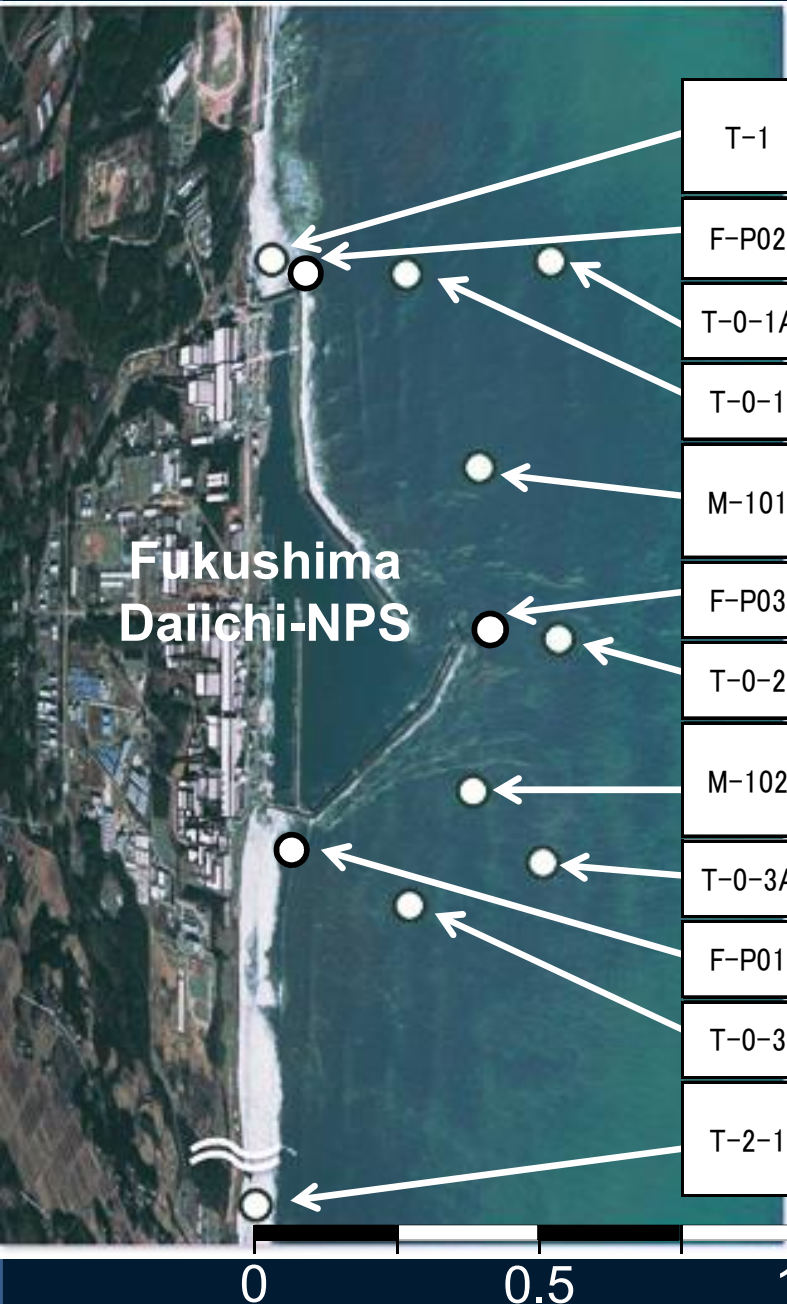


# Sea Area Monitoring

February 23, 2016

Nuclear Regulation Authority (NRA), Japan

# Sea area within 2km radius from the NPS



Fukushima  
Daiichi-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	2016/2/8	ND(0.63)	ND(0.69)	13 <sup>*1</sup>	ND(1.5)				
	2016/1/4	ND(0.55)	ND(0.73)	10 <sup>*1</sup>	ND(1.4)	ND(0.0076)	ND(1.5)		
	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	2016/1/22	ND(0.061)	0.12	0.03 <sup>*2</sup>	ND(0.47)	In progress		In progress	In progress
	2015/12/14	ND(0.059)	0.059	0.08 <sup>*2</sup>	ND(0.40)	0.001		ND(9.0 × 10 <sup>-6</sup> )	9.0 × 10 <sup>-6</sup>
T-0-1A	2016/2/8	ND(0.54)	ND(0.64)	ND(16) <sup>*1</sup>	In progress				
	2016/2/1	ND(0.68)	ND(0.74)	ND(16) <sup>*1</sup>	ND(1.6)				
T-0-1	2016/2/8	ND(0.71)	ND(0.92)	ND(16) <sup>*1</sup>	In progress				
	2016/2/1	ND(0.59)	ND(0.58)	ND(16) <sup>*1</sup>	ND(1.6)				
M-101	2015/12/9	0.017	0.076		0.14	In progress			
	2015/11/11	0.0073	0.034		0.092	In progress			
	2015/10/5	0.018	0.085		0.44	0.077			
F-P03	2016/1/22	ND(0.062)	ND(0.046)	0.04 <sup>*2</sup>	ND(0.45)	In progress		In progress	In progress
