30 September 2016

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IN THIS BULLETIN

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NEWS

Dugong deaths along Queensland coast spark calls for testing to prevent further losses (QLD, Australia)

30 September 2016, ABC Online (Australia)

Four dugongs have been found dead along the Queensland coast in the past week, sparking calls for testing to prevent further losses. Since last Wednesday, carcasses have been found south of Mackay, at Hervey Bay and north and south of Townsville. One drowned in a commercial fishing net.

Jim Higgs from the World Wildlife Fund said Queensland's environment department had not done testing to find out how the animals died. Studies show there are only about 600 dugongs left between Cooktown and Bundaberg.

Mr Higgs said conditions that wiped out coral on the reef could be having a similar effect on seagrass beds, a vital food source for the vulnerable mammals. He said testing the dead dugongs could shed some light and help protect other animals.

A spokeswoman for the environment department confirmed necropsies were not performed on any of the animals, but said tissue samples were collected from two of the dugongs. She said more detailed tests were only done if the animal died recently, could be safely retrieved and if it was likely the cause of death would be clear.
Full story: http://www.abc.net.au/news/2016-09-29/dugong-deaths-spark-calls-for-testing-to-prevent-further-losses/7889876

Nitrogen levels from waste site considered cause of sea lettuce problem (UK)
29 September 2016, ITV News

An environmental group in Jersey says high levels of nitrogen originating from the Bellozanne waste plant is the main cause of the island's sea lettuce problem. In their latest report, campaign group Save our Shoreline Jersey (SOSJ) states the excess nitrogen ends up at St Aubin's Bay and leads to formation of sea lettuce. They say the plant discharges 18 million gallons of effluent a day which ends up on the beach.

In the report, Save our Shoreline has accused the Department of Infrastructure of exceeding permitted levels of nitrogen. The Department of Infrastructure has previously said the nitrogen levels originate from France. The SOSJ report says

When the tide is low, the States move the piles of sea lettuce to the low water mark using diggers.
The machinery damages the sand structure and disrupts seagrass beds and other sand-living organisms.
The States are now considering using a costly and ineffective sea lettuce harvesting machine when it becomes available.

Full story: http://www.itv.com/news/channel/2016-09-29/high-levels-of-nitrogen-from-bellozanne-considered-the-cause-of-sea-lettuce-problem/

Beach renourishment project in Sarasota could benefit Perico Preserve (FL, USA)
27 September 2016, Bradenton Herald

Before Perico Preserve opened this spring, Manatee County was already envisioning that the preserve's seagrass habitat could be used for future mitigation for public projects. A Sarasota beach renourishment project at Lido Key may just be that first project. At Tuesday's meeting, the Manatee County Commission authorized sending a letter to the Florida Department of Environmental Protection in support of using Perico Preserve as mitigation area for the Lido Key Hurricane and Storm Damage Reduction Project.

Since Perico Preserve on Perico Island is in the same watershed as Big Sarasota Pass, the state has confirmed that it could be a viable mitigation site, according to agenda materials. While there is 12.25 acres of existing seagrass habitat available within the basin for mitigation, the required amount that would be used of this for this project is estimated between 2.9 and 3.2 acres, according to agenda materials. Manatee County officials have calculated that it would cost approximately $351,000 per acre for mitigation at Perico Preserve. The city of Sarasota would pay the sale amount to Manatee County.
Full story: http://www.bradenton.com/news/local/article104439771.html

Related article:
BOCC to Vote on FDEP Request to Authorize Seagrass Mitigation Project in Perico (Bradenton Times)
http://thebradentontimes.com/bocc-to-vote-on-fdep-request-to-authorize-seagrass-mitigation-project-in-pe-p16895-158.htm

Potentially Invasive Sea Grass Found in Christiansted Harbor (U.S. Virgin Islands)
22 September 2016, Saint Croix

Halophila stipulacea, a potentially invasive seagrass, was found in the waters around St. Thomas and St. John in 2014 but, until this week, its presence has not been confirmed on St. Croix. The species originated in the Red Sea and Indian Ocean and is thought to have spread into the Mediterranean and Caribbean Seas in ships' holds and ballast water or fragmentation caused by anchoring and other bottom disturbances. Currently *H stipulacea* is present from the U.S. and British Virgin Islands south to Grenada.

