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Geoscience Bulletin Board – 27 July 2020 – compiled by Elaine J. Hanford



29,000-year-old volcanic ash layer blanketed Mediterranean traced to Campi Flegrei

- <https://www.ox.ac.uk/news/2019-04-25-mysterious-volcanic-ash-layer-blanketing-mediterranean-29000-years-ago-traced>

110 quadrillion pounds of meteoroids hit the Earth-Moon system during asteroid shower 800 myo & may have caused “snowball Earth”

- <https://www.haaretz.com/science-and-health/.premium-asteroid-storm-800-million-years-ago-may-have-caused-snowball-earth-1.9009584>
- <https://www.iflscience.com/space/up-to-50-quadrillion-kilograms-of-rock-bombarded-earthmoon-system-800-million-years-ago/>

The heterogeneous abyssal seafloor

- https://www.pnas.org/content/117/29/16729.short?rss=1&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+pnas%2FSMZM+%28Current+Issue%29
- Paper: <https://www.pnas.org/content/117/29/16729.full>

100,000 years of the evolution of the geomagnetic field

- <https://eos.org/editors-vox/the-global-geomagnetic-field-of-the-past-hundred-thousand-years>

“Impact winter” caused by solar dimming would have decimated dinosaur habitats

- <https://eos.org/articles/asteroid-impact-not-volcanism-likely-spelled-dinosaurs-end>

Escape from Thera volcanic eruption 3,600 years ago

- <https://eos.org/articles/podcast-escape-from-thera>

Tsunami warning issued following M7.8 shallow EQ in southern Alaska SE of Perryville

- <https://www.foxnews.com/us/tsunami-warning-issued-for-parts-of-alaska-after-7-4-magnitude-earthquake>
- <https://earthquake.usgs.gov/earthquakes/eventpage/us7000asvb/executive>

Phase one of Qatargas offshore North Field site investigation complete

- <https://www.offshore-technology.com/news/fugro-completes-phase-one-qatargas-north-field/>

Planetary alignment and potential increase in volcanic activity

- <https://earthsky.org/space/planetary-alignment-increase-in-volcanoes-july-2020>

Landslide blocked the Quinjiang River in Hubei Province in China

- <https://blogs.agu.org/landslideblog/2020/07/22/quinjiang-river-landslide-1/>

History of the East Antarctic Ice Sheet

- <https://www.ehn.org/east-antarctic-ice-sheet-and-climate-change-2646451298.html>

Long-term climate sensitivity vs equilibrium climate sensitivity

- <https://arstechnica.com/science/2020/07/huge-climate-sensitivity-study-shrinks-uncertainty-on-critical-number/>
- <https://www.theatlantic.com/science/archive/2020/07/a-new-solution-to-climate-sciences-biggest-mystery-sensitivity/614581/>

Copernicus Sentinel-6 Michael Freilich satellite ready for launch to monitor sea level

- https://www.spacedaily.com/reports/Sea_level_changing_satellite_passes_with_flying_colours_999.html

Life in ocean abyss recovered quickly following end-Cretaceous mass extinction event

- https://www.terraviva.com/reports/Life_in_ocean_abyss_recovered_quickly_after_end-Cretaceous_mass_extinction_event_999.html

PACE high-resolution instruments will monitor ocean & atmospheric features

- https://www.spacedaily.com/reports/A_Walk_Through_the_Rainbow_with_PACE_999.html

Dinosaurs & pterosaurs originated from extremely small ancestors

- <https://www.sciencedaily.com/releases/2020/07/200706152659.htm>

Leviathan Cave in southern Great Basin provides evidence for 4,000-year “worst-case” drought

- <https://www.sciencedaily.com/releases/2020/07/200722142739.htm>

South Atlantic Anomaly in Earth magnetic field is a recurring feature

- <https://www.sciencedaily.com/releases/2020/07/200720152407.htm>

Candidatus Manganitrophs noduliformans – newly discovered bacterium residing in ground water feeds on manganese – may help explain manganese nodules on seafloor

- <http://www.sci-news.com/biology/manganitrophus-noduliformans-08660.html>

Desmacella hyaline - New species of glass sponge identified in HSQCS-MPA reef complex off coast of British Columbia, Canada

- <http://www.sci-news.com/biology/new-species-glass-sponge-08655.html>

Novel theory of climate dynamics suggests 3-pattern decomposition of global atmospheric circulation

- <https://phys.org/news/2020-07-theory-climate-dynamics-three-pattern-decomposition.html>

