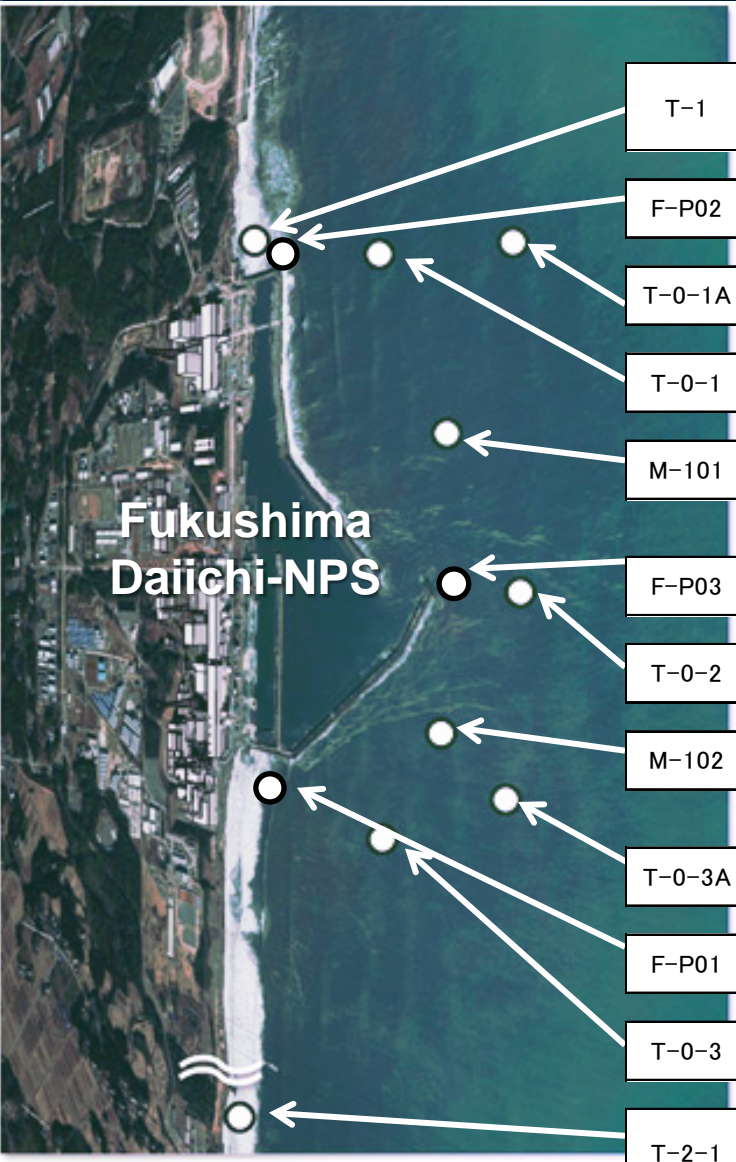


# Sea Area Monitoring

July 22, 2014

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+Pu-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	2014/7/7	ND(0.62)	ND(0.57)	11 <sup>*1</sup>	ND(1.7)				
	2014/5/12	ND(0.77)	0.97	11 <sup>*1</sup>	8.7	1.2	ND(1.5)		
	2014/4/10	ND(0.85)	ND(0.82)					ND( $5.6 \times 10^{-6}$ )	( $9.4+2.2$ ) $\times 10^{-6}$
F-P02	2014/6/16	ND(0.066)	ND(0.050)	0.03 <sup>*2</sup>	ND(0.41)	In progress		In progress	In progress
	2014/4/14	ND(0.060)	ND(0.052)	0.04 <sup>*2</sup>	ND(0.41)	0.002		ND( $6 \times 10^{-6}$ )	$8 \times 10^{-6}$
T-0-1A	2014/7/9	ND(0.59)	ND(0.58)	ND(18) <sup>*1</sup>	In progress				
	2014/7/2	ND(0.62)	ND(0.58)	ND(17) <sup>*1</sup>	ND(1.4)				
T-0-1	2014/7/9	ND(0.64)	ND(0.57)	ND(18) <sup>*1</sup>	In progress				
	2014/7/2	ND(0.62)	ND(0.68)	ND(17) <sup>*1</sup>	ND(1.4)				
M-101	2014/4/25	0.0059	0.017		0.080	In progress			
	2014/2/22	0.15	0.39		0.16	0.034			
F-P03	2014/6/16	ND(0.080)	ND(0.071)	0.03 <sup>*2</sup>	ND(0.41)	In progress		In progress	In progress
