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Geoscience Bulletin Board – 22 March 2021 – compiled by Elaine J. Hanford

Pacific Ocean cooled faster than continent of Africa due to plate tectonics over past 400 million years
  • https://www.yahoo.com/lifestyle/one-side-earth-rapidly-getting-141800651.html

World Meteorological Organization considering redefining length of hurricane season

NWS releases names of storms for Hurricane Season 2021
  • https://www.silive.com/news/2021/03/hurricane-season-2021-what-are-the-names-of-this-years-storms.html

Measuring geothermal heat flux in Antarctica
  • https://eos.org/editor-highlights/taking-the-temperature-of-antarcticas-crust

Dense seismic network in operation in seismically active Himalayan regions

CRUTEMS - New land surface air temperature global data set updated to 2019
  • https://eos.org/editor-highlights/new-land-surface-air-temperature-global-dataset

Seafloor sediment proxy yields high-resolution record of early Paleozoic climate
  • https://eos.org/articles/geologists-have-a-new-tool-for-reconstructing-the-ancient-climate
Newest version of Community Earth System Model
  • https://eos.org/opinions/building-a-better-model-to-view-earths-interacting-processes

Sea cucumbers provide significant excremental contribution to reef habitats with bioturbation rates

Diatoms evolved to substitute zinc for cadmium and vice-versa
  • https://eos.org/research-spotlights/how-did-diatoms-evolve-to-swap-zinc-for-the-toxic-metal-cadmium

Angstrom-scale view of physical and chemical weathering processes
  • https://eos.org/research-spotlights/the-first-angstrom-scale-view-of-weathering

Ground radiant temperatures increase prior to volcanic eruptions
  • https://eos.org/articles/volcanic-lands-warm-before-eruptions

Visualizing gold exploration potential in the Pacific Ring of Fire & in Québec, Canada
  • https://www.visualcapitalist.com/gold-exploration-quebec-cartier-benoist/

Visualizing the drainage basins of the 30 longest rivers
  • https://www.visualcapitalist.com/mapped-the-drainage-basins-of-the-worlds-longest-rivers/

Massive dust storm hits across China
  • https://earthobservatory.nasa.gov/images/148052/early-season-dust-storm-hits-beijing
  • https://www.npr.org/2021/03/15/977397941/desert-dust-sweeps-into-beijing-causing-chinas-worst-sandstorm-in-10-years

Large fast-moving asteroid 2001 FO32 will pass by Earth on the Spring Equinox
  • https://www.huffpost.com/entry/golden-gate-bridge-asteroid-buzzing-earth_n_604d752bc5b672fce4ed337a

NASA using Navajo language to name features & rocks on Mars
  • https://www.huffpost.com/entry/nasa-mars-navajo-names_n_604be458c5b672fce4eca2d8

Understanding reversals of the magnetic field of Earth
  • https://www.spacedaily.com/reports/When_North_was_South_and_South_was_North_999.html

Pressure accumulated over a decade triggered eruption of Kilauea
  • Paper: https://www.nature.com/articles/s41467-020-19190-1

Arctic freshwater affecting marine environments & currents in Atlantic Ocean
  • Paper: https://www.nature.com/articles/s41467-021-21470-3

Camp Century ice core from Greenland reveals million-year-old plant fossils
Late Pleistocene glaciers & enigmatic stone stripes in the highlands of Ethiopia
- https://www.sciencedaily.com/releases/2021/03/210312155451.htm
- Paper: https://advances.sciencemag.org/content/7/11/eabb6826

New insight into formation of copper deposits – crystal mush kikes at Yerington, Nevada
- Paper: https://www.nature.com/articles/s43247-021-00128-4

Imagining into ferro-volcanism
- Paper: https://www.nature.com/articles/s41467-021-21582-w

Transform faults play active role in shaping ocean floor – extension & crustal accretion

Responses of biocrusts in arid regions to warming & drought

Quantifying movement of water from rivers to aquifers across the country – gradient driven

Latest cycle of geothermal exploration in Nevada – this time using UAV magnetometry
- https://www.mining.com/university-of-nevada-ramps-up-exploration-for-geothermal-systems/

