



Seagrass-Watch E-Bulletin

31 July 2015

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Manatees show up in North Carolina again as more 'sea cows' leave Florida (NC, USA)

31 July 2015, *The Guardian*

Researchers say manatees have again been spotted in the marinas and waters in south-eastern North Carolina – far from their natural Florida habitat. The StarNews of Wilmington reported that local researchers have found that the manatees have travelled north to Georgia, the Carolinas and even Virginia.

Erin Cummings with the University of North Carolina Wilmington has charted the “sea cows” in North Carolina waters since the 1990s. Cummings says manatees have been reported in North Carolina dating to the 1930s. She says manatees swim through open ocean, the Atlantic intracoastal waterway, sounds, bays, rivers and creeks searching for sea grass. Cummings says there have been nine manatee sightings in North Carolina this year. She thinks there could be a couple of dozen in North Carolina waters.

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

Seagrass hints at Indian River Lagoon rebound (FL, USA)

27 July 2015, by Jim Waymer, *Florida Today*

Results from a seagrass transplant study may hint at the recovery of seagrass beds in the Indian River after a 2011 algae bloom. A three-year, \$110,000 experiment has offered hints of hope that the lagoon's seagrass can recover from a freefall, triggered by a 100-mile-long algae bloom in 2011.

In still-barren spots where scientists transplanted seagrass from healthier areas of the lagoon, grass grew back, but often, not for long. Some of the transplants couldn't withstand the voracious appetites of manatees, sea turtles and other marine grazers. The small transplants, encircled within plastic fences or metal cages, became salad bars for long-famished grazers that have for years faced slim pickings for seagrass. Manatees often munched up what grew back once protective metal cages or plastic fences were removed, or pinfish swam through openings in the plastic fences for a meal. But the bottom line was what scientists had hoped to prove.

Officials think larger-scale transplants might overcome the grazing pressure. But they're unsure whether such transplants would be worth the cost, which can run hundreds of thousands of dollars per acre, or if it makes more sense to let the grass recover on its own. Transplants may be an option to jump start seagrass in Melbourne, Palm Bay and other areas now barren of grass. A final report on the project is due in September.

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Researchers probe how much sulfide Puget Sound eelgrass can withstand (USA)

19 Jul 2015, *gorskajit*

What's green, thin, slimy and sways in the water? It's eelgrass, an often unseen marine plant that is important for the environment and economy in the Puget Sound region. The eelgrass in Puget Sound is sort of like a canary in a coal mine for the underwater world, serving as an indicator of marine health. It can affect many species that depend on it, from crabs to salmon.

The Puget Sound Partnership's Sylvia Yang and Western Washington University environmental science professor David Shull are leading a two-year research project of the seagrass, and working this summer with seven students. Collectively, the team and those who have contributed to the project since its start in February 2014 are hoping to find out how well Puget Sound eelgrass grows and reproduces in areas with different levels of sulfide, found in the mud around its roots. The results could help direct eelgrass management in Puget Sound.

The Puget Sound Partnership has set the ambitious goal of adding 10,600 acres of eelgrass in Puget Sound by 2020. So far, the agency has found eelgrass in Puget Sound has held relatively stable since 2000. Knowing how much sulfide can harm eelgrass could help restoration and conservation groups use their resources efficiently.

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Turtle - hater shoots turtle rescue volunteer in South Florida (USA)

19 July 2015, *AI.com, Florida*

On Friday night, a turtle rescue led to violence in Lauderdale-by-the-Sea in South Florida, according to the Sun Sentinel. Two volunteers determined to protect sea turtle nests were confronted by a man saying he dislikes turtles and turtle volunteers, according to one of the volunteers. One of the volunteers was hospitalized with a gunshot wound and the man who confronted them was arrested, the Broward Sheriff's Office said.

Michael Q. McAuliffe, 38, has been jailed without bond on two charges of aggravated battery with a deadly weapon, possession of a weapon by a convicted felon and battery on a person 65 or older. Stan Pannaman, 72, was taken to

Broward Health Medical Center with a gunshot wound to his left hip Friday night. He was home Saturday night with the bullet still embedded in his hip, he said.

