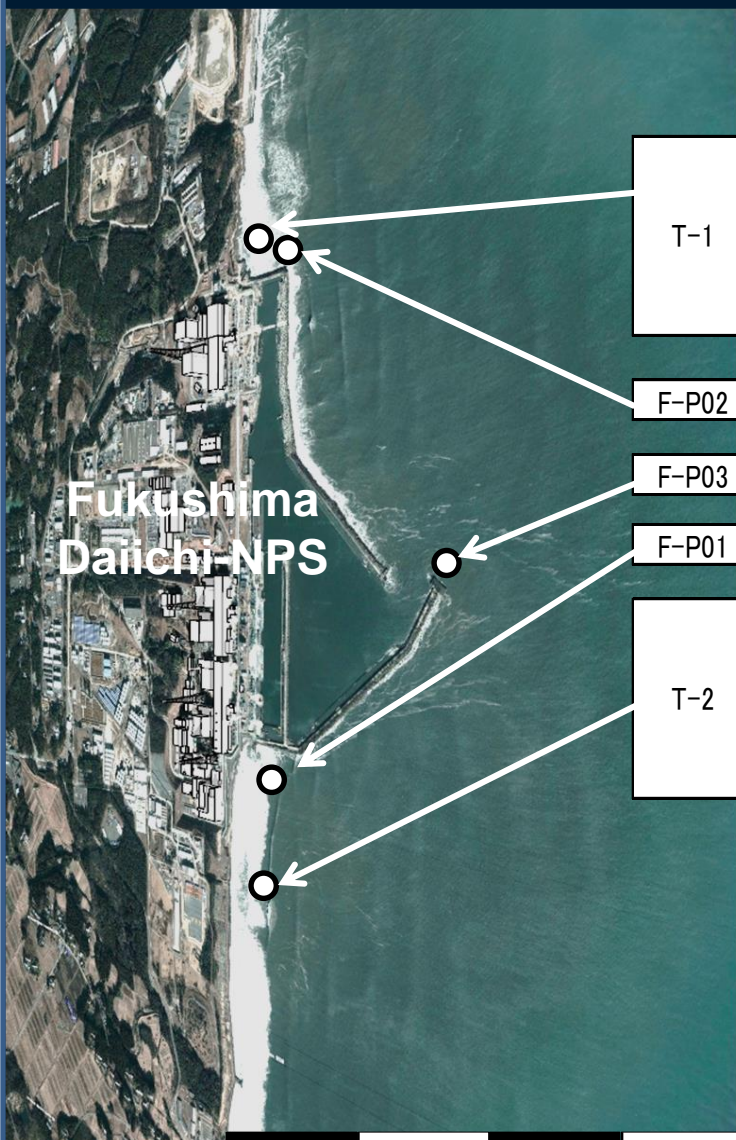


# Sea Area Monitoring

August 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

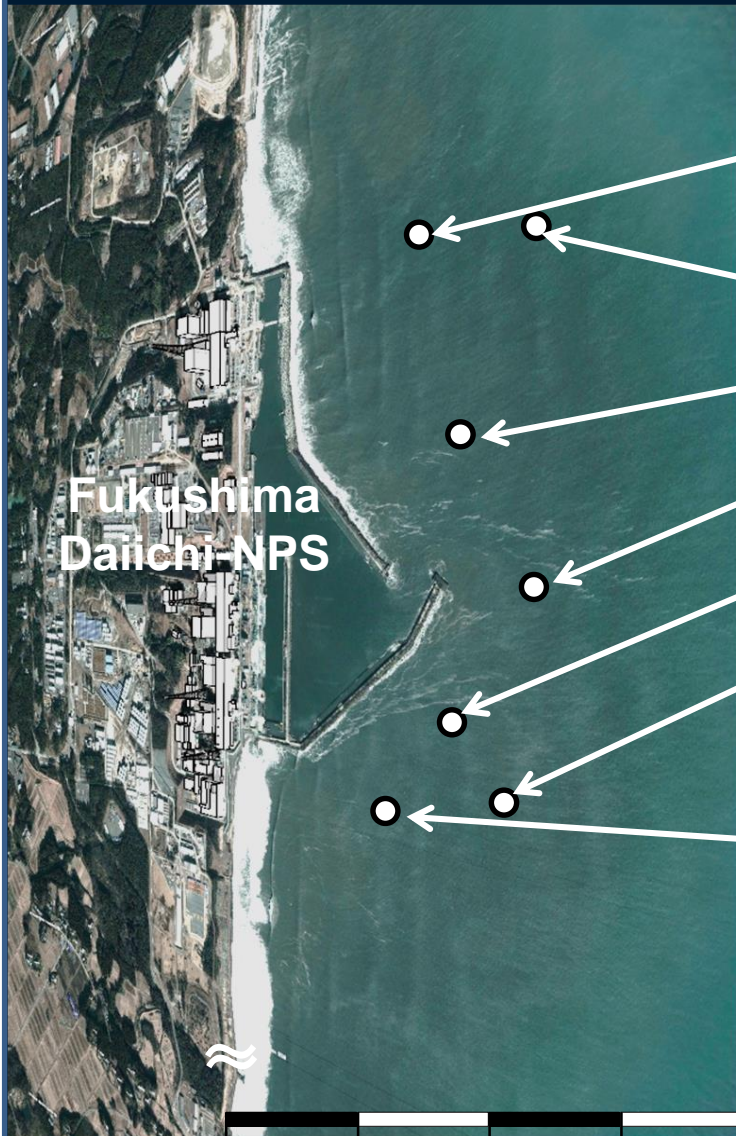
T-1	2016/10/3	ND(0.64)	ND(0.53)	13 <sup>*1</sup>	ND(1.7)	ND(0.0073)	ND(1.5)	ND( $5.6 \times 10^{-6}$ )	( $5.9 \pm 1.8$ ) $\times 10^{-6}$
	2017/7/3	ND(0.55)	ND(0.56)	11 <sup>*1</sup>	ND(1.8)				
	2017/7/10	ND(0.54)	ND(0.73)	9.9 <sup>*1</sup>	ND(1.8)				
	2017/7/17	ND(0.58)	ND(0.62)	14 <sup>*1</sup>	ND(1.7)				
	2017/7/24	ND(0.70)	ND(0.59)	13 <sup>*1</sup>	ND(1.6)				
F-P02	2017/4/20	0.003	0.023	0.03 <sup>*2</sup>	0.36	0.0018		$6 \times 10^{-6}$	ND( $6 \times 10^{-6}$ )
F-P03	2017/4/20	0.021	0.15	0.03 <sup>*2</sup>	ND(0.33)	0.0071		ND( $7 \times 10^{-6}$ )	ND( $7 \times 10^{-6}$ )
F-P01	2017/4/20	0.002	0.020	0.03 <sup>*2</sup>	ND(0.34)	0.0014		ND( $7 \times 10^{-6}$ )	ND( $7 \times 10^{-6}$ )
T-2	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( $5.5 \times 10^{-6}$ )
	2017/7/3	ND(0.68)	ND(0.63)	12 <sup>*1</sup>	ND(1.8)				
	2017/7/10	ND(0.63)	ND(0.58)	12 <sup>*1</sup>	ND(1.6)				
	2017/7/17	ND(0.68)	ND(0.78)	9.9 <sup>*1</sup>	ND(1.6)				
	2017/7/24	ND(0.54)	ND(0.50)	12 <sup>*1</sup>	ND(1.6)				

