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### **Geoscience Bulletin Board – 24 June 2019 – compiled by Elaine J. Hanford**

New seafloor seismic network detected low-frequency tremor in Japan Trench – regions of slow slip in proximity to shallow megathrusts

- <https://eos.org/editor-highlights/shallow-low-frequency-tremors-in-japan-trench>

Glacial retreat alters downstream fjord currents

- <https://eos.org/research-spotlights/arctic-glacial-retreat-alters-downstream-fjord-currents>

Monitoring volcanic craters with infrasound “music” to track rising lava lakes

- <https://eos.org/project-updates/monitoring-volcanic-craters-with-infrasound-music>

Tides have ebbed and flowed over geologic time

- <https://eos.org/features/the-tides-they-are-a-changing>

No direct causal connection between sea level change and strength AMOC

- <https://eos.org/research-spotlights/demystifying-sea-level-changes-along-the-new-england-coast>

Old spy satellite being used to monitor Himalayan glaciers

- <https://www.npr.org/2019/06/19/733739909/i-spy-via-spy-satellite-melting-himalayan-glaciers>

Book Reviews: Highlighting the legacy on the 50<sup>th</sup> anniversary of Apollo 11 – “Moonshot” & “One Giant Leap”

- <https://www.npr.org/2019/06/14/732588738/as-the-50th-anniversary-of-apollo-11-nears-new-books-highlight-the-missions-lega>

Possible explanation for why CO2 levels were lower during an ice age – a constrained model

- <https://arstechnica.com/science/2019/06/we-should-create-a-global-dna-threat-detection-network-to-fight-future-pathogens/>

Map of the M5.8 EQ in Sichuan Province on 17 June 2019

- <https://www.usgs.gov/news/updated-magnitude-58-earthquake-sichuan-province-china>

Paleontologists found two fossilized teeth of extinct cursorial hyenas above the Arctic Circle

- <http://www.sci-news.com/paleontology/arctic-hyenas-07303.html>

Heavy metals on Earth may be result of supernova explosion

- [http://www.spacedaily.com/reports/Earths\\_heavy\\_metals\\_result\\_of\\_supernova\\_explosion\\_University\\_of\\_Guelph\\_research\\_reveals\\_999.html](http://www.spacedaily.com/reports/Earths_heavy_metals_result_of_supernova_explosion_University_of_Guelph_research_reveals_999.html)

Jakobshavn Glacier continues as fastest-moving & fastest-thinning glacier on Greenland

- [http://www.spacedaily.com/reports/Jakobshavn\\_glacier\\_grows\\_for\\_third\\_straight\\_year\\_999.html](http://www.spacedaily.com/reports/Jakobshavn_glacier_grows_for_third_straight_year_999.html)

Planetary geology: Cassini reveals details on structure of complex rings of Saturn

- <https://www.sciencedaily.com/releases/2019/06/190617164658.htm>

Cambrian Explosion may have been driven by plate tectonics

- <https://www.sciencedaily.com/releases/2019/06/190619130315.htm>

Marine life around Antarctica returned to pre-extinction levels following K-PG mass extinction

- <https://www.sciencedaily.com/releases/2019/06/190619104642.htm>

Investigating carbon-absorbing processes in the ocean over time – oceanic carbon cycle

- <https://phys.org/news/2019-06-oceanographers-ocean-carbon-absorbing.html>

Explanation for formation of platinum deposits in the Bushveld Complex of South Africa

- <https://phys.org/news/2019-06-secret-platinum-deposits-revealed-field.html>

High-elevation mountain streams can retain sediment along river corridors for thousands of years

- <https://www.technology.org/2019/06/19/river-sediment-speaks-to-changing-climate/>
- Paper: <https://www.nature.com/articles/s41467-019-09864-w>

Geologist to inspect deep fissures in Manchikere that were first noticed in 2014

- <https://www.deccanherald.com/state/mangaluru/geologists-inspect-chasms-in-manchikere-741541.html>

“Swarmageddon” – 1,000 EQs have struck southern California over past 3 weeks

- <https://www.latimes.com/local/lanow/la-me-ln-earthquake-swarm-small-20190619-story.html>

## The Hiawatha Impact Crater

- <https://svs.gsfc.nasa.gov/4572>

Study predicts melting of Greenland Ice – sea level rise – will Greenland once again be green? Or is it just more “global warming” hyperbole?

