

1 **Supplementary Materials**

2 **Surface pathway of radioactive plume of TEPCO Fukushima NPP1 released**
3 **^{134}Cs and ^{137}Cs**

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1 Figure S7. Zonal (upper) and meridional (lower) speed by satellite along 40 °N (38 °. – 42 °N)
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3 floats are marked from A to G for 15 May 2011, 15 August 2011, 15 November 2011 and 15
4 February 2012.
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1 Table S1. Argo floats position.

Float #	15 May 2011		15 Aug. 2011		15 Nov. 2011		15 Feb. 2012	
	Lon.	Lat.	Lon.	Lat.	Lon.	Lat.	Lon.	Lat.
2901047	143.673 °E	38.345 °N	152.975 °E	40.374 °N	168.971 °E	41.023 °N	Missing	Missing
2901048	143.69 °E	39.873 °N	145.608 °E	41.64 °N	143.843 °E	40.644 °N	154.666 °E	36.502 °N
2901050	150.497 °E	36.962 °N	150.55 °E	34.997 °N	163.196 °E	37.26 °N	165.444 °E	35.314 °N
2901046	141.692 °E	37.549 °N	156.058 °E	40.388 °N	154.28 °E	41.415 °N	152.712 °E	37.363 °N
2901040	150.639 °E	37.205 °N	158.144 °E	40.608 °N	161.365 °E	41.676 °N	174.04 °E	39.309 °N
2901044	150.904 °E	36.608 °N	163.695 °E	38.488 °N	178.045 °W	37.833 °N	168.336 °W	37.355 °N
2901039	143.815 °E	37.616 °N	147.992 °E	36.576 °N	150.802 °E	36.756 °N	165.579 °E	35.854 °N

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1 Table S2. Zonal speed derived by Argo floats movements.

Float #	15 May 2011 – 15 Aug. 2011 cm s ⁻¹	15 Aug. 2011 – 15 Nov. 2011 cm s ⁻¹	15 Nov., 2011 – 15 Feb., 2012 cm s ⁻¹
2901047	10.1	17.0	Missing
2901048	2.0	-1.9	11.9
2901050	0.1	14.3	2.5
2901046	15.6	-1.9	-1.7
2901040	8.2	3.4	13.5
2901044	14.2	20.1	10.8
2901039	4.7	3.2	16.7
Maximum	15.6	20.1	16.7
Minimum	0.1	-1.9	-1.7
Average	7.8	7.7	8.9