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

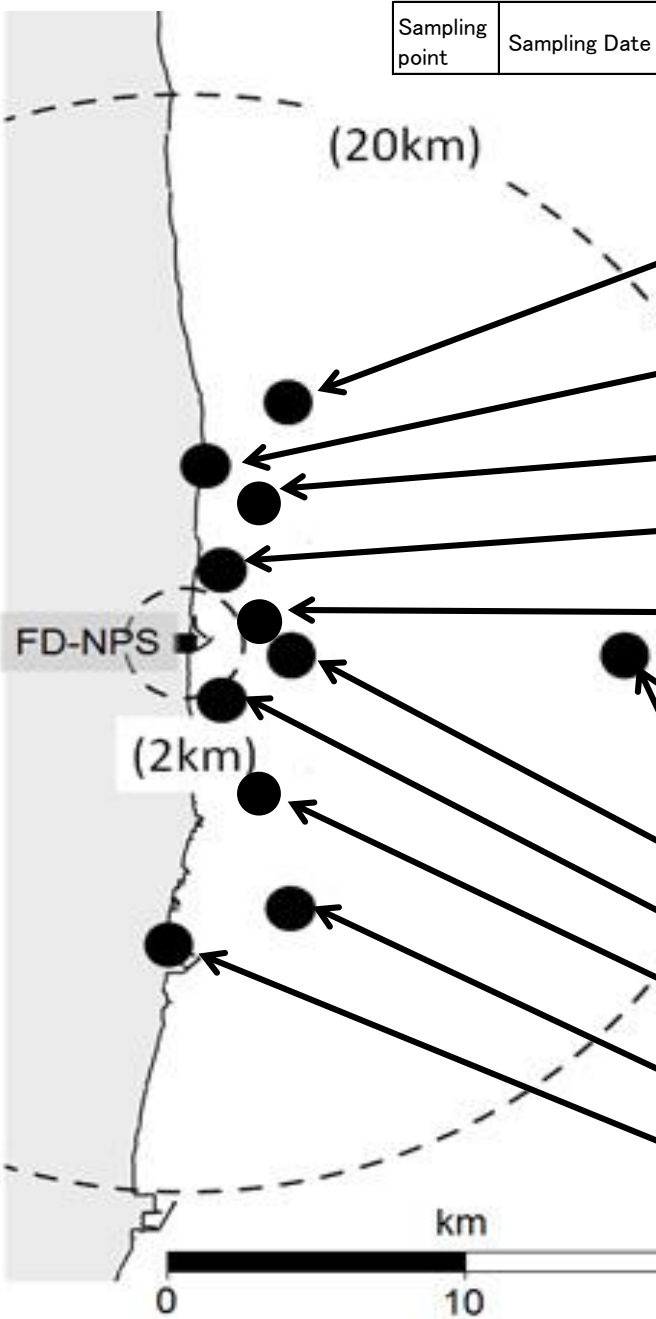
T-0-1	2017/7/3	ND(0.63)	ND(0.53)	ND(17)	ND(1.6)	
	2017/7/10	ND(0.39)	ND(0.62)	ND(17)	ND(1.9)	
	2017/7/17	ND(0.64)	ND(0.57)	ND(15)	ND(1.8)	
	2017/7/24	ND(0.72)	ND(0.86)	ND(17)	In progress	
T-0-1A	2017/7/3	ND(0.57)	ND(0.60)	ND(17)	ND(1.6)	
	2017/7/10	ND(0.68)	ND(0.67)	ND(17)	ND(1.9)	
	2017/7/17	ND(0.65)	ND(0.56)	ND(15)	ND(1.8)	
	2017/7/24	ND(0.68)	ND(0.58)	ND(17)	In progress	
M-101	2017/2/8	0.0044	0.030		0.11	0.0010
	2017/3/9	0.0047	0.038			0.0014
T-0-2	2017/7/3	ND(0.58)	ND(0.78)	ND(17)	ND(1.6)	
	2017/7/10	ND(0.59)	ND(0.53)	ND(17)	ND(1.9)	
	2017/7/17	ND(0.71)	ND(0.78)	ND(15)	ND(1.8)	
	2017/7/24	ND(0.64)	ND(0.70)	ND(17)	In progress	
M-102	2017/2/9	0.0028	0.018		0.078	0.0011
	2017/3/8	0.0020	0.014			0.00099
T-0-3A	2017/7/3	ND(0.84)	ND(0.78)	ND(17)	ND(1.6)	
	2017/7/10	ND(0.78)	ND(0.80)	ND(17)	ND(1.9)	
	2017/7/17	ND(0.84)	ND(0.80)	ND(15)	ND(1.8)	
	2017/7/24	ND(0.67)	ND(0.61)	ND(17)	In progress	
T-0-3	2017/7/3	ND(0.68)	ND(0.64)	ND(17)	ND(1.6)	
	2017/7/10	ND(0.71)	ND(0.64)	ND(17)	ND(2.0)	
	2017/7/17	ND(0.67)	ND(0.62)	ND(15)	ND(1.8)	
	2017/7/24	ND(0.76)	ND(0.92)	ND(17)	In progress	

