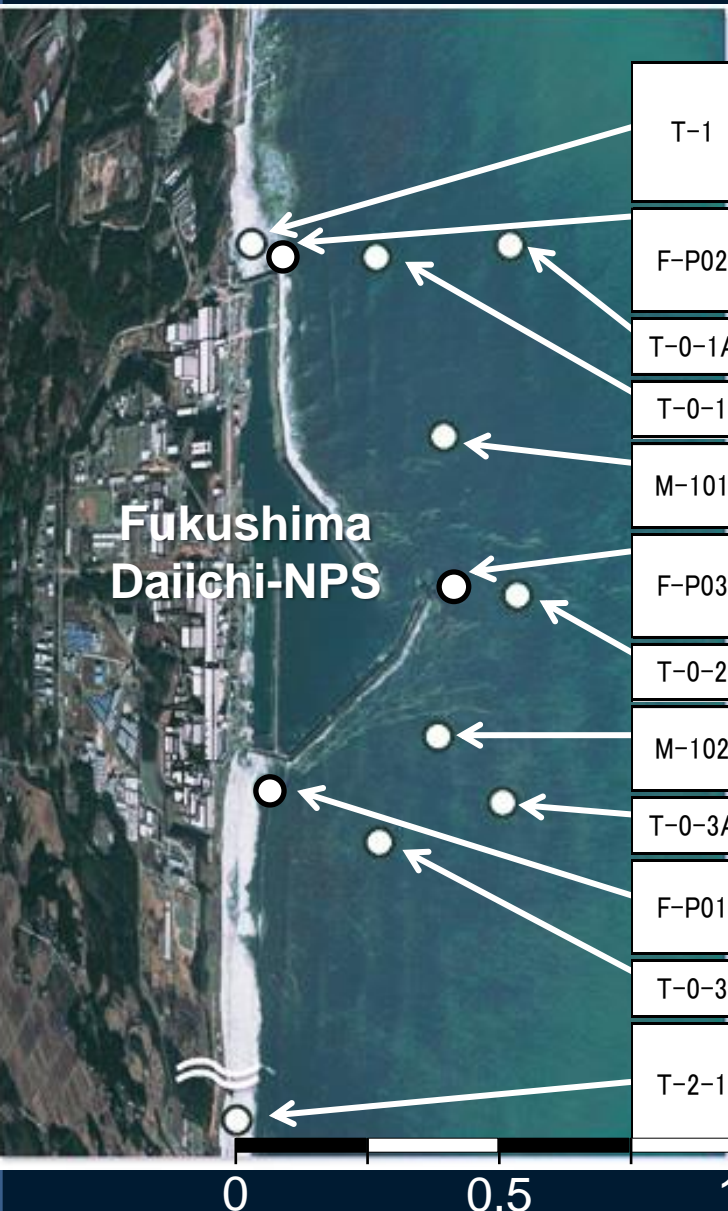


# Sea Area Monitoring

January 26, 2016

Nuclear Regulation Authority (NRA), Japan

# Sea area within 2km radius from the NPS



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

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

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

T-1	2016/1/11	ND(0.76)	ND(0.64)	11 <sup>*1</sup>	ND(1.7)				
	2016/1/4	ND(0.55)	ND(0.73)	10 <sup>*1</sup>	ND(1.4)				
	2015/12/7	ND(0.68)	ND(0.78)	14 <sup>*1</sup>	ND(1.5)	0.021	ND(2.0)		
	2015/11/2	ND(0.83)	ND(0.59)	14 <sup>*1</sup>	3.5	ND(0.0066)	ND(1.6)		
	2015/10/14	ND(0.69)	ND(0.65)	13 <sup>*1</sup>	ND(1.7)	0.087	ND(1.9)	ND(5.8 × 10 <sup>-6</sup> )	(1.0 ± 0.24) × 10 <sup>-5</sup>
F-P02	2015/12/14	ND(0.059)	0.059	0.08 <sup>*2</sup>	ND(0.40)	In progress		In progress	In progress
	2015/11/17	ND(0.064)	0.13	0.06 <sup>*2</sup>	ND(0.34)	In progress		In progress	In progress
	2015/10/13	ND(0.080)	0.14	0.08 <sup>*2</sup>	ND(0.45)	0.054		In progress	In progress
	2015/9/14	0.21	1.0	0.03 <sup>*2</sup>	ND(0.41)	0.003		ND(7 × 10 <sup>-6</sup> )	ND(7 × 10 <sup>-6</sup> )
T-0-1A	2016/1/11	ND(0.80)	ND(0.78)	ND(17) <sup>*1</sup>	In progress				
	2016/1/4	ND(0.80)	ND(0.89)	ND(15) <sup>*1</sup>	ND(1.7)				
T-0-1	2016/1/11	ND(0.66)	ND(0.71)	ND(17) <sup>*1</sup>	In progress				
	2016/1/4	ND(0.59)	ND(0.63)	ND(15) <sup>*1</sup>	ND(1.7)				
M-101	2015/11/11	0.0073	0.034		0.092	In progress			
	2015/10/5	0.018	0.085		0.44	In progress			
	2015/9/2	0.14	0.60		1.9	0.76			
F-P03	2015/12/14	ND(0.055)	0.081	0.06 <sup>*2</sup>	ND(0.40)	In progress		In progress	In progress
