Binns' The Pew Charitable Trusts

The St. Martins Marsh Aquatic Preserve in Crystal River, Florida, safeguards water quality and coastal habitat vital to wildlife and local communities. A new Nature Coast Aquatic Preserve, approved today, extends these protections to about 400,000 acres of seagrass meadows off Citrus, Hernando, and Pasco counties. Off Florida's west coast, seagrass beds stretch for miles and for decades have supported a significant part of the regional economy. That's why the Florida House and Senate passed legislation to protect about 400,000 acres of seagrass—a measure that Governor Ron DeSantis (R) signed into law today.

The Nature Coast Aquatic Preserve off Citrus, Hernando, and Pasco counties is the first new preserve to be designated in more than 30 years and the 42nd in a state system designed to maintain water quality and biological value to ensure healthy ecosystems. The preserve, which covers part of the Gulf of Mexico's largest seagrass bed, still allows traditional activities such as boating, fishing, and scalloping. "The Nature Coast Aquatic Preserve is an essential tool in keeping our marine environment healthy," said Mike Desabrais, vice president of Port Hudson Fishing Club in Pasco County. "Lawmakers and the governor have significantly helped that environment, and future generations will see great value in their efforts." The governor signed the legislation amidst the coronavirus outbreak. While the region's economy has suffered during the pandemic, the new law will help support businesses and tourism for generations to come.

Clean water is essential to seagrass, which grows underwater and provides food, shelter, and nursery areas for a vast array of marine animals. That ecosystem supports a variety of activities, from summertime scalloping, world-class sport fishing, and internationally renowned manatee-watching to harvesting stone crabs and shrimp. Seagrass-related activities in the region generate more than $600 million annually for the economy, provide more than 10,000 jobs, and support about 500 businesses. The new preserve will border several existing ones in Pinellas County, St. Martins Marsh, and the Big Bend, creating a large contiguous protected area for valuable marine coastline. The new preserve will serve as a legacy that will safeguard the region's environment, fishing, and tourism businesses for generations to come.
more…….https://www.pewtrusts.org/en/research-and-analysis/articles/2020/06/29/new-aquatic-preserve-off-florida-is-big-win-for-wildlife-habitat-and-long-term-economy

Puget Sound eelgrass beds create a 'halo' with fewer harmful algae, new method shows (Wash., USA)

24 June 2020, by Hannah Hickey, UW News

A University of Washington study adds one more superpower to the list of eelgrass abilities: warding off the toxin-producing algae that regularly close beaches to shellfish harvests. Researchers found evidence that there are significantly fewer of the single-celled algae that produce harmful toxins in an area more than 45 feet, or 15 meters, around an eelgrass bed. "The effect we're seeing is happening in nature, and it's an effect that's really widespread within this group of harmful algae. What we see is this halo of reduced abundance around the eelgrass beds," said Emily Jacobs-Palmer, a research scientist at the UW. She is the lead author of the study published this spring in the open-access journal PeerJ.

Researchers sampled five coastal sites three times in the spring and summer of 2017. Four sites were within Puget Sound and one was in Willapa Bay, on Washington's outer coast. In addition to a traditional visual ecological survey at each site, the researchers used a type of genetic forensics to detect species that might not be easily seen or present at the time of the survey. This method collects fragments of genetic material to identify organisms living in the seawater. The researchers analyzed the eDNA results to find trends among 13 major groups of organisms. They discovered that dinoflagellates, a broad class of single-celled organism, were scarcer in and around the eelgrass beds than in surrounding waters with bare seabed.

The result has practical applications, since certain species of dinoflagellate populations can spike and produce toxins that accumulate in shellfish, making the shellfish dangerous or even deadly to eat. The authors hypothesize that the same biological reasons why dinoflagellates don't flourish inside eelgrass beds — likely bacteria that occur with eelgrass and are harmful to dinoflagellates — may extend past the bed's edge.
more…….https://www.washington.edu/news/2020/06/24/puget-sound-eelgrass-beds-create-a-halo-with-fewer-harmful-algae-new-method-shows/

Studying connection between sea otters and eelgrass recovery in Central Coast estuaries (CA, USA)

22 June 2020, by Sukhmony Brar, KCBX

While estuarine waters in Morro Bay and Elkhorn Slough help endangered species recover, estuaries themselves are in jeopardy due to a rapid decline of eelgrass beds. However, new research suggests sea otters are actively aiding in eelgrass recovery.

