Supplemental Information for "Machine learning approach to projecting hydropower generation and water supply in multi-use reservoirs under climate change"

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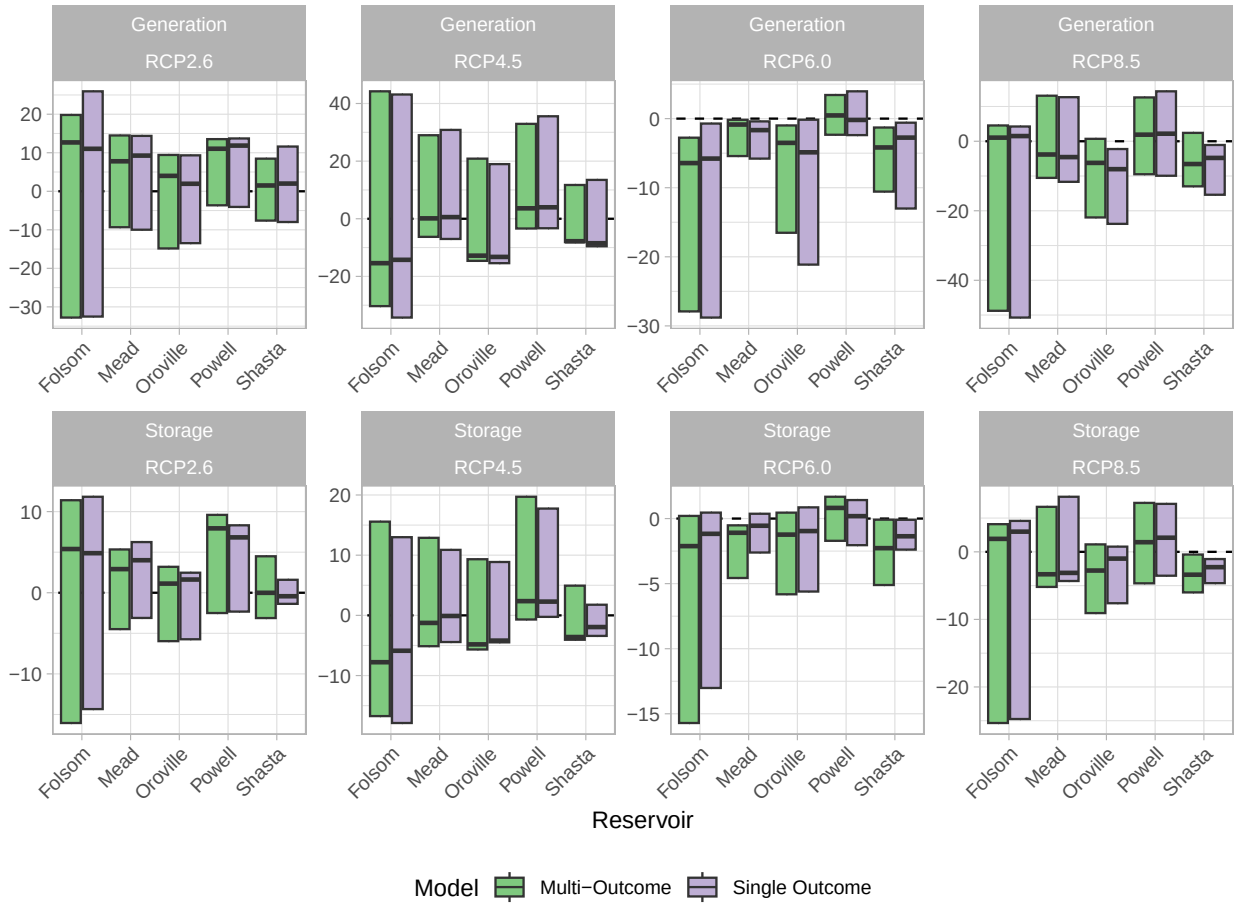

Figure S1: Percent change between the future period (2041-2060) compared to the baseline (2001-2020) for the winter months. Each bar shows the minimum, median, and maximum projected changes across the four GCMs.

