30 September 2018

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IN THIS BULLETIN

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NEWS

Base behaviour: Kayaktavists in Japan (Japan)

29 September 2018, Geographical

Protests against a new US air base are taking place in the sea. In recent months, hundreds of 'kayaktivists' have patrolled the coast of Henoko Bay on the island of Okinawa, Japan. If the US Air Corps has its way, the waters will be landfilled to support two full-size runways surrounded by a seawall. Twenty million cubic metres of material will be dumped into the water to reclaim an area the size of 160 rugby fields. Construction will take five years but began to pick up over the summer. 'Sediment input could begin at any time,' says Kanna Mitsuta, executive director of Friends of the Earth, Japan.

Campaigners are particularly concerned about the fate of the dugong. Rarely seen – but given away by their telltale feeding paths through seagrass – the handful of dugongs at Henoko are the last of a once healthy Okinawa population. 'The dugong used to come and feed here, but have been unconfirmed since the US base construction began,' says Tomiko Suzuki, a member of the kayaktivist group Henoko Blue. Henoko's diverse topography supports a variety of marine life, including mangrove forests, seagrass beds, tidelands, sands, mud flats and coral reefs.

Okinawa has been a military hotspot since the Second World War. US forces occupied the island for 20 years longer than the rest of the country. Though it represents less than one per cent of Japan's landmass, it continues to host nearly three-quarters of the 47,000 US troops based in the country and has the largest contingent of marines outside the US.
more……..http://www.seagrasswatch.org/news_Sep2018archives.htm

Students vow to protect sea cows (Philippines)

27 September 2018, thedailyguardian.net

The Philippines have thousands of species that are undeniably incredible, including the largest and only sea-living mammal which grazes on seagrass, the Dugong (*Dugong* dugon). Presently, we have seen the number of dugong in the country slowly diminishing due to man-made and natural threats such as loss or degradation of seagrass habitat due to activities that cause water pollution, incidental capture in fishing gears, hunting, chemical pollution, climate change and more.

Thus, in order to spread the importance of conserving and protecting such important mammal, an Information Education and Communication (IEC) Campaign led by the Department of Envrironment and Natural Resources (DENR)-Community Environment and Natural Resources Office (CENRO)-6 Culasi was conducted in Malabor Elementary School and La Paz Elementary School in Tibiao, Antique, just recently. More than one hundred students from the said schools attended the campaign.Both schools were located at the coastal barangays of Tibiao. Using a very effective IEC strategy called Dalaw-Turowith lectures, environmental skits and games, the students easily acquired more information about Dugong, their importance and the role of the youth in protecting the said mammal from extinction.

"I believe all of us share the same goal of preserving Dugongs, which we want the next generations to see how amazing this mammal is and the things it can do for our environment. We want our children to see them, not only in the books but also in their real habitat," said DENR 6 Regional Executive Director Jim O. Sampulna. "The Agency continues to campaign in saving and protecting such species by educating not only the youth but everyone because Dugongs are the first marine mammal to be protected in Philippine waters in accordance with DENR Administrative Order No. 55, Series of 1991," added Director Sampulna
more……..http://www.seagrasswatch.org/news_Sep2018archives.htm

Legal Appeal Challenges US Military Base Construction in Japan, Threat to Rare Okinawa Dugongs

24 September 2018, Center for Biological Diversity

American conservation groups and residents of Okinawa today appealed a court ruling allowing construction of a new U.S. military base on the Japanese island. The base will destroy crucial habitat for the last remaining Okinawa dugongs. The appeal argues the district court's August ruling overlooked key procedural and public-participation requirements of the U.S. National Historic Preservation Act. The co-litigants in this appeal are the Japan Environmental Lawyers Foundation, the Save the Dugong Foundation, Anna Shimabukuro, Takuma Higashionna and Yoshikazu Makishi. The Center for Biological Diversity, Turtle Island Restoration Network and the co-plaintiffs are represented in this case by Earthjustice, which filed the appeal.