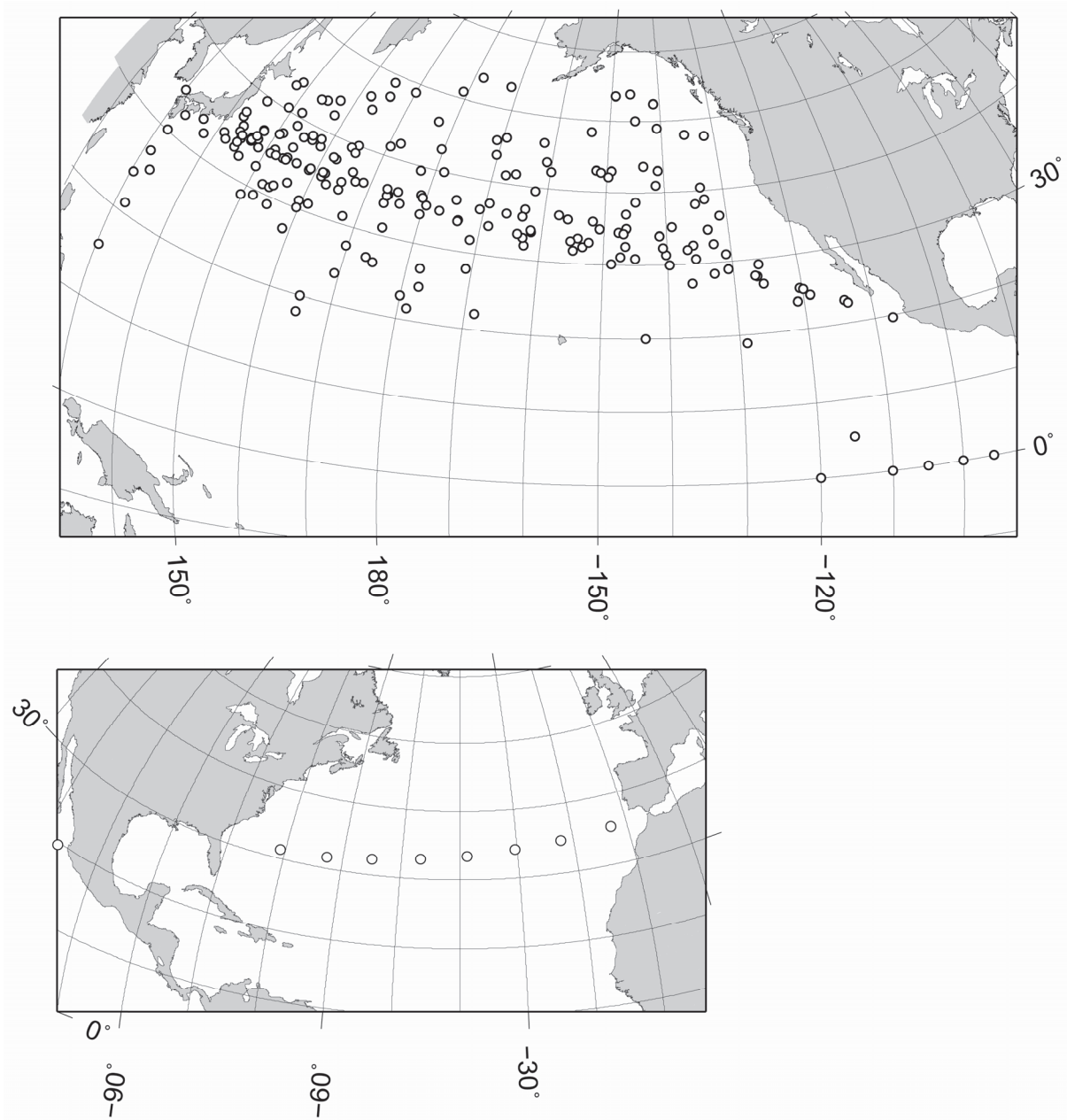
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1 Table S3-1 Zonal and Meridional speed of near-realtime global ocean surface currents derived
 2 from satellite altimeter and scatterometer data.

Year	Month	Zonal speed (u) cm s ⁻¹			Meridional speed (v) cm s ⁻¹		
		140°E – 160°E	160°E – 180°E	180°E – 160°W	140°E – 160°E	160°E – 180°E	180°E – 160°W
2011	Mar.	2.9	6.6	6.5	-1.2	-1.5	-2.1
2011	Apr.	3.4	5.6	5.4	0.0	-0.3	-0.9
2011	May	3.6	6.1	5.2	-0.2	-0.3	-1.1
2011	Jun.	3.9	6.5	5.4	0.1	0.1	-0.7
2011	Jul.	4.2	6.9	5.9	0.5	0.6	0.2
2011	Aug.	4.5	6.7	4.9	0.2	0.3	-0.6
2011	Sep.	3.3	6.3	4.1	0.5	0.4	-1.1
2011	Oct.	2.2	6.9	4.1	0.1	0.3	-0.5
2011	Nov.	2.3	7.4	4.2	-1.4	-0.4	-0.9
2011	Dec.	2.4	7.2	6.1	-2.7	-2.3	-2.8
2012	Jan.	1.5	7.2	5.2	-2.1	-1.9	-1.2
2012	Feb.	3.7	6.9	5.5	-1.9	-2.2	-1.7
2012	Mar.	3.1	7.0	4.1	-0.3	0.5	-0.9

3 Table S3-2 Speed and direction of near-realtime global ocean surface currents derived from
 4 satellite altimeter and scatterometer data.