	2015/11/17	ND(0.058)	0.070	0.02 <sup>*2</sup>	ND(0.33)	In progress		In progress	In progress
	2015/10/13	0.10	0.46	0.19 <sup>*2</sup>	2.1	0.27		In progress	In progress
	2015/9/14	ND(0.051)	0.087	0.03 <sup>*2</sup>	ND(0.40)	0.002		ND(7 × 10 <sup>-6</sup> )	ND(7 × 10 <sup>-6</sup> )
T-0-2	2016/1/11	ND(0.67)	ND(0.59)	ND(17) <sup>*1</sup>	In progress				
	2016/1/4	ND(0.67)	ND(0.83)	ND(15) <sup>*1</sup>	ND(1.7)				
M-102	2015/11/12	0.023	0.11		0.12	In progress			
	2015/10/6	0.016	0.066		0.20	In progress			
	2015/9/3	0.0054	0.022		0.077	0.00098			
T-0-3A	2016/1/11	ND(0.78)	ND(0.75)	ND(17) <sup>*1</sup>	In progress				
	2016/1/4	ND(0.80)	ND(0.74)	ND(15) <sup>*1</sup>	ND(1.7)				
F-P01	2015/12/14	ND(0.060)	0.099	0.05 <sup>*2</sup>	ND(0.41)	In progress		In progress	In progress
	2015/11/17	ND(0.062)	0.17	0.06 <sup>*2</sup>	ND(0.34)	In progress		In progress	In progress
	2015/10/13	ND(0.080)	0.11	0.03 <sup>*2</sup>	0.53	0.008		In progress	In progress
	2015/9/14	ND(0.053)	0.15	0.05 <sup>*2</sup>	0.55	0.031		ND(6 × 10 <sup>-6</sup> )	6 × 10 <sup>-6</sup>
T-0-3	2016/1/11	ND(0.86)	ND(0.87)	ND(17) <sup>*1</sup>	In progress				
	2016/1/4	ND(0.69)	ND(0.81)	ND(15) <sup>*1</sup>	ND(1.7)				
T-2-1	2016/1/11	ND(0.76)	ND(0.49)	9.7 <sup>*1</sup>	ND(1.7)				
	2016/1/4	ND(0.73)	ND(0.72)	13 <sup>*1</sup>	ND(1.4)				
	2015/12/7	ND(0.63)	ND(0.67)	10 <sup>*1</sup>	ND(1.5)	ND(0.0075)	ND(2.0)		
	2015/11/2	ND(0.57)	ND(0.65)	11 <sup>*1</sup>	2.7	0.0071	ND(1.9)		
	2015/10/14	ND(0.88)	ND(0.78)	11 <sup>*1</sup>	ND(1.7)	ND(0.0093)	ND(1.9)	ND(5.5 × 10 <sup>-6</sup> )	(1.8 ± 0.30) × 10 <sup>-5</sup>

0 0.5 1km

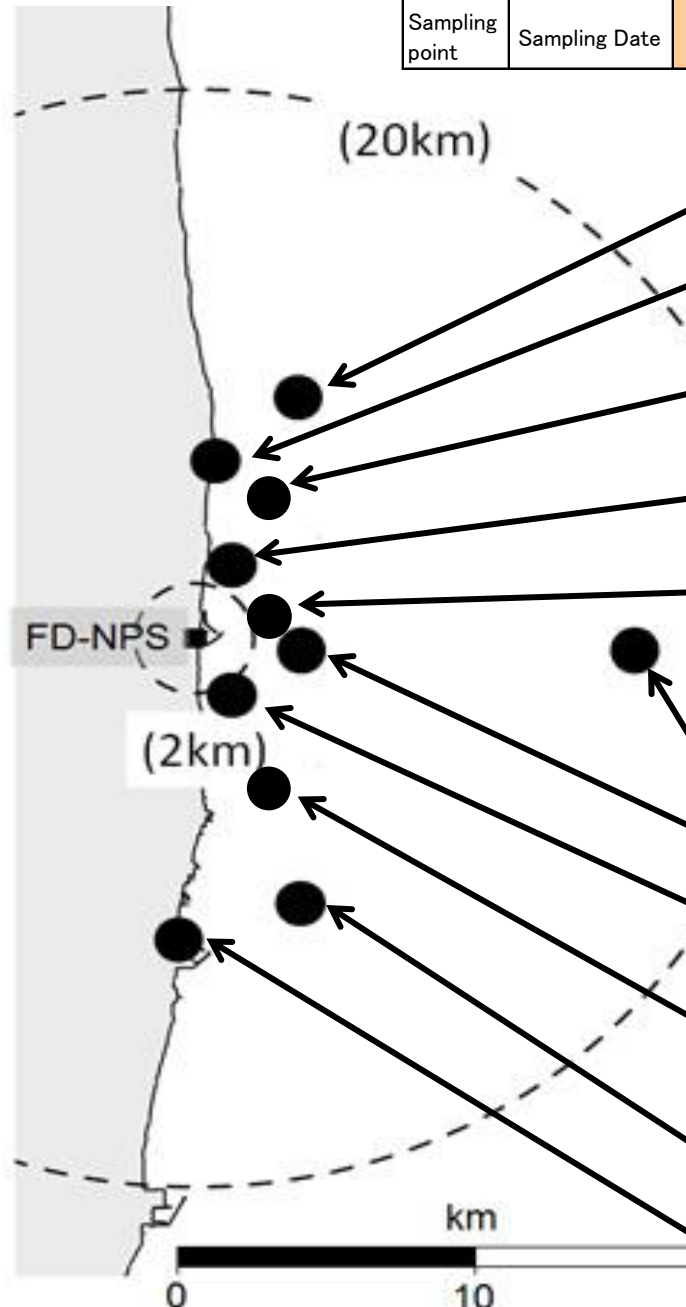
# Sea area between 2-20km radius from the NPS (1)