2,000-year record of hurricanes in the Caribbean – the Common Era record

- <https://phys.org/news/2020-07-years-storms-caribbean.html>
- Paper: <https://www.nature.com/articles/s41598-020-68633-8>

First active methane seep identified in Antarctica

- <https://phys.org/news/2020-07-discovery-seep-antarctica-methane.html>
- Paper: <https://royalsocietypublishing.org/doi/10.1098/rspb.2020.1134>

In Memoriam: Sakiko Olsen (2020) – migmatite researcher at Johns Hopkins University

- <https://hub.jhu.edu/2020/07/21/sakiko-olsen-obituary/>

Strong evidence of active fault underlying Hollywood Center mega-development site

- <https://patch.com/california/hollywood/earthquake-fault-runs-under-hollywood-skyscrapers-project-state>

The voyage of the HMS Challenger reshaped the science of oceanography

- <http://www.bbc.com/travel/story/20200719-hms-challenger-the-voyage-that-birthed-oceanography>

Baleen whales (humpbacks, blue, fin & sei whales) have expanded their range

- <https://www.fisheries.noaa.gov/feature-story/baleen-whales-have-changed-their-distribution-western-north-atlantic>
- Paper: <https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.15191>

The initiation & propagation of fracturing the crust to prompt Plate Tectonics

- <https://www.universetoday.com/147154/what-cracked-the-earths-outer-shell-and-started-its-plate-tectonics/>
- Paper: <https://www.nature.com/articles/s41467-020-17480-2>

“Anthropause” has resulted in quieting of high-frequency seismic noise

- <https://en.farsnews.ir/newstext.aspx?nn=13990504000258>
- <https://www.zmescience.com/science/geology/coronavirus-raspberry-shake-earthquake-24072020/>

Deeper fracking can increase risk of earthquakes by ten-fold

- <https://www.independent.co.uk/independentpremium/fracking-climate-crisis-earthquakes-fossil-fuels-a9636786.html>

Analyzing 37,000 years of climatic events revealed by benthic foraminifera in Bay of Biscay

- https://www.eurekalert.org/pub_releases/2020-07/uotb-ofa072420.php

Quick tour of important rocks: Uluru, Grand Canyon & Yosemite

- <https://www.varsity.co.uk/science/19644>

Celebrating the work of Marie Tharp – mapping the sea floor

- <https://blogs.ei.columbia.edu/2020/07/24/marie-tharp-connecting-dots/>

Olivine micropillars rheological properties correspond to shallow lithospheric conditions

- <https://eos.org/editor-highlights/olivine-micropillars-reveal-shallow-lithosphere-rheology>

Planetary geology: Active volcanoes are abundant on Venus

- <https://www.popsci.com/story/science/venus-volcanoes-ring-of-fire/>

Paper: anisotropic growth of water films on minerals driven by defects and surface tension

- <https://advances.sciencemag.org/content/6/30/eaaz9708>

Two new reports on critical minerals in Utah

- <https://moabtimes.com/2020/07/09/importance-of-potash-reports-highlight-utahs-contribution-to-mineral-resources/>
- C-129: <https://ugspub.nr.utah.gov/publications/circular/c-129.pdf>
- MP-174: https://ugspub.nr.utah.gov/publications/misc_pubs/mp-174/mp-174.pdf

Everything you need to know about nickel – Elon Musk's new favorite mineral

- <https://www.inverse.com/innovation/nickel-elon-musks-new-favorite-mineral>

Desert mosses use quartz rocks as sun shades in the Mojave Desert

- <https://phys.org/news/2020-07-mosses-quartz-sun.html>

Well-preserved mammoth skeleton found in Pechevalavato Lake in Siberia

- <https://phys.org/news/2020-07-well-preserved-mammoth-skeleton-siberian-lake.html>



Environmental Science Bulletin Board – 27 July 2020 – compiled by Elaine J. Hanford

New York plans \$750M expansion of electric-vehicle infrastructure

- <https://www.reuters.com/article/us-autos-electric-new-york/new-york-to-invest-750-million-to-expand-electric-vehicle-infrastructure-idUSKCN24H3DD>

CRS Report: USDA Adaptation – adaptation is much better approach than mitigation

- <https://crsreports.congress.gov/product/pdf/R/R46454>

Dam on the Chuhe River in Anhui province in China blasted to release floodwaters

- <https://currently.att.yahoo.com/att/dam-blasted-release-floodwaters-death-063917747.html>
- <https://apnews.com/6e2e510a8a41999c5729204881a61429>
- <https://www.taiwannews.com.tw/en/news/3970298>

