

Supplementary Table 2. Glossary

The study highlighted differences in terminology and this table defines some of the most common technical terms used in the paper.

Term	Definition used in this paper
CMIP5	The most recent Intergovernmental Panel on Climate Change (IPCC) report is known as the Coupled Model Intercomparison Project Phase 5 (CMIP5).
Coriolis effect	An effect whereby a mass moving in a rotating system experiences a force (the Coriolis force) acting perpendicular to the direction of motion and to the axis of rotation.
Eddy	Circulating body of water that can range from centimeters to hundreds of kilometres across. Smaller scale eddies may be short-lived, while the larger features may last for timescales of years.
Emission scenario	A range of plausible scenarios have been defined to provide a common set of future greenhouse gas emission outcomes that can be used to help compare results across different climate models.
Fast ice	Sea ice that is "fastened" to the coastline, to the sea floor along shoals, or to grounded icebergs.
Front	Transition zone where properties such as temperature, salinity or nutrient concentration change rapidly, thereby delimiting areas with distinct physical, chemical, and biological characteristics.
Gyre	Gyres are persistent large scale features often caused by the interaction of wind and the Coriolis effect.
IPCC-class models	Full complexity coupled atmosphere-ocean-sea ice climate models.
Model ensemble	Collections of climate model simulations are often referred to as ensembles. Those comprising a range of different models

	are referred to as multi-model ensembles, referred to here for simplicity as ‘model ensembles’.
Pack ice	A mass of ice floating in the sea, formed by smaller pieces freezing together.
Polynya	An area of open water surrounded by ice.
Projection	A simulation of a possible future evolution of climate based on a given emissions scenario.
Representative Concentration Pathways (RCPs)	The set of scenarios used by the IPCC Fifth Assessment Report are termed Representative Concentration Pathways (RCPs). There are four RCPs, each one represents a different trajectory and cumulative emission concentration to 2100.
Sea ice concentration	The fraction of the ocean surface covered by sea ice.
Sea ice extent (SIE)	Describes areal coverage. The area of sea ice with a concentration exceeding a specified threshold, usually 15%. SIE is commonly used to evaluate models since it can be observed reliably from satellites.
Sea ice seasonality	Describes the timing of annual sea ice expansion and contraction.
Scenario	Plausible and often simplified descriptions of how the future may develop based on a coherent and internally consistent set of assumptions about key driving forces and relationships.
Assemblage	Refers to all of the different species that exist in a particular habitat.
Bloom	Refers to an algal bloom which is a rapid increase or accumulation in the population of algae in an aquatic system.
Ecosystem	A holistic concept of the plants, the animals associated with them and all the physical and chemical components of the immediate environment or habitat which together form a recognizable self-entity.
Ecological community	The species that occur together in space and time.

Ecosystem-based management (EBM)	EBM of marine resources attempts to balance the benefits that people obtain from using these resources against the productivity, health and resilience of the ecosystem.
Food web	Representation of feeding relationships in an ecological community. Food webs are limited representations of real ecosystems as they necessarily aggregate many species into groups (often trophic levels).
Generation length	The average age of parents of the current cohort (i.e. newborn individuals in the population). Generation length therefore reflects the turnover rate of breeding individuals in a population.
Marginal Ice Zone	The outer zone of the sea ice, i.e. the transition area between open ocean and sea ice. Depending on factors such as wind direction and currents, it may consist of anything from isolated, small and large ice floes drifting over a large area to a compact edge of small ice floes pressed together in front of solid pack ice.
Pelagic	Refers to the open ocean. The pelagic zone of the ocean begins at the low tide mark and includes the entire oceanic water column.
Phytoplankton	Plankton comprised of microscopic plants.
Phenology	Phenology is the study of the timing of life cycle events at the population level.
Plankton	Diverse collection of organisms that live in the water column and are generally unable to swim against a current. They provide a crucial source of food to many aquatic organisms.
Primary productivity	The rate at which biomass is produced per unit area by plants.
Recruitment	Occurs when juvenile organisms survive to be added to a population, by birth or immigration.
Trophic level	Position in the food web.

Zooplankton	Plankton comprised of small animals and the immature stages of larger animals.
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