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### **Geoscience Bulletin Board – 10 June 2019 – compiled by Elaine J. Hanford**

#### **75<sup>th</sup> Anniversary of D-Day – Military Geologists played a big role in the Invasions**

- <https://www.forbes.com/sites/davidbressan/2019/06/06/geology-as-a-factor-in-the-battle-of-normandy/#90ce4797df31>

#### **Book Review: “Origins: How Earth’s History Shaped Human History” - For the human race, geology is destiny**

- [https://www.washingtonpost.com/outlook/for-the-human-race-geology-is-destiny/2019/05/31/80fff8bc-5b06-11e9-9625-01d48d50ef75\\_story.html?utm\\_term=.1fc476533d37](https://www.washingtonpost.com/outlook/for-the-human-race-geology-is-destiny/2019/05/31/80fff8bc-5b06-11e9-9625-01d48d50ef75_story.html?utm_term=.1fc476533d37)

#### **Debris flows linked to drought, wildfire & ENSO, put drinking water supplies at risk**

- Paper: <https://pubs.geoscienceworld.org/gsa/geology/article/47/5/491/569815/debris-flows-in-southeast-australia-linked-to>

#### **Australian-US joint venture aims to establish rare-earth processing plant in Hondo, Texas**

- <https://arstechnica.com/information-technology/2019/05/australian-rare-earth-ore-processor-wants-to-build-a-plant-in-the-us/>
- <https://arstechnica.com/information-technology/2019/05/some-us-officials-looking-to-ways-to-counter-chinas-rare-earths-dominance/>
- <https://www.cnn.com/2019/06/03/why-chinas-rare-earths-threat-is-no-game-changer-in-the-trade-war.html>

#### **Estimates of CO<sub>2</sub> were incorrect – ocean absorbed “extra” CO<sub>2</sub> over last two decades**

- [https://arstechnica.com/science/2019/05/the-oceans-absorbed-extra-co<sub>2</sub>-in-the-2000s/](https://arstechnica.com/science/2019/05/the-oceans-absorbed-extra-co2-in-the-2000s/)

#### **Comparison of seismic design in Japan versus the US**

- <https://www.nytimes.com/interactive/2019/06/03/us/earthquake-preparedness-usa-japan.html?smid=nytcore-ios-share>

#### **Magnetism in volcanic tuffs forms through varied processes making signatures less reliable**

- <https://eos.org/research-spotlights/paleomagnetism-indicators-may-be-flawed>

**Nankai subduction zone reflects surface deformation spanning almost an entire seismic cycle**

- <https://eos.org/research-spotlights/deja-vu-understanding-subduction-zones-cycle-of-seismicity>

**Celebrating oceanic researchers**

- <https://eos.org/agu-news/science-in-the-deep>

**Tierra Blanca Joven eruption roughly 1,500 years ago was one of the largest in the Holocene**

- <https://eos.org/articles/eruption-in-el-salvador-was-one-of-the-holocenes-largest>

**Tropical atmosphere maintains radiative-convective equilibrium as a whole – not at smaller scales**

- <https://eos.org/research-spotlights/the-tropical-atmospheres-balancing-act>

**Mineralogical Society of America reaches centennial**

- <https://eos.org/features/the-mineralogical-society-of-america-turns-100>

**“Great Dying” extinction event nearly erased life on Earth – Smithsonian Exhibit**

- <https://www.npr.org/2019/06/04/729341362/the-great-dying-nearly-erased-life-on-earth-scientists-see-similarities-to-today>

**What can we deduce from the increase in tornado clusters and eastward shift in tornadic activity?**

- [https://www.huffpost.com/entry/tornadoes-climate-change\\_n\\_5cf01341e4b0e8085e369463](https://www.huffpost.com/entry/tornadoes-climate-change_n_5cf01341e4b0e8085e369463)

**USGS is ready for the 2019 Atlantic Hurricane Season**

- <https://www.usgs.gov/news/2019-atlantic-hurricane-season-here-usgs-ready>

**Why mid- to late Pleistocene giant beavers (*Castoroides*) went extinct at the end of the last Ice Age**

- [www.sci-news.com/paleontology/giant-beavers-07259.html](http://www.sci-news.com/paleontology/giant-beavers-07259.html)