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Manatee: Large and Slow-Moving Sea Cow (USA)

17 July 2015, Chinatopix

A gentle sea cow known as the manatee has recently been making some buzz after it was seen swimming north and just kept going. According to ABC 2, the large and slow-moving marine mammal was found swimming about in St. George Creek, a Potomac River tributary near Waldorf, Maryland. Unlike Florida that is well-accustomed to manatee sightings, Maryland is a rather unusual place to find the creature.

A manatee sighting in Maryland is not as surprising as many would think. In fact, they will head back to Florida once the temperatures start to drop in September, Sentinel Republic revealed. For 5 fun facts about these gentle manatees, follow the link.

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

Tags reveal secret life of turtles and dugongs (QLD, Australia)

16 July 2015, Gladstone Observer

A study that tracks turtles and dugongs in the Port Curtis area will continue into next year to gather more information about the marine animals. The studies started in 2014 and will continue over a three year period to track the animals' movements to gain information about how the animals are using habitats in Port Curtis, and how long they are staying in particular areas.

In 2014, 11 green turtles were assessed in Port Curtis. These animals had a tendency to remain in or return to where they were found, but used a variety of microhabitats and crossed deep water areas between foraging areas and areas of high vessel traffic, including shipping channels. Two dugongs were also found on the Pelican Banks in Port Curtis in 2014. Both remained in the Port Curtis region for the duration of tagging.

As part of the second year of the project, Environment Heritage and Protection officers and students from James Cook University and University of Queensland are in Gladstone to find green turtles and fit satellite tags to 11 new animals. Researchers also hope to fit tags on up to three dugongs. EHP Threatened Species Unit chief scientist Dr Col Limpus said members of the community may mistake the satellite tags for litter and may think that the animal has been entangled in a float line. The studies are being carried out by researchers from JCU and the department, supported by Gladstone Ports Corporation.

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Port Melville: Increased activity around Tiwi Islands puts dugong, nesting turtles at risk, groups say (NT, Australia)

15 July 2015, ABC Online

Dugongs and turtles that nest around the Tiwi Islands will be put at risk unless the company developing Port Melville takes steps to mitigate the environmental impacts of its operations, three separate environmental groups have claimed. The Sea Turtle Foundation, the Environmental Defenders Office and the Australian Marine Conservation Society have said in submissions to the federal Department of Environment that greater risks would come with increased ship traffic and more industrial activity through the waters around the islands.

The groups are not alone in their concern, with the Federal Environment Department receiving close to 400 submissions calling for greater environmental scrutiny of the operational plans for Port Melville. The ABC revealed in May the port had been built without environmental clearance from the Northern Territory or Commonwealth governments. A subsequent investigation ordered by Environment Minister Greg Hunt found the port's developer Ezion Offshore Logistics Hub (Tiwi) had not breached Federal Environmental laws in building the port.

But the Department alerted Ezion its investigation had identified "activities associated with future operations of the Port and Marine Supply Base", including "shipping movements, fuel storage and fuelling activities" that may require environmental assessment under federal law.

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Dugongs on brink of extinction, poaching continues in India (India)

12 July 2015, Times of India

The Union government's Compensatory Afforestation Fund Management and Planning Authority (CAMPA) on Wednesday declared that dugongs among the five species to be the focus of conservation, but the marine mammals, ironically called the 'angel of the sea', continue to be poached for their meat. There are just 250 dugongs in the Indian

seas, according to a study by Zoological Survey of India in 2013. In the Gulf of Mannar, the dugong population ranged between 77 and 158, said the survey. In Andamans, there could be 41 to 81 dugongs, and in the Gulf of Kutch, some 10 to 15, said ZSI director K Venkataraman.

