

## 1 SUPPLEMENTARY TABLES

ID	Name	Geographic Coordinates
1	Saqqarliup Sermia	68.88° N, 50.31° W
2	Alanngorliup Sermia	68.94° N, 50.22° W
3	Sermeq Kujalleq (Jakobshavn Isbræ)	69.14° N, 49.58° W
4	Sermeq Avannarleq	69.37° N, 50.30° W
5	Eqip Sermia	69.79° N, 50.24° W
6	Kangilernata Sermia	69.91° N, 50.34° W
7	Sermeq Kujalleq (Alianaatsup Sermia)	69.99° N, 50.16° W
8	Sermeq Avannarleq	70.07° N, 50.31° W
9	Sermeq Kujalleq (Store Gletsjer)	70.40° N, 50.54° W
10	Sermeq Avannarleq (Lille Gletsjer)	70.53° N, 50.50° W
11	Sermilik	70.63° N, 50.62° W
12	Kangilleq	70.72° N, 50.63° W
13	Sermeq Silarleq	70.81° N, 50.79° W
14	Perlerfiup Sermia	70.99° N, 50.91° W
15	Kangerluarsuup Sermia	71.25° N, 51.48° W
16	Kangerlussuup Sermia	71.46° N, 51.38° W
17	Kangilliup Sermia (Rink Isbræ)	71.75° N, 51.61° W
18	Umiammakk Sermiat	71.74° N, 52.39° W
19	Salliarutsip Sermia (Inngia Isbræ)	72.03° N, 52.59° W
20		72.78° N, 54.22° W
21	Sermeq (Upernavik Isstrøm)	72.85° N, 54.31° W
22		72.94° N, 54.33° W
23		73.03° N, 54.30° W
24		73.00° N, 54.64° W
25	Naajarsuit Sermiat	73.23° N, 55.13° W
26		73.38° N, 55.03° W
27	(Kakivfaits Sermia A)	73.46° N, 55.29° W
28	(Kakivfaits Sermia B)	73.49° N, 55.43° W

29	Qeqertarsuup Sermia	73.59° N, 55.54° W
30	Sermeq Kujalleq (Ussingbraer A)	73.83° N, 55.59° W
31	Sermeq Avanarleq (Ussingbraer B)	73.94° N, 55.68° W
32	Ikissuup Sermersua (Cornell Gletsjer)	74.24° N, 56.05° W
33		74.30° N, 56.09° W
34	Illullip Sermia	74.40° N, 56.04° W
35	Nunatakassaap Sermia (Alison Glacier)	74.61° N, 56.06° W
36		74.70° N, 56.32° W
37		74.79° N, 56.53° W
38		74.87° N, 56.76° W
39		74.91° N, 56.91° W
40	Tuttilikassaap Sermia (Hayes Gletsjer)	74.94° N, 57.08° W
41		75.04° N, 57.53° W
42	Kjer Gletsjer	75.14° N, 57.78° W
43		75.20° N, 57.78° W
44	Sermersuaq (Steenstrup Gletsjer)	75.29° N, 57.91° W
45	Dietrichson Gletsjer	75.46° N, 58.03° W
46	Sverdrup Gletsjer	75.59° N, 58.12° W
47	Nansen Gletsjer	75.74° N, 58.89° W
48	Nordenskiöld Gletsjer	75.83° N, 59.04° W
49		75.89° N, 59.16° W
50		75.97° N, 59.49° W
51	Nuussuup Sermia (Kong Oscar Gletsjer)	76.01° N, 59.73° W
52		76.06° N, 59.96° W
53		76.08° N, 60.13° W
54	Issuuusarsuit Sermiat (Peary Gletscher)	76.05° N, 60.63° W
55		76.21° N, 60.66° W
56	Rink Gletsjer	76.23° N, 60.92° W
57		76.25° N, 61.38° W
58	Qeqertat Timaanni Sermeq (Döcker Smith Gletsjer)	76.25° N, 61.78° W
59	Döcker Smith Gletsjer C	76.28° N, 61.91° W