"This could be the last chance to save the dugong. The court should compel the U.S. military to follow the law and not wipe out these amazing animals," said Peter Galvin, cofounder of the Center. "The Trump administration can't ignore the cultural and environmental harm of building a massive military base in these beautiful coastal waters." The Trump administration has begun construction of a new U.S. airbase that would fill in and pave over 125 acres of rich seagrass and coral habitat in Henoko Bay, although the work has been temporarily suspended.

The case now returns to the 9th Circuit Court of Appeals, which ruled last year that the issue deserved a full hearing on the environmental merits. The base's destruction of seagrass habitat in Henoko Bay could lead to the extinction of the Okinawa dugong, an important cultural icon and one of the planet's most endangered marine mammals. Just a handful of Okinawa dugongs remain in the world.
more……..http://www.seagrasswatch.org/news_Sep2018archives.htm

Eelgrass wasting disease has new enemies: Drones and artificial intelligence

17 September 2018, Phys.Org

This September a team of biologists is zeroing in on eelgrass wasting disease, in the first study of the disease to stretch along the Pacific Coast from southern California to Alaska, with a $1.3 million grant from the National Science Foundation. "There are a number of seagrass monitoring programs that work on regional and to some degree on global scales, but most of them are really only looking at the cover and the abundance of the seagrass itself," said Emmett Duffy, director of the Marine Global Earth Observatories (MarineGEO) headquartered at the Smithsonian Environmental Research Center. The new grant builds on collaborative work by the Zostera Experimental Network

(ZEN), led by Duffy, and will look at how climate, biodiversity and other environmental aspects can change the course of the disease. The team is deploying a wide arsenal of weapons to understand it. In addition to marine biologists, they are bringing on geographers, computer scientists, artificial intelligence and drones.

A microscopic slime mold called *Labyrinthula zosterae* frequently infects eelgrass with wasting disease. The disease wiped out 90 percent of eelgrasses along the North American East Coast and Europe in the 1930s, and is still threatening eelgrass recoveries worldwide. The three-year project takes a holistic approach, investigating the disease from several angles. The team will survey seagrass beds in 36 different sites, from San Diego to just south of Juneau, Alaska. In one of those sites - Friday Harbor Laboratories in Washington state - they will run experiments to see how small animals that feed on seagrass or algae could impact the disease. If the most common herbivores are eating algae, that could clean the eelgrass and make it better able to resist the disease. But if they are grazing directly on the grass itself, they could weaken it or even help spread the disease. Microbes that grow naturally on eelgrass blades could also play a role.

Artificial intelligence will give the team another assist. Cornell computer scientist Carla Gomes has developed an algorithm to train computers to recognize the disease's telltale lesions, and to distinguish them from nicks, cuts or other kinds of damage the team is not studying. The team will also deploy drones along the Pacific Coast. The drones, run by Tim Hawthorne's Citizen Science GIS Team at the University of Central Florida, will provide sub-meter imagery and detailed maps of the eelgrass beds at a higher resolution than most satellites could offer. Hawthorne's team will train members of the public to fly the drones as well, when researchers are not on site, and create a public open mapping website of project imagery. Hawthorne said he hopes the drones will not just provide data, but encourage involvement from local communities.
more……..http://www.seagrasswatch.org/news_Sep2018archives.htm

Archaeologists uncover Queensland's role in the commercial dugong trade (QLD, Australia)
16 September 2018, ABC Local

The vulnerable and endangered dugong is a protected species, but once upon a time hunters killed the marine animal for its oil and meat, with Queensland at the centre of the trade. In the 1800s hunters slaughtered dugongs in their thousands, developing an industry that saw merchants selling dugong oil as a miracle cure for an array of ailments. James Cook University archaeology student Timothy Russell said it wasn't just the oil that made dugongs a valuable commodity. The skin would be used for brakes on carriages and the meat was sold for steaks and bacon, Mr Russell said.