Sampling point	Sampling Date	Cs-134	Cs-137	total β	H-3	Sr-90	total α	Pu-238	Pu-239+240	S	S:2m below sea level
										Depth(m) from sea level	

Sea water radioactivity (Bq/L):

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

\*1: Total β: including K-40 \*2: Total β: excluding K-40



T-D1	2015/12/2	0.0055	0.024	ND(17) <sup>*1</sup>	ND(0.32)	ND(0.0072)	ND(1.9)			S
	2015/10/5	0.0029	0.010	ND(16) <sup>*1</sup>	ND(0.36)	ND(0.0066)	ND(1.6)	ND(5.1 × 10 <sup>-6</sup> )	ND(5.1 × 10 <sup>-6</sup> )	S
T-6	2015/12/1	0.015	0.078	ND(17) <sup>*1</sup>	ND(0.38)					S
F-P06	2015/12/14	ND(0.069)	ND(0.066)	0.05 <sup>*2</sup>	ND(0.39)	In progress		In progress	In progress	S
	2015/11/17	ND(0.051)	ND(0.044)	0.04 <sup>*2</sup>	ND(0.34)	In progress		In progress	In progress	S
	2015/10/13	ND(0.087)	ND(0.070)	0.03 <sup>*2</sup>	ND(0.45)	0.010		In progress	In progress	S
	2015/9/14	ND(0.050)	0.082	0.02 <sup>*2</sup>	0.47	0.001		ND(8 × 10 <sup>-6</sup> )	ND(8 × 10 <sup>-6</sup> )	S
M-103	2015/11/11	0.0042	0.022		0.085	In progress				0.5m
	2015/10/5	0.0046	0.020		0.10	In progress				0.5m
	2015/9/2	0.0068	0.030		0.10	0.0021				0.5m
F-P04	2015/12/14	ND(0.066)	ND(0.070)	0.04 <sup>*2</sup>	ND(0.39)	In progress		In progress	In progress	S
	2015/11/17	ND(0.066)	ND(0.048)	0.04 <sup>*2</sup>	ND(0.34)	In progress		In progress	In progress	S
	2015/10/13	ND(0.074)	ND(0.071)	0.02 <sup>*2</sup>	ND(0.46)	0.001		In progress	In progress	S
	2015/9/14	ND(0.054)	0.052	0.02 <sup>*2</sup>	ND(0.40)	0.002		ND(7 × 10 <sup>-6</sup> )	ND(7 × 10 <sup>-6</sup> )	S
T-5	2015/12/2	ND(0.0014)	0.0041	ND(17) <sup>*1</sup>	ND(0.32)	ND(0.0070)	ND(1.9)			S
	2015/10/6	ND(0.0015)	0.0042	ND(16) <sup>*1</sup>	ND(0.36)	ND(0.0067)	ND(1.9)	ND(5.1 × 10 <sup>-6</sup> )	(7.2 ± 1.9) × 10 <sup>-6</sup>	S
T-D5	2015/12/2	0.0022	0.011	ND(17) <sup>*1</sup>	ND(0.32)	ND(0.0069)	ND(1.9)			S
	2015/10/5	ND(0.0016)	0.0085	ND(16) <sup>*1</sup>	ND(0.36)	ND(0.0062)	ND(1.6)	ND(5.1 × 10 <sup>-6</sup> )	ND(5.3 × 10 <sup>-6</sup> )	S
M-104	2015/11/12	0.0066	0.029		0.11	In progress				0.5m
	2015/10/6	0.0041	0.016		0.080	In progress				0.5m
	2015/9/3	0.0062	0.030		0.14	0.0012				0.5m
F-P05	2015/12/14	ND(0.064)	0.062	0.04 <sup>*2</sup>	ND(0.39)	In progress		In progress	In progress	S
	2015/11/17	ND(0.060)	0.055	0.03 <sup>*2</sup>	ND(0.33)	In progress		In progress	In progress	S
	2015/10/13	ND(0.075)	ND(0.069)	0.03 <sup>*2</sup>	ND(0.44)	0.001		In progress	In progress	S
	2015/9/14	0.067	0.31	0.03 <sup>*2</sup>	ND(0.39)	0.009		ND(5 × 10 <sup>-6</sup> )	ND(5 × 10 <sup>-6</sup> )	S
T-D9	2015/12/2	ND(0.0013)	0.0049	ND(17) <sup>*1</sup>	ND(0.32)	ND(0.0073)	ND(1.9)			S
	2015/10/6	0.0026	0.013	ND(16) <sup>*1</sup>	ND(0.36)	ND(0.0068)	ND(1.9)	ND(5.2 × 10 <sup>-6</sup> )	ND(5.0 × 10 <sup>-6</sup> )	S
T-3	2015/12/1	0.022	0.090	ND(15) <sup>*1</sup>	ND(0.38)					S

# Sea area between 2-20km radius 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: under detection limits; Numbers in parentheses: detection limits

T-S1	2015/12/10	0.0022	0.013	S
		0.0025	0.012	B

T-14	2015/12/14	0.0036	0.011	S
		0.0035	0.019	B

T-D1	2015/12/14	0.0019	0.0096	S
		0.0031	0.013	B

T-6	2015/12/22	0.0083	0.031	S
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T-S8	2015/12/6	0.0027	0.013	S
		0.0027	0.013	B

T-3	2015/12/22	0.0098	0.037	S
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T-S7	2015/12/17	0.0052	0.024	S
		0.0052	0.026	B