Feeding on seagrass, dugongs are found in seagrass beds, sheltered waters, lagoons and bays. Fourteen sea grass species are found in the marine waters in the country of which 13 are found in the Gulf of Mannar and Palk Bay areas. Central Marine Fisheries Research Institute records showed that in 1983-84 more than 250 dugongs were killed in Keelakarai and Periapattanam villages in Ramanathapuram. Researchers said a section of people in villages believed that the dugongs carried boxes full of money in their stomach and poached them indiscriminately.

As dugongs had been brought under Schedule I of the Wildlife Protection Act, the punishment for poaching is imprisonment, but seldom is anyone punished. Human intervention, fishing activities, pollution, mixing of excessive nutrients from agricultural fields that gets drained into the coastal waters and mixing of sewage are some of the direct threats to dugong habitats.

More cooperation among countries in the South Asian region is needed to protect them from extinction, says Venkataraman. Sri Lanka has made efforts to protect its small dugong population that migrate from the Gulf of Mannar. Threat evaluation, putting an end to illegal and incidental captures, reducing marine pollution through serious monitoring are some of the measures researchers suggest to protect dugongs from extinction. CAMPA has announced 4 crore each for conserving five species including dugongs, sangai deer, Gangetic dolphins, wild water buffalo and the great Indian bustard.

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Whale, dugong and turtle populations still reeling from past fishing practices (QLD, Australia)

08 July 2015, ABC Local

Can you imagine riding a turtle or fishing for dugongs? These actions sound unthinkable but they were both once considered completely acceptable in the Great Barrier Reef. Mark Read from the Great Barrier Reef Marine Park Authority says these practices are still affecting species today, even though they've been outlawed for decades.

The harvesting of dugongs began in 1847 and continued for over a century, despite the fact that the animals were officially declared as protected in 1888. Dugong oil was used in cosmetics and for various ailments, while their hides were used as a high grade leather. Mr Read says green and hawksbill turtles were also harvested until the 1930s. Hawksbill turtles were used for their shells, while the green turtles were used for meat and to make turtle soup. Mr Read says whales, turtles and dugongs are great examples of how far the management of the Great Barrier Reef has come.

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US ambassador reiterates commitment to controversial Okinawa air base, a setback for endangered dugong (Japan)

06 July 2015, Mongabay.com

Okinawa, Japan's southernmost prefecture, has a long history of US military presence on its tropical islands. This presence has not always been universally welcome. A longstanding plan to relocate the major Futenma airbase from the urbanized northeast of the island to a coastal site in Henoko Bay in the less-populated north has provoked the ire of many local residents, the local government, and numerous NGOs. They claim the development will cause catastrophic environmental damage and seal the fate in the region of the iconic dugong (*Dugong dugon*).

Hopes of a long-awaited breakthrough were raised recently when it was announced that Caroline Kennedy, the US ambassador to Japan, was scheduled to meet Takeshi Onaga, the governor of Okinawa who was elected last November on a platform of opposition to the US plan. But hope soon turned to frustration. In a statement issued by the US embassy in Tokyo following the meeting on June 19, Kennedy reiterated that the Henoko location remains the "only solution" for the new Marine Corps air base as far as the US is concerned. For his part, Onaga claims that the ambassador has not responded to a request from the prefectural government to conduct environmental research in the waters around Henoko that are currently controlled by the US military.

Greenpeace is among the groups that have been campaigning for years against the base, organizing large protests that have seen thousands of demonstrators in kayaks descend on the Camp Schwab military base near the planned construction site. Ahead of the meeting, the group presented a petition with more than 53,000 signatures urging the US to halt construction. The project's numerous critics claim that no proper environmental impact survey has been carried out and that land reclamation for the construction will destroy coral reefs and two major seagrass beds that serve as the only documented food source for the region's dwindling population of dugongs.

