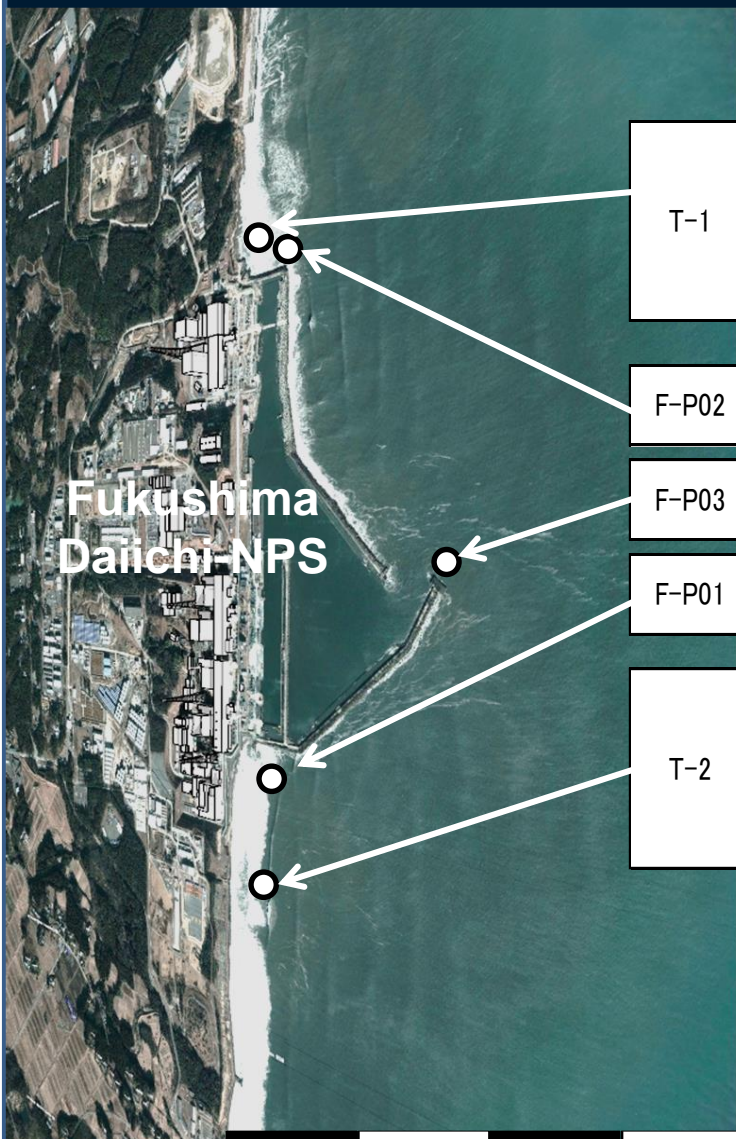


# Sea Area Monitoring

April 25, 2017

Nuclear Regulation Authority (NRA), Japan

# Sea area within 2km from the NPS (1)



Sampling point	Sampling Date	Cs-134	Cs-137	Gross $\beta$	H-3	Sr-90	Gross $\alpha$	Pu-238	Pu-239+Pu-240
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Sea water radioactivity (Bq/L):

ND: Not detected; Numbers in parentheses: detection limits

\*1: Gross  $\beta$  including K-40 \*2: Gross  $\beta$  excluding K-40

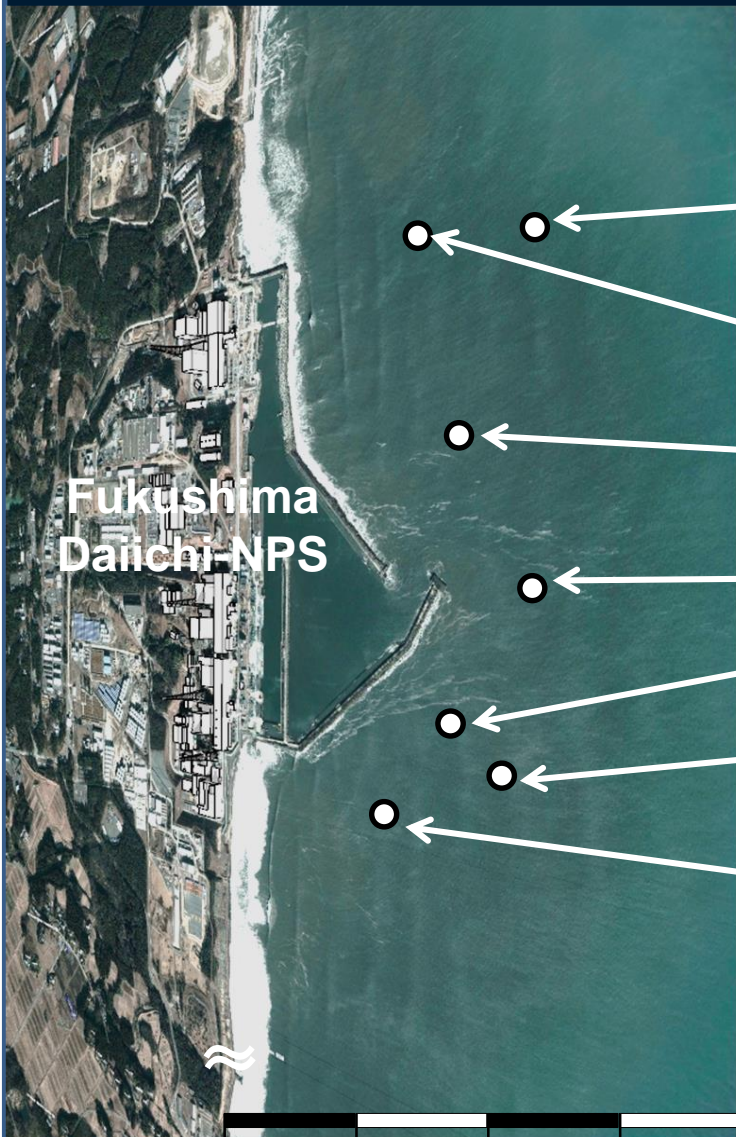
T-1	2017/3/20	ND(0.70)	ND(0.53)	9.5* <sup>1</sup>	ND(1.7)				
	2017/3/13	ND(0.73)	ND(0.68)	13* <sup>1</sup>	ND(1.8)				
	2017/3/6	ND(0.67)	ND(0.72)	15* <sup>1</sup>	ND(1.8)				
	2017/2/27	ND(0.67)	ND(0.55)	14* <sup>1</sup>	ND(1.6)				
	2016/10/3	ND(0.64)	ND(0.53)	13* <sup>1</sup>	ND(1.7)	ND(0.0073)	ND(1.5)	ND( $5.6 \times 10^{-6}$ )	( $5.9 \pm 1.8$ ) $\times 10^{-6}$
F-P02	2017/1/20	ND(0.055)	ND(0.048)	0.03* <sup>2</sup>	ND(0.33)	In progress		In progress	In progress
	2016/12/12	ND(0.058)	ND(0.050)	0.03* <sup>2</sup>	ND(0.35)	0.0024		ND( $8 \times 10^{-6}$ )	ND( $8.0 \times 10^{-6}$ )
F-P03	2017/1/20	ND(0.062)	ND(0.050)	0.03* <sup>2</sup>	ND(0.33)	In progress		In progress	In progress
	2016/12/12	ND(0.057)	0.11	0.03* <sup>2</sup>	ND(0.35)	0.0056		ND( $6.0 \times 10^{-6}$ )	ND( $8.0 \times 10^{-6}$ )
F-P01	2017/1/20	ND(0.055)	0.044	0.03* <sup>2</sup>	0.42	In progress		In progress	In progress
	2016/12/12	ND(0.049)	ND(0.047)	0.02* <sup>2</sup>	ND(0.35)	0.0018		ND( $8.0 \times 10^{-6}$ )	ND( $8.0 \times 10^{-6}$ )
T-2	2017/3/20	ND(0.74)	ND(0.58)	9.7* <sup>1</sup>	ND(1.5)				
	2017/3/13	ND(0.59)	ND(0.46)	12* <sup>1</sup>	ND(1.6)				
	2017/3/6	ND(0.63)	ND(0.71)	12* <sup>1</sup>	ND(1.5)				
	2017/2/27	ND(0.62)	ND(0.68)	11* <sup>1</sup>	ND(1.5)				
	2016/10/3	ND(0.77)	ND(0.58)	13* <sup>1</sup>	ND(1.8)	0.0092	ND(1.9)	ND( $6.0 \times 10^{-6}$ )	ND( $5.5 \times 10^{-6}$ )

