9SM

Ocean, Cryosphere, and Sea Level Change
Supplementary Material

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9.SM.1 Additional Ocean Information

9.SM.1.1 Details for Figure 9.10

Lower-right panel: In all experiments an additional surface freshwater flux (hosing) is applied over the subpolar North Atlantic (regions vary between studies) for a limited time. The total amount of freshwater added is then this flux multiplied by the number of years applied (in Gt). While hosing is applied the AMOC weakens. In some models the AMOC recovers quickly, in other the AMOC hasn't recovered after 200 years, and in some the AMOC is starting to recover after 200 years. These are represented by circles, downward and upward triangles respectively, which show the percentage AMOC change after 200 years. Sizes of symbols represent the magnitude of the hosing (from 0.1–1 Sverdrups=10^5–10^6 m^3s^{-1} or 10^8–10^9 kg s^{-1}) and colours indicate the different studies these results were taken from (de Vries and Weber, 2005; Stouffer et al., 2006; Yin and Stouffer, 2007; Meehl et al., 2009; Jackson, 2013; Liu and Liu, 2013; Timmermans et al., 2014; Hutchings et al., 2015; Jackson and Wood, 2018; Haskins et al., 2019).

9.SM.2 Additional Ice-Sheet Information

9.SM.3 Additional Glacier Information

9.SM.3.1 Details for Figure 9.21

The 1960–2019 time series annual and decadal values are from Zemp et al. (2019, 2020). Glacier mass change rates estimated from GRACE 2002–2016 from Wouters et al. (2019). Glacier mass change rate between 2006–2016 and its respective uncertainty as it was assessed in SROCC (Hock et al., 2019). Glacier mass change rates between 2000–2009 and 2010–2019 and its respective uncertainty obtained by Hugonnet et al. (2021).

9.SM.3.2 Details for Figure 9.22

Glacier mass relative to 2015 between 1902 and 2100. Glacier change in the 20th century is from Marzeion et al. (2015). Observed mass change between 1961–2016 from Zemp et al. (2019). Median and ±1 standard deviation (shaded areas) projected mass change between 2015 and 2100 for RCP2.6, RCP 4.6, and RCP8.5 scenarios obtained from GlacierMIP (Marzeion et al., 2020). Data from Bamber et al. (2018) included in some regions.

Table 9.SM.1 | Observed mass loss of Greenland (The IMBIE Team, 2020) and Antarctic (The IMBIE Team et al., 2018) ice sheets for three different periods. Values are expressed as the total loss over each period (Gt) along with the equivalent rate (Gt yr^{-1}) and *very likely* ranges. Periods include both end years. The cumulative mass-loss uncertainty from IMBIE is assumed to be zero at the start of each period.

Observed Mass Loss		1992–1999	2000–2009	2010–2019
Greenland The IMBIE Team (2020)	Δ (Gt)	309 [–24 to 642]	1753 [1308 to 2199]	2433 [1968 to 2897]
	Gt yr^{-1}	39 [–3 to 80]	175 [131 to 220]	243 [197 to 290]
Antarctica The IMBIE Team et al. (2018)	Δ (Gt)	392 [–18 to 802]	703 [220 to 1187]	1482 [942 to 2022]
	Gt yr^{-1}	49 [–2 to 100]	70 [22 to 119]	148 [94 to 202]

Table 9.SM.2 | Regional and global glacier-covered area, glacier mass (presented as potential sea level rise equivalent) in year 2000, glacier mass change rate in the period 2000–2019, and projected glacier mass change between 2015 and 2100. The glacier-covered area is derived from the RGI 6.0 (RGI Consortium, 2017) and glacier-covered area uncertainties are extracted from Pfeffer et al. (2014). Glacier mass and uncertainties are derived from Farinotti et al. (2019), based on RGI 6.0. Recent (2000–2019) mass change rate is based on Hugonnet et al. (2021), except: [a] mean of Menounos et al. (2019) and Hugonnet et al. (2021); [b] mean of Aðalgeirsdóttir et al. (2020) and Hugonnet et al. (2021); [c] mean of Schuler et al. (2020) and Hugonnet et al. (2021); [d] mean of Davaze et al. (2020), Sommer et al. (2020) and Hugonnet et al. (2021); [e] mean of Shean et al. (2020) and Hugonnet et al. (2021); and [f] mean of Dussaillant et al. (2019) and Hugonnet et al. (2021). The total projected glacier mass change between 2015–2100 is derived from Marzeion et al. (2020). See Figure 9.22 for the time series of changes in each region.

Region	Glacier-covered area in 2000 (km^2)	Glacier mass in 2000 (mm SLE)	Glacier mass change rate 2000–2019 (kg m^{-2} yr^{-1})	Projected glacier mass change between 2015 and 2100 (mm SLE)		
				RCP 2.6	RCP 4.5	RCP 8.5
Alaska (1)	86,700 ± 4600	43 ± 11	–770 ± 60	14 ± 11	19 ± 13	25 ± 15
Western Canada and USA (2)	14,500 ± 1400	2.6 ± 0.7	–490 ± 170[a]	1.5 ± 0.9	2.0 ± 0.7	2.2 ± 0.7
Arctic Canada North (3)	105,100 ± 3400	65 ± 17	–290 ± 20	10 ± 10	16 ± 15	24 ± 20
Arctic Canada South (4)	40,900 ± 2000	21 ± 5	–650 ± 50	5 ± 5	7 ± 7	11 ± 7
Greenland Periphery (5)	89,700 ± 4500	34 ± 9	–430 ± 40	9 ± 10	12 ± 11	18 ± 11
Iceland (6)	11,000 ± 300	9 ± 2	–860 ± 100[b]	2 ± 3	3 ± 3	5 ± 3
Svalbard (7)	34,000 ± 1200	17 ± 4	–270 ± 180[c]	7 ± 7	11 ± 9	14 ± 8
Scandinavia (8)	2900 ± 300	0.7 ± 0.2	–580 ± 60	0.3 ± 0.2	0.4 ± 0.2	0.4 ± 0.2
Russian Arctic (9)	51,600 ± 1400	32 ± 8	–200 ± 20	10 ± 8	14 ± 11	20 ± 12
North Asia (10)	2400 ± 200	0.3 ± 0.1	-500 ± 70	0.2 ± 0.2	0.3 ± 0.2	0.3 ± 0.2

Region	Glacier-covered area in 2000 (km^2)	Glacier mass in 2000 (mm SLE)	Glacier mass change rate 2000–2019 ($kg\ m^{-2}\ yr^{-1}$)	Projected glacier mass change between 2015 and 2100 (mm SLE)		
				RCP 2.6	RCP 4.5	RCP 8.5
Central Europe (11)	2100 ± 200	0.3 ± 0.1	–760 ± 260[d]	0.2 ± 0.1	0.3 ± 0.1	0.3 ± 0.1
Caucasus and Middle East (12)	1300 ± 100	0.2 ± 0.1	–430 ± 60	0.1 ± 0.05	0.11 ± 0.04	0.13 ± 0.04
High Mountain Asia (13–15)	97,600 ± 7800	17 ± 3	–205 ± 40[e]	8 ± 3	11 ± 4	13 ± 5
Low Latitudes (16)	2300 ± 200	0.2 ± 0.1	–450 ± 60	0.13 ± 0.12	0.17 ± 0.12	0.19 ± 0.11
Southern Andes (17)	29,400 ± 1700	13 ± 3	–720 ± 230[f]	3 ± 4	4 ± 3	6 ± 4
New Zealand (18)	1200 ± 100	0.2 ± 0.1	–720 ± 110	0.06 ± 0.06	0.09 ± 0.05	0.13 ± 0.04
Antarctic and Sub-Antarctic (19)	132,900 ± 2500	69 ± 18	–170 ± 20	9 ± 15	16 ± 13	20 ± 24
World	705,700 ± 33,200	324 ± 84	–460 ± 10	79 ± 56	119 ± 75	159 ± 86

9.SM.4 Additional Sea Level Information

9.SM.4.1 Framework for Assessing Changes To Sea-level (FACTS)

Projections of the probability distributions of global mean and relative sea level change are produced using the Framework for Assessing Changes to Sea-level (FACTS), a Python-based modularized framework. Contributors to sea level change (e.g., ice sheets, ocean dynamics, etc.) are represented as individual modules which are then organized into user-defined projection workflows. The modularity of the framework enables efficient application of the different methodologies described in the chapter. The code for FACTS and its accompanying modules are open source and available through GitHub (https://github.com/radical-collaboration/facts). In the application here, the different drivers are treated as conditionally independent given GSAT. Ideally, a FACTS module contains a sample-generation method through some sort of statistical or process-based model for the particular component. For example, the module for projecting thermal expansion and dynamic sea level generates samples from statistical distributions calibrated within the module itself. For modules that use externally provided ensembles for this report, which include the Emulated ISMIP6 ice-sheet simulations, Emulated GlacierMIP glacier simulations, the LARMIP-2 Antarctic ice-sheet simulations, the Marine Ice Cliff Instability Antarctic ice-sheet simulations, and the Structure Expert Judgement ice-sheet simulations, a bootstrap sampling approach is used. This provides a consistent number of samples across all modules within an integrated projection workflow. However, due to this sampling method, the number of samples in the provided ensemble for the module, and the seed value for the random-number generator, small differences may exist between the values of the FACTS-produced projections and the values published in the paper for a particular method.

9.SM.4.2 Obtaining Global Mean Thermosteric Sea Level Rise and Ocean Dynamic Sea Level Change from CMIP6

We obtained monthly mean values for the CMIP6 variables 'zos' (sea surface height above geoid), 'zostoga' (global mean thermosteric sea level change) and 'psl' (air pressure at sea level; required to apply the inverse barometer effect). The data files were extracted from the Earth System Grid Federation (ESGF) database between 22 and 30 September 2020. Data were obtained for both the historical experiment (1850–2014) and the five core SSPs (2015–2100 and up to 2300 where available) with corresponding variant labels ('ripf' identifier). Additionally, models were required to provide the pre-industrial control output from which the 'zos' and 'zostoga' experiments were initialized, so that 'zos' and 'zostoga' simulations could be corrected for model ocean drift (Gupta et al., 2013; Hobbs et al., 2016). Thus, the total number of available models used for each emissions scenario depends on the availability of these simulations (and of the grid information required to carry out the preprocessing steps detailed in the next paragraph, such as ocean-grid cell area 'areacello'). We obtained all available data with an experiment variant with a realization equal to one ('ripf' having 'r' = 1). For each model, we use the first of the remaining experiment variants for which most SSP experiments are available, and the first alternative experiment variant for the SSPs for which that variant is not available. For UKESM1-0-LL, the air pressure sea level field yielded an anomalously large inverse barometer effect, so this model was not included.

Then, the time series of 'zos' and 'zostoga' were corrected for ocean model drift (Gupta et al., 2013; Hobbs et al., 2016). This was done by fitting a linear trend to the full pre-industrial control run of each model, and subtracting the resulting linear trend from the historical and scenario runs. Since the drift in 'zostoga' is nearly linear for most CMIP6 models, quadratic or linear drift correction yields little difference compared to the magnitude of projected GTE under the emissions scenarios (Hermans et al., 2021). Additionally, the area-weighted mean of the 'zos' field was removed at each time step for each model, since 'zos' is defined as the sea surface height above a time-invariant geoid. Next, 'zos' and 'psl' were bilinearly interpolated to a common regular 1°-by-1° grid using the ESMValTool regridding routine (Eyring et al., 2020). Finally, the inverse barometer

effect was derived from sea level pressure anomalies with respect to the area-weighted ocean mean sea level pressure (following Stammer and Hüttemann, 2008) and applied to 'zos' in order to obtain ocean dynamic sea level fields (Gregory et al., 2019). Note that the inverse barometer effect due to sea ice (e.g., Lyu et al., 2020) was not applied here.

9.SM.4.3 Global Mean Thermosteric Sea Level and Ocean Dynamic Sea Level Projections Based on the Two-Layer Emulator

To convert the ocean heat content (OHC) projections based upon the AR6 assessment of equilibrium climate sensitivity and transient climate response (Appendix 7.A.2) to global mean thermosteric sea level rise projections, the emulated OHC projections were multiplied with expansion coefficients estimated from CMIP6. A distribution of expansion coefficients was derived by fitting drift-corrected global mean thermosteric sea level rise (9.SM.4.2) from individual CMIP6 GCMs against total OHC output of a two-layer emulator configured with CMIP6 calibration parameters (Smith et al., 2020). Both thermosteric sea level rise and OHC were referenced to their mean values in 1995–2014. The two-layer model was forced with scenario-dependent effective radiative forcing (ERF) from the RCMIP protocol (Nicholls et al., 2020) for the SSPs. Expansion coefficients were derived through linear regression with a fixed 0-intercept for the period 2015–2100 for all SSPs combined.

The resulting distribution was clipped based on the root mean square error cumulative across scenarios between the GSAT projections of individual CMIP6 models and the GSAT projection of the two-layer model calibrated to that model. Only the expansion coefficients of models with an RMSE less than or equal to the 85th percentile of the cumulative distribution function of RMSEs were considered. Thus, the expansion coefficients for CNRM-ESM2-1 and EC-Earth3-Veg were dropped. Expansion coefficients were then randomly drawn from a normal fit to the distribution of remaining expansion coefficients, which has a mean and standard deviation of 0.113 ± 0.013 m/YJ.

To produce ocean dynamic sea level projections consistent with the global mean thermosteric projections described in this section, we follow the approach of Kopp et al. (2014). We fit a multivariate t-distribution to the ocean dynamic sea level terms from CMIP6 (9.SM.4.2), and drawing from this distribution, combine the ocean dynamic sea level terms with the emulator-based global mean thermosteric projections, accounting for the underlying correlation between global mean thermosteric sea level rise and ocean dynamic sea level change in CMIP6. While if the CMIP6 ensemble represented a complete representation of all relevant uncertainties, its 5th to 95th percentile range would represent a *very likely* range, it is not a perfect representation, so following practice in the AR5, we treat its 5th to 95th percentile range as a *likely range* (i.e., a 17th to 83rd percentile range). We therefore scale the standard deviation of the t-distribution of ocean dynamic sea level change by 1.64, so that ±1 standard deviation of the scaled fitted distribution corresponds to a central 66% *likely range*. To account for identifiable, model-specific problems in specific grid cells (e.g., in inland seas), projections for a grid cell are removed if they have an amplitude in 2099 more than ten times the median local amplitude. In cases where, after removal of extreme outliers, the standard deviation of projections in 2099 is greater than 20 cm, we also remove models that deviate from the mean by more than three standard deviations.

9.SM.4.4 Parametric Fit to ISMIP6 Greenland Ice-Sheet Projections

Since the ISMIP6 emulator does not account for temporal correlation, a polynomial fit to the ISMIP6 results is employed to calculate rates of change. The parametric fit is a cubic fit to temperature and a quadratic fit over time:

$$\frac{\partial s}{\partial t} = \beta_0 + \beta_1 T + \beta_2 T^2 + \beta_3 T^3 + \beta_4 t + \beta_5 t^2$$

Where s indicates the sea level equivalent contribution in mm, T is GSAT in °C, and t is time in years. For the purposes of fitting this function, T and t are anomalies to their respective values in the year 2015. Fitting is done using maximum a posteriori estimation.

Table 9.SM.3 | Parameters for the fit to the ISMIP6 Greenland Ice-Sheet models.