University of the Virgin Islands researcher Marcia Taylor found and identified a fragment of *H. stipulacea* this week while walking on the beach west of Christiansted Harbor looking for marine samples for her class. Taylor said the segment of seagrass may have drifted here and was definitely alive and growing. Usually it is found on the sea floor but this sample was floating on the surface with other seagrass, she said.

Although *H. stipulacea* has been studied by the Virgin Islands Experimental Program to Stimulate Competitive Research on St. Thomas, no determination has been made whether it is harmful to other sea plants and marine life. It grows quickly and competes with other species for space, which "may or may not be a bad thing," Taylor said. According to Taylor, if the seagrass chokes out other species that turtles and fish eat, it may disrupt their habits and cause them to move to other locations. More research of the underwater areas around the island is needed, Taylor said. She hopes that residents will contact her at mtaylor.uvi.edu or UVI if they come across samples of the sea grass. Findings can also be reported to invasiveseagrass.org.
Full story: http://stcroixsource.com/content/news/local-news/2016/09/22/potentially-invasive-sea-grass-found-christiansted-harbor

UQ and NASA team up to study Great Barrier Reef (QLD, Australia)

22 September 2016, UQ News

University of Queensland researchers are playing a key role in a NASA airborne mission designed to transform understanding of earth's valuable and ecologically sensitive coral reefs. The mission has set up shop in Australia for a two-month investigation of the Great Barrier Reef, the world's largest reef ecosystem, using UQ's Heron Island Research Station as one of its bases.

Scientists from NASA's Coral Reef Airborne Laboratory (CORAL) mission and their Australian collaborators discussed the mission's objectives and the insights they expect to glean into the present condition of parts of the Great Barrier Reef and the function of reef systems worldwide. CORAL's three-year mission combines aerial surveys using state-of-the-art airborne imaging spectrometer technology developed by NASA's Jet Propulsion Laboratory with in-water validation activities.

UQ School of Geography, Planning and Environmental Management scientist Professor Stuart Phinn said CORAL would provide Australian and global coral reef science and management with unique new maps and mapping approaches that would expand efforts to map and understand the condition of the Great Barrier Reef. Professor Phinn and his UQ colleague Dr Chris Roelfsema are working to build a process to map the entire reef, to better understand ways to manage and protect it. CORAL principal investigator Dr Eric Hochberg, of the Bermuda Institute of Ocean Sciences (BIOS), said CORAL offered the clearest, most extensive picture to date of the condition of a large portion of the world's coral reefs.

Over the next year, CORAL will survey portions of the Great Barrier Reef along with reef systems in the main Hawaiian islands, the Mariana Islands and Palau. In Australia, CORAL will survey six discrete sections across the length of the Great Barrier Reef, from the Capricorn-Bunker Group in the south to the Torres Strait in the north. Two locations on the reef – Lizard Island Research Station in the north and Heron Island Research Station in the south – will serve as bases for in-water validation activities.

Full story: https://www.uq.edu.au/news/article/2016/09/uq-and-nasa-team-study-great-barrier-reef

Sewage dump may lead to algae blooms, fish kill, lost seagrass, say experts (USA)

16 September 2016, Tampabay.com

Expect algae blooms. Seagrass die-off. Fish kills. Dead birds. Those are some of the environmental consequences that could result from the tens of millions of gallons of sewage that has flowed into Tampa Bay over the past year, according to bay experts. The region's ongoing sewage crisis struck just as the waters of Tampa Bay had recovered after decades of waste had been dumped into it. As of last year, there were signs that the bay was the cleanest it had been in 60 years. That's critical in a tourist-dominated economy. A healthy bay is estimated to generate $22 billion worth of economic activity and is linked to one in every five jobs.

