



# Seagrass-Watch E-Bulletin

**28 February 2017**

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## NEWS

### **Dated state seagrass report obscures recent dieoffs (USA)**

27 February 2017, Florida Today

A statewide "state-of-the-seagrass" report shows the vital bottom plant was thriving throughout most of Florida, until a few years ago when in some parts of the state brutal algae blooms laid waste to years of conservation efforts. The Florida Fish and Wildlife Conservation Commission released a report Monday showing only two of 29 regions in the state with seagrass losses: Choctawhatchee Bay in the Panhandle and the southern Big Bend, south of Tallahassee. But estimates for those two regions were based on data as much as a decade old, the most recent mapping available. And most of the data for the other 27 regions in FWC's report is three or more years old.

For many coastal areas, especially the Indian River Lagoon, more recent seagrass surveys paint a much bleaker picture than FWC's report. In many areas of the central regions of the lagoon, Lori Morris, an environmental scientist who monitors lagoon seagrass for the St. Johns River Water Management District, finds moonscapes along the bottom when she dives in search of seagrass. More than 40 scientists from agencies across Florida map and monitor

seagrasses statewide and report those ecological health assessments online. Using available data, researchers estimated there are about 2.5 million acres of seagrass in estuaries and nearshore waters of Florida, which provide ecological services worth more than \$20 billion a year.

FWC's seagrass monitoring program was developed in 2009 to provide "a collaborative resource for seagrass mapping, monitoring and data sharing," the agency said in a news release. By 2009, the Indian River Lagoon's seagrass grew at levels not seen since the 1940s. But then cold and algae blooms cut seagrass coverage in half in just a few years. The southern lagoon lost 1,946 acres of seagrass (21 percent) between 2009 and 2011 and gained 666 acres between 2011 and 2013, or 34 percent of what had been lost in the superbloom. The northern lagoon lost 31,916 acres between 2009 and 2011 (45 percent) and regained 4,762 acres between 2011 and 2013, or 15 percent of what had been lost. Field assessments in 2014 found very little seagrass remained near the mouth of the Suwannee River in the Big Bend area. Seagrass density in beds has declined sharply in the past 10 years throughout the region, FWC's report says.

[more..... http://www.seagrasswatch.org/news.html](http://www.seagrasswatch.org/news.html)

### **Singapore scientists, volunteers monitor seagrass health (Singapore)**

24 February 2017, *The Straits Times*

Apart from being a source of food for herbivores, seagrass meadows are nurseries for juvenile animals such as crabs, shrimps and fishes. The structural complexity of seagrasses makes seagrass meadows areas of rich marine biodiversity. There are a total of 12 species of seagrasses in Singapore, out of 23 in the Indo-Pacific region, and their habitats can be found both on the northern and southern shores of the island.

TeamSeagrass, a group of volunteers, conducts frequent seagrass monitoring at six locations - Chek Jawa, Pulau Semakau, Cyrene Reef, Sentosa, Labrador Beach and Tuas. The information collected is shared with Seagrass-Watch, an international monitoring programme for seagrasses.

Like much of the country's natural heritage, seagrass meadows have been in decline for decades, with around 40 per cent of the original cover lost to coastal development. Since 2007, scientists and volunteers have regularly monitored them for their health. A three-year research project, which ends in the middle of next year, intends to better understand the dispersal patterns of seagrasses, in addition to assessing how resilient they are in the face of various stressors.

[more..... http://www.seagrasswatch.org/news.html](http://www.seagrasswatch.org/news.html)

### **17th Annual Seagrass Awareness Celebration scheduled (FL, USA)**

22 February 2017, *Santa Rosa Press Gazette*

You can learn about seagrass, marine creatures that live in it and how to protect the habitat during the 17th annual Seagrass Awareness Celebration.

Family-focused activities feature marine life in touch tanks, seining, games, fishing, marine creatures, marine debris, arts and crafts including making shark tooth necklaces, boating and water safety, kayaking and food vendors. Attendees should bring water, sunscreen, a hat, water shoes and lawn chairs.

Participating organizations include the Navarre Beach Marine Science Station, the United States EPA Gulf Ecology Division, Gulf Breeze High School, University of Florida's Institute of Food and Agricultural Sciences Florida Sea Grant, UF-IFAS Master Gardeners, Ocean Hour, Navarre Beach Kayaks and Escambia County Natural Resources.