**Feathers may have arisen 250 to 230 myo – roughly 80 million years before birds**

- <http://www.sci-news.com/biology/feathers-before-birds-07256.html>

**School of *Erismatopterus levatus* – extinct freshwater fish – found in Eocene Green River Formation**

- [www.sci-news.com/paleontology/fossilized-fish-school-07253.html](http://www.sci-news.com/paleontology/fossilized-fish-school-07253.html)

**Japanese drill ship Chikyu drilled deep into seafloor but failed to reach EQ generating zone**

- <https://www.nature.com/articles/d41586-019-01551-6>

**Setting a forest on fire & then studying it with drones**

- <https://www.nature.com/articles/d41586-019-01604-w>

**Iron oxide appears to retain magnetic properties deep within the mantle**

- <https://www.sciencedaily.com/releases/2019/06/190606101831.htm>

**Bolshaya Udina volcano – previously considered extinct – may produce Pompeii-size eruption**

- <https://www.newsweek.com/russia-extinct-volcano-woken-pompeii-eruption-1442479>

**2D and 3D seismic surveys are important tools when exploring for O&G reserves under the ocean**

- <https://www.energyvoice.com/oilandgas/200648/a-seismic-shift-at-sea/>

**Google Maps to show hurricane forecasts & Earthquake strike maps & floods**

- <https://www.pcmag.com/news/368826/google-maps-to-show-hurricane-forecasts-earthquake-strike-m>

**Dispelling misconceptions about origins of banded iron formations**

- [https://www.eurekalert.org/pub\\_releases/2019-06/uoa-sc060619.php](https://www.eurekalert.org/pub_releases/2019-06/uoa-sc060619.php)

**Sediment stirred up by fishing activity has detrimental effect on reef-building sea sponges**

- <https://phys.org/news/2019-06-sediment-fishing-sea-sponges.html>

**“A mountain of microplastic pollution” in the deep ocean**

- <https://www.scientificamerican.com/article/the-deep-ocean-harbors-a-mountain-of-microplastic-pollution/>

**Surface erosion plays critical role in reducing friction in subduction zones**

- <https://cosmosmagazine.com/geoscience/lubricating-rocks-ease-tectonics-researchers-say>

**Interview with John Murphy – Northern Cape in South Africa shows significant mineral potential**

- [https://www.miningweekly.com/article/northern-cape-may-be-where-parts-of-australia-were-in-90s-the-mineral-corporation-2019-06-06/rep\\_id:3650](https://www.miningweekly.com/article/northern-cape-may-be-where-parts-of-australia-were-in-90s-the-mineral-corporation-2019-06-06/rep_id:3650)

**Hydrothermal vents fuel massive phytoplankton blooms**

- <https://www.sciencedaily.com/releases/2019/06/190605100335.htm>

**New mineral classification system reflects chemistry & crystalline structure and also physical, chemical, or biological processes of formation**

- <https://www.sciencedaily.com/releases/2019/06/190603124552.htm>

**Most recent nuclear test by North Korea was more powerful than previously thought – moved a mountain**

- <https://www.popularmechanics.com/military/weapons/a27758417/north-korea-nuke/>