60	Döcker Smith Gletsjer B	76.32° N, 61.97° W
61	Morell Gletsjer	76.30° N, 62.52° W
62	Innaqqissorsuup Oqquani Sermeq (Gade Gletsjer)	76.36° N, 62.84° W
63		76.43° N, 63.39° W
64		76.40° N, 63.55° W
65	Yngvar Nielsen Gletsjer	76.35° N, 64.08° W
66		76.37° N, 64.24° W
67		76.29° N, 64.61° W
68	Helland Gletsjer	76.19° N, 64.83° W
69	Savissuup Sermia	76.20° N, 65.24° W
70		76.34° N, 65.68° W
71		76.32° N, 66.84° W
72		76.26° N, 67.28° W
73		76.19° N, 67.48° W
74	Paakitsup Sermersua (Pituffik Gletsjer)	76.23° N, 68.79° W
75	Ullip Sermia (Harald Moltke Bræ)	76.59° N, 67.74° W
79	Leidy Gletsjer	77.26° N, 66.08° W
80	Qaquaarsuup Sermia (Heilprin Gletsjer)	77.54° N, 66.00° W
81	Qeqertaarsuusarsuup Sermia (Tracy Gletsjer)	77.65° N, 66.05° W
82	Tuttulipaluup Sermia (Farquhar Gletsjer)	77.70° N, 66.25° W
83	Paarnarsuit Sermiat (Hart Gletsjer)	77.69° N, 67.14° W
84	Quinisut Sermiat (Hubbard Gletsjer)	77.54° N, 67.81° W
85	Kangerluarsuup Sermia (Bowdoin Gletsjer)	77.68° N, 68.60° W
86	Qinnguata Sermia (Verhoeff Gletsjer)	77.86° N, 69.89° W
87	Neqip Sermia (Morris Jesup Gletsjer)	77.89° N, 71.13° W
88	Arfalluarfiup Sermia (Diebitsch Gletsjer)	77.94° N, 71.60° W
89	Arfalluarfiup Sermia (Clements Markham Gletsjer)	77.93° N, 71.95° W
90	Bamse Gletsjer	78.02° N, 72.17° W

2 **Table S1:** ID, name, and geographic coordinates for all glaciers in this study. Names provided are  
3 official names, with alternative or common name in parentheses, from Bjørk *et al.* (2015).  
4 Geographic coordinates are for a point feature on each glacier.

Ocean Point	Region	Coordinates
1	Disko Bay	69.25° N, 52.25° W
2	Uummannaq Fjord	70.85° N, 54.25° W
3	Upernivik Icefjord and north	73.25° N, 58.0 ° W
4	South Melville Bay/Wilcox Head	74.5° N, 60.0° W
5	Central Melville Bay	75.5° N, 61.75° W
6	North Melville Bay/Cape York	75.75° N, 65.0° W
7	Wolstenholme Bay/Thule	76.25° N, 71.0° W
8	Inglefield Fjord	77.0° N, 72.5° W

5   **Table S2:** Sample point numbers, region names, and geographic coordinates for locations from  
 6 which ocean data were sampled.

