



Seagrass-Watch e-Bulletin

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NEWS

Dugongs in polluted waters on west coast face murky future (India)

28 Apr 2019, by Badri Chatterjee, Hindustan Times

Industrial pollution in the Gulf of Kutch (GoK) is degrading the last remaining habitats of dugongs, says a study by the Bombay Natural History Society (BNHS). During 2017-18, the BNHS looked at 11 sites spread across 100km, covering Paga, Ajad, Pirotan and Jindra islands, and found that water and noise pollution is destroying the habits of

dugongs. The findings were recently published in the Journal of Threatened Taxa. An ongoing study by the Wildlife Institute of India (WII), Dehradun, estimates there are approximately 10-15 dugongs in the Gulf of Kutch.

BNHS researchers said that seagrass habitats were declining because of industrial pollution and increased shipping. Effluents from petrochemical, textile, rubber, salt and industries affect the growth of seagrass, which in turn would impact dugongs. "Our study indicates a need for restoring these sites similar to coral restoration through regular monitoring of seagrass meadows," said Deepak Apte, director, BNHS and lead author of the study.

The state government said that pollution along the Gujarat coast is not an issue. "We are carefully monitoring the protection of dugongs. Their presence is not threatened by shipping traffic or effluent discharge due to stringent norms," said Dr Rajiv Kumar Gupta, additional chief secretary (forests and environment), Gujarat government and chairman of the Gujarat Pollution Control Board. The responsibility to address pollution falls on the environment department or pollution control board. However, the forest department is playing the veto role by rejecting proposals along GoK to set up new industries considering the impact on dugongs. Mapping and monitoring of seagrass areas is now a continuous activity," said AK Saxena, principal chief conservator of forest (wildlife).

[more.....https://www.hindustantimes.com/mumbai-news/dugongs-in-polluted-waters-on-west-coast-face-murky-future/story-8rOPd4xLKBcnsSITfYv71.html](https://www.hindustantimes.com/mumbai-news/dugongs-in-polluted-waters-on-west-coast-face-murky-future/story-8rOPd4xLKBcnsSITfYv71.html)

Climate change protest highlights tourism impact (Spain)

27 April 2019, Majorca Daily Bulletin (press release)

Some 150 people protested in Palma on Thursday in demanding urgent political action against climate change. The demonstration was called by a youth group for climate and was timed to coordinate with protests in other cities. A march from Plaça de la Porta Pintada ended outside the office of the national government delegation.

The group, Joventut pel Clima, was formed by university students and has followed the initiative of the Swedish sixteen-year-old Greta Thunberg in calling for immediate actions by governments. The theme of the Palma protest was "climate emergency; save the planet now".

Outside the delegation's office, a declaration was read out that considered the effects of climate change on Majorca and the island's economic model. "Tourist massification affects our natural resources, especially the availability of water, and creates a disproportionate amount of waste. It also affect biodiversity, for example through damage to *Posidonia* seagrass." Natural resources are limited, the declaration continued. "If there are not remedial measures, Majorca will pass from being a tourism theme park to being a desert."

[more.....https://www.majorcadailybulletin.com/news/local/2019/04/26/55261/climate-change-protest-highlights-tourism-impact.html](https://www.majorcadailybulletin.com/news/local/2019/04/26/55261/climate-change-protest-highlights-tourism-impact.html)

Meeting Set To Discuss Shoaling Concerns At Shell Key North Pass (FL, USA)

26 April 2019, By D'Ann Lawrence White, Patch.com

Pinellas County has scheduled a stakeholder meeting to discuss early progress on a feasibility study that will evaluate shoaling concerns at the northern portion of Shell Key Preserve. Residents, waterway users and other interested residents are invited to attend and provide input about shoaling in the vicinity of Shell Key North Pass and the entrance to Grand Canal. Staff from Pinellas County and its consultant, APTIM, will share information about the regional history and coastal dynamics, as well as explain the scope and goal of the study.