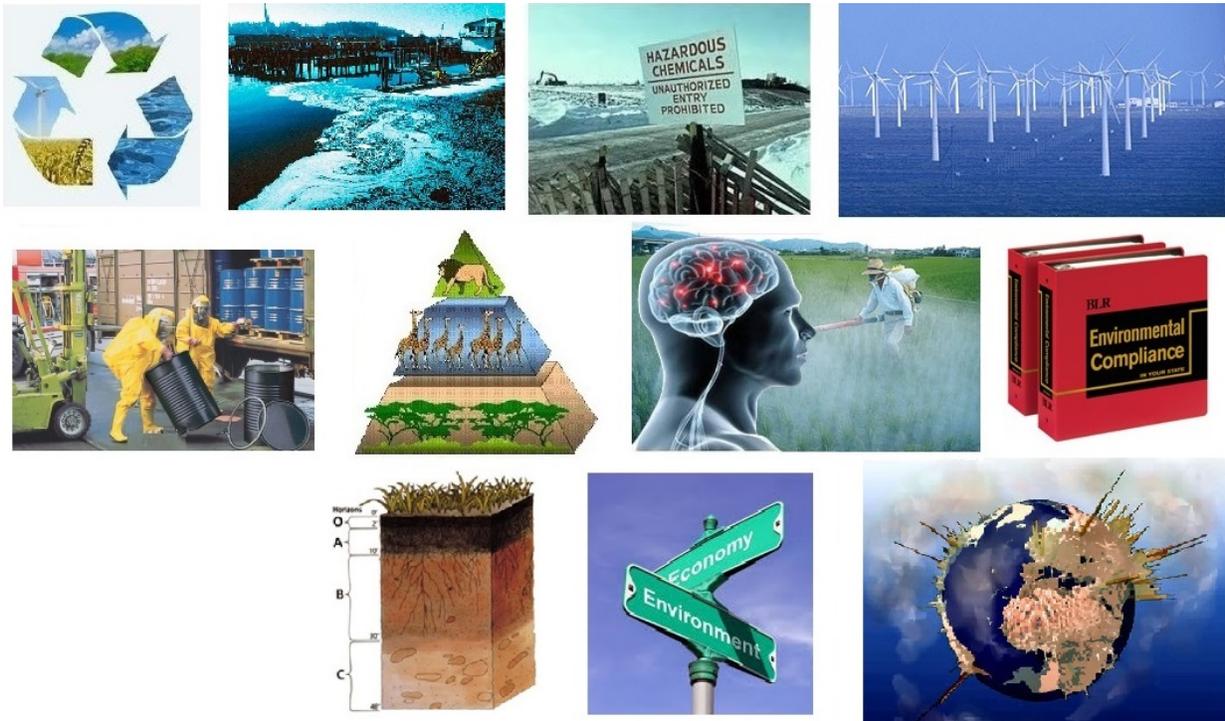
**Interferometric synthetic aperture radar data characterizes aseismic slip along North Anatolian Fault**

- <https://eos.org/research-spotlights/variations-in-creep-along-one-of-earths-most-active-faults>

**8.5M pound boulder falls and blocks highway in Colorado – Colorado Highway 145 to be re-routed**

- <https://news.yahoo.com/colorado-highway-rocked-8-5-150712817.html>

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**Environmental Science Bulletin Board – 10 June 2019 – compiled by Elaine J. Hanford**

**Opening of Morganza Spillway was delayed to reduce volume of water into Atchafalaya Basin**

- <https://www.apnews.com/b30368632b19453b9b161f631fb92e23>

- <https://www.accuweather.com/en/weather-news/ongoing-flooding-may-threaten-mississippi-rivers-old-river-control-structure/70008430>

#### **Epidemiology of avian influenza – health implications – gene editing – outbreaks in China & elsewhere**

- <https://www.frontiersin.org/articles/10.3389/fvets.2019.00150/full>
- <https://asunow.asu.edu/20190522-asu-researchers-evaluate-impact-climate-change-avian-flu>
- <https://reliefweb.int/report/nigeria/gIEWS-country-brief-nigeria-27-may-2019>
- <https://guardian.ng/features/science/understanding-health-implications-of-bird-flu/>
- <https://www.reuters.com/article/us-health-birdflu-chickens/scientists-edit-chicken-genes-to-make-them-resistant-to-bird-flu-idUSKCN1T41E9>
- <https://kfgo.com/news/articles/2019/jun/03/china-reports-h5n6-bird-flu-outbreak-in-xinjiang/>
- <https://en.tempo.co/read/1210526/fao-acknowledges-governments-efforts-to-control-avian-flu>

#### **Final portion of sewer separation project to reduce wastewater overflows in Port Huron**

- <https://www.thetimesherald.com/story/news/2019/05/31/port-huron-combined-sewer-overflow-separation-black-river/1289402001/>

#### **Mexico begins construction of \$7.7B Refinery Project**

- <https://www.bloomberg.com/news/articles/2019-06-02/mexico-starts-refinery-as-amlo-rallies-nation-amid-trump-tariffs>

#### **Los Angeles City Hall has serious rat infestation linked to nearby homeless encampments – homelessness impacts human health & governments**

- <https://www.msn.com/en-us/news/us/rat-infestation-at-la-city-hall-linked-to-nearby-homeless-encampments-report-finds/ar-AAckmd8>
- <https://www.nature.com/articles/d41586-019-01573-0>

#### **First 1 GW energy storage project proposed – combined hydrogen & compressed air caverns**

- <https://arstechnica.com/science/2019/05/power-systems-company-to-build-worlds-first-1-gw-energy-storage-project-in-utah/>