- <https://phys.org/news/2019-06-iceless-greenland-future.html>
- <https://earther.gizmodo.com/study-warns-we-could-melt-the-entire-greenland-ice-shee-1835688660>

Simulating the extreme pressure and heat in the mantle of the Earth

- <https://www.sciencedaily.com/releases/2019/06/190619130313.htm>

Alberta, Canada, imposes new fracking restrictions near Brazeau Dam following EQs

- <https://www.resilience.org/stories/2019-06-19/alberta-imposes-new-fracking-restrictions-near-dam-after-quakes/>

Deep-sea fish in shallow waters of Japan not a predictor of an imminent earthquake

- [https://www.upi.com/Science\\_News/2019/06/19/5461560944002/?si=2](https://www.upi.com/Science_News/2019/06/19/5461560944002/?si=2)

Book Review: *Hot Carbon: Carbon-14 and a Revolution in Science*

- <https://www.nature.com/articles/d41586-019-01895-z>

Massive undersea freshwater aquifer mapped off US Northeast coast

- [https://www.eurekalert.org/pub\\_releases/2019-06/eiac-smh062119.php](https://www.eurekalert.org/pub_releases/2019-06/eiac-smh062119.php)

Explaining the possible eating habits of Ernietta - Ediacaran organism

- <https://www.livescience.com/65751-ancient-organisms-dinner-party.html>
- Paper: <https://advances.sciencemag.org/content/advances/5/6/eaav9396.full.pdf>

EQ swarm revealing link between magma source, sinking tectonic plates & newly formed volcanoes

- [http://www.spacedaily.com/reports/Earthquake\\_swarms\\_feed\\_molten\\_rock\\_to\\_newly\\_forming\\_volcanoes\\_999.html](http://www.spacedaily.com/reports/Earthquake_swarms_feed_molten_rock_to_newly_forming_volcanoes_999.html)

Microwear patterns on teeth may help distinguish first herbivorous dinosaurs

- [https://www.eurekalert.org/pub\\_releases/2019-06/jgum-dmp062119.php](https://www.eurekalert.org/pub_releases/2019-06/jgum-dmp062119.php)

Cumulative stresses caused by historic EQs may explain location of seismic events

- [https://www.eurekalert.org/pub\\_releases/2019-06/uop-sfp061919.php](https://www.eurekalert.org/pub_releases/2019-06/uop-sfp061919.php)

