



Seagrass-Watch e-Bulletin

Sanur, Bali, Indonesia

31 July 2019

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After years of decline, some European seagrass meadows show signs of recovery

(Netherlands)

29 Jul 2019, Phys.Org

European research has found that a third of European seagrass was lost to disease, declining water quality and coastal development, chiefly during the 1970s and 1980s. However, since the late 20th century that decline has been gradually slowing and in some places seagrass meadows are recovering as a result of EU measures to improve water quality. "This research reveals that there is hope for its future, as seagrass meadows are already showing signs of recovery in some parts of Europe," says Marieke van Katwijk, an environmentalist. The findings have been published in Nature Communications.

The researchers used data from 737 sites along the coast of 25 European countries. It even included a map of the Wadden Sea in the Netherlands, from 1869. Unfortunately, the seagrass recorded on that map is now gone. The highest rate of seagrass loss in Europe can be found in the Netherlands." The overall picture is therefore a little less positive for the Netherlands. "It's good news for Europe as a whole, but a lot of work is still needed in the Netherlands. The seagrass levels are stable, but very low," according to Van Katwijk. Planting of seagrass has been planned for Lake Grevelingen [Grevelingenmeer] in Zeeland, in the south-west of the Netherlands. "It was lost around 1990 at that particular site. Planting is difficult. There are far more crabs and algae, so the food chain looks to have been disrupted."

The North German Wadden Sea has seen the highest levels of recovery within Europe. This is the result of a different, faster growing species of seagrass. "There was some eutrophication there, but less than in the Netherlands, and in recent decades it has declined even more. The Western Wadden Sea in the Netherlands has a very different structure, being much deeper and with fewer mudflats. In this western area of the Wadden Sea there are a few sites where recovery of a deep-growing species of seagrass (the species seen in 1869) would be possible, but much less of the shallow species. However, the eastern part of the Dutch Wadden Sea is more like the North German area. It has lots of mudflats but is also more eutrophic. This is due to agriculture, but also because we happen to be at the mouth of the Rhine, which is always full of nutrients. It's therefore unlikely that we'll be able to replicate the success seen in Germany. But we should certainly be able to improve on what we have now," says Van Katwijk.

[more.....https://phys.org/news/2019-07-years-decline-european-seagrass-meadows.html](https://phys.org/news/2019-07-years-decline-european-seagrass-meadows.html)

Toba Aquarium expert helps Thai staff raise orphan baby dugongs (Thailand)

29 Jul 2019, by Masatomo Norikyo, Asahi Shimbun

To save the lives of orphaned baby dugongs, Japanese dugong expert Yoshihito Wakai has been invited to a marine research center here to offer his expertise and guidance. Wakai, 59, vice director of the Toba Aquarium in Toba, Mie Prefecture, will be visiting the Phuket Marine Biological Center in southern Thailand until early August.

On July 27, Wakai assisted the staff with a 5-month-old male dugong named Jamil, who was taken in by the research center in June. Wakai watched Jamil for about six hours in a pool in the center from the morning. While playing together in the water in the afternoon, Jamil begun swimming and splashing about although the young marine mammal was not active. Wakai gave instruction on "dietary education," in teaching the dugong how to recognize food by letting them bite seaweed. He also taught local breeding staff how to examine their excrement to help in their care.

Wakai has 35 years of experience in working with endangered dugongs. He is known for raising a female dugong named Serena, which broke the world record for living in captivity in 2018, having spent more than 32 years in the aquarium.

[more.....http://www.asahi.com/ajw/articles/AJ201907290033.html](http://www.asahi.com/ajw/articles/AJ201907290033.html)

Extreme weather has damaged nearly half Australia's marine ecosystems since 2011 (QLD, Australia)

27 Jul 2019, by Lisa Cox, The Guardian

More than 8,000km of Australia's coast was affected by extreme climate events from 2011 to 2017, and in some cases they caused irreversible changes to marine habitats. The study collated all the published research by leading scientists, who have examined the effects of marine heatwaves, heavy rainfall from tropical storms, cyclones and droughts on coral, kelp, mangrove and seagrass communities. It paints a bigger picture of the extent to which the climate crisis is fueling widespread change across Australia's marine ecosystems.

The study found that big climate events were exacerbating the effects of human-induced climate change. Heatwaves, for example, compounded the effects of the underlying global heating trend and left little time for organisms to adapt. "If you stand back and have a look at how many [climate events] have happened between that period of 2011 to

2017, it really backs up that it's not just the Great Barrier Reef that we have to think about. It's all around the country," Russ Babcock, the study's lead author, said.

The team of scientists looked at events, including the 2011 marine heatwave in Western Australia, cyclone Yasi, the back-to-back mass bleaching on the Great Barrier Reef, and the mangrove dieback in the Gulf of Carpentaria in 2015-16. Babcock said the long-term effects of such events affected other species, such as large animals that fed off seagrasses, which could lead to changes in the composition of entire marine communities.

[more.....https://www.theguardian.com/environment/2019/jul/28/extreme-weather-has-damaged-nearly-half-australias-marine-ecosystems-since-2011](https://www.theguardian.com/environment/2019/jul/28/extreme-weather-has-damaged-nearly-half-australias-marine-ecosystems-since-2011)

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Extreme weather affects almost half of Australian coast: scientists (26 July 2019, Xinhua)

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Government must urgently step up ambition to protect coastal habitats from climate impacts (26 July 2019, Mirage News)

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Australia faces environmental crisis as extreme climatic conditions damage its ecosystem (28 July 2019, Blasting News United States)

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Extreme Weather Caused by Climate Change Has Damaged 45% of Australia's Coastal Habitat (28 July 2019, TheInertia.com)

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3 Images Sum Up the Damage to Australia's Coast From the Climate Crisis (30 July 2019, Inverse)

<https://www.inverse.com/article/58125-climate-change-coastal-marine-habitats-australia-extreme-weather-events>

Underwater grasses in the bay improve despite record rain (VA, USA)

25 July 2019, by Tamara Dietrich, Daily Press

Last year's record rainfall throughout the Chesapeake Bay makes hard numbers hard to come by, but experts believe underwater grasses withstood the "onslaught" and even improved a bit. If they're right, it means that seagrass acreage swelled by 4%, from nearly 105,000 acres in 2017 to 108,960 in 2018 — the highest recorded level to date. Seagrass restoration stands at 59% of the goal of 185,000 acres by 2025.

