

表1 牛窓地先水深2m層の日平均水温(1~3月)

月	日	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	1	11.5	11.7	11.0	11.0	11.7	9.6	11.5	11.7	12.0	10.9	11.2	10.5	10.4	11.2	12.6	9.0	12.0	11.4	11.4	10.2	10.2	10.7	9.4	10.3	9.7	12.5	12.5	9.8	11.8	12.5	10.7	10.6	10.6
1	2	11.4	11.7	10.9	10.9	11.5	9.6	11.3	11.6	11.8	10.8	11.1	10.3	10.1	11.1	12.4	9.0	12.0	11.0	11.2	9.9	10.0	10.8	9.4	10.3	9.4	12.4	12.4	9.6	11.6	12.3	10.5	10.3	10.5
1	3	11.2	11.6	10.9	10.9	11.4	9.6	10.9	11.6	11.6	10.8	10.8	9.8	9.9	11.2	12.4	8.9	12.0	10.8	11.0	9.8	10.0	10.7	9.3	10.3	9.1	12.5	12.3	9.5	11.4	12.3	10.4	10.2	10.3
1	4	11.0	11.4	10.9	10.9	11.3	9.4	10.6	11.3	11.6	10.7	10.5	9.5	9.3	11.0	12.7	8.8	11.9	10.7	11.0	9.7	10.4	10.5	9.2	9.1	10.3	9.1	12.6	12.3	9.3	11.3	12.2	10.1	10.2
1	5	10.7	11.3	10.9	10.8	11.2	9.2	10.3	11.4	11.6	10.6	10.2	9.5	9.3	10.9	12.1	8.7	11.8	10.6	11.1	9.7	9.9	10.2	9.0	10.2	9.2	12.6	12.2	9.3	11.2	12.1	10.2	10.0	10.0
1	6	10.4	11.1	10.7	10.8	10.9	9.2	10.0	11.2	11.6	10.7	10.0	9.4	8.9	10.8	11.8	8.7	11.8	10.6	11.0	9.4	9.7	10.0	8.9	10.2	9.2	12.6	12.2	9.3	11.1	12.0	10.1	10.0	9.9
1	7	10.4	11.2	10.6	10.7	10.7	9.2	9.8	11.1	11.5	10.8	9.7	9.4	8.8	10.8	11.7	8.6	11.5	10.6	10.8	9.2	9.6	9.8	9.0	10.1	9.1	12.5	12.0	9.4	11.1	12.0	9.9	10.0	9.8
1	8	10.4	11.2	10.6	10.6	10.7	9.2	9.8	10.8	11.1	10.6	9.6	9.4	8.8	10.6	11.6	8.4	11.2	10.6	10.7	9.1	9.6	9.7	8.9	10.1	9.0	12.3	12.0	9.3	11.0	12.0	9.4	10.0	9.7
1	9	10.4	11.1	10.4	10.5	10.9	8.8	9.6	10.8	10.5	10.5	9.6	9.3	8.8	10.5	11.3	8.3	11.1	10.6	10.7	9.2	9.6	9.7	8.8	10.0	9.0	12.1	11.9	9.4	10.8	11.9	8.9	10.1	9.7
1	10	10.4	11.0	10.9	10.4	10.4	10.8	8.5	9.5	10.6	10.2	10.5	9.8	9.3	10.8	10.5	9.8	11.1	10.6	10.5	9.2	9.4	9.7	8.7	9.9	8.9	11.8	11.8	9.2	10.6	11.8	8.6	10.2	9.7
1	11	10.5	10.9	10.4	10.4	10.5	8.2	9.5	10.6	10.0	10.4	9.8	9.4	8.9	10.5	10.6	8.3	10.0	10.6	10.3	9.2	9.4	9.6	8.5	9.7	8.7	11.7	11.7	9.1	10.5	11.7	8.4	10.2	9.7
1	12	10.4	10.9	10.4	10.4	10.4	8.3	9.4	10.5	9.9	10.4	9.6	8.9	10.4	10.3	8.4	9.4	9.5	8.5	9.6	8.7	11.6	11.4	9.0	10.6	11.6	8.4	9.0	10.6	11.6	8.4	9.9	9.7	
1	13	10.2	10.9	10.4	10.4	10.2	8.4	9.4	10.4	9.8	10.4	9.4	9.6	8.9	10.4	10.1	8.4	10.9	10.4	9.8	9.0	9.2	9.4	8.5	9.5	8.6	11.4	11.2	8.8	10.5	11.4	8.4	9.6	9.8
1	14	10.0	10.8	10.3	10.4	9.9	8.4	10.3	9.7	10.4	9.1	9.9	8.9	10.1	10.1	8.5	10.8	10.3	9.6	8.6	9.1	9.3	8.5	9.5	8.6	11.2	10.8	8.6	10.5	11.2	8.5	9.3	9.9	
1	15	9.7	10.6	10.3	10.3	9.5	8.5	10.1	9.5	10.4	8.8	9.8	8.8	9.9	10.1	8.7	10.8	10.2	9.6	8.3	9.1	9.2	8.5	9.4	8.8	11.0	10.3	8.6	10.5	11.1	8.6	9.2	10.0	
1	16	9.6	10.5	10.3	10.3	9.4	8.7	9.4	10.0	9.2	10.3	8.5	10.0	8.6	10.0	10.1	8.6	10.8	10.2	9.5	8.2	8.7	9.1	8.4	9.3	8.9	10.9	10.1	8.6	10.4	11.1	8.6	9.2	10.1
1	17	9.6	10.4	10.2	10.2	9.3	8.6	9.4	9.9	9.2	10.2	8.4	10.0	8.6	9.9	10.0	8.7	10.9	10.0	9.5	8.1	8.5	9.1	8.3	9.2	9.0	10.8	10.0	8.7	10.3	11.0	8.7	9.1	10.0
1	18	9.4	10.1	10.2	10.1	9.2	8.6	9.5	10.1	9.1	10.3	8.4	9.9	8.7	9.9	8.7	10.8	9.9	9.5	8.2	8.4	9.1	8.2	9.1	8.9	10.7	10.0	8.8	10.2	11.0	8.5	8.9	9.9	
1	19	9.3	9.9	9.9	9.9	9.1	8.5	9.4	9.9	9.1	10.2	8.4	9.8	8.7	9.8	9.9	8.6	10.7	9.8	9.5	8.2	8.3	9.1	8.1	8.9	8.8	10.5	10.1	8.9	10.2	11.0	8.4	8.8	9.8