But over the past year — particularly in the aftermath of Hurricane Hermine — the bay area's rain-soaked utilities spilled, leaked and dumped an estimated 253 million gallons of sewage into streets and waterways. Much of that ended up in Tampa Bay. So much sewage can fuel the bloom of toxic algae in the bay — not necessarily Red Tide, but perhaps another kind, says Holly Greening, executive director of the Tampa Bay Estuary Program. Leaking septic tank waste has been partially blamed for fueling the toxic algae bloom off the state's Atlantic coast that laid atop the waves like a thick layer of guacamole. Such a bloom could lead to the death of seagrass beds and fishkills.

Florida Fish and Wildlife Research Institute in St. Petersburg "has not had any reports of fish kills and has not confirmed any impacts on wildlife," said state Fish and Wildlife Conservation Commission spokeswoman Susan Smith. Hundreds of manatees live in Tampa Bay. But manatees tend to be pretty adaptable to poor conditions such as polluted water, said Pat Rose of the Save the Manatee Club. However, a loss of seagrass would rob them of their main source of food. By last year, Tampa Bay was supporting 40,295 acres of seagrass beds, the largest amount of seagrass measured since the 1950s.

Full story: http://www.tampabay.com/news/environment/water/sewage-dump-may-lead-to-algae-blooms-fish-kill-lost-seagrass-say-experts/2293875

Strong case for seagrass in biodiversity analysis

15 September 2016, Harvard Gazette

A new analysis of a key contributor to the marine food web has turned up a surprising twist: more unique species in cooler waters than in the tropics, a reversal of the situation on land. The findings highlight the need to direct limited conservation dollars according to science, with a focus on places where biodiversity is most at risk, said Barnabas Daru, Harvard Herbaria Postdoctoral Fellow in Organismic and Evolutionary Biology, who performed the analysis on the world's 70 species of seagrass.

Daru acknowledged that seagrass isn't as exciting as sharks, or as marine mammals such manatees. But for anyone who cares about the health of marine animals, he said, the role of humble seagrass at the beginning of the marine

food chain is key. In Boston Harbor, vast seagrass beds have now dwindled to a bare remnant, roughly 750 acres of the 16,000 acres once thought to cover the harbor. Statewide, 90 percent of the remaining beds are in decline, according to the Massachusetts Bays Program.

Daru's research, published last month in the journal Biological Conservation, combined DNA analysis with existing data on seagrass distribution worldwide to draw what scientists call a "phylogenetic tree" showing relationships among different grasses. Researchers linked that tree to known patterns of global distribution. What emerged was a picture that surprised Daru. Unlike patterns of biological diversity on land - where the tropics have more vertebrate species that are evolutionarily distinct and without close relatives - seagrasses show the opposite distribution, with cooler, temperate regions home to more distinct species. The finding illustrates the importance of science in clarifying species distribution, he said, because that clarity is crucial to proper distribution of conservation funds.
Full story: http://news.harvard.edu/gazette/story/2016/09/strong-case-for-seagrass-in-biodiversity-analysis/

Romberg biologists helping get new Smithsonian project off the ground (CA, USA)
13 September 2016, SF State Campus Headlines

Researchers at San Francisco State University's Romberg Tiburon Center (RTC) for Environmental Studies have joined a global partnership, led by the Smithsonian Institution, aimed at better understanding the world's marine ecosystems and how they may be affected by climate change. The MarineGEO project is a worldwide network of observation sites and research centers. Biologists at each site will collect data annually, and over time the information will allow them to predict changes to marine ecosystems, leading to more efficient conservation and restoration efforts.