	2014/4/14	ND(0.069)	ND(0.053)	0.03 <sup>*2</sup>	ND(0.41)	0.003		ND( $9 \times 10^{-6}$ )	$8 \times 10^{-6}$
T-0-2	2014/7/9	ND(0.68)	ND(0.50)	ND(18) <sup>*1</sup>	In progress				
	2014/7/2	ND(0.43)	ND(0.60)	ND(17) <sup>*1</sup>	ND(1.4)				
M-102	2014/4/24	0.0050	0.014		0.091	In progress			
	2014/2/21	0.12	0.33		0.21	0.074			
T-0-3A	2014/7/9	ND(0.64)	ND(0.50)	ND(18) <sup>*1</sup>	In progress				
	2014/7/2	ND(0.66)	ND(0.83)	ND(17) <sup>*1</sup>	ND(1.4)				
F-P01	2014/6/16	ND(0.056)	0.074	0.04 <sup>*2</sup>	ND(0.41)	In progress		In progress	In progress
	2014/4/14	ND(0.065)	0.078	0.04 <sup>*2</sup>	ND(0.40)	0.006		ND( $5 \times 10^{-6}$ )	$6 \times 10^{-6}$
T-0-3	2014/7/9	ND(0.82)	ND(0.76)	ND(18) <sup>*1</sup>	In progress				
	2014/7/2	ND(0.75)	ND(0.52)	ND(17) <sup>*1</sup>	ND(1.4)				
T-2-1	2014/7/7	ND(0.74)	1.2	11 <sup>*1</sup>	ND(1.7)				
	2014/5/12	ND(0.53)	ND(0.69)	13 <sup>*1</sup>	4.3	0.018	ND(1.5)		
	2014/4/10	ND(0.70)	ND(0.58)	9.0 <sup>*1</sup>				ND( $5.6 \times 10^{-6}$ )	( $3.1+0.41$ ) $\times 10^{-5}$

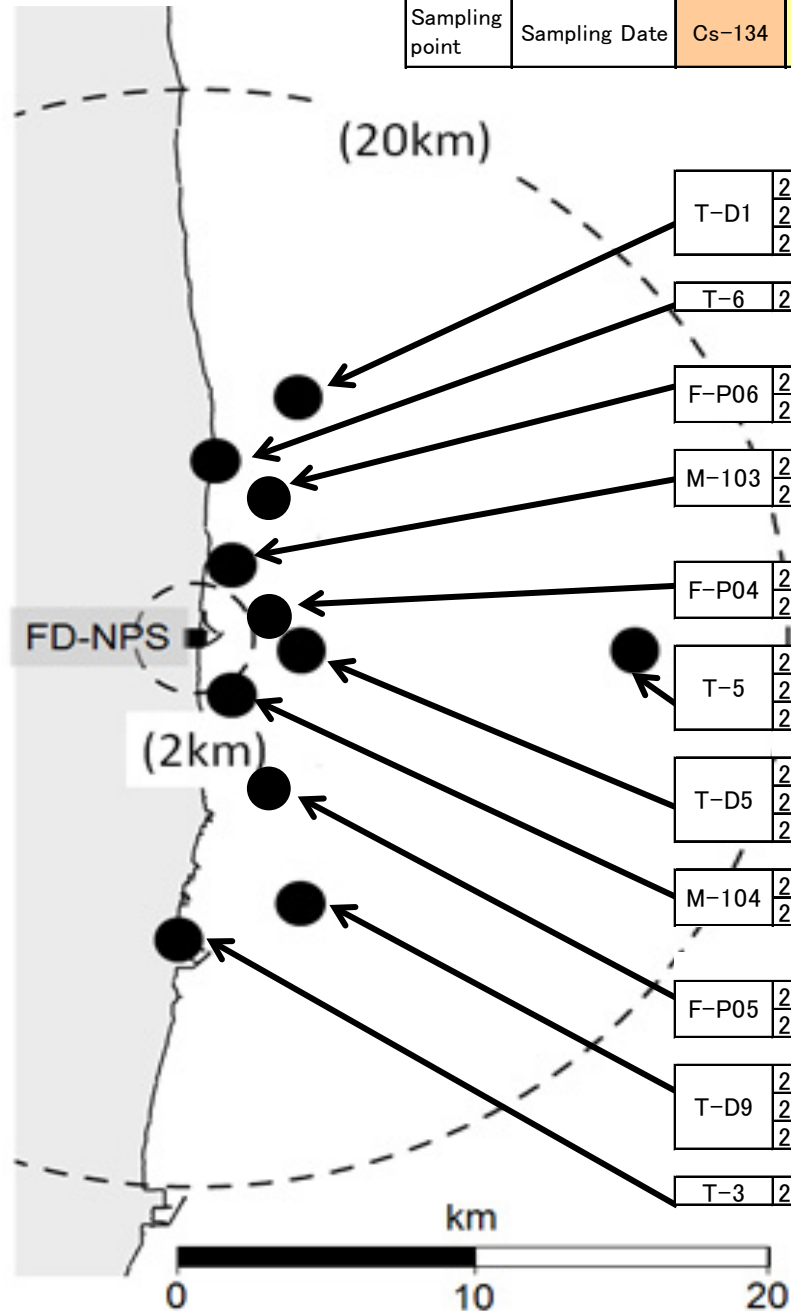
# Sea area between 2-20km radius from the NPS (1)