1	20	9.3	9.7	9.7	9.7	9.1	8.6	9.3	9.6	9.0	9.9	8.2	9.7	8.6	9.7	9.8	8.6	10.6	9.5	9.6	8.3	8.2	9.1	8.2	8.8	8.7	10.1	10.1	9.0	10.1	11.0	8.4	8.7	9.8
1	21	9.4	9.7	9.5	9.7	9.2	8.6	9.1	9.6	9.0	9.4	8.1	9.8	8.6	9.6	9.3	8.5	10.5	9.3	9.5	8.5	8.1	9.2	8.1	8.8	8.5	10.0	9.9	9.0	10.1	10.9	8.4	8.6	9.6
1	22	9.5	9.7	9.5	9.5	9.3	8.5	8.8	9.5	9.0	9.2	8.1	9.8	8.5	9.2	9.4	8.5	10.4	9.2	9.4	8.5	8.1	8.7	8.6	9.9	9.9	8.8	10.0	10.7	8.5	8.6	9.5		
1	23	9.4	9.5	9.4	9.4	9.3	8.7	9.5	9.1	9.6	8.5	8.1	9.6	8.5	9.7	9.3	8.4	10.3	9.1	9.5	8.4	8.0	9.0	8.1	8.7	8.6	9.6	8.5	9.9	10.7	8.6	8.6	9.4	
1	24	9.2	9.3	9.4	9.2	8.3	8.6	9.3	9.2	9.4	8.2	8.5	8.4	8.2	8.5	9.5	9.2	8.3	10.3	8.9	9.4	8.3	8.0	8.6	8.1	8.7	8.5	9.5	9.4	8.3	10.0	10.8	8.6	9.4
1	25	9.2	9.3	9.4	9.3	9.2	8.1	8.5	9.0	9.3	9.3	8.1	9.6	8.4	8.3	9.2	8.3	10.3	8.8	9.3	8.3	7.9	8.6	8.1	8.8	8.5	9.0	9.3	8.0	9.9	10.7	9.1	8.6	9.0
1	26	9.1	9.4	9.4	9.3	9.2	7.9	8.4	8.7	9.4	8.1	9.4	8.3	8.2	8.3	10.2	8.7	9.2	8.2	7.8	8.4	7.8	8.8	8.6	8.8	9.3	7.9	9.7	10.7	9.3	8.6	8.6		
1	27	9.0	9.5	9.5	9.4	9.1	8.0	8.4	8.6	9.4	8.0	9.4	8.3	8.1	9.1	8.3	10.2	8.7	9.2	8.2	7.6	8.2	7.7	8.7	8.6	8.8	9.2	7.8	9.6	10.6	9.5	8.8	8.6	
1	28	8.9	9.6	9.4	9.2	9.0	8.0	8.4	8.5	9.4	7.9	9.3	8.3	8.2	9.2	8.2	10.1	8.6	9.2	8.4	7.6	8.1	7.5	8.6	8.7	8.9	9.3	7.8	9.6	10.3	9.5	8.8	8.4	
1	29	8.7	9.6	8.9	9.0	8.9	8.0	8.3	8.4	9.2	8.9	7.9	9.0	8.0	8.2	9.3	8.2	10.0	8.5	9.3	8.4	7.6	8.1	7.5	8.6	8.5	9.0	9.3	7.8	9.5	10.3	9.3	8.8	8.3
1	30	8.6	8.7	8.7	8.7	8.7	7.9	8.2	8.3	9.1	8.9	8.0	8.8	7.7	8.3	9.3	8.3	10.9	8.6	9.4	8.4	7.4	8.2	7.6	8.6	8.5	9.1	9.4	7.7	9.5	10.5	8.8	8.7	8.2
1	31	8.5	9.7	8.7	8.6	8.5	7.8	8.1	8.3	9.1	8.7	8.1	8.7	7.6	8.4	9.1	8.4	10.0	8.6	9.5	8.5	7.4	8.1	7.7	8.6	8.4	9.1	9.3	7.6	9.5	10.3	8.7	8.6	8.3
2	1	8.5	10.0	8.7	8.6	8.3	7.7	8.0	8.3	9.2	8.7	8.1	8.7	7.6	8.6	8.8	8.4	9.8	8.6	9.4	8.4	7.2	8.0	7.8	8.6	8.3	9.1	9.1	7.5	9.5	10.2	8.7	8.5	8.3
2	2	8.4	9.4	8.6	8.5	8.2	7.4	8.0	8.3	9.2	8.8	8.0	8.7	7.5	8.7	8.4	8.4	9.5	8.6	9.3	8.4	7.3	7.9	8.0	8.8	8.2	9.1	9.1	7.5	9.3	10.3	8.8	8.3	8.3
2	3	8.4	9.7	8.6	8.3	8.2	7.1	8.0	8.3	9.1	8.7	7.9	8.7	7.5	8.7	8.4	8.4	9.4	8.6	9.2	8.4	7.3	7.8	8.2	9.0	8.1	9.2	9.1	7.6	9.3	10.3	8.7	8.3	8.3
2	4	8.4	10.1	8.7	8.2	8.3	7.1	7.9	8.3	8.8	7.9	8.8	7.5	8.5	8.5	8.1	9.4	8.6	9.3	8.3	7.4	7.8	8.2	9.0	8.2	9.2	9.2	7.5	9.4	10.3	8.6	8.2	8.3	
2	5	8.3	9.4	8.7	8.3	8.2	7.1	7.9	8.3	8.8	8.6	7.9	8.8	7.6	8.4	8.5	8.0	9.5	8.6	9.3	8.4	7.5	7.8	8.2	8.8	8.2	9.2	9.2	7.2	9.5	10.2	8.5	8.1	7.3
2	6	8.3	9.3	8.8	8.5	8.1	6.9	7.9	8.3	8.8	8.6	8.0	8.9	7.5	8.2	8.4	7.8	9.6	8.5	9.3	8.3	7.5	7.8	8.2	8.6	8.2	9.1	9.2	7.0	9.5	10.0	8.7	7.8	8.3
2	7	8.4	9.3	8.9	8.5	8.1	6.8	7.8	8.3	8.9	8.6	8.0	8.9	7.6	8.1	8.2	7.8	9.7	8.4	9.3	8.3	7.6	7.9	8.3	8.5	8.1	9.1	9.1	6.8	9.6	9.9	8.7	7.7	8.4
2	8	8.4	9.2	8.7	8.5	8.2	6.8	7.9	8.2	9.0	8.5	8.0	8.9	7.7	8.0	8.2	7.8	9.7	8.4	9.3	8.2	7.7	7.7	8.1	8.3	8.2	9.0	9.0	6.8	9.5	9.8	8.7	7.8	8.4
2	9	8.5	9.1	8.6	8.4	8.4	6.9	8.0	8.0	9.1	8.1	7.9	9.0	7.8	8.0	8.3	7.8	9.8	8.3	9.2	8.6	7.8	7.6	7.9	8.3	7.9	9.0	9.0	6.9	9.4	9.7	8.5	7.9	8.5
2	10	8.4	9.1	8.5	8.2	8.4	6.8	8.1	8.0	9.1	8.0	7.9	8.8	8.0	8.2	8.4	7.8	9.9	8.2	9.3	8.7	7.8	7.5	7.9	8.2	7.6	8.9	8.8	6.9	9.2	9.6	8.5	8.0	8.4
2	11	8.6	9.1	8.5	8.1	8.5	6.8	8.0	8.0	9.1	8.0	7.9	8.7	8.2	8.4	8.3	7.8	9.8	8.4	9.3	8.7	7.7	7.5	7.9	8.									

