Pacific Northwest
NATIONAL LABORATORY

Planning for Emerging Threats

June 13, 2024

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NASEO Energy Security Bootcamp

U.S. DEPARTMENT OF ENERGY BATTELLE

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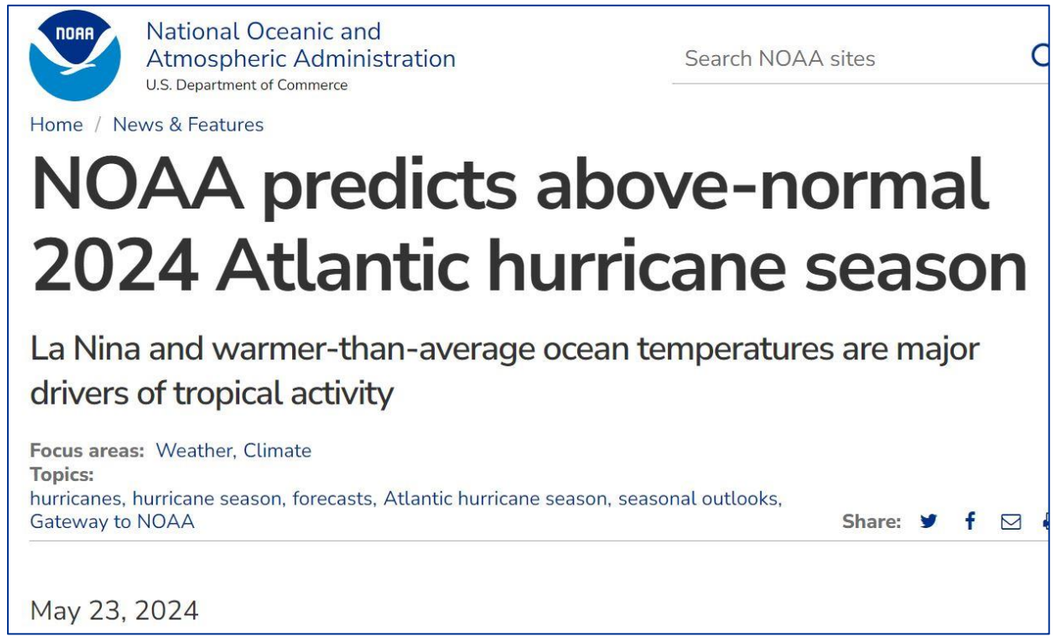
Science Headlines at PNNL: Hurricanes

Hurricanes

- Storms may grow wetter, threatening heightened risks of flooding.
- Warming tropical waters can trigger changes in winds that both strengthen and push hurricanes to the U.S. East and Gulf coasts more often, boosting hurricane frequency by a third compared to current levels
- Since 1979, nearshore hurricanes around the world intensified at a quickening pace, and this is projected to continue in a warming world



National Oceanic and Atmospheric Administration
U.S. Department of Commerce

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NOAA predicts above-normal 2024 Atlantic hurricane season

La Nina and warmer-than-average ocean temperatures are major drivers of tropical activity

Focus areas: Weather, Climate
Topics:
hurricanes, hurricane season, forecasts, Atlantic hurricane season, seasonal outlooks, Gateway to NOAA

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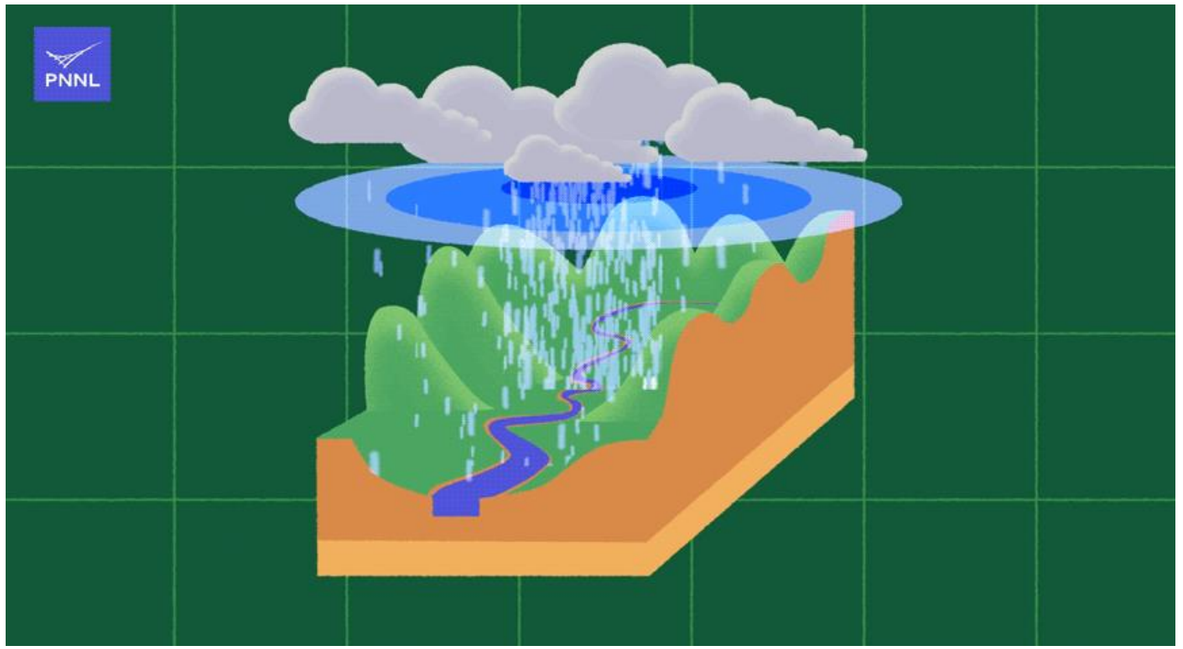
Science Headlines at PNNL: Flood

Flood

- Increasing flood risks from cold-season storm sharpening in the Western U.S.
- Increasing flood coherence and severity, notably in late summer season (Delaware River case study)
- Atmospheric river events intensify snowpack reduction (ablation) and nearly double the runoff magnitude response to precipitation, compared to non-AR events



Science Headlines at PNNL: Wildfire

Wildfire

- Long term outlooks predict a seasonal shift in wildfire extending from summer into fall in California. In the short term, fire duration will increase.
- Wildfires in west-coast states can strengthen storms in downwind states. Heat and airborne particles inflict stronger rain and larger hail upon central U.S. states.

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Thank you

Contributors

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