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

Micro-drone LiDAR effective in mapping varied terrain in the Ozarks

- <https://insideunmannedsystems.com/project-success-lidar-overcomes-mapping-obstacles-in-the-ozarks/>

Deepwater Horizon – reflecting on 10th anniversary of the event

- <https://www.whoi.edu/news-insights/content/whoi-recalls-deepwater-horizon-crisis/>
- <https://www.wired.com/story/the-deepwater-horizon-disaster-fueled-a-gulf-science-bonanza/>
- <https://www.forbes.com/sites/christopherheman/2020/04/23/a-decade-after-deepwater-horizon-oil-still-flows-from-this-prolific-patch-in-the-gulf-of-mexico/#51d034d343a9>
- <https://www.workboat.com/blogs/maritime-matters/10-years-after-deepwater-horizon-increasing-safety/>
- <https://www.theverge.com/2020/4/20/21228577/offshore-drilling-deepwater-horizon-10-year-anniversary>

“Biological carbon pump” in the ocean is efficient at absorbing carbon

- https://www.upi.com/Science_News/2020/04/08/Oceans-biological-pump-absorbs-more-carbon-than-previously-estimated/4141586193778/

Fluvial runoff & continental shelf sediments transport carbon & trace elements via Transpolar Drive

- <https://www.ecomagazine.com/news/science/study-finds-new-source-of-trace-elements-could-rapidly-change-arctic-ecosystems>

New open-source database of SEAFloor FLuid Expulsion Anomalies (SEAFLEASs) at global scale

- <https://eos.org/editor-highlights/a-new-global-map-of-seafloor-fluid-expulsion-anomalies>

Objective method to classify mesoscale patterns of marine shallow clouds in satellite images

- <https://eos.org/editor-highlights/a-new-view-of-old-clouds>
- Paper: <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019GL085988>

Using cosmic rays to forecast volcanic eruptions – using relativistic particles from space

- <https://eos.org/articles/are-cosmic-rays-a-key-to-forecasting-volcanic-eruptions>
- Paper: <https://www.nature.com/articles/s41598-020-62342-y>

Turbulence of mountain streams increases rate of gas exchange

- <https://eos.org/articles/mountain-streams-exhale-more-than-their-share-of-co2>
- Paper: <https://www.nature.com/articles/s41467-019-12905-z>

Using planetary boundaries concept for water management

- <https://eos.org/research-spotlights/shaping-water-management-with-planetary-boundaries>
- Paper: <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019EF001377>

Glacial sounds

- <https://eos.org/articles/tuning-in-to-a-glacial-symphony>
- Paper: <https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2020GL086951>

Emerging field of Cryoseismology

- <https://eos.org/editors-vox/frontiers-in-cryoseismology>
- Paper: <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2016RG000526>

Rhizaria may be responsible for up to 20% of total amount of silica in the ocean

- <https://eos.org/research-spotlights/new-recognition-for-major-players-in-the-oceans-silicon-cycle>
- Paper: <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019GB006286>

Did heavy rain trigger 2018 eruption of Kilauea in Hawaii?

- <https://www.npr.org/2020/04/22/839866607/did-heavy-rain-cause-hawaiis-historic-volcanic-eruption>
- https://www.terraily.com/reports/Study_suggests_rainfall_triggered_2018_Kilauea_eruption_999.html

Planetary geology: new comprehensive geologic map of the Moon

- <https://www.usgs.gov/news/usgs-releases-first-ever-comprehensive-geologic-map-moon>
- Video: <https://www.usgs.gov/media/videos/unified-geologic-map-moon>

Petrologic analysis of Honeyeater Basalt of East Pilbarra Craton provides evidence that plate tectonics began before 3.2 byo

- <http://www.sci-news.com/othersciences/geophysics/earths-plate-tectonics-08357.html>
- Paper: <https://advances.sciencemag.org/content/6/17/eaaz8670>

This perspective shows marine biodiversity has remained fairly constant over last 200 million years

- <https://phys.org/news/2020-04-ocean-biodiversity-substantially-hundreds-millions.html>