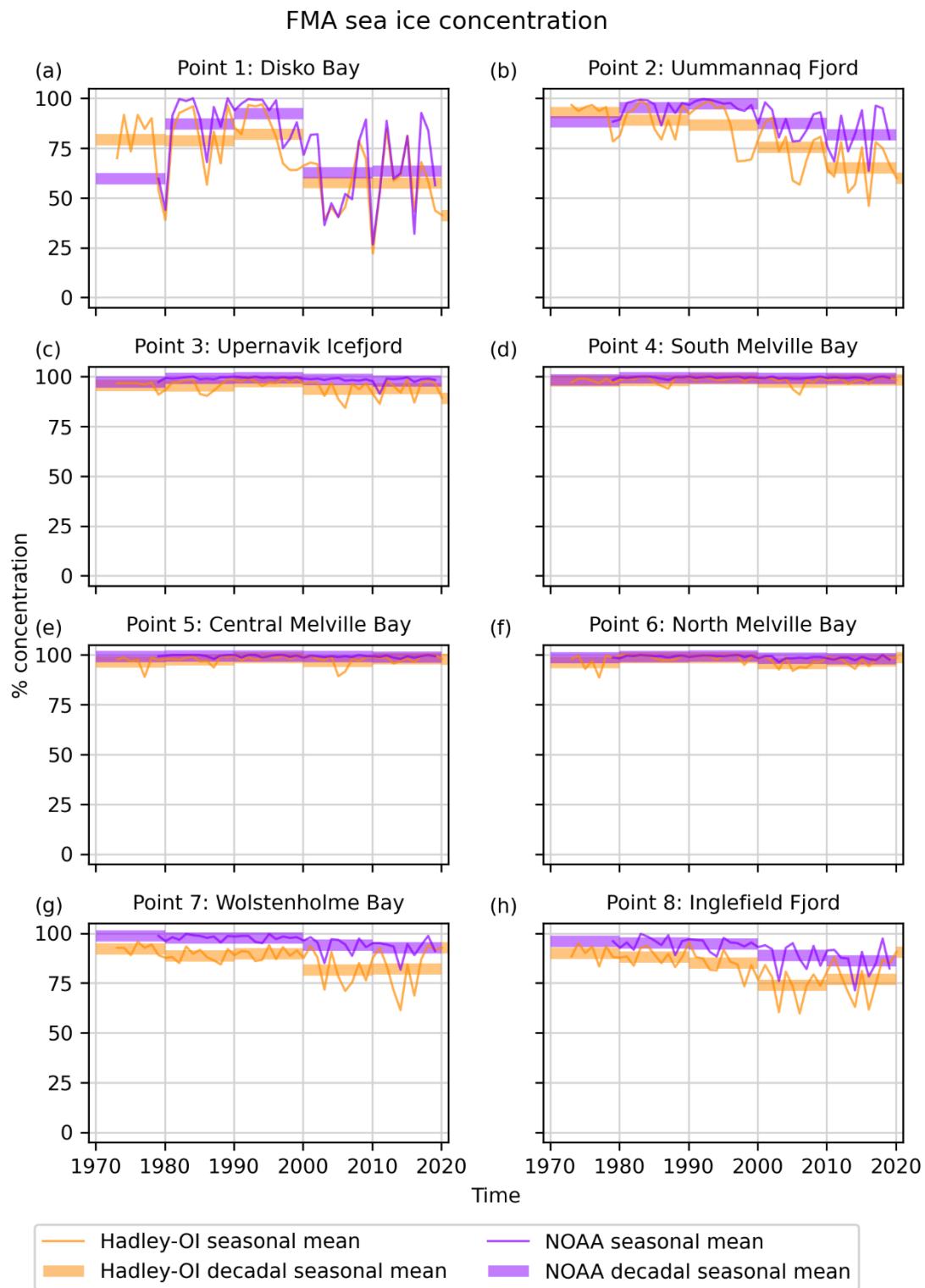
<b>ID</b>	<b>Number of Observations</b>	<b>Net ΔArea (km<sup>2</sup>)</b>	<b>Net ΔLength (km)</b>	<b>Breakpoint Year</b>
1	43	-5.11*	-1.24*	2002
2	43	-1.34*	-0.61*	2000
3	43	-125.68*	-16.26*	1993
4	42	-6.76*	-2.73*	1996
5	41	-5.46*	-1.55*	1996
6	41	-9.16*	-2.88*	1997
7	39	-3.36	-0.77	2006
8	38	-0.31	-0.07	1987
9	41	-0.12	-0.03	2002
10	40	-2.83*	-1.49*	1997
11	40	-0.81	-0.36	2004
12	40	0.06	0.04	2003
13	39	-16.77*	-5.27*	2001
14	39	-6.90*	-2.86*	2006
15	40	-3.01*	-1.41*	1997
16	40	0.46	0.13	1993
17	41	-1.92	-0.47	1984
18	42	-12.11*	-5.05*	1996
19	42	-26.52*	-8.49*	2003
20	41	-10.82*	-6.67*	1985
21	41	-2.08	-0.68	2013
22	42	-15.61*	-4.93*	2007
23	42	-40.62*	-8.42*	1997
24	43	-5.69*	-3.55*	2015
25	45	0.00	0.00	2012
26	43	-0.25	-0.15	1991
27	43	-4.79*	-1.44*	2009
28	42	-17.19*	-5.67*	2007
29	41	-5.02*	-1.35*	1999
30	41	-1.73*	-0.51*	2009