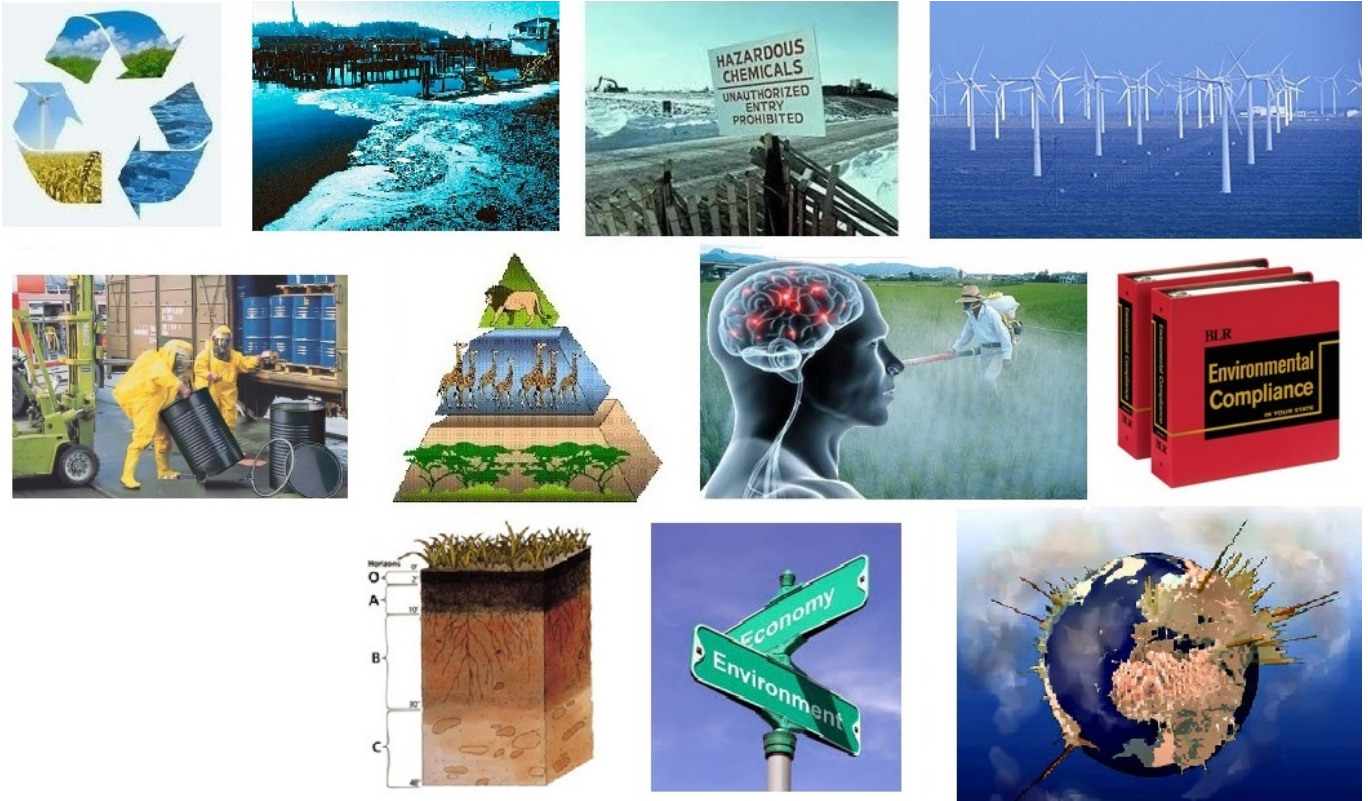
Perovskite solar cells being test in the lab to assess real-world performance

- [https://www.eurekalert.org/pub\\_releases/2019-06/epfd-psc062019.php](https://www.eurekalert.org/pub_releases/2019-06/epfd-psc062019.php)

Stromboli is active – humans forbidden to climb above 500m without a licensed guide

- <https://www.standard.co.uk/lifestyle/travel/stromboli-mt-etna-sicily-guide-a4173141.html>

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**Environmental Science Bulletin Board – 24 June 2019 – compiled by Elaine J. Hanford**

It is Pollinator Week – test your knowledge

- <https://www.usgs.gov/news/test-your-bee-and-other-pollinator-knowledge>

Nationwide survey found 37.7% of honeybee colonies died this past winter

- <https://phys.org/news/2019-06-survey-biggest-honeybee-winter-die-off.html>

7 places subsiding faster than elsewhere in the US primarily due to excessive groundwater withdrawal

- [https://start.att.net/news/read/category/news/article/business\\_insider-7\\_places\\_that\\_are\\_sinking\\_faster\\_than\\_anywhere\\_els-newscred2](https://start.att.net/news/read/category/news/article/business_insider-7_places_that_are_sinking_faster_than_anywhere_els-newscred2)

Groundwater pumping (over-pumping) has significantly reduced US stream flows

- <https://phys.org/news/2019-06-groundwater-significantly-stream.html>

CRS Report: The Front End of the Nuclear Fuel Cycle: Current Issues

- <https://crsreports.congress.gov/product/pdf/R/R45753>

Leading causes of rabies amongst humans in the US

- <http://www.cidrap.umn.edu/news-perspective/2019/06/cdc-bats-pose-biggest-rabies-threat-us>
- <https://www.usnews.com/news/healthiest-communities/articles/2019-06-12/officials-warn-of-rabies-risks-despite-drop-in-domestic-cases>

Rivers running dry – excessive human demand and water withdrawal (including groundwater) – UN data shows 2B people using water faster than naturally replenished – John Wesley Powell was wise