Sampling point	Sampling Date	Cs-134	Cs-137	total $\beta$	H-3	Sr-90	total $\alpha$	Pu-238	Pu-239+Pu-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



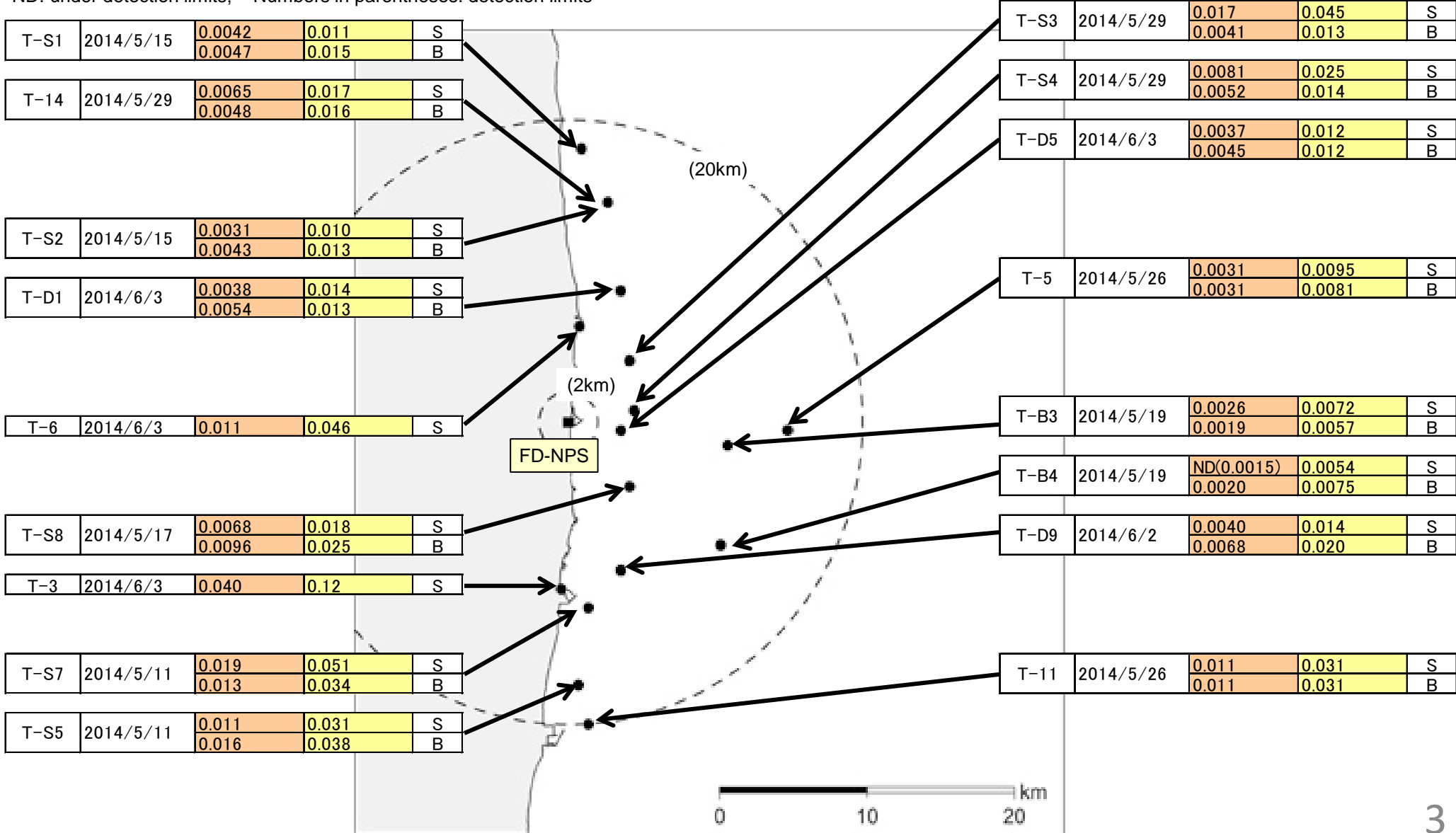
T-D1	2014/5/21	0.0039	0.010	ND(15) <sup>*1</sup>	ND(0.32)					S
	2014/5/7	0.0061	0.015	ND(16) <sup>*1</sup>	0.34	ND(0.01)	ND(1.5)			S
	2014/4/1	0.0027	0.0086	ND(17) <sup>*1</sup>	ND(0.30)	ND(0.009)	ND(1.9)	ND(5.3 × 10 <sup>-6</sup> )	(5.7 ± 1.7) × 10 <sup>-6</sup>	S
T-6	2014/5/20	0.012	0.038	ND(15) <sup>*1</sup>	0.45					S
F-P06	2014/6/16	ND(0.055)	ND(0.055)	0.03 <sup>*2</sup>	ND(0.40)	In progress		In progress	In progress	S
	2014/4/14	ND(0.058)	ND(0.047)	0.03 <sup>*2</sup>	ND(0.41)	0.001		ND(7 × 10 <sup>-6</sup> )	7 × 10 <sup>-6</sup>	S
M-103	2014/4/25	0.0081	0.023		0.10	In progress				0.5m
	2014/2/22	0.035	0.087		0.098	0.0032				0.5m
F-P04	2014/6/16	ND(0.074)	ND(0.053)	0.03 <sup>*2</sup>	ND(0.41)	In progress		In progress	In progress	S
	2014/4/14	ND(0.072)	ND(0.051)	0.03 <sup>*2</sup>	ND(0.41)	0.002		ND(7 × 10 <sup>-6</sup> )	7 × 10 <sup>-6</sup>	S
T-5	2014/5/20	ND(0.0013)	0.0064	ND(15) <sup>*1</sup>	ND(0.32)					S