31	41	-3.45*	-0.76*	1994
32	40	-6.54*	-1.54*	2016
33	40	-3.28*	-1.50*	2002
34	41	-4.76*	-1.10*	2001
35	40	-58.08*	14.31*	1996
36	40	-46.00*	-13.36*	2001
37	39	-21.03*	-5.42*	1984
38	39	-9.08*	-3.31*	1994
39	40	-5.66*	-2.00*	2008
40	40	-10.76*	-2.65*	1996
41	40	-8.19*	-1.20*	1997
42	43	-83.26*	-14.98*	2010
43	43	-23.55*	-7.51*	2013
44	43	-34.67*	-7.27*	1995
45	42	-7.11*	-2.78*	2006
46	41	-39.48*	-7.93*	2000
47	42	-28.35*	-4.83*	2014
48	42	-8.71*	-2.67*	2010
49	42	-1.74*	-0.64*	1993
50	42	-3.09*	-1.94*	1988
51	42	-10.84	-3.09	1989
52	43	-11.47*	-3.93*	2006
53	44	-8.36*	-3.49*	2011
54	46	-13.51*	-3.65*	2019
55	45	-1.63	-0.85	1992
56	44	-11.23*	-3.87*	1995
57	45	-1.90*	-0.97*	2002
58	46	-10.93*	-3.47*	1996
59	46	-15.36*	-9.22*	2001
60	46	-19.59*	-6.38*	1993
61	46	-16.46*	-5.38*	2005

62	46	-9.27*	-1.84*	1982
63	45	-8.65*	-3.17*	2012
64	45	-4.03*	-1.96*	1997
65	40	-16.14*	-7.01*	2013
66	39	-0.21	-0.12	2017
67	38	-3.22*	-1.61*	1998
68	38	-4.36*	-1.43*	1996
69	39	-5.68*	-1.89*	1996
70	38	-23.86*	-5.69*	2001
71	39	-5.78*	-2.28*	1996
72	33	-7.71*	-3.27*	1998
73	34	-18.44*	-5.19*	1992
74	33	-11.10*	-2.45*	1996
75	39	-33.54*	-6.10*	1999
79	44	-2.06*	-0.74*	1999
80	44	-6.12*	-1.78*	1996
81	44	-51.06*	-12.17*	1982
82	38	-7.28*	-3.83*	1998
83	45	-1.45*	-0.87*	2006
84	45	-2.10*	-1.01*	1994
85	43	-2.70*	-1.24*	2002
86	42	-0.83	-0.29	1997
87	42	-1.25	-0.42	1998
88	42	-5.11*	-1.72*	1997
89	38	-1.03*	-0.85*	1996
90	42	-1.27*	-0.80*	1997

7 **Table S3:** Total number of observations, net area and equivalent length change since first  
8 observation, and breakpoint year for area and equivalent length. Significant area and length  
9 changes are indicated by an asterisk (\*) after the value.