0

0.5

1km

# Sea area within 2km from the NPS (2)



Fukushima  
Daiichi NPS

Sampling point	Sampling Date	Cs-134	Cs-137	Gross $\beta$ *	H-3	Sr-90
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Sea water radioactivity (Bq/L):

ND: Not detected; Numbers in parentheses: detection limits

\*: Gross  $\beta$  including K-40

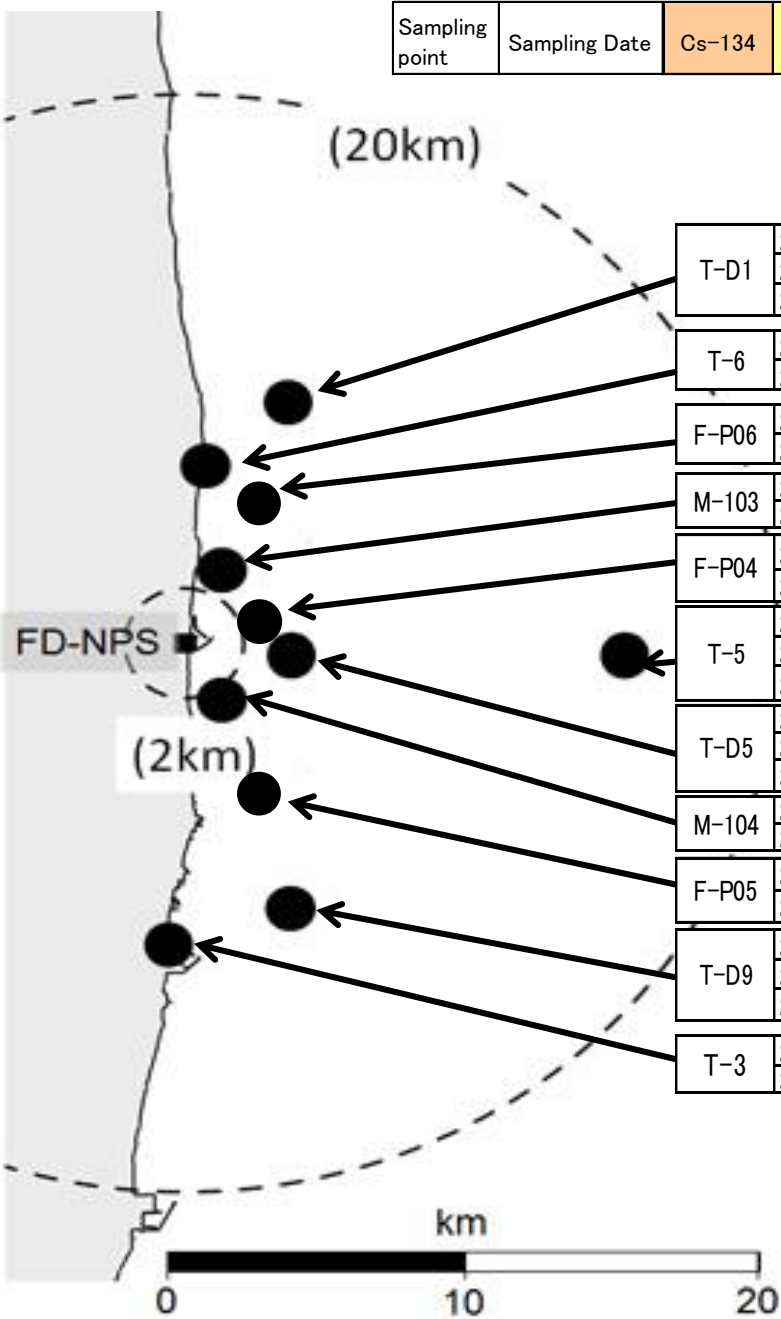
T-0-1A	2017/3/29	ND(0.77)	ND(0.50)	ND(17)	In progress	
	2017/3/20	ND(0.62)	ND(0.78)	ND(18)	ND(1.6)	
	2017/3/13	ND(0.62)	ND(0.59)	ND(17)	ND(1.8)	
	2017/3/6	ND(0.73)	ND(0.69)	ND(18)	ND(1.6)	
	2017/2/27	ND(0.60)	ND(0.58)	ND(17)	ND(1.6)	
T-0-1	2017/3/29	ND(0.68)	ND(0.58)	ND(17)	In progress	
	2017/3/20	ND(0.66)	ND(0.63)	ND(18)	ND(1.6)	
	2017/3/13	ND(0.74)	ND(0.58)	ND(17)	ND(1.8)	
	2017/3/6	ND(0.57)	ND(0.68)	ND(18)	ND(1.6)	
	2017/2/27	ND(0.59)	ND(0.63)	ND(17)	ND(1.6)	
M-101	2017/1/12	0.0036	0.024		0.065	0.0017
	2016/12/7	0.0030	0.019		0.11	0.0015
T-0-2	2017/3/29	ND(0.77)	ND(0.64)	ND(17)	In progress	
	2017/3/20	ND(0.73)	ND(0.51)	ND(18)	ND(1.6)	
	2017/3/13	ND(0.71)	ND(0.82)	ND(17)	ND(1.8)	
	2017/3/6	ND(0.72)	ND(0.65)	ND(18)	ND(1.6)	
M-102	2017/1/13	0.0049	0.024		0.073	0.0012
	2016/12/7	0.0029	0.019		0.15	0.0015
T-0-3A	2017/3/29	ND(0.67)	ND(0.67)	ND(17)	In progress	
	2017/3/20	ND(0.55)	ND(0.58)	ND(18)	ND(1.6)	
	2017/3/13	ND(0.81)	ND(0.62)	ND(17)	ND(1.8)	
	2017/3/6	ND(0.71)	ND(0.69)	ND(18)	ND(1.6)	
T-0-3	2017/3/29	ND(0.75)	ND(0.64)	ND(17)	In progress	
	2017/3/20	ND(0.68)	ND(0.53)	ND(18)	ND(1.6)	
	2017/3/13	ND(0.67)	ND(0.75)	ND(17)	ND(1.8)	
	2017/3/6	ND(0.81)	ND(0.67)	ND(18)	ND(1.6)	
	2017/2/27	ND(0.68)	ND(0.64)	ND(17)	ND(1.6)	