	2014/5/8	0.0013	0.0047	ND(16) <sup>*1</sup>	ND(0.33)	ND(0.01)	ND(1.5)			S
	2014/4/2	ND(0.0014)	0.0044	ND(17) <sup>*1</sup>	ND(0.30)	ND(0.009)	ND(1.9)	ND(5.5 × 10 <sup>-6</sup> )	(8.3 ± 2.1) × 10 <sup>-6</sup>	S
T-D5	2014/5/21	0.0044	0.0099	ND(15) <sup>*1</sup>	ND(0.32)					S
	2014/5/7	0.010	0.027	ND(16) <sup>*1</sup>	ND(0.33)	ND(0.01)	ND(1.5)			S
	2014/4/1	0.0058	0.012	ND(17) <sup>*1</sup>	ND(0.30)	ND(0.009)	ND(1.9)	ND(5.2 × 10 <sup>-6</sup> )	ND(4.5 × 10 <sup>-6</sup> )	S
M-104	2014/4/24	0.024	0.071		0.16	In progress				0.5m
	2014/2/21	0.043	0.11		0.18	0.011				0.5m
F-P05	2014/6/16	ND(0.060)	ND(0.076)	0.03 <sup>*2</sup>	ND(0.41)	In progress		In progress	In progress	S
	2014/4/14	ND(0.058)	ND(0.060)	0.03 <sup>*2</sup>	ND(0.41)	0.002		ND(6 × 10 <sup>-6</sup> )	6 × 10 <sup>-6</sup>	S
T-D9	2014/5/20	0.0047	0.013	ND(15) <sup>*1</sup>	ND(0.32)					S
	2014/5/8	0.010	0.025	ND(16) <sup>*1</sup>	ND(0.33)	ND(0.008)	ND(1.5)			S
	2014/4/2	0.0041	0.010	ND(16) <sup>*1</sup>	ND(0.30)	ND(0.008)	ND(1.9)	ND(4.7 × 10 <sup>-6</sup> )	ND(4.5 × 10 <sup>-6</sup> )	S
T-3	2014/5/20	0.021	0.066	ND(15) <sup>*1</sup>	ND(0.32)					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):