表2 牛窓地先水深2m層の日平均水温 (4~6月)

月	日	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
4	1	10.1	10.9	10.2	10.0	10.4	9.3	11.0	11.2	10.7	10.2	10.7	12.0	9.8	11.4	9.9	9.5	11.7	10.6	11.3	10.7	10.3	10.0	10.7	11.2	11.0	11.9	10.8	11.1	11.3	12.1	12.4	11.2	12.5	
4	2	10.1	11.1	10.3	10.2	10.5	9.3	11.0	11.0	10.8	10.2	11.0	12.2	9.9	11.6	10.0	9.5	11.9	10.8	11.3	10.8	10.5	10.2	10.7	11.3	11.3	12.1	11.0	11.5	11.2	12.1	12.6	11.1	12.7	
4	3	10.2	11.3	10.6	10.4	10.3	9.1	11.0	11.0	10.7	10.3	11.0	12.3	10.1	11.7	10.2	9.7	11.9	10.9	11.5	10.8	10.6	10.4	10.7	11.4	11.6	12.4	11.1	11.7	11.3	12.2	12.8	11.2	12.7	
4	4	10.3	11.2	10.7	10.7	10.5	9.1	11.1	11.2	10.9	10.1	11.0	12.3	10.1	11.2	10.6	9.8	11.9	11.1	11.5	10.7	10.3	10.8	11.4	11.8	12.6	11.4	11.9	12.0	12.4	12.4	13.0	11.2	12.8	
4	5	10.6	11.3	10.7	11.0	10.8	9.2	11.2	11.5		10.6	11.2	12.4	10.1	11.6	10.3	9.9	11.9	11.4	11.5	11.1	10.8	10.5	11.1	11.2	11.9	12.6	11.6	12.0	11.6	12.4	12.9	11.6	12.8	
4	6	10.7	11.6	10.6	11.2	10.9	9.3	11.2	11.8	11.0	10.8	11.6	12.5	10.1	11.8	10.5	10.0	12.0	11.6	11.7	11.4	11.0	10.7	11.5	11.1	12.0	12.6	11.7	12.0	11.8	12.4	12.9	11.7	13.0	
4	7	10.9	11.7	10.8	11.4	11.0	9.4	11.2		11.0	11.0	11.9	12.6	10.4	12.0	10.7	10.3	12.1	11.7	12.0	11.4	11.3	10.6	11.5	11.2	12.0	12.9	11.9	11.8	12.0	12.6	12.9	11.8	13.2	
4	8	11.2	11.9	10.8	11.6	11.3	9.7	11.3	12.5	11.1	11.2	12.2	12.9	10.7	12.2	10.9	10.3	12.2	11.8	12.2	11.3	11.5	10.7	11.5	11.4	12.0	12.9	12.1	11.7	12.3	12.7	13.0	12.0	13.0	
4	9	11.4	12.1	10.8	11.5	11.4	9.8	11.5	12.3	11.2	11.3	12.5	12.9	10.7	12.4	11.1	10.2	12.4	12.1	12.5	11.4	11.8	10.9	11.7	11.7	11.9	13.1	12.3	11.8	12.4	12.9	13.0	12.6	13.0	
4	10	11.7	12.5	10.7	11.5	11.5	9.8	11.6	13.1	11.4	11.4	12.7	12.8	10.8	12.6	11.4	10.4	12.6	12.3	12.7	11.7	11.9	11.1	11.6	11.9	11.8	13.2	12.2	12.1	12.2	12.9	13.0	13.2	13.1	
4	11	12.2	12.4	10.9	11.7	11.5	9.7	11.6	13.0	11.6	11.4	12.9	12.8	10.8	12.7	11.7	10.7	12.8	12.4	13.0	11.9	12.0	11.2	11.5	11.7	11.9	13.1	12.2	12.2	12.0	12.9	13.2	13.8	13.4	
4	12	12.5	12.2	10.9	11.9	11.9	9.7	11.7	13.9	11.7	11.5	12.9	12.8	11.1	12.9	11.6	10.9	13.1	12.6	13.2	12.1	11.9	11.4	11.5	11.9	12.0	13.1	12.3	12.4	12.1	12.8	13.3	14.0	13.6	
4	13	12.8	11.9	11.0	12.1	11.7	9.8	11.8	13.9	11.8	11.7	12.9	12.9	11.4	13.3	11.7	10.9	13.2	12.7	13.6	12.1	12.1	11.5	11.6	11.9	12.2	13.2	12.4	12.6	12.3	12.4	13.6	14.0	13.7	
4	14	12.8	12.0	11.2	12.0	11.7	10.0	11.9	13.8	11.8	11.7	12.9	13.2	11.4	13.4	11.8	10.9	13.4	12.8	13.7	11.8	12.2	11.7	11.8	12.1	12.4	13.4	12.6	12.7	12.4	12.4	13.8	13.6	13.9	
4	15	12.8	12.2	11.3	12.0	11.7	10.3	12.0	13.7	12.0	11.7	13.0	13.3	11.5	13.4	12.0	10.8	13.5	12.9	13.9	11.7	12.3	11.9	12.0	12.1	12.1	13.6	12.7	13.0	12.5	12.6	13.7	13.3	14.2	
4	16	12.8	12.4	11.5	12.1	12.1	10.6	12.2	13.3	12.3	11.6	13.5	13.4	11.9	13.7	12.1	10.9	13.5	13.0	14.0	11.5	12.5	12.2	12.3	12.2	11.9	13.8	12.9	13.1	12.6	12.9	13.8	13.2	14.1	
4	17	12.9	12.4	11.7	12.3	12.3	10.7	12.5	13.4	12.5	11.8	13.7	13.5	12.3	13.8	12.2	10.9	13.5	13.1	14.2	11.5	12.5	12.4	12.5	12.4	11.9	14.4	13.2	13.1	12.9	13.2	14.0	13.3	13.9	
4	18	13.0	12.6	11.9	12.3	12.5	11.0	12.7	13.5	12.6	12.0	13.9	13.3	12.6	14.1	12.4	11.1	13.4	13.2	14.6	11.6	12.5	12.7	12.7	12.7	12.6	12.0	14.0	13.2	13.3	13.2	13.3	13.8	13.3	13.9
4	19	13.1	12.8	12.2	12.6	12.5	11.0	13.0	13.5	12.7	12.2		13.4	12.6	14.4	12.5	11.0	13.5	13.1	14.8	11.7	12.5	12.9	12.8	12.7	12.1	13.7	13.2	13.6	13.4	13.2	13.7	13.4	13.8	