0 0.5 1km

# Sea area between 2-20km from the NPS (1)

Sampling point	Sampling Date	Cs-134	Cs-137	Gross $\beta$	H-3	Sr-90	Gross $\alpha$	Pu-238	Pu-239+240	S	S:2m below sea level
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Sea water radioactivity (Bq/L):  
 ND: Not detected; Numbers in parentheses: detection limits  
 \*1: Gross  $\beta$  including K-40 \*2: Gross  $\beta$  excluding K-40



T-D1	2017/2/20	0.0026	0.015	ND(18) <sup>*1</sup>	ND(0.31)					S
	2017/2/9	ND(0.0013)	0.0082	ND(16) <sup>*1</sup>	ND(0.32)	ND(0.0073)	ND(1.9)			S
	2016/10/3	0.0016	0.012	ND(16) <sup>*1</sup>	ND(0.36)	ND(0.0068)	ND(1.6)	ND(5.5 × 10 <sup>-6</sup> )	ND(5.2 × 10 <sup>-6</sup> )	S
T-6	2017/2/21	0.0053	0.045	ND(16) <sup>*1</sup>	ND(0.29)					S
	2017/2/8	0.0063	0.033	ND(17) <sup>*1</sup>	ND(0.29)					S
F-P06	2017/1/20	ND(0.065)	ND(0.049)	0.03 <sup>*2</sup>	ND(0.32)	In progress		In progress	In progress	S
	2016/12/12	ND(0.054)	ND(0.049)	0.03 <sup>*2</sup>	ND(0.34)	0.0009		ND(9 × 10 <sup>-6</sup> )	ND(8 × 10 <sup>-6</sup> )	S
M-103	2017/1/12	0.0049	0.034		0.059	0.0012				0.5m
	2016/12/7	0.0016	0.012		0.11	0.0013				0.5m
F-P04	2017/1/20	ND(0.058)	ND(0.048)	0.03 <sup>*2</sup>	ND(0.33)	In progress		In progress	In progress	S
	2016/12/12	ND(0.052)	ND(0.045)	0.04 <sup>*2</sup>	ND(0.35)	0.0027		ND(9 × 10 <sup>-6</sup> )	ND(1 × 10 <sup>-5</sup> )	S
T-5	2017/2/20	ND(0.0014)	0.0030	ND(18) <sup>*1</sup>	ND(0.31)					S
	2017/2/9	ND(0.0012)	0.0026	ND(16) <sup>*1</sup>	ND(0.32)	ND(0.0068)	ND(2.5)			S
	2016/10/4	ND(0.0014)	0.0058	ND(15) <sup>*1</sup>	ND(0.33)	ND(0.0078)	ND(1.6)	ND(5.3 × 10 <sup>-6</sup> )	ND(5.2 × 10 <sup>-6</sup> )	S
T-D5	2017/2/20	ND(0.0014)	0.0061	ND(18) <sup>*1</sup>	ND(0.31)					S
	2017/2/9	ND(0.0012)	0.0064	ND(16) <sup>*1</sup>	ND(0.32)	ND(0.0069)	ND(1.9)			S
	2016/10/3	ND(0.0013)	0.0091	ND(16) <sup>*1</sup>	ND(0.36)	0.0098	ND(1.6)	ND(8.2 × 10 <sup>-6</sup> )	ND(8.2 × 10 <sup>-6</sup> )	S
M-104	2017/1/13	0.0016	0.013		0.037	0.0012				0.5m
	2016/12/8	0.0014	0.010		0.12	0.00097				0.5m
F-P05	2017/1/20	ND(0.068)	ND(0.051)	0.03 <sup>*2</sup>	ND(0.32)	In progress		In progress	In progress	S
	2016/12/12	ND(0.069)	ND(0.050)	0.03 <sup>*2</sup>	ND(0.35)	0.0025		ND(8 × 10 <sup>-6</sup> )	ND(8 × 10 <sup>-6</sup> )	S
T-D9	2017/2/20	ND(0.0014)	0.0074	ND(18) <sup>*1</sup>	ND(0.31)					S
	2017/2/13	0.0014	0.0076	ND(16) <sup>*1</sup>	ND(0.31)	ND(0.0067)	ND(1.9)			S
	2016/10/4	0.0015	0.0085	ND(15) <sup>*1</sup>	ND(0.33)	ND(0.0080)	ND(1.6)	ND(7.3 × 10 <sup>-6</sup> )	ND(7.1 × 10 <sup>-6</sup> )	S
T-3	2017/2/21	0.0040	0.026	ND(16) <sup>*1</sup>	ND(0.31)					S
	2017/2/8	0.0067	0.045	ND(17) <sup>*1</sup>	ND(0.37)					S