Assessing parental magma of the Altiplano-Puna Volcanic Complex in northern Chile

- <https://phys.org/news/2020-04-pulse-supervolcano.html>

- Paper: <https://www.nature.com/articles/s41598-020-63454-1>

Quantitative synthesis of faulting and crustal stress across the North American continent

- <https://phys.org/news/2020-04-seismic-north-america-reveals-geologic.html>
- <https://gizmodo.com/new-seismic-map-of-north-america-reveals-a-continent-un-1843020591>
- Paper: <https://www.nature.com/articles/s41467-020-15841-5>

Further exploration of the non-vertebrate and vertebrate assemblages in Kem Kem beds of Morocco

- <https://www.sciencedaily.com/releases/2020/04/200423130449.htm>
- Paper: <https://zookeys.pensoft.net/article/47517/>

Evolution of early life on Earth was complicated

- https://www.spacedaily.com/reports/New_study_reveals_lifes_earliest_evolution_was_more_complicated_than_previously_suspected_999.html

Consortium microbes are subsisting on ethane seeps from hot deep-sea vents in Gulf of California

- https://www.spacedaily.com/reports/Scientists_find_microbes_eating_ethane_spewing_from_deep-sea_vents_999.html

Origin of nitrogen on Earth

- https://www.terraviva.com/reports/New_geochemical_tool_reveals_origin_of_Earths_nitrogen_999.html
- Paper: <https://www.nature.com/articles/s41586-020-2173-4>

Melting of Eurasian ice sheet following last Glacial Maximum resulted in 4.5-7.9 m sea level rise

- https://www.spacedaily.com/reports/Eurasian_ice_sheet_collapse_raised_seas_eight_metres_study_999.html

Melting of some of Greenland Ice Sheet resulted in 1.5 mm rise in sea level in 2019

- https://www.spacedaily.com/reports/Alarms_ring_as_Greenland_ice_loss_causes_40_of_2019_sea_level_rise_999.html

Charcoal in the fossil record

- <https://natureecoevocommunity.nature.com/users/254832-sam-slater/posts/66719-charcoal-in-the-fossil-record>

Proposed lithium mine in Thacker Pass in northern Nevada – may become “Lithium Valley”

- <https://www.necn.com/lx/is-a-proposed-lithium-mine-in-nevada-the-future-of-renewable-energy/2263346/>

Virtual hike in these national parks to vicariously view the geology

- <https://www.architecturaldigest.com/story/national-parks-you-can-virtually-hike-to-avoid-cabin-fever>



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

Inspirational words on Nature for Earth Day – Emerson, Newton, Muir, Hesse, Plath, Sagan, Adams, Thoreau, Carson, Leopold & others

- <https://www.treehugger.com/conservation/words-nature-greatest-thinkers.html>

Laws that helped shape the beginnings of the environmental movement

- <https://www.ehn.org/history-of-environmental-laws-in-us-2645742770.html>

Anthropogenic megadrought is ongoing in Western US – human demand far exceeds supply

- <https://www.yahoo.com/news/megadrought-emerging-western-u-might-192423752.html>
- <https://www.msn.com/en-us/weather/topstories/the-western-us-is-locked-in-the-grips-of-the-first-human-caused-megadrought-study-finds/ar-BB12JQ6V>

Colorado River Basin Climate & Hydrology – State of the Science (2020) – links to report

- <https://www.colorado.edu/publications/reports/CRBreport/>

US Army COE examines impact of proposal for 4 huge pumps at confluence of Yazoo & Mississippi Rivers – “one of the worst projects ever conceived by Congress”

- <https://apnews.com/668bfc8c593f7f5338719e80b7ff754f>

US Judge canceled key permit for Keystone XL pipeline – US Army COE did not adequately consider effects on endangered species

- <https://finance.yahoo.com/news/judge-cancels-permit-keystone-xl-231924272.html>

Learning environment – poll disses distance learning

- <https://www.breitbart.com/tech/2020/04/18/77-of-college-students-say-online-classes-are-worse-than-in-person-classes/>