	2015/12/14	ND(0.055)	0.081	0.06 <sup>*2</sup>	ND(0.40)	0.003		ND(7.0 × 10 <sup>-6</sup> )	1.2 × 10 <sup>-5</sup>
T-0-2	2016/2/8	ND(0.75)	ND(0.73)	ND(16) <sup>*1</sup>	In progress				
	2016/2/1	ND(0.67)	ND(0.59)	ND(16) <sup>*1</sup>	ND(1.6)				
M-102	2015/12/10	0.022	0.099		0.29	In progress			
	2015/11/12	0.023	0.11		0.12	In progress			
	2015/10/6	0.016	0.066		0.20	0.017			
T-0-3A	2016/2/8	ND(0.73)	ND(0.58)	ND(16) <sup>*1</sup>	In progress				
	2016/2/1	ND(0.67)	ND(0.62)	ND(16) <sup>*1</sup>	ND(1.6)				
F-P01	2016/1/22	ND(0.060)	ND(0.051)	0.04 <sup>*2</sup>	ND(0.49)	In progress		In progress	In progress
	2015/12/14	ND(0.060)	0.099	0.05 <sup>*2</sup>	ND(0.41)	0.004		ND(1.1 × 10 <sup>-5</sup> )	1.3 × 10 <sup>-5</sup>
T-0-3	2016/2/8	ND(0.71)	ND(0.78)	ND(16) <sup>*1</sup>	In progress				
	2016/2/1	ND(0.58)	ND(0.64)	ND(16) <sup>*1</sup>	ND(1.6)				
T-2-1	2016/2/8	ND(0.87)	ND(0.69)	11 <sup>*1</sup>	ND(1.5)				
	2016/1/4	ND(0.73)	ND(0.72)	13 <sup>*1</sup>	ND(1.4)	ND(0.0076)	ND(1.5)		
	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

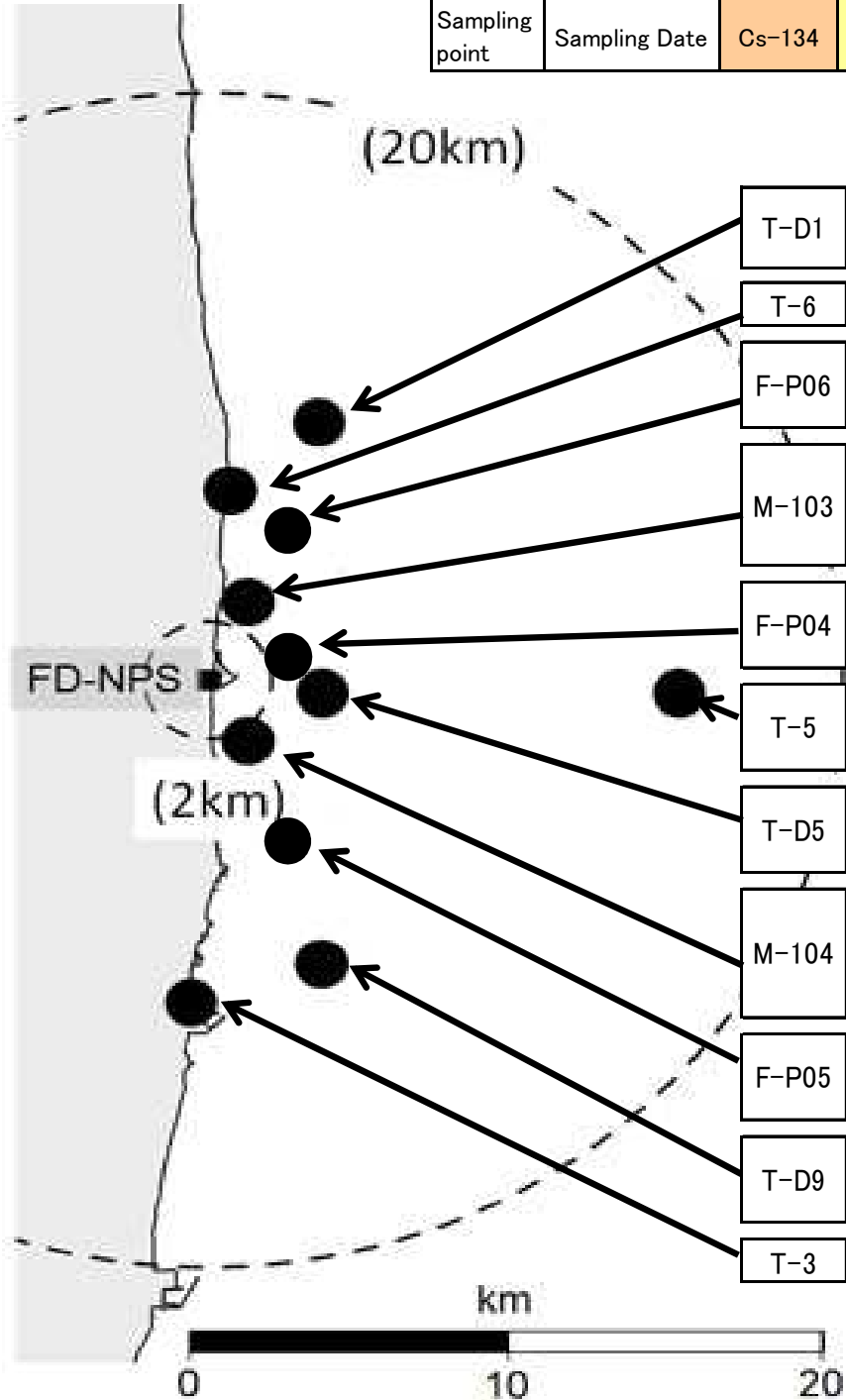
# Sea area between 2-20km radius from the NPS (1)

