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Geoscience Bulletin Board – 15 March 2021 – compiled by Elaine J. Hanford

Meteor created fireball over Vermont from near Burlington to the Canadian Border

How old is the Yangtze River? Evidence from detrital muscovite and K-feldspar
- [https://eos.org/research-spotlights/researchers-home-in-on-the-age-of-the-yangtze-river](https://eos.org/research-spotlights/researchers-home-in-on-the-age-of-the-yangtze-river)

Seismic data from Mid-Atlantic Ridge suggests upwelling may contribute to divergent behavior

Global surface temperatures since the end of the Little Ice Age – as expected it is somewhat warmer

As Earth cools over geologic time may lead to increased water capacity of the mantle
- [https://eos.org/editor-highlights/watering-down-the-mantle](https://eos.org/editor-highlights/watering-down-the-mantle)

Hydrologic modeling & discharge estimates from Landsat result in assessment for Missouri River Basin

Geologists share concerns with drilling for oil in Big Cypress
- [https://www.nationalparkstraveler.org/2021/03/geologists-share-their-concerns-drilling-oil-big-cypress](https://www.nationalparkstraveler.org/2021/03/geologists-share-their-concerns-drilling-oil-big-cypress)

New swimming robot works in the Mariana Trench
• https://arstechnica.com/science/2021/03/researchers-build-a-swimming-robot-that-works-in-the-mariana-trench/

Using geomagnetic data to link Antarctica to other continents
• https://www.spacedaily.com/reports/Antarcticas_magnetic_link_to_ancient_neighbours_999.html
• Paper: https://www.nature.com/articles/s41598-021-84834-1

Crop-CASMA maps soil moisture
• Interactive Crop-CASMA: https://cloud.csiss.gmu.edu/Crop-CASMA/

Images from Perseverance Rover on Mars
• https://www.youtube.com/watch?v=32liXI8NL0

San Cristobal volcano in Nicaragua spewed cloud of volcanic ash
• https://www.spacedaily.com/reports/Nicaragua_volcano_blankets_communities_in_ash_999.html

Duh! Bite of juvenile T. rex was less ferocious than an adult
• https://www.spacedaily.com/reports/Bite_of_juvenile_T_rex_was_less_ferocious_than_an_adult_tyrannosaurus_999.html

Copernicus Sentinel-2 monitors Galapagos Islands chain of volcanoes
• https://www.spacedaily.com/reports/ESA_Eyes_On_Earth_Galapagos_Islands_999.html

Fossil plants preserved within 300 myo volcanic ash in China “Pompeii of prehistoric plants”
• https://www.terradaily.com/reports/Pompeii_of_prehistoric_plants_unlocks_evolutionary_secret_study_999.html
• Paper: https://www.pnas.org/content/118/11/e2013442118

Predicting shallow, dangerous landslides – size matters
• https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=302226&org=GEO&from=news

First non-avian dinosaur found atop egg clutch in China

New method for locating mild tremors near deep-sea faults – Nankai subduction zone, Japan
• https://www.sciencedaily.com/releases/2021/03/210305123805.htm

TROPOMI observations being used to discern emissions from natural geological methane sources
Russian mining company Norilsk Nickel pays nearly $2B fine for giant fuel spill in the Arctic

Mantle of Earth may contain proton rivers of superionic phases of iron oxide-hydroxide

10-year retrospective: 2011 M9.0 Earthquake & Tsunami
- Chronology: [https://mainichi.jp/english/articles/20210311/p2g/00m/0na/029000c](https://mainichi.jp/english/articles/20210311/p2g/00m/0na/029000c)

Characteristics of Ediacaran organisms

Oldest meteorite on Earth found in Sahara Desert dates from 4.6 billion years ago
- [https://www.zmescience.com/science/geology/the-oldest-meteorite-ever-found-is-older-than-the-earth-itself/](https://www.zmescience.com/science/geology/the-oldest-meteorite-ever-found-is-older-than-the-earth-itself/)

Searching for more glaciers

Earthquakes of 365 AD – the making of the legend of Atlantis based on tangible proof

Geology sheds light on archaeological artifacts – cogged stones in Orange County, California

Celebrating Joseph Prestwich & John “Flint” Evans – weekend geologists
- [https://blog.oup.com/2021/03/turning-geology-into-archaeology-how-two-businessmen-changed-the-face-of-time/](https://blog.oup.com/2021/03/turning-geology-into-archaeology-how-two-businessmen-changed-the-face-of-time/)

Landslide atlas of Kerala, India
- [https://www.eurekalert.org/pub_releases/2021-03/mtu-gec030921.php](https://www.eurekalert.org/pub_releases/2021-03/mtu-gec030921.php)