Shell Key Preserve is an 1,800-acre preserve located on Shell Key in Tierra Verde. The preserve protects sensitive marine habitats and includes one of the county's largest undeveloped barrier islands as well as numerous mangrove islands and expansive seagrass beds. Previous dredging will also be discussed to solicit comments on perceived performance and potential concepts for alternatives. The conversation will be framed in such a manner to seek a balance between needs and objectives, environmental issues, coastal processes and potential regulatory limitations.

[more.....https://patch.com/florida/pinellasbeaches/meeting-set-discuss-shoaling-concerns-shell-key-north-pass](https://patch.com/florida/pinellasbeaches/meeting-set-discuss-shoaling-concerns-shell-key-north-pass)

Operation cleanup marks World Earth Day (India)

25 April 2019, The Hindu

In a bid to create awareness on coastal cleanliness and protect the rich biosphere reserve in the region, the Forest department joined hands with Wildlife Institute of India (WII) and launched a cleaning drive in Palk Bay at Mandapam. The drive was aimed at commemorating World Earth Day, which was observed on April 22. On Wednesday, the Forest department and WII conducted the hour-long cleaning drive involving scuba divers and recovered about 25 kg of plastic waste embedded in the sea and entangled in coral reefs. Mandapam forest range officer S. Sathish, who accompanied the scuba divers, said the drive was launched to educate visitors to sea shores and the fisher folk to keep the beaches and coastal areas clean and protect the marine bio-diversity in the region.

In a related development, the Forest department organised training programmes on underwater monitoring and scuba diving as part of a capacity-building programme for conservation of bio-diversity in Gulf of Mannar region. Five
www.seagrasswatch.org

foresters, five Sub-Inspectors of Marine police and two local fishermen would be trained for five days under the programme, Mr. Ashok Kumar said. The training programme to be conducted in Palk Bay was sponsored by WII under its Dugong recovery project, he added. The capacity building programme was organised to monitor seagrass and coral reef rehabilitation programmes,” the wildlife warden added.

[more.....https://www.thehindu.com/news/cities/Madurai/operation-cleanup-marks-world-earth-day/article26945392.ece](https://www.thehindu.com/news/cities/Madurai/operation-cleanup-marks-world-earth-day/article26945392.ece)

Scallops Urged to Minimize Threat to Seagrass (FL, USA)

19 April 2019, Public News Service

As many people and businesses gear up for this year's scalloping season, they'll find a new education campaign about the importance of seagrass. There has been an increased threat to undersea communities of seagrass that are filled with animals such as bay scallops, varieties of fish and small organisms that grow on the grass blades that other animals such as manatees feed on.

While Frank Kapocsi – president of the Homosassa River Alliance – sees each scalloping season as a major economic boon for his community and others along the Nature Coast, he's worried about the concentration of thousands of boats pulling up anchors during low tide, which usually is the best time for scallops. For the second year, Kapocsi plans to post informational signs, targeted at inexperienced boaters, and for the first time, National Oceanic and Atmospheric Administration Sea Grant will have interns staged at boat docks to educate people about seagrass. Scalloping season starts July 1 for most counties.

Savanna Barry, regional specialized extension agent, University of Florida Institute of Food and Agricultural Sciences' Nature Coast Biological Station, says it is important that boaters understand the delicate balancing act to maintain scalloping seasons – because the bay scallop, which only averages a year lifespan, is dependent on the seagrass. Barry says the most important thing an individual boater can do is to just be aware of seagrass and its importance, and if at all possible use channels and known deepwater areas when boating. The Nature Coast, which includes Citrus, Hernando and Pasco counties, plays host to 400,000 acres of healthy seagrass, which is the largest contiguous seagrass beds in the country.