Human-caused most-powerful non-nuclear explosion of ammonium nitrate in Beirut created atmospheric wave that led to electron disturbances in ionosphere
- Paper: https://www.nature.com/articles/s41598-021-82355-5

Ocean trawling destroys seafloor & releases massive amounts of emissions from marine sediments

Deep-sea buoys trigger tsunami warnings

About 125,000 years ago during last interglacial Greenland was green and lush
- https://www.sciencedaily.com/releases/2021/03/210317141654.htm

Geologist calls for exploration of “elephant country” in South Africa

Still debating “the golden spike” that defines beginning of the Anthropocene – maybe they should recognize it began at the beginning of the Holocene
Meandering rivers create point bars

- https://www.eurekalert.org/pub_releases/2021-03/uota-mrc031621.php

“river of rocks” influencing tectonic activity in the Caribbean – low-viscosity asthenosphere flow

- Paper: https://www.nature.com/articles/s41467-021-21723-1

Armored mud balls in Franklin County, Massachusetts


Book Review: “Notes from Deep Time”

- https://www.nature.com/articles/d41586-021-00660-5

The origins of the largest aquamarine crystal


Traces of primordial magma found in rocks in Greenland

- https://www.iflscience.com/environment/traces-of-the-primordial-magma-ocean-found-for-the-first-time/
- Paper: https://advances.sciencemag.org/content/7/11/eabc7394

PEACH is 5-year project to monitor the Gulf Stream off Cape Hatteras – 10-minute video

- https://vimeo.com/279906819

Benthic habitats & communities of islands & seamounts of Nazca Desventuradas Marine Park

- Paper: https://www.nature.com/articles/s41598-021-85516-8

Stratus Ocean Reference Station buoy launched in tropical Pacific


After 6,000 years of dormancy, Mount Fagradalsfjall erupts in Iceland


Exploring the plumbing of Steamboat Geyser

- https://www.sciencedaily.com/releases/2021/03/210315160708.htm

Even before the Brunt Ice Shelf calved, the ocean floor was teeming with life


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Environmental Science Bulletin Board – 22 March 2021 – compiled by Elaine J. Hanford

World Water Day – 22 March 2021 – images of polluted waters around the world

CRISPR - regulation, public trust and question of ethics regarding gene editing – “model embryo”
- [https://www.nature.com/articles/d41586-021-00672-1](https://www.nature.com/articles/d41586-021-00672-1)

US Dept of Interior announces details for public forum on federal O&G program

Webinar: Quantifying Ecosystem Functions to Facilitate Wetland Monitoring & Assessment

No such thing as a “natural disaster” – we’re doing it to ourselves
- [https://www.unrr.org/news/sendai-framework-6th-anniversary-time-recognize-there-no-such-thing-natural-disaster-were](https://www.unrr.org/news/sendai-framework-6th-anniversary-time-recognize-there-no-such-thing-natural-disaster-were)

Permanent daylight savings time would reduce human health risks – Sunshine Protection Act of 2021

K2 Gold mining company wants to transform 22,500 acres of public lands into open pit cyanide heap leach mine between dusty Owens Valley floor and Death Valley National Monument
Influx of firefly tourists is harming the species along with habitat loss, light pollution & insecticides

Intense sand storm turns skies orange in Beijing, China

Outflow from Glen Canyon Dam will drop to 4,000 cfs – about one-third average release rate

15 countries with highest per capita carbon emissions – if that matters

Gas prices at the pump are significantly increasing

Strong winds are churning up deep water in the Great Lakes – impacting water quality

Drinking water crisis in Jackson, Mississippi

Soil erosion is a problem at solar farms

Bad policies proposed in the CLEAN Future Act

You are what you eat – but what fish are you really eating?
- https://sustainablefisheries-uw.org/sustainability-mislabeled-fish-usa/

Tourists get upset when lion kills wild dog – guess we better go kill all the lions for being territorial
Book Review: “Under a White Sky” – can engineers fix the environmental problems they created?
  • https://blogs.sciencemag.org/books/2021/03/15/under-a-white-sky/

FEMA grants for flood-prone areas not being used because of the financial strings that are attached (cost-sharing)
  • https://www.theadvocate.com/baton_rouge/news/environment/article_1182c514-7ac1-11eb-a026-cff7d68cf2af.html