#### **Lost WWII uranium cubes explains why nuclear program in Germany failed**

- <https://arstechnica.com/science/2019/06/physicists-hunt-uranium-cubes-to-shed-light-on-germanys-failed-nuclear-reactor/>

#### **Book Review: “Power Trip” a guide through the history of energy – geopolitics of energy**

- <https://www.ijpr.org/post/centrality-energy-use-power-trip#stream/0>
- <https://www.youtube.com/watch?v=uUpXUS4jo0Y>

#### **Global assessment examines threats to mountain ecosystem & communities**

- <https://eos.org/research-spotlights/mountain-ecosystems-and-communities-face-challenges-worldwide>

#### **Editing genes in babies may increase higher risk of premature death – “a lesson in humility”**

- <https://www.npr.org/sections/health-shots/2019/06/03/727957768/2-chinese-babies-with-edited-genes-may-face-higher-risk-of-premature-death>

#### **CBD oils becoming more popular – some health benefits but questions about human health safety**

- <https://www.npr.org/sections/health-shots/2019/05/31/728370966/as-cbd-oils-become-more-popular-the-fda-is-looking-at-how-they-should-be-regulat>

#### **Teflon was a result of modern chemistry – so too the PFOA toxic chemistry in our waters**

- [https://www.huffpost.com/entry/pfas-water-crisis-2020-democrats\\_n\\_5ce6d95ae4b0cce67c873f3f](https://www.huffpost.com/entry/pfas-water-crisis-2020-democrats_n_5ce6d95ae4b0cce67c873f3f)

#### **Poultry farms in North Carolina are “an unregulated environmental disaster”**

- <https://www.treehugger.com/sustainable-agriculture/north-carolinas-poultry-farms-are-unregulated-environmental-disaster.html>

- EWG Report: [https://cdn3.ewg.org/sites/default/files/u352/EWG\\_NC-CAFO\\_Report\\_C05.pdf?\\_ga=2.128189892.938341127.1551895121-990668769.1548783418](https://cdn3.ewg.org/sites/default/files/u352/EWG_NC-CAFO_Report_C05.pdf?_ga=2.128189892.938341127.1551895121-990668769.1548783418)

**Removing water from many products would significantly reduce plastic packaging waste**

- <https://www.treehugger.com/plastic/incredibly-simple-solution-plastic-packaging-waste.html>

**Love dogs? Could be in your genetic make-up**

- <http://www.sci-news.com/genetics/human-genetic-variation-dog-ownership-07247.html>
- Paper: <https://www.nature.com/articles/s41598-019-44083-9>

**Vegetation mosaics in California linked to patterns of weathered bedrock**

- <https://eos.org/research-spotlights/answer-to-california-landscape-riddle-lies-underground>

**Book Review: “Underland – a Deep Time Journey”**

- <https://www.npr.org/2019/06/03/729156788/underland-connects-us-to-dazzling-worlds-beneath-our-feet>

**12 most endangered cat species**

- <https://www.treehugger.com/slideshows/natural-sciences/cats-are-going-extinct-12-most-endangered-feline-species/>

**Modern food banishes nature & the environment to the periphery of how we live**

- <https://www.ehn.org/our-food-systems-reckoning-with-nature-is-coming-2638684015.html>

**Another warning that e-cigarettes can damage the heart & increase risk of heart disease**

- <https://www.ehn.org/vaping-hurts-your-heart-2638041485.html>

**2019 hurricane season has begun but much of H. Harvey 2017 flood damage remains unrepaired**

- <https://www.reuters.com/article/us-usa-weather-houston-housing-feature/houston-still-rebuilding-from-2017-floods-as-new-hurricane-season-arrives-idUSKCN1IX48C>
- <https://www.citylab.com/environment/2019/06/hurricane-season-texas-houston-storm-flood-resilience-funds/588868/>

**Nature-based solutions – not just conventional engineering – needed to address flooding**

- <https://news.uga.edu/building-bridges-2/>

**In Memoriam: Jon A Peterka (1941-2019) – wind energy pioneer**

- <https://www.enr.com/articles/46969-wind-engineering-pioneer-peterka-dies-at-age-77>

**Ebola cases doubled over just two months in Democratic Republic of the Congo – exceeds 2,000**

- <https://www.nature.com/articles/d41586-019-01735-0>

**Some things to know about porcupines**

- <https://www.nationalgeographic.com/animals/mammals/group/porcupines/>

**Surprising answer to the question: What species would you save?**

- <https://www.nationalgeographic.com/animals/2019/05/which-animal-species-would-you-save/>