- <https://www.reuters.com/article/us-water-global-scarcity/running-dry-competing-for-water-on-a-thirsty-planet-idUSKCN1T41AT>
- <https://www.aspentimes.com/opinion/paul-andersen-mega-runoff-sends-wrong-message-on-water/>

\$453M Manitoba-Minnesota transmission line gets approval – impacts on First Nation of concern

- <https://www.cbc.ca/news/canada/manitoba/manitoba-minnesota-transmission-line-approved-1.5175422>

African Swine Fever crisis could disrupt global food supply & demand

- <https://www.forbes.com/sites/simonmoore/2019/06/15/how-african-swine-fever-matters-in-2019/#66ef28322046>
- <https://www.pigprogress.net/Health/Articles/2019/6/Rabobank-predicts-meat-shortages-due-to-ASF-in-China-439124E/>
- <http://www.futuredirections.org.au/publication/african-swine-fever-in-china-turmoil-ahead-for-food-prices-and-the-chinese-economy/>

US EPA Administrator signed Affordable Clean Energy Rule establishing emission guidelines – repeals Clean Power Plan

- <https://www.coastalreview.org/2019/06/epa-chief-signs-clean-power-plan-repeal/>

Improved atmospheric monitoring networks need to enforce Montreal Protocol – banned CFC emissions tracked to eastern China

- <https://eos.org/articles/banned-cfc-emissions-tracked-to-eastern-china>

Archeological evidence suggests humans rebuilding after natural disaster is not a new behavior

- <https://eos.org/articles/ceramics-trace-a-14th-century-indonesian-tsunami>

Will New York City legislators replace Rikers Island jail with a solar farm?

- [https://www.huffpost.com/entry/rikers-island-renewable-power\\_n\\_5cfaec5fe4b0aab91c0649c0](https://www.huffpost.com/entry/rikers-island-renewable-power_n_5cfaec5fe4b0aab91c0649c0)

Consumer demand for meat, soy, palm oil resulted in 60% of primates species facing extinction

- <https://www.treehugger.com/animals/high-income-countries-are-driving-extinction-worlds-primates.html>

Photo-essay: Nature is resilient once humans are taken out of the picture

- <https://www.treehugger.com/conservation/photos-nature-proving-resilience.html>

Almonds evolved from deadly to delicious – result of domestication by human agriculture

- <https://www.npr.org/sections/thesalt/2019/06/13/732160949/how-almonds-went-from-deadly-to-delicious>
- <http://www.sci-news.com/genetics/almond-genome-07293.html>

84% of fracking studies show the industry poses threat to air, water and human health

- <https://www.ehn.org/84-of-fracking-studies-show-the-industry-harms-human-health-2638917368.html>

Cities & counties that restrict or ban pesticides face battles in a prolonged war

- <https://www.ehn.org/the-uphill-battle-for-communities-that-ban-harmful-pesticides-2638803514.html>

Some growers of legal marijuana are going organic

- <https://www.ehn.org/as-legal-cannabis-spreads-growers-go-organic-and-beyond-2638712724.html>

Synthetic biology & hacking viruses sound great – until you wipe out humanity

- Part 3: <https://arstechnica.com/science/2019/06/ars-on-your-lunch-break-engineering-superbugs-accidentally-or-otherwise/>
- Part 2: <https://arstechnica.com/science/2019/06/ars-on-your-lunch-break-the-fate-we-might-be-making-for-ourselves/>
- Part 1: <https://arstechnica.com/ars-podcast/2019/06/ars-on-your-lunch-break-lets-talk-about-the-extinction-of-humanity/>

Will a global DNA threat-detection network be an effective approach to fight future pathogens?