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### **Underwater seagrass beds dial back polluted seawater (USA)**

16 February 2017, *Science Daily*

Seagrass appear to combat bacteria in the first research to assess whether that coastal ecosystem can alleviate disease associated with marine organisms, says said lead author Joleah Lamb of Cornell University's Atkinson Center for a Sustainable Future, where she is a Nature Conservancy NatureNet fellow.

On the small islands at Spermonde Archipelago, Indonesia, freshwater is sparse, surface soil is thin and just off shore the marine environment teems with solid waste, sewage and wastewater pollution. Generally, the islands -- though filled with people -- do not have septic systems. The team used *Enterococcus* assays, the U.S. Environmental Protection Agency standard of health risk levels for wastewater pollution in recreational waters, to see whether seagrass meadows influenced bacterial levels. Water samples taken near the beaches exceeded exposure levels by a factor of 10. But, Lamb's team found threefold lower levels of *Enterococcus* in seawater collected from within seagrass meadows.

While research is beginning to reveal the mechanisms driving bacterial-load reductions in these ecosystems, it is evident that an intact seagrass ecosystem -- home to filter-feeders like bivalves, sponges, tunicates (marine

invertebrates) -- removes more bacteria from water. As seagrass meadows and coral reefs are usually linked habitats, Lamb's team examined more than 8,000 reef-building corals for disease. The researchers found lower levels -- by twofold -- of disease on reefs with adjacent seagrass beds than on reefs without nearby grasses.

*more..... <http://www.seagrasswatch.org/news.html>*

### **Seagrass comeback good news for health of Tampa Bay (FL, USA)**

*08 February 2017, FOX 13 News, Tampa Bay*

Seagrass is making a comeback in the Bay Area and biologists say it's a good sign of the health of the area.

In 2014, scientists announced Tampa Bay had reached levels of seagrass not seen since the 1950s. They say the grasses on the bottom provide habitat for fish, help clean the water, and indicate the health of the bay. The new 2016 seagrass map produced by the SWIM program of the Southwest Florida Water Management District shows even higher levels than 2014 - a gain of more than 1,300 acres. The new map shows more than 41,000 acres across the bay.

Tom Ries and Brad Young, with Scheda Ecological Associates, say seagrass beds around Pinellas County may or may not have been affected by big sewage spills in September of 2016.

*more..... <http://www.seagrasswatch.org/news.html>*

### **Great Barrier Reef: Coal spillage discovered from ship loader at mining port, Government says (QLD, Australia)**

*08 February 2017, ABC Online*

A Queensland Government investigation has found a large spillage of coal at a mining port in waters near the Great Barrier Reef. The investigation, which found the spillage from a ship loader at the Port of Hay Point, was launched after complaints that coal and fine black dust were washing up at East Point beach near Mackay. Coal was also found at Louisa Creek Beach near Hay Point's two export terminals.

Hay Point is the largest coal port alongside the Great Barrier Reef, housing two separate export terminals. Scientists say coal dust can kill coral and damage the growth of seagrasses. Environment Minister Steven Miles confirmed to the ABC that he has seen photos and video footage sent in by local people. Officers from the environment department conducted two inspections of the two bulk coal terminals at Hay Point last month.

*more..... <http://www.seagrasswatch.org/news.html>*

### **Bay grass restoration threatened by warming, scientists say (USA)**

*14 February 2016, The Chesapeake Bay Journal*

The Bay region is unlikely to meet its underwater grass restoration goals unless it clears up the Chesapeake's water beyond what is now targeted, scientists warned in a recent journal article. If more action is not taken, they warn that eelgrass — the primary underwater grass species found in high-salinity portions of the Bay — may face a “catastrophic” decline in the Chesapeake because of a combination of warming temperatures and murky water. As a consequence, they predict populations of blue crabs and many other fish will also decline as areas with once-lush grass beds convert to muddy bottoms. They project that the resulting economic impacts from that loss of habitat could reach \$1.5 billion to \$2.5 billion annually.

Over the last half-century, eelgrass has been eliminated from nearly half the area it once occupied in the Bay. It rebounded slightly in the late 1980s, but since 1991 — a period when grass beds have come back in many other areas — eelgrass acreage has declined 29 percent. In the wake of Tropical Storm Agnes in 1972, grass beds suffered dramatic declines as the Bay filled with sediment and nutrient-fueled algae blooms, hitting a low point of 38,000 acres in 1983. Since then, they have made a comeback in many places, reaching 92,315 acres throughout the Chesapeake and its tidal rivers in 2015, the most recent year for which data is available. That's about half of the Baywide goal of 185,000 acres, which is based on observations made in the decades prior to Agnes.