Sampling point	Sampling Date	Cs-134	Cs-137	total $\beta$	H-3	Sr-90	total $\alpha$	Pu-238	Pu-239+240	S	S:2m below sea level
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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-D1	2016/1/5	0.0024	0.014	ND(18) <sup>*1</sup>	ND(0.38)	ND(0.0065)	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( $5.1 \times 10^{-6}$ )	ND( $5.1 \times 10^{-6}$ )	S
T-6	2016/1/5	0.012	0.046	ND(15) <sup>*1</sup>	ND(0.32)					S
F-P06	2016/1/22	ND(0.060)	0.058	0.04 <sup>*2</sup>	ND(0.45)	In progress		In progress	In progress	S
	2015/12/14	ND(0.069)	ND(0.066)	0.05 <sup>*2</sup>	ND(0.39)	0.001		ND( $8.0 \times 10^{-6}$ )	ND( $1.0 \times 10^{-5}$ )	S
M-103	2015/12/9	0.011	0.051		0.10	In progress				0.5m
	2015/11/11	0.0042	0.022		0.085	In progress				0.5m
	2015/10/5	0.0046	0.020		0.10	0.0017				0.5m
F-P04	2016/1/22	ND(0.065)	ND(0.048)	0.04 <sup>*2</sup>	ND(0.44)	In progress		In progress	In progress	S
	2015/12/14	ND(0.066)	ND(0.070)	0.04 <sup>*2</sup>	ND(0.39)	0.002		ND( $6.0 \times 10^{-6}$ )	$8.0 \times 10^{-6}$	S
T-5	2016/1/6	ND(0.0014)	0.0047	ND(15) <sup>*1</sup>	ND(0.33)	ND(0.0071)	ND(2.0)			S
	2015/10/6	ND(0.0015)	0.0042	ND(16) <sup>*1</sup>	ND(0.36)	ND(0.0067)	ND(1.9)	ND( $5.1 \times 10^{-6}$ )	$(7.2 \pm 1.9) \times 10^{-6}$	S
T-D5	2016/1/5	0.0032	0.015	ND(18) <sup>*1</sup>	ND(0.38)	ND(0.0072)	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( $5.1 \times 10^{-6}$ )	ND( $5.3 \times 10^{-6}$ )	S
M-104	2015/12/10	0.0045	0.022		0.061	In progress				0.5m
	2015/11/12	0.0066	0.029		0.11	In progress				0.5m
	2015/10/6	0.0041	0.016		0.080	0.0015				0.5m
F-P05	2016/1/22	ND(0.062)	ND(0.042)	0.04 <sup>*2</sup>	ND(0.45)	In progress		In progress	In progress	S
	2015/12/14	ND(0.064)	0.062	0.04 <sup>*2</sup>	ND(0.39)	0.002		ND( $7.0 \times 10^{-6}$ )	ND( $8.0 \times 10^{-6}$ )	S
T-D9	2016/1/5	0.0020	0.0082	ND(18) <sup>*1</sup>	ND(0.38)	ND(0.0068)	ND(2.0)			S
	2015/10/6	0.0026	0.013	ND(16) <sup>*1</sup>	ND(0.36)	ND(0.0068)	ND(1.9)	ND( $5.2 \times 10^{-6}$ )	ND( $5.0 \times 10^{-6}$ )	S
T-3	2016/1/5	0.0084	0.041	ND(17) <sup>*1</sup>	ND(0.31)					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	2016/1/21	0.0052	0.025	S
		0.0076	0.036	B

T-14	2016/1/21	0.0048	0.027	S
		0.0055	0.022	B

T-D1	2016/1/21	0.0046	0.021	S
		0.0048	0.022	B

T-6	2016/1/21	0.012	0.063	S
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T-S8	2016/1/11	0.0023	0.016	S
		0.0024	0.013	B

T-3	2016/1/21	0.026	0.11	S
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T-S7	2016/1/26	0.0081	0.047	S
		0.012	0.060	B

T-S5	2016/1/26	0.010	0.056	S
		0.010	0.049	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	2016/1/21	0.0063	0.024	S
		0.0062	0.024	B