T-S5	2015/12/17	0.0051	0.019	S
		0.0052	0.024	B

T-S3	2015/12/9	0.0029	0.013	S
		0.0027	0.014	B

T-S4	2015/12/9	ND(0.0014)	0.0070	S
		0.0049	0.026	B

T-D5	2015/12/14	0.0021	0.011	S
		0.0027	0.014	B

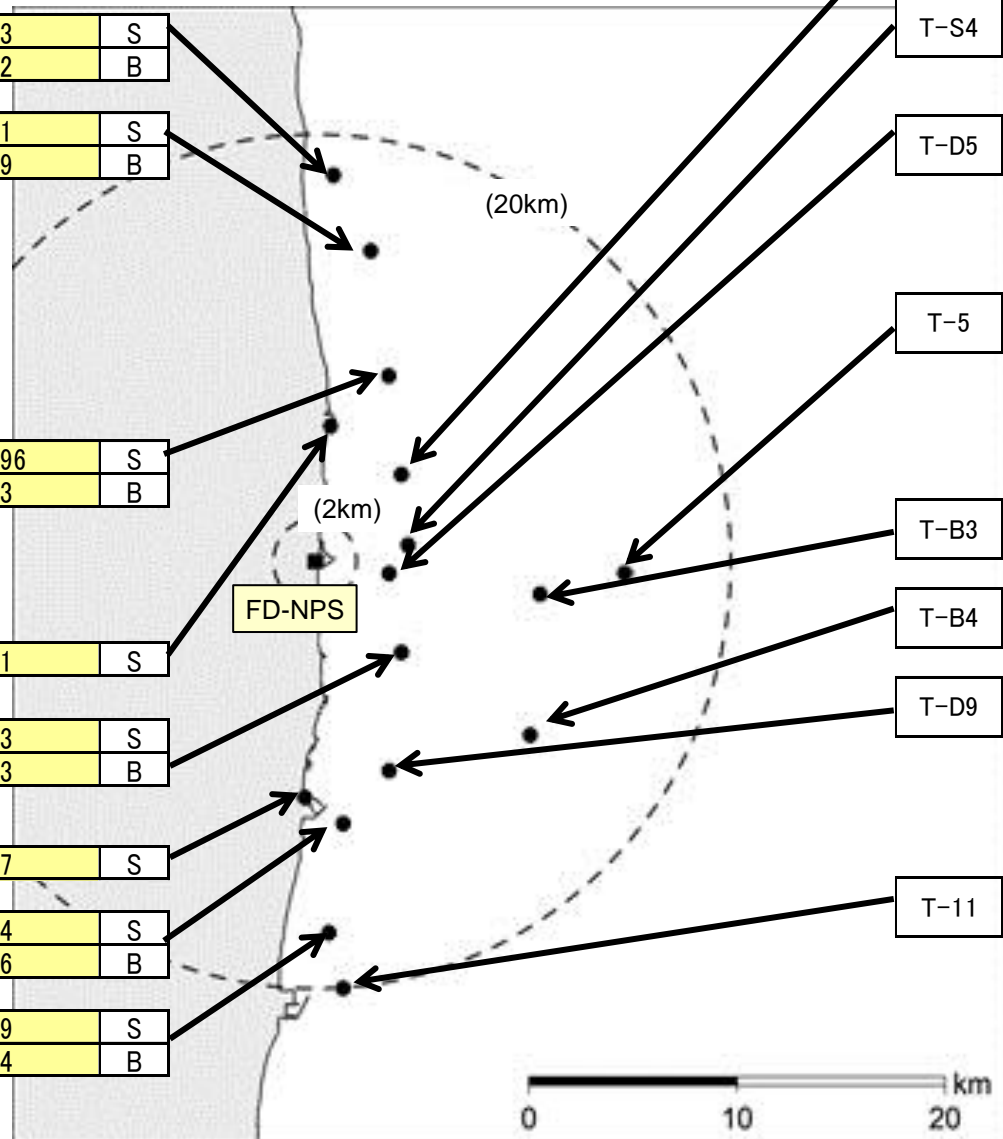
T-5	2015/12/16	ND(0.0012)	0.0031	S
		ND(0.0011)	0.0038	B