"I'm so relieved to see that our SAV numbers didn't decline dramatically," said Brooke Landry, a natural resources biologist with the Maryland Department of Natural Resources who heads the Submerged Aquatic Vegetation (SAV) Workgroup at the Chesapeake Bay Program. The bay program based its latest survey results on actual mapping from last year, but also on estimates for areas that were inaccessible because of bad weather or security restrictions, or were just too cloudy to assess the grass beds. About 22 percent of the bay and its tidal tributaries couldn't be mapped — parts of the freshwater, slightly salty and moderately salty areas — so surveyers backfilled based on 2017 numbers. Areas they could access — especially in the very salty waters of the lower bay — showed an estimated 91,559 acres of underwater grasses.

At the Chesapeake Bay Foundation advocacy group, Beth McGee, director of science and agricultural policy, said 2018's strong showing indicates the grasses "were able to withstand the onslaught of last year's record rainfall, a sign of ecosystem resiliency." That resiliency, however, isn't assured. Experts attribute the steady abundance of seagrass mostly to widgeon grass — a boom-or-bust species that can grow or die off dramatically from year to year. Robert J. Orth, head of VIMS' SAV Restoration and Monitoring Program, said researchers are encouraged by the latest numbers on submerged grasses, given conditions in the bay last year.

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New Study Says Everglades Water Is Harming Keys' Corals. Not Everyone Agrees (FL, USA)

23 July 2019, by Jenny Staletovich, WJCT News

Debate among scientists tends to be collegial. But a new study on coral and the Florida Keys that gained national headlines last week has reignited a decades-old dispute over pollution and the Everglades. The study, published in the journal *Marine Biology* by Florida Atlantic University marine biologist Brian LaPointe, concludes that water from the southern Everglades is harming reefs near Looe Key. LaPointe said water sampling he conducted over 30 years showed that big pulses of water from the Everglades' Shark River preceded the Keys' mass bleaching events over the years. He says the remote river is polluted with nitrogen from farms and urban development, which can harm corals. But at least 16 scientists who work in the Everglades are raising questions. They say more widespread monitoring doesn't appear to support the findings of excess nitrogen. They show nitrogen only spiking during natural events like tropical storms, cold freezes and hurricanes. The South Florida Water Management District said that its monitoring also failed to detect dangerous levels of nitrogen in Florida Bay outside severe storms.

Everglades restoration is based largely on the premise that flood protection has cut off the southern Everglades from the water that naturally flowed out of Lake Okeechobee, down the river of grass and out marshes into the vast seagrass meadows in Florida Bay. Over the years, too little water has made Florida Bay's seagrass vulnerable to drought. In droughts in 1987 and again in 2015, the bay became too salty and triggered major die-offs. More than 60

square-miles of seagrass died by 2016. The 1980s die-off set the stage for catastrophic algae blooms that caused the bay to crash. The state of Florida has spent millions, including \$880 million for filtering marshes, to clean water and get it back into the southern Everglades. But it focuses on phosphorus, the chemical in fertilizer coming off sugar fields and in water out of Lake Okeechobee. Too much phosphorus can cause cattails and other plants to grow in the sparse marshes and interrupt the flow of water and over-stimulate seagrasses. The state does not focus on removing nitrogen. In 1999, Everglades scientists published findings blaming the drought for the die-off, a finding largely accepted by South Florida's scientific circles.

But LaPointe has long argued that elevated nitrogen flowing from the southern marshes, not the dead seagrass, caused the blooms. Four years after the 1999 study, he published comments saying seagrass biologists Jay Zieman and Jim Fourqurean overstated the impact from the drought and called their findings "untenable." Zieman and Fourqurean fired back in a published response, saying LaPointe misinterpreted data from another scientist at Everglades National Park. They said his findings illustrated "a repeated lack of understanding of the geography and hydrology of the southern Everglades and Florida Bay."

[more.....https://news.wjct.org/post/new-study-says-everglades-water-harming-keys-corals-not-everyone-agrees](https://news.wjct.org/post/new-study-says-everglades-water-harming-keys-corals-not-everyone-agrees)

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About that Panel of Algae Scientists: How Did Brian Lapointe Get Left Behind? (22 July 2019, Sunshine State News)

<http://www.sunshinestatenews.com/story/about-desantis-algae-scientists-how-did-brian-lapointe-get-left-behind>

New Study Says Everglades Water Is Harming Keys Corals. Not Everyone Agrees. (28 July 2019, Sun Sentinel)

<https://www.sun-sentinel.com/news/florida/fl-ne-wlrn-everglades-water-coral-damage-20190728-d6sdqctzrjgbc3ft7i7jyscza-story.html>

FWC stepping up their boating patrol to limit the rise in manatee deaths (FL, USA)

19 July 2019, Wink News

Manatee deaths are on track to reach a record number this year, and wildlife officers are stepping in to hopefully decrease the high numbers. Lee County is one of the leading areas of manatee deaths and Florida Fish and Wildlife Conservation Commission will begin patrolling the waters to limit the incidents that lead to manatee deaths. Too often boaters are breaking the rules, by speeding in marked areas or boating outside of the designated channels.

By the end of May, FWC recorded 19 manatee deaths from boat strikes, which is up from 13 during the previous year. This rise is causing FWC to amp up their patrolling on the water. Another issue with boats is they destroy the manatees source of food. "When boat motors run through these seagrass beds, it takes more than 10 years for that seagrass to grow back," Captain Justin Paulauskis said. That's why local marinas educate boat renters before sending them out in rentals.

