Climate as a Dynamic System, Not a Trend Line

Vault Intro Note

This paper outlines PaleoTech's high-level climate philosophy. It does not describe models, algorithms, datasets, or forecasting methods. It is intended to explain how climate is interpreted conceptually, not how predictions are generated.

1. The limits of trend-based thinking

Much of modern climate interpretation relies on trend lines, averages, and long-run baselines. While useful for describing past behaviour, these tools perform poorly when used to guide near-term decisions in volatile systems.

Climate does not evolve smoothly. It shifts between regimes, expresses variability unevenly, and often changes character without warning when viewed through averages alone.

2. Climate as a regime-based system

A growing body of climate science recognises that large-scale systems operate in modes or regimes rather than continuous linear states. These regimes influence rainfall timing, persistence, and variability more than long-term means.

Understanding which regime is dominant matters more for decision-making than knowing long-run averages.

3. Timing over totals

In practical systems, when rainfall or heat occurs it is often more important than how much it occurs. Timing governs establishment success, stress exposure, and recovery potential.

This makes timing-sensitive interpretation essential for usable climate insight.

4. Implications for decision-making

When climate is treated as dynamic and regime-driven, decision frameworks must prioritise timing, variability, and transition risk over static benchmarks.

This perspective underpins all applied PaleoTech frameworks.