Group	Model	β_0	β_1	β_2	β_3	β_4	β_5
UCIJPL	ISSM1	0.11	0.68	–0.16	0.03	–0.009	1.5E–04
UAF	PISM1	0.11	2.23	–0.69	0.08	–0.046	4.7E–04
NCAR	CISM	0.31	1.60	–0.44	0.06	–0.030	2.7E–04
MUN	GSM2601	0.26	1.92	–0.64	0.07	–0.048	5.4E–04
AWI	ISSM1	0.15	0.57	–0.06	0.02	–0.002	2.6E–05
JPL	ISSMPALEO	0.08	0.67	–0.13	0.02	–0.016	1.9E–04
BGC	BISICLES	0.15	0.82	–0.24	0.04	–0.017	2.2E–04
GSFC	ISSM	0.17	1.94	–0.62	0.08	–0.035	3.8E–04
UCIJPL	ISSM2	0.22	0.34	0.05	–0.02	–0.004	8.5E–05
IMAU	IMAUICE2	0.20	2.30	–0.71	0.09	–0.044	4.5E–04

Group	Model	β_0	β_1	β_2	β_3	β_4	β_5
VUB	GISMHOMv1	0.39	0.85	–0.19	0.04	–0.002	–1.1E–05
IMAU	IMAUICE1	0.28	0.84	–0.13	0.03	–0.002	–7.9E–06
MUN	GSM2611	0.32	0.39	0.15	–0.04	–0.016	2.1E–04
UAF	PISM2	0.22	0.22	–0.03	0.02	0.002	–1.0E–05
VUW	PISM	0.00	1.54	–0.52	0.06	–0.037	4.6E–04
AWI	ISSM2	0.15	0.58	–0.06	0.02	–0.001	1.6E–05
ILTS_PIK	SICOPOLIS2	0.23	0.64	–0.06	0.02	–0.005	6.9E–05
ILTS_PIK	SICOPOLIS1	0.18	1.83	–0.52	0.07	–0.036	3.7E–04
AWI	ISSM3	0.09	2.12	–0.65	0.08	–0.042	4.2E–04
JPL	ISSM	0.20	0.73	–0.13	0.03	–0.004	4.9E–05
LSCE	GRISLI2	0.22	0.39	–0.04	0.02	–0.006	5.7E–05

9.SM.4.5 Parametric Fit to GlacierMIP2 Projections

Since the GlacierMIP2 emulator does not account for temporal correlation and terminates, along with the GlacierMIP2 simulations, in 2100, we employ a power law fit to the GlacierMIP2 simulations (Marzeion et al., 2020), with a functional form similar to that employed by AR5, to calculate rates of change and extrapolate changes beyond 2100 (up to a maximum potential contribution of 0.32 m). As in AR5 (Church et al., 2013) , the glacier contribution is the integral of $f I(t)^{\rho}$, where $I(t)$ is the time integral of GSAT from 2006 to time t in degrees Celsius year, and the constants f and ρ used for each glacier model are shown in Table 9.SM.4. The spread of the results around this median projection has a coefficient of variation (standard deviation divided by the mean) σ which is determined on a per-model basis. As in AR5, this variation is incorporated by taking for each Monte Carlo sample a normally distributed random number. This number is multiplied by the time-dependent standard deviation and added to the sample. All models are equally weighted.

Table 9.SM.4 | Parameters for the fit to the global glacier models.

Global Glacier Model	f (mm °C^{-1} yr^{-1})	ρ	σ
GLIMB	3.7	0.66	0.21
GloGEM	4.08	0.72	0.16
JULES	5.5	0.56	0.19
MAR2012	4.89	0.65	0.14
OGGM	4.26	0.72	0.16
RAD2014	5.18	0.71	0.14
WAL2001	2.66	0.73	0.21

9.SM.4.6 Background Rates of Relative Sea Level Change

Background rates of RSL change, including glacial-isostatic adjustment as well as other factors contributing to long-term vertical land motion, are estimated from tide-gauge data following the Gaussian-process regression method of Kopp et al. (2014). The method was applied to annual-mean tide-gauge data downloaded from the Permanent Service for Mean Sea Level (Holgate et al., 2013) on 18 October 2020. As in Kopp et al. (2014), RSL is represented as the sum of three Gaussian processes: (i) a regionally varying, temporally linear process, (ii) a globally uniform process, and (iii) a regionally varying, temporally autocorrelated non-linear process. The posterior estimate of the first (temporally linear) process is used as the estimate of the background rate. The analysis is conducted separately for each of 15 regions: Iceland/Svalbard, Scandinavia, Northern Europe, Russia, Mediterranean/Africa, US Pacific, US Atlantic, Gulf of Mexico, Northeastern Canada, Alaska, Latin America, Oceania, Japan, South/East Asia, and Antarctica (see Kopp et al., 2014, for details). Within each region, available tide-gauge data are used together with the GMSL curve of Dangendorf et al. (2019); treated as a noisy observation of the second term) to estimate the Gaussian-process model.

9.SM.4.7 Warming-Level Scenarios

Because GMSL projections are more strongly related to integrated warming rather than to instantaneous warming, warming-level-based scenarios cannot be defined based on the time slice method used for atmospheric variables (Cross-Chapter Box 11.1). Instead, consistent with the approaches of Jackson et al. (2018) and Rasmussen et al. (2018), all available SSP-based projections are pooled, then assigned to temperature levels based on the 2081–2100 GSAT anomaly projected by the two-layer energy budget emulator, using a ±0.25°C window around the targeted temperature level. For example, the 2.0°C projections are based on all realizations from all scenarios where 2081–2100 GSAT falls between 1.75°C and 2.25°C. A certain warming level may therefore include a mixture of one or more SSP scenarios.

9.SM.4.8 Analysis of Future Changes in Extreme Sea Level Return Frequency

Frequency amplification factors for the 1% average annual probability of extreme still-water levels are computed by combining the projected

regional sea level change (Section 9.6.3.3) with historical distributions of observed extreme events derived from the Global Extreme Sea Level Analysis 2 (GESLA2; Woodworth et al. (2016), following the approach of SROCC and Frederikse et al. (2020). GESLA2 stations are included in the analysis when hourly mean data was available for at least 6000 hours per year (250 days) for at least 20 years. For each station, the annual means were removed before fitting a General Pareto Distribution (GPD) to the hourly mean GESLA2 data using a peak-over-threshold (POT) method with a threshold of 99.7%. The extremes are de-clustered using a minimum of 72 hours between subsequent extremes. The estimated GPD location (the 99.7% threshold), scale and shape parameters are generally in agreement with Frederikse et al. (2020). We note that our results are sensitive to the statistical method used (Wahl et al., 2017) and may therefore differ from previous analyses.

Following the SROCC and Frederikse et al. (2020), we computed an ensemble of historical return curves for each station using the location parameter in combination with 50,000 random pairs of the shape and scale parameters drawn from the mean estimated shape and scale parameters and their covariance matrices. To compute the future return curves, we use the same scale and shape parameter

Table 9.SM.5 | Integrated GMSL projections for 2050, relative to 1995–2014, from the post-AR5 literature. All projections are adjusted to a 1995–2014 baseline and 2050 end year. For projections baselined to 1986–2005 or to 2000, adjustments are made assuming a 3 mm yr^{-1} rate. For projections ending in 2046–2065, adjustments are made assuming a constant acceleration from 1996–2014 to the end year.

Study	Grouping	RCP 2.6		RCP 4.5		RCP 8.5	
		67%	90%	67%	90%	67%	90%
Bakker et al. (2017)	MED		0.16–0.29		0.18–0.31		0.20–0.34
Kopp et al. (2014)	MED	0.19–0.27	0.16–0.31	0.19–0.29	0.16–0.33	0.22–0.32	0.19–0.36
Mengel et al. (2016)	MED		0.10–0.20		0.11–0.21		0.12–0.25
Nicholls et al. (2018)	MED						0.16–0.29
Kopp et al. (2017)	MICI	0.14–0.31	0.10–0.39	0.16–0.34	0.12–0.41	0.20–0.38	0.15–0.46
Wong et al. (2017)	MICI		0.18–0.31		0.20–0.33		0.23–0.38
Jackson and Jevrejeva (2016)	SEJ					0.19–0.34	0.15–0.45
Bamber et al. (2019)	SEJ					0.25–0.45	0.19–0.59

Table 9.SM.6 | Integrated GMSL projections for 2100, relative to 1995–2014, from the post-AR5 literature.

Study	Grouping	RCP 2.6		RCP 4.5		RCP 8.5	
		67%	90%	67%	90%	67%	90%
Bakker et al. (2017)	MED		0.37–0.68		0.51–0.94		0.82–1.56
Jackson and Jevrejeva (2016)	MED			0.33–0.69	0.19–0.82	0.51–0.95	0.34–1.15
Kopp et al. (2014)	MED	0.35–0.63	0.27–0.80	0.43–0.75	0.34–0.91	0.60–0.98	0.50–1.19
Kopp et al. (2016)	MED	0.26–0.49	0.22–0.59	0.37–0.67	0.31–0.83	0.57–1.03	0.50–1.29
Mengel et al. (2016)	MED		0.25–0.53		0.34–0.74		0.54–1.28
Nauels et al. (2017)	MED	0.34–0.56		0.45–0.71		0.65–1.06	
Slangen et al. (2014)	MED			0.36–0.83		0.46–1.15	
Le Bars (2018)	MED			0.39–0.67	0.31–0.82	0.59–0.98	0.48–1.18
Le Cozannet et al. (2019)	MED	0.20–0.42	0.14--0.49	0.32–0.54	0.24–0.60	0.55–0.80	0.45–0.89
Goodwin et al. (2017)	MED		0.51–0.88		0.52–0.79		0.73–1.00
Nicholls et al. (2018)	MED						0.51–0.88
Kopp et al. (2017)	MICI	0.35–0.76	0.24–0.96	0.64–1.23	0.48–1.56	1.07–2.07	0.91–2.41
Wong et al. (2017)	MICI		0.41–0.72		0.54–1.28		1.07–2.05
Grinsted et al. (2015)	SEJ					0.56–1.18	0.43–1.81
Jackson and Jevrejeva (2016)	SEJ					0.60–1.18	0.48–1.64
Jevrejeva et al. (2014)	SEJ						0.44–1.78
Bamber et al. (2019)	SEJ					0.77–1.72	0.60–2.36
Horton et al. (2020)	Survey	0.28–0.63	0.19–0.80			0.61–1.30	0.43–1.63

All projections are adjusted to a 1995–2014 baseline and 2100 end year. For projections baselined to 1986–2005 or to 2000, adjustments are made assuming a 3 mm yr^{-1} rate. For projections ending in 2081–2100, adjustments are made assuming a constant acceleration from 1996–2014 to the end year.

samples but increase the location parameter at each station by the local projected mean sea level change, effectively shifting the return curve up. The uncertainty in the local projected mean sea level change is estimated by drawing 50,000 samples from the projected probability distribution of local mean sea level change, clipped at its 5th and 95th percentiles. This differs from SROCC, where sea level change samples were drawn from a normal distribution using the central value and a standard error.

Using the resulting 50,000 future return curves for each station, we calculated the frequency amplification factor of a 1% average annual probability (i.e., once in 100 years) of extreme still-water level by dividing the frequency of that water level in the future return curves by the historical frequency. This resulted in a probability distribution of frequency amplification factors that represents both the uncertainty in projected sea level change and in the historical distribution of extremes.

Using the POT method, the frequency of extreme events is only defined for water levels above the POT threshold. If the projected sea level change for a given location is higher than the exceedance of the historical location parameter by the historical 1% annual-probability event, the historical 1% annual-probability event would have a return level below the future location parameter. Thus, for the stations where this occurs the frequency amplification factor cannot be fully determined. Therefore, we used the approach of Buchanan et al. (2016) to describe the return frequency of return heights below the POT threshold. We fit a Gumbel distribution between Mean Higher-High Water (MHHW) and the location parameter, assuming the frequency of exceedance of the MHHW to be 182.6 yr^{-1}. The MHHW was estimated from the GESLA2 data as the long-term mean of 2-daily maxima for each location. Therefore, by construction, the maximum projected frequency amplification factor in our analysis is 18,262.5.

Table 9.SM.7 | Global mean sea level projections for five SSP scenarios, for total change and individual contributions, median values and (*likely*) ranges of the process-based model ensemble, for 1995–2014 to 2050 and 2150 in metres. Average rates for total sea level change in mm yr^{-1}.

	SSP1-1.9	SSP1-2.6	SSP2-4.5	SSP3-7.0	SSP5-8.5	SSP5-8.5 *Low Confidence*
2050						
Thermal expansion	0.07 (0.06–0.08)	0.07 (0.06–0.09)	0.08 (0.07–0.10)	0.09 (0.07–0.10)	0.09 (0.08–0.11)	0.09 (0.08–0.11)
Greenland	0.03 (0.02–0.04)	0.03 (0.02–0.04)	0.03 (0.02–0.04)	0.03 (0.02–0.04)	0.03 (0.02–0.04)	0.04 (0.02–0.14)
Antarctica	0.03 (0.01–0.08)	0.03 (0.01–0.08)	0.03 (0.01–0.08)	0.03 (0.01–0.08)	0.03 (0.01–0.08)	0.03 (-0.01–0.12)
Glaciers	0.04 (0.03–0.05)	0.05 (0.04–0.06)	0.05 (0.05–0.06)	0.06 (0.05–0.07)	0.07 (0.06–0.08)	0.06 (0.04–0.08)
Land-Water Storage	0.01 (0.00–0.02)	0.01 (0.00–0.02)	0.01 (0.00–0.01)	0.01 (0.00–0.02)	0.01 (0.00–0.01)	0.01 (0.00–0.01)
Total (2050)	0.18 (0.15–0.23)	0.19 (0.16–0.25)	0.20 (0.17–0.26)	0.22 (0.18–0.27)	0.23 (0.20–0.29)	0.24 (0.19–0.40)
2150						
Thermal expansion	0.14 (0.11–0.18)	0.18 (0.14–0.23)	0.30 (0.24–0.38)	0.46 (0.38–0.57)	0.55 (0.45–0.68)	0.55 (0.45–0.68)
Greenland	0.10 (0.08–0.13)	0.13 (0.10–0.17)	0.19 (0.15–0.24)	0.23 (0.19–0.28)	0.27 (0.22–0.35)	0.31 (0.18–0.98)
Antarctica	0.17 (–0.01–0.44)	0.18 (–0.02–0.49)	0.18 (–0.05–0.55)	0.17 (–0.09–0.59)	0.16 (–0.11–0.66)	0.76 (–0.11–3.68)
Glaciers	0.10 (0.06–0.14)	0.12 (0.08–0.17)	0.18 (0.13–0.25)	0.25 (0.17–0.31)	0.29 (0.20–0.31)	0.29 (0.20–0.31)
Land-Water Storage	0.05 (0.03–0.06)	0.05 (0.03–0.06)	0.05 (0.03–0.07)	0.07 (0.04–0.09)	0.05 (0.03–0.06)	0.05 (0.03–0.06)
Total (2150)	0.57 (0.37–0.86)	0.68 (0.46–0.99)	0.92 (0.66–1.33)	1.19 (0.88–1.65)	1.32 (0.98–1.88)	1.98 (0.98–4.82)

Table 9.SM.8 | Global mean sea level rise projections for 2000–2300 from literature (m), for different RCP scenarios.

Study	Grouping	RCP 2.6		RCP 4.5		RCP 8.5	
		67%	90%	67%	90%	67%	90%
Kopp et al. (2014)	MED	0.3–2.9	–0.2–4.7	0.7–3.5	0.0–5.3	1.8–5.2	1.0–7.4
Nauels et al. (2017)	MED	0.8–1.4		1.8–2.3		3.4–6.8	
Palmer et al. (2020)[a]	MED	0.6–2.2		0.9–2.6		1.7–4.5	
Kopp et al. (2017)	MICI	0.8–2.3	0.5–3.0	2.8–6.0	2.1–7.0	9.8–14.1	9.1–15.5
Bamber et al. (2019)[b]	SEJ	1.2–3.6	0.5–5.3			2.6–6.5	1.8–11.8
Horton et al. (2020)	Survey	0.54–2.15	0.24–3.11			1.67–5.61	0.88–7.83

[a] Palmer et al. (2020) 5th to 95th percentile of simulated projections are constructed to be analogous to AR5/SROCC *likely* ranges and so are presented here as 17th to 83rd percentile projections.

[b] Bamber et al. (2019) 2°C scenario is listed under the RCP 2.6 column, but GSAT does not decline in this 2°C scenario as it does in RCP 2.6. Bamber et al. (2019) 'RCP 8.5' scenario assumes GSAT stabilization at 5°C above pre-industrial after 2100 and so becomes cooler than RCP 8.5 over the 22nd and 23rd century. Bamber et al. (2019) is not included in the 'Post-AR5 published range' in Table 9.11, as the Bamber et al. (2019) ice sheet projections instead inform the column labelled 'SEJ'.

9.SM.5 Data Table

Table 9.SM.9 | Input datasets and code in the chapter.