[more.....https://www.publicnewsservice.org/2019-04-19/environment/scallops-urged-to-minimize-threat-to-seagrass/a66209-1](https://www.publicnewsservice.org/2019-04-19/environment/scallops-urged-to-minimize-threat-to-seagrass/a66209-1)

Related article

Protect our seagrass beds in Homosassa (24 April 2019, Citrus County Chronicle)

https://www.chronicleonline.com/opinion/letters_to_editor/protect-our-seagrass-beds-in-homosassa/article_0a89ef60-66b1-11e9-8537-935a088efac6.html

MOE investigates sightings of two dugong near Hateruma Island (Japan)

18 April 2019, Ryukyushimpo

On April 16 the Ministry of the Environment (MOE) publicized the results of its 2018 investigation of the dugong habitat. According to the investigation, on August 22, 2018 two dugong specimens thought to be parent and child were seen from a helicopter at Taketomi Town's Hateruma Island in the Sakishima Islands. There is no proof of the sighting, such as a photograph, so it cannot act as verification of the dugong habitat, but a staff member of the 11th Regional Coast Guard Headquarters at Ishigaki Airport also claimed to have spotted the dugong in that area while flying a helicopter.

The MOE stated, “The Sakishima Islands are generally a dugong habitat, so it is not strange for them to be there.” It also mentioned its intention to continue habitat investigations including underwater audio recording. An audio recording study concerning the dugong habitat in the Sakishima Islands was last conducted in 2004, 14 years ago.

According to the MOE, the verified dugong habitat has been limited to the vicinity of Okinawa Island since 1970. Habitat investigation results mention a dugong spotted from an aircraft on June 6, 2013 in the vicinity of Tarama Island in the Sakishima Islands, and kayakers' eyewitness reports of dugong off the northern shore of Iriomote Island between early spring and summer in 2013 and 2014.

[more.....http://english.ryukyushimpo.jp/2019/04/23/30280/](http://english.ryukyushimpo.jp/2019/04/23/30280/)

Report Set for Release on Regional Synergetic Action on Use of Coral Reefs, Mangroves, Seagrass Beds (VI, USA)

18 April 2019, St. John Source (press release)

The development of the report on the State of Marine Habitats in the Wider Caribbean (SoMH) and the Regional Strategy and Action Plan for the Valuation, Protection and/or Restoration of Key Marine Habitats in the Wider Caribbean 2021-2030 (RSAP) will result in new tools for the sustainable management of coastal resources regionally. The Caribbean Natural Resources Institute (CANARI) is facilitating the preparation of the SoMH and RSAP on behalf of the United Nations Environment Program (UN Environment) — Caribbean Environment Program

(CEP) Specially Protected Areas and Wildlife (SPAW) Sub-program and the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+) Project (2015-2020).

The SoMH provides baseline information on the status of coral reefs, mangroves and seagrass beds as well as a snapshot of key initiatives and responses to habitat degradation and mismanagement. It uses the DPSIR (Driver, Pressure, State, Impact, Response) analytical framework to examine the marine habitats of the Wider Caribbean. The RSAP is a 10-year mechanism for coordinated regional management of coral reefs, mangroves and seagrass beds. The strategy and action plan will allow collaborative and complementary action by governments, regional/international agencies, civil society, private sector and academic institutions in coastal/marine natural resource management within a regional framework.

The SoMH and RSAP will help bring about practical and innovative actions for marine resource conservation and management through shared experiences and best practices, while supporting CLME+ SPAW countries to meet international and regional MEA (multilateral environmental agreements) targets and objectives.

[more.....https://stjohnsource.com/2019/04/17/report-set-for-release-on-regional-synergetic-action-on-use-of-coral-reefs-mangroves-seagrass-beds/](https://stjohnsource.com/2019/04/17/report-set-for-release-on-regional-synergetic-action-on-use-of-coral-reefs-mangroves-seagrass-beds/)

Dead dugong found in a mangrove area in Palawan (Philippines)

17 April 2019, GMA News

A male dugong was found dead in a mangrove forest near an old Vietnamese Refugee Camp in Barangay Banca-Banca, Puerto Princesa City, Palawan. The dead sea cow was discovered by a fisherman around 12:45 p.m. on Tuesday, April 16. The unidentified fisherman along with villagers immediately called village officials to report the discovery of the dead dugong.