Selected US National Park webcams

- <https://www.nps.gov/media/multimedia-search.htm#fq%5B%5D=Type%3A%22Webcam%22>
- <https://www.nps.gov/romo/learn/photosmultimedia/webcams.htm>

- <https://www.nps.gov/yell/learn/photosmultimedia/webcams.htm>
- <https://yosemite.org/webcams/yosemite-falls/>
- <https://www.nps.gov/glba/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/gumo/learn/photosmultimedia/gumo-webcams.htm>
- <https://www.nps.gov/glac/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/ever/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/havo/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/crla/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/sagu/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/chis/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/katm/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/thro/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/seki/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/isro/learn/photosmultimedia/webcams.htm>
- <https://www.nps.gov/dena/learn/photosmultimedia/webcams.htm>

FAA Webcams in Alaska & Canada

- <https://avcams.faa.gov/>

Trickle of water restoring wetlands & forests in parched Colorado River Delta

- <https://www.azcentral.com/in-depth/news/local/arizona-environment/2020/04/19/how-mexicos-dry-colorado-river-delta-being-restored-piece-by-piece/5082051002/>

Giant Galapagos Tortoise at his favorite watering hole (video)

- <https://www.yahoo.com/news/giant-galapagos-tortoise-gulps-water-110502303.html>

Soil erosion in parts of Great Britain occurring at “unsustainable levels”

- https://www.exeter.ac.uk/news/research/title_789820_en.html
- Paper: <https://www.sciencedirect.com/science/article/pii/S0016706119323407>

Tech hazard: Gas leak in Grand Prairie, Texas, prompted evacuations

- <https://www.msn.com/en-us/news/us/gas-leak-fire-near-highway-360-in-grand-prairie-prompts-immediate-evacuations/ar-BB12QeGp>

Huge fire ravages Biebrza National Park - largest nature reserve in Poland

- <https://phys.org/news/2020-04-huge-ravages-poland-largest-nature.html>

Busting five environmental myths

- <https://www.yahoo.com/lifestyle/organic-produce-isnt-necessarily-pesticide-160300863.html>

425-pound tiger that lived in apartment in Harlem, New York City, was victim of illegal pet trade

- <https://www.msn.com/en-us/news/crime/a-425-pound-tiger-living-in-a-harlem-apartment-yes-it-happened/ar-BB12Qw6y>

Landslide at illegal gold mine in Sumatra killed 9 people

- <https://www.msn.com/en-us/news/world/nine-killed-in-indonesia-mining-accident/ar-BB12RoVG>

25 years ago – Alfred P. Murrah Federal Building was bombed in Oklahoma City – slide series

- <https://www.msn.com/en-us/news/us/a-look-back-at-the-oklahoma-city-bombing-in-21-images/ss-BB12lx3n>

Thailand scrambling to contain major outbreak of African horse sickness (AHS)

- <https://www.sciencemag.org/news/2020/04/thailand-scrambles-contain-major-outbreak-horse-killing-virus#>

How ancient fighting techniques spread across Europe during the Bronze Age

- <https://www.sciencemag.org/news/2020/04/sword-wielding-scientists-show-how-ancient-fighting-techniques-spread-across-bronze-age>

Male ring-tailed lemurs may use their tails to spread fruity “love potions”

- <https://www.sciencemag.org/news/2020/04/male-lemurs-may-spread-fruity-love-potions-their-tails>

US wind energy production capacity has reached 100GW

- <https://renews.biz/59731/usa-hits-wind-century-in-2019/>

Northeast Boundary Tunnel to increase sewer system capacity in Washington DC now 60% complete

- <https://www.theconstructionindex.co.uk/news/view/tbm-reaches-milestone-on-580m-us-project>

Wild Sourdough Project – opportunity to participate

- <https://www.npr.org/sections/coronavirus-live-updates/2020/04/22/841443442/so-your-sourdough-starter-failed-thats-ok-science-needs-it>
- Website: <http://robdunnlab.com/projects/wildsourdough/>

