

Climate models can't explain 2023's huge heat anomaly – we could be in uncharted territory



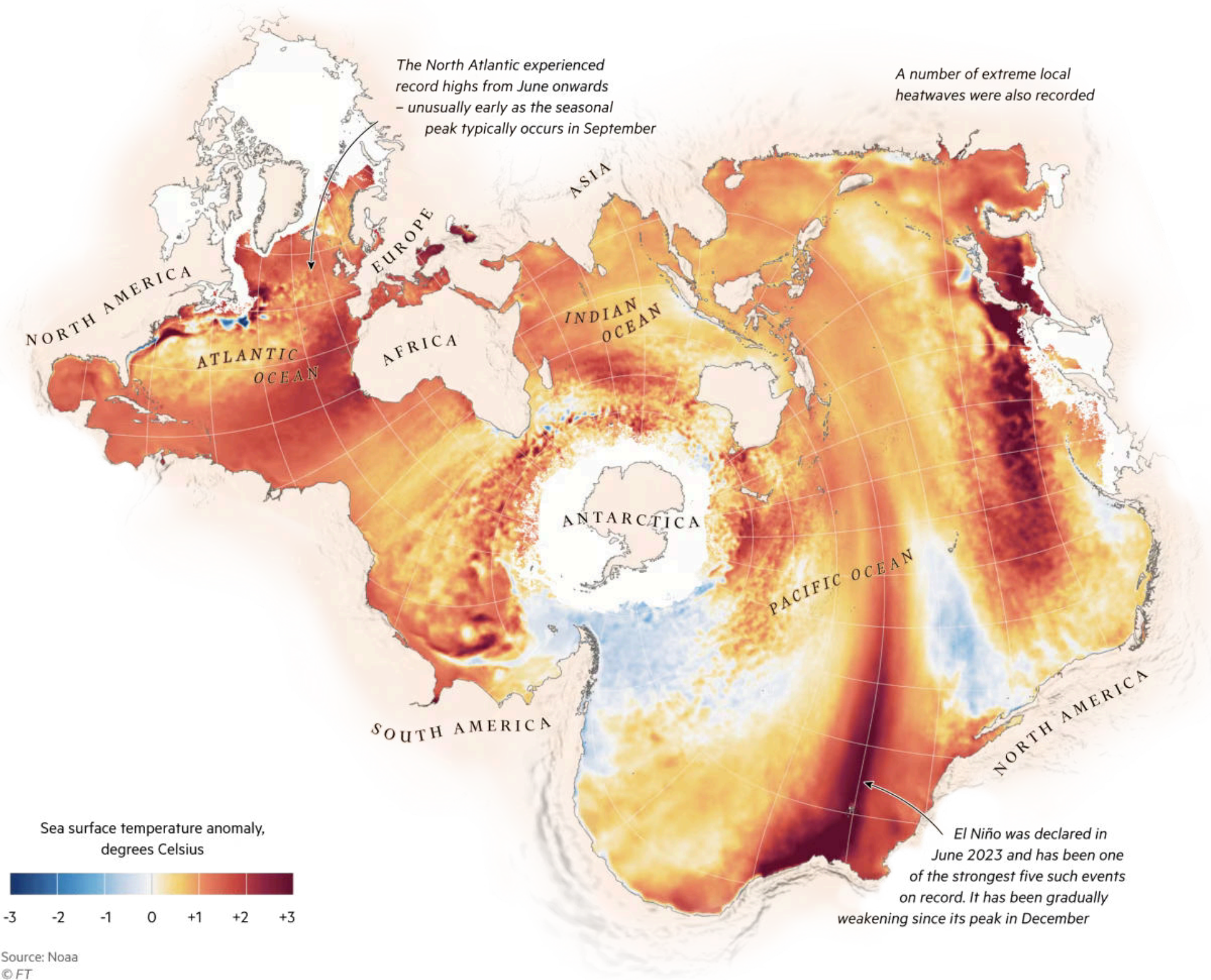
Taking into account all known factors, the planet warmed 0.2 °C more last year than climate scientists expected. More and better data are urgently needed.

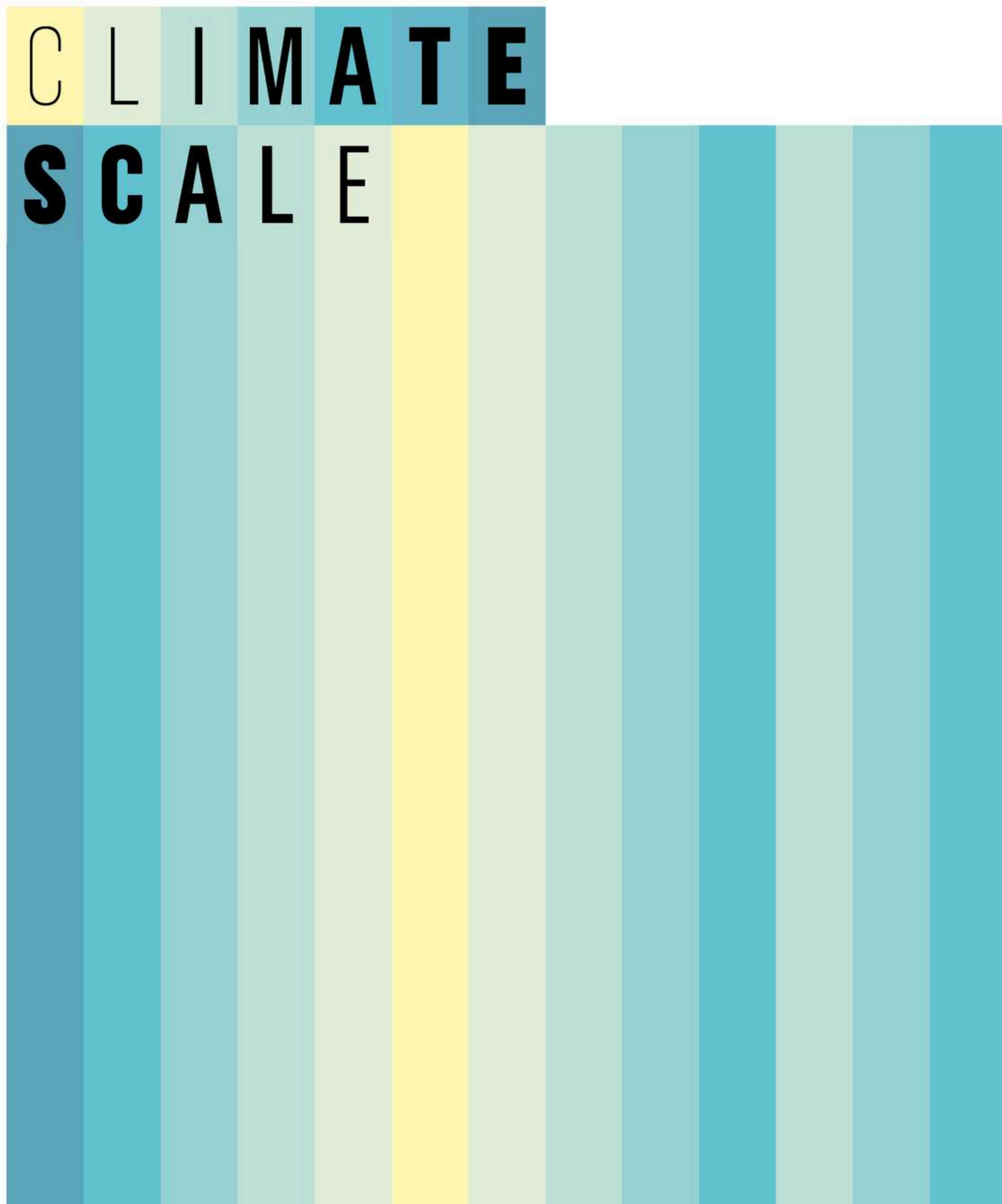
By [Gavin Schmidt](#)