0 0.5 1km

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

Sampling point	Sampling Date	Cs-134	Cs-137	Gross β	H-3	Sr-90	Gross α	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 β including K-40 \*2: Gross β excluding K-40



T-D1	2016/10/3	0.0018	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
	2017/6/6	ND(0.0012)	0.0050	ND(16) <sup>*1</sup>	ND(0.36)	0.0015	ND(2.3)			S
	2017/6/23	ND(0.0012)	0.0036	ND(17) <sup>*1</sup>	ND(0.31)					S
T-6	2017/6/6	0.0018	0.010	ND(18) <sup>*1</sup>	ND(0.31)					S
	2017/6/20	0.0047	0.026	ND(16) <sup>*1</sup>	ND(0.31)					S
F-P06	2017/3/7	ND(0.052)	ND(0.048)	0.03 <sup>*2</sup>	ND(0.35)	0.0010		ND(8 × 10 <sup>-6</sup> )	ND(9 × 10 <sup>-6</sup> )	S
	2017/4/20	ND(0.001)	0.011	0.02 <sup>*2</sup>	ND(0.35)	0.0009		ND(6 × 10 <sup>-6</sup> )	ND(9 × 10 <sup>-6</sup> )	S
M-103	2017/2/8	0.0025	0.019			0.088				0.5m
	2017/3/9	0.0015	0.013			0.0010				0.5m
F-P04	2017/2/14	ND(0.061)	ND(0.047)	0.03 <sup>*2</sup>	ND(0.33)	0.0010		ND(1.1 × 10 <sup>-5</sup> )	ND(8 × 10 <sup>-6</sup> )	S
	2017/4/20	ND(0.002)	0.009	0.04 <sup>*2</sup>	ND(0.34)	0.0009		ND(8 × 10 <sup>-6</sup> )	ND(6 × 10 <sup>-6</sup> )	S
T-5	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
	2017/6/5	ND(0.0014)	0.0026	ND(15) <sup>*1</sup>	ND(0.36)	0.0011	ND(1.9)			S
	2017/6/23	ND(0.0012)	0.0027	ND(17) <sup>*1</sup>	ND(0.31)					S
T-D5	2016/10/4	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
	2017/6/6	ND(0.0014)	0.0053	ND(16) <sup>*1</sup>	ND(0.36)	ND(0.0085)	ND(2.3)			S
	2017/6/23	ND(0.0013)	0.0046	ND(17) <sup>*1</sup>	ND(0.31)					S
M-104	2017/2/9	0.0025	0.015			0.00094				0.5m
	2017/3/8	0.0015	0.010			0.0011				0.5m
F-P05	2017/2/14	ND(0.058)	ND(0.048)	0.02 <sup>*2</sup>	ND(0.33)	0.0010		ND(7 × 10 <sup>-6</sup> )	ND(8 × 10 <sup>-6</sup> )	S
	2017/4/20	ND(0.002)	0.008	0.03 <sup>*2</sup>	ND(0.35)	0.0009		ND(5 × 10 <sup>-6</sup> )	ND(6 × 10 <sup>-6</sup> )	S
T-D9	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
	2017/6/5	ND(0.0012)	0.0037	ND(15) <sup>*1</sup>	ND(0.36)	0.0012	ND(1.9)			S
	2017/6/23	ND(0.0011)	0.0051	ND(17) <sup>*1</sup>	ND(0.31)					S
T-3	2017/6/6	0.0037	0.022	ND(17) <sup>*1</sup>	ND(0.31)					S
	2017/6/20	0.0070	0.039	ND(18) <sup>*1</sup>	ND(0.32)					S

