The Ocean Is Looking More Menacing

By David Wallace-Wells

The New York Times, June 1, 2023

There are a lot of unsettling signals coming from the world’s oceans right now. Even for those of us who watch things like temperature anomalies and extreme weather events as likely portents of the climate to come, the off-the-charts rise of global sea surface temperature this spring has been eye-popping. As is much of the language recently used to describe it: “record breaking,” “huge,” “alarming,” “unprecedented,” “uncharted,” “an extreme event at a global scale.” Perhaps most simply: “trouble.”

In mid-March, measures of global sea-surface temperature plotted against recent years took a sharp turn away from the pack. By April 1, it had hit a record high. Then, in line with historical seasonal patterns, it began to slightly decline — only to reverse course in the middle of the month, heating up to about three quarters of a degree above the 1982-2011 mean. That represented what Robert Rohde, the lead scientist of the Berkeley Earth institute, identified as the largest global ocean temperature anomaly on record.

Three-quarters of a degree might not sound like much, and the size of the anomaly has since shrunk, to a temperature level only about one-quarter degree above the previous record. But scientists talk about global temperature rise using very small numbers — sometimes describing the difference between 1 degree Celsius of warming and 2 as an almost civilization-scale chasm — and often find themselves gobsmacked when local surface temperature records are broken by even one full degree. Because the oceans are so large, it takes a lot more to heat them — which makes any extremes even harder to produce, and therefore more startling.

Read More ...
Freshwater and anadromous fishing in Ice Age Beringia

By BEN A. POTTER HTTPS://ORCID.ORG/0000-0002-4749-0428, CARRIN M. HALFFMAN HTTPS://ORCID.ORG/0000-0003-5551-7799, HOLLY J. MCKINNEY HTTPS://ORCID.ORG/0000-0001-7688-2549, JOSHUA D. REUTHER HTTPS://ORCID.ORG/0000-0002-3877-359X, BRUCE P. FINNEY HTTPS://ORCID.ORG/0000-0002-2639-6512, FRANÇOIS B. LANOË HTTPS://ORCID.ORG/0000-0002-4627-140X, J. ANDRÉS LÓPEZ HTTPS://ORCID.ORG/0000-0002-2845-9871, CHARLES E. HOLMES HTTPS://ORCID.ORG/0000-0003-1405-4707, ERICA PALMER, [...], AND BRIAN M. KEMP

Science Advances, June 2, 2023

While freshwater and anadromous fish have been critical economic resources for late prehistoric and modern Native Americans, the origin and development of fishing is not well understood. We document the earliest known human use of freshwater and anadromous fish in North America by 13,000 and 11,800 years ago, respectively, from primary anthropogenic contexts in central Alaska (eastern Beringia). Fish use appears conditioned by broad climatic factors, as all occurrences but one are within the Younger Dryas chronozone. Earlier Bølling-Allerød and later early Holocene components, while exhibiting similar organic preservation, did not yield evidence of fishing, suggesting that this was a response to changing environmental factors, perhaps reductions in higher ranked resources such as large terrestrial mammals. Late Pleistocene and recent Indigenous peoples harvested similar fish taxa in the region (salmon, burbot, whitefish, and pike). We characterize late Pleistocene fishing in interior Beringia as an important element of broad-spectrum foraging rather than the intensive communal fishing and storage common among recent peoples.

Read More ...

Anacortes pier marked for removal by state

By Skagit Publishing staff

Anacortes American, May 21, 2023

An Anacortes pier will likely be taken down under a bill recently signed into law by Gov. Jay Inslee.

The Triton-America pier in Anacortes is named by the state Department of Natural Resources as one of the “Filthy Four” — a group of large derelict structures on state-owned aquatic lands.
The new law gives Natural Resources the authority to remove derelict aquatic structures such as unused piers and pilings from state waterways.

The Triton-America pier was built in 1914. Various cannery companies owned the structure until 1998, according to Anacortes Museum Director Bret Lunsford.

It is most known for housing Shannon Point Seafoods cannery.

In 2014, Triton-America LLC, a local company, purchased the section of the pier on privately owned tidelands after the previous owner went bankrupt.

Read More ...

Arizona Limits Construction Around Phoenix as Its Water Supply Dwindles

In what could be a glimpse of the future as climate change batters the West, officials ruled there’s not enough groundwater for projects already approved.

By Christopher Flavelle and Jack Healy

The New York Times, June 1, 2023
Maricopa County, which includes Phoenix and its suburbs, gets more than half its water supply from groundwater. Most of the rest comes from rivers and aqueducts as well as recycled wastewater. In practical terms, groundwater is a finite resource; it can take thousands of years or longer to be replenished.

The announcement of a groundwater shortage means Arizona would no longer give developers in some areas of Maricopa County new permits to construct homes that rely on wells for water.

Phoenix and nearby large cities, which must obtain separate permission from state officials for their development plans every 10 to 15 years, would also be denied approval for any homes that rely on groundwater beyond what the state has already authorized.

The decision means cities and developers must look for alternative sources of water to support future development — for example, by trying to buy access to river water from farmers or Native American tribes, many of whom are facing their own shortages. That rush to buy water is likely to rattle the real estate market in Arizona, making homes more expensive and threatening the relatively low housing costs that had made the region a magnet for people from across the country.

Read More ...

Saturn reclaims 'moon king' title with 62 newfound satellites, bringing total to 145

Sorry, Jupiter.

By Robert Lea

SPACE.com, May 2023
Astronomers have discovered 62 new moons orbiting the ringed planet Saturn.
The satellite haul brings the planet's total number of moons to over 100 and also means the gas giant takes back the crown as the solar system's "moon king" from Jupiter.

Prior to this discovery, Saturn had 83 moons recognized by the International Astronomical Union, so the new batch brings the total number to an incredible 145. The discovery marks another milestone for Saturn, with the planet becoming the first world in the cosmos known to be orbited by more than 100 moons.

---

**High costs of invasive species**

*BIOLOGICAL INVASION*

By Bianca Lopez

*Science, June 1, 2023*
Invasive species such as water hyacinth, pictured here, have high economic costs. PHOTO: SEBASTIAN KENNERKNECHT/MINDEN PICTURES

A subset of the myriad species that people have introduced into new regions become “invasive,” with outsized effects on ecosystems and human health, food production, and livelihoods. However, the costs associated with biological invasions may be underrecognized because their impacts often take a long time to appear and accumulate. Turbelin et al. compared the costs of damage associated with invasive species against those of natural hazards, including storms, drought, fires, floods, and earthquakes, both globally and within the United States. At both scales, storms incurred the highest costs, but the total costs of invasive species were similar to or greater than those of other types of natural hazards—and are increasing over time.

Read More ...