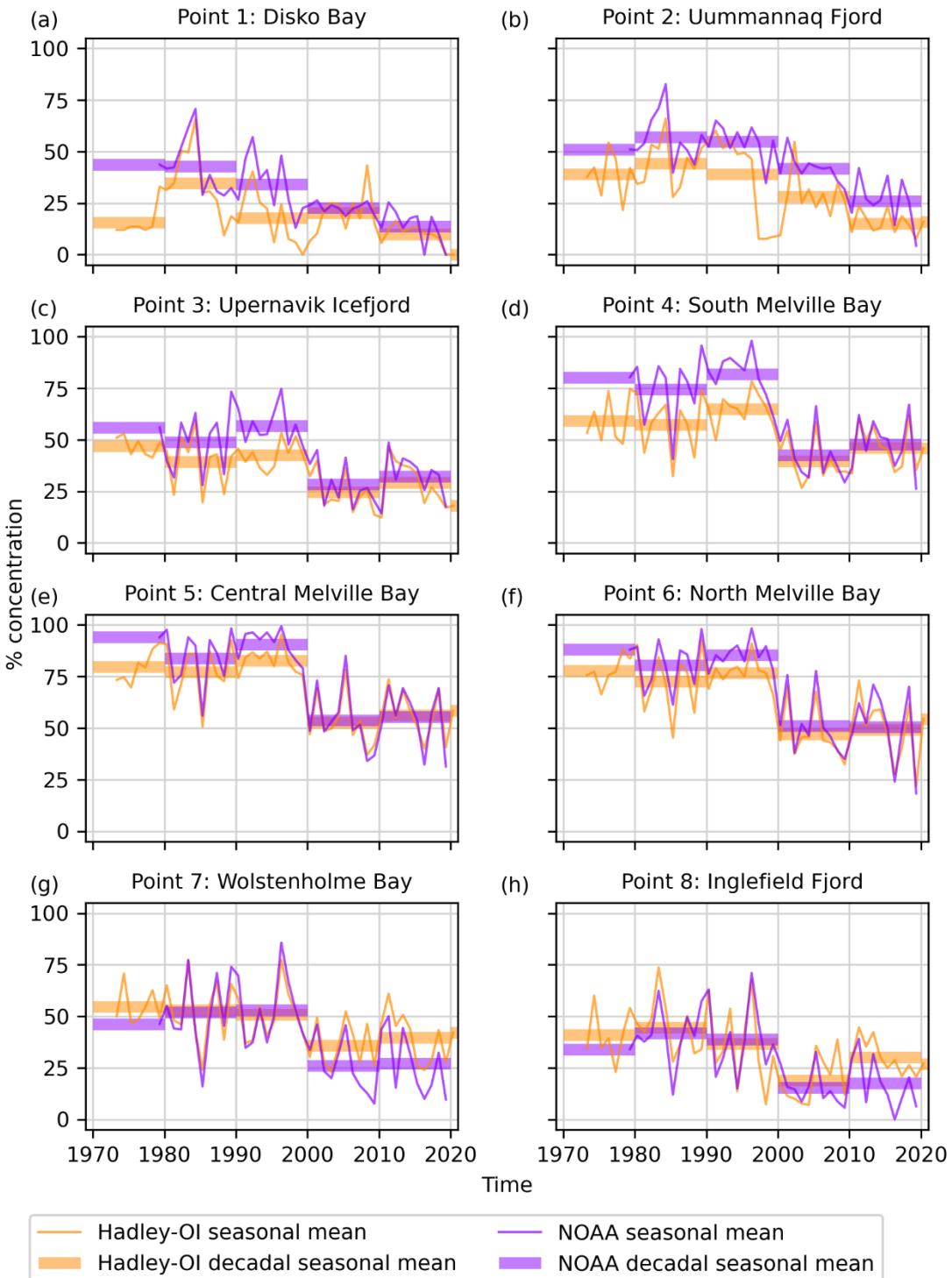
11 **SUPPLEMENTARY FIGURES**



12

13 **Figure S1:** Annual and decadal February-April mean sea-ice concentration from Hadley-OI  
14 (orange) and NOAA (green). Each panel corresponds with an ocean point in Figure 1.

