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Geoscience Bulletin Board – 6 April 2020 – compiled by Elaine J. Hanford

Major ocean gyres are shifting poleward as part of natural variability

- <https://www.loe.org/shows/segments.html?programID=20-P13-00013&segmentID=3>
- <https://www.awi.de/en/about-us/service/press/press-release/major-wind-driven-ocean-currents-are-shifting-toward-the-poles.html>
- Paper: <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019GL085868>

Using GPS trackers & drones to locate floating marine debris

- <https://www.hydro-international.com/content/article/how-gps-trackers-and-drones-help-locate-floating-debris>

Moving heat around the world

- <https://marketresearchnews.org/2020/04/01/how-oceans-and-atmospheres-move-heat-around-on-earth-and-other-planets/>

Bald notothen drastically adjusts blood oxygen level to remain active in frigid environments

- <https://www.scientificamerican.com/article/antarctic-fish-is-a-blood-doping-champion/>

Labrador Sea dubbed “the lungs of the ocean”

- Part 1: <https://www.thetelegram.com/news/local/special-report-lure-of-the-labrador-offshore-429975/#>
- Part 2: <https://www.thetelegram.com/news/local/special-report-the-oceans-lungs-are-in-the-labrador-sea-429984/>

Got dirt? Need dirt? There is an app for that

- <https://www.enr.com/articles/49065-soil-connect-app-matches-users-who-need-dirt-with-those-who-have-it>

The Danakil Depression in Ethiopia – mining for “white gold”

- <https://suitcasemag.com/travel/explore/danakil-depression-ethiopia/>
- <https://kawa-news.com/en/djibouti-white-gold-miners-still-braving-the-journey-through-hell/>

Dendrochronology helps pinpoint the data of the disappearance of ancient Minoan civilization

- <https://www.heritagedaily.com/2020/03/tree-rings-could-pin-down-thera-volcano-eruption-date/127010>

Fatal failure in large sand pile in China

- <https://blogs.agu.org/landslideblog/2020/03/30/guizhou-sand-heap-landslide/>

Debate over oldest fossils on Earth - stromatolites

- <https://www.smithsonianmag.com/science-nature/earth-earliest-life-fossils-stromatolites-180974442/>

Land animals began dying before marine species in The Great Dying

- <https://www.sciencealert.com/land-animals-began-to-die-long-before-marine-life-vanished-in-earth-s-biggest-extinction>
- Paper: <https://www.nature.com/articles/s41467-020-15243-7>

Favorable court rule for Eritrean refugees allegedly subjected to inhumane treatment by Canadian mining company

- <https://allafrica.com/stories/202003270595.html>

Detailed mapping of the geomorphology of the river systems of the world

- <https://www.theguardian.com/environment/2020/mar/30/show-with-the-flow-elevation-maps-reveal-world-rivers>

Sediments overlying subducting slab may play key role in determining magnitude & location of megaquakes

- <https://phys.org/news/2020-03-sediments-magnitude-megaquakes.html>

Sinkhole diverts water from 500-foot high San Rafael waterfall in Ecuador

- <https://www.newsweek.com/huge-sinkhole-ecuador-tallest-waterfall-1495294>

Reduction of human produced seismic noise is beneficial to seismologists

- <https://www.nature.com/articles/d41586-020-00965-x>

Denman Glacier appears to be sinking into deep canyon

- <https://www.livescience.com/denman-glacier-retreat-worlds-deepest-canyon.html>

Virtual tour of Volcano National Park in Hawaii

- <https://artsandculture.withgoogle.com/en-us/national-parks-service/hawaii-volcanoes/nahuku-lava-tube-tour>

Locating volcanic source of pumice raft floating in the South Pacific

- <https://eos.org/science-updates/satellite-sleuthing-detects-underwater-eruptions>

Comparison of methods for calculating snow water equivalent and estimating snowpack

