**Abstract**  
Global climate models (GCMs) have limitations in simulating spatially non-uniform sea-level rise due to their coarse resolution and omission of tides in the marginal seas. Regional ocean climate model (RCM) that considers tide was used to address the shortcomings of GCMs through dynamical downscaling in the northwest Pacific marginal seas. Four GCMs that drive RCMs were selected based on the performance evaluation along the boundary of the RCMs. High-resolution RCMs (1/20° resolution) were able to project nonuniform changes in the sea-level via the intermediate and high-end scenarios from 2006 to 2100. Downscaled simulation enabled us to determine the total sea-level rise (TSLR), which includes tidal amplitude changes and natural variability. High-resolution RCMs with dynamical downscaling that consider tides might be recommended for decision makers to accurately estimate local sea-level changes.

In this data publication, we present the model output and results associated with the Frontiers in Marine Science's manuscript #620570: “Local sea-level rise caused by climate change in the northwest Pacific marginal seas using dynamicl downscaling”. We include all model results for figures.

**Usage Notes**

MATLAB is needed to process these datasets. Almost of data are '~.m' and '.nc' files. The names of each data file match the names of each figure (Data01 <-> Figure 01).

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