- <https://arstechnica.com/science/2019/06/we-should-create-a-global-dna-threat-detection-network-to-fight-future-pathogens/>

Neolithic settlement experience overcrowding, infectious diseases, violence & environmental problems

- <http://www.sci-news.com/archaeology/catalhoyuk-urban-problems-07300.html>

NASA prediction is same old-same old: freshwater future is extremes of flood and drought

- [http://www.spacedaily.com/reports/Earths\\_freshwater\\_future\\_extremes\\_of\\_flood\\_and\\_drought\\_999.html](http://www.spacedaily.com/reports/Earths_freshwater_future_extremes_of_flood_and_drought_999.html)

Democratic Republic of Congo Army sent to out illegal miners

- [http://www.africadaily.net/reports/DR\\_Congos\\_army\\_moves\\_in\\_to\\_dislodge\\_illegal\\_miners\\_999.html](http://www.africadaily.net/reports/DR_Congos_army_moves_in_to_dislodge_illegal_miners_999.html)

*Lingulodinium polyedra* – plankton species uses bioluminescence to scare off predators

- [http://www.terradaily.com/reports/Plankton\\_species\\_uses\\_bioluminescence\\_to\\_scare\\_off\\_predators\\_999.html](http://www.terradaily.com/reports/Plankton_species_uses_bioluminescence_to_scare_off_predators_999.html)

Spending at least 2 hours a week in Nature promotes human health & well-being

- <https://www.sciencedaily.com/releases/2019/06/190613095227.htm>

Crop diversity could increase harvest stability and improve food supply

- <https://phys.org/news/2019-06-stabilizing-nations-food-production-crop.html>

Concentrations of organochlorine pesticides used in agriculture have increased about 10X in mussels in Sea of Japan, Sea of Okhotsk & Bearing Sea

- [https://www.eurekalert.org/pub\\_releases/2019-06/fefu-fsr061919.php](https://www.eurekalert.org/pub_releases/2019-06/fefu-fsr061919.php)

US military uses vast amounts of hydrocarbon fuels – more than most countries

- [https://www.eurekalert.org/pub\\_releases/2019-06/lu-umc061919.php](https://www.eurekalert.org/pub_releases/2019-06/lu-umc061919.php)

What we know about the deadly salmonella bacteria

- <https://www.technology.org/2019/06/19/understanding-the-deadly-salmonella-bacteria/>

Sexting linked to troubling behaviors in teens leading to increased health risks

- <https://www.cantechletter.com/2019/06/sexting-is-linked-to-a-number-of-troubling-behaviour-in-teens-u-of-calgary-study-finds/>

Tazewell County, Virginia, now only site being considered for \$2B hydroelectric pump station

- [https://www.bdtonline.com/news/tazewell-county-now-the-only-site-being-considered-for-billion/article\\_e43e7e76-91d4-11e9-9c67-8b2f7d97857c.html](https://www.bdtonline.com/news/tazewell-county-now-the-only-site-being-considered-for-billion/article_e43e7e76-91d4-11e9-9c67-8b2f7d97857c.html)

Following imposition by humans, now looking for “ghost creeks” in San Francisco Bay area

- <https://www.scientificamerican.com/article/ecological-detectives-hunt-for-san-franciscos-vanished-waterways/>

Perspective: How Nevada is fooled by the purveyors of solar energy

- <https://www.nevadasolarscam.com/>

WHO launched global campaign to curb spread of antibiotic resistant superbugs

- <https://medicalxpress.com/news/2019-06-invisible-pandemic-global-superbugs.html>
- <https://www.who.int/news-room/detail/18-06-2019-in-the-face-of-slow-progress-who-offers-a-new-tool-and-sets-a-target-to-accelerate-action-against-antimicrobial-resistance>
- AWaRe: <https://adoptaware.org/>

California may hit vaccination exemptions as measles outbreak continues

- <https://www.msn.com/en-us/news/us/california-looks-to-crack-down-on-vaccine-exemptions-amid-national-measles-outbreak/ar-AADa3xr>

Perspective: CRISPR babies: when will the world be ready? – Correct answer is never!