- <https://eos.org/research-spotlights/snowpack-data-sets-put-to-the-test>

New models of methylated mercury content in the ocean

- <https://eos.org/research-spotlights/new-models-give-global-picture-of-mercury-content-in-oceans>

M5.0 EQ hits West Texas near town of Mentone

- <https://earthquake.usgs.gov/earthquakes/eventpage/us70008ggn/executive>

“Space Fence” radar tracking objects as small as 10 cm

- https://www.spacedaily.com/reports/Space_Fence_radar_operational_tracks_objects_as_small_as_10_centimeters_999.html

Tracking migration of marine species adapting to temperature changes in the ocean

- https://www.terraviva.com/reports/Study_reveals_where_marine_species_are_moving_as_oceans_warm_999.html
- Paper: [https://www.cell.com/current-biology/fulltext/S0960-9822\(20\)30250-5](https://www.cell.com/current-biology/fulltext/S0960-9822(20)30250-5)

6.5M EQ hits near Challis, Idaho – complex strike slip faulting with prolonged shaking

- <https://earthquake.usgs.gov/earthquakes/eventpage/us70008jr5/executive>
- <https://apnews.com/ee4018c9240bd4768dbea25c40712198>

Luming Mine tailings leak in China

- <https://blogs.agu.org/landslideblog/2020/03/31/luming-mine-tailings-accident/>
- <https://blogs.agu.org/landslideblog/2020/04/01/luming-mine-tailings-leak/>

Monitoring the melting of glacial ice

- <https://earth.gizmodo.com/one-of-the-toughest-jobs-on-earth-studying-melting-ice-1842618610>

In Memoriam: Harold W Borns Jr (1928-2020) – glacial geologist

- <https://bangordailynews.com/2020/04/01/news/bangor/umaine-professor-with-antarctic-glacier-named-for-him-dies/>

90 myo there was a rainforest near what is now the South Pole

- <https://cosmosmagazine.com/geoscience/when-there-was-rainforest-near-the-south-pole>
- <https://www.slashgear.com/90m-year-old-antarctic-rainforest-raises-huge-climate-change-question-01615120/>
- <https://www.zmescience.com/science/rainforest-antarctica-032532/>

Carbon was contained in the core during formative years of the planet – remains major reservoir

- <https://www.heritagedaily.com/2020/04/most-of-earths-carbon-was-hidden-in-the-core-during-its-formative-years/127098>

Paper: Microbial dynamics influenced by hydrocarbon seepage in sediments in Gulf of Mexico

- <https://www.nature.com/articles/s41598-020-62840-z>

Distinguishing between different geologic ages – International Chronostratigraphic Chart

- <https://www.livescience.com/why-geologic-time-periods.html>

Quantitative reconstruction of paleo-pressure that governs generation, expulsion, migration accumulation & preservation of petroleum

- https://www.eurekalert.org/pub_releases/2020-04/scp-qro040120.php

Mentos candy-soda geyser experiment at different altitudes

- https://www.eurekalert.org/pub_releases/2020-04/acs-tcs040120.php

Geology of York County – take a drive along Interstate 83 from Baltimore MD to Harrisburg PA

- <https://www.ydr.com/story/opinion/2020/03/26/drive-up-interstate-83-provides-history-york-countys-geology/2919352001/>

New “slip law” for motion of ice to improve forecasts of glacier speed

- <https://www.news.iastate.edu/news/2020/04/02/slip-law>

Scarborough Art Gallery will display “map that changed the world” by William Strata Smith

- <https://museumcrush.org/william-strata-smith-and-the-map-that-changed-the-world/>

Improving understanding of river deltas – natural solutions to man-made problems

- <https://eos.org/research-spotlights/finding-natural-solutions-to-man-made-problems-in-river-deltas>
- Paper: <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019JF005201>