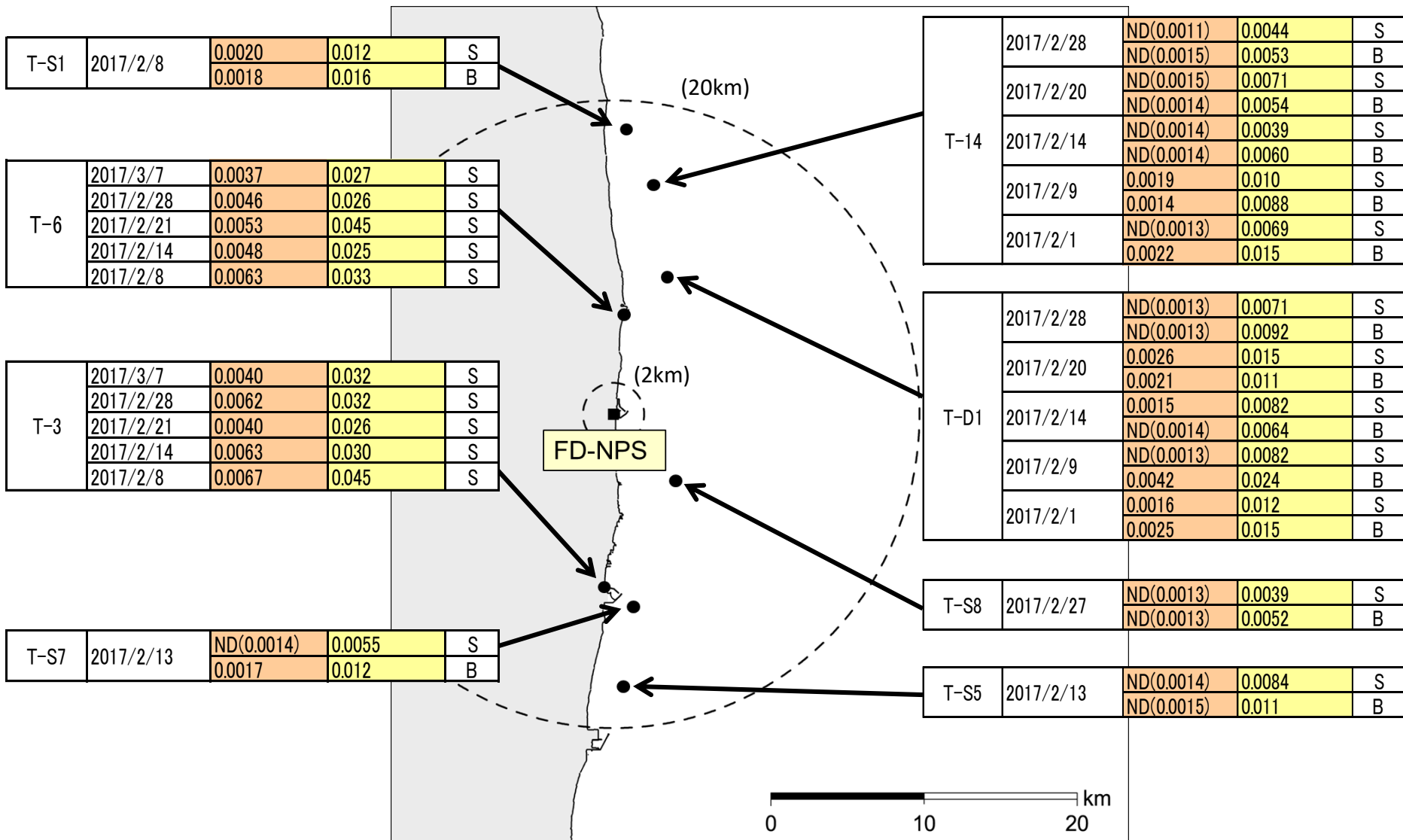
# Sea area between 2-20km from the NPS (2)

Sampling point	Sampling Date	Cs-134	Cs-137	S/B
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S: 2m below sea level  
B: 2-3m above sea bottom

Sea water radioactivity (Bq/L):

ND: Not detected; Numbers in parentheses: detection limits



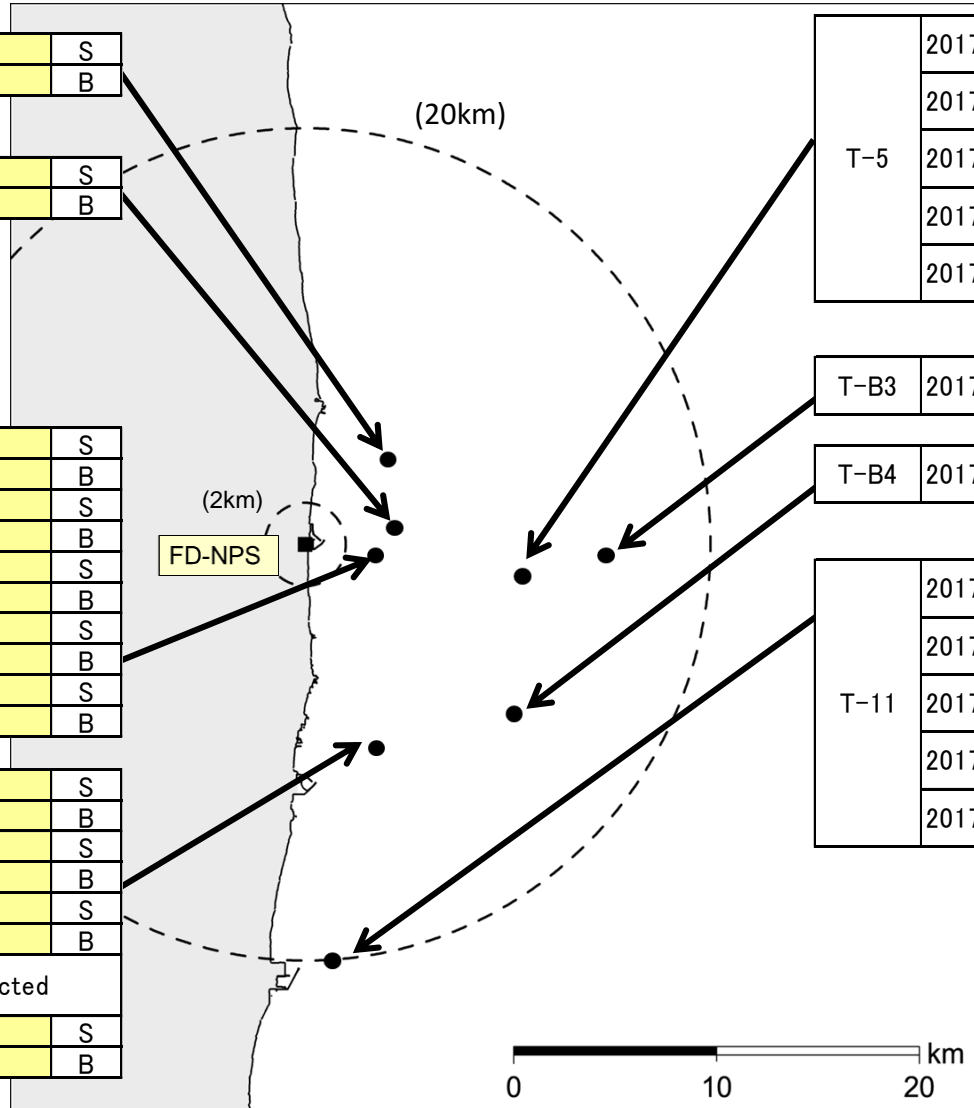
# Sea area between 2-20km from the NPS (3)