Federal approval given for Gross Reservoir Expansion Project in Colorado – 77,000 acre-ft increase

- <https://denver.cbslocal.com/2020/07/17/gross-reservoir-expansion-project-approval-boulder-county/>

Phoenix, Arizona, attempting to reduce heat island effect by spray-coating streets

- <https://kjzz.org/content/1602245/cool-pavement-coming-soon-some-phoenix-neighborhoods>

Investigating impacts of human demand on shared water resources – transboundary water stress

- <https://eos.org/research-spotlights/modeling-water-stress-for-shared-water-resources>
- Paper: <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019EF001321>

Babies born near natural gas flaring are 50% more likely to be premature due to air pollution

- <https://www.ehn.org/fracking-preterm-births--2646411428.html>

TRAILS Project earns 2020 ESRI SAG award

- <https://www.usgs.gov/news/trails-project-earns-2020-esri-sag-award>

US Army COE inspects Hills Creek Dam in Oregon –

- <https://www.registerguard.com/news/20200720/corps-conducts-annual-inspection-of-hills-creek-dam>

US Army COE to recommend approval of Pebble Mine in Alaska despite environmental opposition

- <https://www.reuters.com/article/us-usa-alaska-mine/u-s-army-corps-poised-to-recommend-approval-of-alaskas-pebble-mine-idUSKCN24L2UC>

Using solar power for poultry farms

- <https://coastalcourier.com/news/local-solar-company-partners-poultry-farm/>

Toxic blue-green algae bloom ripening on Lake Okeechobee

- <https://www.palmbeachpost.com/news/20200716/lake-o-stinky-potential-danger-is-lurking-in-its-waters>

Restoration options for rehabilitation of Ackerson Meadow in Yosemite National Park

- <https://www.nationalparkstraveler.org/2020/07/yosemite-national-park-detailing-restoration-options-ackerson-meadow>

Great American Outdoors Act is a “band-aid” for backlog of maintenance work in National Parks

- <https://www.nationalparkstraveler.org/2020/07/great-american-outdoors-act-not-panacea-national-park-service-woes>
- <https://www.msn.com/en-us/news/politics/the-great-american-outdoors-act-is-the-legislation-of-a-generation/ar-BB174m1G>

Restoration effort aimed at re-wilding areas of Grand Teton National Park

- <https://www.nationalparkstraveler.org/2020/07/ambitious-restoration-effort-aims-re-wild-areas-grand-teton>

National Park Service seeks public help in identifying arsonist(s) who started wildfire in Ahwahnee Meadows in Yosemite National Park

- <https://www.nationalparkstraveler.org/2020/07/there-seems-be-arson-problem-yosemite-national-park>

Update: Mexico attempting to honor Treaty – military police vs farmers - US Commissioner demands Mexico comply with requirements of 1944 Water Treaty – deficit of 432,360 acre-feet for 5-year period ending Oct 2020 – did not comply during cycle that ended in 2015

- https://thefacts.com/ap_news/texas/article_7f7fa195-920f-5d53-8da9-79484b9f712e.html
- <https://www.valleycentral.com/news/local-news/u-s-commissioner-demands-mexico-deliver-rio-grande-water-to-the-united-states/>

Perspective: Protecting our national sovereignty along the southern Border – a future crisis?

- <https://www.yahoo.com/news/mexican-migration-could-first-crisis-140005661.html>

John Muir – the Father of Our National Parks – “there is a moral purpose for wilderness” - now being derided as a racist

- <https://www.yahoo.com/news/sierra-club-john-muir-racism-monuments-182629801.html>
- <https://www.atlasobscura.com/articles/the-miseducation-of-john-muir>

Need to determine effective & non-polluting methods to recycle rare earth elements

- <https://arstechnica.com/science/2020/07/are-we-ready-to-recycle-the-rare-earths-behind-an-energy-revolution/>

1979-2016 one-child policy is now two-child policy in China – using maternal name

- https://www.sinodaily.com/reports/Chinas_two-child_policy_means_more_babies_named_after_mum_999.html

Bayer (Mosanto) loses appeal in Roundup (glyphosate) cancer verdict in California Court of Appeals

- https://www.seeddaily.com/reports/Bayer_loses_appeal_in_California_Roundup_cancer_verdict_999.html

