



*Supplement of*

## **Interannual variation of a bottom cold water mass in the Seto Inland Sea, Japan**

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## Supplementary:

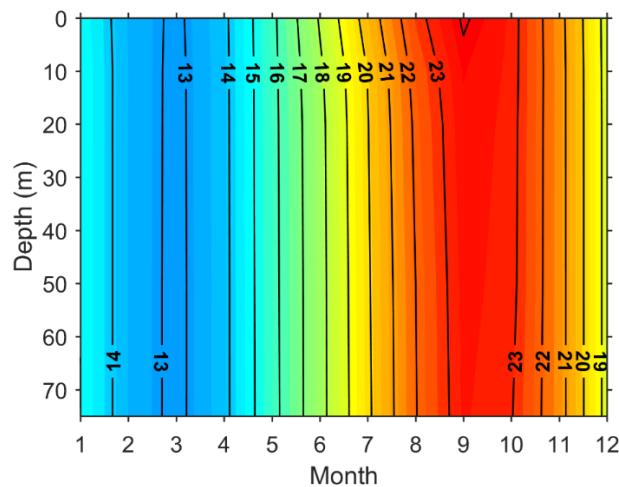


Figure S1 Seasonal variation of multi-year average observed water temperature at station R.

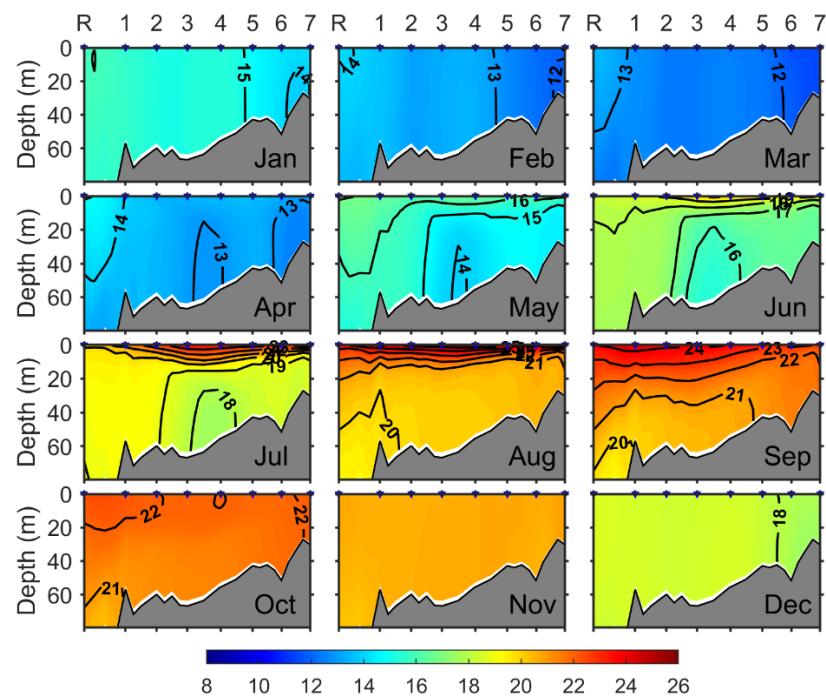


Figure S2 Spatial distributions of simulated averaged water temperature ( $^{\circ}\text{C}$ ) along a vertical transect (station R to station 7) from January to December.

