OCTOBER 2021

MARINE HEATWAVES

- Due to increased greenhouse gas emissions, extended periods of extreme warming in seas and oceans have increased in frequency by 50% in the past 10 years and are becoming more severe.
- These Marine Heat Waves (MHWs) threaten marine biodiversity and ecosystems, make extreme weather more likely, and negatively impact the fisheries, aquaculture and tourism industries.
- Governments must invest in nature-based solutions and ambitiously reduce fossil-fuel-based emissions to limit the impacts of the climate crisis.
- More research, better prediction and warning systems, and regional measures to build ocean resilience can help protect communities and ecosystems from MHWs.

What is the issue?

T average temperature has increased by 1.5°C in the last century, and for the past 10 years average annual ocean temperatures have been the highest ever recorded. In addition to this long-term, persistent warming, discrete periods of extreme regional ocean warming called **marine heatwaves (MHWs) are becoming more frequent**.

MHWs have increased by 50% over the past decade and now last longer and are more severe. MHWs can last for weeks or even years. They can affect small areas of coastline or span multiple oceans. MHWs have been recorded in surface and deep waters, across all latitudes, and in all types of marine ecosystems.

Projections suggest that **by 2100 MHWs will occur as many as 50 times as often as in pre-industrial times**, and **increase 20-50 times in frequency and 10 times in intensity**. While these changes impact the entire ocean, **the Arctic and tropical regions** are expected to be most affected.

Anthropogenically-driven climate change is causing ocean warming globally, and regionally MHWs are driven by unusual weather patterns and disruptions in ocean currents and mixing.

Increasing average water temperatures

MHWs have repercussions throughout marine ecosystems. **MHWs have been associated with the mass mortality of marine invertebrates**, and may force species to change behaviour in a way that puts **wildlife at increased risk of harm**. MHWs have been **linked to whale entanglements in fishing gear**, for example. Changing conditions can also help invasive alien species to spread, which can be devastating for marine food webs.

The im19(ou)14(g)-8(ho)3(ut)8( )6(m)-3(arin)4(e)]TJ EQ 0.00000886 0 9.96 86es