Sampling point	Sampling Date	Cs-134	Cs-137	S/B
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S: 2m below sea level  
 B: 2-3m above sea bottom

Sea water radioactivity (Bq/L):

ND: Not detected; Numbers in parentheses: detection limits



T-S3	2017/2/8	0.0017	0.018	S
		0.0017	0.011	B

T-S4	2017/2/8	ND(0.0014)	0.0062	S
		ND(0.0012)	0.0090	B

T-D5	2017/2/28	ND(0.0014)	0.0068	S
		ND(0.0013)	0.0089	B
	2017/2/20	ND(0.0014)	0.0061	S
		ND(0.0014)	0.0054	B
	2017/2/14	ND(0.0014)	0.0062	S
		ND(0.0014)	0.0051	B
	2017/2/9	ND(0.0012)	0.0064	S
		ND(0.0012)	0.0067	B
	2017/2/1	ND(0.0014)	0.0042	S
		ND(0.0014)	0.0039	B

T-D9	2017/2/28	0.0019	0.010	S
		0.0014	0.011	B
	2017/2/20	ND(0.0014)	0.0074	S
		ND(0.0014)	0.0074	B
	2017/2/13	0.0014	0.0076	S
		0.0019	0.015	B
	2017/2/11	No samples were collected		
	2017/2/1	ND(0.0013)	0.0042	S
		ND(0.0013)	0.0077	B

T-5	2017/2/28	ND(0.0014)	0.0041	S
		ND(0.0012)	0.0043	B
	2017/2/20	ND(0.0014)	0.0030	S
		ND(0.0013)	0.0052	B
	2017/2/13	ND(0.0013)	0.0028	S
		ND(0.0013)	0.0058	B
	2017/2/9	ND(0.0012)	0.0026	S
		ND(0.0010)	0.0039	B
	2017/2/1	ND(0.0012)	0.0026	S
		ND(0.0012)	0.0031	B

T-B3	2017/2/25	ND(0.0013)	0.0034	S
		ND(0.0014)	0.0047	B

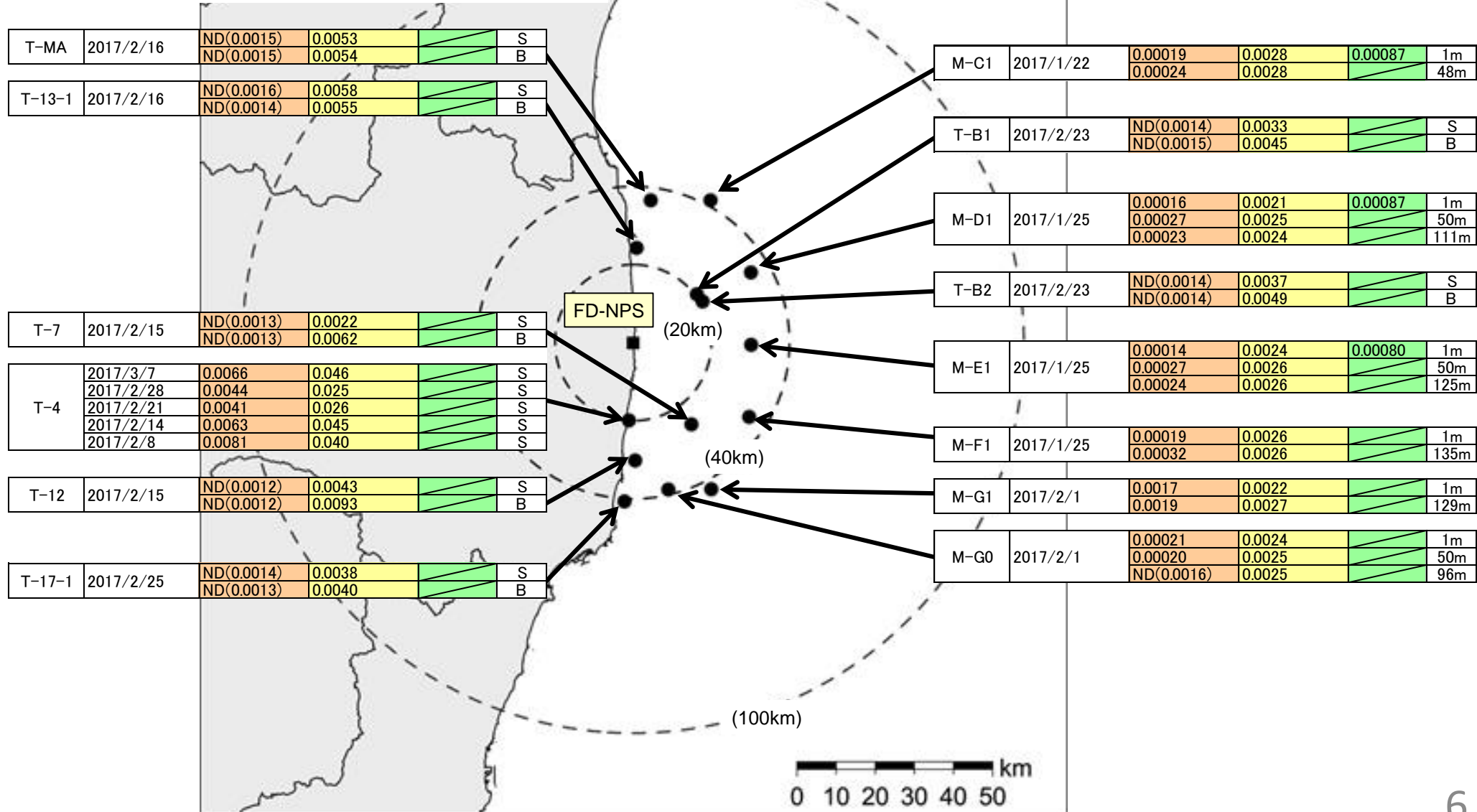
T-B4	2017/2/25	ND(0.0013)	0.0036	S
		ND(0.0013)	0.0044	B