Definition of “Waters of the US” – Final rule defining waters regulated under Clean Water Act

- <https://www.federalregister.gov/documents/2020/04/21/2020-02500/the-navigable-waters-protection-rule-definition-of-waters-of-the-united-states>

Construction begins on man-made marsh section of Everglades Agricultural Area Reservoir Project

- <https://www.tcpalm.com/story/news/local/indian-river-lagoon/health/2020/04/20/army-corps-issues-permit-construction-starts-eaa-reservoir-marsh/5163853002/>

Education levels among US immigrants

- <https://www.immigrationreform.com/2020/04/17/high-skilled-immigrants-media-bias-immigrationreform-com/>

Two local hunters suspected of killing protected bird species near Lake Texoma – game wardens find more than two dozen birds piled beside a road

- <https://www.msn.com/en-us/news/us/local-hunters-suspected-of-killing-federally-protected-birds-at-lake-texoma/ar-BB130qk2>

“State of the Air” 2020 report marks 50th Anniversary of the Clean Air Act

- <http://www.stateoftheair.org/key-findings/>

“Affordable” housing project in Solana Beach, California, could cost \$1.1M per apartment

- <https://www.msn.com/en-us/news/us/affordable-housing-can-cost-dollar1-million-per-apartment-in-california-coronavirus-could-make-it-worse/ar-BB130nXx>

California still moving ahead with high-speed rail project – preliminary funding of \$423M for phase of Link Union Station

- <https://mynews1a.com/business/2020/04/21/high-speed-rail-authority-approves-initial-funding-for-union-station-project/>

Lift Station 87 project is part of long-delayed & over-budget (by \$40M) Sarasota, Florida, sewer project

- <https://www.heraldtribune.com/news/20200421/beleaguered-sewer-project-nears-completion>

New Mexico developing classification system for dust storms along I-10

- <https://www.demingheadlight.com/story/news/2020/04/20/new-mexico-state-university-research-aimed-making-10-safer/5165983002/>

Death of research lab animals

- <https://www.msn.com/en-us/news/world/millions-of-unused-research-animals-killed-in-germany/ar-BB135zZH>

SCOTUS rejects case limiting water pollution in Hawaii – “functional equivalent” of point source

- <https://thehill.com/regulation/court-battles/494298-supreme-court-hands-environmentalists-a-win-in-water-pollution-case>

Kane County opted to withdraw from Lake Powell water pipeline – “doesn’t need more water” - \$25M spent thus far – will bypass Johnson Canyon & Kanab – more water for growing population

- <https://www.sltrib.com/news/environment/2020/04/23/why-did-kane-county-pull/>
- <https://www.stgeorgeutah.com/news/archive/2020/04/17/mgk-kane-county-drops-out-of-lake-powell-pipeline-project/#.XqHiA0BFyUk>
- <https://www.lakepowelllife.com/lake-powell-pipeline-to-bypass-johnson-canyon-and-kanab/>
- <https://www.kuer.org/post/lake-powell-pipeline-project-continues-despite-kane-countys-departure#stream/0>

Reports of insect apocalypse are overblown but still concerning

- <https://www.cnn.com/2020/04/23/world/insect-declines-scn/index.html>
- Paper: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0185809>

Treetopias in urban areas – do they really turn cities into urban forests?

- <https://theconversation.com/the-urban-forest-of-the-future-how-to-turn-our-cities-into-treetopias-134624>

How infectious disease influenced the design of American bathrooms

- <https://www.citylab.com/design/2020/04/bathroom-home-design-history-disease-hygiene-coronavirus/609745/>

Assessing “carbon footprint” across the US

- <https://arstechnica.com/science/2020/04/americans-have-texas-sized-carbon-footprints-heres-why/>

“Significantly elevated” levels of PFAS chemical found in Starkweather Creek sediments in Wisconsin

- <https://www.channel3000.com/environmental-group-finds-significantly-elevated-levels-of-pfas-in-creek-sediments/>