Besides from being aware of the areas you can and can not boat in, FWC recommends wearing polarized sunglasses so you can spot manatees and other wildlife in the water easier.

[more.....https://www.winknews.com/2019/07/19/fwc-stepping-up-their-boating-patrol-to-limit-the-rise-in-manatee-deaths/](https://www.winknews.com/2019/07/19/fwc-stepping-up-their-boating-patrol-to-limit-the-rise-in-manatee-deaths/)

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FWC increasing patrols to protect manatees (19 July 2019, WTVY, Dothan)

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Wildlife officers to increase manatee patrols (24 July 2019, The West Volusia Beacon)

https://www.beacononlinenews.com/news/wildlife-officers-to-increase-manatee-patrols/article_2374369a-ae4e-11e9-a15d-4f3c8bc98d5c.html

FWC urges boaters to watch out for manatees as sea cow deaths rise (29 July 2019, Fox 35 Orlando)

<https://www.fox35orlando.com/news/fwc-urges-boaters-to-watch-out-for-manatees-as-sea-cow-deaths-rise>

Posidonia, a treasure under pressure (Spain)

19 July 2019, by Raquel Vaquer, Majorca Daily Bulletin

The Balearic Islands are blessed to have an underwater treasure: 650has of posidonia (*Posidonia oceanica*) seagrass meadows. This treasure is under threat from anchors and wastewater. Every summer many boats anchor over posidonia meadows. Last June dozens of boats were reported anchoring over the seagrass meadow of Portals Vells; which resulted in 7 of them being fined. Posidonia meadows have been declared a priority EU habitat. It's illegal to anchor over it. The Balearic Government is one of the very few regions with specific legislation to protect Posidonia. Other areas strongly affected by irregular anchoring are Portocolom bay, Ibiza and Formentera.

Posidonia grows very slowly; about 1 to 5 centimetres per year. Because of this, the damage caused by one day anchoring could take decades to restore. In 2017, researchers estimated that the anchor of a 15 m long boat, uprooted about 165 posidonia shoots in Portocolom; and that it would take 5 years of optimal conditions to regenerate. This single action released 915 g of carbon to the atmosphere. A study revealed that *Posidonia oceanica* meadows in s'Espalmador (Formentera) were reduced by 44 % between 2008 and 2012, mainly because of the impact of anchoring. And then, there is the documented event of the 116m Turama boat in Formentera a few years ago whose damage will take almost thousand years to restore.

Unfortunately, there are still several bays and Posidonia meadows across Majorca which suffer from the impacts of poor water quality. The third major impact on Posidonia, is climate change. Warmer waters increase mortality of Posidonia. But if anchors and wastewater weaken the plants then Posidonia meadows are more vulnerable and less able to cope with climate change. Marilles Foundation advocates for action and promotes solutions to protect this priority habitat. If you are a boat owner please remember: anchoring on seagrass meadows is forbidden and keep 200 m distance from the coast in beaches and 50 m in rocky areas, for swimmer's safety.

[more.....https://www.majorcadailybulletin.com/life-style/life-style/2019/07/19/56325/posidonia-treasure-under-pressure.html](https://www.majorcadailybulletin.com/life-style/life-style/2019/07/19/56325/posidonia-treasure-under-pressure.html)

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Almost 2500 boats made to move on from Posidonia (26 July 2019, Majorca Daily Bulletin)

<https://www.majorcadailybulletin.com/news/local/2019/07/26/56503/almost-500-boats-made-move-from-posidonia.html>

The 'snotweed' scourge smothering seagrass and how oysters could be used to fight it (QLD, Australia)

19 July 2019, by Jennifer Nichols, ABC News

A respected marine scientist warns that seagrass beds off Queensland's Bribie Island are being smothered by 'snotweed' algae. But Dr Ben Diggles hopes a national effort to restore Australia's lost shellfish reefs could help turn the tide against the slimy invader while improving water quality, creating new marine habitat and significantly boosting fish stocks.

Dr Diggles, who provides specialist aquatic animal health services to industry and government, expressed his deep concern about the health of Pumicestone Passage. "It's like snot, I guess — it's a good term for it," he said. "It's pretty easy to get a 10 litre bucketful in a minute or so if you want to use your hand — as you can see it gets in there amongst the seagrass strands and sort of binds it all together." Dr Diggles said snotweed, or *Ectocarpus fasciculatus* algae, was now blooming every winter when the water clarity improved and light penetrated to the bottom of the channel. "I'm particularly worried about it because it tends to smother the seagrass and that reduces the surface area available to the seagrass, which means we're losing all those little nooks and crannies where the little prawns and shrimps and fish can hide and feed, and I'm pretty sure it probably also kills the seagrass because it shades it and actually prevents it from seeing the sunlight."

Dr Diggles said the snotweed algae was feeding off a build-up of excess nutrients like nitrogen and phosphorous runoff from suburbs, leaking septic tanks, sewage treatment plants, and farmland in the catchment area. The scientist believes the answer to successfully battling snotweed and rebuilding the future health of this waterway can be found in its past. Moreton Bay was once home to vast thriving shellfish reefs, and the job of mining them became one of Queensland's earliest industries. "We used to have hundreds of acres of oyster reefs in the bay, [but now] they're functionally extinct," Dr Diggles said. "They're no longer there and played a very important role as a habitat for fish and crabs, and the best thing was that they filter large amounts of water — over 100 litres of water a day."

[more.....https://www.abc.net.au/news/rural/2019-07-19/snotweed-algae-oyster-reef-restoration/11324388](https://www.abc.net.au/news/rural/2019-07-19/snotweed-algae-oyster-reef-restoration/11324388)

Scallop population naturally falling, worrying some in Citrus County (FL, USA)

18 July 2019, by Daisy Ruth, WFLA

Bay scallop season is officially underway in Citrus and Hernando counties and begins Friday in Pasco. However, many across social media have noticed while scalloping, there just doesn't seem to be as many of the shellfish in Tampa Bay area seagrass beds. Numbers released by the Florida Fish and Wildlife Conservation Commission support that.