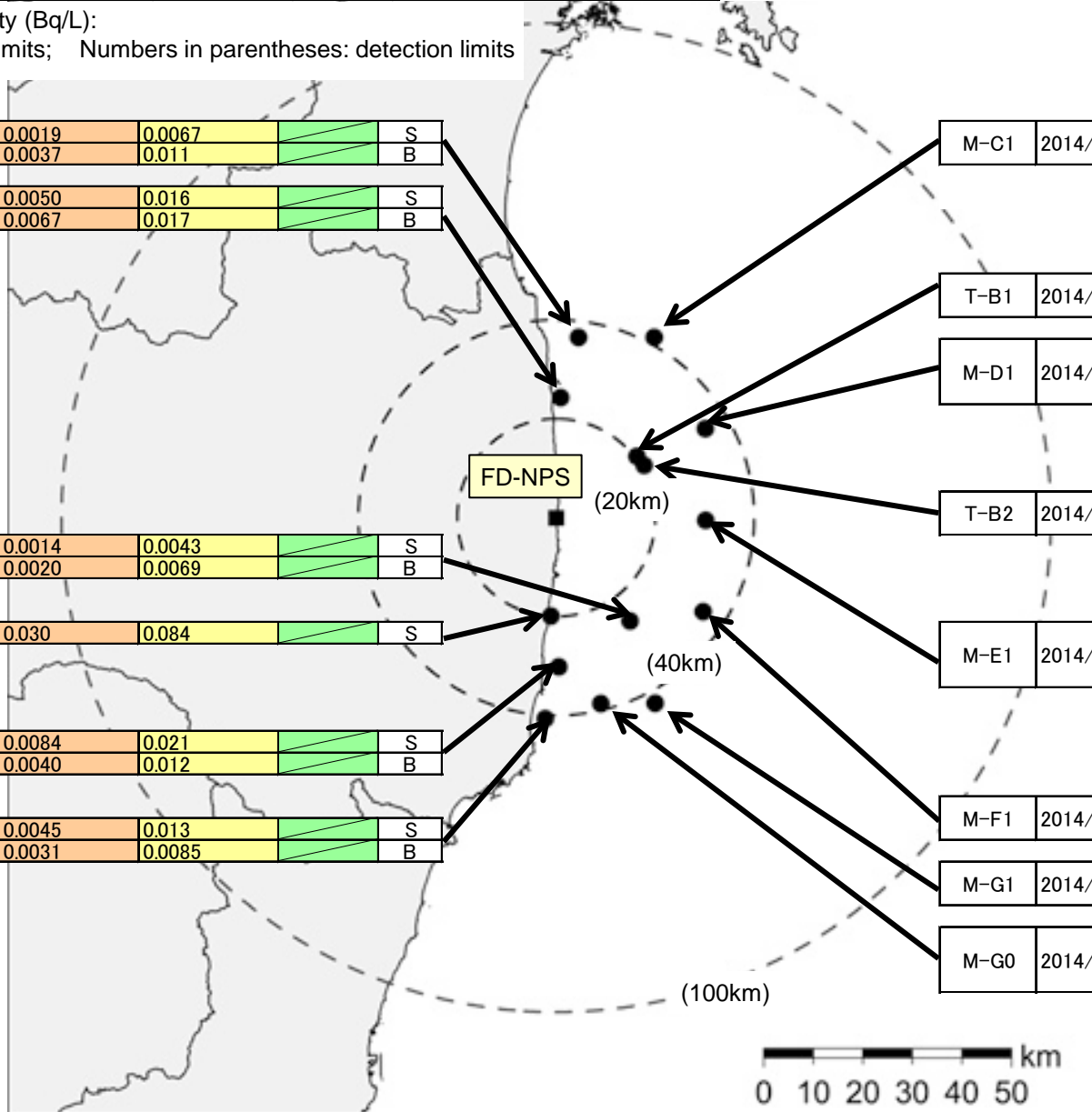
ND: under detection limits; Numbers in parentheses: detection limits