According to observational data collected by the Morro Bay National Estuary Program, there has been a 90% decline in eelgrass acreage in the Morro Bay Estuary over the last decade. Estuaries also increasingly serve as safe harbors for sea otters, away from the dangers of the open ocean. So how do increased numbers of sea otters contribute to increased levels of eelgrass? Cal Poly biologist Lisa Needles says the resurgence in eelgrass in areas with sea otters has to do with their feeding habits. "One of the cool things we've been finding is the importance of these top predators on restoring degraded ecosystems and on providing resilience to these ecosystems from other threats," Needles said. "When otters are in the system, crabs go down, these mesograzers go up, that decreases the algal growth on the eelgrass so the eelgrass can photosynthesize better," Needles said.

While the presence of sea otters has been critical to the revival of eelgrass in Elkhorn Slough estuary, it's still scarce in Morro Bay, especially in the back portions of the bay, where there are few to no sea otters. If trends follow the data in Elkhorn Slough and sea otters move into the back portion of the Morro Bay estuary, researchers say it may trigger a significant revival in eelgrass throughout.
more……https://www.kcbx.org/post/studying-connection-between-sea-otters-and-eelgrass-recovery-central-coast-estuaries#stream/0

Local scientists study seagrass in Caloosahatchee River for first time in 26 years (FL, USA)

18 June 2020, by Michael Raimondi, NBC2 News

Dr. James Douglass said seagrass is vital to water quality and that manatees and turtles eat the seagrass. The vegetation also cleans the water as a natural filter and if too many nutrients are in the water, it can fuel an algae bloom. Scientists think pollution is killing the seagrass.

The last time anyone mapped the growth of the seagrass was 1994. Dr. Douglass said there is less now than 26 years ago. He said salt level balance is important and that some seagrass thrive in saltwater, while other types prefer freshwater. The team wants to find out where the grass is growing underwater because researchers think that can help determine what is killing them. If they find the source of the problem, they can hopefully stop it. So far, they have surveyed about 80 percent of the river between Sanibel and I-75, and they plan to finish the study in the next month or so.
more……https://www.nbc-2.com/story/42265347/local-scientists-study-seagrass-in-caloosahatchee-river-for-first-time-in-26-years

Got Chesapeake Bay acid? New study finds seagrasses may bring relief (MD, USA)

14 June 2020, by Rachael Pacella, Baltimore Sun

Subaquatic vegetation uses sunlight to produce food from carbon dioxide and water through a process called photosynthesis. It's such a powerful action that the surrounding water becomes less acidic and crystals of calcium carbonate form on the plants' leaves, scientists said in a study recently published in the journal Nature. Those crystals can travel downstream and dissolve, making the water more alkaline. That helps to prevent acidification caused by algae bloom die-offs and man-made pollution.

The burning of fossil fuels has increased the amount of carbon dioxide in the atmosphere. When carbon dioxide gets into water and dissolves, it adds a proton and makes the water more acidic, the study's co-author Jeremy Testa said in a statement announcing the findings. Acidification hurts shell-forming animals including larval mussels and oysters, according to a summary of the finds released by the University of Maryland. Photosynthesis, on the other hand, takes carbon dioxide out of the water, Testa said, reversing the acidification process and increasing the water's pH.

Testa said they noticed that in the area of the Susquehanna Flats, a large underwater grass bed in the upper Chesapeake, total alkalinity was very low. The reason carbonate was disappearing near the bed was that photosynthesis in the bed caused pH to increase so much that calcium carbonate crystals began precipitating on the grass, Testa said. It wasn't dissolved in the water anymore. Farther down the bay, they noticed more alkalinity than expected just from water mixing. They used a computer model, which suggested that crystals from the Susquehanna Flats in the Upper Bay could have reached more acidic and oxygen-deprived waters farther downstream and dissolved, Testa said.
more……https://www.baltimoresun.com/news/environment/ac-cn-chesapeake-grasses-06-20200614-tnmgemk2xrdktbrgpd7xseqxey-story.html

Related articles
In the Chesapeake Bay, saving seagrasses can fight ocean acidification (02 June 2020, National Geographic
https://www.nationalgeographic.com/science/2020/06/chesapeake-seagrasses-fight-ocean-acidification/