Exceptional ocean heat across the globe

Sea surface temperatures for March 2023–February 2024, compared with long-term average





Five Slides
Reanalysis, Wind and Climate Change

TEM111 - Meeting
København 2024



this is the Multiverse by VORTEX

The Wind Resource

Last 20 years



The Power

Next 24-48 hours



The Wind Anomalies

One Season Ahead



The Risks of a
Changing Climate

Now and Next Decades

this is the Multiverse by VORTEX



The Wind Resource

Last 20 years



The Power

Next 24-48 hours



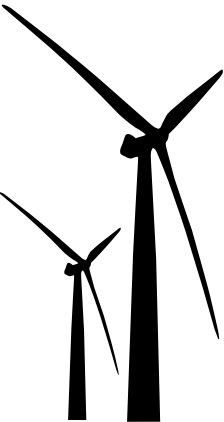
The Wind Anomalies

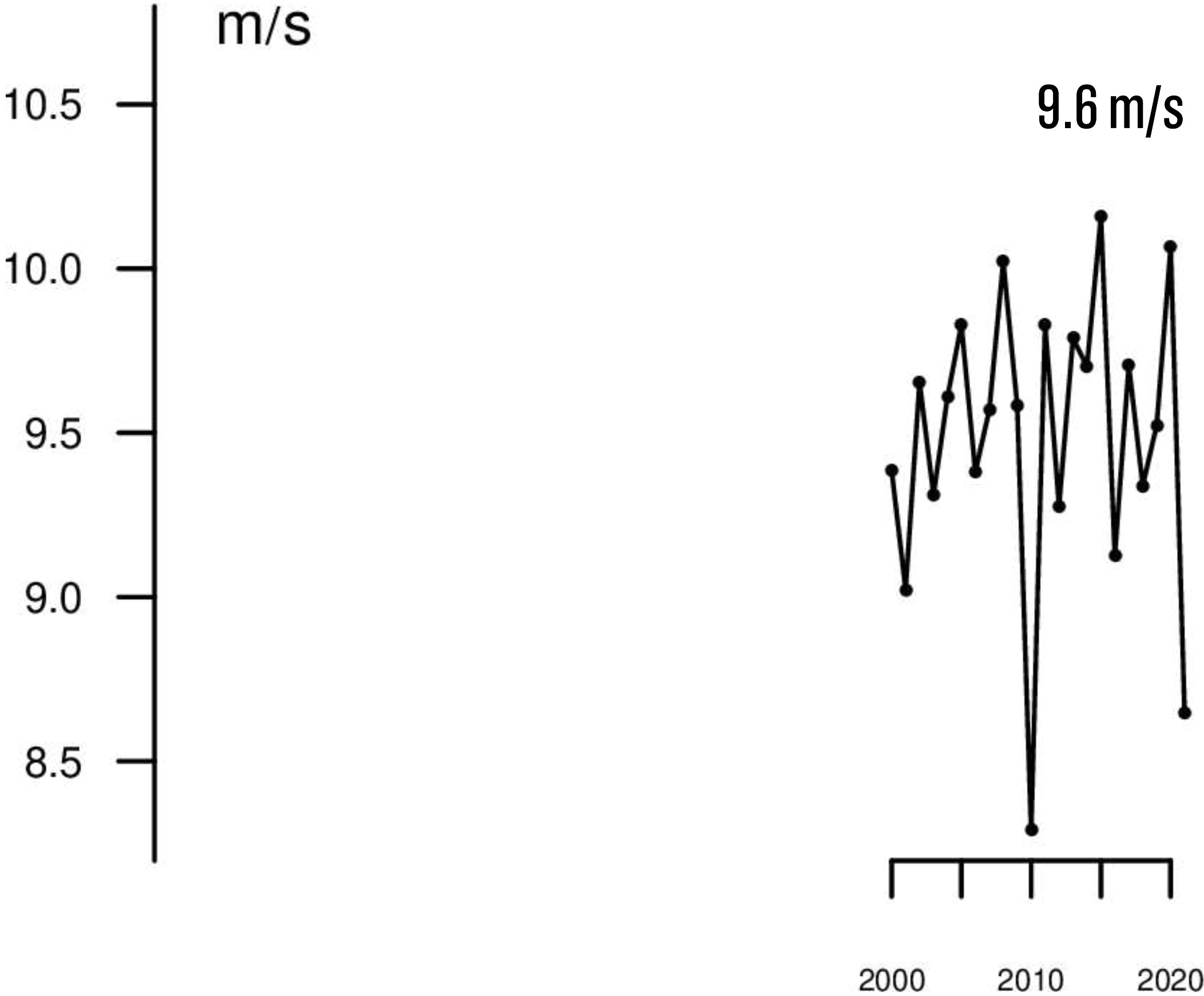
One Season Ahead

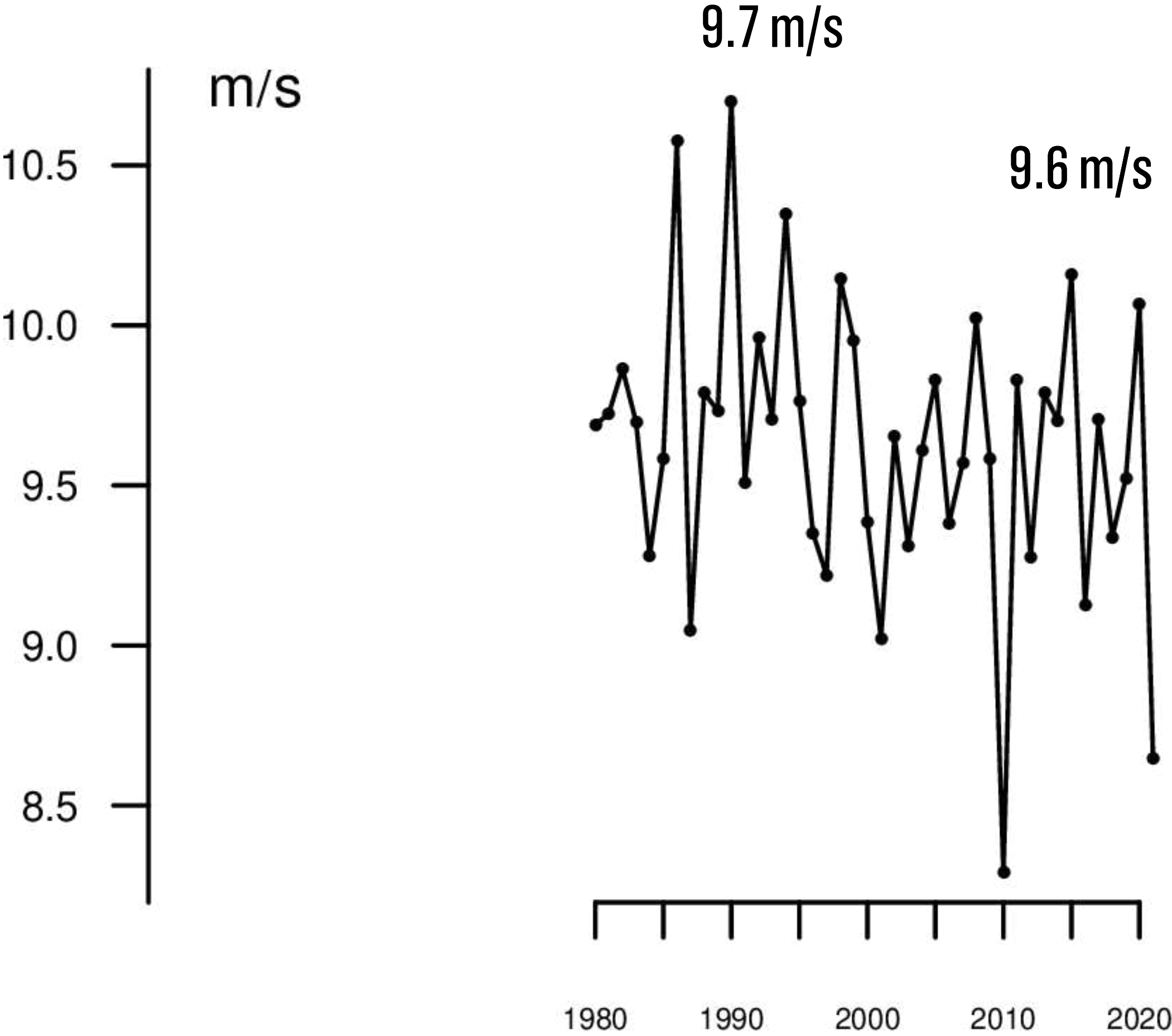