In conjunction with the partnership, Kathy Boyer, a professor of biology at SF State, and her Romberg colleagues, as well as several student researchers, spent the summer documenting the patterns of invertebrate animal communities in seagrass beds and mudflat habitats, comparing natural habitat areas in Richardson Bay to restored habitat there and near the Richmond Bridge. This fall, they'll conduct similar work in salt marshes. Boyer and fellow Professor of Biology Karen Crow hope to offer a suite of courses next spring to immerse undergraduate students in marine science research and allow them to participate in the new research partnership.
Full story: http://news.sfsu.edu/news-story/romberg-biologists-helping-get-new-smithsonian-project-ground

Local Watershed Scores Overall C-Plus On Annual Report Card (MD, USA)
12 September 2016, The Dispatch

The Maryland Coastal Bays Program gave area waterways a C-plus for 2015 in its annual report card, unveiled at the Ocean City Marlin Club on Sept. 8. Since its last report, the Coastal Bays Program has seen phosphorous levels rise and seagrass levels fall, according to Maryland Department of Natural Resources Environmental Program Manager Cathy Wazniak. Although seagrass levels have decreased, Wazniak says conditions could improve as the water quality increases. Populations among living resources, such as crabs and clams, have maintained and improved along most waterways, Wazniak says.

Maryland coastal bays are graded based on reports from six regions: Assawoman, Chincoteague, Isle of Wight, Newport, and Sinepuxent Bays and St. Martin River. Health conditions deteriorated in Sinepuxent and Chincoteague Bays, but improved in Assawoman and Newport Bays, Wazniak says. Isle of Wight Bay and St. Martin River saw no change. Overall, the program gave Sinepuxent and Chincoteague Bays the best health scores and St. Martin River the worst.

The rating is based off chlorophyll, dissolved oxygen, nitrogen, phosphorous, seagrass and hard clam measurements taken from all six waterways. These measurements are then averaged out to reflect the overall quality of the coastal bay region. This year, the coastal bay system received a score of 57.9 percent, two percentage points less than last year's score. Yet, these numbers have improved since 1996, when the coastal bays received its lowest overall health score of 11 percent. Dr. Bill Dennison, professor at University of Maryland Coastal Center for Environmental Science, says the waterways still have to improve, but applauds the bays' stable conditions. Dennison says he hopes next year's health report card will improve to a B-minus. A detailed report on the coastal bays' health from every year can be found at www.ecoreportcard.org.
Full story: http://mdcoastdispatch.com/2016/09/12/local-watershed-scores-overall-c-plus-on-annual-report-card/

Seahorse discovery (UK)
11September 2016, Exmouth Journal

The Seahorse Trust, based in Tospham, is celebrating the discovery of three spiny seahorses in an area of seagrass meadow at a secret location. Neil Garrick-Maidment, trust founder, said the sightings had been reported to the Seahorse Trust national database. He said: "We cannot, for obvious reasons, say exactly where the seagrass bed is, but it was in the eastern side of Weymouth Bay - a site we have never dived before. It gives us good hope there are some seagrass sites still undamaged and with seahorses in them."
Full story: http://www.exmouthjournal.co.uk/news/seahorse_discovery_1_4689082

Green sea turtles thrive in Raine Island recovery project off far north Queensland (Australia)

10 September 2016, ABC Online

A project to raise the height of a remote island off far north Queensland to help save the world's most important nesting site for thousands of green sea turtles has saved eggs and hatchlings, researchers say. Raine Island, about 620 kilometres north-east of Cairns and inaccessible to the public, is the nesting ground for about 60,000 green turtles every year. Researchers have been reshaping parts of the beach to protect the breeding grounds and used pool fencing to help turtles falling off sand cliffs as part of the Raine Island Recovery Project.

Drones were used to survey the re-shaped island's area to help keep it above the flooding level throughout the 2015-2016 nesting season. Anna Marsden, managing director of the Great Barrier Reef Foundation, said early results marked a positive start for the five-year project. Queensland National Parks Minister Dr Steven Miles said the "bold conservation project" had kept the beach stable and turtle eggs safe. He said the project had been successful largely due to using new drone technology to "show people exactly what Raine Island looks like filled with thousands and thousands of turtles".