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

Great Barrier Reef World Heritage ruling: Still a titanic task ahead (Australia)

04 July 2015, *The Courier Mail*

Trying to save the Great Barrier Reef will be like turning around the Titanic, says Terry Hughes, a coral expert who sits on federal and state government scientific panels overseeing repair work. He warned that emerging El Nino conditions this summer could cause further ocean warming which might lead to a big coral bleaching event like those that occurred in 1998 and 2002. This also could set repair work back. Professor Hughes, ARC Centre of Excellence for Coral Studies director, said it was unrealistic to think that 200 years of damage would be repaired quickly, but state, federal and UNESCO actions had put Australia on the right path. No matter what Australia did about water quality and other problems, climate change remained the Reef's greatest threat.

University of Queensland Global Change Institute director Ove Hoegh-Guldberg said more work was needed to achieve targets set for reducing sediment and nutrient run-off. If these could be solved, then the greatest short-term threat to the Reef would be averted. This left climate change still to be dealt with.

Prof Hughes said Australia had no choice but to meet the targets set by the 2050 plan, otherwise the World Heritage area would end up on the UNESCO in danger list. Marine conservation planning expert Bob Pressey said the Great Barrier Reef Marine Park Authority had done a good job in protecting the Reef but was crippled by cuts in federal funding which had forced out experienced staff.

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

Grunter's life choices chronicled in fisheries study (Australia)

02 July 2015, *Science Network Western Australia*

Research into populations of the western striped grunter (*Pelates octolineatus*) on the lower west coast shows the species has a highly seasonal growth pattern and migrate between coastal and estuarine environments depending on their age. Murdoch University Centre for Fish and Fisheries Research (CFFR) and the Department of Fisheries scientists investigated the species' life cycle in what was the first study of a terapontid species to use individually aged fish.

They determined the abundant grunter spends the first year of its life in nearshore or estuarine seagrass meadows before it migrates into deeper coastal waters with sparser seagrass to mature. The study also found pronounced seasonal changes in the species' growth rates, peaking in the summer months with negligible growth in the winter months.

Observations at the nearshore seagrass meadows at Mangles Bay found the grunter entered the Harvey-Peel Estuary in mid-summer soon after they matured. Murdoch University Professor Ian Potter says the estuaries' high productivity made them important nursery grounds and resulted in a higher individual growth rate as opposed to those in coastal waters.

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Great Barrier Reef spared Unesco's 'in-danger' listing (Australia)

02 July 2015, *The Guardian*

The UN has ruled against listing the Great Barrier Reef as "in danger", congratulating Australia on its conservation plan but giving it five years to halt deterioration of the natural icon. Unesco's world heritage committee in Germany on Wednesday unanimously passed an earlier draft ruling that the reef's status remain unchanged but that Australia must show significant progress in pushing its plan by the end of 2016. The committee praised Australia's efforts but said it was still concerned about the threat of climate change, industrial port development and water pollution to the reef.

The committee chairwoman, Maria Böhmer, said Australia had done "everything in [its] ability" to engage with the committee's concerns and its financial commitments were "a decisive foundation for preserving and conserving this brilliant world heritage property". But Unesco's decision was not "the end of the debate, it's just the beginning of a new phase" as focus turned to Australia's implementation, she said.

Committee members broadly commended moves to limit new ports on the Queensland coastline, ban the dumping of dredging spoil in world heritage waters and cut pollution runoff by 80% within a decade. The Philippines said Australia needed to address "knowledge gaps" in monitoring a reef 1,400 miles (2,300km) long and extend its vigilance in protecting coral to "seagrass beds, mangroves, floodplains and saltmarshes". Australia's environment minister, Greg Hunt, said the country had "clearly heard the concerns of the world heritage committee" and implemented all its recommendations.

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<http://www.fijitimes.com/story.aspx?id=312961>

Seagrass may not tell what ails Indian River Lagoon (FL, USA)

30 July 2015, by Kevin Spear, Orlando Sentinel

When scientists dove into the ailing Indian River Lagoon near Kennedy Space Center recently, they found that beds of seagrass had grown lusher, which ordinarily would have been encouraging. But the lagoon's health has become such an enigma, there is no great confidence that an increase in grass means the coastal system is rebounding or is verging on another disastrous seizure. Increasingly, scientists and lagoon defenders think a useful diagnosis of the lagoon's condition hinges on more sophisticated appreciation of interaction among grass, algae, water chemistry, rainfall, temperature and seasonal shifts in daylight.