Update: \$4.6 billion Grand Ethiopian Renaissance Dam – filling of reservoir has begun

- <https://apnews.com/3783b6627bb2e7da650fae5456dec1b1>
- https://www.spacedaily.com/reports/Ethiopias_Abiy_praises_historic_start_to_dam_filling_999.html
- https://www.spacedaily.com/reports/Ethiopia_says_first_year_of_Nile_mega-dam_filling_achieved_999.html

Beluga whales form social networks that include family & friends

- <https://www.sciencedaily.com/releases/2020/07/200710212233.htm>
- Paper: <https://www.nature.com/articles/s41598-020-67314-w>

7 Chinese & 2 Malawian wildlife trafficking gang members jailed in Malawi

- https://www.terradaily.com/reports/Malawi_jails_9_Chinese_wildlife_trafficking_gang_members_999.html

Explaining how you get “goose bumps”

- <https://www.sciencedaily.com/releases/2020/07/200720112325.htm>

Dragonflies help reveal the extent of mercury pollution (methylmercury) in National Parks across the US

- <https://www.sciencedaily.com/releases/2020/07/200722083811.htm>
- Paper: <https://pubs.acs.org/doi/10.1021/acs.est.0c01255>

Tongoenas burleyi – large fruit-eating bird was hunted to extinction following arrival of humans in Tongo

- <https://www.sciencedaily.com/releases/2020/07/200722163236.htm>
- <http://www.sci-news.com/paleontology/tongoenas-burleyi-08669.html>

Human immune systems would likely struggle to fight extra-terrestrial micro-organisms

- <http://www.sci-news.com/space/mammalian-immune-system-extraterrestrial-microorganisms-08668.html>

Mercury remains persistent in Still River in western Connecticut – “Mad Hatters” danger

- <https://phys.org/news/2020-07-mercury-persistent-poison-connecticut-river.html>

Oil spills and waste from storage facilities are deadly to livestock in Syria

- <https://phys.org/news/2020-07-black-oil-pollute-northeast-syria.html>

Fluoroethers from drinking water comprise 24% of PFAS in residents of Wilmington, North Carolina

- <https://phys.org/news/2020-07-pfas-comprise-blood-wilmington-north.html>
- Paper: <https://ehp.niehs.nih.gov/doi/10.1289/EHP6837>

500-year record of flood data in Europe

- <https://phys.org/news/2020-07-years-rivers-climate-europe.html>

Oldest water rights on Western Slope in Colorado get extra protection from State Engineer

- <https://www.craigdailynews.com/news/colorados-oldest-water-rights-get-extra-protection-from-state-engineer/>

Tulsa, Oklahoma, approved \$46M for reconstruction of Zink Dam on the Arkansas River

- https://tulsaworld.com/news/local/government-and-politics/zink-dam-work-to-begin-in-august/article_11e9c468-7781-5b25-b4de-0645e0eec531.html

Three Gorges Dam failed to regulate flood waters on Yangtze River – less severe than worst-case scenario

- <https://asiatimes.com/2020/07/yangtze-deluge-tests-limits-of-three-gorges-dam/>

Concrete dam in Mie Prefecture in Japan is being built almost entirely with robots – humans on stand-by

- <https://asia.nikkei.com/Business/Engineering-Construction/Dam-built-by-robots-Japan-s-Obayashi-tests-it-out>

CRS Insight report: What happens if National Flood Insurance Program (NFIP) lapses? Maybe people would have to shoulder the burden for their decision to buy property in flood-prone areas?

- <https://crsreports.congress.gov/product/pdf/IN/IN10835>

“Greenwashing” accusation against Shell for using Scottish forests for carbon offsetting

- <https://www.yahoo.com/news/shell-offsetting-carbon-scottish-forest-150459585.html>

Climber died after trying to retrieve a backpack – fell from Dragon’s ridge in Glacier National Park

- <https://us.cnn.com/2020/07/23/us/montana-climber-glacier-national-park-death-trnd/index.html>

CORONAVIRUS

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

- <https://www.worldometers.info/coronavirus/>

Some people (me included) cannot wear face masks

- <https://currently.att.yahoo.com/att/disabled-people-invisible-illness-fear-face-mask-shaming-050000510.html>

Anthropause – massive cessation of human activity impacting the environment

- <https://currently.att.yahoo.com/att/nature-biggest-winner-covid-19-070000657.html>