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.2 b	OSCAR third-degree resolution ocean surface currents, Ver. 1	Input dataset (observations)		Open	ESR (2009)	https://doi.org/10.5067/OSCAR-03D01 (accessed 20/05/2022)	Bonjean and Lagerloef (2002)	Time averaged over 1993–2018.
	ETOPO20	Input dataset (topography)		Open	NOAA National Geophysical Data Center (2009)	http://www.ngdc.noaa.gov/mgg/global/etopo2.html (accessed 20/05/2022)	Amante and Eakins (2009)	
	Permafrost gridded map	Input dataset		Open	Brown et al. (2011)	https://data.tpdc.ac.cn/en/data/c66bf4a7-8f20-443c-9412-53ac675bd964/ (accessed 20/05/2022)		All permafrost types combined.
	Snow water equivalent (SWE) map	Input dataset		Open	Brodzik et al. (2007)	https://doi.org/10.5067/KIGGFNVROX9V (accessed 20/05/2022)		SWE converted to distribution of snowy regions and locations of ice sheets.
	Northern Hemisphere sea ice data	Input dataset		Open	Meier et al. (2017)	https://doi.org/10.7265/N59P2ZTG (accessed 20/05/2022)		Annual average concentration.
	Southern Hemisphere sea ice data	Input dataset		Open			Peng et al. (2013)	Annual average concentration.
	Glacier inventory	Input dataset		Open			RGI Consortium (2017)	
Figure 9.3a (left: paleo panel)	Paleo MPWP observation	Input dataset (observations)			Foley and Dowsett (2019)		McClymont et al. (2020)	Anomalized relative to 1950–1980. These data used a different 'modern' period so a +0.2 correction was applied based on HadCM3.
	Paleo LIG observation	Input dataset (observations)					Fischer et al. (2018) Turney et al. (2020) Hoffman et al. (2017)	Anomalized relative to 1950–1980. The references used varying 'modern' periods so the following corrections were applied: +0.2 for Fischer et al. (2018) and –0.1 for Turney et al. (2020). These corrections were based on HadCM3.

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3a (left: paleo panel) *(continued)*	Paleo LGM observation	Input dataset (observations)			(Kaufman et al., 2020b)		Kageyama et al. (2021) Paul et al. (2021) Tierney et al. (2020) Waelbroeck et al. (2009)	Anomalized relative to 1950–1980. The references used varying 'modern' periods so the following corrections were applied: +0.2 for Paul et al. (2021) and MARGO (2009), and +0.1 for Tierney et al. (2020). These corrections were based on HadCM3 and PAGES12K Kaufman et al. (2020) respectively.
	Paleo MPWP models	Input dataset (model)					Haywood et al. (2020)	Anomalized relative to 1950–1980. These data used a different 'modern' period so a +0.2 correction was applied based on HadCM3.
	Paleo LIG models	Input dataset					Otto-Bliesner et al. (2021)	Anomalized relative to 1950–1980. (Otto-Bliesner et al., 2021) used a different 'modern' period so a +0.2 correction was applied based on HadCM3.
	Paleo LGM models	Input dataset (model)					Kageyama et al. (2021)	Anomalized relative to 1950–1980. Kageyama et al. (2021) used a different 'modern' reference period so the following was applied: +0.2. This correction was based on HadCM3.
Figure 9.3a (middle and right panels)	Hadley Centre Sea Ice and Sea Surface Temperature dataset (HadISST)	Input dataset (observational reanalyses)		Crown copyright		https://www.metoffice.gov.uk/hadobs/hadisst/ (accessed 20/05/2022)	Rayner et al. (2003); ESMValTool,Ver. 2.	Reformatted with ESMValTool, Ver. 2.0 (20 March 2020).
	CMIP6 (CMIP, ScenarioMIP, HighResMIP)	Input dataset (model)						
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Dix et al. (2019b, c, d, e, f)			
	ACCESS-ESM1-5: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Ziehn et al. (2019b, d, e, f, g)			
	BCC-CSM2-MR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Wu et al. (2018); Xin et al. (2019a, b, c, d)			
	BCC-ESM1: historical	Input dataset			Zhang et al. (2018)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3a (middle and right panels) *(continued)*	CAMS-CSM1-0: historical	Input dataset			(Rong, 2019c)			
	CAS-ESM2-0: historical	Input dataset			(Chai, 2020b)			
	CESM2: historical	Input dataset			Danabasoglu (2019b)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Danabasoglu (2019l, m, n, o, p)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CIESM: historical, ssp126, ssp245, ssp585	Input dataset			Huang (2019a, b, 2020a, b)			
	CMCC-CM2-HR4: highres-future, hist-1950	Input dataset			Scoccimarro et al. (2019a, b)			
	CMCC-CM2-SR5: historical, ssp126, ssp245, ssp370	Input dataset			Lovato and Peano (2020b, c, d, e)			
	CMCC-CM2-VHR4: highres-future, hist-1950	Input dataset			(Scoccimarro et al., 2018, 2019c)			
	CNRM-CM6-1: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Voldoire (2018a, 2019b, c, d, e)			
	CNRM-CM6-1-HR: highres-future, hist-1950	Input dataset			Voldoire (2019h, i)			
	CNRM-ESM2-1: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Seferian (2018b); Voldoire (2019m, n, o, p)			
	CanESM5: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Swart et al. (2019b, c, d, e, f)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			
	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	EC-Earth3P-HR: highres-future, hist-1950	Input dataset			EC-Earth Consortium (EC-Earth) (2018, 2019f)			
	ECMWF-IFS-HR: hist-1950	Input dataset			Roberts et al. (2017)			
	FIO-ESM-2-0: historical, ssp126, ssp245	Input dataset			Song et al. (2019a, b, c)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3a (middle and right panels) *(continued)*	GFDL-CM4: historical, ssp245, ssp585	Input dataset			Guo et al. (2018a, b, c)			
	GFDL-ESM4: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			John et al. (2018a, b, c, d); Krasting et al. (2018)			
	GISS-E2-1-G: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b)			
	GISS-E2-1-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019a)			
	HadGEM3-GC31-HM: highres-future, hist-1950	Input dataset			Roberts (2018, 2019)			
	HadGEM3-GC31-LL: historical, ssp126, ssp245, ssp585	Input dataset			Good (2019, 2020a, b); Ridley et al. (2019b)			
	HadGEM3-GC31-MM: historical, ssp126, ssp585	Input dataset			Ridley et al. (2019c); Jackson (2020a, b)			
	INM-CM4-8: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Volodin et al. (2019a, c, d, e, f)			
	INM-CM5-0: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Volodin et al. (2019g, i, j, k, l)			
	INM-CM5-H: hist-1950	Input dataset			Volodin et al. (2019m)			
	IPSL-CM6A-LR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Boucher et al. (2018b, 2019a, b, c, d)			
	MIROC6: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Tatebe and Watanabe (2018c); Shiogama et al. (2019a, b, c, d)			
	MPI-ESM-1-2-HAM: historical	Input dataset			Neubauer et al. (2019a)			
	MPI-ESM1-2-HR: historical, hist-1950, ssp126, ssp245, ssp370, ssp585	Input dataset			von Storch et al. (2018a); Jungclaus et al. (2019b); Schupfner et al. (2019a, b, c, d)			
	MPI-ESM1-2-LR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Wieners et al. (2019a, b, c, d, e)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3a (middle and right panels) *(continued)*	MPI-ESM1-2-XR: hist-1950	Input dataset			von Storch et al. (2018b)			
	MRI-ESM2-0: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Yukimoto et al. (2019b, c, d, e, f)			
	NESM3: historical	Input dataset			Cao and Wang (2019b)			
	NorCPM1: historical	Input dataset			Bethke et al. (2019)			
	NorESM2-LM: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Seland et al. (2019b, c, d, e, f)			
	NorESM2-MM: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Bentsen et al. (2019b, c, d, e, f)			
	SAM0-UNICON: historical	Input dataset			Park and Shin (2019)			
	TaiESM1: historical	Input dataset			Lee and Liang (2020a)			
	UKESM1-0-LL: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Good et al. (2019a, b, c, d); Tang et al. (2019)			
Figure 9.3b	Hadley Centre Sea Ice and Sea Surface Temperature dataset (HadISST)	Input dataset (observational reanalyses)		Crown copyright		https://www.metoffice.gov.uk/hadobs/hadisst/ (accessed 20/05/2022)	See Figure 9.3a (middle and right panels)	Monthly data averaged between 1995–2014. Reformatted with ESMValTool, Ver. 2.0 (20 March 2020).
Figure 9.3c	Hadley Centre Sea Ice and Sea Surface Temperature dataset (HadISST)	Input dataset (observational reanalyses)		Crown copyright		https://www.metoffice.gov.uk/hadobs/hadisst/ (accessed 20/05/2022)	See Figure 9.3a (middle and right panels)	Change rate calculated between the 2005–2014 mean and the 1950– 1959 mean.
Figure 9.3d	CMIP6 (CMIP)	Input dataset (model)						Change rate calculated between the 2091–2100 mean and the 2005– 2014 mean.
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp585	Input dataset			Dix et al. (2019b, f)			
	ACCESS-ESM1-5: historical, ssp585	Input dataset			Ziehn et al. (2019b, g)			
	BCC-CSM2-MR: historical, ssp585	Input dataset			Wu et al. (2018); Xin et al. (2019d)			
	CESM2-WACCM: historical, ssp585	Input dataset			Danabasoglu (2019l, p)			
	CIESM: historical, ssp585	Input dataset			Huang (2019a, 2020b)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3d *(continued)*	CNRM-CM6-1: historical, ssp585	Input dataset			Voldoire (2018a, 2019e)			
	CNRM-ESM2-1: historical, ssp585	Input dataset			Seferian (2018b); Voldoire (2019p)			
	CanESM5: historical, ssp585	Input dataset			Swart et al. (2019b, f)			
	GFDL-CM4: historical, ssp585	Input dataset			Guo et al. (2018a, c)			
	GFDL-ESM4: historical, ssp585	Input dataset			John et al. (2018d); Krasting et al. (2018)			
	HadGEM3-GC31-LL: historical, ssp585	Input dataset			Ridley et al. (2019b); Good (2020b)			
	HadGEM3-GC31-MM: historical, ssp585	Input dataset			Ridley et al. (2019c); Jackson (2020b)			
	INM-CM4-8: historical, ssp585	Input dataset			Volodin et al. (2019a, f)			
	INM-CM5-0: historical, ssp585	Input dataset			Volodin et al. (2019g, l)			
	IPSL-CM6A-LR: historical, ssp585	Input dataset			Boucher et al. (2018b, 2019d)			
	MIROC6: historical, ssp585	Input dataset			Tatebe and Watanabe (2018c); Shiogama et al. (2019d)			
	MPI-ESM1-2-HR: historical, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019d)			
	MPI-ESM1-2-LR: historical, ssp585	Input dataset			Wieners et al. (2019d, e)			
	MRI-ESM2-0: historical, ssp585	Input dataset			Yukimoto et al. (2019b, f)			
	NorESM2-LM: historical, ssp585	Input dataset			Seland et al. (2019b, f)			
	NorESM2-MM: historical, ssp585	Input dataset			Bentsen et al. (2019b, f)			
	UKESM1-0-LL: historical, ssp585	Input dataset			Good et al. (2019d); Tang et al. (2019)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3e	CMIP6 (CMIP)	Input dataset (model)						See Fig. 9.3b.
	CMIP6 data citations							
	ACCESS-CM2: historical	Input dataset			Dix et al. (2019b)			
	ACCESS-ESM1-5: historical	Input dataset			Ziehn et al. (2019b)			
	BCC-CSM2-MR: historical	Input dataset			Wu et al. (2018)			
	BCC-ESM1: historical	Input dataset			Zhang et al. (2018)			
	CAMS-CSM1-0: historical	Input dataset			Rong (2019c)			
	CAS-ESM2-0: historical	Input dataset			Chai (2020b)			
	CESM2: historical	Input dataset			Danabasoglu (2019b)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical	Input dataset			Danabasoglu (2019l)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CIESM: historical	Input dataset			Huang (2019a)			
	CMCC-CM2-SR5: historical	Input dataset			Lovato and Peano (2020b)			
	CNRM-CM6-1: historical	Input dataset			Voldoire (2018a)			
	CNRM-ESM2-1: historical	Input dataset			Seferian (2018b)			
	CanESM5: historical	Input dataset			Swart et al. (2019b)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			
	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	FIO-ESM-2-0: historical	Input dataset			Song et al. (2019a)			
	GFDL-CM4: historical	Input dataset			Guo et al. (2018a)			
	GFDL-ESM4: historical	Input dataset			Krasting et al. (2018)			
	GISS-E2-1-G: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b)			
	GISS-E2-1-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019a)			
	HadGEM3-GC31-LL: historical	Input dataset			Ridley et al. (2019b)			
	HadGEM3-GC31-MM: historical	Input dataset			Ridley et al. (2019c)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3e *(continued)*	INM-CM4-8: historical	Input dataset			Volodin et al. (2019a)			
	INM-CM5-0: historical	Input dataset			Volodin et al. (2019g)			
	IPSL-CM6A-LR: historical	Input dataset			Boucher et al. (2018b)			
	MIROC6: historical	Input dataset			Tatebe and Watanabe (2018c)			
	MPI-ESM-1-2-HAM: historical	Input dataset			Neubauer et al. (2019a)			
	MPI-ESM1-2-HR: historical	Input dataset			Jungclaus et al. (2019b)			
	MPI-ESM1-2-LR: historical	Input dataset			Wieners et al. (2019e)			
	MRI-ESM2-0: historical	Input dataset			Yukimoto et al. (2019b)			
	NESM3: historical	Input dataset			Cao and Wang (2019b)			
	NorCPM1: historical	Input dataset			Bethke et al. (2019)			
	NorESM2-LM: historical	Input dataset			Seland et al. (2019b)			
	NorESM2-MM: historical	Input dataset			Bentsen et al. (2019b)			
	SAM0-UNICON: historical	Input dataset			Park and Shin (2019)			
	TaiESM1: historical	Input dataset			Lee and Liang (2020a)			
	UKESM1-0-LL: historical	Input dataset			Tang et al. (2019)			
Figure 9.3f	CMIP6 (CMIP)	Input dataset (model)						See Fig. 9.3c.
	CMIP6 data citations							
	ACCESS-CM2: historical	Input dataset			Dix et al. (2019b)			
	ACCESS-ESM1-5: historical	Input dataset			Ziehn et al. (2019b)			
	BCC-CSM2-MR: historical	Input dataset			Wu et al. (2018)			
	BCC-ESM1: historical	Input dataset			Zhang et al. (2018)			
	CAMS-CSM1-0: historical	Input dataset			Rong (2019c)			
	CAS-ESM2-0: historical	Input dataset			Chai (2020b)			
	CESM2: historical	Input dataset			Danabasoglu (2019b)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical	Input dataset			Danabasoglu (2019l)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3f *(continued)*	CIESM: historical	Input dataset			Huang (2019a)			
	CMCC-CM2-SR5: historical	Input dataset			Lovato and Peano (2020b)			
	CNRM-CM6-1: historical	Input dataset			Voldoire (2018a)			
	CNRM-ESM2-1: historical	Input dataset			Seferian (2018b)			
	CanESM5: historical	Input dataset			Swart et al. (2019b)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			
	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	FIO-ESM-2-0: historical	Input dataset			Song et al. (2019a)			
	GFDL-CM4: historical	Input dataset			Guo et al. (2018a)			
	GFDL-ESM4: historical	Input dataset			Krasting et al. (2018)			
	GISS-E2-1-G: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b)			
	GISS-E2-1-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019a)			
	HadGEM3-GC31-LL: historical	Input dataset			Ridley et al. (2019b)			
	HadGEM3-GC31-MM: historical	Input dataset			Ridley et al. (2019c)			
	INM-CM4-8: historical	Input dataset			Volodin et al. (2019a)			
	INM-CM5-0: historical	Input dataset			Volodin et al. (2019g)			
	IPSL-CM6A-LR: historical	Input dataset			Boucher et al. (2018b)			
	MIROC6: historical	Input dataset			Tatebe and Watanabe (2018c)			
	MPI-ESM-1-2-HAM: historical	Input dataset			Neubauer et al. (2019a)			
	MPI-ESM1-2-HR: historical	Input dataset			Jungclaus et al. (2019b)			
	MPI-ESM1-2-LR: historical	Input dataset			Wieners et al. (2019e)			
	MRI-ESM2-0: historical	Input dataset			Yukimoto et al. (2019b)			
	NESM3: historical	Input dataset			Cao and Wang (2019b)			
	NorCPM1: historical	Input dataset			Bethke et al. (2019)			
	NorESM2-LM: historical	Input dataset			Seland et al. (2019b)			
	NorESM2-MM: historical	Input dataset			Bentsen et al. (2019b)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3f *(continued)*	SAM0-UNICON: historical	Input dataset			Park and Shin (2019)			
	TaiESM1: historical	Input dataset			Lee and Liang (2020a)			
	UKESM1-0-LL: historical	Input dataset			Tang et al. (2019)			
Figure 9.3g	CMIP6 (CMIP)	Input dataset (model)						Change rate calculated between the 2041–2050 mean and the 2005–2014 mean.
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp585	Input dataset			Dix et al. (2019b, f)			
	ACCESS-ESM1-5: historical, ssp585	Input dataset			Ziehn et al. (2019b, g)			
	BCC-CSM2-MR: historical, ssp585	Input dataset			Wu et al. (2018); Xin et al. (2019d)			
	CESM2-WACCM: historical, ssp585	Input dataset			Danabasoglu (2019l, p)			
	CIESM: historical, ssp585	Input dataset			Huang (2019a, 2020b)			
	CNRM-CM6-1: historical, ssp585	Input dataset			Voldoire (2018a, 2019e)			
	CNRM-ESM2-1: historical, ssp585	Input dataset			Seferian (2018b); Voldoire (2019p)			
	CanESM5: historical, ssp585	Input dataset			Swart et al. (2019b, f)			
	GFDL-CM4: historical, ssp585	Input dataset			Guo et al. (2018a, c)			
	GFDL-ESM4: historical, ssp585	Input dataset			John et al. (2018d); Krasting et al. (2018)			
	HadGEM3-GC31-LL: historical, ssp585	Input dataset			Ridley et al. (2019b); Good (2020b)			
	HadGEM3-GC31-MM: historical, ssp585	Input dataset			Ridley et al. (2019c); Jackson (2020b)			
	INM-CM4-8: historical, ssp585	Input dataset			Volodin et al. (2019a, f)			
	INM-CM5-0: historical, ssp585	Input dataset			Volodin et al. (2019g, l)			
	IPSL-CM6A-LR: historical, ssp585	Input dataset			Boucher et al. (2018b, 2019d)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3g *(continued)*	MIROC6: historical, ssp585	Input dataset			Tatebe and Watanabe (2018c); Shiogama et al. (2019d)			
	MPI-ESM1-2-HR: historical, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019d)			
	MPI-ESM1-2-LR: historical, ssp585	Input dataset			Wieners et al. (2019d, e)			
	MRI-ESM2-0: historical, ssp585	Input dataset			Yukimoto et al. (2019b, f)			
	NorESM2-LM: historical, ssp585	Input dataset			Seland et al. (2019b, f)			
	NorESM2-MM: historical, ssp585	Input dataset			Bentsen et al. (2019b, f)			
	UKESM1-0-LL: historical, ssp585	Input dataset			Good et al. (2019d); Tang et al. (2019)			
Figure 9.3h	CMIP6 (HighResMIP)	Input dataset (model)						See Fig. 9.3b.
	CMIP6 data citations							
	CMCC-CM2-HR4: hist-1950	Input dataset			Scoccimarro et al. (2019b)			
	CMCC-CM2-VHR4: hist-1950	Input dataset			Scoccimarro et al. (2018)			
	CNRM-CM6-1-HR: hist-1950	Input dataset			Voldoire (2019i)			
	EC-Earth3P-HR: hist-1950	Input dataset			EC-Earth Consortium (EC-Earth) (2018)			
	ECMWF-IFS-HR: hist-1950	Input dataset			Roberts et al. (2017)			
	HadGEM3-GC31-HM: hist-1950	Input dataset			Roberts (2018)			
	INM-CM5-H: hist-1950	Input dataset			Volodin et al. (2019m)			
	MPI-ESM1-2-HR: hist-1950	Input dataset			von Storch et al. (2018a)			
	MPI-ESM1-2-XR: hist-1950	Input dataset			von Storch et al. (2018b)			
Figure 9.3i	CMIP6 (HighResMIP)	Input dataset (model)						See Fig. 9.3c.