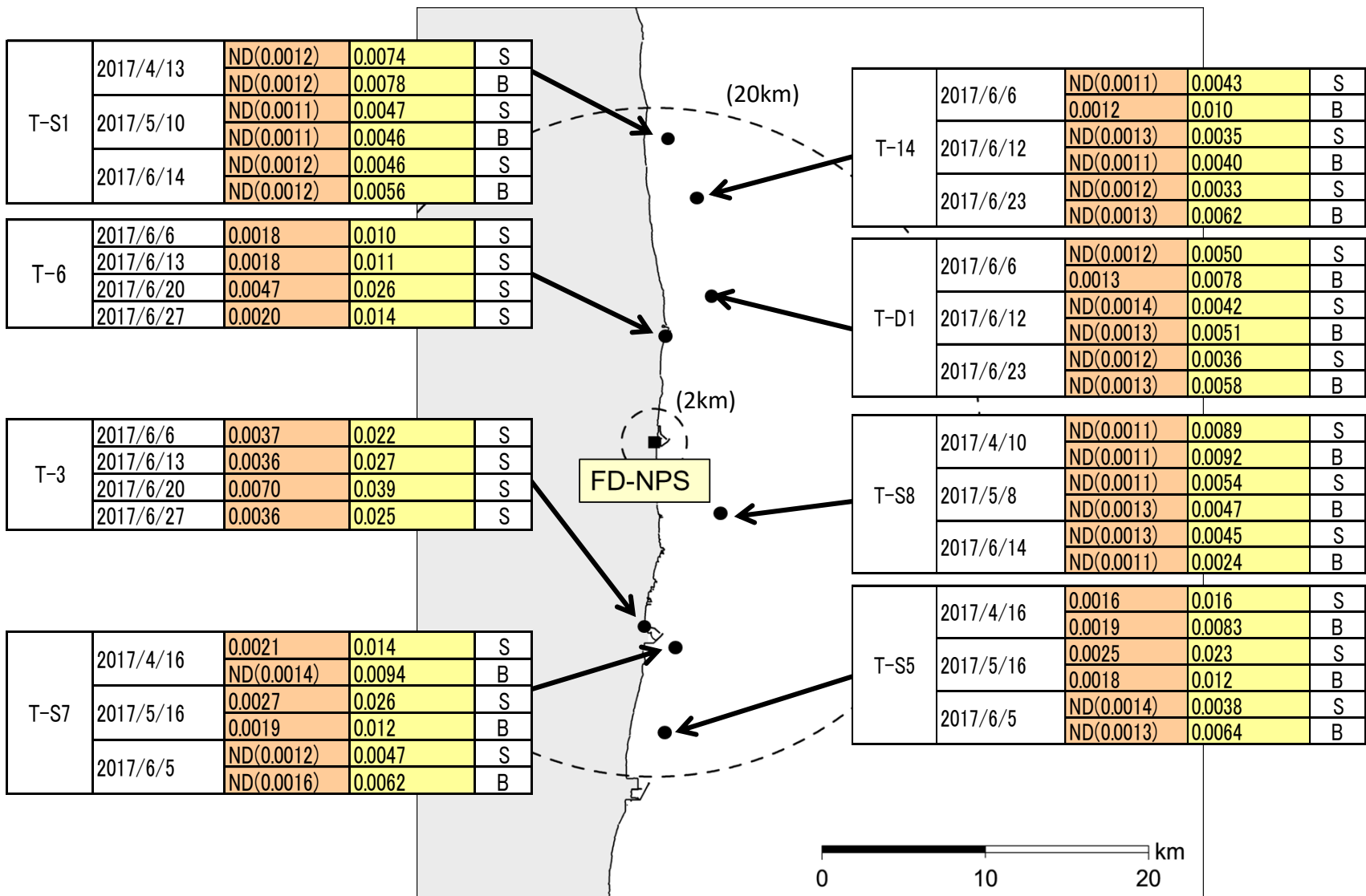


# Sea area between 2-20km from the NPS (2)

Sampling point	Sampling Date	Cs-134	Cs-137	S/B	S: 2m below sea level B: 2-3m above sea bottom
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Sea water radioactivity (Bq/L):

ND: Not detected; Numbers in parentheses: detection limits



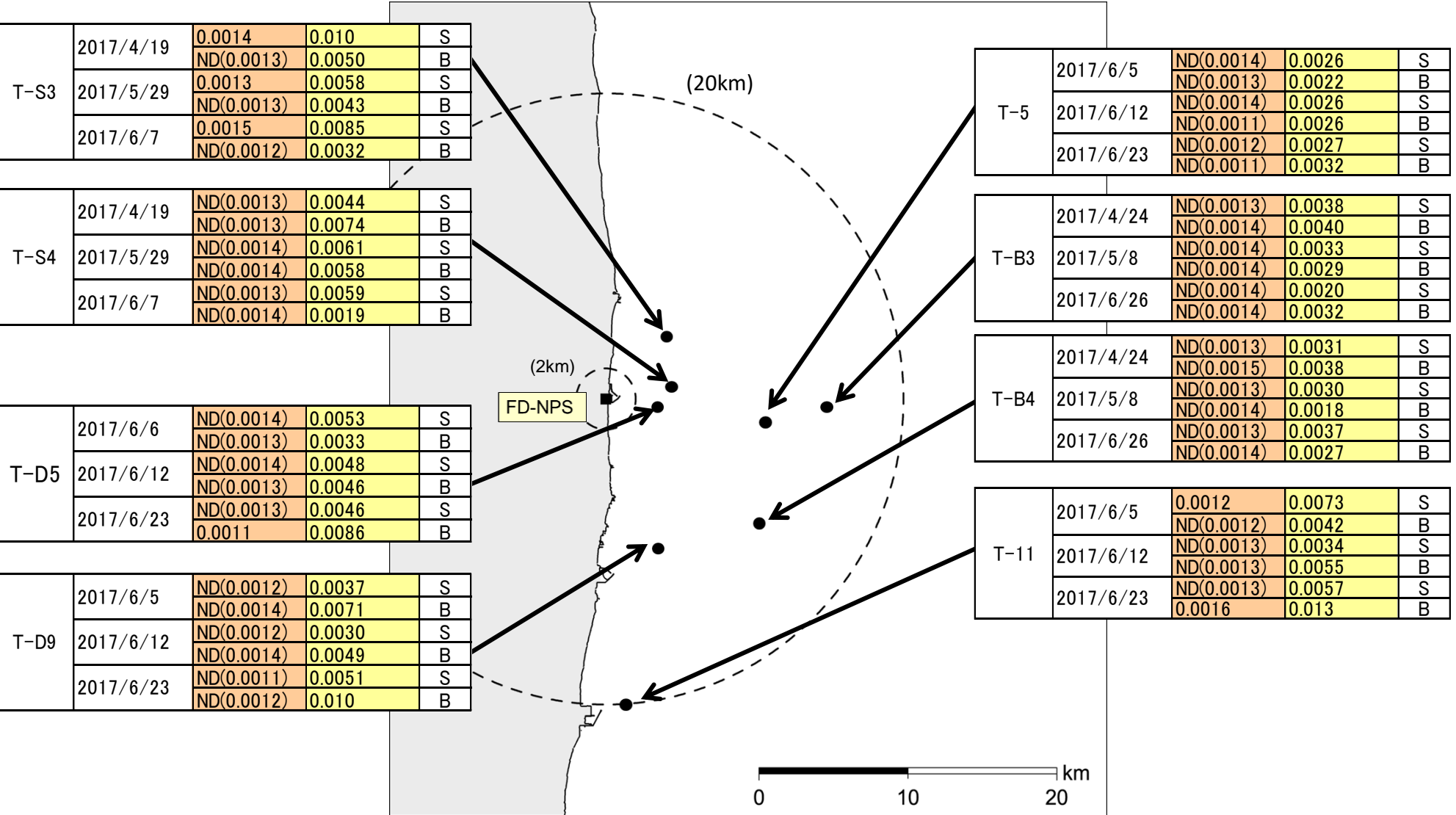
# Sea area between 2-20km from the NPS (3)