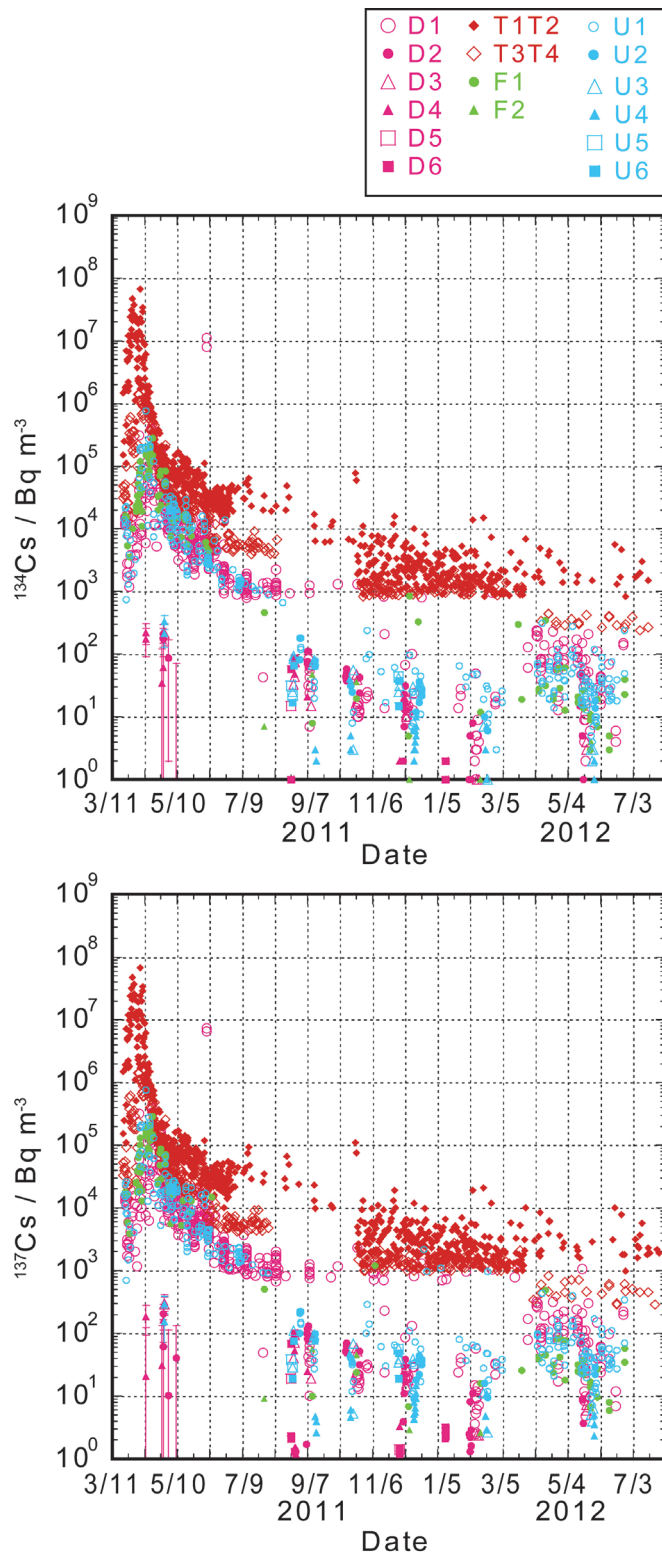
Year	Month	Speed cm s ⁻¹			Direction degree		
		140°E – 160°E	160°E – 180°E	180°E – 160°W	140°E – 160°E	160°E – 180°E	180°E – 160°W
2011	Mar.	3.2	6.8	6.8	112	102	108
2011	Apr.	3.4	5.6	5.5	90	93	99
2011	May	3.6	6.1	5.3	93	93	102
2011	Jun.	3.9	6.5	5.5	89	89	97
2011	Jul.	4.2	6.9	5.9	83	85	88
2011	Aug.	4.5	6.7	4.9	87	87	97
2011	Sep.	3.4	6.3	4.3	82	87	105
2011	Oct.	2.2	6.9	4.1	88	87	97
2011	Nov.	2.7	7.4	4.3	121	93	102
2011	Dec.	3.6	7.6	6.7	138	108	114
2012	Jan.	2.6	7.4	5.3	144	105	103
2012	Feb.	4.2	7.2	5.8	118	107	107
2012	Mar.	3.2	7.0	4.2	95	86	103



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2 Figure S1. Sampling locations in the Pacific Ocean (upper) and the Atlantic Ocean (lower).