In Citrus County last year, FWC observed 21.1 scallops per 200 square meters. This year's preseason survey only saw 4.3 scallops in the same amount of space. Research scientists for FWC aren't alarmed, however. "Scallop populations tend to be cyclical. They're on anywhere from a five to seven year cycle. And we've had several good years with scallops in the region," said scientist Ryan Gandy. "So, we anticipated to have some low numbers in the following years. And so we look at this as a low period within the scallop population."

FWC confirms on its website that scallop population abundance is "highly variable because scallops live for one year" and are also sensitive to water quality changes. FWC says changes in population may occur after events such as a tropical storm or an El Nino. Citrus County Tourism Development Director John Pricher said the threat of scalloping trip cancellations is a big concern in the industry, but said the county has yet to see any issues. Pricher said there are still many things for folks to enjoy in Citrus County, whether they find their limit of scallops or not. "The manatees [are still] here."

[more.....https://www.wfla.com/mobile/scallop-population-naturally-falling-worrying-some-in-citrus-county-3/](https://www.wfla.com/mobile/scallop-population-naturally-falling-worrying-some-in-citrus-county-3/)

NPS recommends flat wake zones in environmental impact study (USA)

18 July 2019, Gulf Breeze News

The National Park Service released the Final Environmental Impact Statement (FEIS) for Personal Watercraft (PWC) use at Gulf Islands National Seashore July 5. The FEIS incorporates research regarding the impacts of PWC use on water, air, soundscape quality and submerged aquatic vegetation (seagrass beds), as well as public comments collected last fall to determine the final preferred alternative.

The preferred alternative proposed by the National Park Service includes: • Revised flat wake zones — 150 yards from shorelines in Florida — 300 yards from shorelines in Mississippi • A prohibition on PWC landings on wilderness islands. “Thanks to the hard work of park staff and thoughtful input from the community, the alternative identified will ensure this recreational opportunity continues in park waters while protecting park resources including shorebirds and seagrasses,” said Superintendent Dan Brown...

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Sarasota Public Art Committee choose art sculptures for roundabouts (FL, USA)

17 July 2019, ABC7 WWSB

Over the past several years, a number of art structures have been installed at roundabouts throughout the City of Sarasota. Now, the city’s public arts committee chooses their two new sculptures. “The Life in Seagrass” sculpture by Solano for the intersection of U.S. 41 and 10th Street and “Poly” by Nancy Hou for the intersection of U.S. 41 and 14th Street.

Although there is some push-back about art being on Sarasota Roads, city officials told us that it will add character once they’re completed. With over 200 submissions, it’s all come down to 6. Public Art Committee Chair, Leslie Butterfield, explained that the structures would make a great sense of community. Each roundabout budgeted for \$150,000 all paid for by local developers.

[more.....https://www.mysuncoast.com/2019/07/18/sarasota-public-art-committee-choose-art-sculptures-roundabouts/](https://www.mysuncoast.com/2019/07/18/sarasota-public-art-committee-choose-art-sculptures-roundabouts/)

Related article

Committee Picks Brand New Art for Brand New Roundabouts (18 July 2019, Sarasota)
<https://www.sarasotamagazine.com/slideshows/2019/7/18/sarasota-public-art-roundabouts>

Marine experts push to plan to protect dugongs (Thailand)

18 July 2019, The Phuket News

Calling on local fishermen to preserve dugong seagrass grazing areas and establishing a dugong protection zone are just two strategies to be rolled out under a plan to try to stem the rising number of dugongs found dead along the Andaman coast. The proposals were put forward at a meeting in Krabi on Tuesday (July16) headed by Marine and Coastal Resources Department Director-General Jatuporn Buruspat. Also present were Rear Admiral Nunthapon Mararat of the Royal Thai Navy Third Area Command and Krabi Vice Governors Somkuan Kunngen and Sompot Chotichuchuang.

So far this year 15 dead dugongs have washed ashore or been found in the sea off the coast of the southern provinces, much higher than the yearly average, the meeting was told. Mr Jatuporn unveiled a plan comprising short-term, mid-term and long-term phases. The short-term plans consists of calling on locals and fishermen to take care of dugongs’ food sources; the middle-term plan consists of collecting information and coordinating with other marine organisations; while long-term plan is to identify and set up a protection zone for dugong conservation over the next five years, he explained.

Providing adequate care and protection for dugongs has become the focus of attention in the media and among the public this, with marine officials saying that fishing equipment had killed 10 of the 15 dead dugongs found. Rope marks were also found on the remaining five.

[more.....https://www.thepuketnews.com/marine-experts-push-to-plan-to-protect-dugongs-72180.php#kOe04s57OumwAm96.97](https://www.thepuketnews.com/marine-experts-push-to-plan-to-protect-dugongs-72180.php#kOe04s57OumwAm96.97)

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National agenda will be prepared for dugong conservation in Thailand (19 July 2019, The Thaiger)
<https://thethaiger.com/hot-news/environment/national-agenda-will-be-prepared-for-dugong-conservation-in-thailand>

World's erosion experts gather at gateway to GBR (QLD, Australia)

18 July 2019, Mirage News

Leading Australian and international gully erosion experts will meet in Townsville next week and view first-hand the severe impact this type of land degradation is having on the Great Barrier Reef. Gully and stream bank erosion is recognized globally as a significant source of sediment that is delivered to rivers and a natural hazard that can be accelerated by climate change, extreme events, and human land-use.

A key focus of protection and recovery efforts on the Great Barrier Reef are based in the catchments adjoining its coastline. Elevated sediment loads are damaging inshore coral reefs and seagrass beds within this important World Heritage Area. Controlling gully and stream bank erosion is the main approach being used by land managers to reduce fine sediment. Technical advice provided by CSIRO, Griffith University and other partners to control gully erosion is occurring in collaboration with landholders on more than 100 properties across the catchments that drain to the Great Barrier Reef.