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



# 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

T-MA	2017/4/19	ND(0.0014)	0.0044		S
		ND(0.0014)	0.0047		B
	2017/5/18	ND(0.0015)	0.0044		S
		ND(0.0016)	0.0040		B
2017/6/7	ND(0.0011)	0.0039		S	
	ND(0.0015)	0.0040		B	

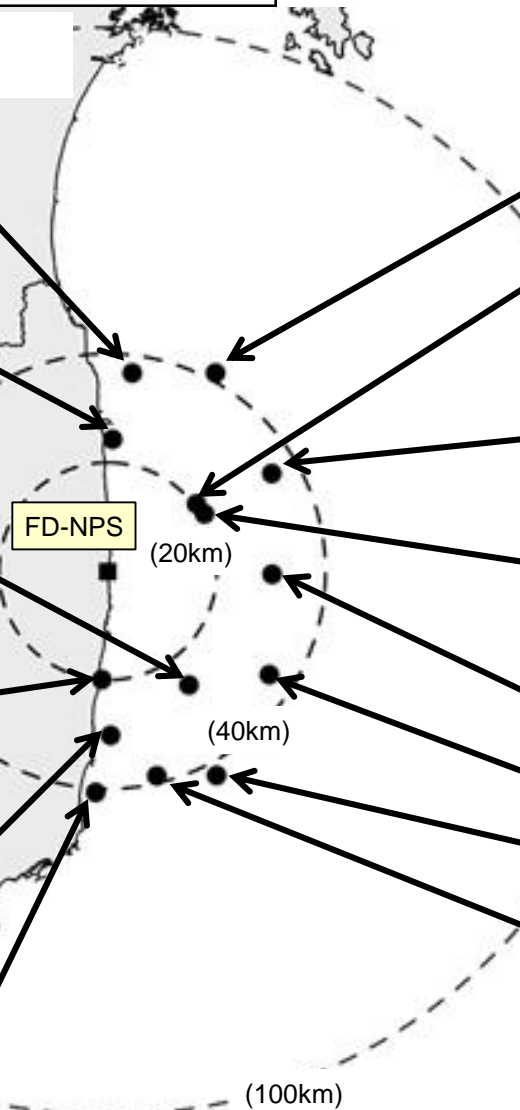
T-13-1	2017/4/19	0.0019	0.0079		S
		ND(0.0015)	0.012		B
	2017/5/18	ND(0.0014)	0.0054		S
		ND(0.0013)	0.0043		B
2017/6/7	ND(0.0013)	0.0050		S	
	ND(0.0013)	0.0046		B	

T-7	2017/4/27	ND(0.0012)	0.0032		S
		ND(0.0012)	0.0020		B
	2017/5/12	ND(0.0012)	0.0032		S
		ND(0.0013)	0.0029		B
2017/6/13	ND(0.0012)	0.0024		S	
	ND(0.0012)	0.0029		B	

T-4	2017/6/6	0.0021	0.018		S
	2017/6/13	0.0043	0.023		S
	2017/6/20	0.010	0.061		S
	2017/6/27	0.0026	0.018		S

T-12	2017/4/17	ND(0.0014)	0.0093		S
		ND(0.0013)	0.0047		B
	2017/5/23	0.0014	0.0078		S
		ND(0.0014)	0.0041		B
2017/6/21	0.0018	0.0077		S	
	ND(0.0014)	0.0030		B	

T-17-1	2017/4/17	ND(0.0014)	0.0075		S
		ND(0.0013)	0.0050		B
	2017/5/23	ND(0.0013)	0.0050		S
		ND(0.0012)	0.0058		B
2017/6/21	ND(0.0014)	0.0087		S	
	ND(0.0013)	0.0047		B	



M-C1	2017/1/22	0.00019	0.0028	0.00087	1m
		0.00024	0.0028		48m

T-B1	2017/4/21	ND(0.0013)	0.0058		S
		ND(0.0013)	0.0028		B
	2017/5/19	ND(0.0014)	0.0044		S
		ND(0.0014)	0.0036		B
2017/6/2	ND(0.0014)	0.0037		S	
	ND(0.0014)	0.0021		B	

M-D1	2017/1/25	0.00016	0.0021	0.00087	1m
		0.00027	0.0025		50m
		0.00023	0.0024		111m

T-B2	2017/4/21	ND(0.0012)	0.0024		S
		ND(0.0013)	0.0027		B
	2017/5/19	ND(0.0013)	0.0044		S
		ND(0.0014)	0.0025		B
	2017/6/2	ND(0.0013)	0.0038		S
		ND(0.0013)	0.0031		B

