Appendix M

Climate projection data

PROJECTIONS BUILDER: RESULTS

These results were produced using the Climate Futures Projections Builder, based on the settings selected by the user. It is important to retain a record of those settings.

TITLE: NEW ENGLAND HIGHWAY

REGION: EAST COAST

EMISSIONS SCENARIO: RCP 8.5

TIME SPAN: 2050

Climate Futures Classification: Annual Rainfall and Mean Surface Temperature

REPRESENTATIVE MODELS

To identify the representative models, all models were ranked using a multivariate statistical technique (Kokic et al., 2002) to identify the model that is the best fit to the settings selected by the user for the Best and Worst cases.

In addition, where possible, the tool identifies the maximum consensus climate future (i.e. the climate future projected by at least 33% of the models and which comprises at least 10% more models than any other).

Case	Representative Model	Consensus
Best Case	NorESM1-M	Very Low
Worst Case	CanESM2	Low
Maximum Consensus	MIROC5	Low

Table 1: Climate Futures description, consensus rating and representative model for each of the three cases: Best, Worst and Maximum Consensus.

		Maximum Daily Temperature				
	Model	June - August (JJA)	Annual	September - November (SON)	December - February (DJF)	March - May (MAM)
Best Case	NorESM1-M	1.32°C	1.27°C	1.09°C	1.12°C	1.59°C
Worst Case	CanESM2	2.50°C	2.78°C	3.27°C	2.83°C	2.50°C
Maximum Consensus	MIROC5	1.88°C	1.87°C	2.03°C	1.78°C	1.72°C

Table 2: Projected changes for each of the selected variables and seasons for the three cases described in Table 1.

USING THESE PROJECTIONS

In applying these projections to an impact assessment, the results for each case should be used separately, resulting in separate statements of impact for each case.

PROJECTIONS BUILDER: RESULTS

These results were produced using the Climate Futures Projections Builder, based on the settings selected by the user. It is important to retain a record of those settings.

TITLE: NEW ENGLAND HIGHWAY

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To identify the representative models, all models were ranked using a multivariate statistical technique (Kokic et al., 2002) to identify the model that is the best fit to the settings selected by the user for the Best and Worst cases.

In addition, where possible, the tool identifies the maximum consensus climate future (i.e. the climate future projected by at least 33% of the models and which comprises at least 10% more models than any other).

Case	Representative Model	Consensus
Best Case	NorESM1-M	Very Low
Worst Case	CanESM2	Low
Maximum Consensus	ACCESS1-0	Low

Table 1: Climate Futures description, consensus rating and representative model for each of the three cases: Best, Worst and Maximum Consensus.

		Minimum Daily Temperature				
	Model	June - August (JJA)	Annual	September - November (SON)	December - February (DJF)	March - May (MAM)
Best Case	NorESM1-M	1.69°C	1.46°C	1.63°C	1.32°C	1.22°C
Worst Case	CanESM2	1.94°C	2.35°C	2.51°C	2.56°C	2.40°C
Maximum Consensus	ACCESS1-0	1.70°C	1.84°C	1.72°C	1.91°C	2.02°C

Table 2: Projected changes for each of the selected variables and seasons for the three cases described in Table 1.

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Climate Futures Classification: Annual Rainfall and Mean Surface Temperature

REPRESENTATIVE MODELS

To identify the representative models, all models were ranked using a multivariate statistical technique (Kokic et al., 2002) to identify the model that is the best fit to the settings selected by the user for the Best and Worst cases.

In addition, where possible, the tool identifies the maximum consensus climate future (i.e. the climate future projected by at least 33% of the models and which comprises at least 10% more models than any other).

Case	Representative Model	Consensus
Best Case	CESM1-CAM5	Low
Worst Case	NorESM1-M	Very Low
Maximum Consensus	MIROC5	Low

Table 1: Climate Futures description, consensus rating and representative model for each of the three cases: Best, Worst and Maximum Consensus.

	Model	Rainfall				
		June - August (JJA)	Annual	September - November (SON)	December - February (DJF)	March - May (MAM)
Best Case	CESM1-CAM5	-14.0%	-1.0%	1.6%	1.8%	1.1%
Worst Case	NorESM1-M	11.9%	1.4%	7.5%	4.0%	-15.3%
Maximum Consensus	MIROC5	-12.9%	-7.0%	-24.4%	6.8%	-1.3%

Table 2: Projected changes for each of the selected variables and seasons for the three cases described in Table 1.

USING THESE PROJECTIONS

In applying these projections to an impact assessment, the results for each case should be used separately, resulting in separate statements of impact for each case.

PROJECTIONS BUILDER: RESULTS

These results were produced using the Climate Futures Projections Builder, based on the settings selected by the user. It is important to retain a record of those settings.

TITLE: NEW ENGLAND HIGHWAY

REGION: EAST COAST

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Climate Futures Classification: Annual Rainfall and Mean Surface Temperature

REPRESENTATIVE MODELS

To identify the representative models, all models were ranked using a multivariate statistical technique (Kokic et al., 2002) to identify the model that is the best fit to the settings selected by the user for the Best and Worst cases.

In addition, where possible, the tool identifies the maximum consensus climate future (i.e. the climate future projected by at least 33% of the models and which comprises at least 10% more models than any other).

Case	Representative Model	Consensus
Best Case	NorESM1-M	Very Low
Worst Case	GFDL-ESM2M	Low
Maximum Consensus	ACCESS1-0	Low

Table 1: Climate Futures description, consensus rating and representative model for each of the three cases: Best, Worst and Maximum Consensus.

	Model	Humidity	Solar Radiation
		Annual	Annual
Best Case	NorESM1-M	-0.5%	1.1%
Worst Case	GFDL-ESM2M	-7.1%	4.5%
Maximum Consensus	ACCESS1-0	-1.6%	1.3%

Table 2: Projected changes for each of the selected variables and seasons for the three cases described in Table 1.

USING THESE PROJECTIONS

In applying these projections to an impact assessment, the results for each case should be used separately, resulting in separate statements of impact for each case.

Important: The projected changes shown in Table 2 are the results from the corresponding climate model as described in Tables 1 and 2. They represent the projected 20-year average change, calculated over the region selected and are calculated relative to the historic reference period 1986 to 2005. The projected changes are influenced concurrently by the long-term climate trend and the decade variability as simulated by the relevant climate model.