Research has identified that gullies, or washaways as they are often known, are really vulnerable to erosion. Researchers are working with natural resource managers such as NQ Dry Tropics and Fitzroy Basin Association, and the grazing industry to develop practical and effective land management solutions for the Reef, and to help keep soil and nutrients on-property where they can be productive.

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Oregon's Eelgrass Is Disappearing, With Potentially Big Impacts (OR, USA)

16 July 2019, *The Pew Charitable Trusts*

On many low-tide mornings, Caitlin Magel traverses the platinum-blue shallows of South Slough National Estuarine Research Reserve on Oregon's south coast, counting silky shoots of eelgrass. This underappreciated seagrass provides nursery habitat for crabs, salmon, and other wildlife that help support coastal fishing communities. Eelgrass also absorbs carbon and stores it in its shoots and roots. And by pulling carbon dioxide out of the water during photosynthesis, eelgrass also acts as a buffer against ocean acidification, says Magel, who is quantifying some of these benefits as part of her doctoral research at Oregon State University.

Since Magel started her Ph.D. work in 2016, however, eelgrass has inexplicably begun disappearing from some parts of Coos Bay, adding urgent new questions to her research. The Pew Charitable Trusts caught up with Magel to learn more about what fascinates her about eelgrass and other things estuarine.

"I think discovering the decline of eelgrass in South Slough is the most interesting thing I've been involved in so far. And it's happening in well-established eelgrass beds. We are in the process of figuring out what happened, why it happened, and what we can do about it. But one of the challenges is managing habitat in the face of rapid change. Once you notice the decline, it may be too late to stop it. It's been a good lesson in the complexities of working in these kinds of systems," Magel said.

[more.....https://www.pewtrusts.org/en/research-and-analysis/articles/2019/07/16/oregons-eelgrass-is-disappearing-with-potentially-big-impacts](https://www.pewtrusts.org/en/research-and-analysis/articles/2019/07/16/oregons-eelgrass-is-disappearing-with-potentially-big-impacts)

Mounting dugong deaths cause alarm (Thailand)

15 July 2019, *Bangkok Post*

Two more dugongs were found dead on Sunday, one off the coast of Krabi and the other in Trang, bringing the death toll to five in four months, said Kongkiat Kittiwatanawong, director of Phuket Marine Biological Centre. In Krabi, the dead dugong was pulled out of the sea between Koh Pu and Koh Phi Phi. The other dead dugong was found washed ashore on Hat Samran beach in Trang's Hat Samran district.

The Krabi dugong was a 2.3-metre long male weighing about 400kg, said Woraphot Lomlin, head of Hat Noppharat Thara National Park-Phi Phi Archipelago in Krabi. It was transported to Rajamangala University of Technology Srivijaya's Trang campus for an autopsy, he said. The Krabi dugong was the fourth death, and the Trang dugong the fifth, in the past four months, said Mr Kongkiat in his Facebook post on Sunday.

Thon Thamrongnawasawat, deputy dean of Faculty of Fisheries of Kasetsart University, said the dugongs may have been hunted for their tusks which are made into talismans. The expert said the earlier rescues of two young dugongs, named Mariam and Yamil, had captivated the public. Those two young dugongs are now being nursed under the care of the Department of Marine and Coastal Resources.

[more.....https://www.bangkokpost.com/thailand/general/1712472/mounting-dugong-deaths-cause-alarm](https://www.bangkokpost.com/thailand/general/1712472/mounting-dugong-deaths-cause-alarm)

Related article

Dead dugongs found at Thai beaches (15 July 2019, Xinhua)
http://www.xinhuanet.com/english/2019-07/15/c_138229014.htm

Mounting dugong deaths cause alarm (15 July 2019, The Phuket News)

<https://www.thephuketnews.com/mounting-dugong-deaths-cause-alarm-72128.php#8Rtxq0Wi3uegqAXw.97>

Koh Phi Phi dugong died from a gastrointestinal infection (16 July 2019, The Thaiger)

<https://thethaiger.com/hot-news/environment/koh-phi-phi-dugong-died-from-a-gastrointestinal-infection>

South Florida scientists concerned over seagrass decline in the Loxahatchee River (FL, USA)

12 July 2019, by Sabirah Rayford, WPTV.com

A group of scientists and researchers at the Loxahatchee River District say they're seeing dangerously low amounts of seagrass in our area. Lately, they've been working to educate boaters that underneath their vessels is endangered seagrass. These scientists and researchers said there are several other factors leading to a dangerous decline in seagrass including human impact, water quality, and lack of sunlight.

In the last 10 years, senior scientist Dr. Rachel Joy Harris said they've seen a 30 percent decline in seagrass in the Loxahatchee River. The scientists said that means less food for the organisms that depend on it. "If we lose such a valuable habitat we would expect to see losses in different organisms that are using these habitats," Dr. Joy Harris said.

For now, the group is taking more samples and hoping it will lead to more answers, while also working to inform the public to be respectful to this ecosystem. "It's great to have people come out and enjoy these areas, but we also want them to be aware of the seagrasses and be able to protect them and conserve them as much as possible," Dr. Joy Harris said.

[more.....https://www.wptv.com/news/protecting-paradise/south-florida-scientists-concerned-over-seagrass-decline-in-the-loxahatchee-river](https://www.wptv.com/news/protecting-paradise/south-florida-scientists-concerned-over-seagrass-decline-in-the-loxahatchee-river)

Lee County leads state in manatee boat deaths during what could become record year (FL, USA)

10 July 2019, by Chad Gillis, Fort Myers News

Florida is on pace to smash the record for manatee boat deaths, with 86 struck and killed in the first six months of the year, according to Florida Fish and Wildlife Conservation Commission records. Lee County leads the way with 21 boat kills, which is more than the next two counties combined. Brevard and Volusia have 9 each.

Boats killed a record 122 manatees last year. If the current pace keeps through the rest of the year, the boat death toll for this year could hit 172. "Among known causes, watercraft-related mortality for the first half of 2019 is of unprecedented proportion and the main contributor to this year's mortality so far," said Martine deWitt, an FWC veterinarian. Collier County had three boat-related deaths while Martin County had one through June 30, according to FWC records.