Forest City kicks off mangrove conservation project (Malaysia)

11 June 2020, by Gigi Onag, FutureIoT

Forest City, the smart city project in the Malaysian state of Johor, renewed its commitment to sustainable development by protecting mangroves around the construction area of the 30-km man-made islands. Mangrove conservation the latest project at Forest City aimed at protecting the area's ecological and environmental balance. In previous months, it has invested some 2.5 ringgit (approximately US$600,000) to establish protection zones for seagrass in partnership with local universities with the aim of improving the habitats in which dugongs, sea turtles and sea horses, among other endangered species, live.

Located within the Iskandar Malaysia special economic zone (SEC) in southern Johor, Forest City comprises four man-made islands spanning 30 square kilometres. Last year, more than 20,000 residential units were handed over to owners on top of the more than 4,000 that already have been. The first island (Island 1) is 50%reclaimed and comprises a fully occupied retail complex, the five-star Phoenix International Marina Hotel, commercial units, a sales gallery, and Shattuck-St Mary's Forest City International School. The remaining three islands (Islands 2-4) will be built based on "property demand and supply".
more……https://futureiot.tech/forest-city-kicks-off-mangrove-conservation-project/

Protection of seagrasses key to building resilience to climate change, disasters - new UN report (Kenya)

08 June 2020, UN Environment (press release)

Seagrass meadows can be a powerful nature-based climate solution and help sustain communities hard-hit by stressors such as the COVID-19 pandemic, but these important ecosystems continue to decline. The importance of seagrasses is highlighted in a new report, Out of the Blue: The Value of Seagrasses to the Environment and to People, released by the United Nations Environment Programme (UNEP) together with GRID-Arendal and the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC).

The report, launched on World Oceans Day, finds that seagrass ecosystems play an outsized role in combatting the climate crisis. Though they cover only 0.1 per cent of the ocean floor, these meadows are highly efficient carbon sinks, storing up to 18 per cent of the world's oceanic carbon. Countries aiming to do their part under the Paris Agreement can include seagrass protection and restoration in their nationally determined contributions (NDCs) to help reduce the amount of heat-trapping carbon in our atmosphere.

As the global community works to build back better and strengthen economies and societies in the wake of the devastation wrought by this pandemic, preserving and restoring seagrass ecosystems can be a highly effective way to protect food chains and create jobs in industries such as fishing and tourism. The well-being of human communities all around the globe is closely tied to the health of seagrass meadows. "Seagrasses are the super ecosystems of our oceans, providing an incredible range of benefits to people around the world. Yet, while their flashier counterparts attract more attention, they remain among the most unheralded aquatic environments on Earth. The Out of the Blue report showcases the many ways that seagrasses help people thrive and sustain the healthy natural environment that we all depend on," said Dr. Maria Potouroglou, seagrass scientist at GRID-Arendal and lead editor of the report.

Despite their importance, new data suggest that seagrasses are among the least protected coastal habitats. Only 26 per cent of recorded seagrass meadows fall within Marine Protected Areas (MPAs) compared with 40 per cent of coral reefs and 43 per cent of mangroves. Conserving and restoring seagrass meadows can contribute to achieving as many as 10 of the UN Sustainable Development Goals as well as the goals of the Paris Agreement and the Convention on Biological Diversity.

more……https://www.unenvironment.org/news-and-stories/press-release/protection-seagrasses-key-building-resilience-climate-change

Related articles

Protection of seagrasses is key to building resilience to climate change and disasters (08 June 2020, Phys.Org)
https://phys.org/news/2020-06-seagrasses-key-resilience-climate-disasters.html

Seagrass Could Be A Powerful Weapon Against Climate Change, Natural Disasters: UN Report (09 June 2020, The Swaddle)
https://theswaddle.com/seagrass-could-be-a-powerful-weapon-against-climate-change-natural-disasters-un-report/

Protection of seagrasses key to building resilience to climate change, disasters (09 June 2020, Modern Diplomacy)
https://moderndiplomacy.eu/2020/06/09/protection-of-seagrasses-key-to-building-resilience-to-climate-change-disasters/

Seagrass meadows can help communities hit hard by pandemic: UN (13 June 2020, New Kerala)
https://www.newkerala.com/news/2020/101674.htm

East Africa: Tourism, Fishing Trawlers Hurt Seagrasses of East Africa - UN Report (18 June 2020, AllAfrica.com)
https://allafrica.com/stories/202006190213.html

Envoy helps plant seagrass along foreshore (Fiji)

5 June 2020, by Paulini Curuqara, Fiji Times

Permanent secretary for Waterways and Environment Joshua Wycliffe commemorated World Environment Week by planting seagrass along the Suva foreshore. Also present at the "Meadows in the Sea campaign" was British High commissioner Melanie Hopkins.