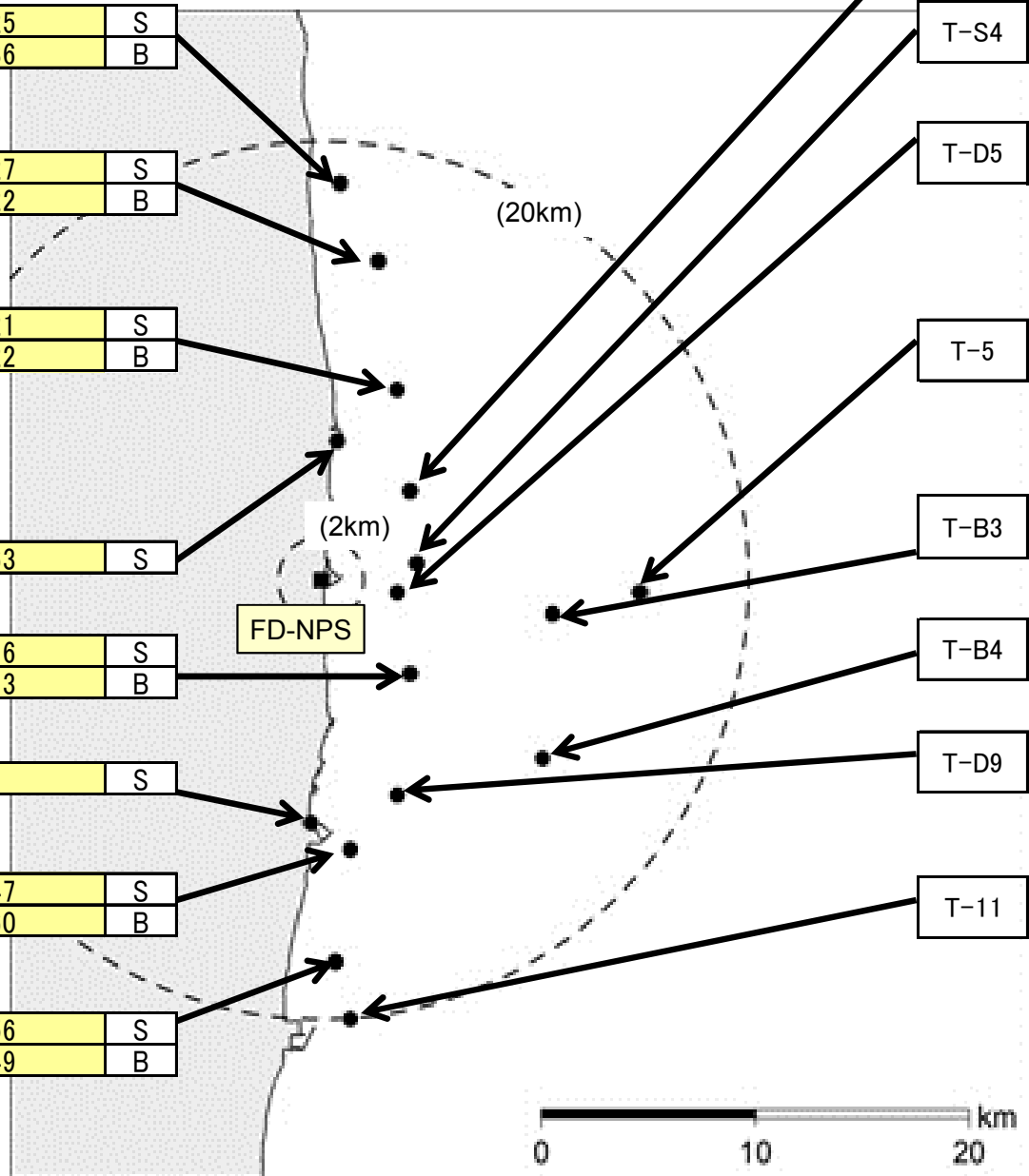
T-5	2016/1/22	0.0015	0.0070	S
		0.0019	0.011	B