Meanwhile, Jovic Fabello, spokesperson of Palawan Council for Sustainable Development Staff (PCSDS) spokesperson, said the dugong measures two meters in length, weighs 250 kilos and has a body width of around 50 centimeters. Fabello suspects the dugong died after being strangled in nets since the area has a lot of fish pens installed by fisherman. He added that the common cause of dugong's death are fish pen entrapment and ingestion of plastic.

[more.....https://www.gmanetwork.com/news/news/regions/691671/dead-dugong-found-in-a-mangrove-area-in-palawan/story/](https://www.gmanetwork.com/news/news/regions/691671/dead-dugong-found-in-a-mangrove-area-in-palawan/story/)

Jim Iglar was always near the water or under it, cleaning, teaching, helping (FL, USA)

15 April 2019, by Kristen Hare, Tampa Bay Times

Jim Iglar cleaned the gravel that went into displays at the Florida Aquarium before it opened for the first time. He planted mangroves in the wetlands gallery. He waded hip-deep through muck in reservoir ponds, picking up plastic bags, bottles and straws. "It's kind of like, what didn't Jim do?" said Eric Hovland, the aquarium's associate curator.

Mr. Iglar transplanted sea grass, snorkeling as he pulled it from one spot to place in another. He stood behind booths at festivals, explaining the work of any one of the many environmental organizations he was volunteering for that day. He removed derelict crab traps. He never complained, said Serra Herndon, habitat restoration director at Tampa Bay Watch. He always worked with a smile. Mr. Iglar led dive cleanups, scouting out sites ahead of time, recruiting volunteers, hauling out supplies, directing parking, leading safety training, then diving in. He connected people from all the organizations where he volunteered.

Before his super-volunteering, Mr. Iglar worked as a teacher. Then a trucker. He lived in New York and the Midwest. After he moved to Florida, he wore tie-dye shirts and mutton chops. When it was time to dress up, like when he won a national award from Keep America Beautiful, he returned to his vest and bolo tie. A few years ago, Mr. Iglar suffered health issues that slowed down his volunteering, including undergoing heart surgery. Mr. Iglar died on March 28 due to injuries he sustained at a crosswalk in a hit-and-run accident in St. Petersburg. He was 74.

[more.....https://www.tampabay.com/florida/2019/04/15/jim-iglar-was-always-near-the-water-or-under-it-cleaning-teaching-helping/](https://www.tampabay.com/florida/2019/04/15/jim-iglar-was-always-near-the-water-or-under-it-cleaning-teaching-helping/)

Scientists, at Napatree, refine eelgrass mapping techniques (RI, USA)

13 April 2019, By Cynthia Drummond, The Westerly Sun

A consortium of scientists is studying methods for mapping eelgrass at Napatree Point. They hope to develop and refine techniques for documenting eelgrass beds and for distinguishing eelgrass from macroalgae, or seaweed, which can resemble eelgrass when viewed from a distance. Only one eelgrass species, *Zostera marina*, is found in Rhode Island, and the largest patch in the state, more than 80 acres, is growing in Little Narragansett Bay, between the Napatree Point Conservation Area and Sandy Point. The Napatree eelgrass study represents some of the most notable research described in the Watch Hill Conservancy's annual "State of Napatree" report issued this month.

Two participants in the study were University of Rhode Island professor Peter August, from the URI Department of Natural Resources, who serves as the conservation area's science adviser, Michael Bradley, an eelgrass researcher, also of URI. Bradley has undertaken three statewide eelgrass mapping initiatives in Rhode Island since 2006, www.seagrasswatch.org

collecting aerial photographs of beds from Napatree to Little Compton, and another bed in Long Island Sound. Developing consistent and effective assessment methods, August said, would result in a more accurate picture of the health of the eelgrass beds.

