

# Our Oceans Are Changing

## SEA SURFACE TEMPERATURE



Sea surface temperatures are projected to increase.

Newfoundland

Mid-Century (°C) End of Century (°C)



+1.9



+4.7

Labrador

Mid-Century (°C) End of Century (°C)



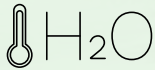
+1.3



+4.0

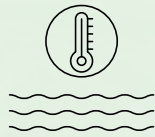
The increase in sea surface temperatures are projected under a high emissions scenario (SSP5-8.5 ensemble 50<sup>th</sup> percentile) for the mid-century (2041-2060) and the end of the century (2081-2100), compared to the baseline period (1971-200).

## HOW ARE THE OCEANS CHANGING?



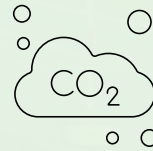
### Warmer Waters:

Increasing levels of greenhouse gases are being absorbed by the ocean and warming the water.



### Decreased Oxygen:

Warmer ocean temperatures reduce oxygen availability.



### Ocean Acidification:

Increased levels of carbon dioxide in the ocean causes the pH of the water to decrease.



### Less Sea Ice:

As sea ice melts, more solar energy is absorbed at the surface causing temperatures to further increase.

## POTENTIAL IMPACTS



Ocean acidification harms organisms with shells, many of which are economically and culturally significant.



Less sea ice can mean fewer ferry delays and new shipping routes, but is negative for locals and Indigenous communities, who rely on the ice.



More turbulent weather affects fishing vessel operations and sector economics. The potential exists for the fishing sector to expand further north.



Phytoplankton blooms and spawning of commercially targeted species delayed due to increased species migration, invasive species (e.g. sunfish and sharks), and accelerated sea ice melt.



Changes in ocean temperatures and processes result in serious socio-economic and mental health impacts for populations with deep connections to the sea, such as Indigenous and fishing communities.