T-B3	2016/1/15	ND(0.0015)	0.0042	S
		ND(0.0014)	0.0038	B

T-B4	2016/1/15	ND(0.0014)	0.0030	S
		ND(0.0013)	0.0030	B

T-D9	2016/1/22	0.0075	0.035	S
		0.0093	0.038	B

T-11	2016/1/22	0.0051	0.027	S
		0.0040	0.020	B

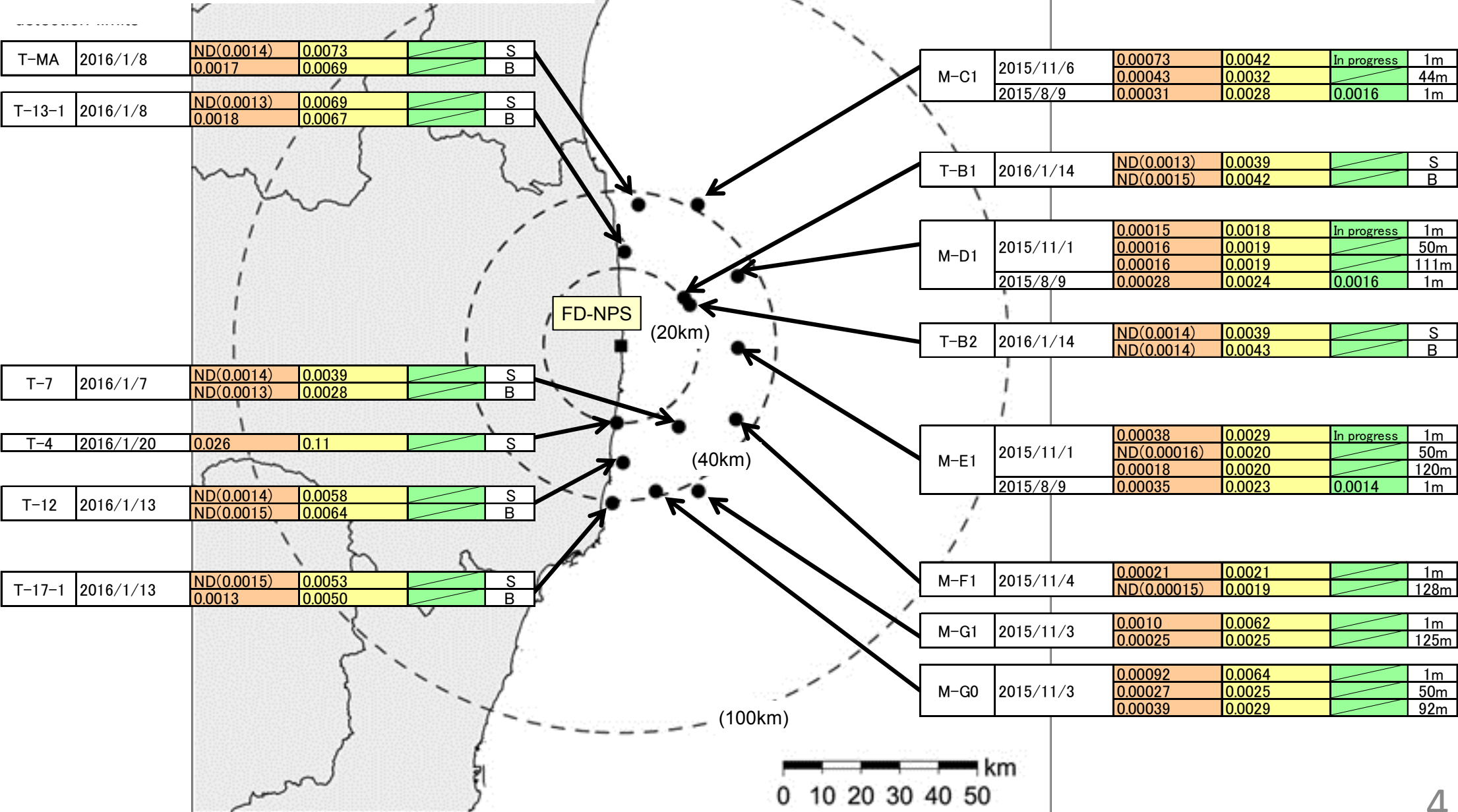


# Sea area between 20-100km radius from the NPS(1)

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

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
M-C3	2015/10/31	ND(0.00016)	0.0019	0.028	0.088	In progress	1m
		0.00015	0.0018				50m
		0.00014	0.0018				120m
	2015/8/8	0.00031	0.0026	0.025	0.079	0.0014	1m

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
T-22	2016/1/8	ND(0.0013)	0.0057				S
		ND(0.0015)	0.0067				B

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
M-D3	2015/10/31	ND(0.00016)	0.0020	0.028	0.073	In progress	1m
		0.00020	0.0018				100m
		0.00018	0.0017				204m
	2015/8/8	0.00021	0.0022	0.030	0.093	ND(0.00053)	1m

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
M-F3	2015/11/4	ND(0.00015)	0.0020	0.028	0.091	In progress	1m
		0.00021	0.0023				100m
		0.00018	0.0023				213m
	2015/8/6	0.00018	0.0021	0.025	0.093	0.0014	1m

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
T-18	2016/1/7	ND(0.0014)	0.0076				S
		0.0017	0.0079				B

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
T-20	2016/1/13	ND(0.0014)	0.0042				S
		ND(0.0013)	0.0050				B

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
T-M10	2016/1/7	ND(0.0015)	0.0073				S
		ND(0.0013)	0.0032				B

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
M-E3	2015/11/4	0.00016	0.0021	0.027	0.076	In progress	1m
		ND(0.00014)	0.0017				100m
		ND(0.00012)	0.0017				209m
	2015/8/8	0.00020	0.0021	0.028	0.065	ND(0.00055)	1m