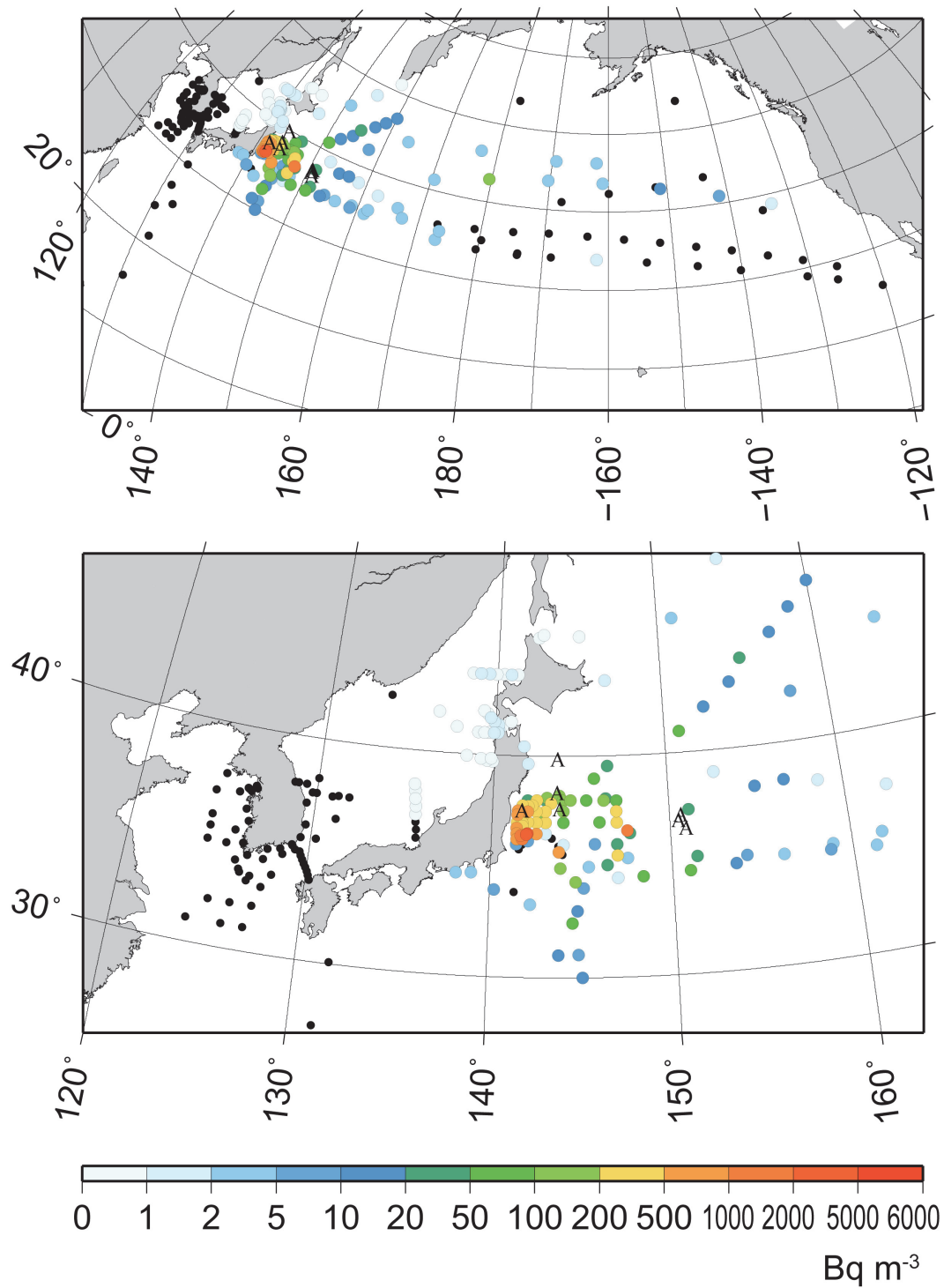
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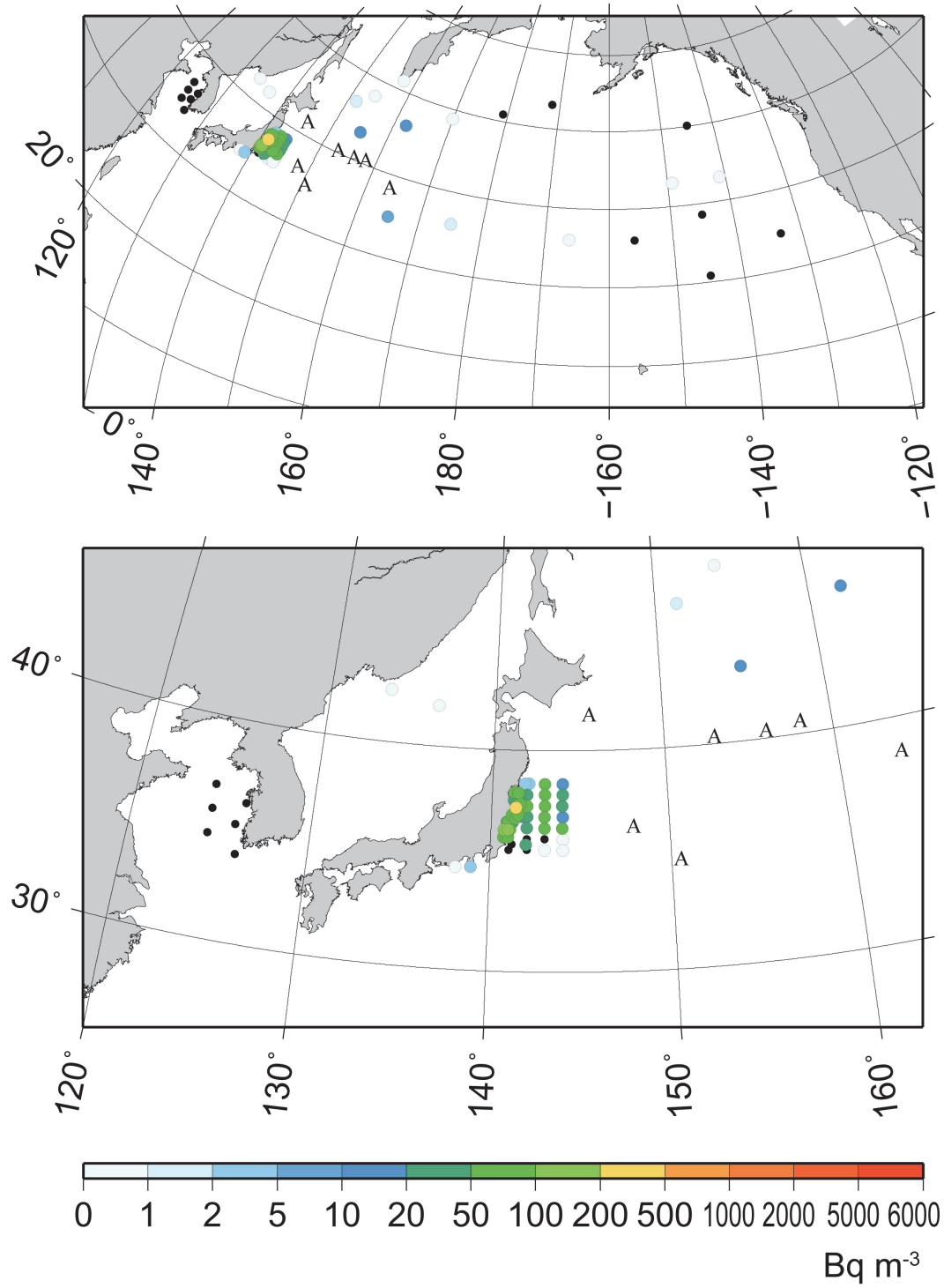
2 Figure S2. ^{134}Cs (upper) and ^{137}Cs (lower) activity in the surface water during the period from
 3 March 2011 to July 2012 of Fukushima.