US Forest Service to receive $285M for maintenance & recreation infrastructure on national forests & grasslands under Great American Outdoors Act
  • https://www.aashtojournal.org/2021/03/12/usda-investing-285m-in-transportation-infrastructure/

UN report “Making Peace with Nature” urges valuing the fundamental “natural capital”
  • UN Report: https://www.unep.org/resources/making-peace-nature

$98M solar farm proposed for Louisiana

Wanting clarification of “policy” on conservation goals – especially in Western states

US Army COE says Detroit Dam in Oregon could fail during seismic event
  • https://apnews.com/article/oregon-dam-could-fail-in-large-earthquake-640a51f1b5050ec00bd6a09d8f6632b5

China to crackdown on sand mining in Yangtze River

Attempting to battle Chronic Wasting Disease in white-tailed deer in Ohio

American High-Speed Rail Act proposes $205B introduced into Congress – despite other projects that have not yet succeeded

New River Gorge in West Virginia is most recently designated National Park – but geology is ancient
  • National Park Service info: https://www.nps.gov/neri/index.htm

Visualizing “green energy” investments – lots of hype but still only 11% of energy output
  • https://www.visualcapitalist.com/capturing-the-renewable-energy-shift/
  • US EIA: https://www.eia.gov/energyexplained/us-energy-facts/
Exploring Ivvavik National Park in Arctic Canada
• https://www.nationalparkstraveler.org/2021/03/exploring-canadas-most-accessible-arctic-national-park

Two excerpts from “The Monsanto Papers” which chronicles life of exposure to Roundup herbicides
• Part 1: https://www.ehn.org/monsanto-papers-2650517822.html

Previously unknown bacterial species found on ISS
• http://www.sci-news.com/biology/methylobacterium-international-space-station-09458.html

Air pollution levels in 2020 exceeded WHO recommendations for small particulate matter
• https://www.terradaily.com/reports/Lethal_pollution_high_in_2020_despite_lockdowns_report_999.html

Development continues to cause urban flooding
• https://www.terradaily.com/reports/Combination_of_climate_change_development_to_fuel_urban_flooding_999.html

Recent summer droughts in Europe repeating conditions of a few thousand years ago
• https://www.sciencedaily.com/releases/2021/03/210315132141.htm

Humans live in chemical soup – newly detected chemicals include 55 never reported & 42 “mystery chemicals” found in residents of San Francisco, California
• https://www.ucsf.edu/news/2021/03/420061/ucsf-study-finds-evidence-55-chemicals-never-reported-people

Perspective: the 30x30 campaign – “protecting” the ocean from people
• https://www.nature.com/articles/d41586-021-00673-0

Dem blocks effort to adjust flood insurance rates – adjustment would more accurately reflect risks, reduce vulnerability & discourage construction in high-risk areas

States sue to overturn “illegal” government action to stop Keystone XL Pipeline
• https://apnews.com/article/joe-biden-donald-trump-ken-paxton-lawsuits-montana-0cf1a378a99ade52cd8b24bb61313ba9

Endangered birds losing their songs & cannot find mates
• https://www.zmescience.com/science/this-endangered-bird-is-losing-its-song/

March 2020 M5.7M earthquake in Utah – “no one is coming to save you”
Advanced nuclear reactors are not safer than conventional plants

Dams in Hawaii that date to the sugar cane plantations need repair or removal
- https://www.civilbeat.org/2021/03/relics-of-sugars-past-hawaii-dams-will-take-years-to-fix-or-remove/

Lessons to be learned from millennia of history of the Nile River - adapt

174% surge in illegals crossing the southern Border – crisis created by change in policy

Legal battle over 115-year-old Truckee Canal – to line or not to line – municipal water supply & water rights

Lake in SW Turkey is turquoise from heavy metal pollutants from Yatagan power plant

Plague of mice hits rural eastern Australia
- https://www.reuters.com/article/us-australia-mice-idUSKBN2BB0VX
- https://www.theguardian.com/australia-news/2021/mar/03/are-poison-packed-drones-the-answer-to-eastern-australias-mouse-plague


Lazarus taxon - video

**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

Pandemic now impacting demographics – with 7.8+B people on the planet that may not be a bad thing

News media finally realizing Florida pandemic response was a good one
Fauci backed study that found 3-foot as good as 6-foot social distancing – but debate continues

- [https://arstechnica.com/science/2021/03/study-finds-3-ft-distancing-in-schools-is-enough-but-debate-is-far-from-over/](https://arstechnica.com/science/2021/03/study-finds-3-ft-distancing-in-schools-is-enough-but-debate-is-far-from-over/)

Understanding VAERS


Perspective: Preparing for the next pandemic – will it truly be a deep dive into failures of the pandemic? Or the antibiotic resistance now being nurtured by human activity? Or re-emerging disease?