Mr Russell said it was a chance find on an online archives database that spawned his interest. “I came across an advertisement for dugong oil in the local paper, it promised the "cheapest, best and cleanest lubricator known," he said. The oil was also sold for its medicinal properties. "That was started in the 1840s when the then-Chief Doctor of Queensland started promoting the idea that the oil had a medical use," Mr Russell said.

The Mackay region was a hotspot for hunters, with prolific seagrass meadows to the north of the city. Waters around Newry Island, off the coast of Seaforth were popular with hunters. There were also hunters based in Moreton and Hervey Bays and a processing facility in the far north of the state in Cardwell. A newspaper article from the Ipswich Herald in 1908 showed there was demand for dugong oil in the United Kingdom. In 1931, there were requests for bulk supply from the United States and by 1946 the oil was listed in the Government Gazette in four and eight-ounce containers, alongside other consumables such as paraffin wax, perfume and hair items. Mr Russell said it was only in the 1960s that commercial dugong hunting was officially stopped in Queensland. "That really was the twilight of the industry in Mackay and across Queensland and there was a real movement to protect the species. Mr Russell said while the history of the region's sugar industry was well known, there was a need for more research on the region's role in the dugong trade.
more……..http://www.seagrasswatch.org/news_Sep2018archives.htm

Cloud computing to speed up stocktaking of Northwest Pacific blue carbon sinks
14 September 2018, UN Environment

Cloud computing technology can speed up the assessment of Northwest Pacific seagrass beds which nurture biodiversity, purify seawater and mitigate climate change but are threatened by human activities and natural disasters, says a study by the UN Environment Regional Seas Programme in the region. Ten species of seagrass reported in the Northwest Pacific seas that border Japan, People’s Republic of China, Republic of Korea and the Russian Federation are included in the International Union for Conservation of Nature red list of threatened species, according to the Feasibility Study Towards Assessment of Seagrass Distribution in the NOWPAP Region. The study was published by the Toyama-based Special Monitoring and Coastal Environmental Assessment Regional Activity Centre, which was set up under the UN Environment Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region.

Case studies conducted in selected Northwest Pacific sea areas during 2015-2016 using satellite imagery found that it was too expensive and time-consuming to use high-resolution data from commercial satellites and conventional

methods of analysis. The process involved purchasing images from private satellite operators, scientists spending several months on each case study to analyze the satellite images using field data for classifying sea floor substrates, and removing sun glint and the effect of water column from the satellite images. Instead, it recommends using cloud computing technologies to analyze freely available multispectral satellite images with a standardized analysis procedure that has been developed by the Centre. The spatial resolution of freely available satellite sensors has improved from 30m to up to 10m with the installation of the Multispectral Imager (MSI) on board the Sentinel-2 satellite of the European Space Agency. Sentinnel-2 MSI images are available free of charge in the Google Earth Engine data catalogue and Amazon Web Services, and anyone can use their on-demand computing resources to perform analysis and create new products without incurring the cost and time required to download and use Landsat data.

The study also advises to develop an online tool to analyze satellite images, maintaining seagrass databases, and building capacities in scientific institutions and civil society to map seagrass distribution. The authors recommend collaboration among voluntary citizen groups and non-governmental organizations working on conservation and restoration of seagrass at international, regional, national and local levels. These include the world's largest seagrass monitoring programme Seagrass-Watch and Project Seagrass, devoted to the conservation of seagrass ecosystems through education, advocacy, research and action. 'Seagrass Spotter', a smartphone tool developed by Project Seagrass is available to the public to collect seagrass field data worldwide.
more……..http://www.seagrasswatch.org/news_Sep2018archives.htm

These First-Known Omnivore Sharks Eat Seagrass (CA, USA)

04 September 2018, Discover Magazine (blog)

Sharks are infamous meat-eaters. Now researchers have discovered that one particular species, bonnethead sharks, also dine on seagrass to meet their nutritional needs. The discovery means bonnethead sharks are not carnivores but omnivores — a distinction that changes how the coastal swimmers influence the fragile ecosystems they call home.