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.3j	CMIP6 (HighResMIP)	Input dataset (model)						See Fig. 9.3g.
	CMIP6 data citations							
	CMCC-CM2-HR4: highres-future, hist-1950	Input dataset			Scoccimarro et al. (2019a, b)			
	CMCC-CM2-VHR4: highres-future, hist-1950	Input dataset			Scoccimarro et al. (2018, 2019c)			
	CNRM-CM6-1-HR: highres-future, hist-1950	Input dataset			Voldoire (2019h, i)			
	EC-Earth3P-HR: highres-future, hist-1950	Input dataset			EC-Earth Consortium (EC-Earth) (2018, 2019f)			
	HadGEM3-GC31-HM: highres-future, hist-1950	Input dataset			Roberts (2018, 2019)			
Figure 9.4a, b, d, e, g, h	CERES EBAF Ver. 4 (heat fluxes); OAFlux-HR (heat, freshwater and momentum fluxes); GPCP (precipitation)	Input datasets (observation-based products)				https://ceres.larc.nasa.gov/data/ (accessed 20/05/2022) http://oaflux.whoi.edu/ (accessed 20/05/2022) https://rda.ucar.edu/datasets/ds728.3/ (accessed 20/05/2022)		
Figure 9.4 c, f, i	CMIP6 (CMIP, ScenarioMIP)	Input dataset (model)						Change rate calculated between the 2081–2100 mean and the 1995–2014 mean. Models include river runoff, observations do not.
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp585	Input dataset			Dix et al. (2019b, f)			
	ACCESS-ESM1-5: historical, ssp585	Input dataset			Ziehn et al. (2019b, g)			
	CESM2-WACCM: historical, ssp585	Input dataset			Danabasoglu (2019l, p)			
	CIESM: historical, ssp585	Input dataset			Huang (2019a, 2020b)			
	CMCC-CM2-SR5: historical, ssp585	Input dataset			Lovato and Peano (2020b, f)			
	CNRM-CM6-1: historical, ssp585	Input dataset			Voldoire (2018a, 2019e)			
	CNRM-ESM2-1: historical, ssp585	Input dataset			Seferian (2018b); Voldoire (2019p)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.4 c, f, i *(continued)*	CanESM5: historical, ssp585	Input dataset			Swart et al. (2019b, f)			
	EC-Earth3: historical, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019a, e)			
	EC-Earth3-Veg: historical, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019h, l)			
	FIO-ESM-2-0: historical, ssp585	Input dataset			Song et al. (2019a, d)			
	GFDL-CM4: historical, ssp585	Input dataset			Guo et al. (2018a, c)			
	GFDL-ESM4: historical, ssp585	Input dataset			John et al. (2018d); Krasting et al. (2018)			
	HadGEM3-GC31-LL: historical, ssp585	Input dataset			Ridley et al. (2019b); Good (2020b)			
	HadGEM3-GC31-MM: historical, ssp585	Input dataset			Ridley et al. (2019c); Jackson (2020b)			
	IPSL-CM6A-LR: historical, ssp585	Input dataset			Boucher et al. (2018b, 2019d)			
	MIROC-ES2L: historical, ssp585	Input dataset			Hajima et al. (2019); Tachiiri et al. (2019d)			
	MPI-ESM1-2-HR: historical, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019d)			
	MPI-ESM1-2-LR: historical, ssp585	Input dataset			Wieners et al. (2019d, e)			
	NorESM2-LM: historical, ssp585	Input dataset			Seland et al. (2019b, f)			
	NorESM2-MM: historical, ssp585	Input dataset			Bentsen et al. (2019b, f)			
	UKESM1-0-LL: historical, ssp585	Input dataset			Good et al. (2019d); Tang et al. (2019)			
Figure 9.5a, b, e, f	Argo mixed layers	Input datasets (observations)		Open		http://mixedlayer.ucsd.edu (accessed 20/05/2022)	Holte et al. (2017)	Climatology of monthly mixed-layer depths. December 2019 version. MLDs calculated using de Boyer Montégut et al. (2004) threshold values. DJF and JJA averages ignore missing grid points. Afterward, isolated missing grid points infilled as average of four neighbours.