T-11	2017/2/28	ND(0.0012)	0.0064	S
		ND(0.0013)	0.0067	B
	2017/2/20	ND(0.0012)	0.0089	S
		ND(0.0014)	0.0062	B
	2017/2/13	0.0014	0.015	S
		0.0018	0.014	B
	2017/2/11	No samples were collected		
	2017/2/1	0.0014	0.0083	S
ND(0.0011)		0.0050	B	

# Sea area between 20-100km from the NPS(1)

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	S/B	S:2m below sea level	B:2-3m above sea bottom
					Depth(m) from sea level		

Sea water radioactivity (Bq/L):  
 ND: Not detected; Numbers in parentheses: detection limits



# Sea area between 20-100km from the NPS(2)

Sampling point	Sampling Date	Cs-134	Cs-137	Grossβ *	H-3	Sr-90	S/I:S:2m below sea level B:2-3m above sea bottom Depth(m) from sea level
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Sea water radioactivity (Bq/L):

ND: Not detected; Numbers in parentheses: detection limits

\*Gross β excluding K-40

M-C3	2017/1/25	ND(0.00014)	0.0022	0.029	0.054	0.00080	1m
		0.00023	0.0027				50m
		0.00030	0.0032				122m

T-22	2017/2/16	ND(0.00014)	0.0071				S
		ND(0.00015)	0.0066				B

M-D3	2017/2/1	0.00014	0.0023	0.030	0.081	0.00096	1m
		0.00023	0.0023				100m
		ND(0.00012)	0.0017				211m

M-F3	2017/1/26	0.00016	0.0023	0.029	0.064	0.0012	1m
		0.00017	0.0023				100m
		0.00020	0.0019				218m

T-18	2017/2/25	ND(0.0013)	0.0034				S
		ND(0.0011)	0.0045				B

T-20	2017/2/25	ND(0.0014)	0.0028				S
		ND(0.0013)	0.0040				B

T-M10	2017/2/15	ND(0.0012)	0.0024				S
		ND(0.0013)	0.0042				B

M-E3	2017/1/26	ND(0.00016)	0.0023	0.030	0.065	0.00087	1m
		ND(0.00015)	0.0025				100m
		ND(0.00014)	0.0018				218m

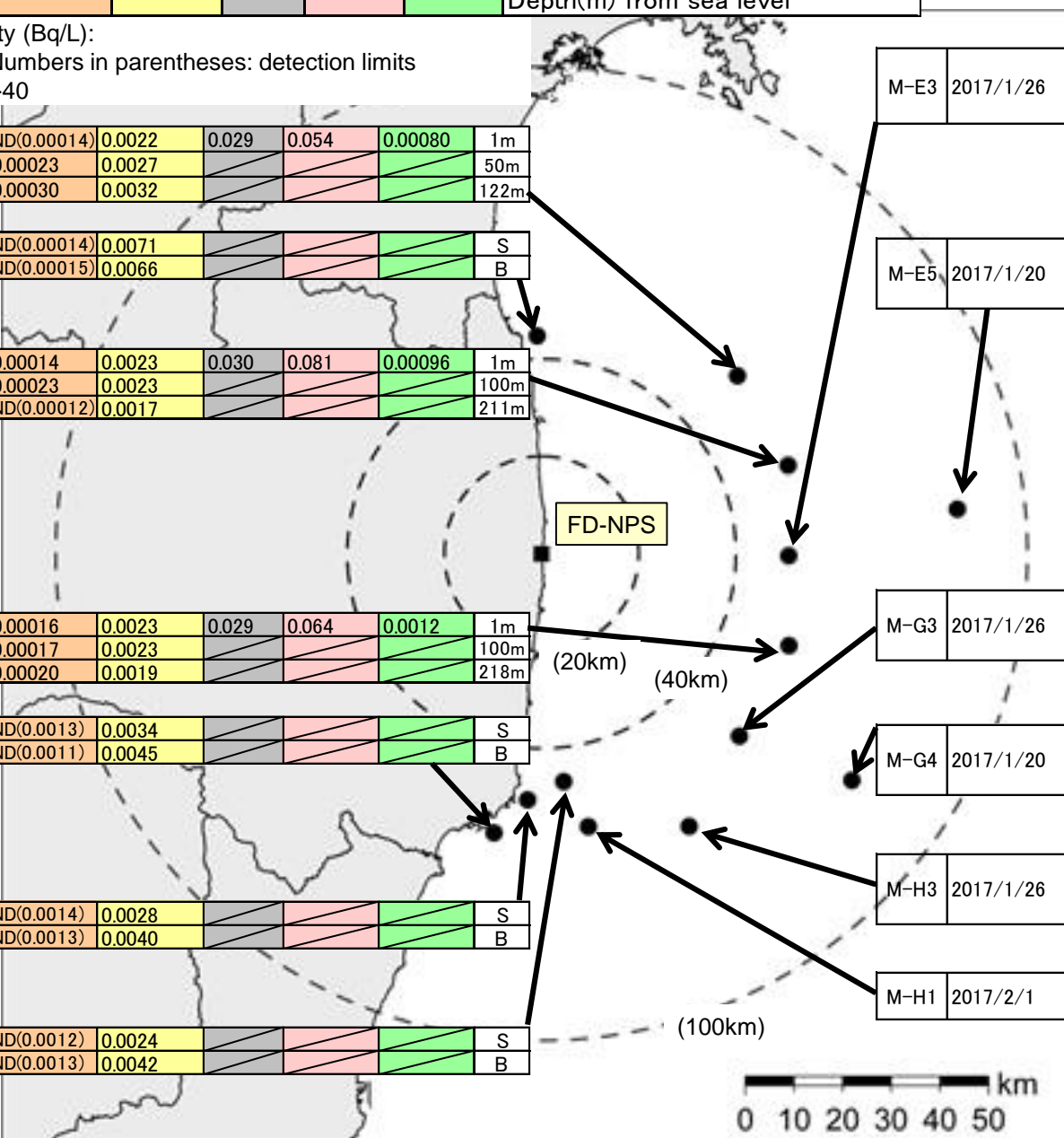
M-E5	2017/1/20	ND(0.00015)	0.0018	0.031	0.076	0.00087	1m
		ND(0.00014)	0.0018				100m
		ND(0.000080)	0.00077				523m