T-B3	2015/11/10	ND(0.0015)	0.0069	S
		ND(0.0014)	0.0039	B

T-B4	2015/11/10	0.0025	0.0083	S
		ND(0.0014)	0.0046	B

T-D9	2015/12/14	0.0034	0.016	S
		0.0033	0.013	B

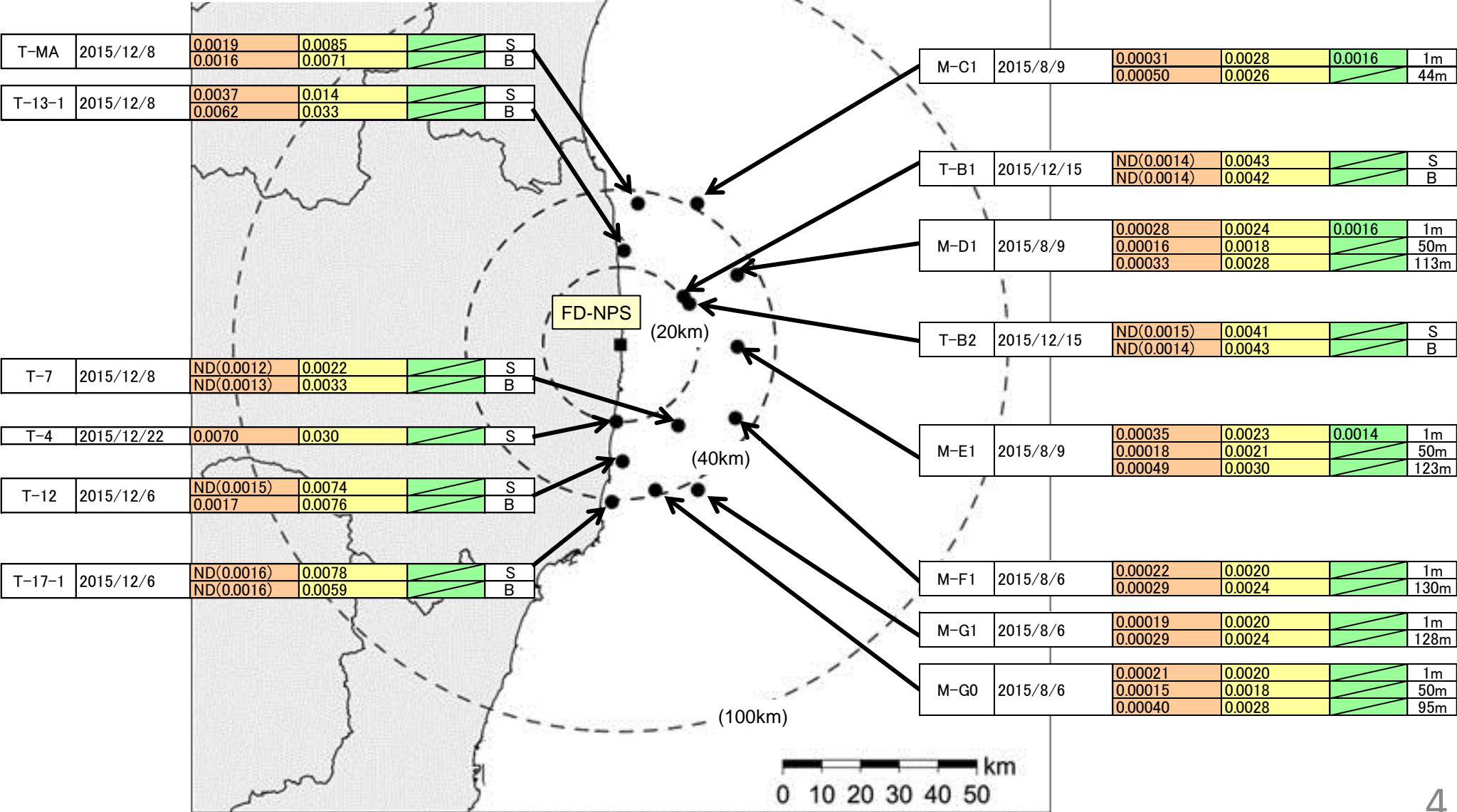
T-11	2015/12/14	0.011	0.054	S
		0.0072	0.036	B



# Sea area between 20-100km radius 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: under detection limits; Numbers in parentheses: detection limits



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

Sampling point	Sampling Date	Cs-134	Cs-137	Total β *	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: under detection limits; Numbers in parentheses: detection limits

\*Total β: excluding K-40

M-C3	2015/10/31	In progress	In progress	0.028	In progress	In progress	1m
	2015/8/8	0.00031	0.0026	0.025	0.079	0.0014	1m
		0.00016	0.0024				50m
		0.00018	0.0020				122m

T-22	2015/12/8	0.0035	0.011				S
		ND(0.0015)	0.010				B

M-D3	2015/10/31	In progress	In progress	0.028	In progress	In progress	1m
	2015/8/8	0.00021	0.0022	0.030	0.093	ND(0.00053)	1m
		0.00021	0.0021				100m
ND(0.00016)	0.0018					207m	

M-F3	2015/11/4	In progress	In progress	0.028	In progress	In progress	1m
	2015/8/6	0.00018	0.0021	0.025	0.093	0.0014	1m
		0.00018	0.0018				100m
0.00021	0.0019					219m	

T-18	2015/12/8	ND(0.0012)	0.0073				S
		ND(0.0014)	0.0064				B

T-20	2015/12/6	0.0024	0.0088				S
		0.0016	0.0078				B

T-M10	2015/12/8	ND(0.0013)	0.0027				S
		ND(0.0013)	0.0029				B

M-E3	2015/11/4	In progress	In progress	0.027	In progress	In progress	1m
	2015/8/8	0.00020	0.0021	0.028	0.065	ND(0.00055)	1m
		ND(0.00017)	0.0019				100m
0.00015	0.0017					213m	

