

Impacts of Climate Change on Life

Climate change is upon us, and greenhouse gas emissions continue to rise:

🌐 Air temperatures	<i>1.37° F increase globally</i>
🌐 Seawater temperatures	<i>0.18° F increase globally, oceans have absorbed >80% of heat increases</i>
🌐 Sea level	<i>0.56 ft. rise in the 20th century</i>
🌐 Extreme weather events	<i>increased droughts, heavy rains, heat waves and hurricanes</i>
🌐 Snow and ice melting	<i>decreased snow, sea ice, and glacier cover and thickness in the last half century</i>
🌐 Ocean Acidification	<i>rising acidity along the West Coast may be cause of decreased oyster farm production</i>

Species are:

- 🌐 Shifting and contracting their distributions
- 🌐 Undergoing earlier seasonal changes
- 🌐 Going extinct



The threatened checkerspot butterfly in Northern California has shifted north and hatches earlier.

Many species cannot move, and those that do move will have **DOMINO EFFECTS** on other species.



Predators will suffer when separated from prey. Polar bears use sea ice to hunt seals, but as the ice melts, the seals stop using the ice and bears **cannot hunt** them. Polar bears may become the first species to be **endangered** due to climate change.



Pollinators and plants may be separated. If they shift at different rates, both species would be negatively affected. This could be extremely **detrimental to agricultural crops.**

Predators will infiltrate new food webs. Predators expanding their ranges, such as the Humboldt squid in California, can **decimate new prey populations** with the potential to damage economically important **fisheries and crops**



Diseases will infect new populations. Warming may increase the **prevalence of tropical diseases** in North American humans, animals and plants, such as malaria.

Solutions

- 🌐 Reduce greenhouse gas emissions immediately
- 🌐 Promote cleaner, alternative energy sources
- 🌐 Create a cooperative federal and state framework to sustainably manage natural resources
- 🌐 Support Long-term observational studies to monitor species' responses to climate change
- 🌐 Expand public outreach campaigns to promote understanding of climate change and its consequences

For further information contact:
Sarah Gravem
PhD Candidate & NSF GK-12 Fellow
Bodega Marine Laboratory, University California, Davis
sagravem@ucdavis.edu
707.875.1921
<http://www.bml.ucdavis.edu>