4	20	13.1	13.0	12.5	12.7	12.5	11.1	13.3	13.6	13.0	12.4	14.0	13.7	12.6	14.8	13.2	11.4	13.7	13.0	15.4	11.9	12.5	13.0	12.7	12.7	12.4	13.9	13.2	13.8	13.5	13.5	14.0	13.6	14.0	
4	21	13.3	13.2	12.8	13.0	12.6	11.1	13.5	13.8	13.3	12.5	13.9	14.1	12.6	14.6	13.2	11.4	13.9	13.1	16.0	12.3	12.7	13.2	12.7	12.7	12.5	14.1	13.3	14.2	13.8	13.4	14.1	13.7	14.2	
4	22	13.2	13.5	13.1	13.4	12.8	11.3	13.7	14.0	13.5	12.6	14.0	14.6	12.7	14.7	12.9	11.3	14.0	13.2	15.4	12.4	12.7	13.5	12.9	12.7	12.6	14.3	13.2	14.5	14.1	13.2	14.3	13.9	14.3	
4	23	13.6	13.5	13.7	13.0	13.4	10.9	13.7	13.8	14.1	12.9	14.3	13.8	12.8	14.1	13.2	10.9	13.8	12.9	14.4	15.2	12.9	12.9	12.9	12.9	14.2	13.0	14.3	14.0	14.2	13.0	14.3	14.0	14.3	
4	24	13.7	13.5	13.6	13.8	12.9	11.8	13.9	14.8	14.2	12.9	14.2	14.9	13.2	14.7	13.0	11.7	14.3	13.4	15.1	12.3	12.7	13.3	13.0	13.0	13.1	14.7	13.8	15.1	14.6	13.0	14.6	14.0	14.3	
4	25	13.9	13.7	13.6	13.8	13.3	12.1	14.0	14.8	14.1	13.0	14.3	14.7	13.0	14.7	13.2	11.8	14.5	13.4	15.1	12.4	12.8	13.5	13.3	13.3	13.3	14.8	14.3	15.2	14.7	13.2	14.9	14.2	14.1	
4	26	14.1	13.6	13.9	13.0	12.3	14.1	14.9	14.1	13.0	14.4	14.6	13.3		13.4	11.8	14.5	13.5	14.9	12.5	13.1	13.8	13.4	13.5	14.0	15.2	14.4	15.0	14.7	13.4	14.8	14.5	14.2		
4	27	14.4	13.8	13.9	13.0	12.5	14.4	15.2	14.2	13.2	14.6	14.6	13.0	15.1	13.6	12.0	14.5	13.6	14.8	12.7	13.6	13.8	13.5	14.0	14.8	15.4	14.3	15.1	14.4	13.6	14.8	14.7	14.3		
4	28	14.8	13.9	13.9	13.0	12.6	14.6	15.4	14.2	13.3	14.7	14.8	13.2	14.9	13.7	12.3	14.6	13.8	14.8	12.8	13.5	14.0	13.7	14.2	15.5	14.5	15.1	14.1	13.7	14.9	15.0	15.0	15.0		
4	29	14.8	14.0	13.9	13.1	12.8	14.7	15.6	14.0	13.2	14.7	14.9	13.5	14.9	14.0	12.5	14.7	14.0	14.9	12.8	13.5	14.9	13.9	14.5	15.3	15.3	14.7	15.2	14.2	13.8	14.9	15.1	15.4		
4	30	14.1	14.9	14.2	14.0	13.3	14.9	15.1	14.2	13.3	14.8	15.0	13.8	15.0	14.3	12.8	15.0	14.5	15.0	12.9	13.8	15.5	13.9	14.9	15.4	15.4	14.8	15.2	14.3	14.1	15.0	14.8	15.3		
5	1	13.7	14.6	14.1	14.1	13.4	13.7	15.0	16.0	14.4	13.6	15.1	15.1	13.8	15.2	14.7	13.1	15.2	14.9	15.1	13.0	14.1	15.6	13.9	15.0	15.3	15.4	15.0	15.5	14.4	14.5	15.1	15.2	14.9	
5	2	13.3	14.6	14.3	14.3	13.8	13.9	15.3	16.8	14.7	13.9	15.3	15.0	13.5	15.5	15.2	13.3	15.3	15.1	15.4	13.1	14.3	15.8	13.9	15.0		15.9	15.1	14.6	15.0	15.0	15.1	14.5		
5	3	13.2	14.5		14.9	13.8	13.6	15.6	16.9	15.1	14.0	15.4	15.5	14.8	15.1	13.3	15.5	15.4	15.7	13.3	14.3	15.8	14.0	15.0		16.3	15.3	15.7	14.9	15.2	15.0	15.0	14.9		
5	4	13.1	14.6			15.3	13.7	15.9	17.0	15.3	14.3	15.5	16.0	14.9	16.0	15.1	13.7	15.6	15.7	15.8	13.6	14.4	14.8	14.2	14.9		16.4	15.7	15.5	15.2	15.5	15.3	15.2	15.2	
5	5	13.2	14.7			15.1	13.5	13.8	16.0	17.1	15.4	14.5	15.6	16.4	15.2	15.9	15.3	14.4	15.8	15.9	15.9	14.0	14.6	14.5	14.4	14.8		16.2	16.1	15.6	15.5	15.6	15.4	15.7	
5	6	13.5	14.9			15.0	13.6	13.9	16.3	17.3	15.5	14.7	15.8	16.5	15.4	16.0	15.7	15.0	15.9	16.0	16.0	14.9	14.8	14.5	14.5	14.7		16.0	16.2	15.6	15.7	15.6	15.6	16.1	16.0
5	7	13.8	15.1	15.0		14.8	13.8	14.0	16.7	17.4	15.6	14.9	16.3	16.3	15.9	16.3	16.0	15.5	16.1	16.1	15.9	14.6	15.3	14.5	14.6	14.8		16.0	15.9	15.5	15.8	15.7	15.6	16.2	16.3
5	8	14.1	15.2	15.2	15.0	14.2	13.9	16.7	17.2	15.7	15.2	16.6	16.1	16.2	16.6	15.8	15.4	16.3	16.1	16.0	14.9	15.5	14.6	14.7	15.2		16.2	15.6	15.6	15.9	15.8	15.8	16.4	16.0	
5	9	14.3	15.3	15.5	15.2	14.2	14.1	16.7	17.2	15.8	15.4	16.6	16.0	15.7	17.1	15.8	15.6	16.4	16.2	16.1	14.7	15.5	14.8	14.9	15.6</										

表3 牛窓地壳水深2m層の日平均水温（7～9月）