[more.....https://www.news-press.com/story/news/2019/07/10/manatee-boat-deaths-collision-florida-lee-county-record-year-2019/1691541001/](https://www.news-press.com/story/news/2019/07/10/manatee-boat-deaths-collision-florida-lee-county-record-year-2019/1691541001/)

Related article

The number of manatees being killed by boats is steadily increasing in Florida (12 July 2019, WWWSB)

<https://www.mysuncoast.com/2019/07/12/number-manatees-being-killed-by-boats-is-steadily-increasing-florida/>

Manatee boat deaths in Florida on pace to set record, with 86 killed in first six months (12 July 2019, TCPalm)

<https://www.tcpalm.com/story/news/local/florida/2019/07/12/manatee-boat-deaths-collision-florida-lee-county-record-year-2019/1712337001/>

Revisions to design for Sarasota's The Bay preserve mangroves (FL, USA)

10 July 2019, by Amy Diaz, Sarasota Herald-Tribune

An updated design of the first phase of the \$300 million bayfront redevelopment plan includes a spiraling pier that sweeps into Sarasota Bay and curves back to the shoreline. Designers of the plan envision the possibilities for winter and summer sunset overlooks and educational opportunities with the visible seagrass and mangroves that the pier arcs around to protect the environment. The preliminary design, which won't be finalized for eight months, was presented to the community on Wednesday for input.

Following ecological surveys, site visits and discussions with experts, the design team realized it had drawn something people liked, but the location and form no longer made sense. The original, more traditional pier jutting into the bay would have had to be built over mangroves and seagrass. The new curving shape avoids the mangroves, embraces the seagrass and is more ecologically sensitive.

While the pier's shape has changed, the conservancy, a private group spearheading the redevelopment in concert with the city of Sarasota, assured attendees that the new design is still in keeping with the original master plan. The Bay Park Conservancy plans to hold seven public workshops over the next eight months to involve the community and City Commission in the design and decision-making process. The Bay Park Conservancy will present the latest design to the Sarasota City Commission on Monday.

[more.....https://www.heraldtribune.com/news/20190710/revisions-to-design-for-sarasotas-bay-preserve-mangroves](https://www.heraldtribune.com/news/20190710/revisions-to-design-for-sarasotas-bay-preserve-mangroves)

Funding boost to help improve River Torrens health (SA, Australia)

10 July 2019, Mirage News

The Australian and South Australian governments will together invest \$4 million to revitalise valuable wetlands at Breakout Creek in the River Torrens to improve the health of the river, protect native species and deliver benefits to the local community. The Minister for the Environment, Sussan Ley, said that the Australian Government is investing \$2 million into the project through its \$100 million Environment Restoration Fund.

“Healthy wetlands such as these remove sediment and nutrients, and provide protection from the effects of extreme weather such as coastal storm surges and floods. “The work at Breakout Creek wetlands will not only improve the immediate environment but will minimise polluted inflows into the Gulf St Vincent, which will in turn protect vital habitat for shorebirds, reduce the loss of sea grass and the erosion of beach and coastal dunes,” Ms Ley said.

Alongside the Australian Government, the Adelaide and Mount Lofty Ranges Natural Resources Management Board has given their in-principle support to co-contribute up to \$2 million towards the project. “The NRM board has been committed to the redevelopment of Breakout Creek since their completion of Stage 1 in 1999, and is pleased to be working with the Australian Government over the coming months to establish and agree on final funding arrangements.”

[more.....https://www.miragenews.com/funding-boost-to-help-improve-river-torrens-health/](https://www.miragenews.com/funding-boost-to-help-improve-river-torrens-health/)

Thailand's Princess Sirivannavari names Krabi's baby dugong 'Yamil' (Thailand)

06 July 2019, The Thaiger

Her Royal Highness Princess Sirivannavari has proposed the name 'Yamil' for the orphaned baby dugong found stranded in Krabi on July 1. The animal was rescued by villagers and sent for treatment and rehabilitation by marine veterinarians in Phuket. Thai PBS reports that Marine and Coastal Resources Department director-general Jatuporn Burutpat says the Princess has agreed to sponsor the care of Yamil which, in the Yawi dialect, means “handsome young man of the sea”, and another baby dugong, Mariam, which means “beautiful young lady of the sea”, under the Coral and Marine Lives project initiated by the Princess.

Jatuporn said that the department and the officials were pleased with the concern shown by the Princess for the conservation of corals and marine life in Thai waters and her kindness in sponsoring the care of the two orphaned baby dugongs. He disclosed that dugong are most commonly sighted in the Andaman Sea in the territory of Chao Mai national park off the coast of Trang because there is abundant seagrass, which is the main food source for the dugong.

[more.....https://thethaiger.com/hot-news/environment/thailands-princess-sirivannavari-names-krabis-baby-dugong-yamil](https://thethaiger.com/hot-news/environment/thailands-princess-sirivannavari-names-krabis-baby-dugong-yamil)

Related articles

New orphan dugong named 'handsome sea prince' by Thai royal (06 July 2019, FRANCE 24)

<https://www.france24.com/en/20190706-new-orphan-dugong-named-handsome-sea-prince-thai-royal>

New orphan dugong named 'handsome sea prince' by Thai royal (07 July 2019, Arab News)

<https://www.arabnews.com/node/1521861/offbeat>

Young artists advocate seagrass protection via exhibit (Philippines)

06 July 2019, by Mary Judaline Partlow, Philippine News Agency

Two young budding artists here are collaborating with environmental groups in the push for the protection of seagrass through an art exhibit dubbed Life-Giving Seagrass Educational Art Project. The artworks of Dumaguete-based artists Cil Flores and Angelo delos Santos are on display in the exhibit, which opened recently at the Flying Fish Hostel here. They said it is through their artworks that they contribute to environmental awareness and protection.