Lacustrine ecosystems needed 10M years to recover from end-Permian extinction

- https://www.eurekalert.org/pub_releases/2020-04/caos-len040320.php

Geodetic infrastructure needs enhancements

- <http://www.parabolicarc.com/2020/04/02/report-geodetic-infrastructure-needs-enhancements-continued-maintenance-to-answer-high-priority-scientific-questions/>
- Report: <https://www.nap.edu/catalog/25579/evolving-the-geodetic-infrastructure-to-meet-new-scientific-needs>



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Coronavirus COVID-19 statistics by country

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

Tracking spread of COVID-19 in the US & the World

- <https://www.npr.org/sections/health-shots/2020/03/16/816707182/map-tracking-the-spread-of-the-coronavirus-in-the-u-s>
- <https://www.npr.org/sections/goatsandsoda/2020/03/30/822491838/coronavirus-world-map-tracking-the-spread-of-the-outbreak>

Coronavirus comparisons are pointless unless biases in testing are considered – causal model

- <https://theconversation.com/coronavirus-country-comparisons-are-pointless-unless-we-account-for-these-biases-in-testing-135464>

Assessing the projections from the COVID-19 models

- <https://www.msn.com/en-us/news/politics/experts-and-trumps-advisers-doubt-white-houses-240000-coronavirus-deaths-estimate/ar-BB125ZfP>
- <https://www.forbes.com/sites/joshuacohen/2020/04/02/accuracy-of-estimate-of-100000-to-240000-covid-19-deaths-hinges-on-key-assumptions/#3cc2ea3e144e>

COVID-19 pandemic is a crisis resulting from human actions upon the environment

- <https://phys.org/news/2020-03-coronavirus-wake-up-war-environment-pandemics.html>
- <https://phys.org/news/2020-03-major-scorecard-health-australia-environment.html>

Will emergence of coronavirus from global wildlife trade be enough motivation to end such trade?

- <https://theconversation.com/the-new-coronavirus-emerged-from-the-global-wildlife-trade-and-may-be-devastating-enough-to-end-it-133333>

Perspective: What “Walden” can tell us about social distancing and life’s essentials

- <https://theconversation.com/what-walden-can-tell-us-about-social-distancing-and-focusing-on-lifes-essentials-134524>
- <https://www.csmonitor.com/Commentary/the-monitors-view/2020/0331/Pondering-a-Walden-experience>

How to understand COVID-19 numbers reported in the media

- <https://spectator.us/understand-report-figures-covid-deaths/>

USFDA approves addition of malaria drugs for COVID-19 to stockpile – “emergency use authorization”

- <https://www.npr.org/sections/coronavirus-live-updates/2020/03/30/823987540/fda-oks-addition-to-stockpile-of-malaria-drugs-for-covid-19>
- <https://arstechnica.com/science/2020/03/fda-approves-the-emergency-use-of-chloroquine-for-covid-19/>

Uneven distribution of COVID-19 cases across the US

- <https://www.yahoo.com/news/partisan-reaction-uneven-covid-spread-125700500.html>
- <https://usafacts.org/visualizations/coronavirus-covid-19-spread-map/>

The media is not doing the best job possible in reporting on COVID-19

- <https://www.yahoo.com/entertainment/marco-rubio-accuses-media-gee-215854462.html>

Messages in the media from officials and politicians causing added fear and confusion

- <https://www.msn.com/en-us/health/medical/why-america-is-scared-and-confused-even-the-experts-are-getting-it-wrong/ar-BB11Z7MI>

8 genetic strains of COVID-19 – few genetic changes compared to flu virus

- <https://www.npr.org/sections/goatsandsoda/2020/03/25/820998549/the-coronavirus-is-mutating-but-that-may-not-be-a-problem-for-humans>

COVID-19 epidemic in UK appears to be starting to slow down

- <https://www.yahoo.com/news/coronavirus-uk-latest-slow-down-rate-death-covid-19-073244787.html>