That's especially the case along the Kennedy Space Center 4 miles east of Titusville, an undeveloped area not as troubled with pollution as more urban sections of lagoon. A few years ago, Lori Morris, St. Johns water district scientist and other scientists couldn't see an inch into some lagoon waters. Since 2011, various population explosions of microscopic algae have clouded the water and blocked sunlight from nurturing seagrass. To survive, the plants shed their blades and retreated into their root systems. As that played out, brown pelicans, bottlenose dolphins and manatees suffered badly.

The root culprit of the lagoon's suffering has been identified as pollution in storm water and thick muck on the lagoon bottom. But no consensus has emerged for what triggered the disaster. Prior to the explosions of algae, or blooms, seagrass had been flourishing. Afterward, surveys found that tens of thousands of acres were lost and recovery has been gradual. Water-district scientists acknowledged the importance of monitoring seaweed that drifts with currents. Charles Jacoby, a St. Johns River Water Management District scientist said its presence had been relegated to a "black box" of factors not examined in depth.

Full article: <http://www.orlandosentinel.com/news/environment/os-indian-river-sea-grass-20150730-story.html>

Moreton Bay: make a difference as a marine science volunteer (Qld, Australia)

25 July 2015, by Rob Woodburn, The Australian

Dugongs are such endearing creatures. I hope to see these fascinating marine mammals while snorkelling Queensland's Moreton Bay. But that's a rather fanciful wish, as scientist James Udy tells me aboard his catamaran Velella. I'm on the water to get a taste of a nascent volunteer scientific expedition dubbed "Snorkel for Queensland's marine mammals". Operated by Earthwatch, it's one of a range of sustainable tourism holiday packages now offered to Qantas frequent flyers.

James Udy is chief scientist of not-for-profit NGO Healthy Waterways and is the principal investigator on the Earthwatch Moreton Bay research project. His wife, Nicola, also a scientist, is marine resources manager with Queensland's Parks and Wildlife service. Both are seasoned "salts" and have circumnavigated Australia aboard Velella. Also with us on board this morning is Earthwatch CEO Professor David McInnes.

Those joining the marine mammals expedition will spend a week in mid-August helping the scientists measure and determine the impact of floods in 2011 and 2013 on dugongs, dolphins and sea turtles living in the bay. It's the first investigation into the state of local seagrass communities since those disasters. Volunteers will learn methods of sampling sediment composition at about 20 sites in the bay, assist in mapping the extent and condition of seagrass and help with seine netting to capture small fish and other marine animals in order to establish a data base of the inhabitants of the seagrass meadows. The snorkelling and other work in the water will be followed by analysis in the science lab on Moreton Island.

Full article: <http://www.theaustralian.com.au/life/travel/moreton-bay-make-a-difference-as-a-marine-science-volunteer/story-e6frg8rf-1227454065824>

Boaters wanted for 2015 Great Bay Scallop Search (FL, USA)

23 July 2015, *Suncoast News*

Tampa Bay Watch is looking for volunteer boaters and divers to take part in the 2015 Great Bay Scallop Search taking place on Aug. 22. The goal of the 22-year-old event is to monitor and document the health of the local scallop population. Tampa Bay Watch will coordinate 45 volunteer boats with more than 180 people to snorkel and search for scallops.

At each site a weighted transect line 50 meters in length is laid along seagrass beds. Snorkelers count scallops along each side of the line creating a 100-square-meter survey area. Those interested in participating must register to volunteer at tampabaywatch.org. Registered scallop searchers will meet at 9 a.m. Aug. 22 at the boat ramp in Fort De Soto Park, 3500 Pinellas Bayway S., Tierra Verde.

Bay scallops disappeared from Tampa Bay in the early 1960s when the bay water was highly polluted from dredging operations and industrial and municipal wastes, Tampa Bay Watch said. Tampa Bay's water quality and seagrass beds have since improved to levels that now support the bay scallop population.