Dr Brodie, of the University of the South Pacific's Institute of Applied Science, said the seagrass ecosystem formed parts of the rich marine ecosystems that can be found on tropical coastal zones. While seagrass or meadows are one of the most widespread and productive coastal ecosystem that are essential to the health and productivity of the marine coastal ecosystem, it is also of the undervalued marine ecosystems that is generally neglected.

Ms Hopkins said in line with COP26 policy themes, the UK would work with all countries to share the opportunities of clean growth, stimulate greater action on climate adaptation and resilience, drive transformation of global financial flows, and tackle the biodiversity crisis. Mr Wycliffe also launched the MPA Compliance Surveillance Program at the Nasese Foreshore yesterday.

more……https://www.fijitimes.com/envoy-helps-plant-seagrass-along-foreshore/

Related articles

Ministry ensures Fiji has a productive ecosystem (05 June 2020, FBC News)
https://www.fbcnews.com.fj/news/ministry-ensures-fiji-has-a-productive-ecosystem/

Court upholds DOD finding that Okinawa air base won't harm endangered dugong (Japan)

04 June 2020, Nichi Bei Weekly

A federal appeals court in San Francisco on May 6 upheld a U.S. Department of Defense finding that construction of a Marine Corps airbase on the Japanese island of Okinawa would not harm the dugong. The 9th U.S. Circuit Court of Appeals ruled in a lawsuit filed in federal court in San Francisco in 2003 by the Center for Biological Diversity, the Turtle Island Restoration Network and two Japanese groups. A three-judge panel said the Defense Department fulfilled the requirements of a federal historic preservation law when it consulted scientific reports and surveys. The department concluded there was an extremely low probability of the sea mammals being found in the area of the new base and that the construction was not likely to harm them.

Center for Biological Diversity program director Pete Galvin said, “We’re very disappointed. It’s a sad day for the dugong.” He said the plaintiff groups are considering a further appeal to an expanded 9th Circuit panel or the U.S. Supreme Court. said there may be only two to 24 remaining Okinawa dugongs, which are possibly a subspecies of dugongs. The U.S. National Historic Preservation Act came into play in the lawsuit because the law requires federal agencies to “take account” of the impact of planned projects on properties protected by similar foreign laws.

The environmental groups that sued to block the base contended the Defense Department’s study was inadequate and also that the process should have included public participation. But the appeals court said the historic preservation law did not include a requirement for public participation in such studies. The panel upheld a 2018 decision by U.S. District Judge Edward Chen, who said the Defense Department’s study was reasonable and adequate. Galvin said that construction work has begun on filling in underwater land for runways for the new base. He said the underwater seagrass in the area is one of the best remaining habitats for the Okinawa dugong.
more…….https://www.nichibei.org/2020/06/court-upholds-dod-finding-that-okinawa-air-base-wont-harm-endangered-dugong/

Can seagrass aquaculture help to halt climate change? (United Kingdom)

04 June 2020, The Fish Site

The Ocean Conservation Trust has completed construction of a seagrass cultivation laboratory as part of a new £2.5 million habitat restoration project led by Natural England. The laboratory at the UK’s National Marine Aquarium is being unveiled on 8 June 2020 - World Oceans Day.