# 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



T-MA	2014/5/28	0.0019 0.0037	0.0067 0.011		S B
T-13-1	2014/5/28	0.0050 0.0067	0.016 0.017		S B

M-C1	2014/1/26	0.00096 0.00063	0.0034 0.0027	0.00090 	1m 48m
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T-B1	2014/5/9	0.0017 ND(0.0015)	0.0071 0.0063		S B
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M-D1	2014/1/23	0.00094 ND(0.00060)	0.0033 0.0034	0.00085 	1m 50m 114m
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T-B2	2014/5/9	0.0018 0.0020	0.0070 0.0079		S B
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T-7	2014/5/26	0.0014 0.0020	0.0043 0.0069		S B
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M-E1	2014/1/23	ND(0.00059) ND(0.00074)	0.0027 0.0019	0.00081 	1m 50m 125m
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T-4	2014/6/3	0.030	0.084		S
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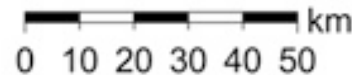
T-12	2014/5/10	0.0084 0.0040	0.021 0.012		S B
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M-F1	2014/1/18	0.00063 ND(0.00071)	0.0025 0.0022		1m 132m
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T-17-1	2014/5/10	0.0045 0.0031	0.013 0.0085		S B
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M-G1	2014/1/16	ND(0.00067) ND(0.00071)	0.0018 0.0020		1m 129m
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M-G0	2014/1/18	0.0018 0.0019 0.0045	0.0061 0.0069 0.012		1m 50m 97m
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# Sea area between 20-100km radius from the NPS(2)

Sampling point	Sampling Date	Cs-134	Cs-137	Total $\beta^*$	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  $\beta$ : excluding K-40

M-C3	2014/5/13	In progress	In progress	0.024	In progress	In progress	1m
	2014/1/19	0.00086	0.0024	0.021	0.045	0.0011	1m
		ND(0.00082)	0.0022				50m
		ND(0.00068)	0.0016				123m