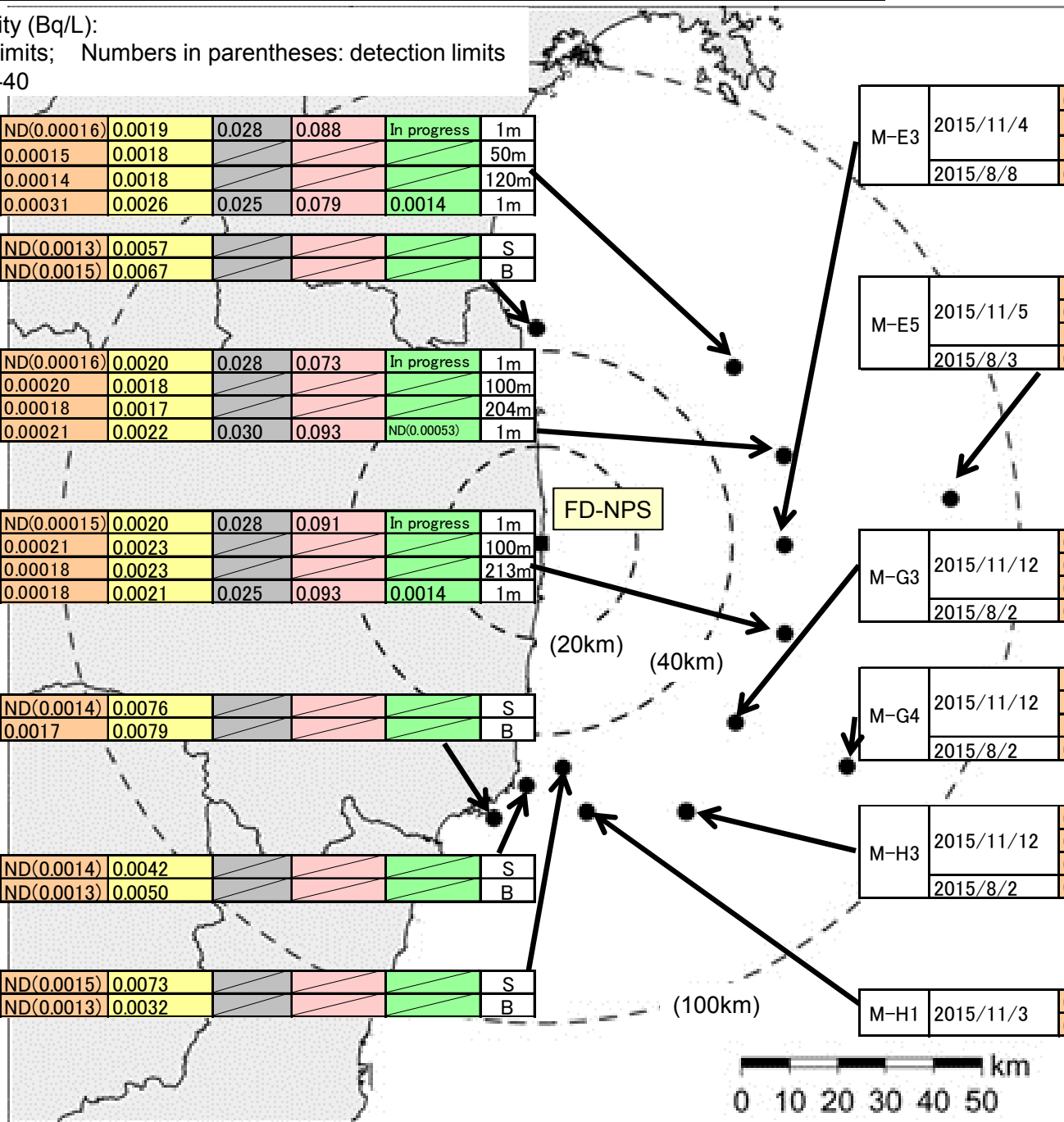
Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
M-E5	2015/11/5	ND(0.00013)	0.0019	0.035	0.069	In progress	1m
		0.00024	0.0024				100m
		ND(0.000077)	0.00066				512m
	2015/8/3	0.00031	0.0023	0.028	0.076	0.0010	1m

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
M-G3	2015/11/12	0.00025	0.0021	0.032	0.080	In progress	1m
		0.00016	0.0019				100m
		0.00022	0.0021				188m
	2015/8/2	0.00021	0.0022	0.030	0.085	0.0012	1m

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
M-G4	2015/11/12	ND(0.00015)	0.0019	0.030	0.072	In progress	1m
		ND(0.00015)	0.0019				100m
		ND(0.000083)	0.00055				645m
	2015/8/2	0.00038	0.0027	0.028	0.086	0.0014	1m

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
M-H3	2015/11/12	0.00024	0.0024	0.030	0.087	In progress	1m
		0.00015	0.0017				100m
		0.00027	0.0024				216m
	2015/8/2	0.00023	0.0023	0.030	0.068	0.0011	1m

Sampling point	Sampling Date	Cs-134	Cs-137	Total β*	H-3	Sr-90	Depth(m)
M-H1	2015/11/3	0.00030	0.0023				1m
		0.00014	0.0021				120m