M-G3	2017/1/26	0.00022	0.0022	0.031	0.058	0.0012	1m
		ND(0.00015)	0.0022				100m
		0.00015	0.0023				195m

M-G4	2017/1/20	ND(0.00012)	0.0023	0.031	0.052	0.0011	1m
		0.00020	0.0022				100m
		ND(0.000075)	0.00060				655m

M-H3	2017/1/26	ND(0.00015)	0.0024	0.030	0.052	0.0010	1m
		0.00016	0.0024				100m
		0.00022	0.0021				227m

M-H1	2017/2/1	0.00015	0.0022				1m
		0.00022	0.0026				123m



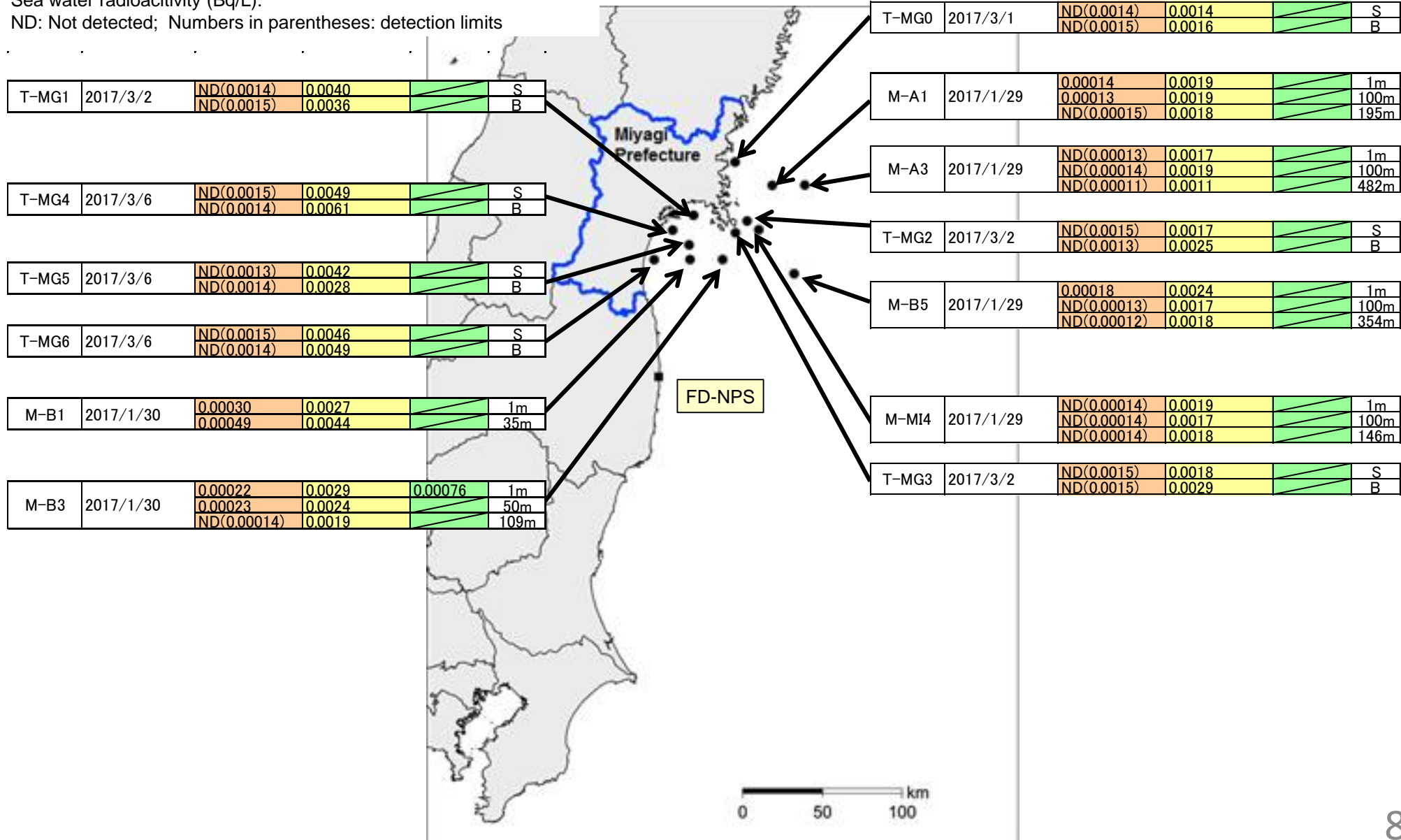


# Sea area along and off the coast of Miyagi Prefecture

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	S/B	S:2m below sea level	B:2-3m above sea bottom
					Depth(m) from sea level		

Sea water radioactivity (Bq/L):