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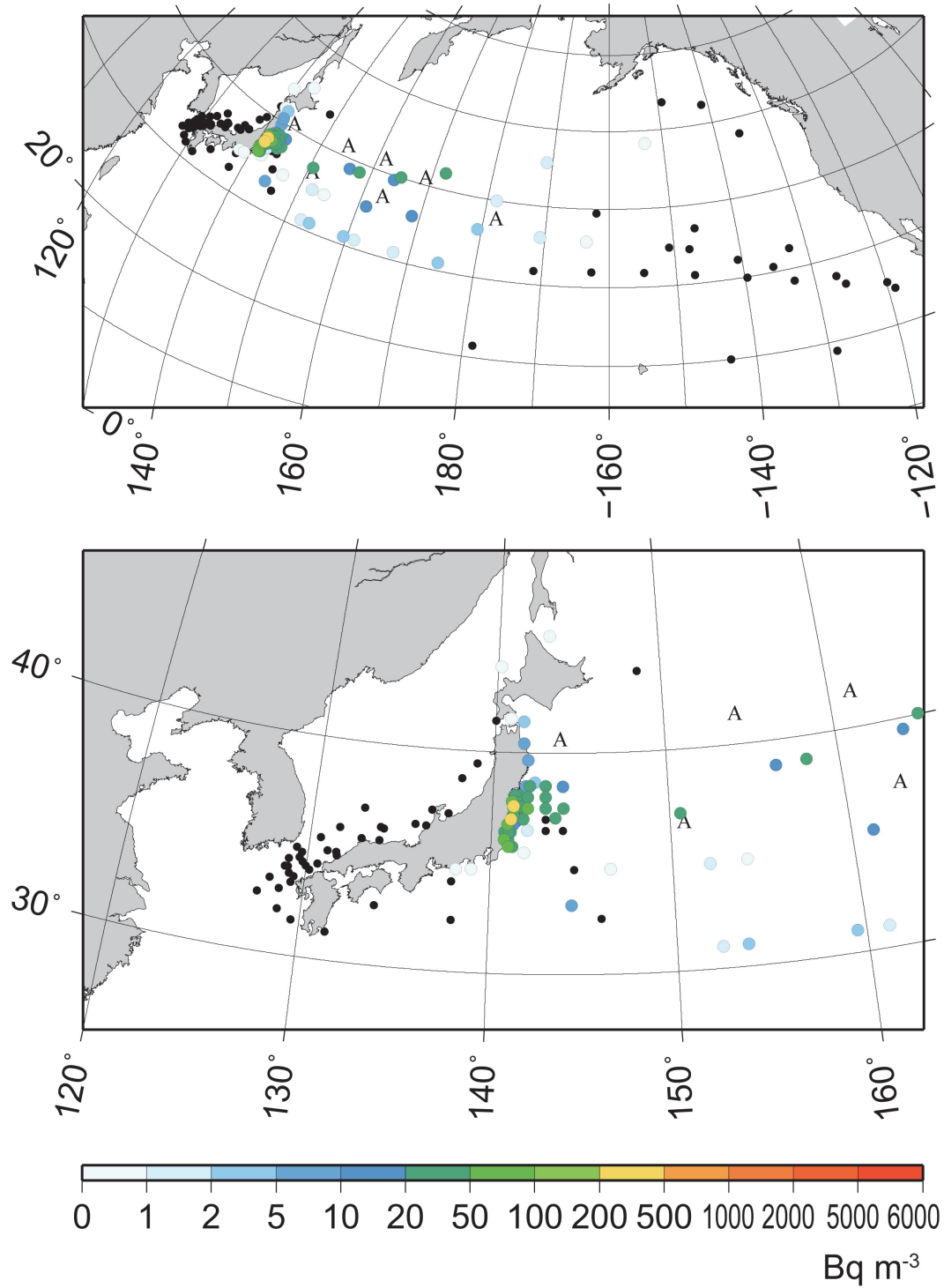
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Figure S3. ^{134}Cs activity in the surface water during the period from April 2011 to June 2011 for the North Pacific Ocean (upper) and close to Japan (lower). Positions of Argo floats on 15 May 2011 are marked "A".