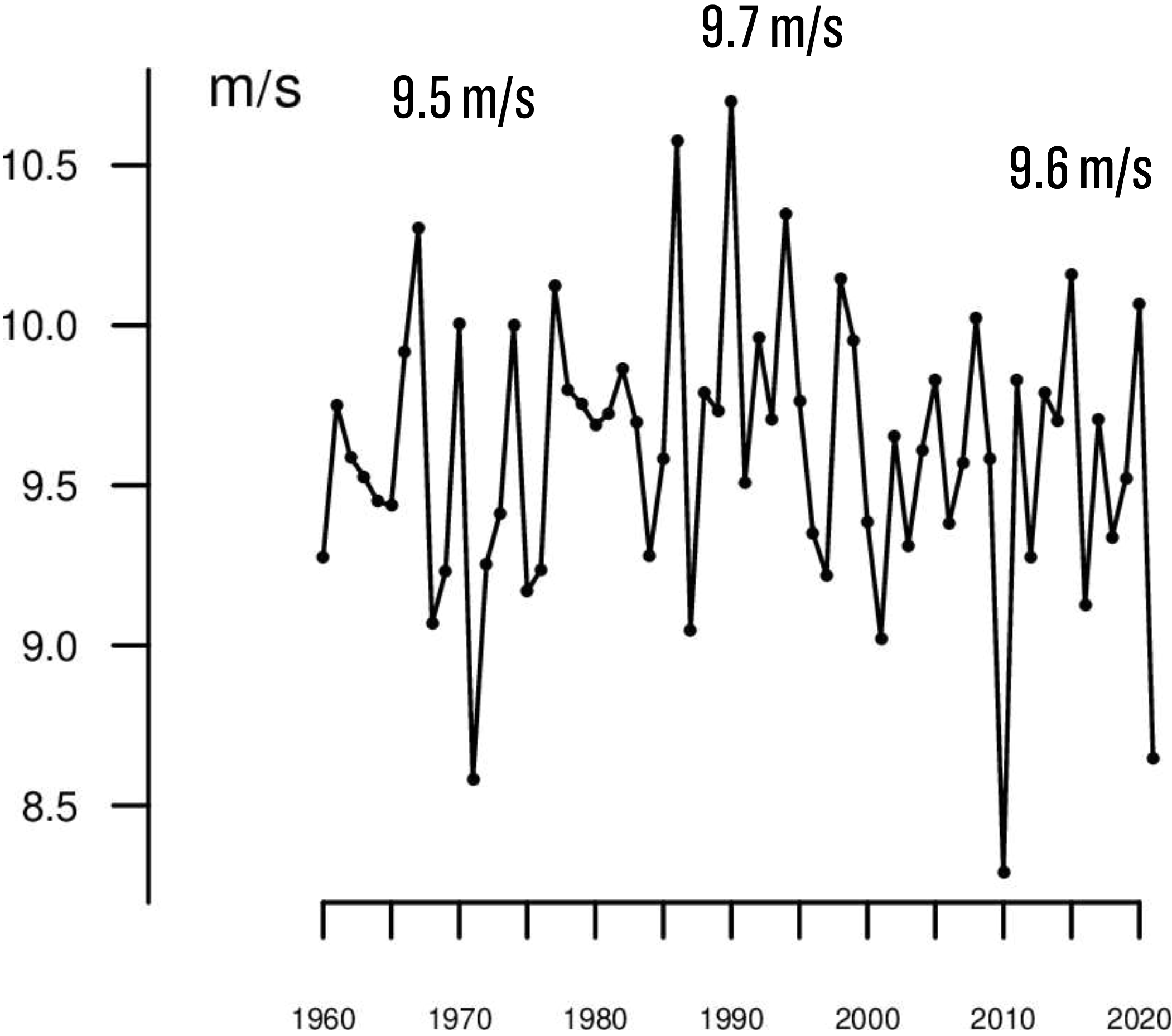
The Risks of a
Changing Climate

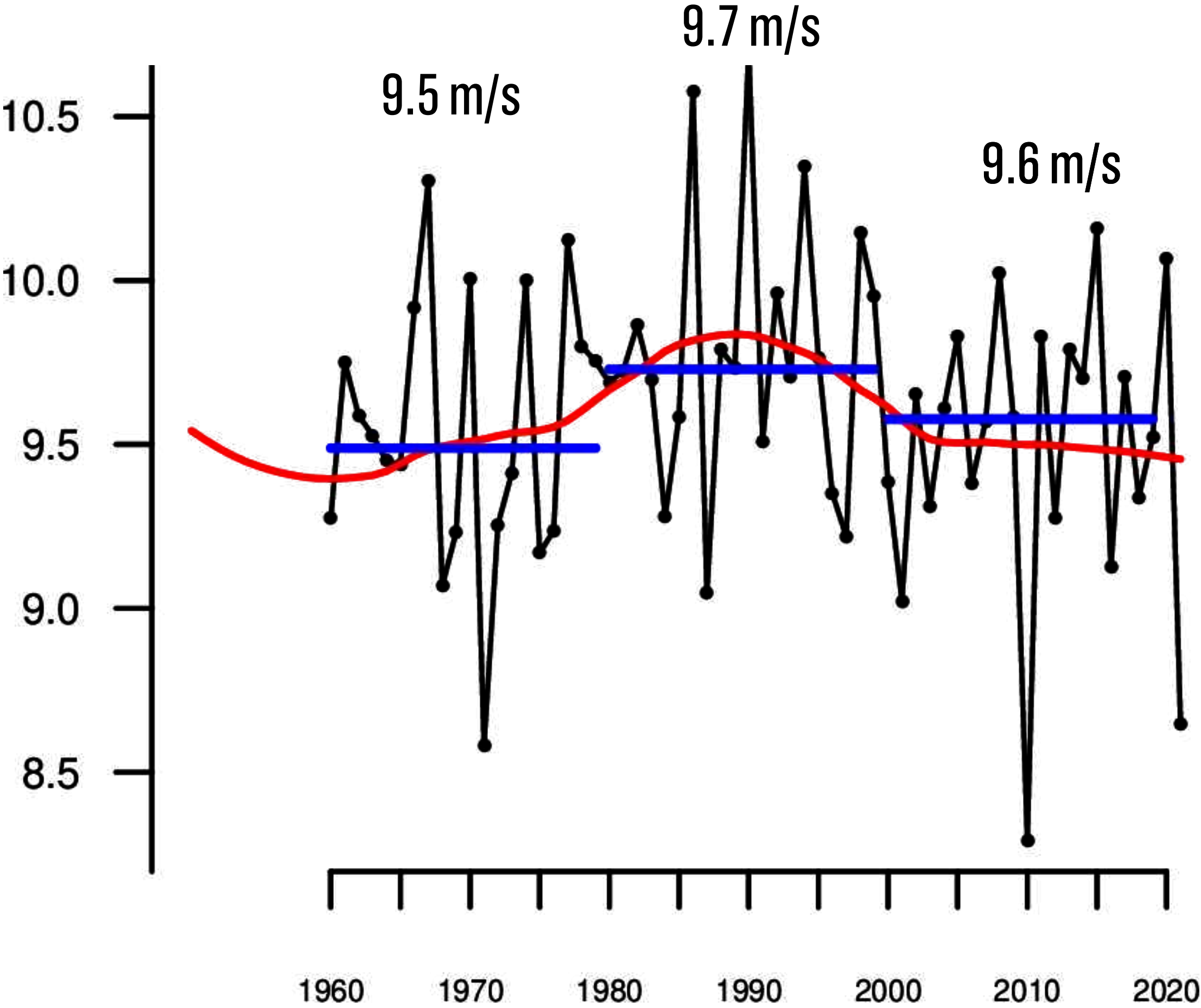
Now and Next Decades



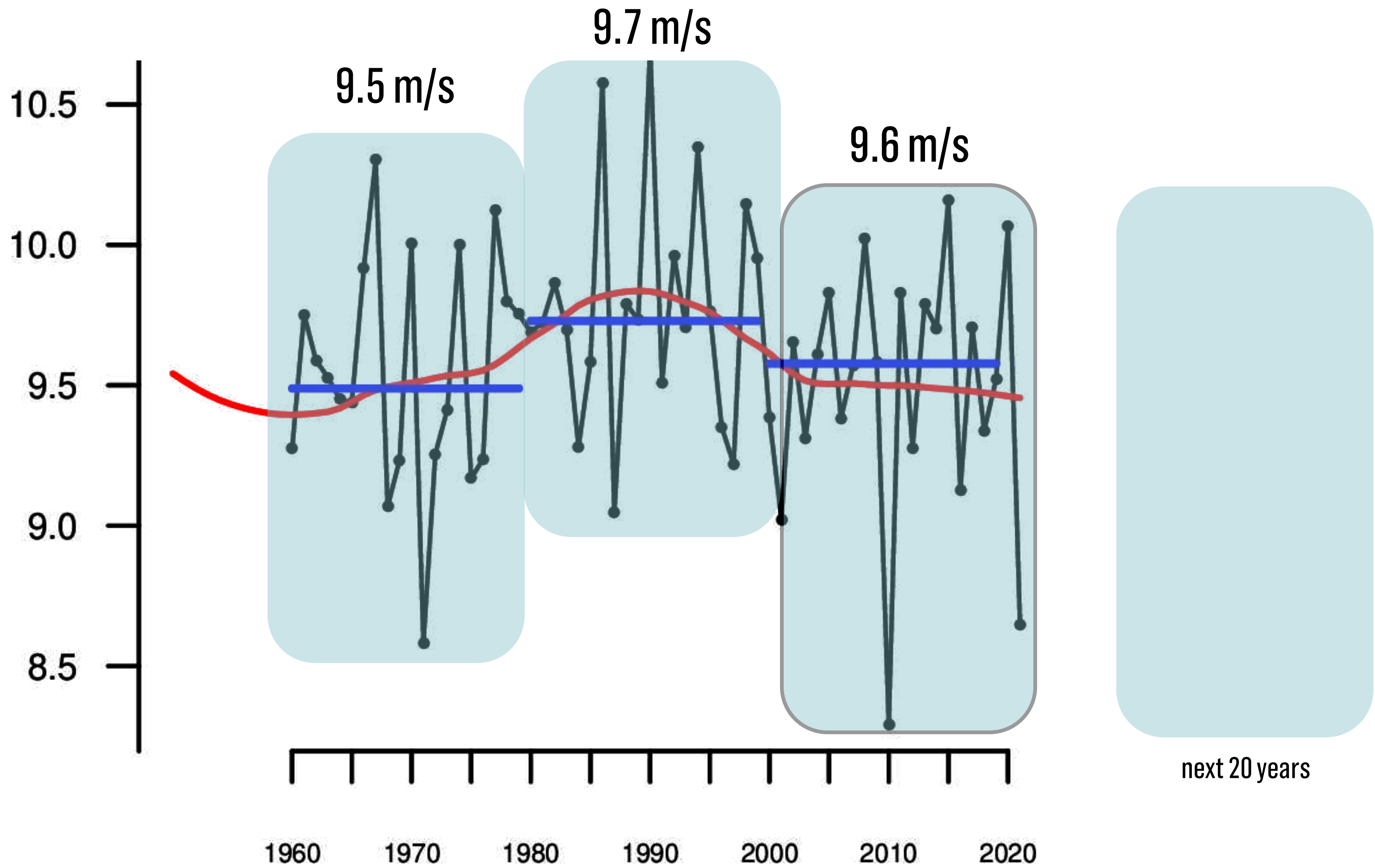




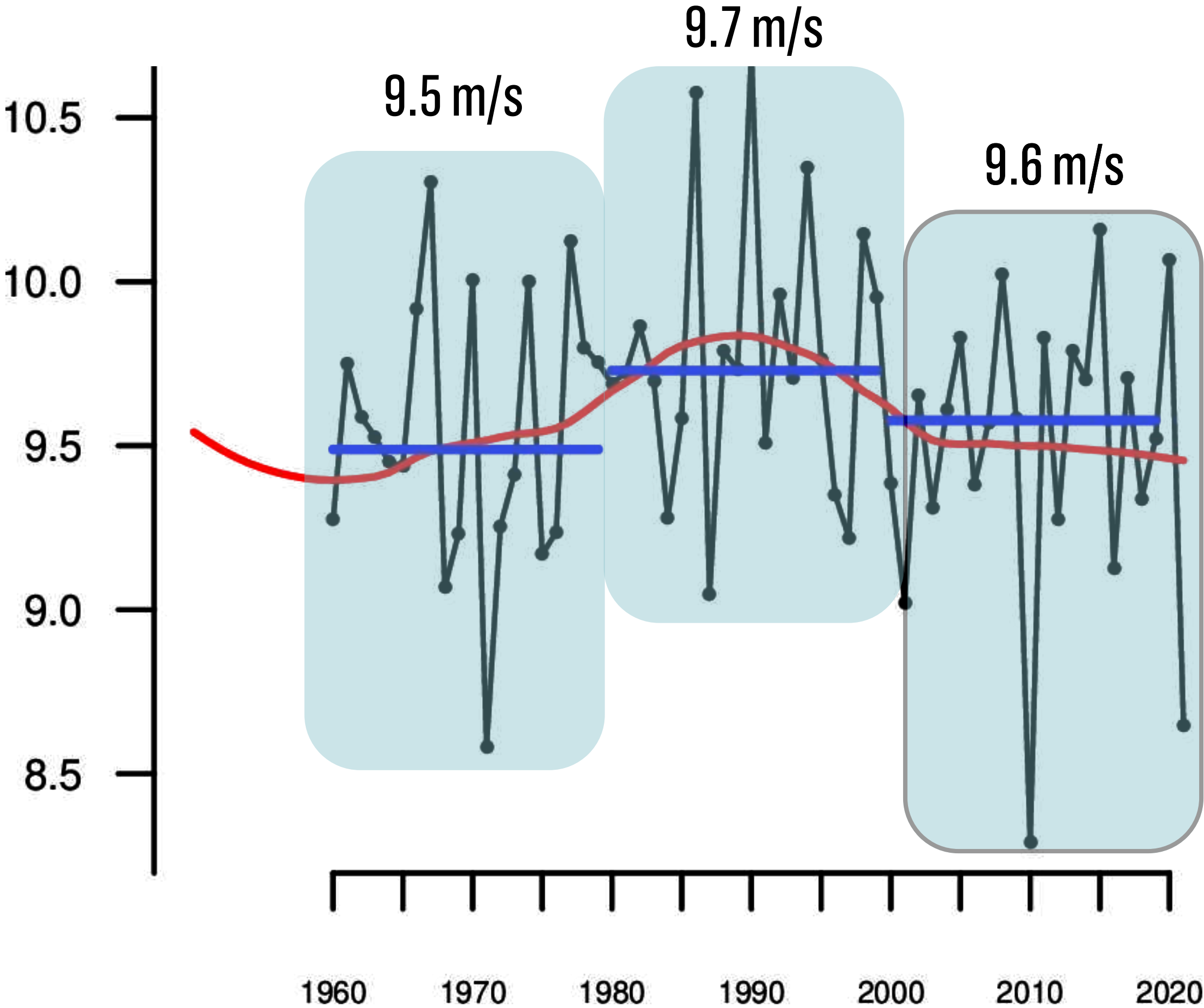




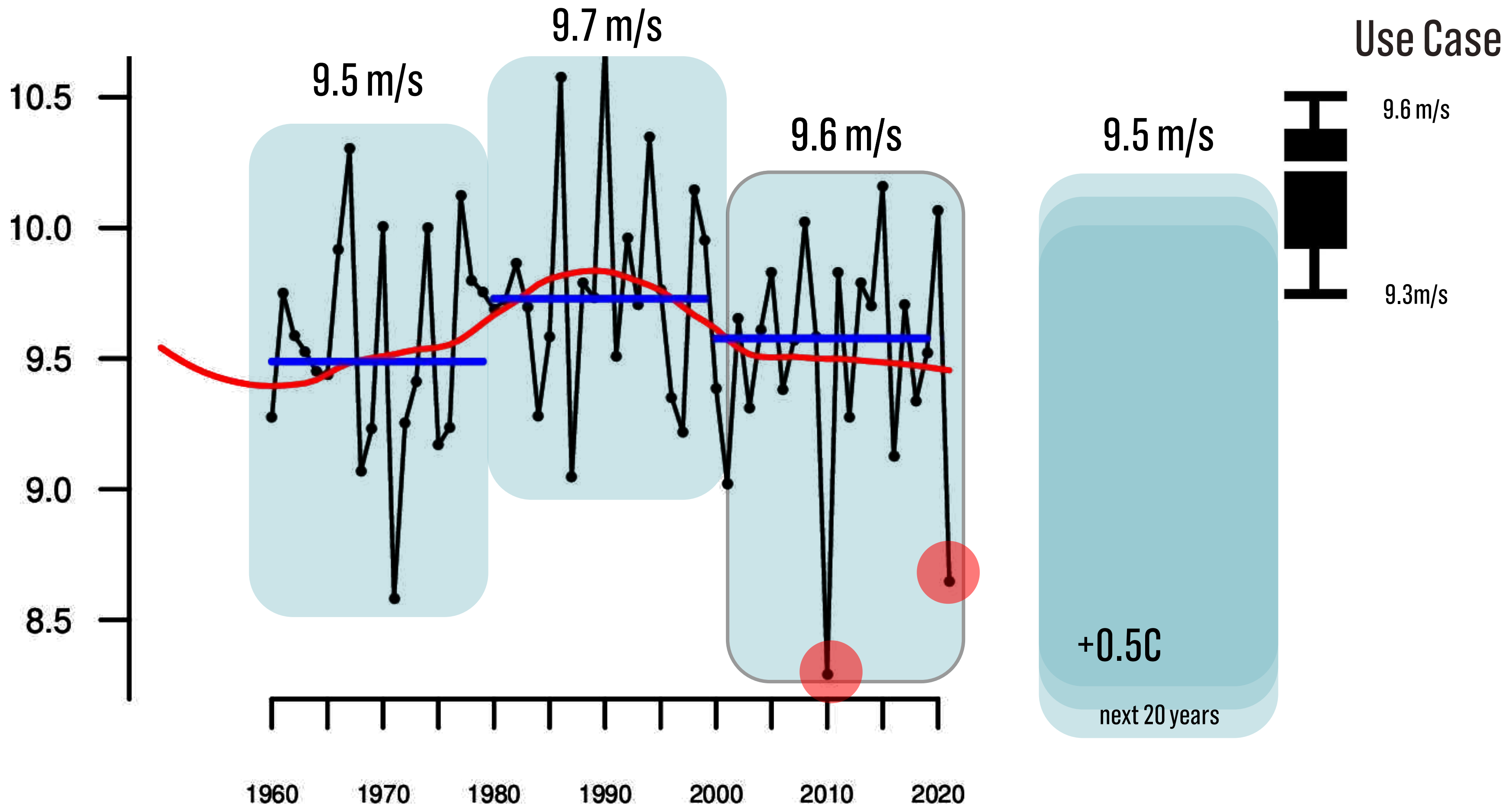