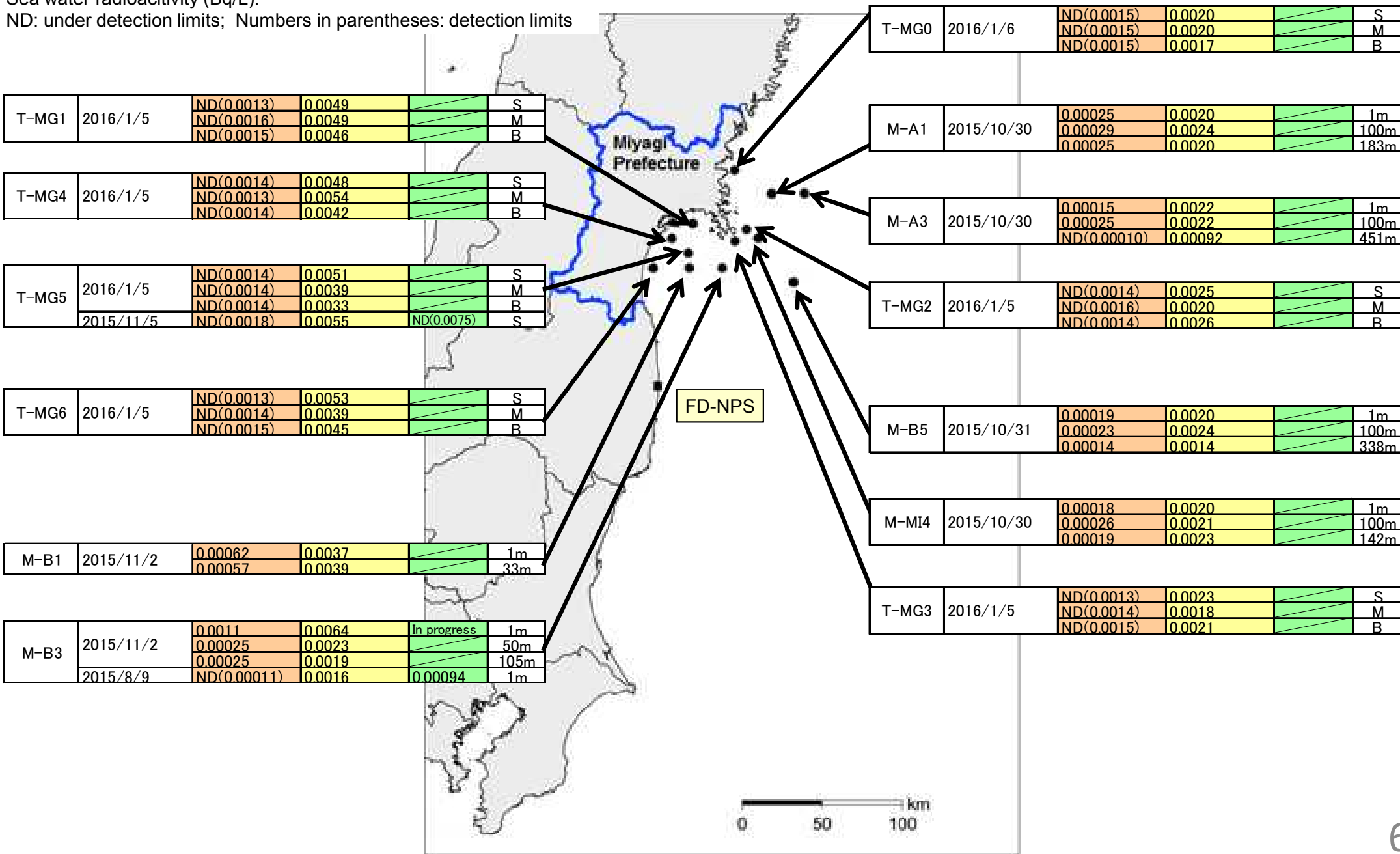


# Sea area along and off the coast of Miyagi Prefecture

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	2016/1/23	ND(1.2)	ND(1.2)	/	S
		ND(0.94)	ND(1.1)		B