“I also want to educate and influence other people about the importance of getting involved in the protection of not only seagrass but also our marine ecosystem and the whole planet,” said Flores, a self-taught artist who is slowly practicing sustainable living. She believes that art influences people and captures their attention and that it is an effective communication tool to get people engaged in social and environmental issues. On the other hand, delos Santos, another self-taught artist, said: “raising awareness about life-giving seagrass has inspired me to want to be a part of this exhibit.” “I want to show through my art that both sea creatures and seagrass need each other to survive,” he said. “For me, in this generation, environmental advocacy is better expressed and understood using art because people nowadays, especially, the youth, are more attracted to artistic conveyance,” he added.

At the opening of the exhibition, which runs for two weeks, was a film showing about seagrass to help spread awareness to and educate people about its importance. The proceeds from the sales of original artworks and art prints will be donated to the Big Blue Network to support its marine education programs with local kids. (PNA)

[more.....https://www.pna.gov.ph/articles/1074149](https://www.pna.gov.ph/articles/1074149)

Competition to name dugong calf in Phuket (Thailand)

05 July 2019, *The Thaiger*

The Department of Marine and Coastal Resources in Phuket is inviting members of the public to participate in a contest to name an orphaned baby dugong, found stranded on a beach in Krabi. The dugong calf is now under the care of DMCR vets to save rare marine animals in Phuket.

Jatuporn Buruspat, the department's director-general visited the Phuket centre to get updates on the condition of the three-month old dugong, which was admitted to the centre on Monday by villagers. Jatuporn ordered a CCTV system to be installed in the centre's nursery facility so that the public can follow the progress of the baby dugong. He also invited members of the public to come up with a name for the calf and entering a competition by submitting their suggestions to the department from today until July 21. Contest results will be announced the following day and the winners will receive prizes.

When the animal gets stronger, it may be moved to the Phuket Marine Biological Centre where Mariam, another baby dugong, is being cared for.

[more.....https://thethaiger.com/hot-news/environment/competition-to-name-dugong-calf-in-phuket](https://thethaiger.com/hot-news/environment/competition-to-name-dugong-calf-in-phuket)

Seagrass declining in Loxahatchee River... here's what is significant about that (FL, USA)

04 July 2019, by Sam Howard, *Palm Beach Post*

That seagrass is withering away in the Loxahatchee River is not altogether unique, researchers at the Loxahatchee River District say. In April and June, district researchers found no seagrass in what's traditionally been a seagrass bed on the Northwest Fork of the Loxahatchee River. Eleven years ago, the area had roughly a 72 percent average occurrence of seagrass, district figures show. The data show similar, though less steep, declines at three other monitoring sites in the river stretching east into the Jupiter Inlet. The seagrass, mostly consisting of two species known as shoal grass and Johnson's seagrass, provides refuge for juvenile fish and food for sea turtles and manatees, researchers said.

A scientific paper on how the district determined effective practices for monitoring seagrass is being reviewed by the journal *Ecological Indicators*, Rachel Joy Harris, senior scientist at the river district's Wildpine Laboratory said. At the moment, Harris and Metz said it's difficult to explain what exactly has reduced seagrass in the Northwest Fork, one of two Florida waterways carrying a federal designation as wild and scenic. They pointed to factors ranging from extreme rainfall and surface water runoff to boating activity.

Environmental advocates at the nonprofit Jupiter Inlet Foundation want to place buoy markers around a seagrass bed near DuBois Park in the Jupiter Inlet. The project is pending approval of a permit by the U.S. Army Corps of Engineers, which closed a public notice period for the proposal late last month.

[more.....https://www.palmbeachpost.com/news/20190704/new-seagrass-declining-in-loxahatchee-river-heres-what-is-significant-about-that](https://www.palmbeachpost.com/news/20190704/new-seagrass-declining-in-loxahatchee-river-heres-what-is-significant-about-that)

Another baby Dugong found on a Krabi beach (Thailand)

02 July 2019, *The Thaiger*

Another lost baby dugong has been rescued after being found injured in Krabi. The baby dugong was found washed up on the shores in Klongthom District, Krabi yesterday (June 1) and was rescued by the officials from the Phuket Marine Biological Centre (PMBC). Thai Rath reports that the baby dugong had a lot of scratches on it and was very exhausted. The dugong was sent to the PMBC for treatment and nursing back to health. According to the PMBC officials, the baby dugong is a 3 month old male, 111 centimetres long.

PMBC officials say the baby dugong might have lost trace of its herd and washed ashore, which is rare because mother dugongs usually take good care of their babies until they are grown and strong enough to be on their own. A mother dugong usually does not let the babies swim far away from her and, in the event that they get separated from their herd, the mother would normally get lost along with her babies.

Meanwhile, netizens are following the event and commenting that 'Mariam' will have a new young friend. They were also questioning what happened to the mother dugong.

[more.....https://thethaiger.com/hot-news/environment/another-baby-dugong-found-on-a-krabi-beach](https://thethaiger.com/hot-news/environment/another-baby-dugong-found-on-a-krabi-beach)

As opposition wanes, a Malaysian land reclamation project pushes ahead (Malaysia)

02 July 2019, by Keith Schneider, *Mongabay*

Forest City, the \$100 billion island city rising from reclaimed seabed at the western entrance to the Johor Strait that marks the border with Singapore, is one of the largest real estate projects on the planet and is just starting to recover from a storm of bad publicity. The new city, designed to house 700,000 residents and employ 250,000 workers, rests

along a magnificent shoreline and offers a more affordable oceanfront housing option than other new developments in Johor Bahru or in Singapore, one of the wealthiest and costliest cities in the world. When it is finished in the mid-2030s, Forest City will consist of four artificial islands spanning about 14 square kilometers. Reclaiming that much land from the sea has generated an intense and absorbing debate about environmental consequences. Along with the seagrass beds where fish spawn and thrive, a mainland mangrove forest has also been disrupted by Forest City construction projects.