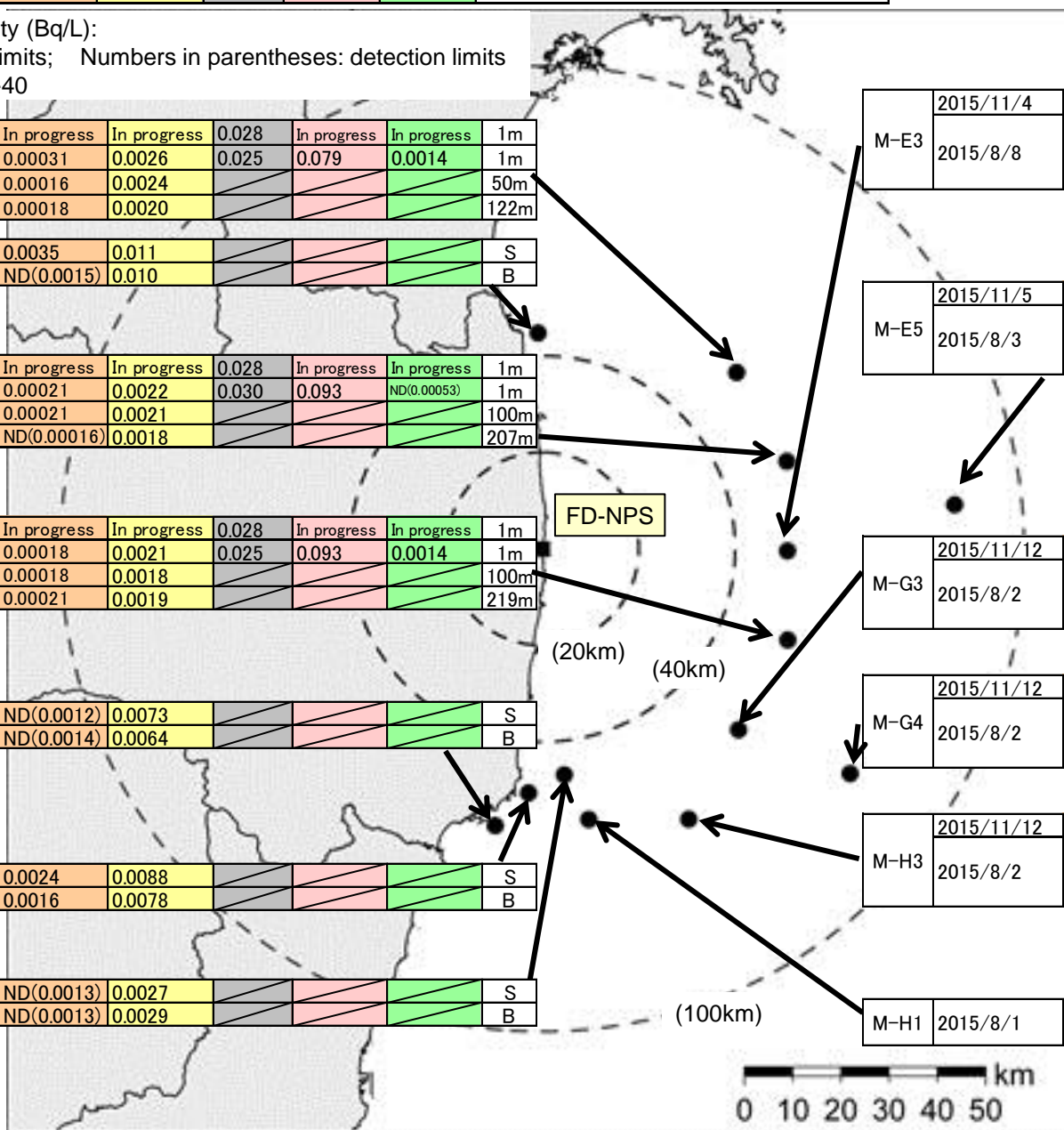
M-E5	2015/11/5	In progress	In progress	0.035	In progress	In progress	1m
	2015/8/3	0.00031	0.0023	0.028	0.076	0.0010	1m
		0.00029	0.0023				100m
ND(0.000086)	0.00065					511m	

M-G3	2015/11/12	In progress	In progress	0.032	In progress	In progress	1m
	2015/8/2	0.00021	0.0022	0.030	0.085	0.0012	1m
		0.00015	0.0020				100m
0.00016	0.0019					199m	

M-G4	2015/11/12	In progress	In progress	0.030	In progress	In progress	1m
	2015/8/2	0.00038	0.0027	0.028	0.086	0.0014	1m
		0.00039	0.0026				100m
ND(0.000069)	0.00057					633m	

M-H3	2015/11/12	In progress	In progress	0.030	In progress	In progress	1m
	2015/8/2	0.00023	0.0023	0.030	0.068	0.0011	1m
		ND(0.00017)	0.0018				100m
0.00014	0.0019					218m	