In many of the eelgrass-dominated areas, water clarity has generally worsened since 1997. Eelgrass was once commonly found at depths of more than 1 meter, but murkier water means plants no longer get enough sunlight to survive at such depths. Meanwhile, gradually warming water temperatures are adding stress to the plants, which are near the southern edge of their range in the Bay. Eelgrass does not tolerate hot temperatures and suffered sharp diebacks after hot summers in 2005 and 2010. In effect, scientists say, poor water clarity is squeezing eelgrass into shallower areas, but those are also warmer. The paper said that the impact of warming temperatures alone in the next 30 years would lead to a further 38 percent decline in eelgrass cover.

*more..... <http://www.seagrasswatch.org/news.html>*

## **Corio Bay healthy despite repeated water pollution (NSW, Australia)**

05 February 2017, Geelong Advertiser

More than 1.7 million litres of polluted water has leaked into Corio Bay but marine experts say the health of our waters remains sound. The state's environment watchdog found water full of sediment and other contaminants above recommended levels gushed into the bay at least five times last year. Fertiliser supplier Incitec Pivot and woodchip processor Midway, both based in North Shore, are the culprits — fined more than \$22,500 for discharging contaminated water.

Environment Protection Authority data shows water quality of the bay dropped slightly in the year to July 2016. The data reveals the bay's salt levels were above state guidelines between November 2015 and August 2016, rising again in November last year. EPA applied science manager Anthony Boxshall said the general health of the bay remained sound and water quality at Eastern Beach was among Port Phillip Bay's best. Deakin University School of Life and Environmental Sciences senior lecturer Craig Sherman said lush coverings of seagrass in Corio Bay meant it was in good health. Water samples are taken weekly from Eastern Beach during summer and monthly from Corio Bay.

[more..... http://www.seagrasswatch.org/news.html](http://www.seagrasswatch.org/news.html)

## **Scientists hope wetland carbon storage experiment is everyone's cup of tea (VIC, Australia)**

03 February 2017, The Guardian

Australian scientists have launched a project to bury tens of thousands of teabags in wetlands around the world. They are hoping others will sacrifice a few cups of tea and join in to discover how efficient different wetlands are at capturing and storing carbon dioxide. Lipton green tea and red tea "rooibos" varieties will be used in the project, which already involves more than 500 scientists in every continent except Antarctica.

Leader of the project, Peter Macreadie from Deakin University's Blue Carbon Lab, said wetlands were important for carbon capture and storage, a process known as carbon sequestration, holding up to 50 times as much carbon by area as rainforests. There are hundreds of thousands of wetlands around the world. A standardised technique for monitoring the carbon is needed for accurate comparison, and monitoring devices can cost thousands of dollars to install. But Macreadie had been reading scientific research about teabags being buried and used to measure the rate at which carbon was being released from soil into the atmosphere. Fast decay of the tea inside the bag meant more carbon was being released into the atmosphere, while slower decay meant the soil was holding the carbon.

Lipton teabags are being used because they are already favoured by international researchers studying terrestrial carbon sequestration. They also have a fairly standard rate of decay in wetlands and the required tea varieties are sold around the world. Lipton are giving the researchers 50,000 teabags.

[more..... http://www.seagrasswatch.org/news.html](http://www.seagrasswatch.org/news.html)

## **Tampa Bay seagrass saw gains, but that was before the recent sewage crisis (FL, USA)**

01 February 2017, Tampabay.com

A key indicator of the health of Tampa Bay is the spread of seagrass, which has shown more improvement in the past year — although those measurements were taken before tens of millions of gallons of sewage was dumped into the bay since last summer. Seagrasses in the bay have increased by more than 1,360 acres, or nearly 3.3%, since 2014, according to the Tampa Bay Estuary Program, a bay science and advocacy group first created by the Environmental Protection Agency but now operating independently.

Decades of pollution had wiped out thousands of acres of seagrasses in the bay, which is Florida's largest open-water estuary, stretching 398 square miles at high tide. When the estuary program was created in 1991, it set a goal of returning the bay to at least 38,000 acres of sea grass, the amount it had in 1950. The bay has now surpassed that goal. Seagrasses cover 41,655 acres of bay bottom. However, the aerial surveys that form the basis of this latest seagrass estimate were conducted during the winter of 2015-2016 — before last summer's torrential rains caused St. Petersburg and other municipal sewage systems to release waste into portions of the bay. The largest gain, 874 acres, occurred in Old Tampa Bay, in the north end of the estuary, which has historically lagged behind the rest of the bay in water quality.

