

Variable	Unit	Source	Used in final model
Surface ocean temperature	°C	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	Y
Benthic ocean temperature	°C	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	N
Surface salinity	PSS	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	Y
Benthic salinity	PSS	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	N
Surface sea water velocity	m s <sup>-1</sup>	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	Y
Benthic sea water velocity	m s <sup>-1</sup>	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	N
Surface dissolved molecular oxygen	nmol m <sup>-3</sup>	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	N
Benthic dissolved molecular oxygen	nmol m <sup>-3</sup>	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	N
Surface primary productivity	nmol m <sup>-3</sup>	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	N
Benthic primary productivity	nmol m <sup>-3</sup>	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	Y
Surface chlorophyll	nmol m <sup>-3</sup>	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	N
Bathymetry	m	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	N
Topographic slope	°	Bio-ORACLE (v3.0; Assis <i>et al.</i> , 2024)	Y
Substrate*	-	Commonwealth Scientific and Industrial Research Organisation (CSIRO) marine benthic substrate database (CSIRO, 2015)	N

\* Substrate types: (1) biosiliceous marl and calcareous clay, (2) calcareous gravel, sand and silt, (3) calcareous ooze, (4) mud and calcareous clay, (5) mud and sand, (6) pelagic clay, (7) sand, silt and gravel with less than 50% mud, and (8) volcanic sand and grit.