ND: Not detected; Numbers in parentheses: detection limits

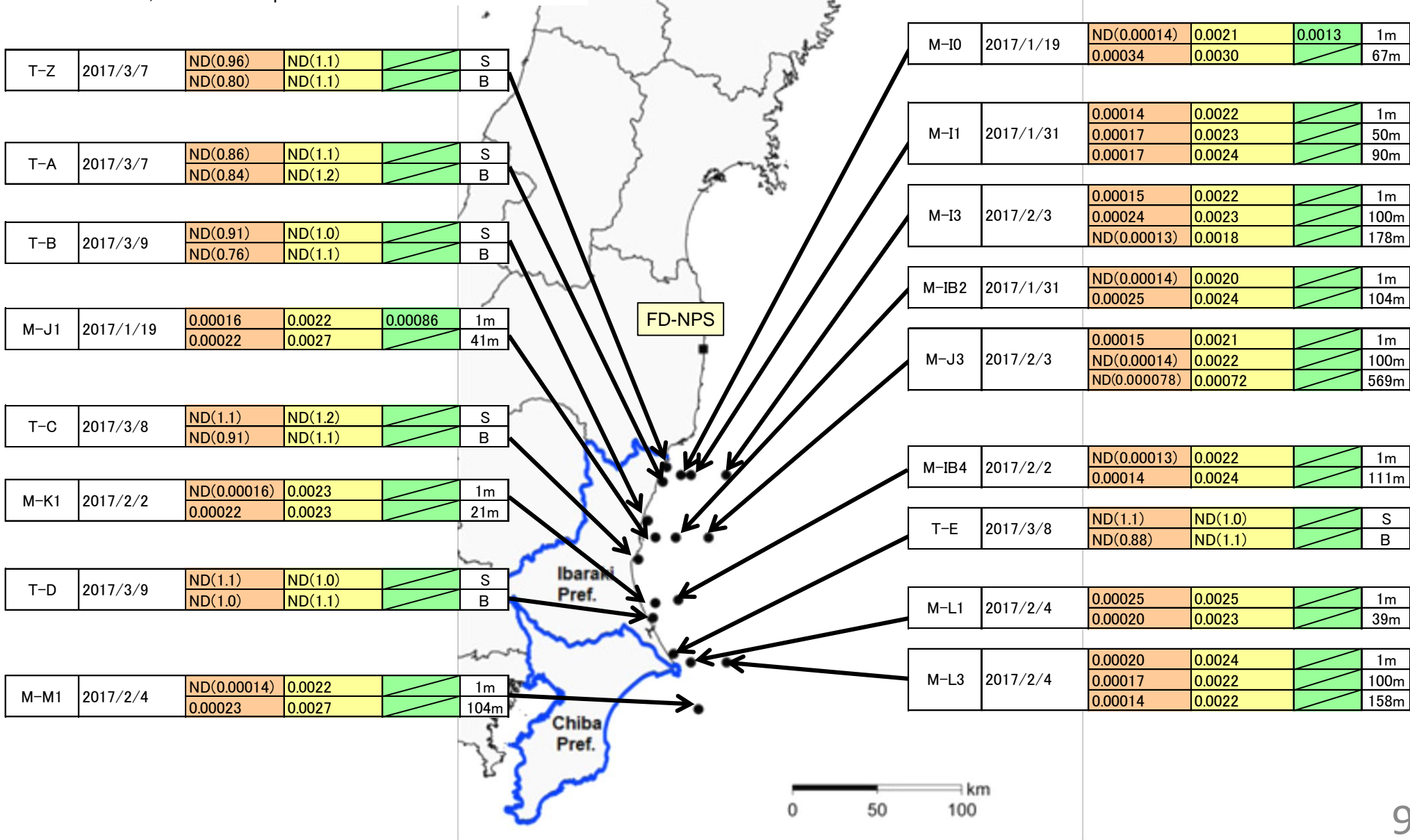


# Sea area along and off the coast of Ibaraki Pref. and Chiba Pref.

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	S/B	S:2m below sea level B:2-3m above sea bottom	
					Depth(m) from sea level		

Sea water radioactivity (Bq/L):

ND: Not detected; Numbers in parentheses: detection limits



# Open sea off the coast of Eastern Japan

Sampling point	Sampling Date	Cs-134	Cs-137	Depth(m) from sea level
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Sea water radioactivity (Bq/L):

ND: Not detected; Numbers in parentheses: detection limits

ND: under detection limits; numbers in parentheses: detection limits

M-10	2016/11/12	ND(0.00061)	0.0018	1m
		ND(0.00064)	0.0022	103m
		ND(0.00058)	0.0016	197m
		ND(0.00057)	0.0014	296m
		ND(0.00060)	0.00084	487m

M-14	2016/11/11	ND(0.00054)	0.0025	1m
		ND(0.00050)	0.0031	98m
		ND(0.00056)	0.0027	192m
		ND(0.00056)	0.0017	287m
		ND(0.00052)	0.00084	472m

M-19	2016/11/15	ND(0.00062)	0.0024	1m
		ND(0.00059)	0.0026	103m
		ND(0.00060)	0.0023	196m
		ND(0.00058)	0.0017	296m
		ND(0.00064)	0.00069	492m

M-20	2016/11/13	ND(0.00069)	0.0018	1m
		ND(0.00067)	0.0026	101m
		ND(0.00065)	0.0033	196m
		ND(0.00068)	0.0036	292m
		ND(0.00060)	0.0017	482m

M-25	2016/11/17	ND(0.00071)	0.0023	1m
		ND(0.00074)	0.0022	102m
		ND(0.00072)	0.0028	197m
		ND(0.00075)	0.0035	300m
		ND(0.00064)	0.0023	488m

M-11	2016/11/12	ND(0.00059)	0.0023	1m
		ND(0.00062)	0.0023	103m
		ND(0.00061)	0.0016	197m
		ND(0.00056)	0.0015	297m
		ND(0.00060)	0.00052	484m

M-15	2016/11/11	ND(0.00069)	0.0020	1m
		ND(0.00068)	0.0030	105m
		ND(0.00067)	0.0022	198m
		ND(0.00065)	0.0019	298m
		ND(0.00073)	0.00078	494m

M-21	2016/11/13	ND(0.00066)	0.0016	1m
		ND(0.00064)	0.0024	103m
		ND(0.00063)	0.0021	197m
		ND(0.00071)	0.0022	303m
		ND(0.00062)	0.0017	483m

M-26	2016/11/14	ND(0.00054)	0.0018	1m
		ND(0.00062)	0.0016	102m
		ND(0.00058)	0.0025	196m
		ND(0.00061)	0.0031	295m
		ND(0.00056)	0.0034	489m

M-27	2016/11/14	ND(0.00064)	0.0018	1m
		ND(0.00055)	0.0019	102m
		ND(0.00056)	0.0029	196m
		ND(0.00062)	0.0034	296m
		ND(0.00071)	0.0026	489m