月	日	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
7	1	19.9	21.1	21.8	20.7	21.8	20.7	23.2	22.2	22.1	22.1	21.7	20.1	23.9	21.2	23.3	21.8	21.4	20.7	22.7	22.1	21.7	22.8	21.4	21.6	22.0	22.9	22.7	22.1	21.7	22.8	21.4	21.7	22.8	21.4
7	2	19.9	20.9	19.8	22.4	20.8	20.0	23.2	22.7	21.3	22.2	20.6	21.9	20.4	23.6	21.4	20.5	21.7	22.2	22.7	21.0	22.0	21.9	23.9	22.0	21.6	23.2	23.3	23.4	21.9	21.5	23.0	24.0	21.2	
7	3	19.8	20.9	20.3	22.4	20.9	20.1	23.2	23.2	21.4	21.9	21.3	22.2	20.7	23.4	21.3	20.2	21.8	22.6	22.7	21.2	21.7	21.2	24.0	22.3	21.3	23.2	23.3	23.8	21.9	21.4	23.6	24.2	21.3	
7	4	20.0	21.0	20.2	22.2	20.7	20.4	23.1	22.9	21.5	21.6	21.6	22.8	21.1	23.9	21.3	21.2	21.8	22.9	22.8	21.3	21.8	21.1	22.9	22.4	21.2	23.0	23.1	24.0	22.2	21.6	24.0	21.4	21.4	
7	5	20.1	20.9	20.5	21.7	20.9	20.5	23.9	22.4	21.7	21.6	21.9	23.4	21.1	24.7	21.4	22.2	21.7	22.5	22.8	21.4	21.6	20.9	23.2	22.2	21.2	23.5	22.8	24.2	22.1	21.7	23.9	21.5	21.5	
7	6	20.3	21.1	20.8	21.3	21.1	20.7	22.9	22.2	22.0	22.1	21.9	23.8	21.2	24.5	21.4	21.4	21.8	22.4	23.4	21.5	21.5	21.0	23.6	21.9	21.2	23.9	22.6	23.9	22.4	21.9	23.1	24.5	21.9	
7	7	21.9	21.2	21.0	21.4	21.6	20.7	22.9	22.5	22.6	22.5	22.7	23.9	21.3	25.0	21.7	21.1	21.8	22.5	23.5	22.2	21.3	21.1	23.9	21.9	21.3	23.9	22.5	23.1	22.7	22.1	22.6	23.9	22.1	
7	8	21.3	21.3	21.2	21.6	21.8	21.0	22.9	22.9	22.2	22.3	22.0	24.9	21.3	25.6	22.0	21.9	22.2	22.6	24.2	23.2	21.2	21.2	24.3	22.1	21.5	23.5	22.4	22.7	22.9	22.3	22.1	24.1	22.6	
7	9	21.0	21.1	21.6	22.1	20.9	21.6	23.6	22.9	23.7	22.7	22.3	24.1	21.8	26.0	22.2	23.0	22.7	22.7	23.6	24.0	23.6	21.7	24.0	22.7	21.9	23.5	22.4	23.4	23.3	22.7	22.5	24.4	22.9	
7	10	21.5	21.8	22.5	21.7	21.9	23.9	22.8	23.1	22.9	23.0	24.4	22.6	22.7	23.4	23.3	23.4	23.8	23.4	24.5	22.5	23.3	23.6	22.4	23.5	22.7	24.3	23.6	23.2	22.5	25.0	22.7	23.0	22.7	
7	11	21.4	21.5	22.5	23.0	21.9	21.9	23.7	22.7	22.7	22.8	23.3	23.9	22.8	25.0	22.5	23.0	23.4	23.7	23.6	23.7	25.2	23.3	23.2	23.6	23.2	23.7	23.2	24.8	23.7	23.5	22.9	25.4	22.7	
7	12	21.5	21.2	22.8	23.1	21.5	22.3	23.6	22.8	22.5	22.9	23.5	23.8	22.8	24.5	22.6	23.2	23.7	24.2	23.5	23.4	24.7	23.9	23.3	23.1	23.6	23.8	23.6	24.1	23.7	23.1	21.3	25.2	23.1	
7	13	21.5	21.1	22.3	23.5	21.4	22.6	23.7	22.8	22.5	22.2	24.3	23.8	22.8	24.8	22.7	23.8	23.8	24.3	23.6	22.9	24.9	24.6	23.3	22.9	24.0	23.8	23.6	23.3	23.3	22.8	22.0	24.6	22.5	
7	14	21.6	21.1	22.5	24.0	21.3	23.0	23.4	23.0	22.5	21.7	25.2	23.8	22.6	24.7	22.9	23.7	23.6	24.4	24.0	23.0	25.1	24.5	23.4	22.9	23.9	23.4	24.1	23.3	23.1	23.1	22.4	24.3	23.0	
7	15	21.8	21.1	21.4	24.3	21.3	23.4	23.1	23.4	22.7	22.0	25.7	24.2	22.5	24.7	23.2	23.2	23.6	24.1	24.2	23.1	25.0	24.9	23.3	23.0	24.4	23.1	24.8	23.6	23.4	22.5	23.2	24.3	23.7	
7	16	21.8	21.1	21.4	24.4	21.4	23.7	22.8	23.7	22.7	22.3	25.8	24.6	22.7	24.5	24.0	22.8	23.1	24.9	24.0	23.3	24.7	25.4	23.3	23.2	25.0	23.0	25.0	24.0	23.8	22.6	23.6	24.4	24.8	
7	17	21.9	21.1	21.8	24.6	21.5	23.8	22.5	24.0	22.7	22.5	25.5	25.3	22.9	24.2	24.8	22.2	22.8	25.2	24.0	24.6	25.4	24.2	23.3	24.8	23.4	23.9	24.3	24.1	23.5	23.9	24.6	25.1	24.5	
7	18	21.7	21.3	21.7	25.0	21.4	24.1	22.7	24.5	22.6	22.7	25.3	24.3	23.0	24.0	25.1	22.2	22.7	25.1	24.1	24.9	24.9	25.6	24.4	23.6	23.8	23.4	23.3	24.6	24.1	24.0	24.6	24.3	24.9	
7	19	21.9	21.5	21.5	25.4	21.8	24.4	23.0	24.9	22.9	23.0	25.3	24.9	23.5	23.9	24.4	22.5	22.9	25.0	24.1	25.7	25.6	25.6	23.8	23.7	24.0	23.5	23.2	24.8	24.0	24.5	25.4	24.1	23.9	