**Changing demand for fossil fuels & petrochemical products**

- <https://www.msn.com/en-us/money/companies/the-backlash-to-plastic-has-oil-companies-worried/ar-AACqMH5>

**Disaster Relief Bill signed – contains \$19.1B in disaster relief funds**

- <https://www.enr.com/articles/47023-trump-signs-191-billion-disaster-relief-bill-with-billions-for-infrastructure>

**Shooting rare black giraffe - “it’s a hobby, it’s something that I love to do” “They are put here for us” – How many things are wrong with this picture???**

- <https://news.yahoo.com/american-hunter-viral-photo-dead-160022804.html>

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**Feasibility study to assess transit crossing across Burrard Inlet in British Columbia**

- <https://www.enr.com/blogs/15-evergreen/post/46896-translink-bc-government-to-explore-transit-link-across-burrard-inlet>

**Mangroves – economies recover faster after tropical cyclones**

- <https://arstechnica.com/science/2019/06/more-mangroves-economies-recover-faster-after-tropical-cyclones/>

**Expansion plans for LNG export terminals in Louisiana and Corpus Christi, Texas**

- <https://www.chron.com/business/energy/article/Cheniere-Energy-inks-deals-to-support-two-13919404.php>

**Estimated 80,000 acres of coastal wetlands being lost each year to development – rate increasing**

- <https://wpde.com/news/local/coastal-wetlands-protect-us-from-disaster>

**Texas coastal flooding strands endangered turtles**

- <https://wtop.com/animals-pets/2019/06/texas-coastal-flooding-strands-about-100-endangered-turtles/>

**Models suggest wet weather sinks carbon into coastal temperate rain forests**

- <https://physicsworld.com/a/wet-weather-sinks-carbon-into-coastal-temperate-rainforests/>

**Coastal habitats of mangroves, seagrass, salt marshes & coral reefs sustain ocean life**

- <https://www.pewtrusts.org/en/research-and-analysis/articles/2019/05/31/four-types-of-coastal-habitats-and-why-they-matter>
- <https://www.pewtrusts.org/en/projects/protecting-coastal-wetlands-and-coral-reefs>

**Florida lawmakers pass 4 bills to assess & manage stressors on coastal communities**

- <https://floridianpress.com/2019/06/fl-lawmakers-pass-bills-tackling-coastal-concerns/>

**Coastal wetlands are impacted by changing climatic conditions**

- <https://www.bostonglobe.com/metro/2019/06/01/great-marsh-and-other-coastal-wetlands-climate-change-harming-delicate-ecosystems/NeYhTV8kzI0XgiVJ2pS3DK/story.html>

**District Court ruling begins to address cases challenging Coastal Zone Management Act**

- <https://www.jdsupra.com/legalnews/motion-to-remand-granted-in-one-coastal-16423/>

**Hundreds of septic tanks polluting coastal area**

- <https://www.news-journalonline.com/news/20190604/coastal-contamination-buried-beneath-quaint-ormond-by-the-sea-lie-hundreds-of-polluting-septic-tanks>

**Coastal Washington State remains dry – precipitation 15 to 25 % below long-term average**

- [https://www.chinookobserver.com/news/local/despite-showers-coastal-washington-remains-abnormally-dry/article\\_9d3cdcd0-8323-11e9-8cc1-e32ece8848e5.html](https://www.chinookobserver.com/news/local/despite-showers-coastal-washington-remains-abnormally-dry/article_9d3cdcd0-8323-11e9-8cc1-e32ece8848e5.html)

**Sea level rise may reactivate growth of some reef structures & islands**

- <https://eos.org/research-spotlights/sea-level-rise-may-reactivate-growth-of-some-reef-islands>

**Modeling tsunamis with video footage gathered from social media**

- <https://eos.org/editor-highlights/modeling-tsunamis-with-social-media>

**Investigation underway into deaths of at least 70 Gray Whales on Alaskan coast**

- [https://www.huffpost.com/entry/gray-whale-deaths-feds-investigate\\_n\\_5cf2870fe4b0a1997b6b15a1](https://www.huffpost.com/entry/gray-whale-deaths-feds-investigate_n_5cf2870fe4b0a1997b6b15a1)