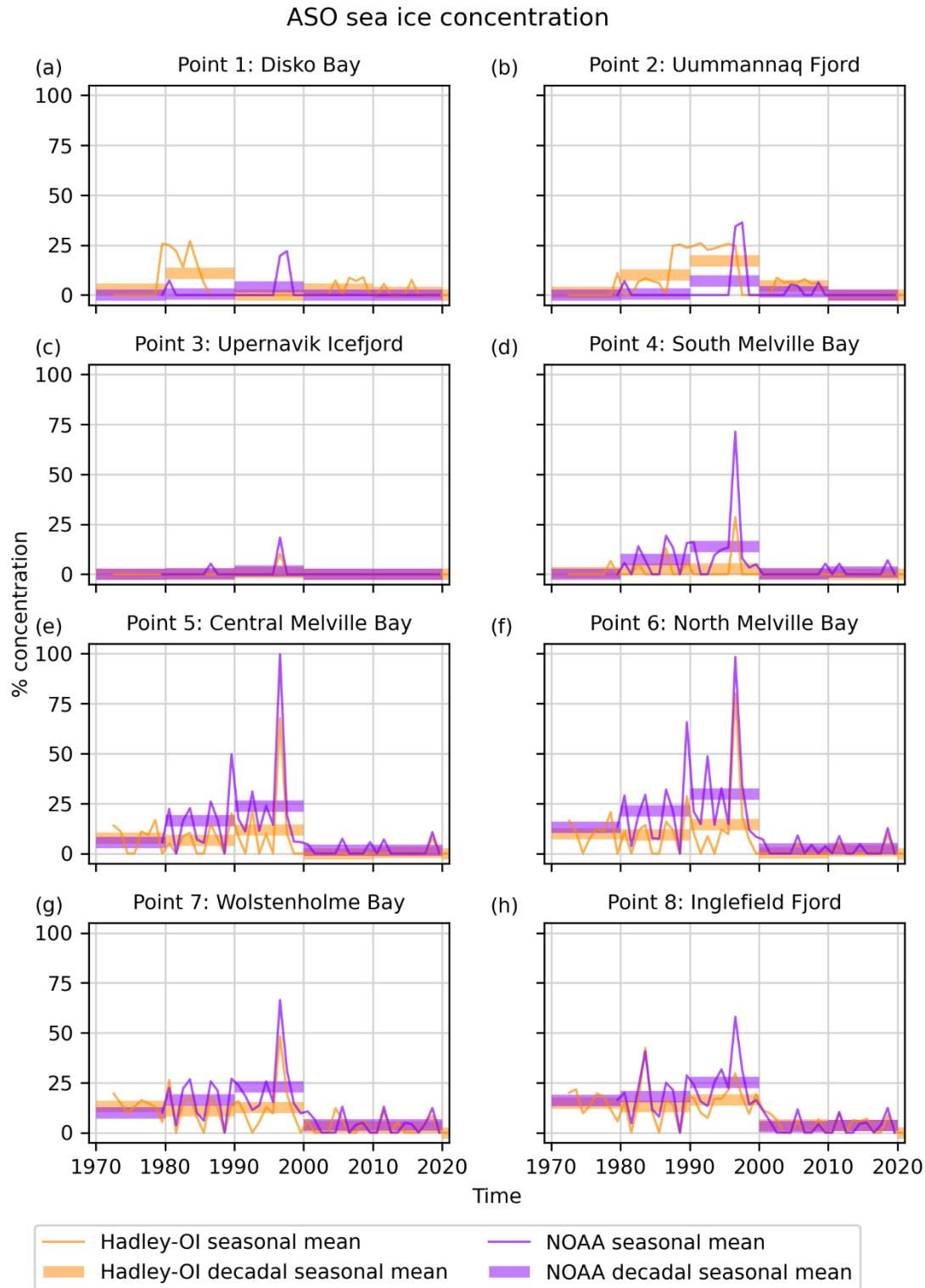
### MJJ sea ice concentration



15

16 **Figure S2:** Annual and decadal May-July mean sea-ice concentration from Hadley-OI (orange)  
 17 and NOAA (green). Each panel corresponds with an ocean point in Figure 1.