M-E1	2017/1/25	0.00014	0.0024	0.00080	1m
		0.00027	0.0026		50m
		0.00024	0.0026		125m

M-F1	2017/1/25	0.00019	0.0026		1m
		0.00032	0.0026		135m

M-G1	2017/2/1	0.0017	0.0022		1m
		0.0019	0.0027		129m

M-G0	2017/2/1	0.00021	0.0024		1m
		0.00020	0.0025		50m
		ND(0.0016)	0.0025		96m

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

Sampling point	Sampling Date	Cs-134	Cs-137	Grossβ *	H-3	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

\*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	2017/4/19	ND(0.0014)	0.0045				S
		ND(0.0014)	0.0072				B
	2017/5/18	ND(0.0015)	0.0064				S
		ND(0.0016)	0.0061				B
	2017/6/7	ND(0.0013)	0.0057				S
		ND(0.0013)	0.0064				B

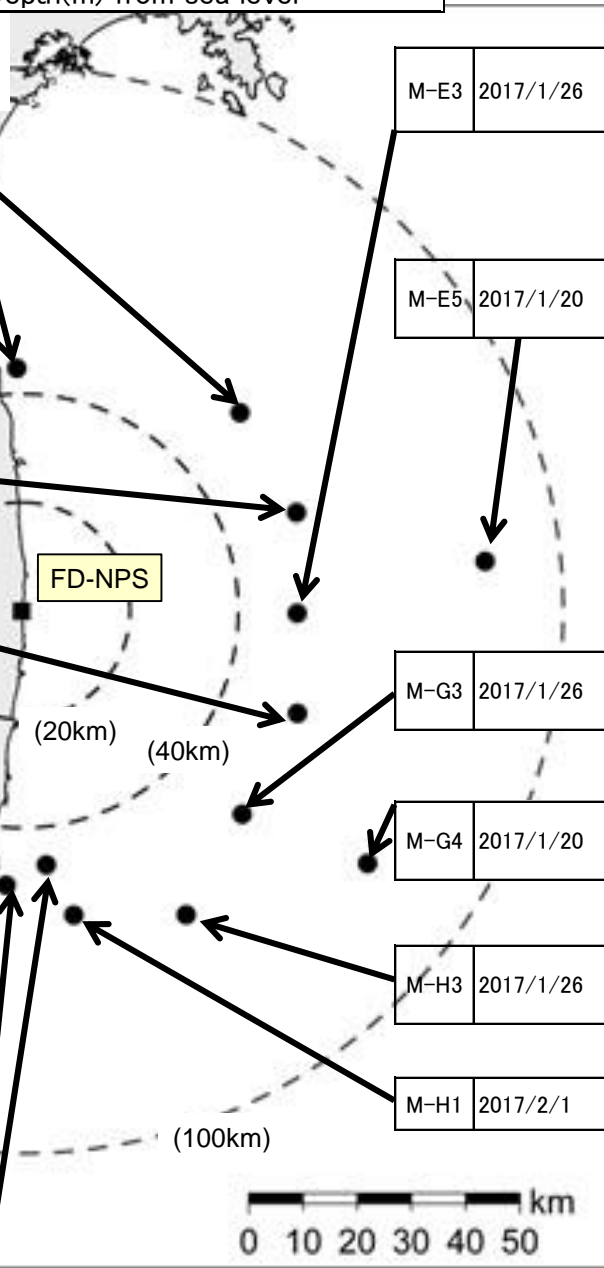
M-D3	2017/2/1	0.00014	0.0023	0.030	0.081	0.00096	1m
		0.00023	0.0023				100m
		ND(0.00012)	0.0017				211m

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	2017/4/27	ND(0.0012)	0.0048				S
		ND(0.0012)	0.0049				B
	2017/5/12	ND(0.0013)	0.0033				S
		ND(0.0013)	0.0041				B
	2017/6/13	ND(0.0013)	0.0032				S
		ND(0.0013)	0.0030				B

T-20	2017/4/17	ND(0.0014)	0.0049				S
		ND(0.0016)	0.0048				B
	2017/5/23	ND(0.0013)	0.0054				S
		ND(0.0013)	0.0039				B
	2017/6/21	ND(0.0014)	0.0053				S
		ND(0.0014)	0.0038				B

T-M10	2017/4/27	ND(0.0012)	0.0037				S
		ND(0.0012)	0.0022				B
	2017/5/12	ND(0.0013)	0.0024				S
		ND(0.0013)	0.0032				B
	2017/6/13	ND(0.0011)	0.0034				S
		ND(0.0013)	0.0020				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

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
T-MG1	2017/5/9	ND(0.0015)	0.0054		S
		ND(0.0015)	0.0033		B
	2017/6/6	ND(0.0015)	0.0039		S
		ND(0.0015)	0.0017		B

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
T-MG4	2017/5/10	ND(0.0017)	0.0043		S
		ND(0.0016)	0.0053		B
	2017/6/7	ND(0.0013)	0.0042		S
		ND(0.0014)	0.0028		B

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
T-MG5	2017/5/10	ND(0.0015)	0.0034		S
		ND(0.0014)	0.0036		B
	2017/6/7	ND(0.0013)	0.0023		S
		ND(0.0015)	0.0028		B

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
T-MG6	2017/5/10	ND(0.0014)	0.0038		S
		ND(0.0015)	0.0046		B
	2017/6/7	ND(0.0014)	0.0023		S
		ND(0.0014)	0.0036		B

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
M-B1	2017/1/30	0.00030	0.0027		1m
		0.00049	0.0044		35m

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
M-B3	2017/1/30	0.00022	0.0029	0.00076	1m
		0.00023	0.0024		50m
		ND(0.00014)	0.0019		109m