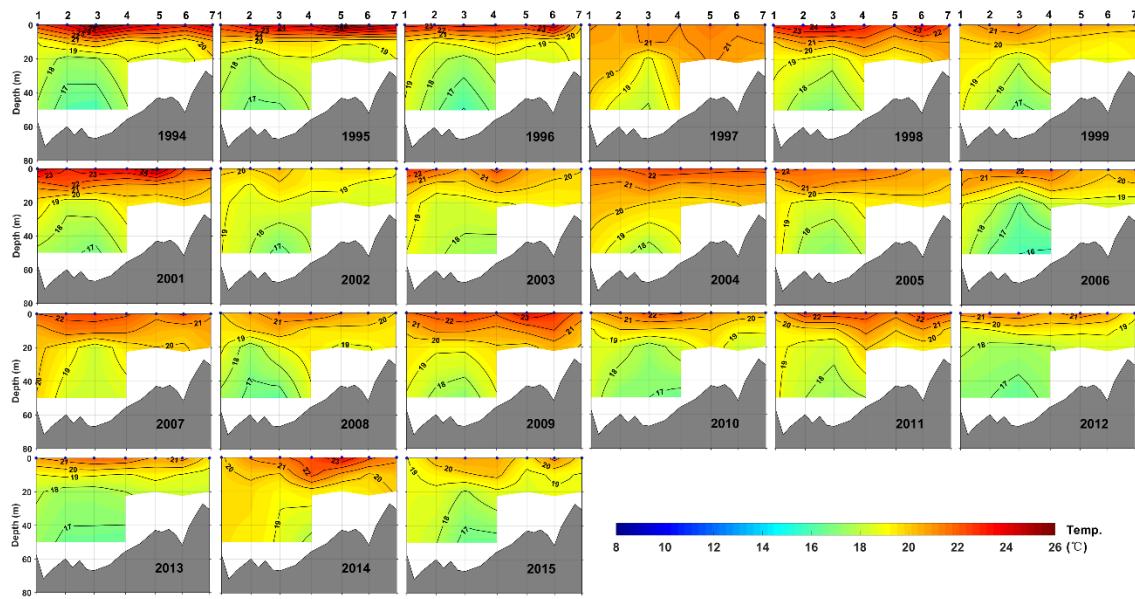


Figure S3 Spatial distributions of observed water temperature along a vertical transect (station 1 to station 7) in July during 1994-2015.

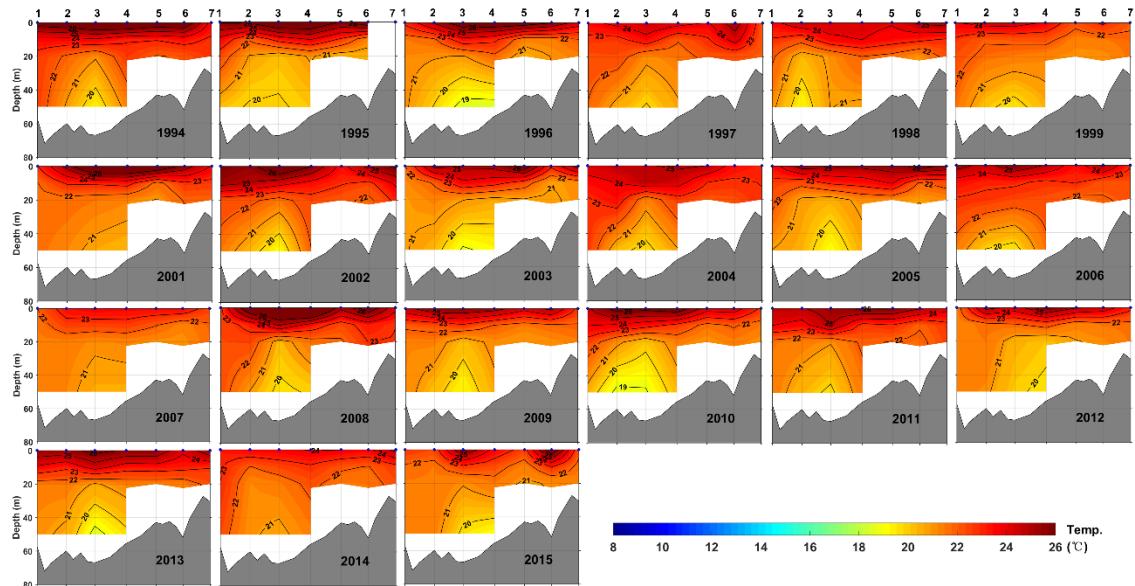


Figure S4 Spatial distributions of observed water temperature along a vertical transect (station 1 to station 7) in August during 1994-2015.

