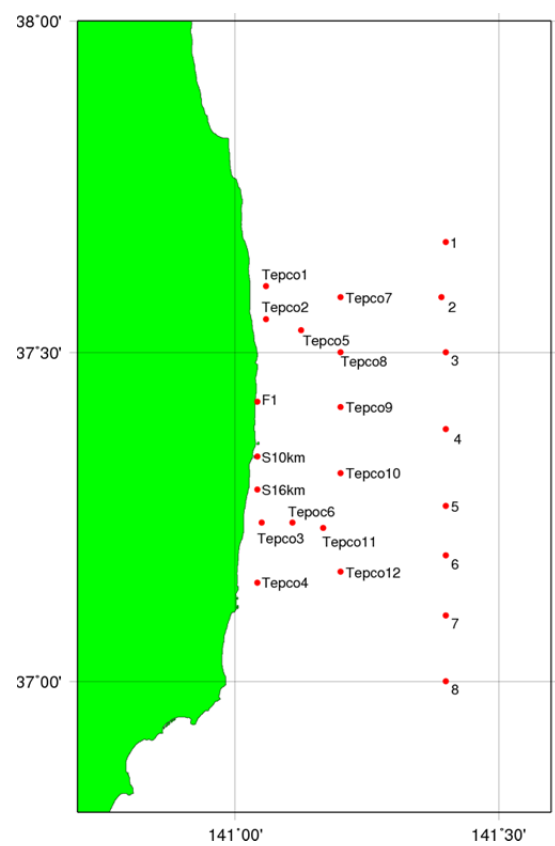
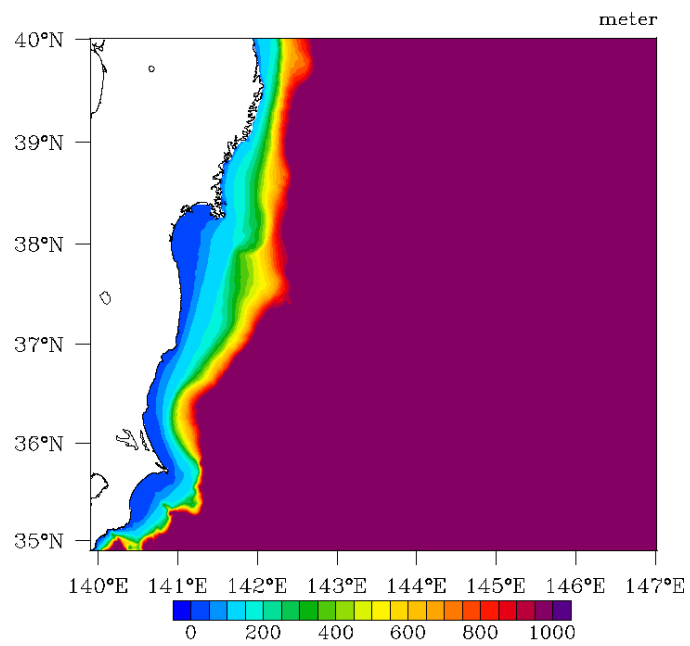


