

Climate & Ecosystems

Biology

The ecological consequences that are well documented.

Documented ecological effects.

Observed

Species ranges shifting poleward and upslope

Earlier spring events — budburst, migration

Phenological mismatch between species

Coral bleaching from thermal stress

Ocean acidification affecting shell formation

Mechanisms

Warming alters development rates unequally

Predator and prey timing decouple

Species move at different speeds

Some habitats have nowhere to move to

Phenological mismatch is the key mechanism: if caterpillars peak before chicks hatch, the chicks starve in an otherwise abundant wood.