CORONAVIRUS

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

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

Screening of residents in New York found 14% tested positive for antibodies

- <https://www.msn.com/en-us/news/us/new-york-test-of-3000-people-finds-14percent-with-coronavirus-antibodies/ar-BB136bZG>
- <https://www.nytimes.com/2020/04/23/nyregion/coronavirus-antibodies-test-ny.html>
- <https://www.dailymail.co.uk/news/article-8250385/A-FIFTH-New-York-City-residents-tested-positive-coronavirus-antibodies-Cuomos-study.html>

First known US cases (deaths) actually occurred in Santa Clara, California in early February – likely community transmission – did we really need to shut the country down? Perhaps just NY& NJ

- <https://www.msn.com/en-us/news/us/autopsies-find-first-us-coronavirus-death-occurred-in-early-february-weeks-earlier-than-previously-thought/ar-BB131mhb>

Antibody testing in Santa Clara County found 2.5% to 4.2% were positive = 48,000+ have had the virus

- <https://www.msn.com/en-us/health/health-news/antibody-research-indicates-coronavirus-may-be-far-more-widespread-than-known/ar-BB12MFWL>

California Governor pushes back against re-opening the State

- <https://ktla.com/news/california/gov-newsom-to-give-latest-update-on-californias-response-to-coronavirus-crisis-amid-calls-for-state-to-reopen/>

The virus “was here long before we knew it”

- <https://www.yahoo.com/news/amid-signs-virus-came-earlier-122540809.html>

Graphs of “projections” versus actual numbers of cases and deaths across the country & by state – do these curves warrant the extended shut-down?

- <https://www.mdmetrix.com/covid-19-projections>
- https://covid-19.mdmetrix.com/grid.html?list=new_case_curve
- https://covid-19.mdmetrix.com/grid.html?list=death_curve

No coronavirus infection-rate spike after in-person voting in Wisconsin – despite criticisms by Dems the case rate dropped compared to the US

- <https://www.msn.com/en-us/news/us/wisconsin-saw-no-coronavirus-infection-rate-spike-after-april-7-election-study-says/ar-BB13b4C3>
- https://madison.com/wsj/news/local/health-med-fit/no-bump-in-covid-19-rates-after-wisconsins-april-7-election-study-says/article_b1aade1d-abec-5fc2-92fb-e1c64ccbc92f.html
- <https://www.nytimes.com/2020/04/07/us/politics/wisconsin-democratic-voters.html>

Assessing the IHME model – “an academically credible analysis funded in part by the Bill & Melinda Gates Foundation” – “not hewed to traditional disease modeling procedures or incorporated crucial variables”

- <https://www.msn.com/en-us/news/politics/how-overly-optimistic-modeling-distorted-trump-teams-coronavirus-response/ar-BB13a8nn>

Victims are furious as inmates are granted early release from jail

- <https://www.yahoo.com/news/slap-face-victims-angered-jails-191413596.html>

Dr Phil says psychological & physiological impacts of isolation are causing more destruction & death than coronavirus

- <https://www.msn.com/en-us/tv/news/dr-phil-claims-shutdowns-deadlier-than-coronavirus-in-wild-fox-news-appearance/ar-BB12LI4c>
- Interview: <https://deadline.com/2020/04/dr-phil-coronavirus-show-mental-health-1202896700/>
- <https://www.frontiersin.org/research-topics/13561/coronavirus-disease-covid-19-psychological-behavioral-interpersonal-effects-and-clinical-implication>
- <https://www.dailymail.co.uk/news/article-8207783/150-000-Brits-die-coronavirus-pandemic-domestic-violence-suicides.html>
- https://www.huffpost.com/entry/increase-domestic-violence-killings-coronavirus-stay-at-home_n_5e907808c5b63e73d7e38fe7
- <https://www.sciencefocus.com/news/mental-health-impact-of-coronavirus-outbreak-requires-urgent-study/>

Good News: car crashes decreased 50+% - waters clearer – air more breathable – wildlife returning – crime rates drop