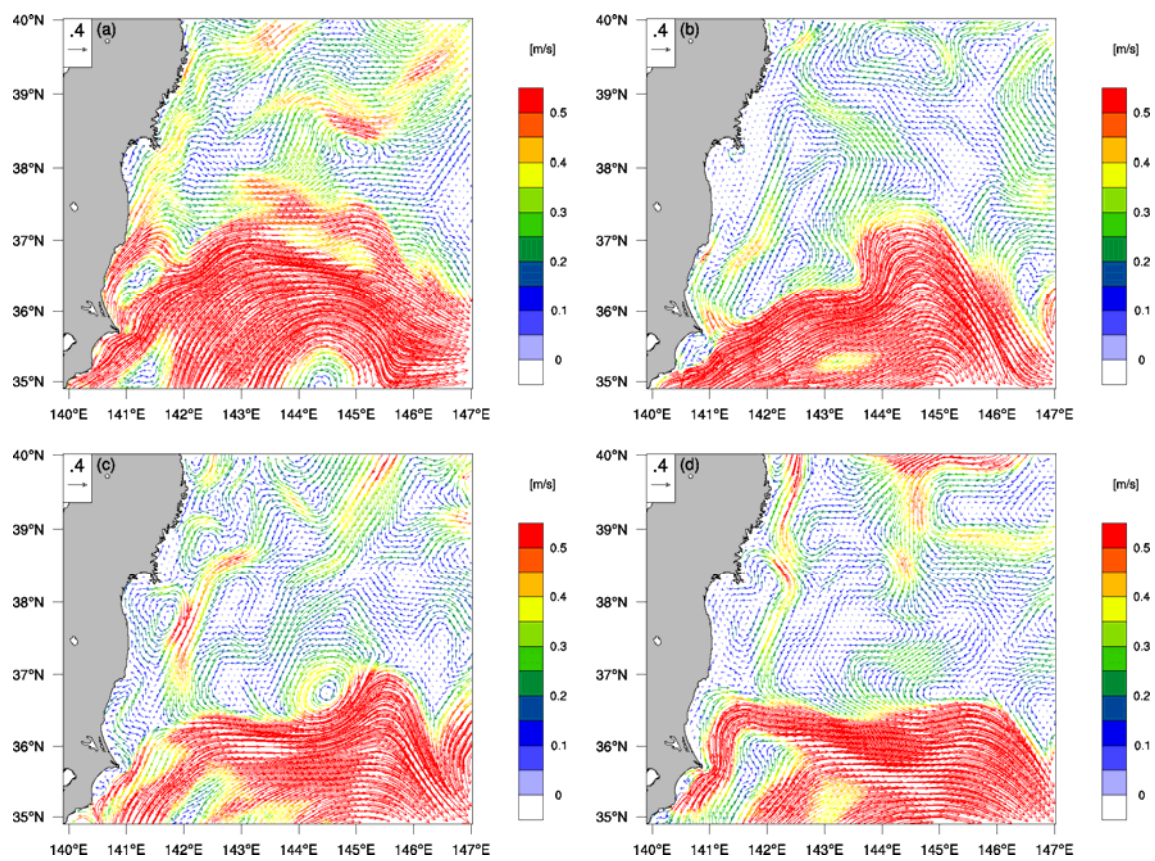
Supplimentary infromations



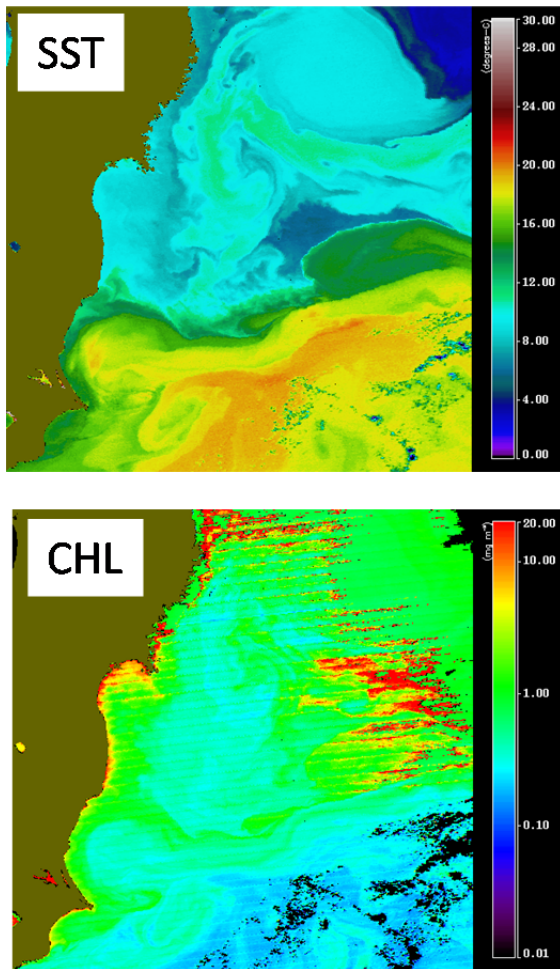
S-Fig. 1. Measuring points near shore



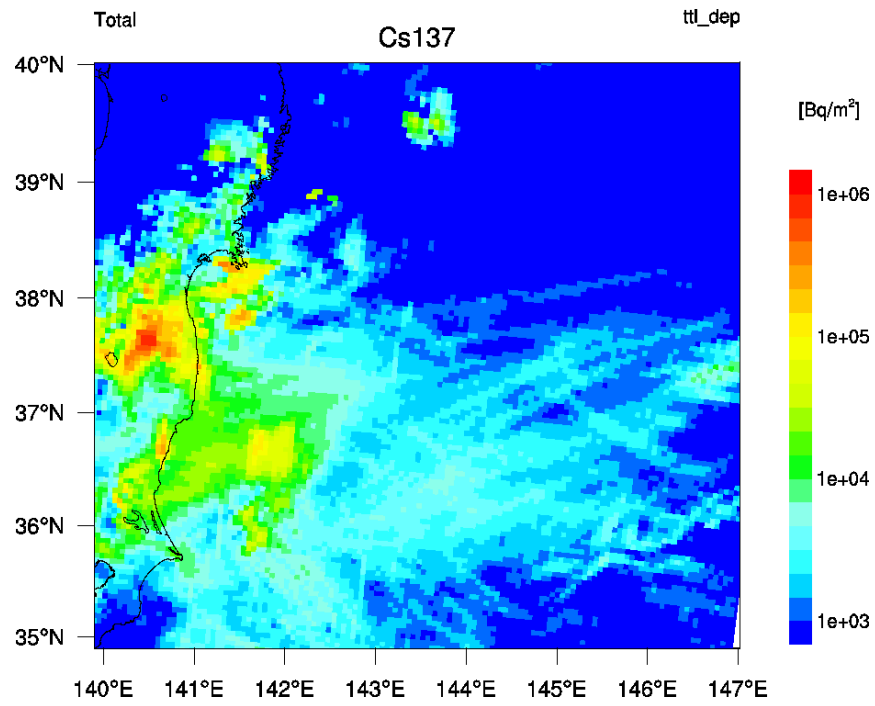