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.5b, f	CMIP6 (CMIP)	Input dataset (model)						Change rate calculated across 1995–2014 period.
	CMIP6 data citations							
	ACCESS-CM2: historical	Input dataset			Dix et al. (2019b)			
	ACCESS-ESM1-5: historical	Input dataset			Ziehn et al. (2019b)			
	AWI-CM-1-1-MR: historical	Input dataset			Semmler et al. (2018c)			
	AWI-ESM-1-1-LR: historical	Input dataset			Danek et al. (2020)			
	BCC-CSM2-MR: historical	Input dataset			Wu et al. (2018)			
	BCC-ESM1: historical	Input dataset			Zhang et al. (2018)			
	CAMS-CSM1-0: historical	Input dataset			Rong (2019c)			
	CAS-ESM2-0: historical	Input dataset			Chai (2020b)			
	CESM2: historical	Input dataset			Danabasoglu (2019b)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical	Input dataset			Danabasoglu (2019l)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CMCC-CM2-HR4: historical	Input dataset			Scoccimarro et al. (2020)			
	CMCC-CM2-SR5: historical	Input dataset			Lovato and Peano (2020b)			
	CanESM5: historical	Input dataset			Swart et al. (2019b)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			
	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	EC-Earth3: historical	Input dataset			EC-Earth Consortium (EC-Earth) (2019a)			
	EC-Earth3-Veg: historical	Input dataset			EC-Earth Consortium (EC-Earth) (2019h)			
	EC-Earth3-Veg-LR: historical	Input dataset			EC-Earth Consortium (EC-Earth) (2020c)			
	FGOALS-f3-L: historical	Input dataset			Yu (2019a)			
	FGOALS-g3: historical	Input dataset			Li (2019b)			
	GFDL-ESM4: historical	Input dataset			Krasting et al. (2018)			
	GISS-E2-1-G: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.5b, f *(continued)*	IPSL-CM6A-LR: historical	Input dataset			Boucher et al. (2018b)			
	KIOST-ESM: historical	Input dataset			Kim et al. (2019a)			
	MPI-ESM-1-2-HAM: historical	Input dataset						
	MPI-ESM1-2-HR: historical	Input dataset			Jungclaus et al. (2019b)			
	MPI-ESM1-2-LR: historical	Input dataset			Wieners et al. (2019e)			
	MRI-ESM2-0: historical	Input dataset			Yukimoto et al. (2019b)			
	NESM3: historical	Input dataset			Cao and Wang (2019b)			
	NorCPM1: historical	Input dataset			Bethke et al. (2019)			
	NorESM2-LM: historical	Input dataset			Seland et al. (2019b)			
	NorESM2-MM: historical	Input dataset			Bentsen et al. (2019b)			
Figure 9.5 c, d, g, h	CMIP6 (ScenarioMIP, CMIP)	Input dataset (model)						Change rate calculated between the 2081–2100 average and the 1995–2014 average.
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp126, ssp585	Input dataset			Dix et al. (2019b, c, f)			
	ACCESS-ESM1-5: historical, ssp126, ssp585	Input dataset			Ziehn et al. (2019b, d, g)			
	AWI-CM-1-1-MR: historical, ssp126, ssp585	Input dataset			Semmler et al. (2018a, c, 2019)			
	AWI-ESM-1-1-LR: historical	Input dataset			Danek et al. (2020)			
	BCC-CSM2-MR: historical, ssp126, ssp585	Input dataset			Wu et al. (2018); Xin et al. (2019a, d)			
	BCC-ESM1: historical	Input dataset			Zhang et al. (2018)			
	CAMS-CSM1-0: historical, ssp126, ssp585	Input dataset			Rong (2019c, d, g)			
	CAS-ESM2-0: historical	Input dataset			Chai (2020b)			
	CESM2: historical	Input dataset			Danabasoglu (2019b)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical, ssp126, ssp585	Input dataset			Danabasoglu (2019l, m, p)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CMCC-CM2-HR4: historical	Input dataset			Scoccimarro et al. (2020)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.5 c, d, g, h *(continued)*	CMCC-CM2-SR5: historical, ssp126, ssp585	Input dataset			Lovato and Peano (2020b, c, f)			
	CanESM5: historical, ssp126, ssp585	Input dataset			Swart et al. (2019b, c, f)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			
	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	EC-Earth3: historical, ssp126, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019a, b, e)			
	EC-Earth3-Veg: historical, ssp126, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019h, i, l)			
	EC-Earth3-Veg-LR: historical	Input dataset			EC-Earth Consortium (EC-Earth) (2020c)			
	FGOALS-f3-L: historical, ssp126, ssp585	Input dataset			Yu (2019a, b, e)			
	FGOALS-g3: historical, ssp126, ssp585	Input dataset			Li (2019b, d, g)			
	GFDL-ESM4: historical, ssp585	Input dataset			John et al. (2018d); Krasting et al. (2018)			
	GISS-E2-1-G: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b)			
	IPSL-CM6A-LR: historical, ssp126, ssp585	Input dataset			Boucher et al. (2018b, 2019a, d)			
	KIOST-ESM: historical, ssp126, ssp585	Input dataset			Kim et al. (2019a, b, d)			
	MPI-ESM-1-2-HAM: historical	Input dataset						
	MPI-ESM1-2-HR: historical, ssp126, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019a, d)			
	MPI-ESM1-2-LR: historical, ssp126, ssp585	Input dataset			Wieners et al. (2019a, d, e)			
	MRI-ESM2-0: historical, ssp126, ssp585	Input dataset			Yukimoto et al. (2019b, c, f)			
	NESM3: historical, ssp126, ssp585	Input dataset			Cao (2019a, c); Cao and Wang (2019b)			
	NorCPM1: historical	Input dataset			Bethke et al. (2019)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.5 c, d, g, h *(continued)*	NorESM2-LM: historical, ssp126, ssp585	Input dataset			Seland et al. (2019b, c, f)			
	NorESM2-MM: historical, ssp126, ssp585	Input dataset			Bentsen et al. (2019b, c, f)			
Figure 9.6a	Observations (Ishii)	Input dataset (observations)	ishii_ohc_global_1955.txt			https://www.data.jma.go.jp/gmd/kaiyou/english/ohc/ohc_data_en.html (accessed 20/05/2022)	Ishii et al. (2017)	Anomalized relative to 2004–2015 mean.
	Hybrid (Zanna)	Input dataset (hybrid)	OHC_GF_1870_2018_Zanna.nc		Zanna et al. (2019)	http://doi.org/10.5281/zenodo.4603700 (accessed 20/05/2022)	Zanna et al. (2019)	Anomalized relative to 2004–2015 mean.
	Hybrid (Cheng)	Input dataset (hybrid)	Cheng_2016_Global_OHC_13_Jan_2021.txt			http://159.226.119.60/cheng/images_files/OHC2000m_annual_timeseries.txt (accessed 20/05/2022)	Cheng et al. (2017)	Anomalized relative to 2004–2015 mean.
	Paleo (LIG)	Input dataset (LIG)	Stored in Excel file for Fig 9.9: 9.2.2_ACM_Fig_9.9_OHC_Paleo_Data_update_2020_12_06.xls				Shackleton et al. (2020)	Last Interglacial OHC anomaly relative to pre-industrial. This mean is between –129 ka and –116 ka CE, and the time series is shown in Fig. 9.9.
	Paleo (LGM)	Input dataset (LGM)	Stored in Excel file for Fig 9.9: 9.2.2_ACM_Fig_9.9_OHC_Paleo_Data_update_2020_12_06.xls				Baggenstos et al. (2019)	Last Glacial Maximum OHC anomaly relative to pre-industrial. This mean is between –23 ka and –19 ka CE, and the time series is shown in Fig. 9.9.
	Paleo (MH)	Input dataset (MH)	Stored in Excel file for Fig 9.9: 9.2.2_ACM_Fig_9.9_OHC_Paleo_Data_update_2020_12_06.xls				Baggenstos et al. (2019)	Mid-Holocene OHC anomaly relative to pre-industrial. This mean is between –6.5 ka and –5.5 ka CE, and the time series is shown in Fig. 9.9.
	CMIP6 (CMIP, ScenarioMIP)	Input dataset (model)						Time series across 1850–2014 (CMIP) and 2015–2100 (ScenarioMIP). Anomalized relative to 2005–2014 mean.
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Dix et al. (2019b, c, d, e, f)			
	ACCESS-ESM1-5: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Ziehn et al. (2019b, d, e, f, g)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.6a *(continued)*	BCC-ESM1: 1pctCO2, historical	Input dataset			Zhang et al. (2018, 2019a)			
	CAMS-CSM1-0: 1pctCO2, historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Rong (2019a, c, d, e, f, g)			
	CAS-ESM2-0: 1pctCO2, historical	Input dataset			Chai (2020b, c)			
	CESM2: historical	Input dataset			Danabasoglu (2019b)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Danabasoglu (2019l, m, n, o, p)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CIESM: historical, ssp126, ssp245, ssp585	Input dataset			Huang (2019a, b, 2020a, b)			
	CMCC-CM2-HR4: historical	Input dataset			Scoccimarro et al. (2020)			
	CMCC-CM2-SR5: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Lovato and Peano (2020b, c, d, e, f)			
	CMCC-ESM2: historical, ssp126, ssp245, ssp585	Input dataset			Lovato et al. (2021a, b, c, d)			
	CanESM5: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Swart et al. (2019b, c, d, e, f)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			
	E3SM-1-1: hist-bgc, historical, ssp585	Input dataset			Bader et al. (2019c, d, 2020a)			
	E3SM-1-1-ECA: historical, ssp585-bgc	Input dataset			Bader et al. (2019e, 2020b)			
	EC-Earth3: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019a, b, c, d, e)			
	EC-Earth3-AerChem: historical, ssp370	Input dataset			EC-Earth Consortium (EC-Earth) (2020a, b)			
	EC-Earth3-CC: historical, ssp245, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2021a, b, c)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.6a *(continued)*	EC-Earth3-Veg: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019h, i, j, k, l)			
	EC-Earth3-Veg-LR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2020c, d, e, f, g)			
	FGOALS-f3-L: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Yu (2019a, b, c, d, e)			
	FGOALS-g3: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Li (2019b, d, e, f, g)			
	FIO-ESM-2-0: historical, ssp126, ssp245, ssp585	Input dataset			Song et al. (2019a, b, c, d)			
	GISS-E2-1-G: historical, piControl	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b, c)			
	GISS-E2-1-G-CC: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019b)			
	INM-CM4-8: historical, piControl, ssp126, ssp245, ssp370, ssp585	Input dataset			Volodin et al. (2019a, b, c, d, e, f)			
	INM-CM5-0: historical, piControl, ssp126, ssp245, ssp370, ssp585	Input dataset			Volodin et al. (2019g, h, i, j, k, l)			
	IPSL-CM5A2-INCA: historical, ssp126, ssp370	Input dataset			Boucher et al. (2020a, b, c, d)			
	IPSL-CM6A-LR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Boucher et al. (2018b, 2019a, b, c, d)			
	MCM-UA-1-0: historical	Input dataset			Stouffer (2019a)			
	MIROC6: historical, ssp245, ssp126, ssp245, ssp370, ssp585	Input dataset			Tatebe and Watanabe (2018a, c); Shiogama et al. (2019a, b, c, d)			
	MPI-ESM-1-2-HAM: historical, piControl	Input dataset			Neubauer et al. (2019a, b)			
	MPI-ESM1-2-HR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019a, b, c, d)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.6a *(continued)*	MPI-ESM1-2-LR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Wieners et al. (2019a, b, c, d, e)			
	MRI-ESM2-0: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Yukimoto et al. (2019b, c, d, e, f)			
	NESM3: historical, lig127k, ssp126, ssp245, ssp585	Input dataset			Cao (2019a, b, c); Cao and Wang (2019a, b)			
	TaiESM1: historical, ssp126, ssp245, ssp370	Input dataset			Lee and Liang (2020a, b, c, d)			
Figure 9.6 b–g	Ishii	Input dataset (observational reanalyses)			Ishii et al. (2017)	https://climate.mri-jma.go.jp/pub/ocean/ts/v7.3/2021-02-01/ (accessed 20/05/2022)		0–700 m calculated between 1971–2014 and 0–2000 m calculated between 2005–2014.
	CMIP6 (CMIP)	Input dataset (model)						0–700 m bias calculated across 1971–2014 mean. 0–2000 m bias calculated across 2005–2014 mean.
	CMIP6 (ScenarioMIP)	Input dataset (model)						Change rate calculated between the 2091–2100 mean and the 2005–2014 mean.
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp585				Dix et al. (2019b, c, f)			
	ACCESS-ESM1-5: historical, ssp585				Ziehn et al. (2019b, d, g)			
	BCC-ESM1: historical				Zhang et al. (2018)			
	CAMS-CSM1-0: historical, ssp585				Rong (2019c, d, g)			
	CAS-ESM2-0: historical				Chai (2020b)			
	CESM2: historical				Danabasoglu (2019b)			
	CESM2-FV2: historical				Danabasoglu (2019j)			
	CESM2-WACCM: historical, ssp585				Danabasoglu (2019l, m, p)			
	CESM2-WACCM-FV2: historical				Danabasoglu (2019q)			
	CIESM: historical, ssp585				Huang (2019a, b, 2020b)			
	CMCC-CM2-HR4: historical				Scoccimarro et al. (2020)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.6 b–g *(continued)*	CMCC-CM2-SR5: historical, ssp585				Lovato and Peano (2020b, c, f)			
	CMCC-ESM2: historical, ssp585				Lovato et al. (2021a, b, d)			
	CanESM5: historical, ssp585				Swart et al. (2019b, c, f)			
	E3SM-1-0: historical				Bader et al. (2019b)			
	E3SM-1-1: historical, ssp585				Bader et al. (2019d, 2020a)			
	E3SM-1-1-ECA: historical				Bader et al. (2020b)			
	EC-Earth3: historical, ssp585				EC-Earth Consortium (EC-Earth) (2019a, b, e)			
	EC-Earth3-AerChem: historical				EC-Earth Consortium (EC-Earth) (2020a)			
	EC-Earth3-CC: historical, ssp585				EC-Earth Consortium (EC-Earth) (2021a, c)			
	EC-Earth3-Veg: historical, ssp585				EC-Earth Consortium (EC-Earth) (2019h, i, l)			
	EC-Earth3-Veg-LR: historical, ssp585				EC-Earth Consortium (EC-Earth) (2020c, d, g)			
	FGOALS-f3-L: historical, ssp585				Yu (2019a, b, e)			
	FGOALS-g3: historical, ssp585				Li (2019b, d, g)			
	FIO-ESM-2-0: historical, ssp585				Song et al. (2019a, b, d)			
	GISS-E2-1-G: historical				NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b)			
	GISS-E2-1-G-CC: historical				NASA Goddard Institute for Space Studies (NASA/ GISS) (2019b)			
	INM-CM4-8: historical, ssp585				Volodin et al. (2019a, c, f)			
	INM-CM5-0: historical, ssp585				Volodin et al. (2019g, i, l)			
	IPSL-CM5A2-INCA: historical				Boucher et al. (2020b, c)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.6 b–g *(continued)*	IPSL-CM6A-LR: historical, ssp585				Boucher et al. (2018b, 2019a, d)			
	MCM-UA-1-0: historical				Stouffer (2019a)			
	MIROC6: historical, ssp126, ssp585				Tatebe and Watanabe (2018c); Shiogama et al. (2019a, d)			
	MPI-ESM-1-2-HAM: historical				Neubauer et al. (2019a)			
	MPI-ESM1-2-HR: historical, ssp126, ssp585				Jungclaus et al. (2019b); Schupfner et al. (2019a, d)			
	MPI-ESM1-2-LR: historical, ssp126, ssp585				Wieners et al. (2019a, d, e)			
	MRI-ESM2-0: historical, ssp126, ssp585				Yukimoto et al. (2019b, c, f)			
	NESM3: historical, ssp126, ssp585				Cao (2019a, c); Cao and Wang (2019b)			
	TaiESM1: historical, ssp126				Lee and Liang (2020a, b)			
Figure 9.7, 1st and 2nd columns	Argo (observations)	Input dataset (observational reanalyses)				https ://argo.ucsd.edu/ (accessed 20/05/2022)		
	CMIP6 (CMIP)	Input dataset (model)						
	CMIP6 data citations							
	ACCESS-CM2: historical	Input dataset			Dix et al. (2019b)			
	ACCESS-ESM1-5: historical	Input dataset			Ziehn et al. (2019b)			
	CAMS-CSM1-0: historical	Input dataset			Rong (2019c)			
	CESM2: historical	Input dataset			Danabasoglu (2019b)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical	Input dataset			Danabasoglu (2019l)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CIESM: historical	Input dataset			Huang (2019a)			
	CNRM-CM6-1: historical	Input dataset			Voldoire (2018a)			
	CNRM-ESM2-1: historical	Input dataset			Seferian (2018b)			
	CanESM5: historical	Input dataset			Swart et al. (2019b)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.7, 1st and 2nd columns *(continued)*	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	FIO-ESM-2-0: historical	Input dataset			Song et al. (2019a)			
	GFDL-ESM4: historical	Input dataset			Krasting et al. (2018)			
	GISS-E2-1-G: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b)			
	GISS-E2-1-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019a)			
	HadGEM3-GC31-LL: historical	Input dataset			Ridley et al. (2019b)			
	HadGEM3-GC31-MM: historical	Input dataset			Ridley et al. (2019c)			
	INM-CM4-8: historical	Input dataset			Volodin et al. (2019a)			
	INM-CM5-0: historical	Input dataset			Volodin et al. (2019g)			
	IPSL-CM6A-LR: historical	Input dataset			Boucher et al. (2018b)			
	MPI-ESM-1-2-HAM: historical	Input dataset			Neubauer et al. (2019a)			
	MPI-ESM1-2-HR: historical	Input dataset			Jungclaus et al. (2019b)			
	MPI-ESM1-2-LR: historical	Input dataset			Wieners et al. (2019e)			
	MRI-ESM2-0: historical	Input dataset			Yukimoto et al. (2019b)			
	NESM3: historical	Input dataset			Cao and Wang (2019b)			
	SAM0-UNICON: historical	Input dataset			Park and Shin (2019)			
	UKESM1-0-LL: historical	Input dataset			Tang et al. (2019)			
Figure 9.7, 3rd and 4th columns	CMIP6 (CMIP, ScenarioMIP)	Input dataset (model)						Change rate calculated between the 2005–2014 mean (CMIP) and the 2091–2100 mean (ScenarioMIP).
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp126, ssp585	Input dataset			Dix et al. (2019b, c, f)			
	ACCESS-ESM1-5: historical, ssp126, ssp585	Input dataset			Ziehn et al. (2019b, d, g)			
	CAMS-CSM1-0: historical, ssp126, ssp585	Input dataset			Rong (2019c, d, g)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.7, 3rd and 4th columns *(continued)*	CESM2-WACCM: historical, ssp126, ssp585	Input dataset			Danabasoglu (2019l, m, p)			
	CNRM-CM6-1: historical, ssp126, ssp585	Input dataset			Voldoire (2018a, 2019b, e)			
	CanESM5: historical, ssp126, ssp585	Input dataset			Swart et al. (2019b, c, f)			
	EC-Earth3-Veg: historical, ssp126, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019h, i, l)			
	INM-CM4-8: historical, ssp126, ssp585	Input dataset			Volodin et al. (2019a, c, f)			
	INM-CM5-0: historical, ssp126, ssp585	Input dataset			Volodin et al. (2019g, i, l)			
	IPSL-CM6A-LR: historical, ssp126, ssp585	Input dataset			Boucher et al. (2018b, 2019a, d)			
	MPI-ESM1-2-LR: historical, ssp126, ssp585	Input dataset			Wieners et al. (2019a, d, e)			
	MRI-ESM2-0: historical, ssp126, ssp585	Input dataset			Yukimoto et al. (2019b, c, f)			
	UKESM1-0-LL: historical, ssp126, ssp585	Input dataset			Good et al. (2019a, d); Tang et al. (2019)			
Figure 9.8 a–f	CMIP5 and observation-based product	Input dataset (model and observation analysis)					Bronselaer and Zanna (2020)	These data are the same as used in the paper, but projections are redrawn so as to match the chapter standards.
Figure 9.8g	RAPID array	Input dataset (observations)					Ver. v2015.1 Smeed D. et al. (2016)	
	CMIP6 (HighResMIP)	Input dataset (model)					Roberts et al. (2020)	This analysis is similar to that in the paper but combines multiple panels from the paper into one.

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.9 a, b, d	Ocean heat content (OHC) estimates	Input dataset				Inset OHC updated values from Levitus et al. (2012); https://www.nodc.noaa.gov/OC5/3M_HEAT_CONTENT/basin_tsl_data.html (accessed 20/05/2022)	Shackleton et al. (2019) Shackleton et al. (2020); Baggenstos et al. (2019); Levitus et al. (2012) updated NOAA NODC (2020)	Rebased to preindustrial baseline (PI): Baggenstos et al. (2019); MOT (Mean ocean temperature)-PI= MOT-1.51; Shackleton et al. (2019) MOT-PI = MOT+0.50 (aligned to Baggenstos et al. (2019); Shackleton et al. (2020); MOT-PI = MOT+0.25 (aligned to Baggenstos et al. (2019); assumption, Baggenstos et al. (2019) at 1000 BP =PI.
	Southern Ocean SST estimates from marine cores	Input dataset					Uemura et al. (2018)	Restacked 11 records from average of three low-variability intervals, 4–8 ka, 18–22ka, and 25–29 ka, binned and averaged at 1000-year intervals.
	Southern Ocean SST estimates from ice core source	Input dataset					Uemura et al. (2018)	As published, moisture source temperature based on deuterium excess.
	OHC from HadCM3	Input dataset				https://crudata.uea.ac.uk/cru/projects/soap/pw/data/model/hadcm3/hadcm3_sealevel.htm (accessed 20/05/2022)	Gregory et al. (2006)	Inset only, natural + anthropogenic forcing.
Figure 9.9c	Model OHC projections	Input dataset (model)					Clark et al. (2016)	Projected OHC in response to four GHG emissions scenarios.
	Model SAT	Input dataset (model)					Clark et al. (2016)	Projected SAT in response to four GHG emissions scenarios.
Figure 9.10, top-left panel	CMIP6 (PMIP)	Input dataset (model)						
	CMIP6 data citations							
	ACCESS-ESM1-5: piControl, lig127k	Input dataset			Yeung et al. (2019); Ziehn et al. (2019c)			
	CESM2: piControl, lig127k	Input dataset			Danabasoglu (2019e); Danabasoglu et al. (2019)			
	FGOALS-g3: piControl, lig127k	Input dataset			Li (2019c); Zheng and Dong (2019)			
	MPI-ESM1-2-LR: piControl, lgm	Input dataset			Jungclaus et al. (2019c); Wieners et al. (2019f)			
Figure 9.10, top-right panel	CMIP6 (DAMIP, ScenarioMIP), CMIP5	Model dataset					Menary et al. (2020)	

