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**Geoscience Bulletin Board – 1 July 2019 – compiled by Elaine J. Hanford**

Only total solar eclipse in 2019 - The Great South American Eclipse

USGS celebrates Oceans Month – Exploration, EQs, Gas Hydrates, Coral Reefs, Hurricanes, Coasts...

EQs in mountain ranges trigger cascade of geological disturbances & hazards
- [https://eos.org/editors-vox/cascading-down-the-mountain](https://eos.org/editors-vox/cascading-down-the-mountain)

Probing Santorini volcano caldera with sound – seismic tomography

Geological Society calling for donations to University of Edinburgh’s campaign to preserve notebooks of Charles Lyell from sale abroad
- Fundraising website: [https://www.ed.ac.uk/giving/save-lyell-notebooks](https://www.ed.ac.uk/giving/save-lyell-notebooks)

Magma beneath Bárðarbunga Volcano in Iceland hit top speed – about 10 days to rise 24 km
Simulating water exchanges between the Red Sea and Gulf of Aden

Representation of clouds in climate models is as or more important than greenhouse gas emissions in predicting future melt of the Greenland ice sheet

Conceptual model explains new mechanism by which storm clouds self-aggregate into dense clusters

Stratospheric ozone depletion driving climate change in Southern Hemisphere

Major discrepancy between climate models and re-analyses of Tropical Hadley cell circulation

New study of oil spill resulting from submarine mudslide caused by H. Ivan in 2004 knocked over Tayler Energy Co. platform which dragged & broke bundle of well pipes – not all wells capped - leaking

Analyzing the colors of dinosaur eggs

Key factor in Himalayan earthquake rupture

Geological Society of America Bulletin on the 2014 Oso Landslide
  • https://www.geosociety.org/GSA/News/pr/2019/19-23.aspx
  • Link to paper: https://pubs.geoscienceworld.org/gsa/gsabulletin/article/571833/enhanced-landslide-mobility-by-basal-liquefaction

More than 50 previously uncharted subglacial lakes beneath Greenland Ice Sheet

Snow, glaciers & glacial lakes in the Himalayan Mountains

Some extinct crocodiles were vegetarians – herbivory – teeth reveal diet

*Pachystruthio dmanisensis* - Giant flightless bird stood 10-ft tall & weighed estimated 1,000 pounds
Vespersaurus paranaensis – desert-based carnivorous dinosaur related to T. rex & velociraptor


Characteristics of oceanic crust are shaped by age and spreading rate

Organometallic cyanide compounds found in CH chondrite meteorites

Fossil record provides evidence that hungry Dickinsonia animals were deliberately mobile
- http://www.terradaily.com/reports/New_study_proves_some_of_Earths_oldest_animals_could_take_trips_999.html

Under certain conditions, weak gamma-ray glows from thunderclouds prior to lightning bolts

Largest-ever simulation of the Deepwater Horizon oil spill – 600-ft long saltwater wave tank

Eruption of Raikoke Volcano after being dormant for 95 years seen from ISS

Geosphere examines 2017-2018 Thomas Fire debris flows Santa Barbara & Ventura Counties, California

US Army COE begins dredging mouth bar of San Jacinto River in Texas

Mud geyser begins erupting in residential backyard in Rotorua, New Zealand
Drug-resistant *Candida auris* has 30-60% fatality rate – spreading around the world

Probiotic bacteria reduce impact of white nose syndrome in bats by about 5-fold
- [https://www.sciencedaily.com/releases/2019/06/190626160337.htm](https://www.sciencedaily.com/releases/2019/06/190626160337.htm)

Argentinian bees are making their nest completely out of plastic – potential dangers

Court negates federal environmental exemption I for Cadiz pipeline to suck water from Mojave to sell
- [https://www.huffpost.com/entry/cadiz-pipelin-water-trump-administration-mjave-desert_n_5d0f1840e4b0a3941863a0b9](https://www.huffpost.com/entry/cadiz-pipelin-water-trump-administration-mjave-desert_n_5d0f1840e4b0a3941863a0b9)

South Carolina estimates $2B needed to repair drinking water systems

Federal disaster declaration adds 8 Mississippi Counties
- [https://mississippitoday.org/2019/06/21/president-approves-disaster-declaration-for-eight-mississippi-counties/](https://mississippitoday.org/2019/06/21/president-approves-disaster-declaration-for-eight-mississippi-counties/)
House adopted series of amendments to block offshore drilling along most US shores for fiscal 2020

Mid-20th century tragedies prompted need for Clean Air Act of 1970
  • https://eos.org/articles/podcast-night-of-the-killer-smog

These microbes live in "polyextreme" hot springs
  • https://eos.org/articles/microbes-spotted-in-polyextreme-hot-springs

WWII bombs still pose a risk – one explodes & creates massive crater in field in Germany
  • https://www.popularmechanics.com/military/weapons/a28170164/crater-germany-world-war-ii/

Tropical soil disturbance due to agriculture & deforestation could be source of CO2 emissions

Male to female birth ratio changes in the US during periods of stress
  • Paper: https://www.nature.com/articles/s41598-019-45316-7

Could some MRSA infections be treated effectively with widely-available antibiotics?