S-Fig. 2. Bottom topography in a Regional Ocean Model System. Maximum depth was set at 1000m in this model.



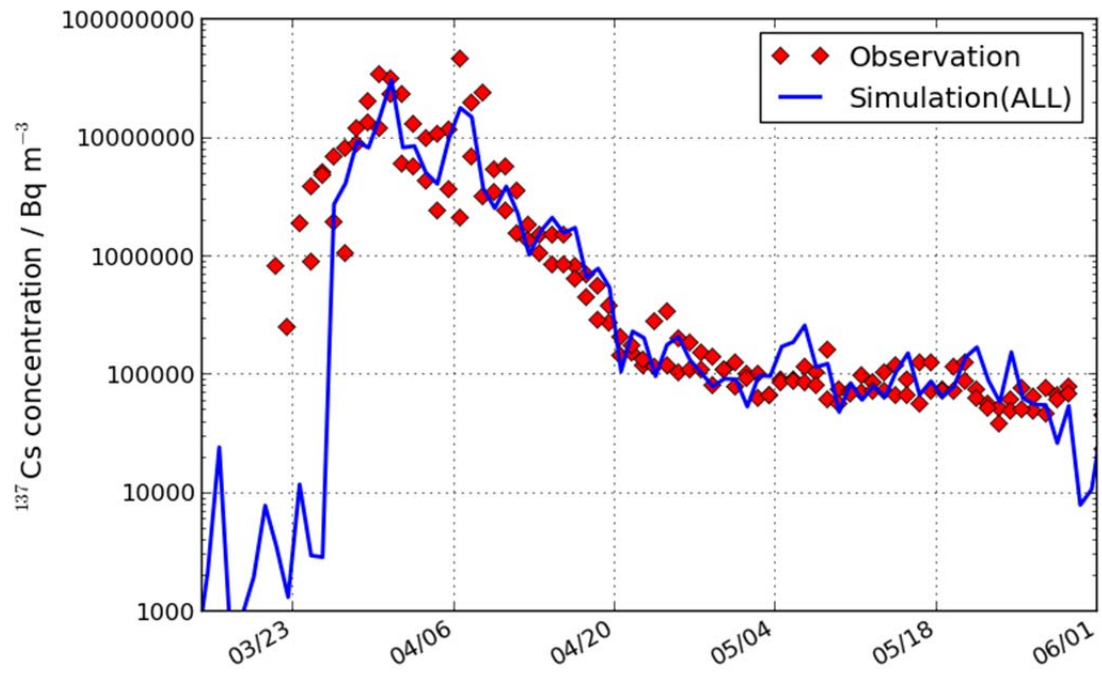
S-Fig. 3. Simulated current field (m s^{-1}) on (a) 1 May, (b) 1 June, (c) 15 June, and (d) 1 July 2011.