7	20	22.4	21.6	21.5	25.7	22.3	24.3	23.4	24.9	23.2	23.3	25.2	25.5	23.5	22.9	24.1	22.6	23.2	25.0	23.9	26.3	25.4	25.1	23.9	23.8	24.1	24.0	24.0	25.9	24.2	24.7	25.9	24.0	23.4	
7	21	22.6	21.8	21.7	25.9	23.4	23.8	23.8	24.9	24.1	23.5	25.2	26.1	23.3	24.0	24.2	23.6	25.4	24.0	26.7	24.8	24.5	24.3	24.5	25.0	24.4	24.7	26.7	24.6	24.4	26.2	24.4	23.5	23.5	
7	22	22.7	22.0	26.1	24.0	23.6	23.9	24.9	24.9	24.9	23.6	25.3	26.4	23.2	24.1	25.2	22.7	23.8	25.8	24.0	26.0	24.7	24.6	24.6	25.1	24.7	25.2	27.2	24.6	23.7	26.2	24.3	24.1	24.1	
7	23	22.6	22.3	26.3	24.5	23.7	24.2	24.9	25.2	23.6	25.3	26.6	23.6	23.6	24.3	24.4	23.1	24.1	26.2	24.1	24.1	24.7	24.9	24.5	25.1	25.0	25.4	26.9	24.6	23.2	25.8	24.0	25.0	24.5	
7	24	22.6	22.5	26.9	25.0	23.7	25.0	25.7	23.6	25.0	26.6	23.4	24.4	24.7	23.4	25.0	26.4	24.4	23.2	25.3	25.4	24.4	24.3	25.4	24.4	24.5	25.2	25.6	25.8	24.4	23.1	25.4	25.5	25.6	
7	25	22.5	23.1	26.7	25.3	24.7	25.1	25.1	26.3	23.8	24.9	26.7	22.9	25.2	25.1	23.3	26.3	26.9	24.5	23.3	25.6	25.7	24.4	24.1	25.2	25.5	25.4	24.5	23.4	25.5	25.5	26.2	26.2	26.2	
7	26	22.6	23.7	26.8	25.7	25.7	25.7	25.1	26.1	24.6	24.9	26.9	22.8	25.8	25.1	23.6	25.8	27.5	24.4	23.6	25.8	26.0	24.4	24.4	25.2	25.6	25.8	25.5	23.7	25.5	25.6	26.2	25.6	25.6	
7	27	22.7	24.4	27.0	24.9	26.0	25.2	25.3	25.3	25.1	27.0	22.9	26.4	25.0	25.8	26.4	25.0	25.8	26.3	24.4	24.5	25.1	25.9	25.9	26.4	25.5	25.9	26.4	25.5	24.1	25.0	25.8	25.8	25.8	
7	28	23.2	22.9	24.5	27.0	24.8	26.0	24.6	25.7	25.6	25.5	25.5	26.9	23.2	26.6	25.2	23.2	24.5	28.0	25.4	24.2	25.6	26.4	24.4	24.5	25.8	26.2	26.3	25.6	24.3	24.7	26.2	27.3	27.3	
7	29	23.9	23.0	24.8	26.8	24.6	25.9	24.5	25.8	25.6	25.9	26.2	27.0	23.4	26.3	25.2	22.9	23.9	27.6	25.6	24.6	25.2	26.6	24.4	24.6	26.5	26.4	26.5	26.1	24.3	24.6	26.5	27.8	27.8	
7	30	24.5	23.1	25.2	26.8	24.5	26.0	24.7	25.7	25.4	26.4	26.9	27.0	23.6	26.0	25.2	23.0	23.8	27.4	26.2	25.1	24.8	27.7	24.4	25.3	26.5	26.9	25.5	26.1	24.3	24.8	26.7	27.6	27.6	
7	31	25.2	23.5	25.0	27.3	24.4	26.2	25.0	25.6	25.5	26.4	27.1	26.9	23.7	26.1	25.2	23.3	24.0	27.1	26.6	25.3	24.7	27.9	24.8	25.8	26.5	27.6	26.0	25.9	24.2	25.0	26.8	27.0	27.0	
8	1	25.8	23.7	23.9	27.9	24.3	26.6	25.1	26.4	25.6	26.5	27.1	26.6	24.0	26.4	25.5	24.4	24.5	27.0	26.8	25.6	24.9	27.4	25.1	26.2	25.2	26.3	28.0	26.3	25.8	24.0	26.0	26.9	26.7	
8	2	25.6	24.0	23.7	28.1	24.1	26.6	25.4	27.1	25.8	26.4	27.0	26.1	24.3	26.3	25.9	25.3	25.0	27.0	26.7	25.6	25.2	27.3	25.1	26.2	25.4	26.1	27.9	26.5	25.7	24.1	27.2	27.2	26.8	
8	3	25.2	24.0	23.6	27.7	24.1	26.4	25.3	27.2	26.1	26.5	27.2	26.0	24.7	26.5	26.1	26.0	25.2	26.9	27.0	26.4	25.6	27.1	24.9	26.2	26.2	26.1	28.0	26.4	25.9	24.4	27.2	27.0	27.0	
8	4	24.6	24.1	23.6	26.8	24.2	26.2	25.1	27.2	26.2	26.7	27.3	25.8	25.0	26.6	26.4	26.9	26.3	26.8	26.8	27.2	25.8	27.2	24.9	26.3	26.2	26.3	28.3	26.2	26.2	24.5	27.8	26.6	26.9	
8	5	24.6	24.6	23.7	26.4	24.5	26.1	25.0	26.7	26.4	26.9	27.2	25.7	25.4	26.9	26.5	27.2	25.6	27.1	27.0	27.4	26.1	27.2	25.0	26.6	26.5	28.5	26.2	26.5	24.6	27.8	26.4	27.0	27.0	
8	6	24.9	24.9	23.8	26.7	25.1	26.1	25.2	26.1	26.8	27.1	27.1	25.9	26.2	27.1	26.6	27.5	26.1	27.4	27.0	27.9	26.7	27.5	25.5	26.8	26.7	26.6	28.6	26.2	26.8	24.8	27.8	26.6	27.3	
8	7	24.9	25.3	24.0	27.0	25.6	26.6	25.5	26.3	27.0	27.3	27.4	26.6	26.7	27.4	26.7	27.3	26.5	27.6	26.9	27.7	27.1	27.4	25.6	26.7	27.4	27.0	28.2	26.3	27.1	24.8	27.4	27.1	27.1	
8	8	24.7	24.1	27.3	25.3	27.3	26.3																												

表4 牛窓地先水深2m層の日平均水温（10～12月）