Use Case

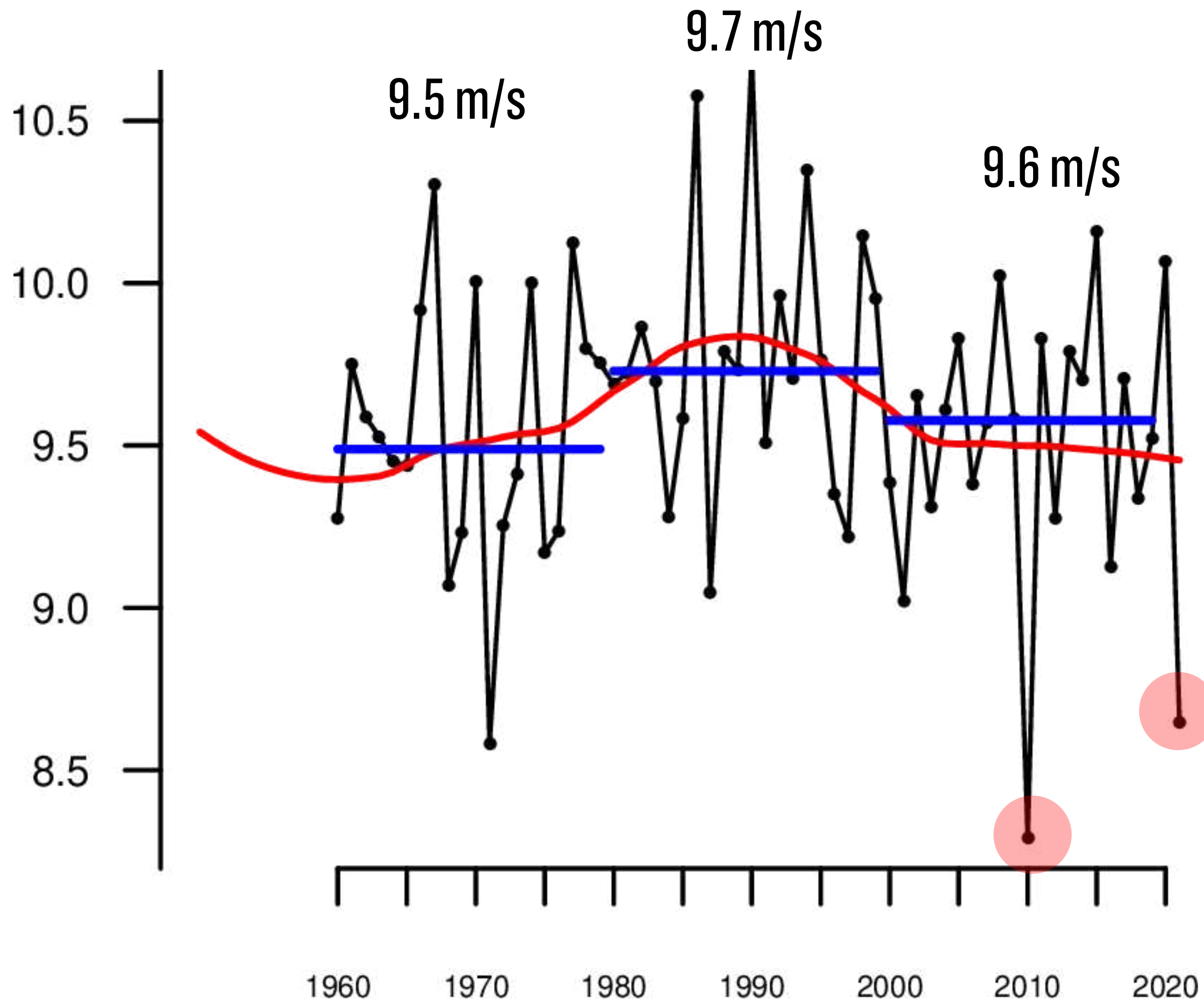


Use Case

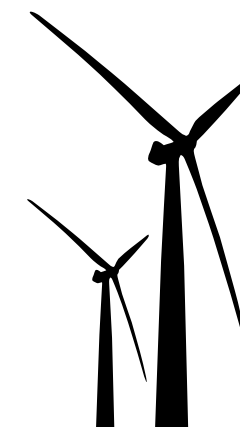
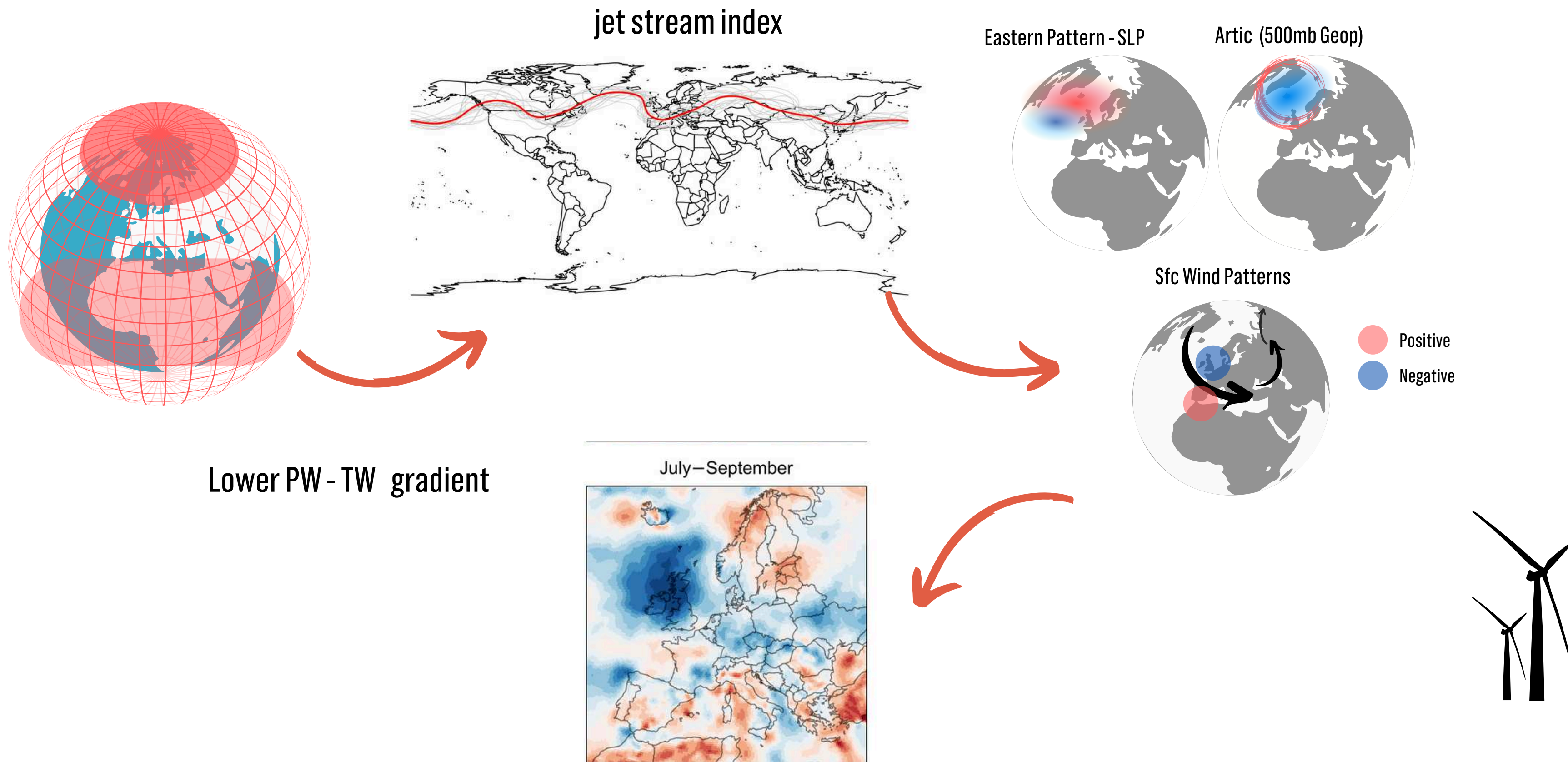


climate scenario
+0.5C
next 20 years





- What are the drivers of (relevant) anomalies:
 - wind drought (months)
 - blocking events (days)
- How likely to happen in a warmer climate



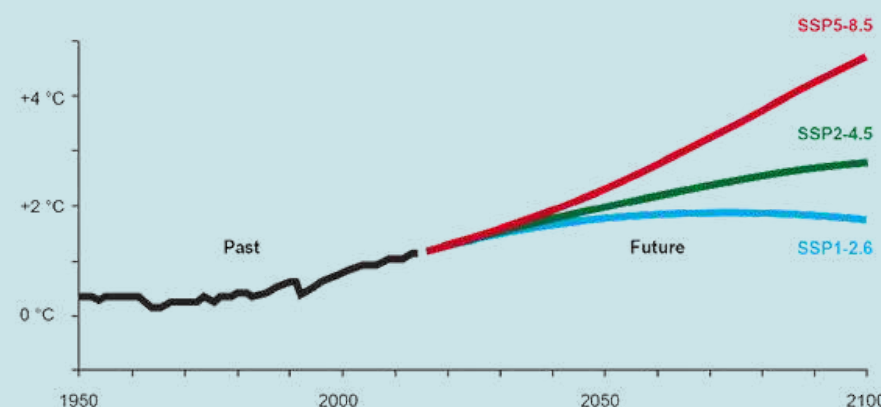
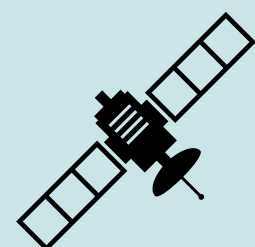
Mapping Climate Risks for Wind