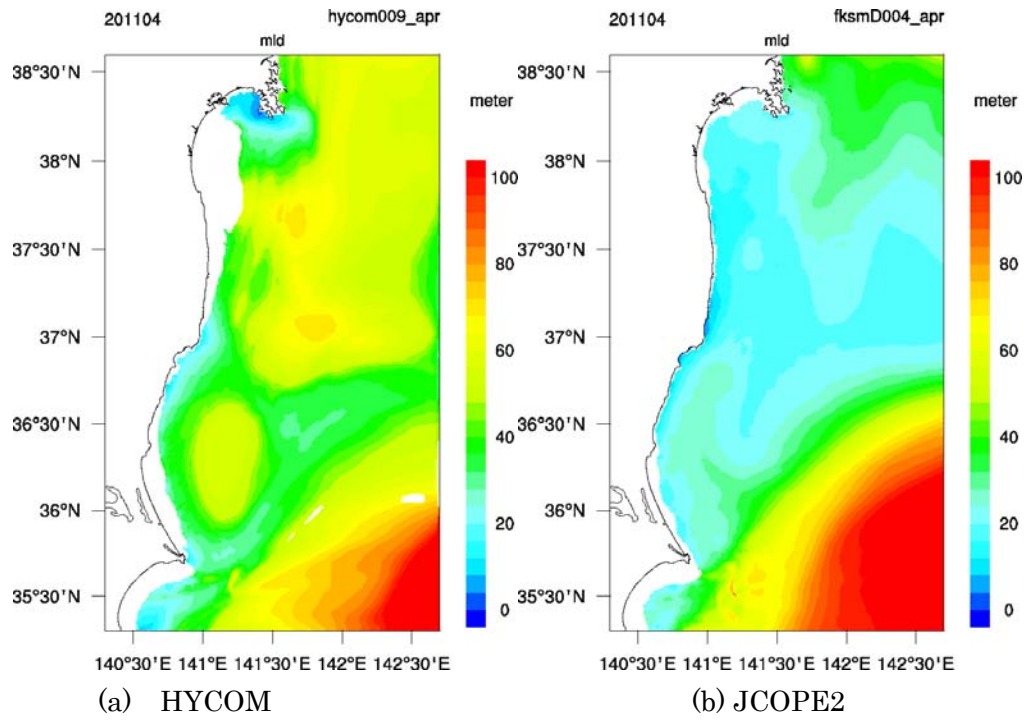
S-Fig. 4. Satellite image of sea surface temperature and chlorophyll a concentration at 14 April 2011.



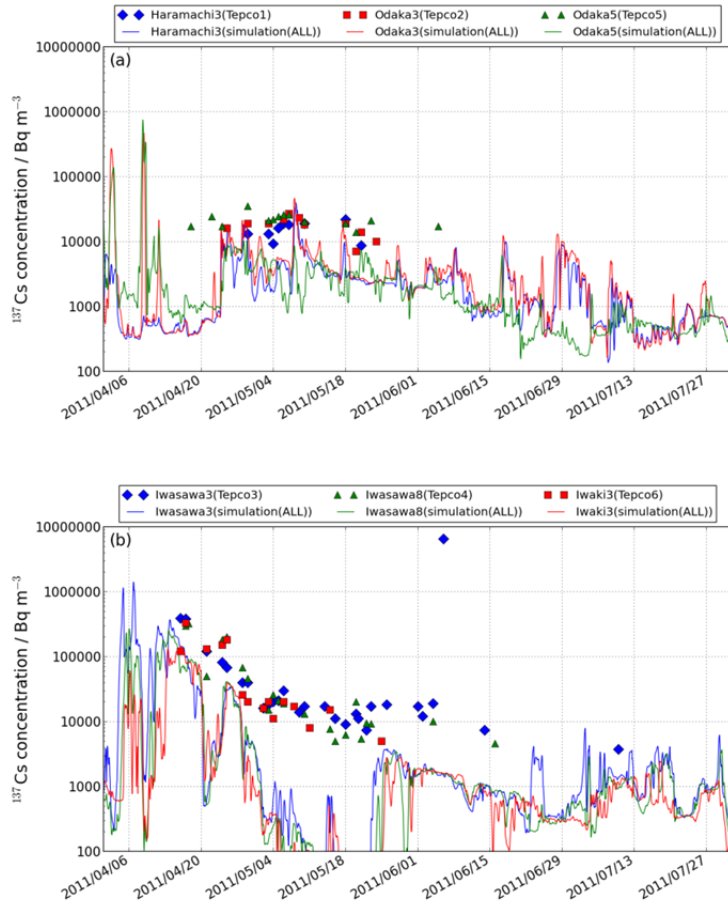
S-Fig. 5. Cumulative atmospheric wet and dry deposition of ¹³⁷Cs activity (Bq m⁻²) from 11 March to 1 April 2011