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.10, bottom panels	Simulated AMOC changes	Model datasets					Based on literature search from Jackson and Wood (2018); Yin and Stouffer (2007); Liu and Liu (2013); Haskins et al. (2019); De Vries and Weber (2005); Jackson (2013); Stouffer et al. (2006)	Extracted from time series and descriptions of models from these papers.
Figure 9.11, maps	CMIP6 (CMIP, ScenarioMIP)	Input dataset (model)						Change rates calculated between the 1995–2014 mean (CMIP) and the 2081–2100 mean (ScenarioMIP).
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp585	Input dataset			Dix et al. (2019b, f)			
	ACCESS-ESM1-5: historical, ssp585	Input dataset			Ziehn et al. (2019b, g)			
	AWI-CM-1-1-MR: historical, ssp585	Input dataset			Semmler et al. (2018c, 2019)			
	BCC-CSM2-MR: historical, ssp585	Input dataset			Wu et al. (2018); Xin et al. (2019d)			
	CAMS-CSM1-0: historical, ssp585	Input dataset			Rong (2019c, g)			
	CAS-ESM2-0: historical, ssp585	Input dataset			Chai (2020b)			
	CESM2: historical, ssp585	Input dataset			Danabasoglu (2019b, i)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical, ssp585	Input dataset			Danabasoglu (2019l, p)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CIESM: historical, ssp585	Input dataset			Huang (2019a, 2020b)			
	CMCC-CM2-SR5: historical, ssp585	Input dataset			Lovato and Peano (2020b, f)			
	CMCC-ESM2: historical, ssp585	Input dataset			Lovato et al. (2021a, d)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.11, maps *(continued)*	CanESM5: historical, ssp585	Input dataset			Swart et al. (2019b, f)			
	E3SM-1-1: historical, ssp585	Input dataset			Bader et al. (2019d, 2020a)			
	EC-Earth3: ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019e)			
	EC-Earth3-CC: historical, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2021a, c)			
	EC-Earth3-Veg: historical, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019h, l)			
	EC-Earth3-Veg-LR: historical, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2020c, g)			
	FGOALS-f3-L: historical, ssp585	Input dataset			Yu (2019a, e)			
	FGOALS-g3: historical, ssp585	Input dataset			Li (2019b, g)			
	FIO-ESM-2-0: historical, ssp585	Input dataset			Song et al. (2019a, d)			
	GISS-E2-1-G: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b)			
	INM-CM4-8: historical, ssp585	Input dataset			Volodin et al. (2019a, f)			
	INM-CM5-0: historical, ssp585	Input dataset			Volodin et al. (2019g, l)			
	IPSL-CM6A-LR: historical, ssp585	Input dataset			Boucher et al. (2018b, 2019d)			
	KIOST-ESM: historical, ssp585	Input dataset			Kim et al. (2019a, d)			
	MIROC6: historical, ssp585	Input dataset			Tatebe and Watanabe (2018c); Shiogama et al. (2019d)			
	MPI-ESM1-2-HR: historical, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019d)			
	MPI-ESM1-2-LR: historical, ssp585	Input dataset			Wieners et al. (2019d, e)			
	MRI-ESM2-0: historical, ssp585	Input dataset			Yukimoto et al. (2019b, f)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.11, maps *(continued)*	NESM3: historical, ssp585	Input dataset			Cao (2019c); Cao and Wang (2019b)			
	NorESM2-LM: historical, ssp585	Input dataset			Seland et al. (2019b, f)			
	NorESM2-MM: historical, ssp585	Input dataset			Bentsen et al. (2019b, f)			
	SAM0-UNICON: historical	Input dataset			Park and Shin (2019)			
Figure 9.11, right column (scatter plots)	CMIP6 (CMIP, ScenarioMIP)	Input dataset (model)					Sen Gupta et al. (2016); Hu et al. (2015)	
Figure 9.12 a–f	CMIP6 (CMIP, ScenarioMIP)	Input dataset (model)						Changes are between the 1995–2014 and 2081–2100 means.
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp126, ssp585	Input dataset			Dix et al. (2019b, c, f)			
	ACCESS-ESM1-5: historical, ssp126, ssp585	Input dataset			Ziehn et al. (2019b, d, g)			
	CAMS-CSM1-0: historical, ssp126, ssp585	Input dataset			Rong (2019c, d, g)			
	CESM2-WACCM: historical, ssp126, ssp585	Input dataset			Danabasoglu (2019l, m, p)			
	CIESM: historical, ssp126, ssp585	Input dataset			Huang (2019a, b, 2020b)			
	CMCC-CM2-SR5: historical, ssp126, ssp585	Input dataset			Lovato and Peano (2020b, c, f)			
	CMCC-ESM2: historical, ssp126, ssp585	Input dataset			Lovato et al. (2021a, b, d)			
	CanESM5: historical, ssp126, ssp585	Input dataset			Swart et al. (2019b, c, f)			
	E3SM-1-1: historical, ssp585	Input dataset			Bader et al. (2019d, 2020a)			
	EC-Earth3: historical, ssp126, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019a, b, e)			
	EC-Earth3-CC: historical, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2021a, c)			
	EC-Earth3-Veg: historical, ssp126, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019h, i, l)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.12 a–f *(continued)*	EC-Earth3-Veg-LR: historical, ssp126, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2020c, d, g)			
	FGOALS-f3-L: historical, ssp126, ssp585	Input dataset			Yu (2019a, b, e)			
	FGOALS-g3: historical, ssp126, ssp585	Input dataset			Li (2019b, d, g)			
	FIO-ESM-2-0: historical, ssp126, ssp585	Input dataset			Song et al. (2019a, b, d)			
	INM-CM4-8: historical, ssp126, ssp585	Input dataset			Volodin et al. (2019a, c, f)			
	INM-CM5-0: historical, ssp126, ssp585	Input dataset			Volodin et al. (2019g, i, l)			
	IPSL-CM5A2-INCA: historical, ssp126	Input dataset			Boucher et al. (2020b, c)			
	IPSL-CM6A-LR: historical, ssp126, ssp585	Input dataset			Boucher et al. (2018b, 2019a, d)			
	MIROC6: historical, ssp126, ssp585	Input dataset			Tatebe and Watanabe (2018c); Shiogama et al. (2019a, d)			
	MPI-ESM1-2-HR: historical, ssp126, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019a, d)			
	MPI-ESM1-2-LR: historical, ssp126, ssp585	Input dataset			Wieners et al. (2019a, d, e)			
	MRI-ESM2-0: historical, ssp126, ssp585	Input dataset			Yukimoto et al. (2019b, c, f)			
	NESM3: historical, ssp126, ssp585	Input dataset			Cao (2019a, c); Cao and Wang (2019b)			
	TaiESM1: ssp126	Input dataset			Lee and Liang (2020b)			
Figure 9.12g	AVISO Sea Surface Altimetry	Input dataset (observations)				https://www.aviso.altimetry.fr/en/home.html (accessed 20/05/2022)		Standard deviation across 2005–2014.

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.12 h, i	CMIP6 (OMIP)	Input dataset (model)				HYCOM low-res is from: https://data.coaps.fsu.edu/pub/abozec/OMIP2-GLBt0.72/ (accessed 20/05/2022) HYCOM high-res is from: https://data.coaps.fsu.edu/pub/abozec/GLBb0.08/ (accessed 20/05/2022)		Standard deviation across last 10 years.
	CMIP6 data citations							
	CESM2: omip2	Input dataset			Danabasoglu (2019d)			
	FGOALS-f3-L: omip2	Input dataset			Lin (2019)			
Figure 9.13, left panel	UHH SIA	Input datasets	SeaIceArea__NorthernHemisphere__monthly__UHH__v2019_fv0.01.nc	Creative Commons Attribution 4.0 International	Doerr et al. (2021)	http://doi.org/10.25592/uhhfdm.8559 (accessed 20/05/2022)		
Figure 9.13, left panel	Plotting code	Code	plot_9_13_and_9_15.py			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
Figure 9.13, maps (except right column)	OSISAF/CCI 450	Input datasets			OSI SAF (2017)	https://doi.org/10.15770/EUM_SAF_OSI_0008 (accessed 20/05/2022)	Lavergne et al. (2019)	
	OSISAF/CCI 430-b	Input datasets			OSI SAF (2020)	https://navigator.eumetsat.int/product/EO:EUM:DAT:0150 (accessed 20/05/2022) ftp://osisaf.met.no/reprocessed/ice/conc-cont-reproc/v2p0/ (accessed 20/05/2022)	Lavergne et al. (2019)	
	NASA team and bootstrap algorithm data as included in the NOAA/NSIDC climate data record	Input dataset			Cavalieri et al. (1996); Comiso (2017); Meier et al. (2017)	https://doi.org/10.5067/8GQ8LZQVL0VL (accessed 20/05/2022) https://doi.org/10.5067/7Q8HCCWS4I0R (accessed 20/05/2022) https://doi.org/10.7265/N59P2ZTG (accessed 20/05/2022)	Cavalieri et al. (1996); Comiso (2017)	
Figure 9.13, right column	Plotting code	Code	plot_Fig_9_13_RIGHT_and_Fig_9_15_RIGHT.py			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
	CMIP6 (CMIP, ScenarioMIP)	Input dataset (model)						

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.13, right column *(continued)*	**CMIP6 data citations**							
	ACCESS-CM2: historical, ssp126, ssp245, ssp585, ssp126, ssp245, ssp585	Input dataset			Dix et al. (2019b, c, d, f)			
	ACCESS-ESM1-5: historical, ssp126, ssp245, ssp585	Input dataset			Ziehn et al. (2019b, d, e, g)			
	AWI-CM-1-1-MR: historical, ssp126, ssp245, ssp585	Input dataset			Semmler et al. (2018a, b, c, 2019)			
	AWI-ESM-1-1-LR: historical	Input dataset			Danek et al. (2020)			
	BCC-CSM2-MR: historical, ssp126, ssp245, ssp585	Input dataset			Wu et al. (2018); Xin et al. (2019a, b, d)			
	BCC-ESM1: historical	Input dataset			Zhang et al. (2018)			
	CAMS-CSM1-0: historical, ssp126, ssp245, ssp585	Input dataset			Rong (2019c, d, e, g)			
	CAS-ESM2-0: historical	Input dataset			Chai (2020b)			
	CESM2: historical, ssp126, ssp245, ssp585	Input dataset			Danabasoglu (2019b, f, g, i)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical, ssp126, ssp245, ssp585	Input dataset			Danabasoglu (2019l, m, n, p)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CIESM: historical, ssp126, ssp245, ssp585	Input dataset			Huang (2019a, b, 2020a, b)			
	CMCC-CM2-HR4: historical	Input dataset			Scoccimarro et al. (2020)			
	CMCC-CM2-SR5: historical, ssp126, ssp245, ssp585	Input dataset			Lovato and Peano (2020b, c, d, f)			
	CNRM-CM6-1: historical, ssp126, ssp245, ssp585	Input dataset			Voldoire (2018a, 2019b, c, e)			
	CNRM-CM6-1-HR: historical, ssp126, ssp245, ssp585	Input dataset			Voldoire (2019g, j, k, 2020a)			
	CNRM-ESM2-1: historical, ssp126, ssp245, ssp585	Input dataset			Seferian (2018b); Voldoire (2019m, n, p)			
	CanESM5: historical, ssp126, ssp245, ssp585	Input dataset			Swart et al. (2019b, c, d, f)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.13, right column *(continued)*	CanESM5-CanOE: historical, ssp585	Input dataset			Swart et al. (2019g, k)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			
	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	EC-Earth3: historical, ssp126, ssp245, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019a, b, c, e)			
	EC-Earth3-Veg: historical, ssp126, ssp245, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019h, i, j, l)			
	EC-Earth3-Veg-LR: historical	Input dataset			EC-Earth Consortium (EC-Earth) (2020c)			
	FGOALS-f3-L: historical, ssp126, ssp245, ssp585	Input dataset			Yu (2019a, b, c, e)			
	FGOALS-g3: historical, ssp126, ssp245, ssp585	Input dataset			Li (2019b, d, e, g)			
	FIO-ESM-2-0: historical, ssp126, ssp245, ssp585	Input dataset			Song et al. (2019a, b, c, d)			
	GFDL-CM4: historical, ssp245, ssp585	Input dataset			Guo et al. (2018a, b, c)			
	GFDL-ESM4: historical, ssp126, ssp245, ssp585	Input dataset			John et al. (2018a, b, d); Krasting et al. (2018)			
	GISS-E2-1-G: historical, ssp126, ssp245, ssp585	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b, 2020a, b, d)			
	GISS-E2-1-G-CC: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019b)			
	GISS-E2-1-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019a)			
	HadGEM3-GC31-LL: historical, ssp126, ssp245, ssp585, ssp126, ssp245, ssp585	Input dataset			Good (2019, 2020a, b); Ridley et al. (2019b)			
	HadGEM3-GC31-MM: historical, ssp126, ssp585	Input dataset			Ridley et al. (2019c); Jackson (2020a, b)			
	IITM-ESM: historical, ssp126, ssp585	Input dataset			Raghavan and Panickal (2019); Panickal and Narayanasetti (2020a, b)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.13, right column *(continued)*	INM-CM4-8: historical, ssp126, ssp245, ssp585	Input dataset			Volodin et al. (2019a, c, d, f)			
	INM-CM5-0: historical, ssp126, ssp245, ssp585	Input dataset			Volodin et al. (2019g, i, j, l)			
	IPSL-CM6A-LR: historical, ssp126, ssp245, ssp585	Input dataset			Boucher et al. (2018b, 2019a, b, d)			
	KACE-1-0-G: historical, ssp126, ssp245, ssp585	Input dataset			Byun et al. (2019a, b, d, f)			
	KIOST-ESM: historical, ssp126, ssp245, ssp585	Input dataset			Kim et al. (2019a, b, c, d)			
	MCM-UA-1-0: historical, ssp126, ssp245, ssp585	Input dataset			Stouffer (2019a, b, c, d)			
	MIROC-ES2L: historical, ssp126, ssp245, ssp585	Input dataset			Hajima et al. (2019); Tachiiri et al. (2019a, b, d)			
	MIROC6: historical, ssp126, ssp245, ssp585	Input dataset			Tatebe and Watanabe (2018c); Shiogama et al. (2019a, b, d)			
	MPI-ESM-1-2-HAM: historical	Input dataset			Neubauer et al. (2019a)			
	MPI-ESM1-2-HR: historical, ssp126, ssp245, ssp585, ssp126, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019a, b, d); Steger et al. (2019a, b)			
	MPI-ESM1-2-LR: historical, ssp126, ssp245, ssp585	Input dataset			Wieners et al. (2019a, b, d, e)			
	MRI-ESM2-0: historical, ssp126, ssp245, ssp585	Input dataset			Yukimoto et al. (2019b, c, d, f)			
	NESM3: historical, ssp126, ssp245, ssp585	Input dataset			Cao (2019a, b, c); Cao and Wang (2019b)			
	NorCPM1: historical	Input dataset			Bethke et al. (2019)			
	NorESM2-LM: historical, ssp126, ssp245, ssp585	Input dataset			Seland et al. (2019b, c, d, f)			
	NorESM2-MM: historical, ssp126, ssp245, ssp585	Input dataset			Bentsen et al. (2019b, c, d, f)			
	SAM0-UNICON: historical	Input dataset			Park and Shin (2019)			
	TaiESM1: historical	Input dataset			Lee and Liang (2020a)			
	UKESM1-0-LL: historical, ssp126, ssp245, ssp585, ssp126, ssp245, ssp585	Input dataset			Good et al. (2019a, b, d); Tang et al. (2019); Byun (2020); Shim et al. (2020, 2021a, b)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.14	Plotting code	Code	plot_Fig_9_14.py			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
	CMIP6 Sea Ice Model Intercomparison Project (SIMIP)	Input dataset (model)					Notz et al. (2016)	
Figure 9.15, left panel	UHH SIA	Input datasets	SeaIceArea__ NorthernHemisphere__ monthly__UHH__ v2019_fv0.01.nc	Creative Commons Attribution 4.0 International	Doerr et al. (2021)	http://doi.org/10.25592/uhhfdm.8559 (accessed 20/05/2022)		
Figure 9.15, left panel	Plotting code	Code	plot_9_13_and_9_15.py			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
Figure 9.15, maps (except right column)	OSISAF/CCI 450	Input datasets			OSI SAF (2017)	http://doi.org/10.15770/EUM_SAF_OSI_0008 (accessed 20/05/2022)	Lavergne et al. (2019)	
	OSISAF/CCI 430-b	Input datasets			OSI SAF (2020)	https://navigator.eumetsat.int/product/EO:EUM:DAT:0150 (accessed 20/05/2022) ftp://osisaf.met.no/reprocessed/ice/conc-cont-reproc/v2p0/ (accessed 20/05/2022)	Lavergne et al. (2019)	
	NASA team and bootstrap algorithm data as included in the NOAA/NSIDC climate data record	Input dataset			Cavalieri et al. (1996); Comiso (2017); Meier et al. (2017)	https://doi.org/10.7265/N59P2ZTG (accessed 20/05/2022)	Cavalieri et al. (1996); Comiso (2017);	
Figure 9.15, right column	CMIP6 (CMIP, ScenarioMIP)	Input dataset (model)						
	Plotting code	Code	plot_Fig_9_13_RIGHT_ and_Fig_9_15_RIGHT.py			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp126, ssp245, ssp585, ssp126, ssp245, ssp585	Input dataset			Dix et al. (2019b, c, d, f)			
	ACCESS-ESM1-5: historical, ssp126, ssp245, ssp585	Input dataset			Ziehn et al. (2019b, d, e, g)			
	AWI-CM-1-1-MR: historical, ssp126, ssp245, ssp585	Input dataset			Semmler et al. (2018a, b, c, 2019)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.15, right column *(continued)*	AWI-ESM-1-1-LR: historical	Input dataset			Danek et al. (2020)			
	BCC-CSM2-MR: historical, ssp126, ssp245, ssp585	Input dataset			Wu et al. (2018); Xin et al. (2019a, b, d)			
	BCC-ESM1: historical	Input dataset			Zhang et al. (2018)			
	CAMS-CSM1-0: historical, ssp126, ssp245, ssp585	Input dataset			Rong (2019c, d, e, g)			
	CAS-ESM2-0: historical	Input dataset			Chai (2020b)			
	CESM2: historical, ssp126, ssp245, ssp585	Input dataset			Danabasoglu (2019b, f, g, i)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical, ssp126, ssp245, ssp585	Input dataset			Danabasoglu (2019l, m, n, p)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CIESM: historical, ssp126, ssp245, ssp585	Input dataset			Huang (2019a, b, 2020a, b)			
	CMCC-CM2-HR4: historical	Input dataset			Scoccimarro et al. (2020)			
	CMCC-CM2-SR5: historical, ssp126, ssp245, ssp585	Input dataset			Lovato and Peano (2020b, c, d, f)			
	CNRM-CM6-1: historical, ssp126, ssp245, ssp585	Input dataset			Voldoire (2018a, 2019b, c, e)			
	CNRM-CM6-1-HR: historical, ssp126, ssp245, ssp585	Input dataset			Voldoire (2019g, j, k, 2020a)			
	CNRM-ESM2-1: historical, ssp126, ssp245, ssp585	Input dataset			Seferian (2018b); Voldoire (2019m, n, p)			
	CanESM5: historical, ssp126, ssp245, ssp585	Input dataset			Swart et al. (2019b, c, d, f)			
	CanESM5-CanOE: historical, ssp585	Input dataset			Swart et al. (2019g, k)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			
	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	EC-Earth3: historical, ssp126, ssp245, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019a, b, c, e)			
	EC-Earth3-Veg: historical, ssp126, ssp245, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019h, i, j, l)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.15, right column *(continued)*	EC-Earth3-Veg-LR: historical	Input dataset			EC-Earth Consortium (EC-Earth) (2020c)			
	FGOALS-f3-L: historical, ssp126, ssp245, ssp585	Input dataset			Yu (2019a, b, c, e)			
	FGOALS-g3: historical, ssp126, ssp245, ssp585	Input dataset			Li (2019b, d, e, g)			
	FIO-ESM-2-0: historical, ssp126, ssp245, ssp585	Input dataset			Song et al. (2019a, b, c, d)			
	GFDL-CM4: historical, ssp245, ssp585	Input dataset			Guo et al. (2018a, b, c)			
	GFDL-ESM4: historical, ssp126, ssp245, ssp585	Input dataset			John et al. (2018a, b, d); Krasting et al. (2018)			
	GISS-E2-1-G: historical, ssp126, ssp245, ssp585	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b, 2020a, b, d)			
	GISS-E2-1-G-CC: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019b)			
	GISS-E2-1-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019a)			
	HadGEM3-GC31-LL: historical, ssp126, ssp245, ssp585, ssp126, ssp245, ssp585	Input dataset			Good (2019, 2020a, b); Ridley et al. (2019b)			
	HadGEM3-GC31-MM: historical, ssp126, ssp585	Input dataset			Ridley et al. (2019c); Jackson (2020a, b)			
	IITM-ESM: historical, ssp126, ssp585	Input dataset			Raghavan and Panickal (2019); Panickal and Narayanasetti (2020a, b)			
	INM-CM4-8: historical, ssp126, ssp245, ssp585	Input dataset			Volodin et al. (2019a, c, d, f)			
	INM-CM5-0: historical, ssp126, ssp245, ssp585	Input dataset			Volodin et al. (2019g, i, j, l)			
	IPSL-CM6A-LR: historical, ssp126, ssp245, ssp585	Input dataset			Boucher et al. (2018b, 2019a, b, d)			
	KACE-1-0-G: historical, ssp126, ssp245, ssp585	Input dataset			Byun et al. (2019a, b, d, f)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.15, right column *(continued)*	KIOST-ESM: historical, ssp126, ssp245, ssp585	Input dataset			Kim et al. (2019a, b, c, d)			
	MCM-UA-1-0: historical, ssp126, ssp245, ssp585	Input dataset			Stouffer (2019a, b, c, d)			
	MIROC-ES2L: historical, ssp126, ssp245, ssp585	Input dataset			Hajima et al. (2019); Tachiiri et al. (2019a, b, d)			
	MIROC6: historical, ssp126, ssp245, ssp585	Input dataset			Tatebe and Watanabe (2018c); Shiogama et al. (2019a, b, d)			
	MPI-ESM-1-2-HAM: historical	Input dataset			Neubauer et al. (2019a)			
	MPI-ESM1-2-HR: historical, ssp126, ssp245, ssp585, ssp126, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019a, b, d); Steger et al. (2019a, b)			
	MPI-ESM1-2-LR: historical, ssp126, ssp245, ssp585	Input dataset			Wieners et al. (2019a, b, d, e)			
	MRI-ESM2-0: historical, ssp126, ssp245, ssp585	Input dataset			Yukimoto et al. (2019b, c, d, f)			
	NESM3: historical, ssp126, ssp245, ssp585	Input dataset			Cao (2019a, b, c); Cao and Wang (2019b)			
	NorCPM1: historical	Input dataset			Bethke et al. (2019)			
	NorESM2-LM: historical, ssp126, ssp245, ssp585	Input dataset			Seland et al. (2019b, c, d, f)			
	NorESM2-MM: historical, ssp126, ssp245, ssp585	Input dataset			Bentsen et al. (2019b, c, d, f)			
	SAM0-UNICON: historical	Input dataset			Park and Shin (2019)			
	TaiESM1: historical	Input dataset			Lee and Liang (2020a)			
	UKESM1-0-LL: historical, ssp126, ssp245, ssp585, ssp126, ssp245, ssp585	Input dataset			Good et al. (2019a, b, d); Tang et al. (2019); Byun (2020); Shim et al. (2020, 2021a, b)			
Figure 9.16, top-left panel	Regional mass change in Greenland	Input dataset					Fausto et al. (2021); Mouginot et al. (2019)	Referenced to 2015.
Figure 9.16, top-right panel	Regional mass change in Antarctic	Input dataset					Shepherd et al. (2018)	Referenced to 2015.