Full story: http://www.abc.net.au/news/2016-09-10/green-sea-turtles-thrive-raine-island-recovery-project-qld/7833294

Related article:
Drones show high sand saves baby turtles (SBS online)
http://www.sbs.com.au/news/article/2016/09/10/drones-show-high-sand-saves-baby-turtles

Nutrient pollution is changing sounds in the sea (SA, Australia)

06 September 2016, Science Daily

Nutrient pollution emptying into seas from cities, towns and agricultural land is changing the sounds made by marine life -- and potentially upsetting navigational cues for fish and other sea creatures, a new University of Adelaide study has found. Published online in the journal Landscape Ecology, the research found that marine ecosystems degraded by 'eutrophication', caused by run-off from adjacent land, are more silent than healthier comparable ecosystems. This marine 'soundscape' comes largely from the snapping of shrimps, but also the rasping of sea urchins and fish vocalisations.

The researchers -- PhD graduate Tullio Rossi, Associate Professor Ivan Nagelkerken and Professor Sean Connell from the University's Environment Institute -- studied kelp forests and seagrass beds in South Australia's St Vincent's Gulf, many of which have been impacted by excessive nutrients washing into the sea, particularly along the metropolitan coast of Adelaide. They compared audio recordings of these polluted waters with audio recordings at natural high-CO2 underwater volcanic vents, which show what water conditions are predicted to be like at the end of the century under global ocean acidification. Remarkably, they found the same pattern of sound reduction in both locally degraded ecosystems and those that show what oceans are expected to be like under climate change.

The study also suggests that soundscapes may be a suitable management approach to evaluating the health of ocean ecosystems -- a new cost-effective monitoring tool. "Because ocean acidification acts at global scales, local reduction of nutrient pollution as a management intervention will strengthen the health of our marine ecosystems, and set them up for coping better with global climate stressors," says Professor Sean Connell.

Full story: https://www.sciencedaily.com/releases/2016/09/160906103149.htm

Bay's nurseries trawled for signs of life (VIC, Australia)

06 September 2016, Mornington Peninsula News

Benchmarks are being set to monitor the number and variety of animals living in Western Port's seagrass beds. Known as the bay's marine nurseries, a series of night trawls of the seagrass beds in January captured 14,073 animals from five species. The most common animals were crustacea – which includes crabs, lobsters, crayfish, shrimp, krill, woodlice and barnacles – and fish. A team of researchers from the Western Port Seagrass Partnership will repeat the trawl to compare animal numbers and varieties in summer and spring.

Marine ecologist Dr Hugh Kirkman said January's trawl for juvenile fish and macroinvertebrates was the first conducted in Western Port. The trawl was carried out at night as many of the animals which live in or under the seagrass only emerge in darkness. Dr Kirkman said the need for a taxonomist to analyse and report on the results made such studies prohibitive but this one had been made possible with backing from Esso.

A report on the results of the trawl co-written by Dr Kirkman, Ian Stevenson and Lynda Avery, states that Western Port's seagrass meadows "have long been recognised as biologically and ecologically important marine ecosystems that provide habitat, food and refuge for a wide variety of animals".

The researchers say the degradation or loss of seagrass "can therefore result in significant reductions in the productivity and biodiversity of shallow marine ecosystems". The trawls of the seagrass beds within the Yaringa Marine Sanctuary resulted in five times more animals being captured than on the bare sandy silt area. Dr Kirkman said choosing one fish species – possibly pipefish – to monitor on a regular basis could make it easier and much

cheaper to continue trawls. One seagrass trawl site was beside the Watson Channel between the mainland and Quail Island and the other closer to the mainland and near a bank leading to unvegetated or sparsely vegetated sandy silt. Dr Kirkman said similar trawls had been carried out at Albany in Western Australia, Kangaroo Island, South Australia while another was being planned for Port Phillip at the Jawbone Marine Sanctuary at Williamstown.
Full story: http://mpnews.com.au/2016/09/06/bays-nurseries-trawled-for-signs-of-life/