Origin of the 62-mile wide Moniitsoq structure – not an impact crater?
- [https://www.sciencealert.com/a-giant-meteorite-impact-crater-from-3-billion-years-ago-isn-t-what-we-thought](https://www.sciencealert.com/a-giant-meteorite-impact-crater-from-3-billion-years-ago-isn-t-what-we-thought)

Texas Earthquake Network (TexNet) adds to Advanced National Seismic System
- [https://news.utexas.edu/2021/03/08/texas-earthquake-system-strengthens-national-network/](https://news.utexas.edu/2021/03/08/texas-earthquake-system-strengthens-national-network/)
• TexNet 2020 report:  

Tracking major earthquakes in the Ring of Fire  
•  https://www.uibk.ac.at/newsroom/tracking-giant-earthquakes-in-the-ring-of-fire.html.en

Apollo rocks revealed history of the Earth and the Moon  
•  https://www.universetoday.com/150448/apollo-rocks-reveal-the-moons-early-history/  
•  https://www.brown.edu/news/2021-02-24/sulfur

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Environmental Science Bulletin Board – 15 March 2021 – compiled by Elaine J. Hanford

Diphtheria is returning as major global disease threat – evolving antimicrobial resistance  
•  https://wwwnc.cdc.gov/eid/article/27/3/20-3205_article  
•  https://www.eurekalert.org/pub_releases/2021-03/uoc-drb030521.php  
•  Outbreak:  http://outbreaknewstoday.com/diphtheria-in-hispaniola-six-deaths-to-date-59848/

Removal of 4 Snake River dams remains a political issue  

Retrospective on Thomas Midgley Jr who solved some science problems but created greater ones – put tetraethyl lead in gasoline (he got lead poisoning) & created CFCs that destroyed the ozone layer  
•  https://www.ehn.org/thomas-midgley-jr-lead-poisoning-2650919604/harmful-invention-2-freon

Hard to believe: UN finds “no adverse health effects” from 2011 Fukushima disaster – But 19,000 died  
•  https://www.terradaily.com/reports/UN_finds_no_adverse_health_effects_from_Fukushima_disaster_999.html
10-year retrospective: 2011 M9.0 Earthquake & Tsunami
- Chronology: https://mainichi.jp/english/articles/20210311/p2g/00m/0na/029000c

Comprehensive planning & leadership needed to increase flood resiliency in North Carolina

San Diego ready to begin construction of $5B Pure Water sewage recycling system

CRS Report: The Safe Drinking Water Act & Regulating Contaminants under SDWA

Protecting neighborhood from “eminent domain” claims for proposed pipeline in Memphis, Tennessee

Frozen wind turbines – can they keep spinning through the winter?

Spain to cull (i.e., kill) 900 cattle that were stranded at sea

Two-thirds of original tropical rainforest destroyed or degraded across the world – sold on Amazon
- Info-graphic: https://tmsnrt.rs/30jfbd7
- Rainforest Foundation Norway Reports: https://www.regnskog.no/en/publications/reports

Fish stocks in rivers in Cambodia are dwindling

Two giraffes die in barn fire at Roer’s Zoofari in Virginia – “Waffles” and mate
Perspective: Valuing wetlands using balanced conservation strategies
- https://www.nature.com/articles/s41561-021-00713-4

US Interior Dept outlines next steps in fossil fuels program review

Flood waters overflowed Kaupakalua Dam and forced evacuations in Hawaii
- https://apnews.com/article/evacuations-hawaii-e99b078c5230ec14a240cad1efe202b7

Smugglers using color-coded wrist bans to sort out illegals – payment status or affiliation

“forthcoming” Interim report on suspension of oil & gas leases

Endangered Amur tiger at Cheyenne Mountain Zoo in Colorado following artificial insemination procedure

Western States respond differently to demand for freshwater exceeding the supply in the Colorado River

Arizona closes Highway Checkpoints to respond to crisis of surging illegal immigration from Mexico

California could learn some lessons about wildfires from Native Americans

Making progress on flood control projects in Louisiana

Converting Red Rock Dam in Pella, Iowa, from flood control to a hydroelectric dam

Technological hazard: understanding methods used by cybercriminals for cyberattacks

If you have bird feeders, do not forget to clean them
- https://www.coastalreview.org/2021/03/clean-your-birdfeeder-wildlife-biologists/

Sea slugs grow new bodies after decapitation
Update on the Great Green Wall in Sub-Saharan Africa
• https://eos.org/articles/new-funding-fortifies-africas-great-green-wall

Have you tried refillable Dove deodorant? Company slashing virgin plastic use
• https://www.treehugger.com/dove-introduces-refillable-deodorant-5094440

Growing marijuana creates enormous amounts of carbon emissions
• https://arstechnica.com/science/2021/03/as-a-crop-cannabis-has-enormous-carbon-emissions/

Invasive Zebra mussels found in pet stores in 21 states from Alaska to Florida

Venom-extraction & exotic pet trade may hasten extinction of scorpions
• https://www.sciencedaily.com/releases/2021/03/210310122605.htm