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.16, lower panels	Regional mass change in Greenland	Input dataset					Mankoff et al. (2019); Mouginot et al. (2019); Dolan et al. (2011); King et al. (2020)	
Figure 9.17, top-left panel	Greenland paleo observations (MPWP)	Input dataset					Dolan et al. (2011); Koenig et al. (2015); Miller et al. (2012b) de Boer et al. (2017); Dolan et al. (2015); Contoux et al. (2015)	The mean of each study's mean is plotted as a circle. The p-box shows the maximum and minimum of range values across all these studies.
	Greenland paleo observations (LIG)	Input dataset					Robinson et al. (2011); Colville et al. (2011); Fyke et al. (2011) Born and Nisancioglu, (2012); Quiquet et al. (2013); Dahl-Jensen et al. (2013); Helsen et al. (2013); Colleoni et al. (2014); Robinson and Goelzer (2014); Calov et al. (2015); Dutton et al.(2015); Goelzer et al. (2016); Yau et al. (2016); Tabone et al. (2018); Plach et al. (2019); Clark et al. (2020)	The mean of each of these studies' means is plotted as a circle. The range shows the maximum and minimum of range values across all these studies.
	Greenland paleo observations (LGM)	Input dataset					Simpson et al. (2009); Lecavalier et al. (2014); Peltier et al. (2015); The IMBIE Team et al. (2018); Khan et al. (2016); Simms et al. (2019); Stuhne and Peltier (2015); Argus and Peltier (2010); Bradley et al. (2018); Tabone et al. (2018)	The mean of each of these studies' means is plotted as a circle. The range shows the maximum and minimum of range values across all these studies.

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.17, top-right panel	Greenland mass loss historical data	Input dataset					Box and Colgan (2013); Kjeldsen et al. (2015); Mouginot et al. (2019); Bamber et al. (2018); Shepherd et al. (2018); The IMBIE Team (2020)	
	Greenland mass loss projection (ISMIP6)	Model datasets					Goelzer et al. (2020); Payne et al. (2021)	
	Greenland mass loss projection (ISMIP6 emulation)	Model dataset					Edwards et al. (2021)	
Figure 9.17. bottom panels	Paleo reconstructions (left three panels)	Input dataset					Lecavalier et al. (2014); Koenig et al. (2015); Goelzer et al., (2018)	
	CryoSat 2 radar altimetry	Input dataset					Bamber et al. (2018b)	
	ISMIP6 projection	Input dataset					Goelzer et al. (2020)	
Figure 9.18, top-left panel	Antarctica paleo observations (MPWP)	Input dataset					Dolan et al. (2011); Miller et al. (2012); Pollard et al. (2015); de Boer et al. (2015); de Boer et al. (2017); DeConto and Pollard (2016); Yan et al. (2016); Gasson et al. (2016); Golledge et al. (2017)	The mean of each of these studies' means is plotted as a circle. The range shows the maximum and minimum of range values across all these studies.
	Antarctica paleo observations (LIG)	Input dataset					Bamber et al. (2009); Dutton et al. (2015); Briggs et al. (2014); Goelzer et al. (2018); Albrecht et al. (2020); Clark et al. (2020)	The mean of each of these studies means is plotted as a circle. The range shows the maximum and minimum of range values across all these studies.
	Antarctica paleo observations (LGM)	Input dataset					Argus and Peltier (2010); Mackintosh et al. (2011); Golledge et al. (2012, 2013, 2014); Whitehouse et al. (2012); Ivins et al. (2013); Argus et al. (2014); Maris et al. (2014)	The mean of each of these studies means is plotted as a circle. The range shows the maximum and minimum of range values across all these studies.

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.18, top-right panel	Antarctic mass loss historical data	Input dataset					Group (2018)	
	Antarctic mass loss projection (ISMIP6)	Model datasets					Seroussi et al. (2019); Payne et al. (2021)	
	Antarctic mass loss projection (ISMIP6 emulation)	Model dataset					Edwards et al. (2021)	
Figure 9.18, bottom panels	Paleo reconstructions (left three panels)	Input dataset					Anderson et al. (2002); Bentley et al. (2014); de Boer et al. (2015); Goelzer et al. (2016)	
	Restored analog radar records	Input dataset					Schroeder et al. (2019)	
	ISMIP6 projection	Input dataset					Seroussi et al. (2019)	
Figure 9.19, top-left panel	Present-day melt rates (input-output method)	Input dataset					Rignot et al. (2013)	
Figure 9.19, top-middle panel	Present-day melt rates (non-local PIGL)	Input dataset					Jourdain et al. (2020)	
Figure 9.19, top-right panel	Present-day melt rates (FESOM simulation)	Input dataset					Naughten et al. (2018)	
Figure 9.19, bottom panels	ISMIP6 projections	Input dataset						Future anomalies are calculated as 2081–2100 minus the present day using the ISMIP6 non-local-MeanAnt and non-local-PIGL parametrizations from Jourdain et al. (2020) lower-left and centre respectively), based on projections from the NorESM1-M CMIP5 model, and the FESOM-MMM projection (lower right).
Figure 9.20	Glacier change rates	Input dataset					Zemp et al. (2019); Zemp et al. (2020); Wouters et al. (2019); Hugonnet et al. (2021)	