Full article: <http://suncoastnews.com/su/list/news-suncoast-pinellas/boaters-wanted-for-2015-great-bay-scallop-search-20150723/>

Volunteers needed for scallop census (FL, USA)

23 July 2015, by *Veronica Terefenko, Pensacola News Journal*

Florida Sea Grant, in partnership with Santa Rosa County, is offering two chances in August to search for scallops in the Santa Rosa Sound — for science. It's essentially a scallop census, if you will. "We don't know what the populations are, and we want to get some baseline data," said Chris Verlinde with the UF/IFAS Florida Sea Grant Extension in Santa Rosa County.

If you're a snorkeler or if you have a boat and want to contribute to a scientific scallop survey, the first Santa Rosa Sound Great Scallop Search is for you. Verlinde is looking for volunteers to participate in a one-day scallop count from 8 a.m. to noon Aug. 1 in Santa Rosa Sound. A second search is planned for Aug. 8 at Big Lagoon. Volunteers will work in teams with a boat captain and three to four people to conduct the surveys. Each boat captain will be assigned a grid (1 nautical mile squared) and take snorkelers to that area — which will be filled with seagrass, a favorite habitat of scallops. The team will put out a 50-meter weighted line with floats on each end. Snorkelers will search along the line using a 1-meter piece of PVC pipe to designate the search area. The Florida bay scallop typically lives in 4-10 feet of water.

Full article: <http://www.pnj.com/story/news/local/navarre/2015/07/19/scallop-harvest-navarre/30314687/>

Sea turtle nests at risk from climate change: Australian study (Australia)

23 July 2015, *AFP*

Rising sea levels from climate change are a threat to sea turtle populations as eggs laid on beaches become submerged in saltwater, Australian scientists said Thursday. Eggs buried by female turtles in usually "high and dry" areas on beaches could be inundated by rising sea levels and storm surges, a study by researchers from Australia's James Cook University said.

Published in the Royal Society Open Science journal, the report focused on nests at the world's largest green sea turtle nesting rookery at Raine Island on Australia's far northeast coast. Eggs submerged for one to three hours did not experience a "significant level" of mortality but those underwater for six hours saw a 40 percent rise in turtle embryo deaths. Pike said one way to protect the eggs was by using volunteers to move the nests further away from the shoreline.

The green turtle population on Raine Island, which is located on the northern tip of the Great Barrier Reef off Queensland's coast, is also under threat from habitat loss, boats and pollution. As many as 60,000 female green turtles swim from breeding grounds in countries such as Indonesia and Papua New Guinea to the island to lay their eggs during nesting season.

Full article: <http://news.yahoo.com/sea-turtle-nests-risk-climate-change-australian-study-071622563.html>

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UD's Griffiths dives into underwater research in the Caribbean (Cayman Islands)

21 July 2015, by *Adam Thomas, UD Daily*

University of Delaware undergraduate student Brian Griffiths is spending his time this summer conducting underwater research on seagrass in the Caribbean at the Central Caribbean Marine Institute (CCMI) in the Cayman Islands. Griffiths, a senior Honors Program student who is majoring in environmental engineering and plant science with a

minor in Spanish, is specifically focused on the discovery of an ecomorph of a species of seagrass, *Thalassia testudinum*.

"This species of seagrass is known to be able to change its morphology based on its environment, and I think this new form may be due to differing sediment characteristics," said Griffiths, who takes 8-inch cores of seagrass out of different lagoons on the island and dissects them to count meristems – the tissue of a plant containing undifferentiated cells – and the number of shoots.

Griffiths also takes and analyzes sediment cores from the locations to determine what they are made up of and their thickness. He is hoping to find a correlation between the occurrence of the strange seagrass and the properties of the sediment in which it is found.