For last summer's Napatree eelgrass study, researchers chose a small area: a 10-acre patch growing in the shallow waters off the northwest corner of Sandy Point. For one day last July, the team, which included Napatree naturalists and Grant Simmons of the Watch Hill Fire District, hit the water to document the eelgrass and anything else they came across. "We studied that bed to fine tune some of our techniques," Bradley said. "We wanted to basically bombard this questionable area with all the mapping tools we had, so we took an underwater video camera linked to a GPS, we had a Quadcopter Phantom 4 drone. We flew at 400 feet above the bed and we took still pictures and then we also took continuous video over that patch. We also put people in the water with Gopros." The still photographs taken from the drone were a disappointment, but the video images and Gopro photos were much better, providing an accurate assessment of the eelgrass there. More information on the eelgrass study and the State of Napatree report are available at: www.tinyurl.com/ntpca-son

[more.....https://www.thewesterlysun.com/news/westerly/scientists-at-napatree-refine-eelgrass-mapping-techniques/article_048fe46e-5c8b-11e9-b6db-5f5f88c39434.html](https://www.thewesterlysun.com/news/westerly/scientists-at-napatree-refine-eelgrass-mapping-techniques/article_048fe46e-5c8b-11e9-b6db-5f5f88c39434.html)

Desalination plant sparks strong opposition from residents concerned about brine (TX, USA)

10 April 2019, By: Priscilla Torres, KRIS Corpus Christi News

Many people showed up to voice their opposition to a permit that the Port of Corpus Christi needs for its desalination plant. The meeting was held Monday night at the Port Aransas Civic Center and was open to everyone. It allowed citizens to provide input to the Texas Commission on Environmental Quality. The biggest concern focused on one key issue: How the 95.6 million gallons of brine discharged into the ship channel daily will affect the environment and wildlife.

One of the most vocal opponents of the proposal was Ken Jones, a fishing guide who depends on marine life for his work. "If you allow this to happen and this water gets muddied up for 5 years and all this seagrass dies and all these fish will leave and if they can't leave, they will die," Jones said. "Where am I going to go and live to provide for my family?" The next step for the discharge permit is a "contested case" hearing. Several groups have requested it, including the City of Port Aransas.

[more.....https://kristv.com/news/2019/04/09/desalination-plant-sparks-strong-opposition-from-resident-concerned-about-brine/](https://kristv.com/news/2019/04/09/desalination-plant-sparks-strong-opposition-from-resident-concerned-about-brine/)

Exotic marine species pose a complex threat to their new environment (Saudi Arabia)

08 April 2019, By Olivia Harvey, Earth.com

A global study conducted by researchers at King Abdullah University of Science and Technology (KAUST) shows that when foreign marine species are introduced to a new habitat, they can pose a threat to their new environment. The team set out to show just how complex the ecological impact of new species on an existing environment can be in an effort to quell the debate about whether or not exotic species even have an impact at all.

Lead author Andrea Anton and her colleagues at the KAUST Red Sea Research Center extracted data from over 150 studies that covered 76 exotic species. Rather than categorizing the change in environment as "positive" or "negative," the team used a metric that measured an increase or decrease in specific ecological variables. Generally, the team found that exotic species often disrupt marine ecosystems, although their impact is fairly low compared to other factors like global warming and overfishing. For example, exotics had negative effects on primary producers (including seagrass) but less impact on species on other trophic levels.

And the impact of exotics was also dependent on their origin and the environment in which they were introduced. The team saw that marine species almost always impacted their environment, whereas freshwater and terrestrial exotics did not. Overall, the team found that exotic species often reduced the abundance of native species, however they did not affect communities in terms of survival or diversity.

[more.....https://www.earth.com/news/exotic-marine-species-threat/](https://www.earth.com/news/exotic-marine-species-threat/)

Study confirms and ranks nursery value of coastal habitats (VA, USA)

07 April 2019, by David Malmquist, VIMS

A comprehensive analysis of more than 11,000 previous coastal-habitat measurements suggests that mangroves and seagrasses provide the greatest value as "nurseries" for young fishes and invertebrates, providing key guidance for managers of threatened marine resources. Published March 25, 2019, in the prestigious Conservation Letters, the analysis began as a class project at William & Mary's Virginia Institute of Marine Science.