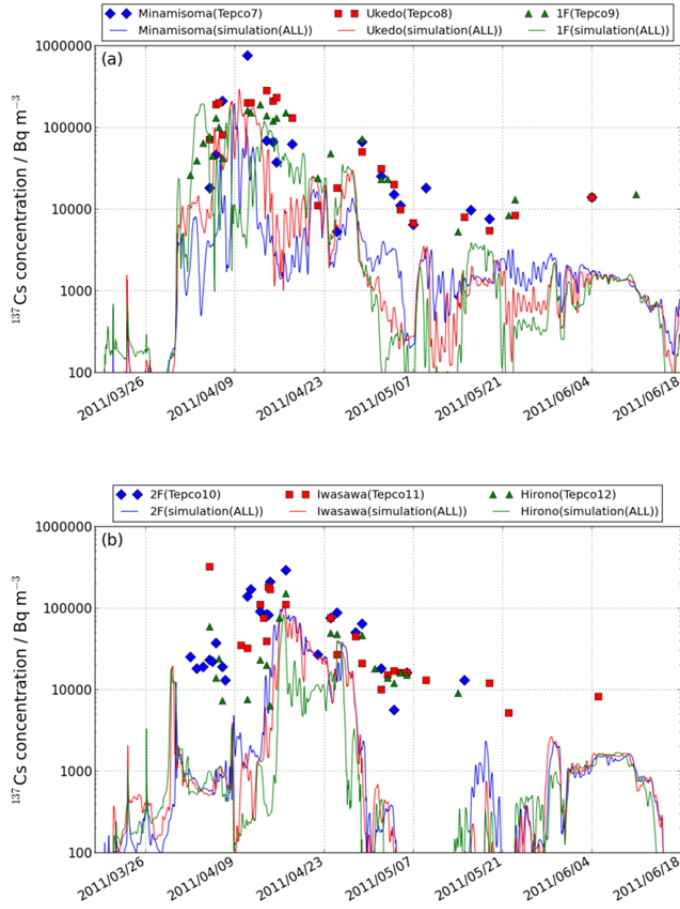
S-Fig. 6. Daily mean measured ^{137}Cs activities (Bq m^{-3}) at the 5-6 and south discharge canals and simulated activities (ALL scenario) adjacent to the 1F NPP.