Bonnethead sharks abound in seagrass meadows where they can devour crustaceans and mollusks. Back in 2007 scientists discovered the sharks also feast on seagrass. Despite the fact that the vegetarian fare made up more than half the sharks' stomach contents, researchers assumed it'd gotten there by chance. Samantha Leigh, a graduate student and ecologist at the University of California, Irvine, who led the new research, wasn't satisfied. She wanted to find out if the sharks could actually digest the grass. So, she put captive bonnethead sharks on a mostly vegetarian diet of seagrass and squid for three weeks. She tagged the seagrass with a marker she could track as the fish consumed the plant material, digested and excreted it. Although she started the project suspecting she'd be proving the assumptions right, Leigh found instead that the sharks digested about half the seagrass they consumed. The sharks also absorbed nutrients from the seagrass and even gained weight on the diet, Leigh and team report in the journal Proceedings of the Royal Society B. Plus, enzymes capable of chewing up cellulose, a fundamental component of plants that make them hard to digest, were hard at work in the sharks' guts.

That means these coastal sharks once thought to be solely meat-eaters are actually omnivorous and the only known shark species to eat plants. That distinction changes things for ecosystem managers since omnivorous fish are food web stabilizers. Since fishing industries rely on seagrass meadow ecosystems for economic value, "making sure we understand the whole seagrass system as it works together will help us conserve those systems," she said.
more……..http://www.seagrasswatch.org/news_Sep2018archives.htm

Mysterious plastic on Cape Ray beach is actually seagrass (Canada)

04 September 2018, The Telegram

At first glance the heaps of material that washed up on a Cape Ray beach on Sunday, Aug. 19 looked like shredded plastic. It's actually not plastic at all, and essentially harmless. "That's a type of seagrass," says Mark Lomond of the Port aux Basques chapter of Delta Waterfowl. Lomond spends a lot of time on the water. "It was in different stages of bleaching from the sun. Some strings were still dark, and there were even balls of it bleached white on top and brown on bottom."

Taverner's cabin is across a small dirt road from the tiny beach where vast quantities of the seagrass washed up. Taverner patrols the sandy beach regularly to pick up garbage like beef buckets or plastic motor oil containers. He was worried, initially, when he noticed the large clumps of plastic-like strands that had washed up onshore. He wondered if it might negatively impact shore birds or other sea life. He was relieved to find out it was naturally-occuring seagrass.

On Monday, Aug. 27 locals also reported the same type of seaweed had washed ashore on beaches in Grand Bay West, Isle aux Morts, Burnt Islands and in the Codroy Valley. Mark Lomond says it's nothing at all to worry about, though he doesn't really know why there's so much of it right now, but believes the large amount is a good sign. Notes Lomond, "Lots of seagrass equals lots of baby cod." To find out more about its importance to a sustainable

fishery and ongoing efforts to preserve these coastal habitats, visit: https://theecologist.org/2014/nov/04/love-cod-lets-save-our-disappearing-seagrass.
more……..http://www.seagrasswatch.org/news_Sep2018archives.htm

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.

More information:
To get important updates, visit: https://www.erf.org/cerf-2019
Follow on twitter @CERFScience, #CERF2019
Session and workshop proposal deadline: 20 September 2018
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 48,702 views to date)

Seagrass & other matters

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

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

SeagrassSpotter https://seagrassspotter.org/

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

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

Keep up to date on what's happening with the around the world from the WSA. The World Seagrass Association is a global network of scientists and coastal managers committed to research, protection and management of the world's seagrasses. WSA members come from

many countries and include leading scientists in marine and seagrass biology. The association supports training and information exchange and raises global awareness of seagrass science and environmental management issues.

World Seagrass Association on Twitter @Seagrass_WSA

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

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

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

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

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

FROM HQ

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