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
T-MG0	2017/5/10	ND(0.0014)	0.0021		S
		ND(0.0015)	0.0016		B
	2017/6/6	ND(0.0015)	0.0019		S
		ND(0.0014)	0.0017		B

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
M-A1	2017/1/29	0.00014	0.0019		1m
		0.00013	0.0019		100m
		ND(0.00015)	0.0018		195m

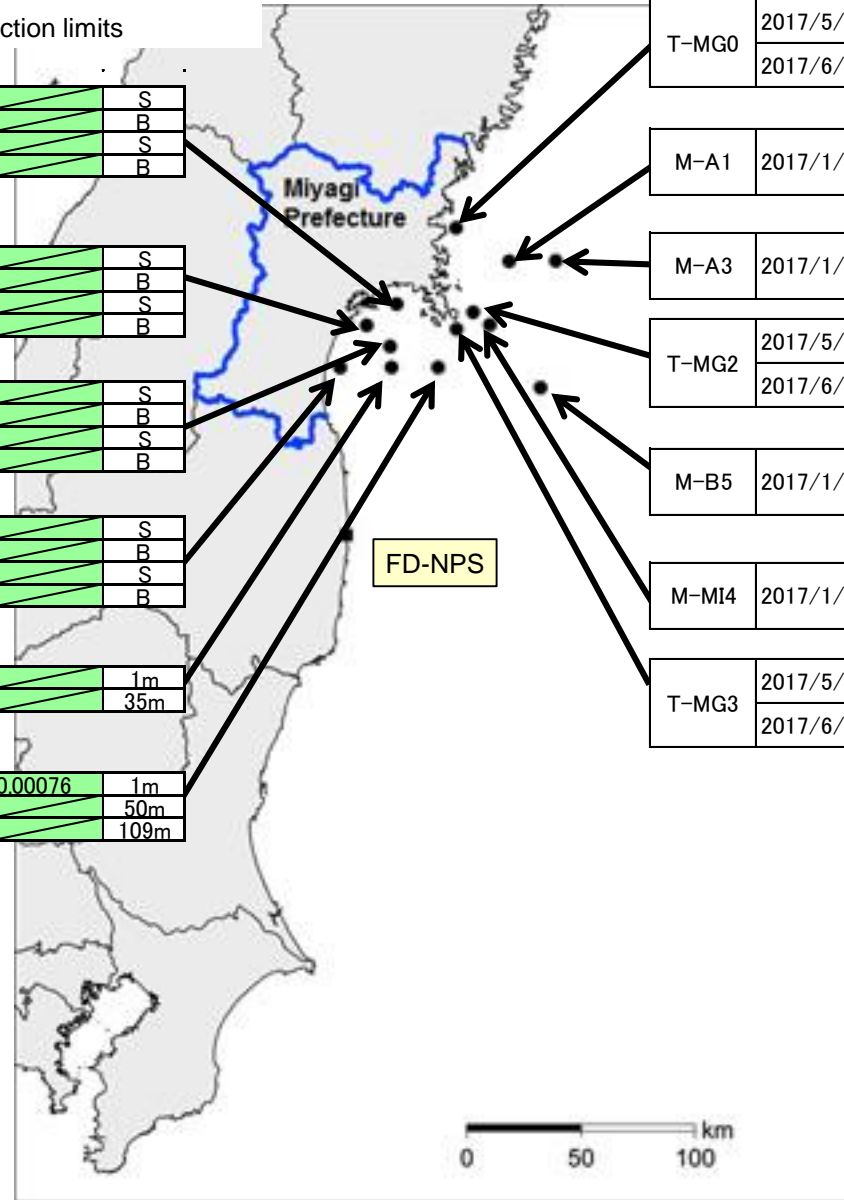
Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
M-A3	2017/1/29	ND(0.00013)	0.0017		1m
		ND(0.00014)	0.0019		100m
		ND(0.00011)	0.0011		482m

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
T-MG2	2017/5/9	ND(0.0012)	0.0019		S
		ND(0.0015)	0.0013		B
	2017/6/6	ND(0.0014)	0.0022		S
		ND(0.0014)	0.0016		B

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
M-B5	2017/1/29	0.00018	0.0024		1m
		ND(0.00013)	0.0017		100m
		ND(0.00012)	0.0018		354m

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
M-MI4	2017/1/29	ND(0.00014)	0.0019		1m
		ND(0.00014)	0.0017		100m
		ND(0.00014)	0.0018		146m

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	Depth
T-MG3	2017/5/9	ND(0.0014)	0.0018		S
		ND(0.0013)	0.0022		B
	2017/6/6	ND(0.0015)	0.0020		S
		ND(0.0013)	0.0014		B