Full article: <http://www.udel.edu/udaily/2016/jul/caribbean-seagrass-072115.html>

Sea turtle washes up in Victoria (Vic, Australia)

17 July 2015, *9news.com.au*

An exhausted green sea turtle has been found on a Victorian beach, thousands of kilometres from its tropical home. The 10-year-old, 7kg green sea turtle was found severely dehydrated, weak and bruised, in a rockpool off Mt Martha beach on the Mornington Peninsula last week. Steve Le Nepveu, a vet with the Mt Martha Veterinary Clinic, didn't expect to see a sea turtle this far south.

The turtle was transferred to a Frankston clinic with a reptile specialist, who put it on a drip and began treatment for "cold shock", before transferring it to Melbourne Aquarium for rehabilitation. The turtle is reportedly doing well and is expected to survive the ordeal.

Full article: <http://www.9news.com.au/national/2015/07/17/11/32/sea-turtle-washes-up-in-victoria>

Bali Police foil turtle smuggling attempt (Indonesia)

10 July 2015, *Jakarta Post*

The Bali Water Police said on Wednesday that they had successfully foiled an attempt to smuggle 37 green turtles to the island. The police also said they had arrested four suspects in the case. Bali Police chief Ronny Franky Sompie said they found the turtles on a traditional boat near Padanggalak beach in Denpasar, Bali. It was suspected that the boat intended to transport the turtles to Serangan Island, also in Bali.

During the interrogation, the four suspects reportedly confessed that they had brought the turtles from Madura, East Java. Turtle trading is a criminal offence in Indonesia. Violators can face a maximum of five years in prison and a fine of up to Rp 100 million (S\$10,135), according to the 1990 Conservation of Biodiversity and Ecosystems Law.

Full article: <http://www.thejakartapost.com/news/2015/07/09/bali-police-foil-turtle-smuggling-attempt.html>

New study warns of dangerous climate change risks to the Earth's oceans (USA)

03 July 2015, *The Guardian*

A new paper just published in *Science* summarizes the projected impacts of climate change on the world's oceans, and consequently on humans and our economy. The study concludes that global warming beyond the international limit of 2°C above pre-industrial temperatures would pose serious threats to marine ecosystems and their millions of human dependents.

The study considers human impacts on the world's oceans under two different scenarios. The first is a business-as-usual high fossil fuel consumption scenario (called RCP8.5 in the latest IPCC report), and the second is a scenario in which humans take immediate serious steps to curb fossil fuel consumption (called RCP2.6). Between now and 2100, RCP8.5 involves 6 times more global carbon pollution emitted by humans than RCP2.6. In the business-as-usual scenario, by 2100 the oceans would be about 30 cm higher, oxygen content nearly 2% lower, ocean acidity 70% higher, and sea surface temperatures about 2°C hotter than in RCP2.6.

The study also estimates some of the economic impacts of ocean changes in the business-as-usual scenario. For example, lost coastal habitats and sea level rise could combine to expose 0.2 to 4.6% of the global population to inundation annually at a cost of 0.3 to 9.3% to global GDP. In terms of tourism dollars, the difference between the two scenarios amounts to about \$10 billion per year, hitting Australia and the USA particularly hard.

Full article: <http://www.theguardian.com/environment/climate-consensus-97-per-cent/2015/jul/02/new-study-warns-of-dangerous-climate-change-risks-to-the-earths-oceans>

Turtle with GoPro strapped to its shell produces remarkable footage of the Great Barrier Reef from 'a turtle's eye view' (Australia)

03 July 2015, Daily Mail

Conservationists from the World Wildlife Fund Australia 'carefully' fitted a green sea turtle with the waterproof recording device to get a better idea of the sea creature's behaviour, after they are released into the wild. The remarkable footage gives viewers a glimpse of what life is like for the some 6,000 species that call the Great Barrier Reef home.

Propelling itself along the ocean floor, the turtle swims between schools of fish that quickly dart to safety amongst the coral. At one point, another turtle can be seen briefly swimming across the right hand side of the frame, while the footage ends with a small white and yellow fish inquisitively looking at the lens.