India lags behind other countries in testing for COVID=19

- <https://finance.yahoo.com/news/doctors-only-matter-time-virus-210000850.html>
- <https://www.msn.com/en-us/news/world/indias-coronavirus-lockdown-is-having-a-dramatic-impact-on-pollution/ar-BB11ZmD5>

Beginning to analyze the impacts of social distancing

- <https://blogs.iadb.org/efectividad-desarrollo/en/the-coronavirus-impact-dashboard-measuring-the-effects-of-social-distancing-on-mobility-in-latin-america-and-the-caribbean/>
- <https://www.vox.com/policy-and-politics/2020/3/24/21192528/coronavirus-social-distancing-economy-deaths>

Rats are going hungry in New Orleans – more visible when searching for food

- <https://www.yahoo.com/news/rats-swarm-orleans-streets-coronavirus-025248712.html>

As humans vacate streets to shelter indoors, wildlife returns to claim their territory

- <https://www.yahoo.com/news/nature-takes-back-worlds-empty-city-streets-163102488.html>
- https://www.terradaily.com/reports/Nature_takes_back_worlds_empty_city_streets_999.html
- Photo-essay: <https://www.yahoo.com/news/coronavirus-animals-reclaiming-cities-covid-19-pandemic-140503907.html>
- <https://theconversation.com/coronavirus-what-the-lockdown-could-mean-for-urban-wildlife-134918>

Perspective: Malthusian Theory of Population in Pakistan

- <https://www.pakistantoday.com.pk/2020/03/30/deadly-blessing/>

Everglades restoration project also includes 5,000-acre water treatment facility

- <https://www.news-press.com/story/news/environment/2020/03/30/district-looking-for-input-on-caloosahatchee-river-reservoir-treatment-component/5078105002/>

New wastewater treatment system may effectively remove conventional pollutants & recover resources – combines chemically enhanced primary sedimentation with acidogenic fermentation

- <https://www.technologynetworks.com/tn/news/novel-wastewater-treatment-removes-and-recovers-332757>

Smuggling tunnel discovered under US-Mexico border in San Diego - \$29M worth of drugs seized

- <https://www.msn.com/en-us/news/us/authorities-find-smuggling-tunnel-under-us-mexico-border-seize-dollar29m-worth-of-drugs/ar-BB11YzEH>

Plans to remove 4 hydroelectric dams on lower Klamath River spark competing interests

- <https://www.yahoo.com/news/largest-us-dam-removal-stirs-152009140.html>

NASA releases global groundwater maps reflecting drought monitoring

- <https://phys.org/news/2020-03-team-global-groundwater.html>

The texture of cities influences major weather events

- <https://phys.org/news/2020-03-layouts-textures-cities-extreme-weather.html>
- <http://news.mit.edu/2020/discerning-texture-of-urban-resilience-0330>
- Video: <https://www.youtube.com/watch?v=Ih6EslaN49U&feature=youtu.be>

Virtual tours of 5 National Parks

- <https://www.travelandleisure.com/trip-ideas/national-parks/virtual-national-parks-tours>

Perspective: despite temporary decreases in air pollution, single use plastics still must be banned

- <https://www.treehugger.com/plastic/dont-let-coronavirus-ruin-fight-against-single-use-plastics.html>

Copernicus Sentinel-1 studying the major rice-producing region in southwest Vietnam

- https://www.spacedaily.com/reports/Copernicus_Sentinel_1_studies_rice_fields_across_Vietnam_999.html

Feasibility of using satellites to track locust invasion

- https://www.seeddaily.com/reports/Could_Satellites_Help_Head_Off_a_Locust_Invasion_999.html

Epigenetic changes are key to adapting to climate change

- https://www.terraily.com/reports/Stickleback_study_shows_epigenetic_changes_key_to_climate_change_adaptation_999.html

Drought and wildfires in the Amazon are killing off dung beetles – necessary detritivores