- [https://www.nature.com/articles/s41591-021-01291-z](https://www.nature.com/articles/s41591-021-01291-z)
- [https://www.nature.com/articles/s41591-021-01264-2](https://www.nature.com/articles/s41591-021-01264-2)
- [https://www.nature.com/articles/s41591-021-01237-5](https://www.nature.com/articles/s41591-021-01237-5)

Italy seizes 400K doses of AZ vaccine after man dies hours after receiving shot


It is time to restore our freedom rather than further attempts at compliance and control


Questioning reports of vaccine efficacy – more data needed along with transparency & access to raw data


AZ vaccine halted in Europe after link to deadly blood clots – resumed after determination that the benefits outweigh the risks


Herd mentality reflects concerns for AZ vaccine – blood clots & fatalities in Europe

Residents on Outer Banks may face 50% increase in taxes to “protect” coastal property

Environmental group objects to Mumbai coastal road clearance

Proposal to increase Louisiana share of offshore O&G revenue and for wind energy
• [https://www.nola.com/news/environment/article_0c2320e6-82a5-11eb-92f3-533f128ba00b.html](https://www.nola.com/news/environment/article_0c2320e6-82a5-11eb-92f3-533f128ba00b.html)

Dispute between Somalia & Kenya over stretch of Indian Ocean believed to hold O&G deposits
• [https://www.standardmedia.co.ke/kenya/article/2001406589/kenya-will-lose-lamu-if-somalia-wins-case](https://www.standardmedia.co.ke/kenya/article/2001406589/kenya-will-lose-lamu-if-somalia-wins-case)

Manatee County considering rolling back some regulations for development in coastal areas vulnerable to flooding & storm surge

New market report on Territorial Border and Coastal Surveillance System Industry
Call for Congressional action to keep coastal waters free from sewage

Computer modeling suggests coastal wastewater infrastructure (sewer lines & cesspools) may flood
- https://www.hawaii.edu/news/2021/03/14/wastewater-leakage-coast-water/

California Coastal Commission unanimously rejected appeal of Riverfront Project

Surigao del Sur coastal road bypass may be beneficial to Lianga economy

Opportunities for public input to coastal resiliency planning & Meganticook River Watershed

Residents challenge permit to pump ocean-access waterway dredge material to Sunset Beach disposal site
- https://www.coastalreview.org/2021/03/residents-appeal-south-jinks-creek-permit/

Efforts to improve water quality in coastal fishing communities in North Carolina
- https://www.coastalreview.org/2021/03/groups-launch-fisheries-water-quality-effort/

Dare County approves process to help recover cost of $11M beach nourishment project
- https://www.coastalreview.org/2021/03/plan-to-fund-avon-nourishment-advances/

Delaware launched Coastal Corridors Study to assess travel routes for beach-resort access

Legal petition asking to extend offshore oil leasing halt

Norwegian Petroleum Directorate revises offshore Norway resource estimate

Discussions to continue between Greece & Turkey toward fair sharing of resources in Eastern Mediterranean
- https://www.dailysabah.com/politics/diplomacy/greek-fm-dendias-to-visit-turkey-next-month-for-east-med-talks

Politics amid the South China Sea dispute
Greymouth Beach “starved” of gravel from river beds becomes more vulnerable to storms

UK issues updated Marine Science Research (MSR) guidance

Primer for operational staffs and tactical leaders (Part 1) on Chinese Maritime Militia & Fishing Fleets

Efforts to eradicate European green crabs from Stinson Beach Seadrift Lagoon in California was unsuccessful – species responded with dramatic population increase – lesson learned

Florida Governor recommends $260M for relief for seaports
- https://www.wesh.com/article/relief-for-seaports/35866572#