Lead author Jonathan Lefcheck, now the coordinating scientist with the Smithsonian's Tennenbaum Marine Observatories Network, says "Our results confirm the nursery function of a range of structured habitats, which

supports their conservation, restoration, and management at a time when our coastal environments are increasingly impacted by human activities.”

Lefcheck and his co-authors say their findings substantiate the general nursery value of structured versus unstructured habitats. All the structured habitats they analyzed — with the exception of kelp and macroalgal “seaweed” — held significantly higher densities of juvenile fishes and invertebrates, and in some cases their resident juveniles exhibited enhanced growth and survival as well. Focusing on the relative value of specific structured habitats, they found the highest juvenile density in mangroves and seagrasses. There was little difference among the habitats in terms of juvenile growth or survival, except for coral reefs, which had slightly greater juvenile growth compared to seagrasses, mangroves or macroalgae.

Though they found clear evidence that mangroves and seagrasses are important nursery grounds, Lefcheck’s team cautions that their analysis was hindered by the relatively small number of studies focused on other, less-studied habitats. The researchers also note they found no studies that had used recruitment — the survival of juveniles into the adult population — as a measure of a habitat’s nursery value. They encourage such studies as another means to clarify and refine the nursery-role hypothesis.

[more.....https://wydaily.com/local-news/2019/04/07/study-confirms-and-ranks-nursery-value-of-coastal-habitats/](https://wydaily.com/local-news/2019/04/07/study-confirms-and-ranks-nursery-value-of-coastal-habitats/)

Coastwatch Survey results launched in Dublin today (Ireland)

05 April 2019, By Ann Robinson, Coast Monkey

Coastwatch shore state and nature results from nearly 600 sites surveyed by citizen scientists were launched today by Ricardo Aguilar, Director of Oceana in Trinity College Dublin. Ricardo who gave the keynote address on the state of our oceans and urgent steps to halt the species loss represents one of the largest international ocean science NGOs.

The Coastwatch survey involves volunteers going out to any shores they have booked online or with regional coordinators and completing a survey forms per 500 m of shore around low tide. The citizen scientists then return their results to the Coastwatch office in Trinity College Dublin, this year augmented by over 1400 photos and video clips giving a snapshot of the coast of Ireland North and South in the September 15th to October 15th survey period.

It was the 31st survey and new seagrass beds found by surveyors and verified have added to official records and extended the known range of the long *Zostera marina* meadows growing in just a few places around our shores. These will now be protected by citizens proud to have discovered them and officials who – knowing the location – take them into account in planning and permitting activities.

[more.....http://coastmonkey.ie/coastwatch-survey-results-launched/](http://coastmonkey.ie/coastwatch-survey-results-launched/)

Three lessons from Cuba about improving coastal climate resilience (Cuba)

04 April 2019, by Katherine Angier, Environmental Defense Fund (blog)

Facing a future with increasingly powerful hurricanes and rising seas, Cuba is addressing its vulnerability to climate change head-on. The country recently approved a new constitution that highlights the importance of addressing climate change, and its National Plan to Confront Climate Change, known as Tarea Vida (“Project Life”), provides a template to coordinate the resilience efforts of multiple sectors across the island. A recent seminar in Havana on climate finance and sustainable development highlighted a three-pronged strategy for effectively building resilience: the protection and rehabilitation of ecosystems to reduce climate impacts, robust data collection, and community involvement every step of the way.