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.21	Historical glacier mass	Input dataset					Marzeion et al. (2015); Zemp et al. (2019); Bamber et al. (2018a)	
	CMIP6 (GlacierMIP Phase 2)	Input dataset (model)					Marzeion et al. (2020)	
Figure 9.22	Global mean annual ground temperature data (GTN-P)	Input dataset			GTN-P, 2018			
Figure 9.22, left panel	CMIP6 (CMIP, AMIP, land-hist), CMIP5	Input dataset (model)	pf15m_amip_NH_1979-1998.txt; pf15m_CMIP5historical_NH_1979-1998.txt; pf15m_historical_NH_1979-1998.txt; pf15m_land-hist_NH_1979-1998.txt	Creative Commons Attribution 4.0 International				
	Observed and reanalysis-based permafrost extent	Input dataset	Three values extracted manually from the cited references	No license required	Obu et al. (2018); Zhang et al. (1999); Gruber (2012)		Obu et al. (2018); Zhang et al. (1999); Gruber (2012)	
	CMIP6 data citations							
	ACCESS-CM2: amip, historical	Input dataset			Dix et al. (2019a, b)			
	ACCESS-ESM1-5: amip, historical	Input dataset			Ziehn et al. (2019a, b)			
	BCC-CSM2-MR: amip, historical, land-hist	Input dataset			Wu et al. (2018, 2019)			
	BCC-ESM1: amip, historical	Input dataset			Zhang et al. (2018, 2019b)			
	CAMS-CSM1-0: amip, historical	Input dataset			Rong (2019b, c)			
	CAS-ESM2-0: amip, historical	Input dataset			Chai (2020a, b)			
	CESM2: amip, historical, land-hist	Input dataset			Danabasoglu (2019a, b, c)			
	CESM2-FV2: amip, historical	Input dataset			Danabasoglu (2019j, 2020a)			
	CESM2-WACCM: amip, historical	Input dataset			Danabasoglu (2019k, l)			
	CESM2-WACCM-FV2: amip, historical	Input dataset			Danabasoglu (2019q, 2020b)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.22, left panel *(continued)*	CMCC-CM2-SR5: amip	Input dataset			Lovato and Peano (2020a)			
	CNRM-CM6-1: amip, historical, land-hist	Input dataset			Voldoire (2018a, b, 2019a)			
	CNRM-CM6-1-HR: amip, historical	Input dataset			Voldoire (2019f, g)			
	CNRM-ESM2-1: amip, historical, land-hist	Input dataset			Seferian (2018a, b); Voldoire (2019l)			
	CanESM5: amip, historical	Input dataset			Swart et al. (2019a, b)			
	CanESM5-CanOE: historical	Input dataset			Swart et al. (2019g)			
	E3SM-1-0: amip, historical	Input dataset			Bader et al. (2019a, b)			
	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	EC-Earth3: historical	Input dataset			EC-Earth Consortium (EC-Earth) (2019a)			
	EC-Earth3-Veg: amip	Input dataset			EC-Earth Consortium (EC-Earth) (2019g)			
	FGOALS-f3-L: historical	Input dataset			Yu (2019a)			
	FGOALS-g3: amip, historical	Input dataset			Li (2019a, b)			
	GFDL-CM4: historical	Input dataset			Guo et al. (2018a)			
	GISS-E2-1-G: amip, historical, land-hist	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018a, b, d)			
	GISS-E2-1-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019a)			
	GISS-E2-2-G: amip	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019c)			
	HadGEM3-GC31-LL: amip, historical, land-hist	Input dataset			Ridley et al. (2019a, b)			
	HadGEM3-GC31-MM: historical	Input dataset			Ridley et al. (2019c)			
	IPSL-CM5A2-INCA: historical	Input dataset			Boucher et al. (2020b)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.22, left panel *(continued)*	IPSL-CM6A-LR: amip, historical, land-hist	Input dataset			Boucher et al. (2018a, b, 2019e)			
	KACE-1-0-G: amip, historical	Input dataset			Byun et al. (2019e, f)			
	MIROC-ES2L: amip, historical	Input dataset			Hajima et al. (2019, 2020)			
	MIROC6: amip, historical, land-hist	Input dataset			Tatebe and Watanabe (2018b, c); Onuma and Kim (2020)			
	MPI-ESM-1-2-HAM: historical	Input dataset			Neubauer et al. (2019a)			
	MPI-ESM1-2-HR: amip, historical	Input dataset			Jungclaus et al. (2019a, b)			
	MPI-ESM1-2-LR: historical, land-hist	Input dataset			Stracke et al. (2019); Wieners et al. (2019e)			
	MRI-ESM2-0: amip, historical	Input dataset			Yukimoto et al. (2019a, b)			
	NorESM2-LM: amip, historical	Input dataset			Seland et al. (2019a, b)			
	NorESM2-MM: amip, historical	Input dataset			Bentsen et al. (2019a, b)			
	TaiESM1: historical	Input dataset			Lee and Liang (2020a)			
	UKESM1-0-LL: historical, land-hist	Input dataset			Tang et al. (2019)			
	CMIP5 data citations							
	ACCESS1-0: historical	Input dataset			Bi et al. (2016a)			
	ACCESS1-3: historical	Input dataset			Bi et al. (2016b)			
	BCC-CSM1-1: historical	Input dataset			Wu and Xin (2015a)			
	BCC-CSM1-1-M: historical	Input dataset			Wu and Xin (2015b)			
	CCSM4: historical	Input dataset			Meehl (2014)			
	CESM1-BGC: historical	Input dataset			Lindsay (2013)			
	CESM1-CAM5: historical	Input dataset			Neale (2013)			
	CESM1-WACCM: historical	Input dataset			Marsh (2013)			
	CMCC-CM: historical	Input dataset			Scoccimarro and Gualdi (2014)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.22, left panel *(continued)*	CMCC-CMS: historical	Input dataset			euro-Mediterraneo sui Cambiamenti Climatici (CMCC) (2013)			
	CNRM-CM5: historical	Input dataset			Sénési et al. (2014)			
	CanESM2: historical	Input dataset			for Climate Modelling and (CCCma) (2015)			
	FGOALS-g2: historical	Input dataset			LASG Institute of Atmospheric Physics (2015)			
	GFDL-CM3: historical	Input dataset			Horowitz et al. (2014)			
	GFDL-ESM2G: historical	Input dataset			Dunne et al. (2014a)			
	GFDL-ESM2M: historical	Input dataset			Dunne et al. (2014b)			
	GISS-E2-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2014a)			
	GISS-E2-R: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2014b)			
	IPSL-CM5A-LR: historical	Input dataset			Denvil et al. (2016)			
	IPSL-CM5A-MR: historical	Input dataset			Foujols et al. (2016)			
	IPSL-CM5B-LR: historical	Input dataset			Fairhead et al. (2016)			
	MIROC-ESM: historical	Input dataset			JAMSTEC et al. (2015a)			
	MIROC-ESM-CHEM: historical	Input dataset			JAMSTEC et al. (2015b)			
	MIROC5: historical	Input dataset			AORI et al. (2015)			
	MPI-ESM-MR: historical	Input dataset			Giorgetta et al. (2012)			
	MRI-CGCM3: historical	Input dataset			Yukimoto et al. (2015)			
	MRI-ESM1: historical	Input dataset			Adachi et al. (2015)			
	NorESM1-M: historical	Input dataset			Bentsen et al. (2012)			
	NorESM1-ME: historical	Input dataset			Tjiputra et al. (2012)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.22, right panel	CMIP6 (CMIP, ScenarioMIP)	Input dataset (model)	pfvolbin-3m.tgz	Creative Commons Attribution 4.0 International			Python, Fortran	Change calculated relative to 1995–2014 over historical period and up to 2100.
	CMIP6 data citations							
	ACCESS-CM2: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Dix et al. (2019b, c, d, e, f)			
	ACCESS-ESM1-5: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Ziehn et al. (2019b, d, e, f, g)			
	BCC-CSM2-MR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Wu et al. (2018); Xin et al. (2019a, b, c, d)			
	BCC-ESM1: historical	Input dataset			Zhang et al. (2018)			
	CAMS-CSM1-0: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Rong (2019c, d, e, f, g)			
	CAS-ESM2-0: historical	Input dataset			Chai (2020b)			
	CESM2: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Danabasoglu (2019b, f, g, h, i)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Danabasoglu (2019l, m, n, o, p)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CNRM-CM6-1: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Voldoire (2018a, 2019b, c, d, e)			
	CNRM-CM6-1-HR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Voldoire (2019g, j, k, 2020a, b)			
	CNRM-ESM2-1: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Seferian (2018b); Voldoire (2019m, n, o, p)			
	CanESM5: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Swart et al. (2019b, c, d, e, f)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.22, right panel *(continued)*	CanESM5-CanOE: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Swart et al. (2019g, h, i, j, k)			
	E3SM-1-0: historical	Input dataset			Bader et al. (2019b)			
	E3SM-1-1: historical	Input dataset			Bader et al. (2019d)			
	E3SM-1-1-ECA: historical	Input dataset			Bader et al. (2020b)			
	EC-Earth3: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019a, b, c, d, e)			
	FGOALS-f3-L: historical	Input dataset			Yu (2019a)			
	FGOALS-g3: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Li (2019b, d, e, f, g)			
	GFDL-CM4: historical, ssp245, ssp585	Input dataset			Guo et al. (2018a, b, c)			
	GFDL-ESM4: ssp126, ssp245, ssp370, ssp585	Input dataset			John et al. (2018a, b, c, d)			
	GISS-E2-1-G: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			NASA Goddard Institute for Space Studies (NASA/GISS) (2018b, 2020a, b, c, d)			
	GISS-E2-1-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/GISS) (2019a)			
	HadGEM3-GC31-LL: historical, ssp126, ssp245, ssp585	Input dataset			Good (2019, 2020a, b); Ridley et al. (2019b)			
	HadGEM3-GC31-MM: historical	Input dataset			Ridley et al. (2019c)			
	IPSL-CM5A2-INCA: historical	Input dataset			Boucher et al. (2020b)			
	IPSL-CM6A-LR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Boucher et al. (2018b, 2019a, b, c, d)			
	KACE-1-0-G: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Byun et al. (2019a, b, c, d, f)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.22, right panel *(continued)*	MIROC-ES2L: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Hajima et al. (2019); Tachiiri et al. (2019a, b, c, d)			
	MIROC6: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Tatebe and Watanabe (2018c); Shiogama et al. (2019a, b, c, d)			
	MPI-ESM-1-2-HAM: historical	Input dataset			Neubauer et al. (2019a)			
	MPI-ESM1-2-HR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Jungclaus et al. (2019b); Schupfner et al. (2019a, b, c, d)			
	MPI-ESM1-2-LR: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Wieners et al. (2019a, b, c, d, e)			
	MRI-ESM2-0: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Yukimoto et al. (2019b, c, d, e, f)			
	NorESM2-LM: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Seland et al. (2019b, c, d, e, f)			
	NorESM2-MM: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Bentsen et al. (2019b, c, d, e, f)			
	TaiESM1: historical	Input dataset			Lee and Liang (2020a)			
	UKESM1-0-LL: historical, ssp126, ssp245, ssp370, ssp585	Input dataset			Good et al. (2019a, b, c, d); Tang et al. (2019)			
Figure 9.23	Observed snow trends	Input dataset	Figure directly from publication	Creative Commons Attribution 4.0 International	Mudryk et al. (2020)		Mudryk et al. (2020)	Trends and anomalies calculated over 1981–2018.
Figure 9.24, left panel	Observed snow-cover extent	Input dataset	Mudryk_scf_1981-2014.txt	Creative Commons Attribution 4.0 International	Mudryk et al. (2020)		Mudryk et al. (2020)	
	CMIP6 (CMIP)	Input dataset (model)	snc_clim_CMIP6_ historical_1981-2014.txt	Creative Commons Attribution 4.0 International	Mudryk et al. (2020)		Mudryk et al. (2020)	1981–2014.
	CMIP6 data citations							
	BCC-CSM2-MR: historical	Input dataset			Wu et al. (2018)			
	BCC-ESM1: historical	Input dataset			Zhang et al. (2018)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.24, left panel *(continued)*	CAS-ESM2-0: historical	Input dataset			Chai (2020b)			
	CESM2: historical	Input dataset			Danabasoglu (2019b)			
	CESM2-FV2: historical	Input dataset			Danabasoglu (2019j)			
	CESM2-WACCM: historical	Input dataset			Danabasoglu (2019l)			
	CESM2-WACCM-FV2: historical	Input dataset			Danabasoglu (2019q)			
	CIESM: historical	Input dataset			Huang (2019a)			
	CMCC-CM2-SR5: historical	Input dataset			Lovato and Peano (2020b)			
	CNRM-CM6-1: historical	Input dataset			Voldoire (2018a)			
	CNRM-CM6-1-HR: historical	Input dataset			Voldoire (2019g)			
	CNRM-ESM2-1: historical	Input dataset			Seferian (2018b)			
	CanESM5: historical	Input dataset			Swart et al. (2019b)			
	EC-Earth3: historical	Input dataset			EC-Earth Consortium (EC-Earth) (2019a)			
	FGOALS-f3-L: historical	Input dataset			Yu (2019a)			
	FGOALS-g3: historical	Input dataset			Li (2019b)			
	GFDL-CM4: historical	Input dataset			Guo et al. (2018a)			
	GISS-E2-1-G: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2018b)			
	GISS-E2-1-H: historical	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2019a)			
	HadGEM3-GC31-LL: historical	Input dataset			Ridley et al. (2019b)			
	HadGEM3-GC31-MM: historical	Input dataset			Ridley et al. (2019c)			
	IPSL-CM6A-LR: historical	Input dataset			Boucher et al. (2018b)			
	MIROC-ES2L: historical	Input dataset			Hajima et al. (2019)			
	MIROC6: historical	Input dataset			Tatebe and Watanabe (2018c)			
	MPI-ESM1-2-HR: historical	Input dataset			Jungclaus et al. (2019b)			
	MPI-ESM1-2-LR: historical	Input dataset			Wieners et al. (2019e)			
	MRI-ESM2-0: historical	Input dataset			Yukimoto et al. (2019b)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.24, left panel *(continued)*	NorCPM1: historical	Input dataset			Bethke et al. (2019)			
	NorESM2-LM: historical	Input dataset			Seland et al. (2019b)			
	SAM0-UNICON: historical	Input dataset			Park and Shin (2019)			
	TaiESM1: historical	Input dataset			Lee and Liang (2020a)			
	UKESM1-0-LL: historical	Input dataset			Tang et al. (2019)			
Figure 9.24, right panel	CMIP6 (CMIP, ScenarioMIP)	Input ataset (model)	sncbin.tgz	Creative Commons Attribution 4.0 International	Mudryk et al. (2020)		Mudryk et al. (2020)	1850–2100, relative to 1995–2014.
	CMIP6 data citations							
	BCC-CSM2-MR: ssp126, ssp245, ssp370, ssp585	Input dataset			Xin et al. (2019a, b, c, d)			
	CESM2: ssp126, ssp245, ssp370, ssp585	Input dataset			Danabasoglu (2019f, g, h, i)			
	CESM2-WACCM: ssp126, ssp245, ssp370, ssp585	Input dataset			Danabasoglu (2019m, n, o, p)			
	CIESM: ssp126, ssp245, ssp585	Input dataset			Huang (2019b, 2020a, b)			
	CMCC-CM2-SR5: ssp126	Input dataset			Lovato and Peano (2020c)			
	CNRM-CM6-1: ssp126, ssp245, ssp370, ssp585	Input dataset			Voldoire (2019b, c, d, e)			
	CNRM-CM6-1-HR: ssp126, ssp245, ssp370, ssp585	Input dataset			Voldoire (2019j, k, 2020a, b)			
	CNRM-ESM2-1: ssp126, ssp245, ssp370, ssp585	Input dataset			Voldoire (2019m, n, o, p)			
	CanESM5: ssp126, ssp245, ssp370, ssp585	Input dataset			Swart et al. (2019c, d, e, f)			
	EC-Earth3: ssp126, ssp245, ssp370, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019b, c, d, e)			
	EC-Earth3-Veg: ssp126, ssp245, ssp370, ssp585	Input dataset			EC-Earth Consortium (EC-Earth) (2019i, j, k, l)			
	FGOALS-f3-L: ssp126, ssp245, ssp370, ssp585	Input dataset			Yu (2019b, c, d, e)			
	GFDL-CM4: ssp245, ssp585	Input dataset			Guo et al. (2018b, c)			
	GISS-E2-1-G: ssp126, ssp245, ssp370, ssp585	Input dataset			NASA Goddard Institute for Space Studies (NASA/ GISS) (2020a, b, c, d)			

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.24, right panel *(continued)*	IPSL-CM6A-LR: ssp126, ssp245, ssp370, ssp585	Input dataset			Boucher et al. (2019a, b, c, d)			
	MIROC-ES2L: ssp126, ssp245, ssp370, ssp585	Input dataset			Tachiiri et al. (2019a, b, c, d)			
	MIROC6: ssp126, ssp245, ssp370, ssp585	Input dataset			Shiogama et al. (2019a, b, c, d)			
	MPI-ESM1-2-HR: ssp126, ssp245, ssp370, ssp585	Input dataset			Schupfner et al. (2019a, b, c, d)			
	MRI-ESM2-0: ssp126, ssp245, ssp370, ssp585	Input dataset			Yukimoto et al. (2019c, d, e, f)			
	UKESM1-0-LL: ssp126, ssp245, ssp370, ssp585	Input dataset			Good et al. (2019a, b, c, d)			
Figure 9.25	Literature global mean sea level projections	Input dataset					Bakker et al. (2017a); Jackson and Jevrejeva (2016); Kopp et al. (2014); Kopp et al. (2016a); Mengel et al. (2016); Nauels et al. (2017); Slangen et al. (2014b); Bars et al. (2017); Le Cozannet et al. (2019b); Goodwin et al. (2017); Nicholls et al. (2018); Kopp et al. (2017); Wong et al. (2017); Jevrejeva et al. (2014); Bamber et al. (2019); Horton et al. (2020); Grinsted et al. (2015); Jackson and Jevrejeva (2016)	See Appendix Tables 9.A.5 and 9.A.6.
Figure 9.26	Sea level projections							See 9.6.3.2, Table 9.7 and Appendix 9.A.4 for methods.
	Figure 9.26, plotting code	Code	Plot_SL_Contribution_ Maps.m			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
	Figure 9.26, plotting Code	Code	Plot_SL_Contribution_ Timeseries.m			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		

Figure Number	Dataset/Code Name	Type	File Name/ Specificities	License Type	Dataset/Code Citation	Dataset/Code URL	Related Publications/ Software Used	Notes
Figure 9.27	GMSL projections							See 9.6.3.2, Table 9.7 and Appendix 9.A.4 for methods.
	Figure 9.27, plotting Code	Code	Plot_GMSL_Projected_ Scenarios.m			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
Figure 9.28	Sea level projections							See 9.6.3.2, Table 9.7 and Appendix 9.A.4 for methods.
	Figure 9.28, plotting Code	Code	Plot_RSL_Scenario_ Maps.m			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
Figure 9.29	Sea level timing projections							See 9.6.3.2, Table 9.7 and Appendix 9.A.4 for methods.
	Figure 9.29, plotting Code	Code	plot_exceedance_year.r			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
Figure 9.30	GMSL commitment (models)	Input dataset					Clark et al. (2016); Van Breedam et al. (2020); Garbe et al. (2020); DeConto and Pollard (2016); Gregory et al. (2020)	
	GMSL commitment (paleo records)	Input dataset						Assessed in 2.3.3.3.
	Figure 9.30, Plotting Code	Code	plot_SLR_ commitments.m			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		
Figure 9.31a	Observed minor tidal flood frequency trend	Input dataset (observations)			Woodworth et al. (2016)		Woodworth et al. (2016)	Trends determined over 1950–2020.
Figure 9.31b	Observed minor tidal flood frequency trend	Input dataset (observations)			Woodworth et al. (2016)		Woodworth et al. (2016)	Trends determined over 1950–2020.
Figure 9.32	Sea level projections	Input dataset					Buchanan et al. (2016); http://www.ipcc.ch/srocc/chapter/chapter-4-sea-level-rise-and-implications-for-low-lying-islands-coasts-and-communities/ Frederikse et al. (2020b)	See Appendix 9.A.4.8 for methods.
	Global Extreme Sea Level Analysis 2 (GESLA2)	Input dataset	private_14032017.zip public_11092018.zip			https://www.gesla.org/ (accessed 20/05/2022)	Woodworth et al. (2016)	Public and private parts of dataset.
	Figure 9.32 Plotting Code	Code	Plot_fig9_32_ESL.m			https://github.com/IPCC-WG1/Chapter-9 (accessed 20/05/2022)		

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