The only section of the bay that lost any acreage was in the so-called "middle bay," south of the Gandy Bridge, including Hillsborough's South Shore to the Manatee County border, and coastal St. Petersburg to Coquina Key. It lost 42 acres between 2014 and 2016.

[more..... http://www.seagrasswatch.org/news.html](http://www.seagrasswatch.org/news.html)

## **Eau Gallie River dredging gets underway (FL, USA)**

01 February 2017, Florida Today

Dredging has begun in the befouled Eau Gallie River to remove a half-century of muck, a carpet of black gunk known to strand even canoes. By the end of 2018, the ambitious \$24 million dredging project will remove at least 632,000 cubic yards (about 42,000 dump truck loads) of muck from the main stem of the Eau Gallie River, as well as the southern branch of its tributary, Elbow Creek. That will remove 1,200 tons of nitrogen and 260 tons of phosphorous from the river, according to the St. Johns River Water Management District, which is overseeing the project. Scientists say dredging out muck could vastly improve the lagoon, and better land-use practices are needed to prevent more muck from entering the estuary.

Excess nitrogen and phosphorus in muck trigger algae blooms that kill fish and seagrass habitat for shrimp, crabs and other marine life. Biologists also find higher incidence in Brevard County's muck-laden hot spots than elsewhere in Florida of a strange cancer in redbfin needlefish — an important bait fish. Muck harms seagrass growth and the fish and organisms that need seagrass to survive. It contributes to bacterial decay, which consumes oxygen, causing fish kills. It also produces noxious chemical compounds, such as the hydrogen sulfide that creates the lagoon's occasional rotten-egg smell.

The dredged-up muck will be pumped on property owned by Brevard County next to the Sarno Road landfill, where the water content will drain out, then the muck will be transported (off-road) directly to the landfill property for disposal. During the permitting process, tests hazardous materials found the muck poses no health risk, water management district officials said. The project permit requires dedicated manatee observers be on site. They must alert workers to stop the dredge whenever a manatee swims within 50 feet of any in-water activity. To protect manatees further, no dredging will occur within the Eau Gallie River or Elbow Creek from March 1 through April 30, and restricted portions of the lagoon – where manatees could become trapped – are closed to dredging from Nov. 1 to May 31.

*more..... <http://www.seagrasswatch.org/news.html>*

## **New analysis supports mangrove forests, tidal marshes and seagrass meadows as effective climate buffers**

01 February 2017, Phys.Org

In the global effort to mitigate carbon dioxide levels in the atmosphere, all options are on the table—including help from nature. Recent research suggests that healthy, intact coastal wetland ecosystems such as mangrove forests, tidal marshes and seagrass meadows are particularly good at drawing carbon dioxide from the atmosphere and storing it for hundreds to thousands of years.

A new analysis co-authored by a University of Maryland scientist suggests that, while coastal wetlands serve as effective "blue carbon" storage reservoirs for carbon dioxide, other marine ecosystems do not store carbon for long periods of time. The research paper, published February 1, 2017 in the journal *Frontiers in Ecology and the Environment*, also notes that coastal wetlands can help protect coastal communities from storm surges and erosion. Coastal wetland areas are easier for governments to manage compared with ecosystems that reside in international waters, further adding to the strategic value of coastal wetlands in the fight against climate change.

The research paper integrates previous data on a variety of coastal and marine ecosystems to determine which systems are best suited to mitigate climate effects. To make this assessment, Ariana Sutton-Grier, an assistant research scientist at UMD's Earth System Science Interdisciplinary Center and her colleagues evaluated how effectively each ecosystem captures carbon dioxide—for example, by plants using it to build their branches and leaves—and how long the carbon is stored, either in plant tissues or in soils. Coastal wetlands outperformed other marine systems in just about every measure. Estimates for tidal marshes and seagrass meadows vary, because these ecosystems are not as well mapped globally, but the total for each could exceed 80 million metric tons per year.

*more..... <http://www.seagrasswatch.org/news.html>*

## **Planning work continues for Nowra marina (NSW, Australia)**

01 February 2017, South Coast Register

Shoalhaven City Council is currently carrying out detailed design work on the final layout of a proposed marina in the Shoalhaven River in Nowra. Council placed 13, 11.5m long and 2.5m wide pontoons, in the river as part of the Shoalhaven River Festival last October with the plan to leave them in place on a permanent basis and form the area's first marina. However, in mid November council was ordered to remove the pontoons by the Department of Primary Industries. A DPI spokesperson said council's use of the pontoons was a temporary installation for the marine expo at the river festival event only and it had not gained approvals to situate the pontoons at the site on a permanent basis.