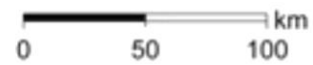
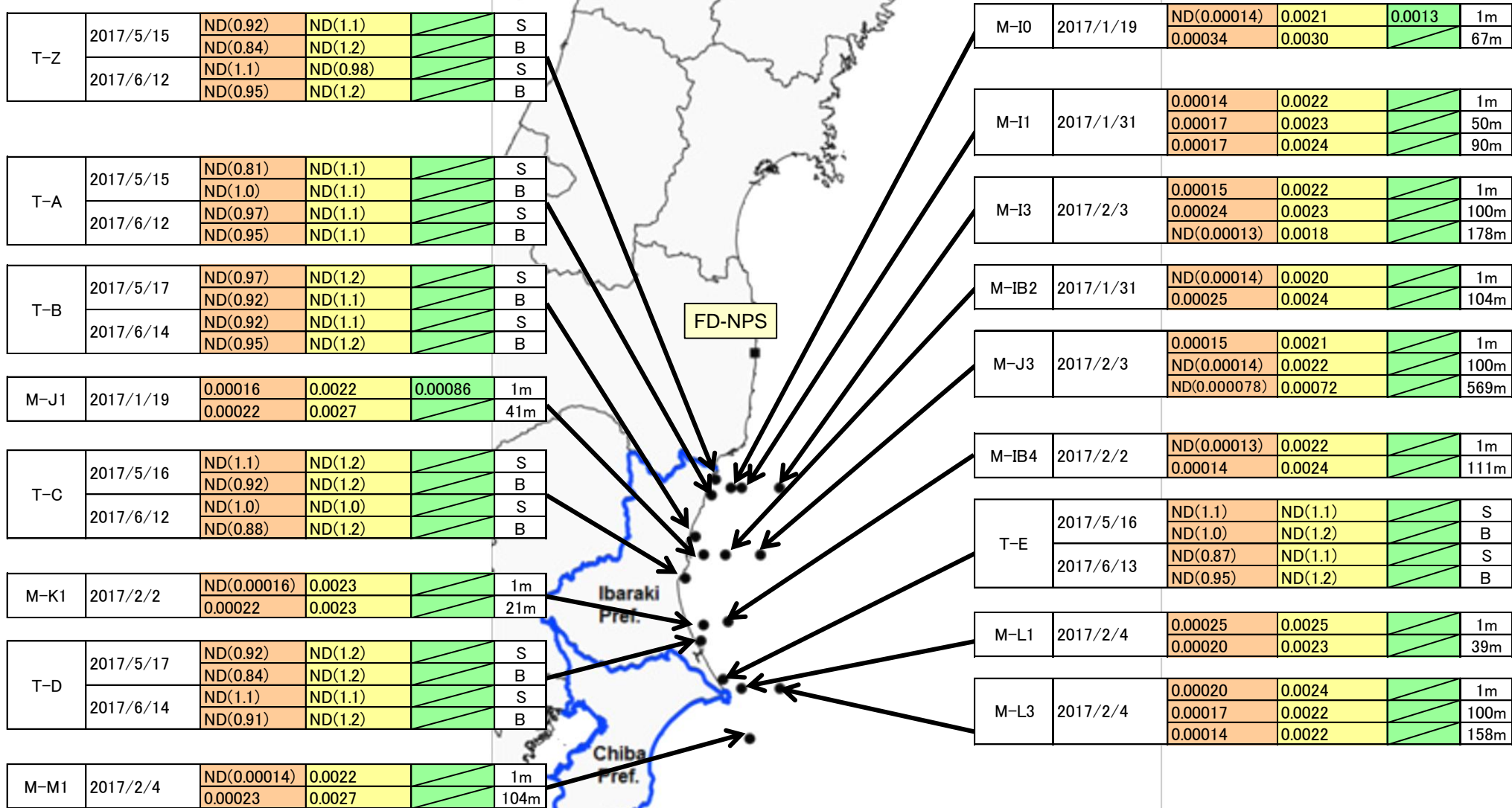


# Sea area along and off the coast of Ibaraki Pref. and Chiba Pref.

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

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

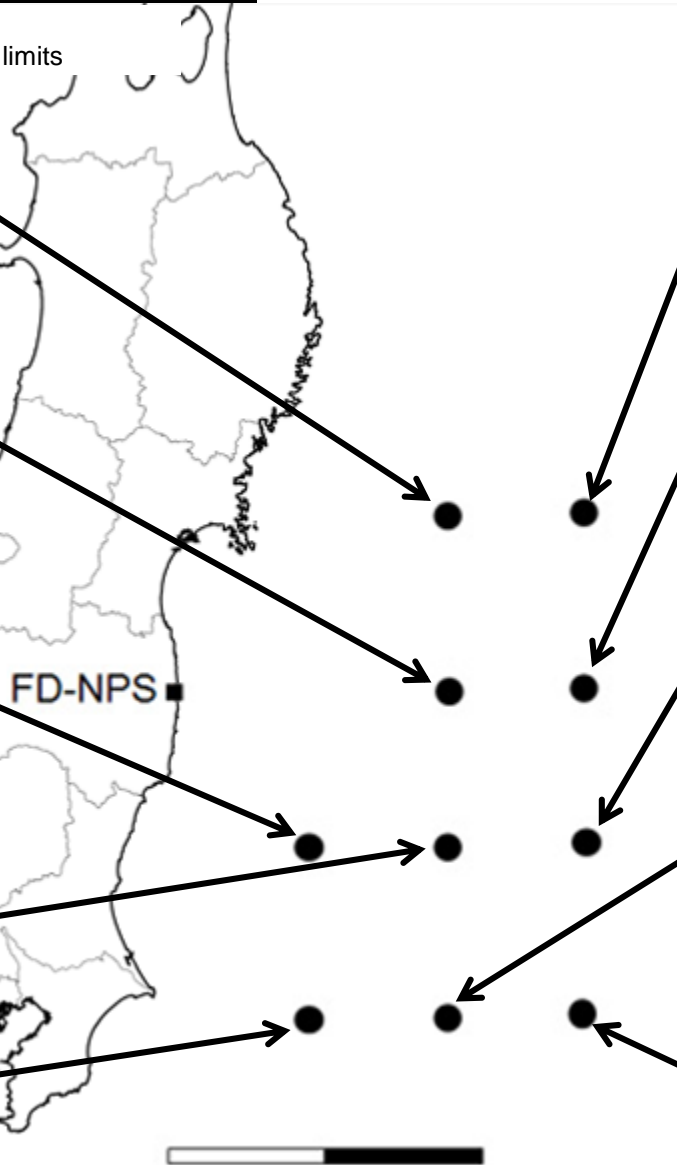
M-11	2016/11/12	ND(0.00059)	0.0023	1m
		ND(0.00062)	0.0023	103m
		ND(0.00061)	0.0016	197m
		ND(0.00056)	0.0015	297m
		ND(0.00060)	0.00052	484m

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



0 200km