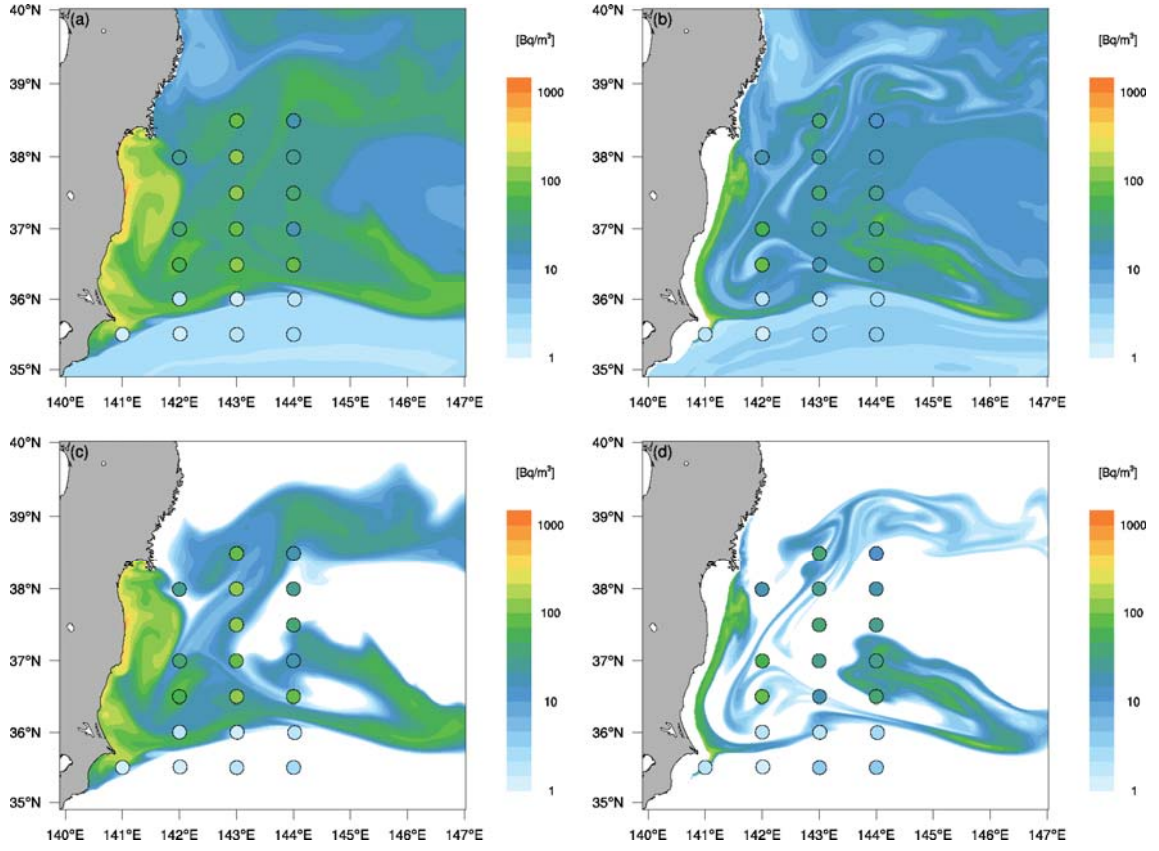
S-Fig. 7. Simulated mixed layer depth (monthly averaged on April 2011)



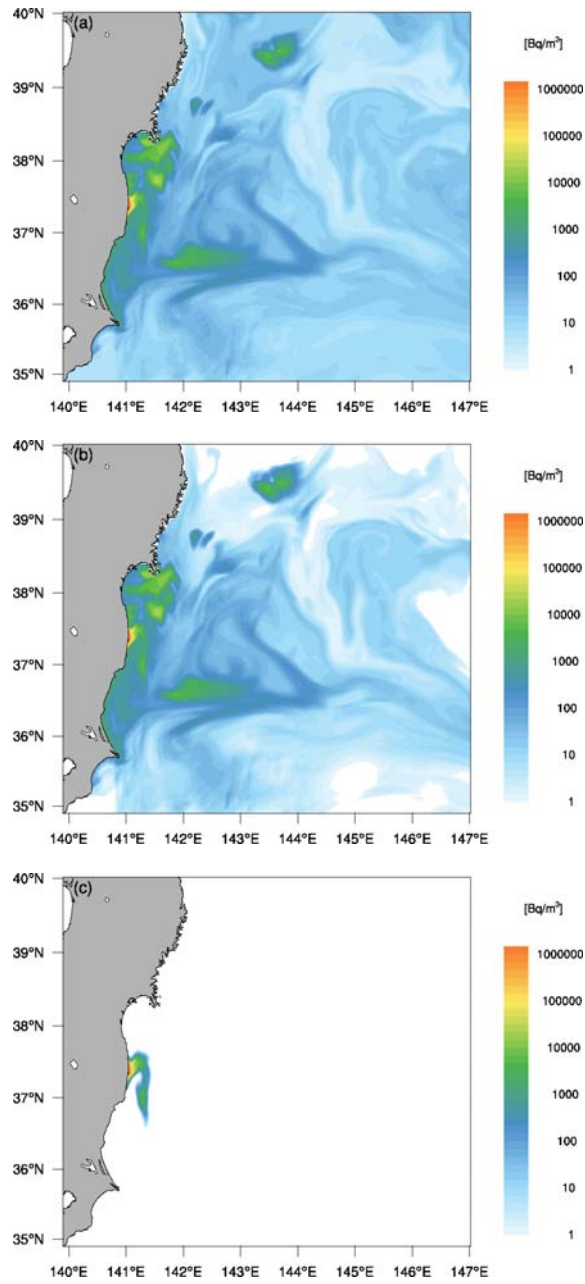
S-Fig. 8. (a) Measured ^{137}Cs activities (Bq m^{-3}) and simulated ^{137}Cs activities (ALL scenario) at 3-8 km offshore at the north and (b) at the south. (c) Scatter plot between daily mean measured activities and simulated activities.