- Paper: <https://www.nature.com/articles/s41559-020-1237-z>

Marine life enjoying a quieter environment

- <https://www.npr.org/2020/07/20/891854646/whales-get-a-break-as-pandemic-creates-quieter-oceans>

Global infection-fatality rate ranges from 0.53% to 0.82% - aggregate about 0.68%

- <https://www.msn.com/en-us/health/medical/how-deadly-is-covid-19-researchers-are-getting-closer-to-an-answer/ar-BB1704sb>

Random sampling identifies numerous asymptomatic cases

- <https://arstechnica.com/science/2020/07/cdc-finds-lots-of-asymptomatic-carriers-in-the-us/>
- Paper: <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2768834>



Coastal Zone Management Bulletin Board – 27 July 2020 – compiled by Elaine J. Hanford

Estuary research has overlooked nutrient cycling in tropical & low-nutrient estuaries

- <https://eos.org/research-spotlights/estuary-research-suffers-from-scientific-bias>
- Paper: <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2020JG005766>

Erosion is claiming luxury homes built along the coast in New South Wales

- <https://www.cnn.com/2020/07/21/australia/australia-coastal-erosion-homes-intl-hnk-scli/index.html>

Construction of 3 living shoreline sills underway in North Carolina

- <https://www.thecoastlandtimes.com/2020/07/19/construction-of-three-new-living-shoreline-sills-underway-near-nc-coastal-federation-wanchese-office/>

Upwelling cools Oregon coastal areas

- <https://www.koin.com/weather/summer-is-cranking-inland-but-coastal-upwelling-cools-the-coast/>

Updated permit approved for nuclear storage at San Onofre

- <https://www.encinitasadvocate.com/news/story/2020-07-17/coastal-commission-signs-off-on-updated-san-onofre-nuclear-storage-program>

Massachusetts Homeowners Handbook to Prepare for Coastal Hazards is updated

- <https://www.capecod.com/newscenter/homeowners-handbook-to-prepare-for-coastal-hazards-gets-update/>
- Handbook: <https://seagrant.whoj.edu/wp-content/uploads/sites/106/2020/07/MA-Homeowners-Handbook-2020-1.pdf>

Man-made reefs may have some positive value when combined with natural habitat restoration to increase fish abundance in estuaries

- <https://www.sciencedaily.com/releases/2020/07/200716101539.htm>

\$10M Tamar Estuary Catchment Management Project delivered environmental benefits

- <https://www.miragenews.com/healthy-waterways-flow-for-tamar-estuary/>

Perspective: Santa Clara River Estuary is perfect for breeding & nesting western snowy plovers

- http://www.coastalview.com/opinion/at-the-very-least/article_4f6378b4-cb90-11ea-ad6b-87a8b5346695.html

Construction of tunnel will allow removal of power pylons from Dwyryd Estuary

- <https://www.wales247.co.uk/snowdonia-moves-closer-to-pylon-free-estuary/>

Some 57,000 beluga whales travel to Churchill River Estuary in Canada each summer

- <https://www.travelandleisure.com/animals/beluga-whale-underwater-livestream>
- Livestream: <https://explore.org/livecams/beluga-whales/beluga-boat-cam-underwater>

Greece protests seismic research by Turkey within territorial waters – Turkey rejects claim

- <https://sputniknews.com/world/202007211079948007-greece-expresses-protest-over-turkeys-seismic-research-in-territorial-waters-appeals-to-un-eu/>
- <https://www.turkishminute.com/2020/07/22/turkey-rejects-greek-claim-over-mediterranean-seismic-research-report/>

Beach erosion puts seaside holidays at risk along Mediterranean & Atlantic coasts

- <https://www.europeandatajournalism.eu/eng/News/Data-news/Beach-erosion-puts-European-seaside-holidays-at-risk>

Chinese vessels illegally fishing in North Korean waters

- https://www.terraily.com/reports/Chinese_vessels_fishing_illegally_in_NKorea_waters_study_999.html
- Paper: <https://advances.sciencemag.org/content/6/30/eabb1197>

US Army COE plans to expand East Side disposal site on Lake Michigan for contaminated sediment

- <https://www.theatlantic.com/science/archive/2020/07/a-new-solution-to-climate-sciences-biggest-mystery-sensitivity/614581/>

Efforts to protect shoreline at Cedar Dunes Provincial Park and West Point Lighthouse

- <https://us.cnn.com/2020/07/23/us/montana-climber-glacier-national-park-death-trnd/index.html>