月	日	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
10	1	24.3	23.8	23.7	25.6	24.1	23.9	24.3	25.2	26.9	25.1	24.5	25.1	24.6	25.5	25.4	25.0	26.9	25.0	25.4	25.8	25.2	25.6	25.2	25.4	24.3	25.6	24.8	24.1	26.3	25.4	25.1	26.0	27.5	
10	2	24.3	23.9	23.6	25.5	24.1	23.9	24.1	25.5	26.9	25.1	24.5	25.0	24.6	25.6	25.5	24.8	26.9	24.9	25.4	25.9	25.6	25.2	25.4	24.2	25.7	24.6	24.0	26.2	25.3	25.0	26.0	27.2		
10	3	24.3	24.1	23.4	25.4	24.2	23.9	23.9	25.6	26.8	25.1	24.3	25.0	24.5	25.4	25.4	24.9	26.8	24.8	25.3	25.7	24.6	25.5	25.1	25.3	24.2	25.8	24.5	24.1	25.9	25.3	25.0	26.1	26.9	
10	4	24.3	24.3	23.3	25.3	24.2	23.8	23.4	25.3	24.2	23.8	25.3	24.3	25.3	25.3	25.3	24.8	24.8	24.2	25.6	25.5	24.4	24.8	24.9	25.1	24.1	25.8	24.2	24.9	23.8	25.2	24.2	25.3	25.8	
10	5	24.3	23.9	23.2	25.2	24.0	23.5	23.8	25.4	26.2	25.0	24.3	25.0	24.2	25.0	25.0	24.6	26.8	24.6	25.0	25.1	24.0	25.3	24.7	24.8	23.9	25.6	24.1	23.8	25.7	25.2	25.1	26.0	26.6	
10	6	24.1	23.5	23.0	24.9	23.7	23.6	23.8	25.3	26.1	24.9	24.3	24.9	24.0	25.1	25.0	24.4	26.6	24.5	24.7	25.0	24.0	25.1	24.8	24.5	23.8	25.5	23.8	24.1	25.6	24.9	25.1	25.6	26.2	
10	7	24.1	23.3	22.7	24.7	23.3	23.6	23.8	25.2	26.2	24.7	24.2	24.7	23.7	25.0	24.8	24.1	26.6	24.4	24.4	25.0	24.0	25.0	24.9	24.2	23.7	25.3	23.5	24.3	25.4	24.8	25.1	25.1	25.8	
10	8	24.1	22.9	22.5	24.6	23.1	23.4	23.7	24.9	26.0	24.5	24.1	24.3	23.6	24.5	24.8	23.8	26.4	24.5	24.1	24.8	23.9	24.9	24.9	24.1	23.6	25.2	23.6	24.3	25.3	24.4	25.2	24.9	25.6	
10	9	23.9	22.5	22.3	24.5	22.9	23.2	23.5	24.7	25.7	24.2	24.0	24.2	23.5	24.3	24.7	23.7	26.2	24.5	23.9	24.6	24.9	24.9	24.0	23.5	25.2	23.8	24.3	25.1	24.0	25.2	24.4	25.2		
10	10	23.7	22.3	22.1	24.4	22.9	23.2	23.4	24.6	25.5	24.2	23.7	24.1	23.4	24.4	24.6	24.9	25.9	24.6	23.8	24.5	24.8	25.0	24.1	23.3	24.9	23.9	24.2	24.9	23.8	25.2	24.2	25.3	25.8	
10	11	23.6	22.3	22.2	24.5	22.9	23.1	23.2	24.6	25.5	24.3	23.7	24.0	23.3	24.4	24.4	23.7	25.7	24.5	23.6	24.5	23.9	24.9	25.1	24.1	23.1	24.6	24.1	24.0	24.9	23.9	25.3	23.8	25.0	
10	12	23.5	22.3	22.2	24.4	22.9	22.9	22.8	24.5	25.5	24.3	23.7	23.9	23.3	24.4	24.5	23.7	25.6	24.1	23.5	24.7	24.9	23.9	22.8	24.5	24.0	23.7	24.8	24.0	25.2	23.6	24.8	24.0		
10	13	23.4	22.2	22.2	24.4	22.9	22.5	24.2	25.5	24.1	23.7	24.0	23.4	24.3	24.4	23.8	25.3	23.9	23.4	24.7	24.4	24.5	23.2	22.6	24.2	23.7	23.5	24.4	24.0	25.1	23.6	24.6	24.6		
10	14	23.2	22.3	22.2	24.3	22.8	22.3	24.1	25.5	24.0	23.5	23.9	23.0	23.8	24.3	23.8	24.9	23.6	23.3	24.7	24.1	24.4	22.9	22.4	23.9	23.6	23.4	24.3	23.9	25.1	23.7	24.7	24.4		
10	15	22.9	22.3	22.1	24.2	22.7	22.1	24.2	25.4	23.8	23.8	22.8	23.3	24.2	23.6	24.7	23.5	23.2	24.7	23.2	24.7	23.5	24.0	24.2	22.7	22.3	23.7	23.4	23.4	24.1	23.7	25.1	23.8	24.3	
10	16	22.8	22.2	22.0	24.1	22.8	22.4	22.0	24.3	25.2	23.7	23.2	23.6	22.5	23.2	24.0	23.5	24.5	23.4	23.1	24.4	23.4	23.9	23.8	22.7	22.2	23.6	23.2	23.4	23.8	23.4	25.0	23.8	24.1	
10	17	22.3	22.3	21.9	24.1	22.8	22.3	21.9	24.1	24.8	23.5	23.1	23.4	22.5	23.1	23.9	23.6	24.3	23.3	23.2	24.2	23.2	23.7	23.4	22.7	22.2	23.6	23.0	23.3	23.6	23.1	24.7	23.9	24.0	
10	18	22.0	22.2	21.6	23.8	22.7	22.1	21.9	23.9	24.4	23.2	22.8	23.3	22.3	23.0	23.7	23.6	24.2	23.3	23.0	24.2	23.0	23.4	23.0	22.6	22.3	23.8	22.8	23.3	23.5	22.9	24.3	23.7	24.0	
10	19	21.9	22.3	21.7	23.7	22.6	22.0	21.8	23.9	24.1	22.8	22.6	23.2	22.2	22.9	23.5	23.6	24.1	23.3	22.7	24.1	23.0	23.1	22.8	22.6	22.3	23.8	22.4	23.2	23.4	22.7	24.0	23.4	24.0	