M-H1	2015/8/1	0.0012	0.0058				1m
		0.00035	0.0029				122m



# Sea area along and off the coast of Miyagi Prefecture

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	S/M/B
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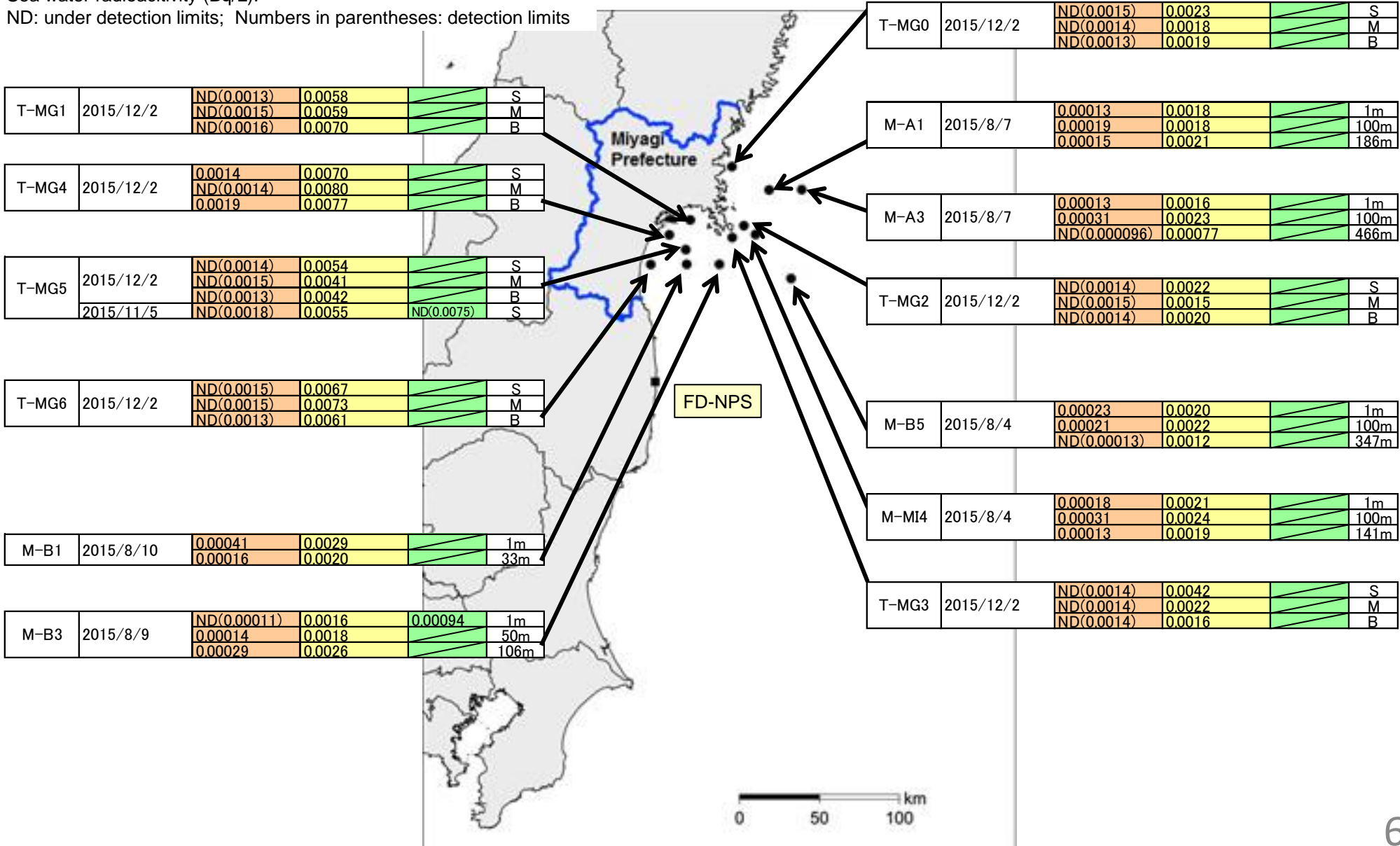
S:2m below sea level

M:between 2m below sea level and 2-3m above sea bottom

B:2-3m above sea bottom

Sea water radioactivity (Bq/L):

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

T-Z	2015/12/8	ND(1.3)	ND(1.1)	/	S
		ND(1.0)	ND(1.3)		B

T-A	2015/12/8	ND(0.94)	ND(1.0)	/	S
		ND(0.89)	ND(1.2)		B

T-B	2015/12/9	ND(0.93)	ND(1.2)	/	S
		ND(0.89)	ND(1.2)		B

M-J1	2015/7/30	0.00058	0.0035	0.0011	1m
		0.0010	0.0051	/	37m

T-C	2015/12/8	ND(0.76)	ND(1.1)	/	S
		ND(0.99)	ND(1.3)		B
	2015/11/10	ND(0.86)	ND(1.1)	ND(0.0067)	S

M-K1	2015/7/30	0.00035	0.0028	/	1m
		0.00028	0.0022		20m

T-D	2015/12/9	ND(0.88)	ND(1.2)	/	S
		ND(0.87)	ND(1.1)		B

M-M1	2015/7/29	0.00023	0.0020	/	1m
		0.00039	0.0026		103m

M-I0	2015/7/31	0.00037	0.0025	0.0011	1m
		0.00040	0.0031	/	61m

M-I1	2015/8/1	0.00046	0.0031	/	1m
		ND(0.00013)	0.0018		50m
		0.00033	0.0025		88m