T-22	2014/5/28	0.0044	0.012				S
		0.0065	0.017				B

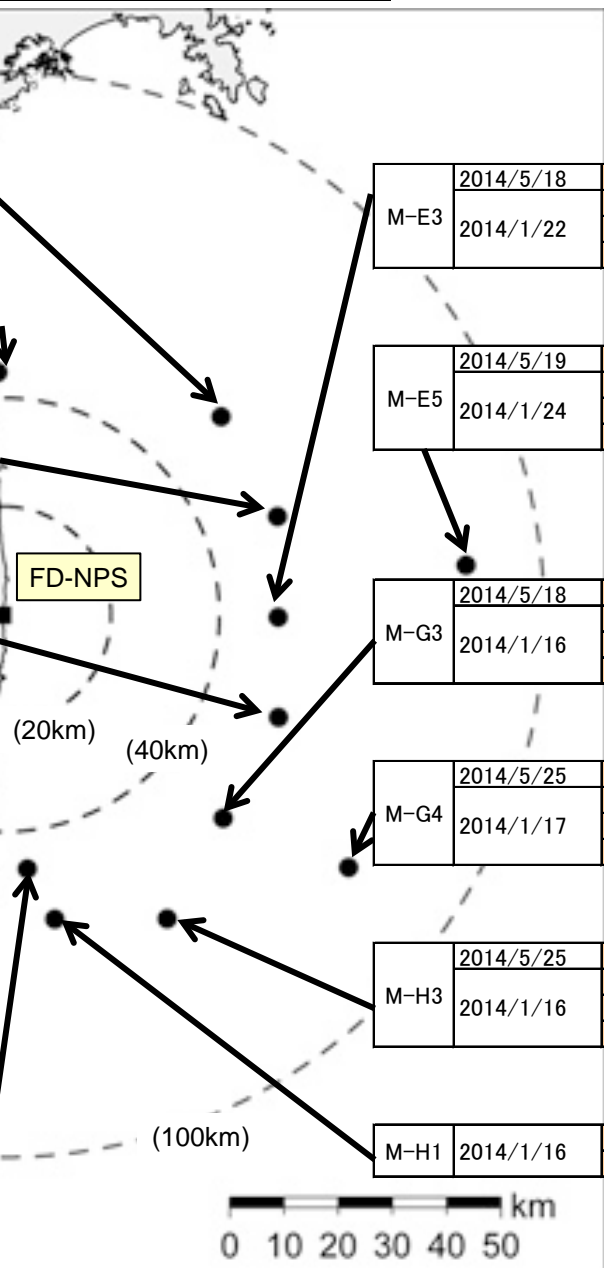
M-D3	2014/5/16	In progress	In progress	0.018	In progress	In progress	1m
	2014/1/22	ND(0.00064)	0.0025	0.021	0.073	0.00099	1m
		ND(0.00073)	0.0018				100m
		ND(0.00074)	0.0025				210m

M-F3	2014/5/18	In progress	In progress	0.027	In progress	In progress	1m
	2014/1/22	ND(0.00058)	0.0020	0.027	0.066	0.0011	1m
		ND(0.00079)	0.0021				101m
		ND(0.00067)	0.0016				223m

T-18	2014/5/26	0.0032	0.011				S
		0.0032	0.0085				B

T-20	2014/5/10	0.0043	0.011				S
		0.0017	0.0065				B

T-M10	2014/5/26	ND(0.0015)	0.0048				S
		ND(0.0015)	0.0055				B



M-E3	2014/5/18	In progress	In progress	0.024	In progress	In progress	1m
	2014/1/22	ND(0.00055)	0.0018	0.030	0.056	0.00099	100m
		ND(0.00061)	0.0019				100m
		ND(0.00067)	0.0022				218m

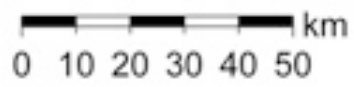
M-E5	2014/5/19	In progress	In progress	0.021	In progress	In progress	1m
	2014/1/24	ND(0.00071)	0.0024	0.031	0.055	0.0011	1m
		ND(0.00080)	0.0021				100m
		ND(0.00076)	0.00062				525m

M-G3	2014/5/18	In progress	In progress	0.027	In progress	In progress	1m
	2014/1/16	ND(0.00071)	0.0017	0.021	0.097	0.0011	1m
		ND(0.00057)	0.0018				100m
		ND(0.00063)	0.0021				196m

M-G4	2014/5/25	In progress	In progress	0.024	In progress	In progress	1m
	2014/1/17	ND(0.00063)	0.0019	0.023	0.063	0.0010	1m
		ND(0.00056)	0.0019				100m
		ND(0.00077)	0.00085				665m

M-H3	2014/5/25	In progress	In progress	0.020	In progress	In progress	1m
	2014/1/16	ND(0.00087)	0.0018	0.025	0.077	0.0010	1m
		ND(0.00058)	0.0016				100m
		ND(0.00069)	0.0020				221m