Full article: <http://www.dailymail.co.uk/news/article-3147317/Turtle-GoPro-strapped-shell-produces-remarkable-footage-Great-Barrier-Reef-turtle-s-eye-view.html>

Related articles:

<http://www.theguardian.com/environment/video/2015/jul/02/turtle-view-great-barrier-reef-video>

Commercial fishers object to stricter laws around reef (Australia)

03 July 2015, Fraser Coast Chronicle

Commercial fishermen from the Fraser Coast could suffer financially from the Australian Government's plans to keep the Great Barrier Reef from becoming endangered, according to an industry spokeswoman. "Some fishing impacts such as illegal fishing" were listed by the Government as one major challenge faced by the Great Barrier Reef in the long-term sustainability plan, assessed by UNESCO.

Part of this plan will be stricter commercial and recreational fishing laws on the Great Barrier Reef, including establishing new net-free zones, allocating up to \$10 million to buy back fishing licences, and enhancing compliance with zoning plans and other regulations through improved enforcement and technologies. Queensland Seafood Industry Association president Karen Collard said if these laws were put in place, they would have a significant impact on commercial fishers.

Full article: <http://www.frasercoastchronicle.com.au/news/fishers-object-to-laws/2694402/>

CONFERENCES

Coastal & Estuarine Research Federation 23rd Biennial Conference (CERF2015) (Portland, Oregon, USA, 8-12 November 2015)

Theme: Grand Challenges in Estuarine and Coastal Science: Securing our Future

The CERF 2015 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 scientific, 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 of the Grand Challenges in Coastal and Estuarine Science:

Managing and mitigating the risks of climate change – *shifts in precipitation and hydrologic patterns; wetland and species migrations; sea level rise; drought and water scarcity; severe storms, etc.*

Synergistic effects of ocean acidification with hypoxia, eutrophication or other conditions – *synthesis of information (e.g., from 2013 CERF) with new research results and methods for mitigating effects*

Polar estuaries and coasts – *physical oceanography, ice cover, biogeochemical interactions and impacts to coastal ecosystems*

Making data work – *advancement, management and integration of modern datasets (observing, genomics, bioinformatics) and capabilities to yield predictive models and tools*

Cities by the sea – *scientific exploration of dense and growing populations, economies and the built environment on coastal ecosystems; success stories from green infrastructure*

Estuaries under threat – *environmental change and variability associated with population growth, resource acquisition and scarcity, war/conflict, biodiversity loss and interactions in the next 50 years*

Multiple uses – *managing multiple, conflicting uses of coastal resources across the natural and sociological continuum; integration, quantification and valuation of ecosystem goods and services*

CERF 2015 sessions will include oral, poster and combined oral/poster formats. Those making submissions should be prepared to either act as a convener or chair of the session/workshop they are proposing, or identify an appropriate chair.

for more information, visit <http://www.erf.org/cerf2015>

The 12th International Seagrass Biology Workshop (ISBW12) (Wales, 17-23 October 2016)

Theme: Declining seagrasses in a changing world.

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 17-23 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.

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

GALLERY

Lakes Entrance, Gippsland Lakes (VIC, Australia): 11-14 July 2015 <http://www.seagrasswatch.org/gallery.html>

Low Isles, Port Douglas (QLD, Australia) :11 July 2015 <http://www.seagrasswatch.org/gallery.html>

Porthdinlleon, Llyn Peninsula (Wales, United Kingdom):06 July 2015 <http://www.seagrasswatch.org/gallery.html>

SEAGRASS-WATCH on YouTube

Seagrass: Pastures of the sea <http://www.youtube.com/watch?v=66Y5vgsuj20> or <http://www.seagrasswatch.org/seagrass.html>

Presentation on what seagrasses are and why they are important (over 38,158 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 Siti Yaakub.

FROM HQ

Past E-bulletins <http://www.seagrasswatch.org/publications.html#ebulletin>

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

Seagrass-Watch 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 HQ is housed by TropWATER (James Cook University) and supported by private donations.

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