M-I3	2015/8/1	0.00033	0.0025	/	1m
		0.00028	0.0023		100m
		0.00031	0.0023		173m

M-IB2	2015/7/31	0.00089	0.0045	/	1m
		0.00052	0.0030		105m

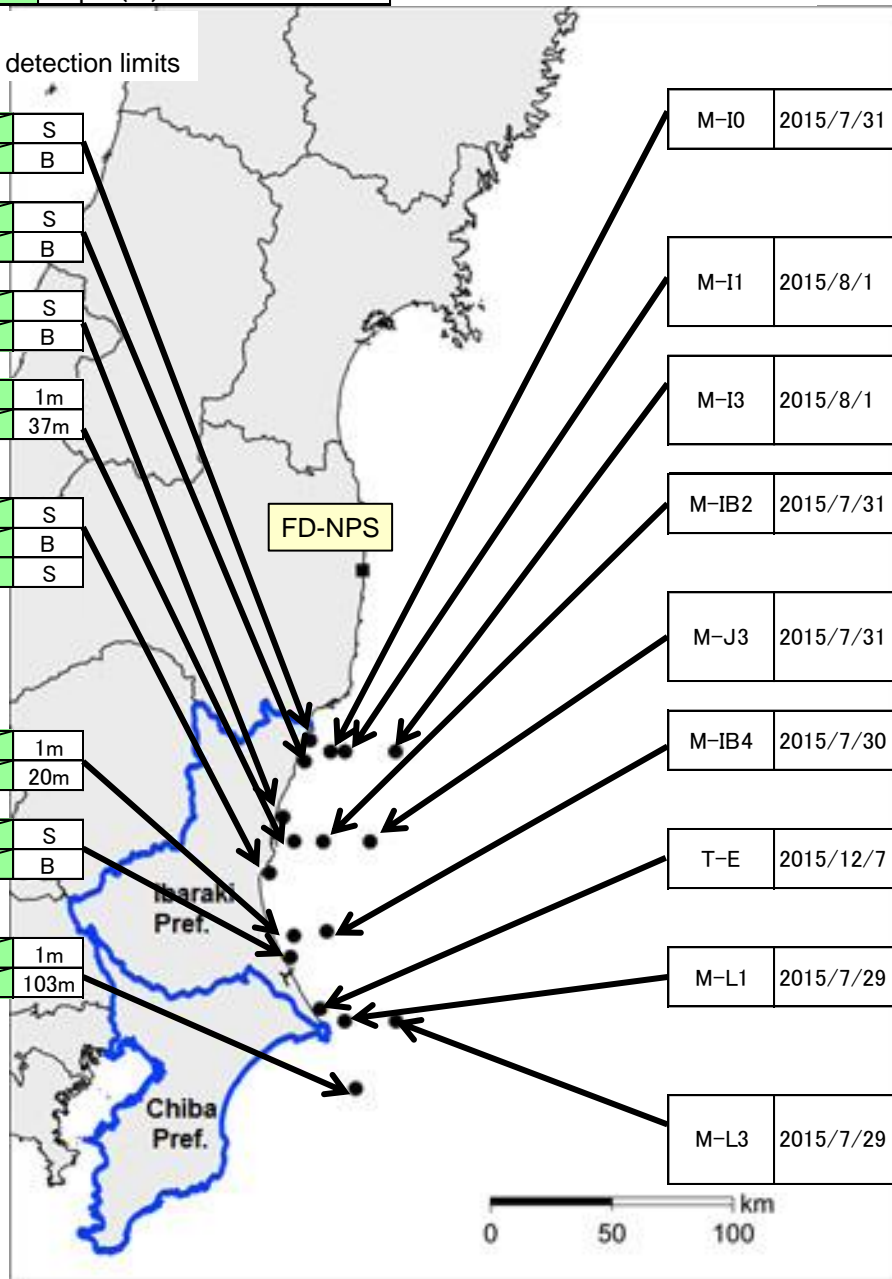
M-J3	2015/7/31	0.00040	0.0030	/	1m
		0.00029	0.0024		100m
		ND(0.000067)	0.00061		550m

M-IB4	2015/7/30	0.00034	0.0028	/	1m
		0.00026	0.0024		110m

T-E	2015/12/7	ND(1.1)	ND(1.1)	/	S
		ND(0.95)	ND(1.1)		B

M-L1	2015/7/29	0.00042	0.0031	/	1m
		0.00061	0.0032		33m

M-L3	2015/7/29	0.00041	0.0030	/	1m
		0.00028	0.0025		100m
		0.00018	0.0022		159m





# 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: under detection limits; Numbers in parentheses: detection limits

M-10	2015/10/21	ND(0.00077)	0.0020	1m
		ND(0.00071)	0.0023	100m
		ND(0.00084)	0.0023	200m
		ND(0.00080)	0.0023	300m
		ND(0.00072)	0.0011	500m

M-14	2015/10/27	ND(0.00068)	0.0026	1m
		ND(0.00065)	0.0028	100m
		ND(0.00064)	0.0021	200m
		ND(0.00066)	0.0017	300m
		ND(0.00075)	0.00097	500m

M-19	2015/10/23	ND(0.00061)	0.0019	1m
		ND(0.00066)	0.0028	100m
		ND(0.00063)	0.0023	200m
		ND(0.00056)	0.0018	300m
		ND(0.00070)	0.00096	500m

M-20	2015/10/22	ND(0.00060)	0.0022	1m
		ND(0.00067)	0.0024	100m
		ND(0.00075)	0.0030	200m
		ND(0.00074)	0.0036	300m
		ND(0.00070)	0.0017	500m

M-25	2015/10/23	ND(0.00067)	0.0019	1m
		ND(0.00066)	0.0022	100m
		ND(0.00070)	0.0032	200m
		ND(0.00064)	0.0020	300m
		ND(0.00062)	0.00093	500m

M-11	2015/10/20	ND(0.00064)	0.0023	1m
		ND(0.00063)	0.0025	100m
		ND(0.00061)	0.0022	200m
		ND(0.00059)	0.0018	300m
		ND(0.00061)	0.0012	500m

M-15	2015/10/20	ND(0.00061)	0.0015	1m
		ND(0.00067)	0.0019	100m
		ND(0.00064)	0.0022	200m
		ND(0.00064)	0.0015	300m
		ND(0.00065)	0.00090	500m

M-21	2015/10/22	ND(0.00058)	0.0017	1m
		ND(0.00061)	0.0021	100m
		0.00071	0.0033	200m
		ND(0.00063)	0.0027	300m
		ND(0.00061)	0.0012	500m

M-26	2015/10/24	ND(0.00078)	0.0021	1m
		ND(0.00063)	0.0021	100m
		ND(0.00073)	0.0032	200m
		ND(0.00065)	0.0037	300m
		ND(0.00069)	0.0030	500m

M-27	2015/10/24	ND(0.00075)	0.0019	1m
		ND(0.00077)	0.0024	100m
		ND(0.00083)	0.0033	200m
		ND(0.00078)	0.0037	300m
		ND(0.00083)	0.0033	500m