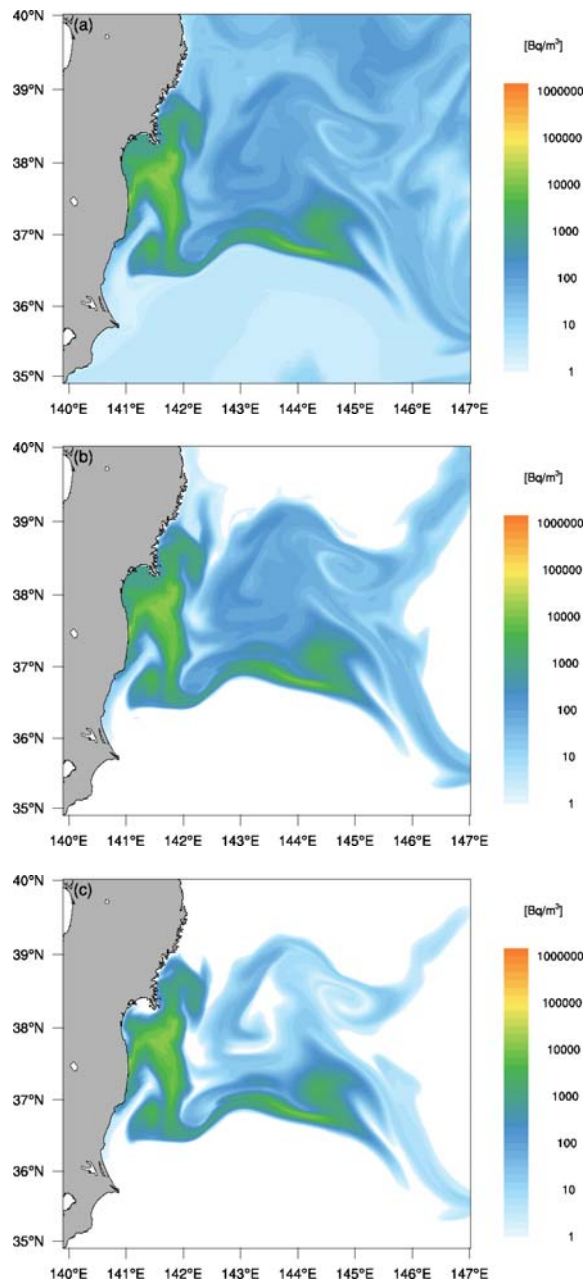
S-Fig. 9. (a) Measured ^{137}Cs activities (Bq m^{-3}) and simulated ^{137}Cs activities (ALL scenario) at 15 km offshore at the north and (b) at the south. (c) Scatter plot between daily mean measured activities and simulated activities.