Scared of Seagrass? Don't be! (Northern Mariana Islands)

02 September 2016, Marianas Variety

Seagrass may seem disturbing to some individuals due to its slimy texture and mysterious appeal, but don't be fooled! Seagrass is extremely important to our environment, most especially to our coral reefs. The Marine Monitoring Team (MMT) of the Coral Reef Initiative (CRI) spent the summer conducting surveys to determine the resilience of the Marianas seagrass beds. The work was part of a pilot study for a larger seagrass resilience assessment. The overall purpose of our project is to determine the resilience score of seagrass beds and what can be done to make them better.

Having resilient seagrass beds benefits the environment because these ecosystems can provide more homes for fish, a more stable sea floor, and a better filtering system. Surveys were conducted in various sites around the island in places such as Susupe, San Roque, Tanapag, Garapan, and Pau Pau.

Benthic cover and invertebrate surveys were conducted and sediment and biomass cores collected. The samples collected from the cores were processed in the lab; inverts were preserved, leaves, shoots, rhizomes, and roots were separated for drying to determine the biomass of the seagrass, measurements of the blades and shoots were also collected. Sediments from the cores were sifted to look for seeds. All the data that has been obtained will be used for management purposes where they will determine what they can do next to help the seagrasses become more resilient.
Full story: http://www.mvariety.com/special-features/green-tips/88889-scared-of-seagrass-don-t-be

Related article:
Reef Tips: Sea grass, the Last Line of Defense (Marianas Variety)
http://www.mvariety.com/special-features/green-tips/88890-sea-grass-the-last-line-of-defense

CONFERENCES

The 12th International Seagrass Biology Workshop (ISBW12) (Wales, 17-21 October 2016)

Theme: Declining seagrasses in a changing world.

The International Seagrass Biology Workshop (ISBW) is the only international meeting specifically tailored to seagrass scientists, professionals and students. The International Seagrass Biology Workshop (ISBW) provides a good opportunity for the scientists working on various aspects of seagrass ecosystems to come together and discuss their latest findings. The ISBW12 will be held from 17-21 October 2016 at Nant Gwytheyrn, Gwynedd, Wales, organized by Project Seagrass and the Seagrass Ecosystems Research Group. The conference email address is ISBW2016@projectseagrass.org.

Prepare for ISBW12:
ISBW12 Presenter's schedule http://isbw12.org/final-program
Book now to secure workshop attendance http://isbw12.org/workshops
Events (http://isbw12.org/events)

Silent Auction (Sunday October 16th, 6:00pm until Friday 21st October, 9:30am)
Why donate?
The ISBW12 Silent Auction is a great way to support student members of the World Seagrass Association. All auction proceeds will go the WSA Evamaria Koch Student Travel Award to support student participation and development activities.
What kind of items will be accepted?
Are you an artist, craftsperson, or author? ISBW12 would love to feature your work as an auction item! If you're not the creative type, donations such as gift certificates (of any denomination), books or journals, scientific instrumentation and fun items that will inspire bids from your fellow ISBWers are also welcome.
How can I donate?
Please download and complete the ISBW12 Silent Auction Donation form (http://bit.ly/2aBlc9O or http://bit.ly/2avX79J) and return to wsa.secretary@gmail.com. Completed silent auction donation forms are due by Friday, October 14th, 2016.
Tuesday Field Trips
1 - Historical trip to Caernarfon Castle
2 - Local guided walk around Nant Gwrtheyrn
3 - Porthdinllaen nature walk and seagrass bed visit
4 - What does a UK seagrass meadow look like?

for more information, visit http://isbw12.org/

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 42,679 views to date)

…seagrass matters blog

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

Keep up to date on what's happening around the world from the WSA with regular updates from WSA President Dr Richard Unsworth and *notes from the field* by Dr Siti Yaakub.

FROM HQ

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