“The project is a disaster for the nearby Merambong seagrass meadow with the ongoing land reclamation,” said Marcel Williams, a planner in Savannah, Georgia, who studied Forest City as a graduate student at the Massachusetts Institute of Technology. “From conversations with Malaysian environmentalists, Forest City construction has further reduced water quality by increasing suspended sediment and the shifting sands have proved hazardous to navigation.” But company officials tout the long-term benefits of the energy-efficient design of building and transportation infrastructure, and environmental recovery projects that are restoring and protecting seagrass. And some observers say that much of the initial environmental damage is already being reversed.

“In relation to the main seagrass area in front of the Forest City complex, they have removed the sand bridge that was across the seagrass meadow and the habitat grew back within 2 weeks,” said Serina Abdul Rahman, a resident of the area and conservation scientist at the ISEAS–Yusof Ishak Institute, a Singapore-based think tank. “We are hoping that as with the other meadows, once reclamation and dredging stops they will be able to recover,” she added. “These habitats are remarkably resilient. The sooner construction is done and the ecosystems are able to find a reprieve, the better it will be.” Not all environmentalists are as sanguine. Forest City is one of a number of big sea reclamation projects under construction in Malaysia that have attracted close civic attention.

[more.....https://news.mongabay.com/2019/07/as-opposition-wanes-a-malaysian-land-reclamation-project-pushes-ahead/](https://news.mongabay.com/2019/07/as-opposition-wanes-a-malaysian-land-reclamation-project-pushes-ahead/)

Mariam nibbles on seagrass as ‘nannies’ help her learn dugong ways (Thailand)

01 July 2019, The Nation

Mariam, the first baby dugong in Thailand to have people serve as its nannies in a natural environment at Koh Libong in Trang province, has learnt to recognise and to swim in both high and low tides, the Koh Libong Wildlife Sanctuary head, Chaipreuk Weerapong, said on Monday. Chaipreuk cited the improvement, noted in a report by a team of sanctuary officials along with the local authorities guarding the Duyong Bay area where the orphaned baby dugong was staying.

The veterinarian team, officials from the wildlife sanctuary and volunteers are continuing to feed Mariam with at least 3,000 millilitres of milk daily, while also taking it to swim and leading it to a field of seagrass so it could teach itself to eat the grass. On Sunday, Mariam drank 3,220 millilitres of milk and ate 200 grams of seagrass.

The six-month-old Mariam became an internet sensation and the new face of sea conservation, after it was rescued in Krabi on April 29 after it was washed ashore in a weak condition. She was expected to be under officials’ care for at least another 12 months before quitting the milk diet and living on her own in the sea. The Department of Marine and Coastal Resources (DMCR) is prepared an around-the-clock live broadcast of the life of Mariam for early this month via the department’s Facebook page. The broadcast aims to cater to the Thai public’s lasting interest in Mariam, boost public awareness of the extinction risks of some 300 endangered dugongs in Thai waters and promote learning about dugong care.

[more.....https://www.nationthailand.com/national/30372045](https://www.nationthailand.com/national/30372045)

Quarter of luxury resorts commit to Seagrass Protection (Maldives)

01 July 2019, by Mariyam Malsa, The Edition

More than 25 per cent of Maldives’ luxury resorts joined the #ProtectMaldivesSeagrass social media campaign led by the Blue Marine Foundation and Maldives Underwater Initiative (MUI) and pledged to protect their seagrass meadows. Over 30 resorts committing themselves to the protection of more than 830,000 square metres of seagrass around resorts across the country.

Executive Director of the Blue Marine Foundation Charles Clover stated that “Many resorts have joined the campaign and are now protecting this critical habitat, however, some resorts are still continuing to remove their seagrass. Support from the government, resorts, organisations and tourists, is evidence that seagrass removal is finally ready to be put to an end”. The Ministry of Tourism also expressed support for the campaign to stop the removal of seagrass beds. Six Senses Laamu, the resort that inspired the campaign, has protected its seagrass since 2017 and has successfully demonstrated that seagrass and tourism can coexist.

[more.....https://edition.mv/travel/11271](https://edition.mv/travel/11271)

Related article

Saving Maldives’ seagrass (02 July 2019, TTR Weekly)

<https://www.ttrweekly.com/site/2019/07/saving-maldives-seagrass/>

CONFERENCES

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

Theme: Connecting Science and Society

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

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

More information:

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

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

Theme: "Responsive | Relevant | Ready"

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

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

Session co-chairs – Robert Orth and Ken Heck

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

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

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

More information:

To get important updates, visit: <https://www.erf.org/cerf-2019>

Follow on twitter @CERFScience, #CERF2019

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

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 49,857 views to date)

Seagrass & other matters

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

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

SeagrassSpotter <https://seagrassspotter.org/>

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

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

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

World Seagrass Association on Twitter [@Seagrass_WSA](https://twitter.com/Seagrass_WSA)

Everything seagrass related. World Seagrass Association official account. Follow to stay up-to-date with global seagrass info. Moderator: LM Nordlund

Dugong & Seagrass Research Toolkit <http://www.conservation.tools/>

Dugongs and seagrass are under threat from human activities. By using this Toolkit you should be able to gather information to:

- understand better the status of dugongs, seagrass and communities at your research site;
- understand threats to dugongs and seagrasses and help find solutions to those threats;
- understand the communities that value or may affect dugongs and seagrasses.

The toolkit will guide you to the techniques and tools most suitable to your team capacity, budget and timeline. By using the toolkit, you will also be helping to standardise data sets and methods across different countries and sites, allowing for better comparison of global dugong and seagrass conservation status. The Toolkit is designed for use by marine natural resource managers and decision-makers (government and non-government) and for dugong and seagrass researchers. The Toolkit will assist organisations to assess funding proposals by describing the scope of work, choice of techniques and tools, and budget.

FROM HQ

Past E-bulletins <http://www.seagrasswatch.org/publications.htm#bulletin>

Frequently Asked Questions <http://www.seagrasswatch.org/faq.html>

Magazine <http://www.seagrasswatch.org/magazine.html>

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

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

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

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