

Project Details	
ESCC Project No. & Title(s)	2.3 Towards an ACCESS decadal prediction system: Component 1 – Towards an ACCESS decadal prediction system
Project Leader(s)	Terence O’Kane, James S. Risbey, Neil Holbrook
Deliverable(s)	11-member ensemble simulations of between 2 to 5 years in length with ocean and atmosphere data assimilation starting in 2002 and running every month until June 2016.
Data/software Manager	Terence O’Kane

Research Output data collection or software URLs if applicable

Description (complete for data and software)	
Title	Multi-year forecasts
Description	2 versions (v0 & v1) of 11-member ensemble simulations of between 2 to 5 years in length beginning every month starting in January 2002 until June 2016. Initial conditions are provided by analysed states where ocean observations have been assimilated. Ensemble perturbations are then generated about the analysed state using a state of the art ensemble prediction system. Forecasts are initialised to the analysed state to which the ensemble perturbations have been added.
Lineage	Coupled model is based on the ACCESS ocean and the GFDL atmosphere (AM2/LM2) and SIS sea ice – code is publicly available from GFDL. Ocean observations are publicly available sea surface temperature (SST), sea surface salinity (SSS), sea surface height (SSH) and in-situ temperature (T) and salinity (S) data. SSH observations are in terms of Radar Altimeter Database System (RADS) altimetry (http://rads.tudelft.nl/rads/rads.shtml) and in-situ T and S observations are downloaded from the CSIRO climatological atlas (CARS) (http://www.cmar.csiro.au/cars) data base and from the WMO GTS (see http://www.wmo.int/pages/prog/www/TEM/GTS/index_en.html). ^L _{SEP}
Credit	T.J. O’Kane, P.A. Sandery, P. Sakov, D. Monselesan, M.A. Chamberlain
Keywords	Reanalysis, multi-year forecast
ABS Fields of Research Category / Subcategory*	04 Earth Sciences 0401 Atmospheric sciences

*These are listed in

<http://www.abs.gov.au/ausstats/abs@.nsf/0/4AE1B46AE2048A28CA25741800044242?opendocument>

Attribution/IP(complete for data and software)	
Owning Organisation	CSIRO
Collaborating Organisations	BoM
Primary contact for this data	Terence O'Kane Terence.okane@csiro.au
Lead Researcher	As above
Contributors	P.A. Sandery Paul.sandery@csiro.au P. Sakov Pavel.sakov@bom.gov.au M. Chamberlain Matthew.chamberlain@csiro.au D. Monselesan dider.monselesan@csiro.au
Access	This software is a research product and is not for public release. For enquiries refer to primary contact.
Licencing	N/A

Required field

Related Materials. Publications, tools, websites, related input data. Please provide full citations for publications, data and software.	
Details	URL
<p>Coupled data assimilation and ensemble initialization with application to multi-year ENSO prediction. (draft manuscript) T.J. O'Kane, P.A. Sandery, D.P. Monselesan, P. Sakov, M.A. Chamberlain, R. Matear, M. Collier, L. Stevens</p> <p>O'Kane T, et al. 2019. Coupled data assimilation and ensemble initialisation with application to multi-year ENSO prediction. <i>Journal of Climate</i>, https://doi.org/10.1175/JCLI-D-18-0189.1</p>	N/A

Technical details	
For data: Total Size of this data collection	102Tb
For data: Total Number of Files	~200000
Current location of files (data or software)	NCI
Format(s)	Netcdf
Associated tool(s)/ Dependencies	N/A
Proposed publication host	N/A

Project details	
ESCC Project No. & Title(s)	2.3 Towards an ACCESS decadal prediction system: Component 2 – Decadal scale predictability of ocean temperature extremes
Project Leader(s)	Terry O’Kane, James Risbey and Neil Holbrook
Deliverable(s)	Digital maps of the characteristics of ocean temperature extremes based on the Decadal Prediction System control model simulation (metadata report)
Data/software Manager	Neil Holbrook

Research output data collection, tool or software URLs if applicable

Description (complete for data, tools and software)	
Title	Representation of ocean temperature extremes in the ACCESS Decadal Prediction System Climate Analysis Forecast Ensemble
Description	This report analyses ocean temperature extremes probability distributions on output from the ACCESS Decadal Prediction System, Climate Analysis Forecast Ensemble (CAFE) system (i.e. from Project 2.3 Component 1 output) for the Australian region and their relationship with El Niño and La Niña phases of the El Niño – Southern Oscillation.
Temporal & spatial extent	
Lineage	Input data: NOAA High Resolution SST data provided by the NOAA/OAR/ESRL PSD, Boulder, Colorado, USA, from their Web site at https://www.esrl.noaa.gov/psd/data/gridded/data.noaa.oisst.v2.highres.html ACCESS Decadal Prediction System, Climate Analysis Forecast Ensemble (CAFE) system developed by NESP ESCC Project 2.3 Component 1 led by Terry O’Kane
Credit	Authors: E. A. Cougnon, N. J. Holbrook, T. J. O’Kane, E. C. J. Oliver and N. Bindoff
Keywords	Probability distribution, ocean temperature extremes, multi-year forecast, Australia
ABS Fields of Research Category / Subcategory*	04 Earth Sciences 0405 Oceanography

*These are listed in <https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1297.02020>

Attribution/IP (complete for data, tools and software)	
Owning organisation	CSIRO for the model output, IMAS-UTAS for the analyses
Collaborating organisations	Dalhousie University, Halifax, Nova Scotia, Canada
Primary contact for this data	Eva A. Cougnon eva.cougnon@utas.edu.au
Lead researcher	Eva A. Cougnon and Neil J. Holbrook
Contributors	Terry O’Kane, Neil J. Holbrook and Eric C. J. Oliver
Access	These digital maps are a research product, and are not for public release. For enquiries refer to primary contact. The model outputs are from the

	CSIRO Decadal Prediction System team led by Terry O’Kane.
Licencing	N/A

Required field

Related materials: publications, tools, websites, related input data. Please provide full citations for publications, data and software.

Details	URL
O’Kane TJ, et al. 2019. Coupled data assimilation and ensemble initialization with application to multi-year ENSO prediction. Journal of Climate.	https://doi.org/10.1175/JCLI-D-18-0189.1

Technical details

For data: Total size of this data collection	N/A
For data: Total number of files	N/A
Current location of files (data or software)	Institute for Marine and Antarctic Studies, University of Tasmania (IMAS-UTAS, Hobart) for the scripts that were used to produce the figures. See above concerning the dataset (satellite based and model output dataset). The raw model output are stored at the Australian National Computing Infrastructure (NCI) under the project v14 led by Terry O’Kane
Format(s)	Digital maps
Associated tool(s)/dependencies	N/A
Proposed publication host	