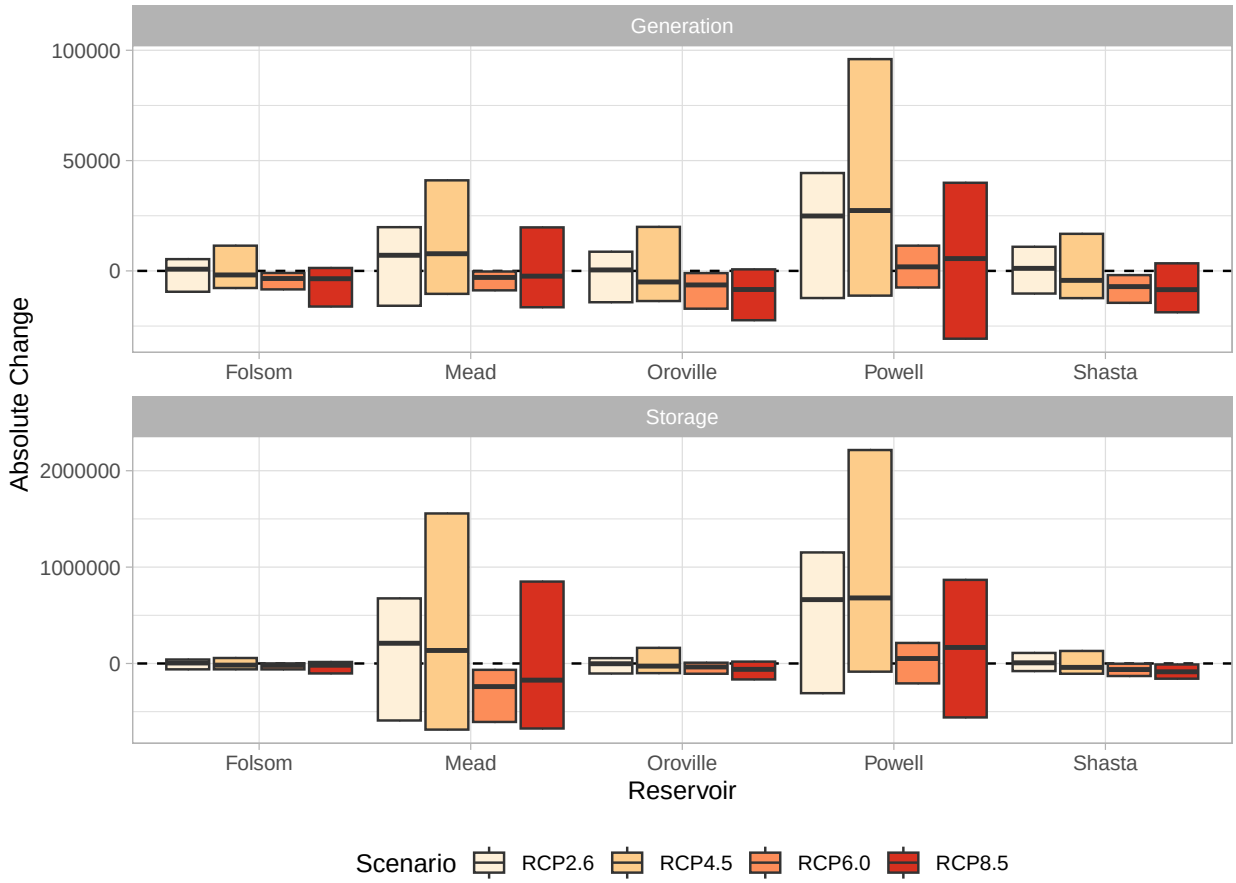

Figure S2: Projected changes in generation (MWh) and storage (acre-feet) between the future period (2041-2060) compared to the baseline (2001-2020) for the winter months using the multi-outcome model architecture. Each bar shows the minimum, median, and maximum projected changes across the four GCMs.