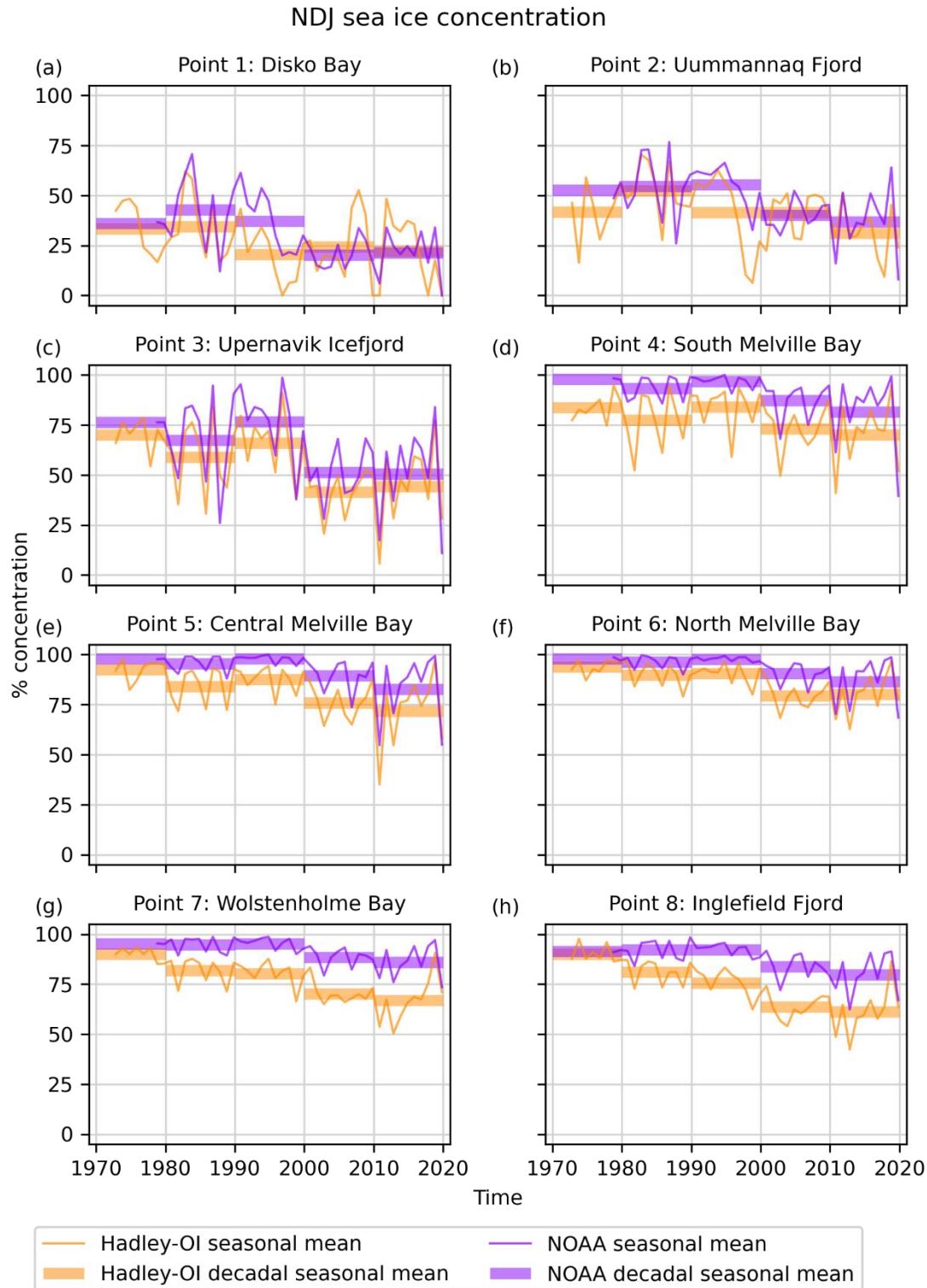
18



19

20 **Figure S3:** Annual and decadal August–October mean sea-ice concentration from Hadley-OI  
 21 (orange) and NOAA (green). Each panel corresponds with an ocean point in Figure 1.

22



23

24

**Figure S4:** Annual and decadal November-January mean sea-ice concentration from Hadley-OI

25 (orange) and NOAA (green). Each panel corresponds with an ocean point in Figure 1.