Anticholinergic drugs linked to dementia – nearly 50% increased odds of dementia

Mississippi River flood damage in towns estimated at $2B
  • https://www.apnews.com/d14581e6fdb34b2483bc305763ae304b

USDA invests $192M in 71 rural water & wastewater infrastructure projects in 29 states

Lightning strike sparked massive wildfire in the Florida Everglades

Book Review: The Patch by master essayist John McPhee
  • https://thefederalist.com/2019/06/28/twilight-master-essayist-john-mcphee-beautiful/

Clouds triggered by airplane contrails may triple by 2050

Need to rethink environmental regulations in Africa – conflicts over resource extraction
Human activities contribute up to 80% of iron falling on the ocean surface

Perspective: Debate over e-cigarettes rages on – solution or major health risks? Banned in San Francisco

Ruling favors 430-mile Permian Highway Pipeline across Texas Hill Country from Katy to West Texas

Captive born monarch butterflies have difficulty migrating south – population continues to decline

Interim repairs ordered for cracked spillway of Magalia Dam in California

Chennai, India – a city of 10M - is running out of water – “toxic mix of bad governance & climate” – not to mention the demands of 10M people in urban setting

Movie Review: Sides of a Horn – short new film on rhino poaching

Niassa National Reserve in Mozambique has now had entire year without elephant poaching

Gut bacteria consume Parkinson’s drug (Levodopa) and can produce harmful side effects

Toxic fumes sicken people and caused closure of schools in Malaysia – from chemical factory?

Why humans are “the fat primate” – turning “bad” fat into “good” fat
Global system needed to detect and halt spread of emerging crop diseases

Biologists call for reining-in free-roaming horses in the Western states to reduce impacts on soil & water

If the study costs $10M – what will potential fixes to reduce flooding of parts of Highway 37 in Marin cost?
  • https://www.marinij.com/2019/06/27/state-approves-10m-for-highway-37-flooding-fix/

Michigan Attorney General sues to shut down twin 66-year old oil pipelines in Great Lakes
  • https://www.apnews.com/ed9e739769664f38bab4c14197307886

$54M concrete water-holding tank being installed at Lynchburg, Virginia, water treatment plant

US Army COE anticipates closing Bonnet Carré Spillway in July
  • https://apnews.com/09d14a8d87f4358863e4d83e82e2765

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House adopted series of amendments to block offshore drilling along most US shores for fiscal 2020


New metric to measure intensity of human impacts on coastal ecosystems


Humans finding method to extract yet more water from coastal aquifer in Peru to meet demands


North Carolina Land Trust purchases & preserves 5,400 acres


Perspective: Marine debris (i.e., human wastes) impedes coastal tourism & economic development


North Carolina law makes changes to shellfish leasing program


Raising concerns about mental health threats of changes in sea level & living on the coast


Italian coast once known for smuggling & illegal immigration is now a protected marine reserve


Creating oyster sanctuary in the Thames Estuary in England


Snohomish River estuary project confirms salmon recovery is a long process


South Tongue Point provides opportunity for restoration & environmental education


Perspective: Oakland Estuary is not a toilet

- [https://alamedasun.com/letters/11270](https://alamedasun.com/letters/11270)

Tāmaki Estuary in Auckland, New Zealand, becoming increasingly inhospitable to shorebirds

- [https://www.newsroom.co.nz/2019/06/18/622279/tamaki-estuarys-sleepless-shorebirds](https://www.newsroom.co.nz/2019/06/18/622279/tamaki-estuarys-sleepless-shorebirds)
Horse tours around Tampa Bay pollute the water with horse poop

Fish kill in Kamini rivulet in Ermal Kalsank area adjacent to estuary

Oregon Legislature repeals 25-year old law prohibiting construction of key structures in tsunami zones

North Carolina to construct 1,000 ft long steel wall to protect north end of Ocracoke Island
  •  https://pilotonline.com/news/local/transportation/article_037a8e0a-937f-11e9-8cd2-e3513cf2adfd.html

Mexico spent $17M to removed sargassum seaweed from Caribbean beaches – ongoing problem

Sea level change at rate of 1.3 mm/year for last 4-5 decades in India mostly due to erosion & subsidence