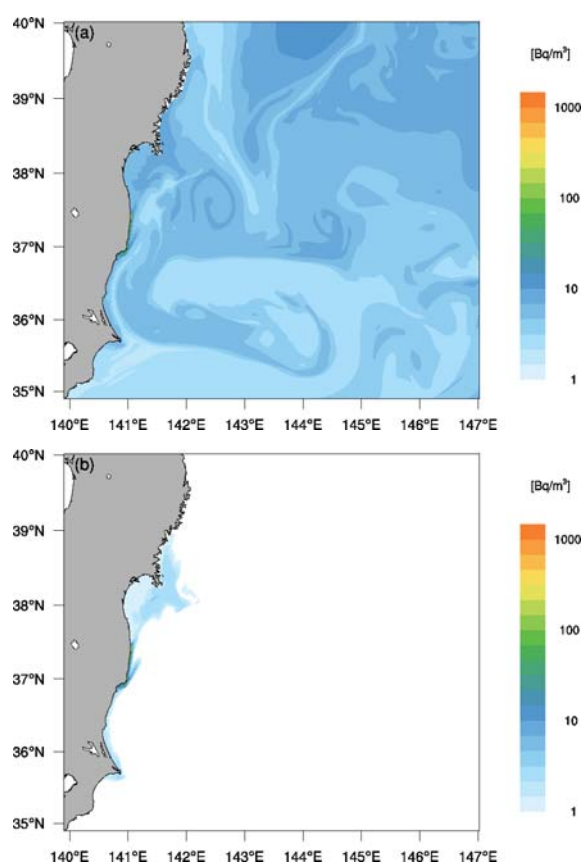
S-Fig. 10. Simulated ^{137}Cs activities (Bq m $^{-3}$) (ALL case) on 25 August 2011 (a) in surface waters and (b) at a depth of 100 m and measurements from 23–27 August 2011. Simulated ^{137}Cs activities (D_RELEASE scenario) (c) in surface waters and (d) at a depth of 100 m.



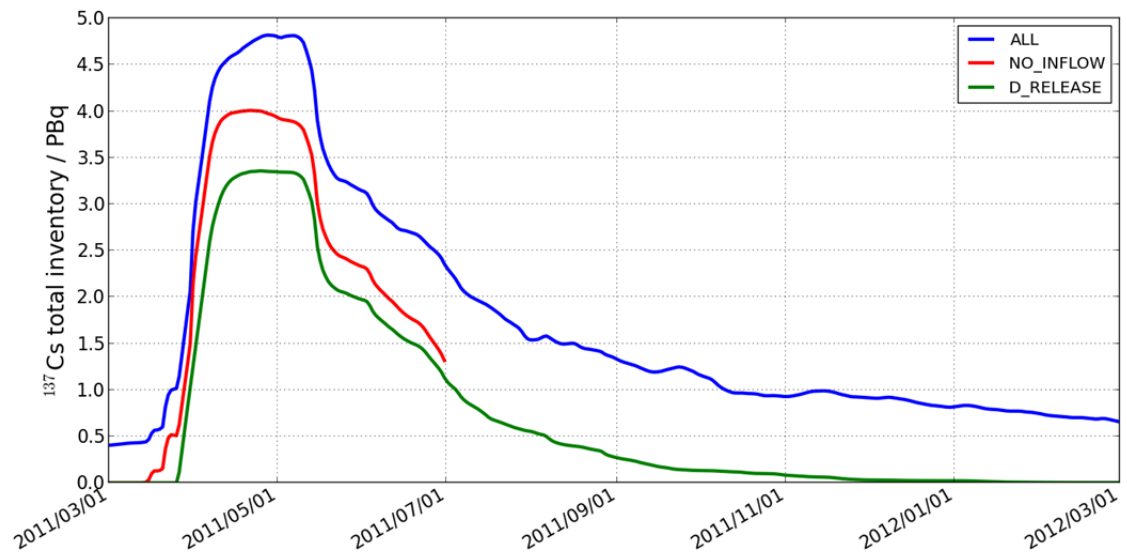
S-Fig. 11 Simulated ^{137}Cs activities (Bq m^{-3}) in surface waters at 1 April 2011 ((a) ALL scenario, (b) NO_INFLOW scenario, and (c) D_RELEASE scenario)



S-Fig. 12 Simulated ^{137}Cs activities (Bq m^{-3}) in surface waters at 1 May 2011 ((a) ALL scenario, (b) NO_INFLOW scenario, and (c) D_RELEASE scenario)



S-Fig. 13 Simulated ^{137}Cs activities (Bq m^{-3}) in surface waters at 29 February 2011 ((a) ALL scenario, and (b) D_RELEASE scenario)



S-Fig. 14 Simulated total inventories of ^{137}Cs activities (PBq) in a model domain for ALL scenario, NO_INFLOW scenario, and D_RELEASE scenario