The three-year LIFE Recreation ReMEDIES project aims to protect vital seagrass meadows located in special areas of conservation (SACs) around the UK’s coasts by providing environmentally friendly moorings, voluntary boating codes, targeted training and habitat restoration. As part of the project, the Ocean Conservation Trust will be cultivating up to 25,000 plants a year in the new laboratory, to help restore up to four hectares of lost seagrass meadows. The laboratory will be open for public viewing once the National Marine Aquarium reopens later this summer in accordance with guidance from the UK government on easing lockdown. Visitors will get to see the plant cultivation in action whilst learning more about the importance of seagrass.
more…….https://thefishsite.com/articles/can-sea-grass-aquaculture-help-to-halt-climate-change

Seagrass stink brings a sea change to Cottesloe Beach (WA, Australia)

05 June 2020, by Jon Bassett, PerthNow

Huge mounds of seagrass, known as wrack, have taken over the usually pristine Cottesloe beach after recent storms. UWA coastal oceanography professor Charitha Pattiaratchi said the seagrass could stink of rotting eggs from its high sulphur content if heat during next week’s forecast good weather accelerated its decomposition. But Prof Pattiaratchi said it was necessary for it to remain on the beach so it could eventually return to the sea and boost the nutrient-poor WA coast. He said the large dump was due to all the shed leaves of summer being brought in by the the first major storm of winter, and less was likely be deposited on the beach in subsequent bad weather.

Cottesloe Mayor Phil Angers said the Town did not plan to remove the seaweed because its leaves’ nutrients should replenish the in-shore ecosystem and protect the beach from any waves, but some may be moved to provide access near the groyne. The State Government does not recommend taking the seaweed for gardens.
more…….https://www.perthnow.com.au/community-news/western-suburbs-weekly/seagrass-stink-brings-a-sea-change-to-cottesloe-beach--c-1074706

Government provides Cancun, Riviera Maya sargassum report (Mexico)

02 June 2020, Riviera Maya News

The government of Quintana Roo reports an investment of over 195 million peso for the construction, acquisition and repair of equipment to containing *Sargassum* along the state's coasts noting that the amount allotted for this year "will be less than in 2018 and 2019".

Admiral José Rafael Ojeda Durán, Secretary of the Navy, says that since May of last year, they began to offer *Sargassum* support. Since then, commissions were created he said, one of the most important being how to allocate and define how the resources were to be spent. He reported that "to date, 195.6 million peso has been received." Of this, 109 million was spent last year to build six *Sargassum* vessels and for the purchase of 4,252 meters of containment barriers, four beach sweepers and three tractors in addition to the repair of a *Sargassum* vessel and a ship, spare parts, operating expenses and storage equipment.

He says based on studies for May, June and July, "there will be little *Sargassum* because the currents are helping. They are causing it to go north and in the east of the Peninsula, the arrival will be less than what was had in 2018 and 2019." "What we see on the beaches is mostly sea grass, which is also part of the ecosystem, but there has been almost no *Sargassum* affection," he said.

more……https://www.riviera-maya-news.com/government-provides-cancun-riviera-maya-sargassum-report/2020.html

Lockdown lures seahorses back to Studland (England, UK)

2 June 2020, Divernet

Britain's endangered spiny seahorses have recolonised their former stronghold of Studland Bay in Dorset. The seahorses had gone missing for the past two years, but the recent survey dive revealed no fewer than 16 of them, including pregnant males and even a juvenile born this year. This is the largest number found in a single dive at the site since the Seahorse Trust began monitoring at Studland in 2008.

Garrick-Maidment attributes the seahorses' return to the reduction in people, boat traffic and associated noise and anchors in the area resulting from Covid-related restrictions. "The seagrass has started to repair itself, and the spiny seahorses have taken advantage of this," he says. Last year Studland Bay was designated as a Marine Conservation Zone (MCZ) in recognition of the importance of its seagrass habitat and seahorse population. Garrick-Maidment describes this development as "a tribute to the thousands of Seahorse Trust volunteers and supporters who collected data, campaigned and signed petitions to get the site protected".