10	20	21.7	22.2	21.5	23.4	22.5	21.9	21.9	23.7	23.9	22.8	22.5	22.0	22.5	23.3	23.4	23.7	23.3	22.6	24.0	22.9	23.0	22.7	22.5	22.3	23.8	22.2	23.2	23.5	22.6	23.5	23.1	23.9		
10	21	21.5	21.9	21.5	23.0	22.4	21.6	22.0	23.3	23.8	22.7	22.2	22.9	21.9	22.3	23.1	23.1	23.2	22.3	23.9	22.9	23.1	22.8	22.5	22.3	23.7	22.1	22.9	23.2	22.6	23.1	23.1	23.4	23.4	
10	22	21.4	21.8	21.4	22.6	22.3	21.4	22.0	23.1	23.6	22.6	22.1	22.7	21.9	22.2	22.8	23.2	22.9	23.0	22.1	23.7	22.9	23.0	22.9	22.5	22.2	23.3	22.0	22.7	23.1	22.3	22.9	23.2	23.1	
10	23	21.3	21.6	21.2	22.3	22.2	21.2	22.0	23.0	23.4	22.5	22.0	22.1	22.2	22.6	22.1	22.8	23.6	22.2	22.6	22.1	23.2	22.8	22.2	22.1	23.1	22.7	22.2	22.6	23.2	22.1	22.6	23.2	23.0	
10	24	21.1	21.6	20.7	22.1	22.1	21.1	22.1	22.9	23.1	22.5	22.0	22.3	21.2	22.1	21.9	22.9	22.7	22.1	23.2	22.9	22.9	22.5	22.5	22.0	22.1	23.0	21.5	22.5	22.9	22.0	22.3	23.0	23.0	
10	25	21.2	21.3	20.5	22.1	21.8	21.4	22.0	22.8	22.9	22.7	21.9	22.2	21.0	22.2	21.8	22.8	22.6	22.5	21.8	23.1	22.7	22.4	22.4	22.0	21.8	22.8	21.5	22.4	22.5	21.7	22.0	22.6	23.0	
10	26	21.1	20.9	20.3	22.0	21.6	21.2	21.5	22.7	22.7	22.7	21.9	22.0	20.9	22.1	21.8	22.7	22.5	22.3	21.6	22.9	22.2	22.3	22.2	22.0	21.4	22.8	21.5	22.3	22.4	21.7	21.9	22.2	22.8	
10	27	21.1	20.7	20.1	21.9	21.4	20.8	20.9	22.4	22.4	22.3	21.9	21.5	20.9	21.7	21.8	22.7	22.5	22.0	21.4	22.3	22.0	22.2	21.9	22.0	21.3	22.8	21.4	22.2	22.4	21.7	21.9	22.0	22.7	
10	28	21.0	20.6	20.0	22.0	21.2	20.5	20.5	22.4	22.2	21.9	21.7	20.9	20.9	21.3	21.7	22.6	22.3	21.7	21.3	22.0	21.8	22.1	21.8	21.6	21.3	22.5	21.2	21.8	22.3	21.6	21.9	22.4	22.4	
10	29	20.9	20.6	19.8	21.9	21.1	20.5	20.3	22.5	22.2	21.6	21.6	20.4	20.7	21.2	21.7	22.5	22.2	21.5	21.3	21.8	21.7	21.9	21.9	21.4	21.0	22.3	20.9	21.6	22.2	21.6	21.8	21.8	22.2	
10	30	20.8	20.5	19.8	21.8	21.2	20.6	20.1	22.4	22.2	21.5	21.5	20.2	20.5	21.2	21.5	22.5	22.1	21.3	21.3	21.6	21.7	21.7	21.9	21.4	20.8	22.0	20.9	21.3	22.1	21.4	21.7	21.6	21.6	
10	31	20.7	20.2	19.4	21.6	21.1	20.6	19.6	22.4	21.9	21.3	20.0	20.5	21.1	21.2	22.4	22.0	21.1	21.4	21.5	21.7	21.4	21.7	21.3	20.7	21.8	20.9	21.1	22.1	21.2	21.6	21.7	21.4	21.9	
11	1	20.5	20.0	19.0	21.2	20.6	20.6	19.1	22.2	21.9	21.0	21.2	19.8	20.5	21.1	21.0	22.3	21.9	21.0	21.3	21.3	21.7	21.1	21.5	21.1	20.4	21.7	20.8	20.9	22.0	21.0	21.7	21.3	21.8	
11	2	20.3	19.7	18.8	21.0	20.0	20.7	18.9	22.2	21.0	21.1	19.6	20.6	21.0	20.8	22.2	21.6	20.9	21.0	21.0	21.6	20.6	21.3	21.2	20.2	21.4	20.7	20.6	22.0	21.0	21.6	21.3	21.8	21.8	
11	3	20.3	19.5	18.8	20.9	19.7	20.7	18.8	22.0	21.0	21.0	19.0	20.7	20.9	20.7	22.0	21.3	20.8	20.4	20.5	21.5	20.4	21.3	20.9	20.1	21.1	20.6	20.5	21.8	20.8	21.5	21.4	21.9	21.9	
11	4	20.1	19.6	18.9	20.6	19.4	20.6	18.8	21.9	21.0	20.7	18.4	20.6	20.7	20.8	21.9	21.2	20.6	20.1	20.3	21.6	20.2	21.2	20.7	20.0	20.8	20.5	20.5	21.6	20.4	21.3	21.3	21.9	21.9	
11	5	19.8	19.5	18.9	20.3	19.2	20.4	18.8	21.7	20.7	21.0	20.3	17.7	20.4	20.6	20.8	21.8	21.1	20.6	19.9	20.2	21.6	20.9	21.0	20.5	20.0	20.7	20.1	20.4	21.3	20.1	21.1	21.1	22.0	
11	6	19.6	19.6	18.9	20.2	19.1	20.4	18.6	21.4	20.5	20.8	20.1	17.3	20.4	20.6	20.7	21.7	21.0	20.5	19.9	20.0	21.7	20.9	20.5	20.1	20.6	19.9	20.4	21.2	20.1	20.9	20.9	21.9		
11	7	19.5	19.5	18.9	20.2	19.0	20.1	18.5	21.2	20.5	20.5	20.6	19.8	17.1	20.5	20.7	20.6	21.2	20.9	20.6	20.0	20.0	21.7	19.7	20.8	20.4	20.1	20.4	19.9	20.4	21.0	20.1	20.8	20.7	21.8
11	8	19.5	19.3	18.7	20.0	18.6	19.9	18.4	21.2	20																									