One of the biggest issues DPI raised with council at the time the pontoons were ordered to be removed was around possible damage to seagrass in the area from shading. The Register was told the pontoons were situated on Crown Land and over seagrass, which was an important nursery ground for juvenile fish, playing a vital role in maintaining healthy aquatic ecosystems and conserving fish stocks. A DPI statement said seagrass was a key fish habitat and nursery and shading from the pontoons being in the river on a permanent basis could have a considerable impact.  
[more..... http://www.seagrasswatch.org/news.html](http://www.seagrasswatch.org/news.html)

### **Hidden plastic pollution is killing endangered turtles and marine life (NSW, Australia)**

12 February 2017, *The New Daily*

Teenage turtles like Cliff are lucky to be rescued, because many are dying after eating hidden plastic pollution in Sydney Harbour and the Hawkesbury River when they come in summer to feed on seagrass meadows. Hospital manager, Libby Hall, said snorkelers discovered the turtle on December 28. It could not swim or feed because it had ingested plastic.

Conservationists are calling for NSW to ban single-use plastic bags, which are a small but significant proportion of the 10 tonnes of plastic waste that litters the harbour and its foreshores each year. David Thomas is the founder of a community group called Eco Divers. A self-styled “environmental ninja”, he has been scouring the waters off Manly, removing rubbish for more than 30 years. After a half-hour dive at the western end of Manly Cove, Mr Thomas filled a mesh bag with rubbish, including balloons that had bite marks from where marine life had tried to eat it.

So far South Australia, the Northern Territory, Tasmania and the ACT have banned single-use plastic bags. Queensland will join them next year. Ian Kiernan, the Chairman of Cleanup Australia, said a NSW ban would be a quick and effective way to reduce pollution around Sydney. Roads and Maritime Services has crews working on Sydney waters for 12 hours a day, seven days a week to clean up the rubbish – which is particularly bad after heavy rain. In a statement, the NSW Environment Minister’s office confirmed it was looking at a national approach to reduce the impact of plastic bags.

Full Story: <http://thenewdaily.com.au/news/state/nsw/2017/02/12/lucky-escape-turtle-eating-plastics-sydney-harbour/>

*Related article*

*Sydney Harbour hidden plastic pollution is killing endangered turtles and marine life*  
<http://www.abc.net.au/news/2017-02-12/sydney-harbour-hidden-plastics-threatening-endangered-turtles/8263368>

## **CONFERENCES**

### **Coastal & Estuarine Research Federation 24th Biennial Conference (CERF2017) (Providence, Rhode Island, USA, 5-9 November 2017)**

Theme: Coastal Science at the Inflection Point: Celebrating Successes & Learning from Challenges

The CERF 2017 scientific program offers four days of, timely, exciting and diverse information on a vast array of estuarine and coastal subjects. Presentations will examine new findings within CERF’s traditional science, education and management disciplines and encourage interaction among coastal and estuarine scientists and managers. Additionally, the Scientific Program Committee plans to convene special sessions and workshops that promote intellectually stimulating discussions. Join us and over a thousand of your colleagues to network, celebrate our work, learn from each other and grow within our amazing profession.

**Important Dates:**

Abstract Deadline: 1 May 2017

Conference Registration Opens in February!

Early Bird Registration Deadline: 15 May 2017

Student Travel Award Application Deadline: 4 August 2017

Presenter Confirmation/Registration Deadline: 5 September 2017

Registration Deadline: 5 September 2017

Advance Registration Deadline: 6 October 2017

for more information, visit <http://www.erf.org/cerf-2017-biennial-conference>

### **The 13th International Seagrass Biology Workshop (ISBW13) and World Seagrass Conference (June 2018, Singapore)**

Theme: Under pressure – Seagrass science and conservation in stressful environments

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 ISBW13 will be held in June 2018 at the National University of Singapore, Singapore, organized by National University of Singapore, National Parks Board, and DHI Water & Environment, Singapore.

**More information:**

To get important updates on ISBW13, register your interest here: <https://goo.gl/forms/T1lhDGhEx71m0tcj1>

Follow on Facebook @ISBW13 and Twitter #ISBW13

## 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 43,985 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.

## FROM HQ

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