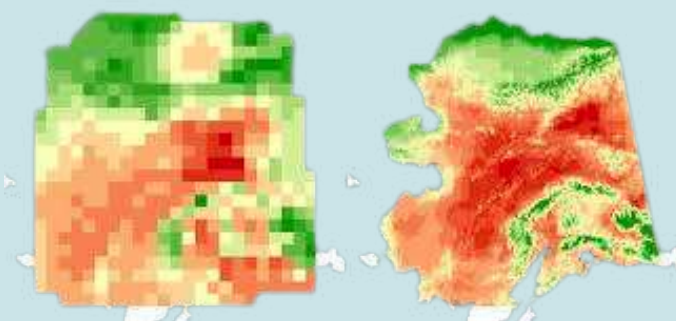
ERA5



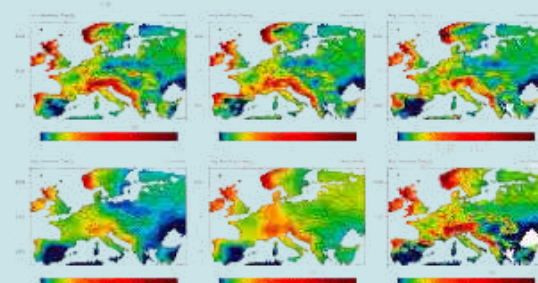
**Other
Data
Sets**



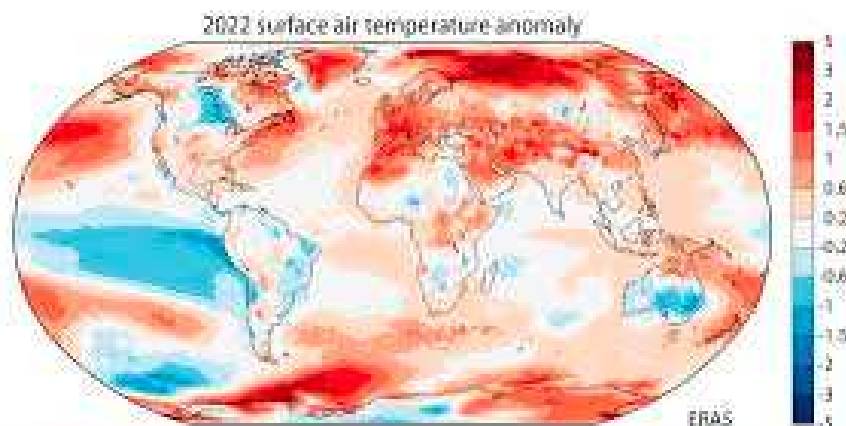
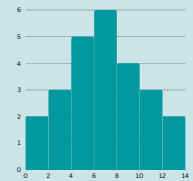
**Advanced ML-AI /
Statistical / Dynamical
Downscaling Model Chain
Bias Correction**

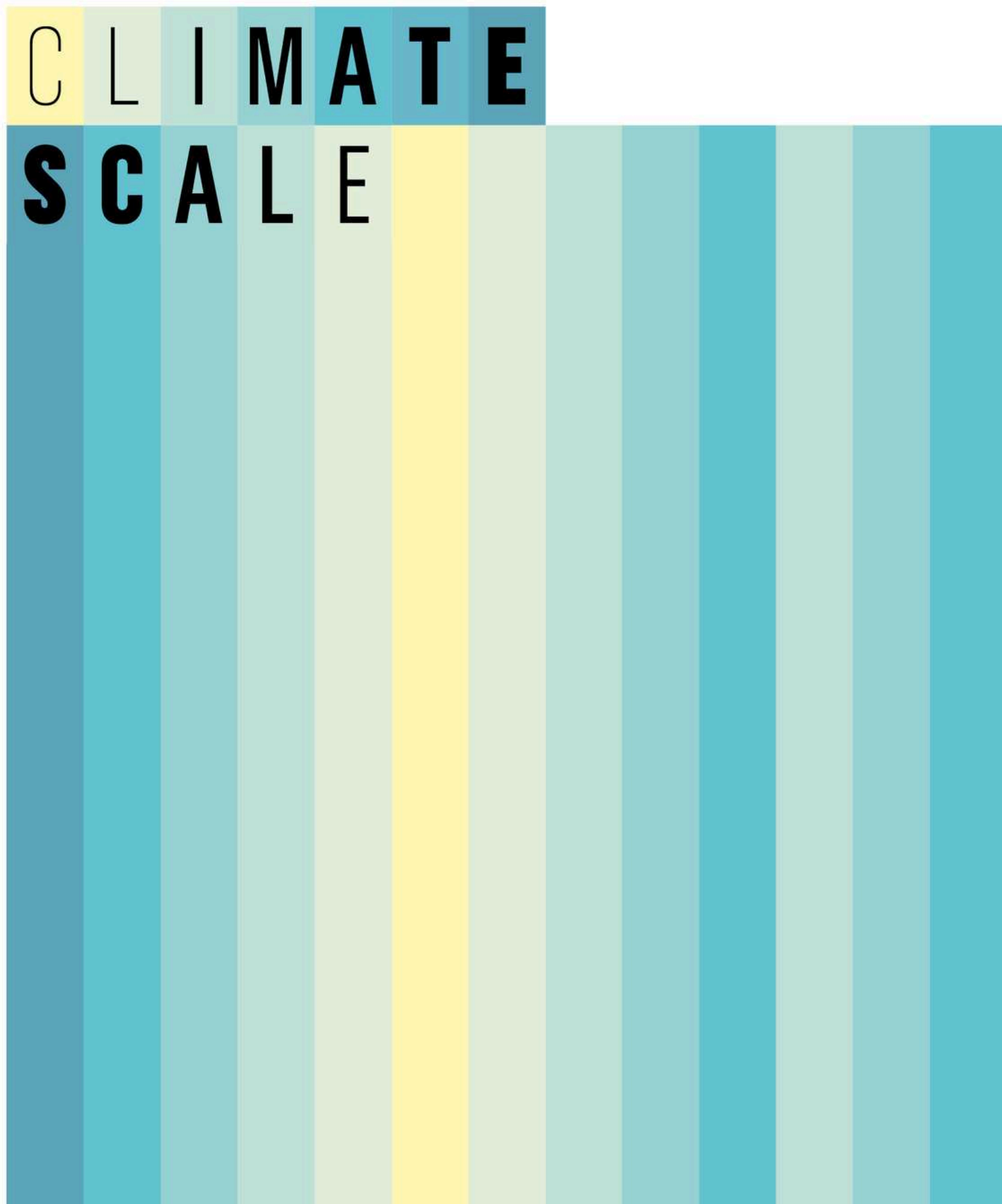


**Climate
Quality**



Data Post-Processing





enabling climate physical risks
screening | assessment | reporting

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