Cuba takes a holistic approach to coastal adaptation. Tarea Vida calls for the use of natural infrastructure and ecosystem-based solutions to increase resilience to the growing challenges of floods, erosion, and saline intrusion into aquifers and soils. Coral reefs and seagrass beds can reduce flood risk and the force of waves reaching shore, which in turn lessens erosion. Mangroves and swamp forests provide the next line of defense against damaging winds and waves. Crucially, these ecosystems must be healthy to provide the full range of benefits, so the most effective projects have been focused on restoration efforts such as replanting the forests and reducing sources of pollution that are harmful to seagrasses and reefs. Cuba’s resilience projects integrate thorough and centralized data collection, with timelines for evaluating the results and reflecting on how to respond. This approach will help answer complex questions and evaluate trade-offs.

Seminar participants emphasized the importance of involving local communities in resilience efforts. In addition to the global threat of climate change, coastal ecosystem resilience is jeopardized by a slew of problematic local practices. Sewage dumping and overfishing threaten the seagrasses and coral reefs, while the mangroves and swamp forests face illegal cutting and fires. One response is to educate communities about the protection that healthy ecosystems provide, and engage people in protecting them. Education opportunities range from awareness programs at local elementary and middle schools, to an exchange program with a coastal community in Panama confronting similar challenges. Cuba recognizes the value of a measurable, communal and ecosystem-based approach to building climate resilience. [more.....http://blogs.edf.org/growingreturns/2019/04/04/cuba-lessons-coastal-climate-resilience/](http://blogs.edf.org/growingreturns/2019/04/04/cuba-lessons-coastal-climate-resilience/)

Cleanup Yields 3 Tons of Marine Debris (NC, USA)

01 April 2019, Coastal Review Online

Nearly 600,000 pounds of debris causing navigational hazards and littering salt marshes, seagrass beds and oyster beds was removed from Carteret County waters as part of a two-year project by the North Carolina Coastal Federation, National Oceanic and Atmospheric Administration, North Carolina Sea Grant and commercial shellfish operations, the federation announced Monday.

Throughout 2017 and 2018, volunteers with the federation, NOAA partners and area contractor, Brooks Dredging and Marine Construction Inc., removed the decades-old mariculture operation debris that included pilings, plastic cages, buoys, netting, ropes, piping, sandbags, screens and other offshore and embedded aquaculture debris from an abandoned mariculture site near Harkers Island. The Duke University Marine Robotics and Remote Sensing research group used drones to help search for debris not be visible from land for removal and determined how the marsh recovered after the cleanup.

The North Carolina Shellfish Mariculture Best Management Practices for the Prevention of Marine Debris guide created as part of the project includes ways to prevent and reduce debris from mariculture operations, which depends on using man-made gear in the marine environment.

[more.....https://www.coastalreview.org/2019/04/cleanup-yields-3-tons-of-marine-debris/](https://www.coastalreview.org/2019/04/cleanup-yields-3-tons-of-marine-debris/)

New sewerage system to cut impact on environment (PNG)

01 April 2019 The National National

The inauguration of the Port Moresby sewerage system on Friday will see less impact caused on the environment and marine life, Minister for Public Enterprise and State Investments William Duma says. It is the only modern sewerage system developed in the Pacific. Duma, who launched the project with the ambassador of Japan to PNG, Satoshi Nakajima, said the project cost around K400 million and was funded by the governments of PNG and Japan through the Japanese International Cooperation Agency.

Duma said the Port Moresby was a coastline city with rich marine inhabitants, large mangroves systems, pristine coral reefs, seagrass beds and sandy beaches. He said the city was experiencing rapid growth in population. Previously, untreated sewerage from the Port Moresby south catchment area had been disposed directly into the sea at Ela Beach but with the development of the treatment facility at Joyce Bay, near Kilakila, sewage would be treated and refined and then sent into the open sea off the shores of Joys Bay.

"This will protect our ecosystem. This will be a future guarantee for generations to come and it will also help increase the potential we have in tourism activities," Duma said.

[more.....https://www.thenational.com.pg/new-sewerage-system-to-cut-impact-on-environment/](https://www.thenational.com.pg/new-sewerage-system-to-cut-impact-on-environment/)

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

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