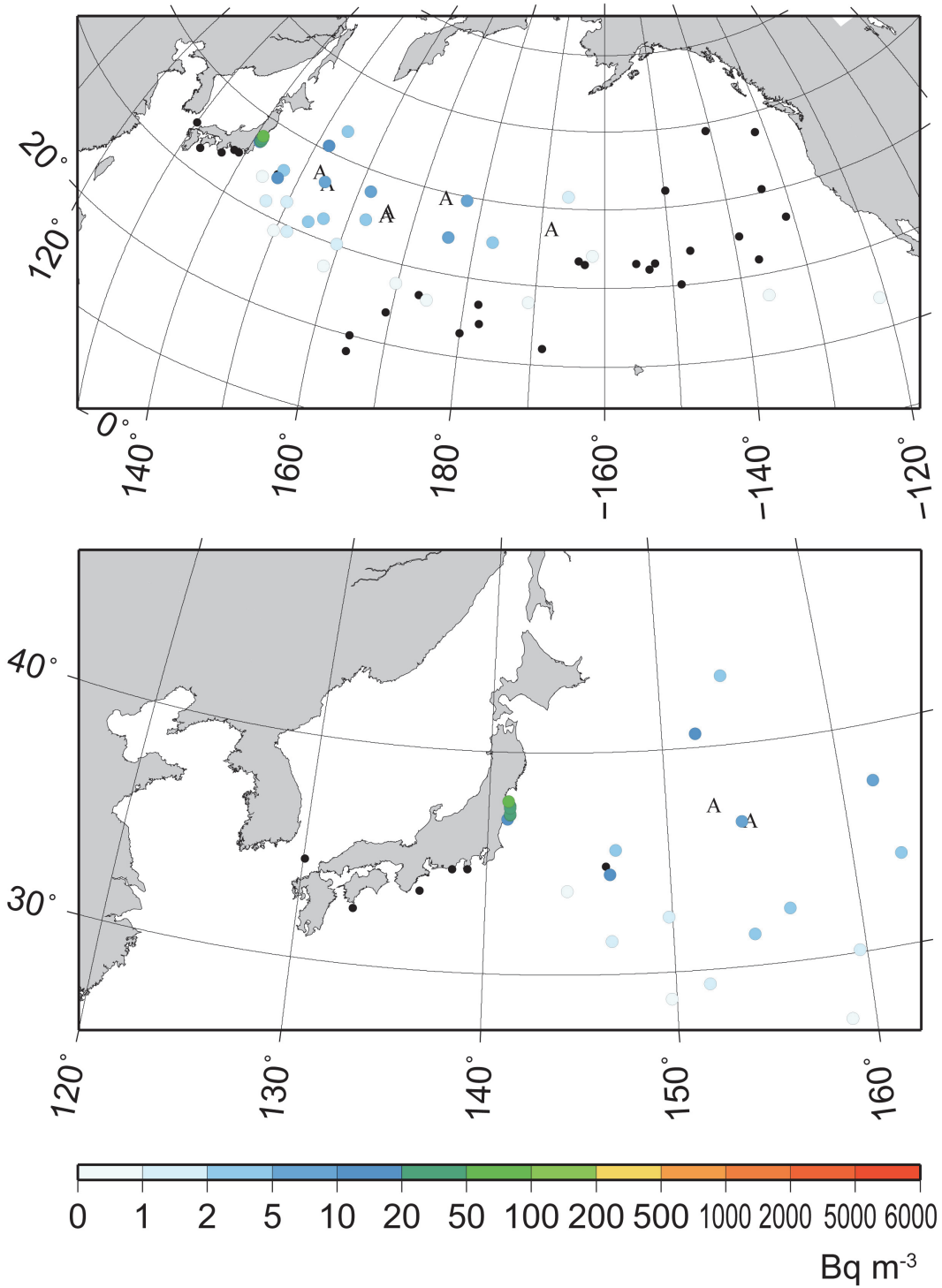
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Figure S4. ¹³⁴Cs activity in the surface water during the period from July 2011 to September 2011 for the North Pacific Ocean (upper) and close to Japan (lower). Positions of Argo floats on 15 August 2011 are marked “A”.