T-A	2016/1/23	ND(0.91)	ND(1.1)	/	S
		ND(0.87)	ND(1.3)		B

T-B	2016/1/22	ND(1.2)	ND(1.1)	/	S
		ND(0.91)	ND(1.1)		B

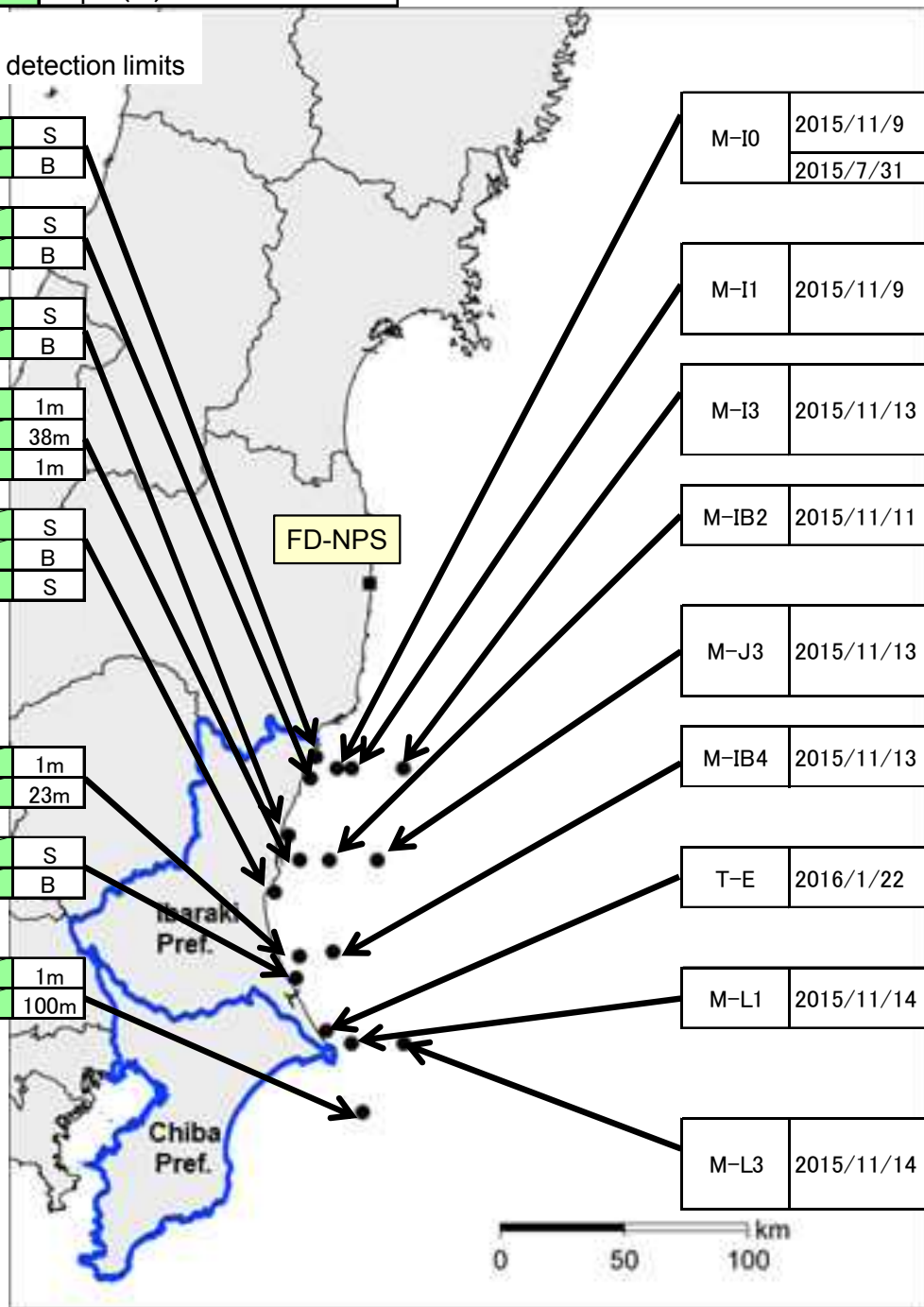
M-J1	2015/11/11	0.00030	0.0023	In progress	1m
		0.00050	0.0032	/	38m
	2015/7/30	0.00058	0.0035	0.0011	1m

T-C	2016/1/21	ND(0.79)	ND(1.3)	/	S
		ND(0.98)	ND(1.2)		B
	2015/11/10	ND(0.86)	ND(1.1)	ND(0.0067)	S

M-K1	2015/11/11	0.00021	0.0020	/	1m
		0.00023	0.0021		23m

T-D	2016/1/21	ND(1.1)	ND(1.1)	/	S
		ND(1.0)	ND(1.2)		B

M-M1	2015/11/14	ND(0.00013)	0.0020	/	1m
		0.00027	0.0025		100m



M-I0	2015/11/9	0.00035	0.0028	In progress	1m
		0.00035	0.0027		/
	2015/7/31	0.00037	0.0025	0.0011	1m

M-I1	2015/11/9	0.00031	0.0025	/	1m	
		0.00019	0.0025		/	50m
		0.00051	0.0032		/	88m

M-I3	2015/11/13	0.00017	0.0024	/	1m	
		ND(0.00012)	0.0020		/	100m
		0.00025	0.0022		/	173m

M-IB2	2015/11/11	0.00023	0.0021	/	1m
		0.00040	0.0026		/

M-J3	2015/11/13	0.00027	0.0024	/	1m	
		0.00027	0.0024		/	100m
		ND(0.000092)	0.00077		/	555m

M-IB4	2015/11/13	0.00031	0.0024	/	1m
		0.00031	0.0026		/

T-E	2016/1/22	ND(1.1)	ND(1.2)	/	S
		ND(0.91)	ND(1.2)		B

M-L1	2015/11/14	0.00020	0.0020	/	1m
		0.00020	0.0023		/

M-L3	2015/11/14	ND(0.00017)	0.0020	/	1m	
		0.00027	0.0026		/	100m
		0.00032	0.0027		/	153m



# 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-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-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-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-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-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-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-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-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-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