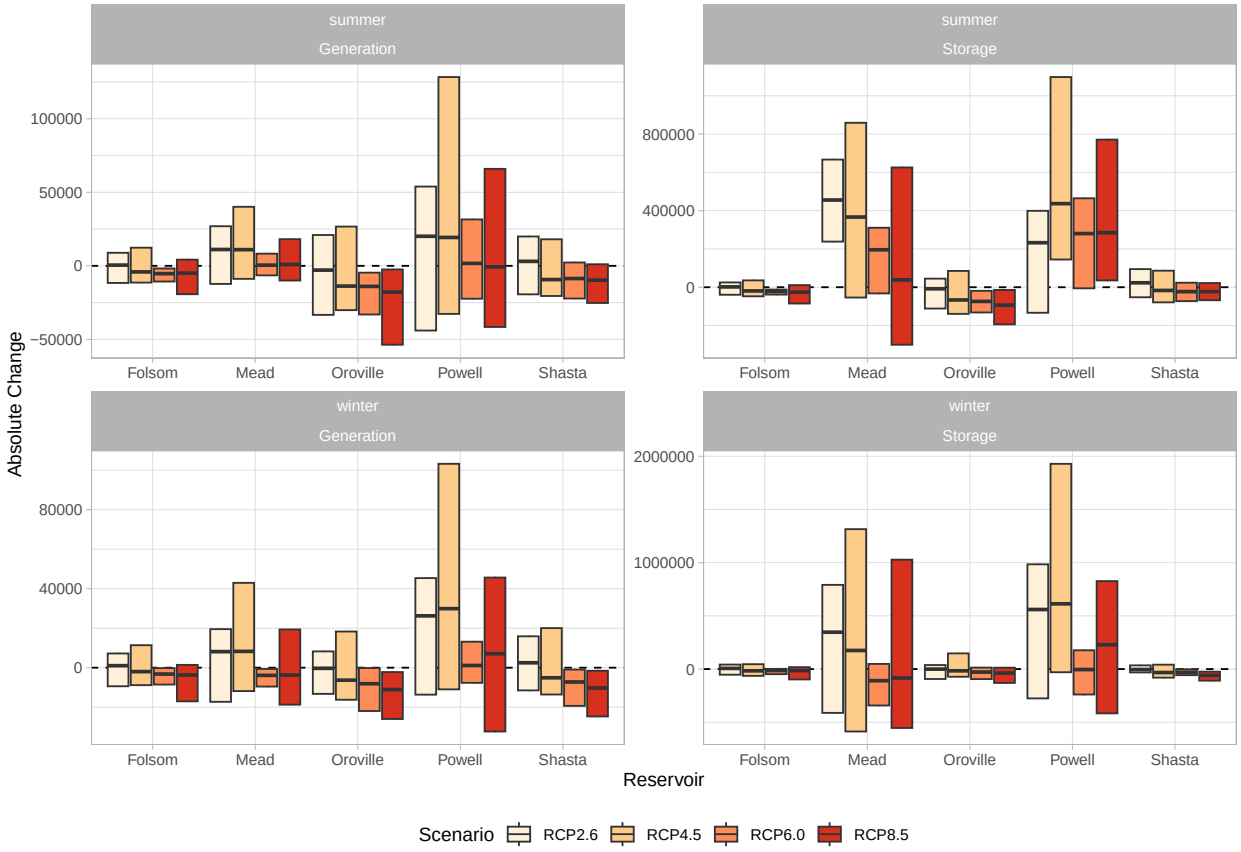

Figure S3: Projected changes in generation (MWh) and storage (acre-feet) between the future period (2041-2060) compared to the baseline (2001-2020) using the single outcome model architecture. Each bar shows the minimum, median, and maximum projected changes across the four GCMs.

Tables

Table S1: Resulting p-values from two sample t-tests performed between single and multi-outcome model predictions.

Reservoir	Season	Variable	p-value
Powell	Summer	Generation	0.8630
		Storage	0.9019
	Winter	Generation	0.9862
		Storage	0.9483
Folsom	Summer	Generation	0.9816
		Storage	0.9652
	Winter	Generation	0.8942
		Storage	0.9357
Oroville	Summer	Generation	0.9528
		Storage	0.8194
	Winter	Generation	0.9704
		Storage	0.8947
Shasta	Summer	Generation	0.9701
		Storage	0.9765
	Winter	Generation	0.8883
		Storage	0.7248
Mead	Summer	Generation	0.8888
		Storage	0.6159
	Winter	Generation	0.9763
		Storage	0.8139