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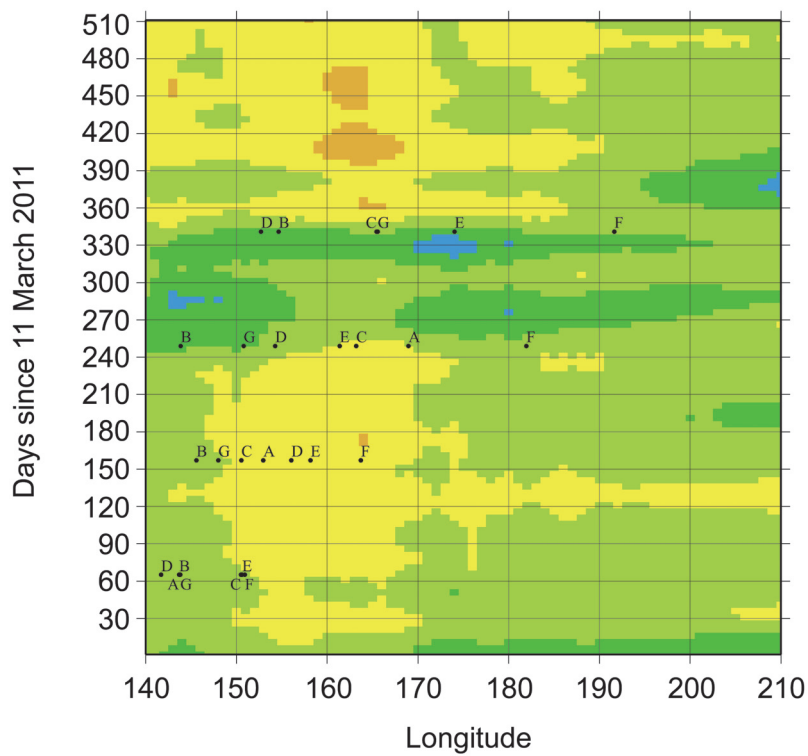
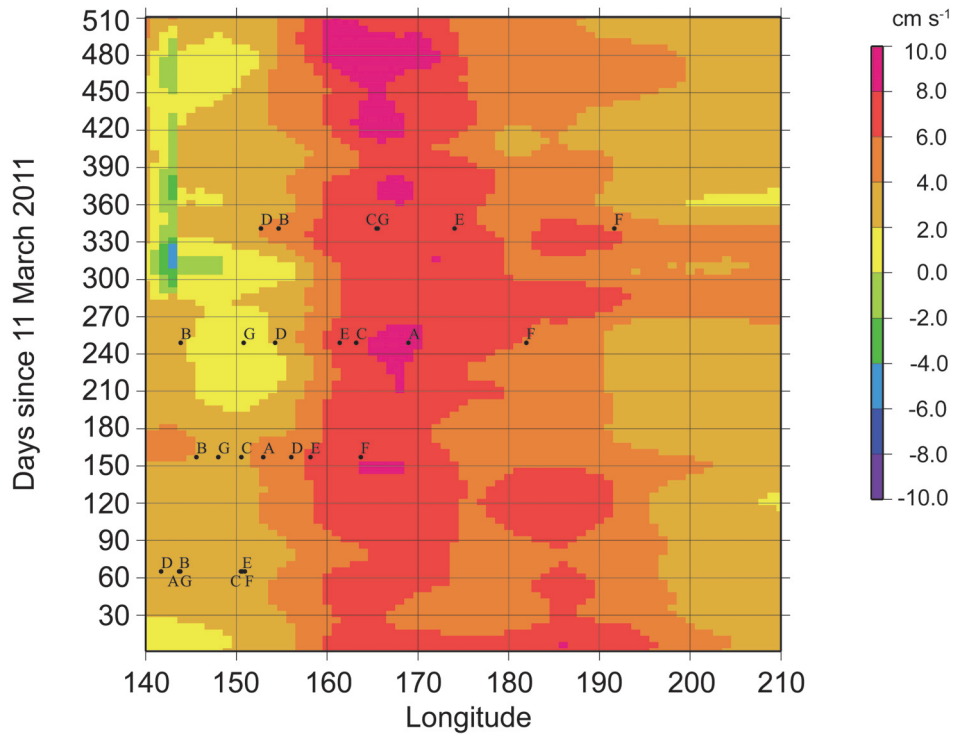
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