- <https://www.nature.com/articles/d41586-019-01906-z>

New York State poised to pass its version of Green New Deal – wait for it – disaster will follow

- <https://www.bloomberg.com/news/articles/2019-06-18/new-york-sets-own-green-new-deal-with-most-aggressive-bill>
- [https://news.vice.com/en\\_us/article/8xzb9g/new-york-state-is-about-to-pass-its-own-green-new-deal](https://news.vice.com/en_us/article/8xzb9g/new-york-state-is-about-to-pass-its-own-green-new-deal)

Energy Solutions Inc. complex refinery explosion & fire started in butane vat then expanded

- <https://news.yahoo.com/fire-burns-control-philadelphia-refinery-094206534.html>
- <https://www.barrons.com/articles/pbf-energy-shares-get-a-boost-from-big-philadelphia-refinery-fire-51561133780>

The myth of sustainability – structural engineers think they can still build with concrete...steel...

- <https://sourceable.net/structural-engineers-are-critical-for-green-building-success/>

Multi-million-dollar storm sewer project in Covington, Kentucky awarded federal grant

- <https://www.wcpo.com/news/local-news/kenton-county/covington/covington-storm-sewer-project-clears-last-financial-hurdle>

Six options being considered to replace old George Massey Tunnel as new Fraser River crossing

- <https://www.straight.com/news/1257526/six-options-new-george-massey-crossing-involve-keeping-old-tunnel>

Concrete to be delivered this summer for new 600 x 110-ft replacement lock at Chickamauga Dam

- <https://www.timesfreepress.com/news/business/aroundregion/story/2019/jun/20/cranes-land-river-projecttowering-over-riverc/497149/>

Archaea - marine extremophiles at basal level of world food chain

- <https://phys.org/news/2019-06-marine-extremophiles-basal-food-chain.html>

NASA helps detect potential algal blooms in lakes & reservoirs – new app developed by CyAN

- [https://www.eurekalert.org/pub\\_releases/2019-06/nsfc-nhw062119.php](https://www.eurekalert.org/pub_releases/2019-06/nsfc-nhw062119.php)

Extravagant courtship displays may wolf spiders easier target for birds & other predators

- [https://www.eurekalert.org/pub\\_releases/2019-06/uoc-sre062019.php](https://www.eurekalert.org/pub_releases/2019-06/uoc-sre062019.php)

Narwhals & belugas can interbreed to produce narwhal-beluga hybrid

- [https://www.eurekalert.org/pub\\_releases/2019-06/uoc-drc062019.php](https://www.eurekalert.org/pub_releases/2019-06/uoc-drc062019.php)

Do worms have butts? These bivalve shipworms do – they eat rocks and poop out sand

- <https://www.smithsonianmag.com/smart-news/new-worm-species-has-eyes-its-butt-and-another-eats-rock-and-poops-sand-180972461/>

How to plan for natural, anthropogenic and cyber disasters

- <https://www.computerweekly.com/feature/Disaster-planning-How-to-expect-the-unexpected>

2019 7<sup>th</sup> International Conference on Debris-Flow Hazards Mitigation - Proceedings address mechanics, monitoring, modeling & assessment (links to download)

- <https://blogs.agu.org/landslideblog/2019/06/21/debris-flow-1-2/>

Executives leave Nature Conservancy – women in conservation leadership positions

- <https://theconversation.com/women-are-rising-in-the-conservation-movement-but-still-face-metoo-challenges-117071>

“No evidence” that fracking can be done with risk to human health

- <https://www.ehn.org/fracking-harms-health-new-report--2638917368.html>
- Download Compendium report: <https://concernedhealthny.org/compendium/>



Comeback of the burning river – the iconic Cuyahoga River 50 years later (video)

- <https://www.ehn.org/cuyahoga-river-50th-anniversary-fire-2638730182.html>

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### Coastal Zone Management Bulletin Board – 24 June 2019 – compiled by Elaine J. Hanford

Portuguese Man-of-War are washing up on South Carolina beaches – public warnings issued

- [https://start.att.net/news/read/category/news/article/newsweek-highly\\_venomous\\_portuguese\\_manofwars\\_are\\_washing\\_a-rnewsweek](https://start.att.net/news/read/category/news/article/newsweek-highly_venomous_portuguese_manofwars_are_washing_a-rnewsweek)
- <https://www.islandpacket.com/news/local/news-columns-blogs/untamed-lowcountry/article231381833.html>
- <https://www.fitsnews.com/2019/06/12/jellyfish-invasion/>