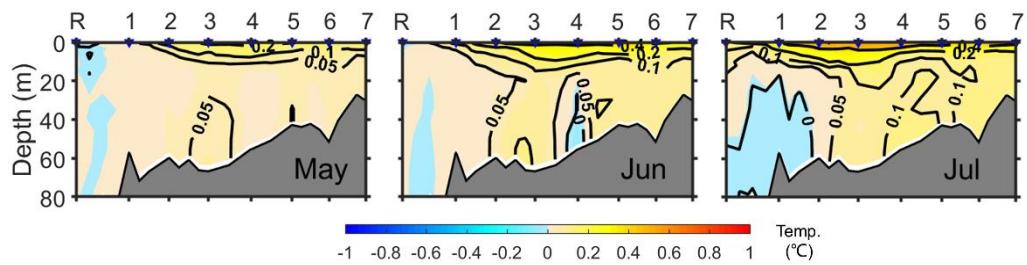


Figure S5 Vertical distribution of temperature difference between Case 2 and Control (Case 2 - Control) from May to July.

Table S1 Statistics of observation year for each month in Iyo-Nada and Hayasui Strait during 1994-2015.

Month	Iyo-Nada (Station 1-7)	Hayasui Strait (Station R)
1	1994-2000, 2003-2008, 2010-2015	1994-2000, 2003-2008, 2010-2015
2	1994-2000, 2002-2004, 2006-2007, 2009-2015	1994-2000, 2002-2004, 2006-2007, 2009-2016
3	1994, 1996, 1998, 2000, 2002-2015	1994, 1996, 1998, 2000, 2002-2015
4	1994-1999; 2001-2015	1994-1999, 2001-2015
5	1994-1999; 2001-2015	1994-1999, 2001-2015
6	1994-1999; 2001-2015	1994-1999, 2001-2015
7	1994-1999; 2001-2015	1994-1999, 2001-2015
8	1994-1999; 2001-2015	1994-1999, 2001-2015
9	1994-1999; 2001-2013, 2015	1994-1999, 2001-2013, 2015
10	1994-1999; 2001-2015	1994-1999, 2001-2015
11	1994-1996, 1998-1999, 2001-2015	1994-1996, 1998-1999, 2001-2015
12	1994-1999, 2001-2002, 2004, 2006- 2009, 2011-2012, 2014-2015	1994-1995, 1997-1999, 2001-2002, 2004, 2006-2009, 2011-2012, 2014-2015

Table S2 Characteristics and intensity of INCWM in July.

Year	The lowest temperature (°C)	Average temperature of INCWM (°C)	Area of INCWM (10 <sup>5</sup> m <sup>2</sup> )	Intensity of INCWM
1994	16.12	17.26	9.92	+
1995	16.72	17.50	8.49	O
1996	15.92	17.30	8.93	+
1997	17.88	17.96	0.12	-
1998	16.96	17.59	4.47	O
1999	16.74	17.54	4.54	O
2001	16.73	17.59	5.96	O
2002	16.54	17.51	3.86	O
2003	17.44	17.80	2.29	-
2004	17.41	17.80	0.71	-
2005	17.01	17.65	3.88	O
2006	15.74	17.04	11.1	+
2007	18.23	18.23	0	-
2008	16.41	17.39	7.78	+
2009	17.17	17.71	1.93	-
2010	16.66	17.44	9.09	+
2011	17.45	17.81	2.13	-
2012	16.52	17.37	13.9	+
2013	16.48	17.34	14.6	+
2014	17.65	17.88	0.22	-
2015	16.59	17.43	6.46	+

Note: “+” notes “Strong”, “O” means “Normal”, and “-” means “weak”.