- <https://theconversation.com/dung-beetles-help-rainforests-regrow-but-extreme-drought-and-wildfires-in-the-amazon-are-killing-them-off-130444>

Perspective: 7.5B and counting – How many humans can the Earth support? – carrying capacity

- <https://theconversation.com/7-5-billion-and-counting-how-many-humans-can-the-earth-support-98797>

When people downsize to tiny houses they adopt more environmentally friendly lifestyle

- <https://theconversation.com/when-people-downsize-to-tiny-houses-they-adopt-more-environmentally-friendly-lifestyles-112485>

New decision by TC Energy to construct major section of Keystone XL Pipeline

- <https://www.chron.com/business/energy/article/TC-Energy-to-build-Keystone-XL-Pipeline-15168373.php>

Lead pollution in glaciers in the Alps connected to conflict & civil unrest in 12th century Britain

- <https://www.zmescience.com/science/alpine-ice-lead-medieval-britain-93515134/>

Natural history of Mount Rainier National Park

- <https://www.nationalparkstraveler.org/review/2020/04%E2%80%8B/tahoma-and-its-people-natural-history-mount-rainier-national-park>
- Book: https://www.nps.gov/parkhistory/online_books/mora/adhi/contents.htm

Roadmap for essential actions to allow marine life to recover to full abundance by 2050

- <https://phys.org/news/2020-04-landmark-marine-life-rebuilt.html>

Winter of 2019-2020 was one of the driest in California – thin snowpack in the Sierra at half of average

- <https://www.kqed.org/science/1960807/as-april-begins-californias-snowpack-is-about-half-of-normal>
- <https://water.ca.gov/News/News-Releases/2020/April-20/March-Precipitation-Not-Enough-to-Offset-Dry-Winter>
- Snowpack data: <http://cdec.water.ca.gov/snow/current/snow/index.html>
- Historical plots: http://cdec.water.ca.gov/reportapp/javareports?name=PLOT_SWC.pdf

Perspective: Can an economy destroy the environment and still be considered “strong”

- <https://www.peoplesworld.org/article/can-an-economy-destroy-the-environment-and-still-be-considered-strong/>

USDA proposes National List of Reportable Animal Diseases

- <https://content.govdelivery.com/accounts/USDAAPHIS/bulletins/2845211>
- List: https://www.aphis.usda.gov/animal_health/monitoring_surveillance/nlrad-system-standards.pdf
- Submit Comments: <https://www.regulations.gov/comment?D=APHIS-2017-0002-0001>

Some levees damaged in 2019 on the Missouri & Kansas Rivers are still vulnerable

- <https://apnews.com/493595f6a52cd42cd32d463ba3339918>

Bonnet Carre Spillway opened to reduce Mississippi River water levels in New Orleans

- https://www.nola.com/news/environment/article_21c051c6-749b-11ea-b481-1ba48d94c148.html

Viking Cruise ships will now ply the Mississippi River

- <https://www.yahoo.com/news/viking-start-cruising-mississippi-summer-155435615.html>

Chad launched a major offensive against Boko Haram jihadists in Lake Chad basin

- <https://www.yahoo.com/news/nigeria-launches-massive-joint-operation-154920936.html>



Coastal Zone Management Bulletin Board – 6 April 2020 – compiled by Elaine J. Hanford

Paper: Ancient coastal changes due to ground movements & human interventions in Roman Portus...