- <https://www.msn.com/en-us/news/us/california-car-crashes-decreased-by-over-50-percent-saving-taxpayers-dollar1b-report/ar-BB12Tw4P>
- <https://www.winknews.com/2020/03/24/coronavirus-pandemic-having-some-positive-impact-on-environment/>
- <https://psiloveyou.xyz/some-positives-that-might-come-out-of-coronavirus-9f9920dffe9e>
- <https://www.france24.com/en/20200320-clearer-water-cleaner-air-the-environmental-effects-of-coronavirus>
- <https://www.yahoo.com/gma/social-distancing-may-impact-park-marine-life-091000912--abc-news-topstories.html>
- <https://www.msn.com/en-us/news/crime/in-baltimore-robberies-and-assaults-plunge-shootings-dip-as-coronavirus-shutters-city/ar-BB135Lbr>

But short-term environmental gains from economic shutdown will not be permanent

- <https://phys.org/news/2020-04-short-term-environment-gains-impermanent.html>

Almost 50% of deaths in Europe were in care homes amidst a very vulnerable population

- <https://www.newscientist.com/article/2237475-covid-19-latest-up-to-half-of-deaths-in-europe-were-in-care-homes/>

Report: The Financial Impact of the COVID-19 Crisis on US Drinking Water Utilities

- https://www.awwa.org/Portals/0/AWWA/Communications/AWWA-AMWA-COVID-Report_2020-04.pdf

Poison reports “increased sharply” as Americans attempt to disinfect to kill the virus

- <https://arstechnica.com/science/2020/04/americans-are-poisoning-themselves-while-trying-to-kill-the-coronavirus/>
- MMWR: https://www.cdc.gov/mmwr/volumes/69/wr/mm6916e1.htm?s_cid=mm6916e1_w

Tracking the origin of the novel coronavirus

- <https://www.genengnews.com/news/spread-of-early-coronavirus-lineages-reconstructed-using-genetic-network-technique/>
- Paper: <https://www.pnas.org/content/early/2020/04/07/2004999117>

What businesses are “essential” and which are not? Definition varies cross the country

- <https://www.msn.com/en-us/news/us/pro-wrestling-beaches-golf-guns-in-coronavirus-closed-america-its-all-essential-somewhere/ar-BB12KPNa>

Hydroxychloroquine drug test will be conducted on thousands in slums of Mumbai, India

- <https://www.msn.com/en-us/news/world/trump-backed-drug-to-be-tested-on-thousands-in-mumbai-slums/ar-BB12MYUv>

Perspective: If half the country deaths were in Montana, would New York shut down?

- <https://townhall.com/columnists/dennisprager/2020/04/21/if-half-the-countrys-deaths-were-in-montana-would-new-york-shut-down-n2567282>

Perspective: Black Americans & COVID-19: Avoid the victim-card players

- <http://www.renewamerica.com/columns/sthompson/200421>

Virus surges through maquiladoras

- <https://www.yahoo.com/news/virus-cuts-mexican-factories-snubbing-shutdown-071322311.html>

Impacts of virus shut-down on farmers and food producers

- <https://www.msn.com/en-us/news/us/egg-demand-shifted-and-61000-minnesota-chickens-were-euthanized/ar-BB12ZUOm>

Understanding the concept of herd immunity

- <https://www.nationalhogfarmer.com/animal-health/approach-covid-19-similar-battling-swine-pathogens>

Perspective: Beating pandemics requires more medical laboratory professionals

- <https://www.forbes.com/sites/coronavirusfrontlines/2020/04/22/beating-pandemics-like-covid-19-requires-more-medical-laboratory-professionals-this-virologist-explains/#53bbf17a6e32>

Perspective: The deadly costs of extended shutdown orders

- <https://amgreatness.com/2020/04/22/the-deadly-costs-of-extended-shutdown-orders/>
- <https://www.breitbart.com/the-media/2020/04/23/donald-trump-jr-blasts-media-acting-cant-open-covid-eliminated/>

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

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Earth Day 2020 & Coastal Education go online

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