more……https://divernet.com/2020/06/02/lockdown-lures-seahorses-back-to-studland/

Related articles

Coronavirus: Largest number of seahorses seen at Studland Bay for 12 years (02 June 2020, BBC News)
https://www.bbc.com/news/uk-england-dorset-52889747
Endangered species of seahorse returns to former stronghold due to lockdown (04 June 2020, Gibraltar Chronicle)
https://www.chronicle.gi/endangered-species-of-seahorse-returns-to-former-stronghold-due-to-lockdown/
Endangered spiny seahorse thrives again in UK waters during Covid-19 lockdown (03 June 2020, Evening Standard)
https://www.standard.co.uk/news/uk/endangered-spiny-seahorse-thrives-uk-covid19-lockdown-a4459086.html
Endangered species of seahorses returns home because of lockdown (03 June 2020, Metro)
https://metro.co.uk/2020/06/03/endangered-species-seahorses-returns-home-lockdown-12793894/
Studland Bay seahorses are thriving under lockdown (04 June 2020, Dorset Echo)
https://www.dorsetecho.co.uk/news/18495242.studland-bay-seahorses-thriving-lockdown/
Coronavirus: Endangered seahorse makes a comeback due to lockdown (04 June 2020, Sky News)
https://news.sky.com/story/coronavirus-endangered-seahorse-makes-a-comeback-due-to-lockdown-11999206
Endangered Seahorses Return To British Bay During Lockdown (06 June 2020, LADbible)
https://www.ladbible.com/news/uk-endangered-seahorses-return-to-british-bay-during-lockdown-20200606

Save our seagrass (England, UK)

2nd June 2020, The Ecologist

There were once vast marine meadows beneath our shores, home to a diverse array of marine life and a hidden power. However, at least 35 percent of seagrasses worldwide have been lost or damaged over the last 40 years. The Marine Conservation Society (MCS) is on a mission to 'Save Our Seagrass'.

The impact of our changing climate is already becoming clear to see in the natural world: floods, storms, bushfires, soaring temperatures and melting ice sheets. Yet seagrass, a flowering plant living in the UK's shallow waters, could be our secret weapon. It has been estimated that seagrass can absorb and store at least as much carbon per hectare as trees in UK woodlands. Not only can seagrass absorb carbon and help battle the climate crisis, but it is also a biodiversity hotspot. The UK's seagrass meadows are home to the two species of seahorse which live in UK waters: the spiny seahorse and the short snouted seahorse. The meadows are also breeding grounds for cuttlefish and sharks, and nurseries for cod, plaice and pollock.

In order to 'Save Our Seagrass', MCS is working with conservation partners along the south coast of England to tackle recreational pressures which are damaging seagrass meadows to ensure they can thrive once again. The project, LIFE Recreation ReMEDIES, will focus on Marine Protected Areas (MPAs) in the Isles of Scilly, Fal & Helford, Plymouth Sound & Estuaries, Solent and Essex Estuaries Special Areas of Conservation to replace traditional, damaging, anchoring and mooring systems with new systems which limit their impact on the seabed and, as such, on the seagrass meadows. The project will not only replace damaging anchoring and mooring systems but raise awareness of the environmental damage these older systems can cause and educate the public in how to better safeguard seagrass meadows.
more……https://theecologist.org/2020/jun/02/save-our-seagrass

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/
Follow on
Facebook @ISBW14, twitter @ISBW14 , Instagram @isbw14 #isbw14

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

Theme: Tackling the Challenging Future of Coral Reefs

The ICRS is the leading global conference on coral reef science, management and conservation, sanctioned every 4 years by the International Coral Reef Society (ICRS). For the first time in its history, an ICRS will be held in Europe. ICRS 2020 will be the key event to develop science-based solutions addressing the present and future challenges of coral reefs, which are globally exposed to unprecedented anthropogenic pressures. The five-day program will present the latest scientific findings and ideas, provide a platform to build the essential bridges between coral reef science, conservation, politics, management and the public, and will promote public and political outreach.

Key Themes which include seagrass ecosystems:
- Theme 3: Ecosystem functions and services
- Theme 6: Unexplored and unexpected reefs
- Theme 9: Global and local impacts
- Theme 10: Organismal physiology, adaptation and acclimation

More information:
To get important updates, visit: https://www.icrs2020.de/

SEAGRASS-WATCH on YouTube

Seagrass: Pastures of the sea *http://www.youtube.com/watch?v=66Y5vgswj20* ***or***
http://www.seagrasswatch.org/seagrass.html
Presentation on what seagrasses are and why they are important (over 51,326 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

Past E-bulletins *https://www.seagrasswatch.org/ebulletin/*
Frequently Asked Questions *https://www.seagrasswatch.org/faq/*
Magazine *https://www.seagrasswatch.org/magazine/*
Virtual Herbarium *https://www.seagrasswatch.org/herbarium/*
Future sampling dates *https://www.seagrasswatch.org/upcomingevents/*

****

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