- <https://www.mdpi.com/2073-4441/12/3/658/htm>

Best-case & worst-case scenarios for San Diego – apocalyptic findings but no cost estimates

- <https://www.voiceofsandiego.org/topics/government/san-diego-calculated-how-fast-the-sea-will-rise-but-not-the-cost/>
- Draft Report: <https://www.sandiego.gov/sites/default/files/slr-va-draft-122019.pdf>
- Related report: https://www.sandiego.gov/sites/default/files/ab691_report_san_diego.pdf

Redondo Beach, California, coastal gas plant will shut down by 2023

- <https://www.latimes.com/environment/story/2020-03-30/redondo-beach-coastal-power-plant-closing-2023>

Nine projects along coastal North Carolina to receive funding for resilience & wildlife habitat

- <https://www.coastalreview.org/2020/03/9-nc-resiliency-projects-receive-millions/>

Cumberland Island National Seashore is located on Georgia coast

- <https://www.nationalparkstraveler.org/2020/03/cumberland-island-national-seashore-georgias-coastal-jewel>

High water levels in Great Lakes posing challenges to coastal communities

- <https://www.mlive.com/news/2020/03/as-the-great-lakes-surge-to-record-heights-coastal-areas-face-a-time-of-reckoning.html>
- <https://www.mlive.com/news/2020/03/we-needed-this-five-years-ago-as-great-lakes-rise-no-money-for-coastal-study.html>

CARES includes provision to help ensure full use of Harbor Maintenance Tax

- <https://ajot.com/news/congress-reforms-harbor-maintenance-funding>

Massive seawall construction completed in Shizuoka Prefecture in Japan

- <http://www.asahi.com/ajw/articles/13257178>

Dauphin Island Sea Lab puts coastal creatures online in new digital learning series

- <https://www.al.com/life/2020/03/dauphin-island-sea-lab-putting-coastal-creatures-online.html>

Federal judge dismisses legal challenge to Coastal Resources Commission in North Carolina

- <https://www.coastalreview.org/2020/04/federal-judge-throws-out-challenge-to-crc/>

Historic Bay Mills Indian Community tribal burial ground in Michigan threatened by coastal erosion

- <https://www.mlive.com/news/2020/03/historic-michigan-tribal-burial-ground-threatened-by-coastal-erosion.html>

Report on adapting to rising tides & rising ground water in the San Francisco Bay area

- <https://mtc.ca.gov/whats-happening/news/new-report-takes-deep-dive-rising-seas>
- Summary Report: http://www.adaptingtorisingtides.org/wp-content/uploads/2020/03/ARTBayArea_Short_Report_Final_March2020_ADA.pdf
- Full Report: http://www.adaptingtorisingtides.org/wp-content/uploads/2020/03/ARTBayArea_Main_Report_Final_March2020_ADA.pdf

Authorities in China demolish luxury beachfront villas classified as illegal structures violating environmental regulations

- <https://supchina.com/2020/03/31/qingdao-demolishes-ultra-luxury-villas-over-environmental-violations/>

Detecting tryptophan as marker for bacterial contamination in coastal waters using fluorescence

- https://newscenter.sdsu.edu/sdsu_newscenter/news_story.aspx?sid=77939

The importance of restoring marine biodiversity & ecosystems

- <https://www.euronews.com/2020/03/31/the-importance-of-restoring-marine-biodiversity>

Too much nitrogen & phosphorus in US waterways triggers coastal algal blooms

- <https://phys.org/news/2020-04-nitrogen-phosphorus-waterways.html>

China to launch 8-month-long campaign to enhance marine environmental protection – “Blue Sea 2020”

- <http://www.ecns.cn/news/2020-04-01/detail-ifzuwwmz9247290.shtml>

Turquoise waters in Manila Bay may be due to harmful pollutants

- <https://www.interaksyon.com/trends-spotlights/2020/03/27/165289/amid-covid-19-crisis-manila-bay-discoloration-also-a-public-health-concern-heres-why/>

Closed beaches mean fewer people which may result in strong turtle nesting season

- <https://www.sun-sentinel.com/coronavirus/fl-ne-coronavirus-is-good-for-sea-turtles-20200401-bbrokumlmzdafd7zwgkybrtd3u-story.html>

As coastal land subsides in Florida more carbonaceous material is buried

- <https://eos.org/research-spotlights/florida-coastlines-respond-to-sea-level-rise>