Woman arrested for harassing/molesting marine sea turtle nest & eggs in Florida

- <https://www.yahoo.com/gma/miami-beach-woman-arrested-stomping-sea-turtle-nest-083550093--abc-news-topstories.html>

M6.8 earthquake in Japan triggers tsunami warning – then lifted

- <https://www.cnn.com/2019/06/18/asia/japan-tsunami-warning-intl/index.html>

Tackling plastic pollution that impacts communities & coral reefs in Cambodia

- <https://phys.org/news/2019-06-tackling-plastic-pollution-coral-reefs.html>

Perspective: California Coastal Commission fines Ritz-Carlton hotel \$1.6M for sins of omission – CCC known for “mafia-style corruption” & is expanding power

- <https://blog.independent.org/2019/06/18/california-coastal-commission-fines-ritz-carlton-1-6-million-for-sins-of-omission/>

Mississippi River Basin floods impact coastal seafood industry – Louisiana asks for disaster declaration

- [https://www.theadvocate.com/new\\_orleans/news/business/article\\_fee6f9f2-9147-11e9-a753-637c6647f14b.html](https://www.theadvocate.com/new_orleans/news/business/article_fee6f9f2-9147-11e9-a753-637c6647f14b.html)

USGS sensors monitor coastal storm surge flooding

- <https://www.earth.com/video/usgs-sensors-measure-coastal-storm-flooding/>

Hundreds of dead dolphins on Gulf Coast in 4 states – investigating cause of die-off

- <https://www.msn.com/en-us/news/us/hundreds-of-dead-dolphins-on-gulf-coast-leave-scientists-perplexed/ar-AAD700M>

Schiller Coastal Studies Center expansion will enhance opportunities for coastal study

- <https://www.bowdoin.edu/news/2019/06/growth-of-a-coastal-refuge.html>

Investigating risk of storm surge in three coastal communities in Sri Lanka

- [https://www.eurekalert.org/pub\\_releases/2019-06/uop-iss061819.php](https://www.eurekalert.org/pub_releases/2019-06/uop-iss061819.php)

Salt water intrusion along South Carolina coast as freshwater is withdrawn

- [https://www.postandcourier.com/news/salt-creeping-into-sc-coastal-groundwater-keeping-track-of-it/article\\_678e79d8-8c63-11e9-875e-5f954a1f7316.html](https://www.postandcourier.com/news/salt-creeping-into-sc-coastal-groundwater-keeping-track-of-it/article_678e79d8-8c63-11e9-875e-5f954a1f7316.html)

Coastal Bend man recovering from Vibrio infection – flesh-eating bacteria – selective killing bacteria

- <https://www.kiiitv.com/article/news/coastal-bend-man-recovering-from-flesh-eating-bacteria-vibrio/503-c1bd084a-d050-4729-97a4-2052e0c4d61d>
- <https://www.nature.com/articles/d41586-019-01852-w>

Coastal cleanup at Half Moon Bay

- <https://patch.com/california/halfmoonbay/coastal-cleanup-half-moon-bay-abundant-grace-renew-partnership>

Alligator sightings increasing along Georgia coast as result of land development & habitat loss

- <https://www.wtoc.com/2019/06/17/more-alligator-sightings-happening-coastal-empire-lowcountry/>

Wind can prevent seabirds from addressing their most important habitat

- [https://www.eurekalert.org/pub\\_releases/2019-06/su-rsw061919.php](https://www.eurekalert.org/pub_releases/2019-06/su-rsw061919.php)

Forum urges solutions to erosion, land subsidence & saltwater intrusion in Mekong Delta

- <https://en.vietnamplus.vn/forum-urges-solutions-to-erosion-saline-intrusion-in-mekong-delta/154631.vnp>

Seawalls would cost estimated \$416B by 2040 – are they really necessary?

- <https://www.theguardian.com/environment/2019/jun/20/us-rising-seas-defense-seawalls-cost-report>

- High Tide Tax: [http://climatecosts2040.org/files/ClimateCosts2040\\_Report-v4.pdf](http://climatecosts2040.org/files/ClimateCosts2040_Report-v4.pdf)