Title	Mean annual sea-surface temperatures (1993–2013)
Type	Dataset
Subject	Oceanic sea surface temperature anomalies
Source	National Institute for Water and Atmospheric Research
Description	The ocean waters surrounding New Zealand vary in temperature from north to south. They interact with heat and moisture in the atmosphere and affect our weather. Sea surface temperature changes with climate drivers such as El Niño, and will change with climate change. The sea surface temperature anomaly provides an indication of the heat change in the ocean. Long-term changes and short-term variability in sea-surface temperatures can affect marine processes, habitats, and species. some species may find it hard to survive in changing environmental conditions. The oceanic sea surface temperature data comes from the NIWA Sea surface temperature Archive (NSA). There are 2 datasets, NSA Annual Means and NSA Annual Anomolies ,covering the Tasman, subtropical (STW) and Southern Antarctic (SAW) area and the total area. The data is available from 1993 to 2013 and the unit of measure is degrees Celsius . For more information please see: Uddstrom, MJ (2015) Sea Surface Temperature Data and Analysis for the 2015 Synthesis Report. For Ministry for the Environment. Available at https://data.mfe.govt.nz/x/hRbGUJ on the Ministry for the Environment dataservice (https://data.mfe.govt.nz). This dataset relates to the "Sea surface temperature" measure on the Environmental Indicators, Te taiao Aotearoa website.
Rights	Creative commons 3.0 (automatic)
Publisher	New Zealand's Environment Reporting Series: The Ministry for the Environment and Statistics New Zealand
Coverage	1993–2013, Tasman sea, Sub-tropical waters (STW), Southern Antarctic waters (SAW) and total area for the New Zealand region.
Identifier	https://data.mfe.govt.nz/x/3pxeRC
Language	New Zealand English
Issued	21/10/2015
Environmental reporting topic	Sea temperature's influence on weather and climate
Environmental reporting category	National indicator
Methodology (collection &	The New Zealand region encompasses our exclusive economic zone (EEZ), the Chatham Rise, northern subtropical waters, subantarctic waters, and the

analyses)	Tasman Sea. It extends from about 30°S to 55°S, 160°E to 170°W. NIWA's sea-surface temperature archive (NSA) is derived from the Advanced Very High Resolution Radiometer (AVHRR) data it receives from the National Oceanic and Atmospheric Administration satellites. The archive provides high spatial (approximately 1km) and high temporal (approximately 6-hourly in cloud-free locations) resolution estimates of sea-surface temperatures over the New Zealand region, dating from January 1993. Uddstrom and Oien (1999) and Uddstrom (2003) describe the methods used to derive and validate the NSA. Datasets with longer time series are available. This dataset has been selected because it represents the New Zealand region and the spatial variability of temperatures in our waters. Rising temperatures are mainly due to the global increase in atmospheric carbon dioxide (CO_2) and other greenhouse gases (GHG) (IPCC, 2013). It is considered extremely likely that these increases result from human-induced emissions of GHG (IPCC, 2013). Globally, oceans absorbed more than 90 percent of the increased energy in the global climate system between 1971 and 2010, leading to higher ocean temperatures (IPCC, 2013). References: Intergovernmental Panel on Climate Change (IPCC) (2013). Summary for policymakers. In TF Stocker et al (Eds), Climate change 2013: The physical science basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Available from www.ipcc.ch. Uddstrom, MJ (2003). Lessons from high-resolution satellite SSTs. *Bulletin of the American Meteorological Society, 84*(7), 896–897. Uddstrom, MJ, & Oien, NA (1999). On the use of high resolution satellite data to describe the spatial and temporal variability of sea surface temperatures in the New Zealand region. *Journal of Geophysical Research (Oceans) 104*, chapter 9, 20729–20751.
Limitations to data & analysis	The long term annual mean is derived from 240 monthly mean SST analyses, which in turn is used to specify the year to year anomalies in SST, both as mapped spatial values at 1 km resolution, and aggregated by Tasman Sea, Sub-Tropical and Sub Antarctic Waters water masses. For reference the aggregated mean SST anomaly over the whole New Zealand region (approximately 2,600 × 2,600 km^2) is also indicated.
Changes to time series	not applicable