Bioaccumulation of phased-out fire retardant chemical slowly declining in Bald Eagles
• Paper: https://setac.onlinelibrary.wiley.com/doi/10.1002/etc.5006

CRS Report: Central Valley Project in California
• https://crsreports.congress.gov/product/pdf/R/R45342

Perspective: Reduced role of nuclear technology in global energy supply
• https://www.nature.com/articles/d41586-021-00615-w

Perspective: valuing ecosystems may help conserve the planet
• https://www.nature.com/articles/d41586-021-00616-9

Population of endangered Mexican wolves is increasing in New Mexico & that is a good thing

Sierra Club joins others in suing Kern County to block new O&G wells

Curved barriers help protect pedestrians from road pollution
• https://www.theengineer.co.uk/curved-barriers-traffic-pollution/

Massive carbon filters “contain” contaminated soil in Detroit River – PAHs & heavy metals
• http://greatlakesecho.org/2021/03/09/massive-filter-keeps-detroit-river-contaminants-in-place/
CORONAVIRUS

Coronavirus COVID-19 statistics by country (click on USA to get State statistics)

- https://www.worldometers.info/coronavirus/
- https://time.com/5800901/coronavirus-map/
- interactive maps: https://geodacenter.github.io/covid/map.html

Zombie crisis of the unsick but locked down


Immune interference & emerging strains


2018 diplomats warned of risky experiments in Wuhan Lab – no one listened


Governor talking about numbers that make California look good – risk of recall is good motivation


CDC reports mask mandates associated with 0.5% to less than 2% reduction in cases/deaths – in other words masks are not effective since that is within the margin of error

- https://www.cdc.gov/mmwr/volumes/70/wr/mm7010e3.htm?s_cid=mm7010e3_w

Deaths related to vaccine? Despite assumed/presumed/confirmed dying with/from virus CDC says no deaths attributed to vaccines


Long-term economic impacts of the shutdown


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US Dept Interior completes Environmental Review of Vineyard 1 Wind offshore project
  • https://www.doi.gov/pressreleases/interior-completes-environmental-review-offshore-wind-project

More damage found at Pensacola Bay Bridge – more work & delayed re-opening
  • http://www.northescambia.com/2021/03/pensacola-bay-bridge-probably-wont-reopen-in-march-more-damage-found

$50B Mid-Barataria Sediment Diversion proposal receives positive report from US Army COE

Virginia Beach to restore 200+ acres of Back Bay marshes to reduce wind-driven flooding

Environmental concerns raised that new artificial island will alter currents in Copenhagen Harbor

Human-induced land subsidence in coastal areas is the big culprit – not sea level rise

The potential for recovery of barrier islands and coastal dunes after storms

Seeking new route for railroad tunnel as San Diego County coastal bluffs erode
The potential for recovery of barrier islands and coastal dunes after storms

Longest & deepest underwater power cable to connect electrical grids of Cyprus, Greece & Israel

Coastal Growers LLC breaks ground for new peanut shelling facility in southern Alabama
- https://www.atmoreadvance.com/2021/03/10/coastal-growers-llc-holds-groundbreaking-for-new-facility/

Examining coastal and offshore faults in southern California

Mapping coastal North Carolina as part of Risk Assessment & Resilience Plan
- https://www.publicnewsservice.org/2021-03-10/environmental-justice/underserved-underwater-mapping-a-future-for-coastal-nc/a73474-1

New use for abandoned offshore oil & gas platforms

Offshore gas “mega hub” developed in Equatorial Guinea to generate future revenue

Encountering substantial pressure increases during offshore drilling causes halt before reaching Neocomian targets in Suriname – will redesign wellbore & drilling program

Israel & Cyrus reaching settlement of offshore gas field dispute

GAO report on Coastal Barrier Resources Act

Chaotic approach to chronic coast erosion in southern California
- https://patch.com/california/lagunaniguel-danapoint/hope-7-miles-eroding-socal-coast

Urging Rhode Island Supreme Court to reject settlement that allows expansion of Block Island Marina
Ad hoc adaptations in coastal communities
  • https://hazards.colorado.edu/mitigation-matters-report/the-art-of-getting-by-1

Collapse of Northern California kelp forests may be irreversible
  • https://www.terradaily.com/reports/The_collapse_of_Northern_California_kelp_forests_will_be_hard_to_reverse_999.html
  • Paper: https://www.nature.com/articles/s42003-021-01827-6

28-year record of water quality in Buzzards Bay
  • Paper: https://www.nature.com/articles/s41597-021-00856-4

Mekong River delta eroding away – dams and sand mining have significant impact
  • https://chinadialogue.net/en/energy/as-the-mekong-delta-washes-away-homes-and-highways-are-being-lost/