M-H1	2014/1/16	0.0037	0.010				1m
		0.0012	0.0048				121m



# 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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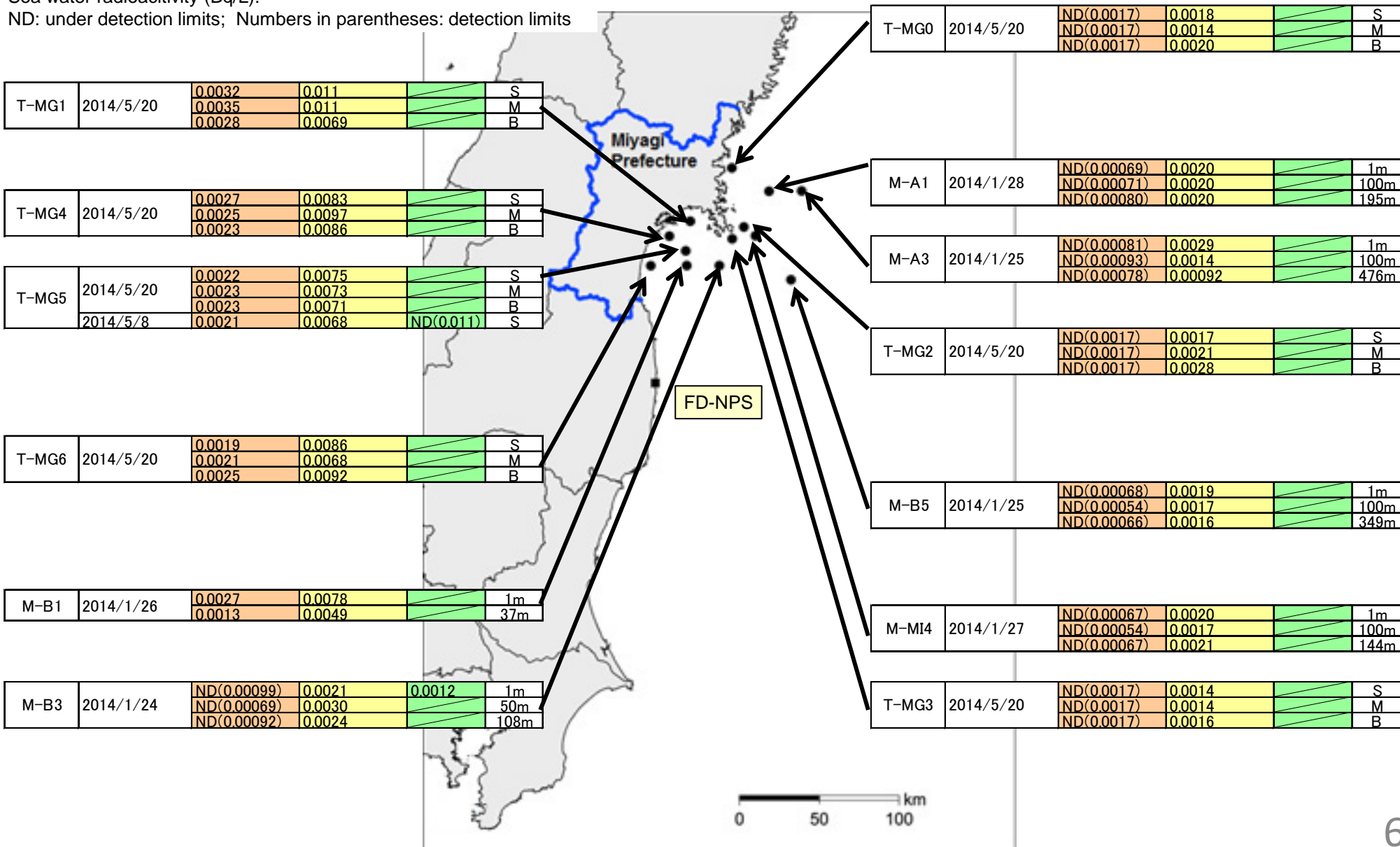
S:2m below sea level

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	2014/6/11	ND(1.2)	ND(1.3)	S	1m
		ND(1.2)	ND(1.3)		

T-A	2014/6/11	ND(1.2)	ND(1.3)	S	1m
		ND(1.2)	ND(1.3)		

T-B	2014/6/11	ND(1.2)	ND(1.3)	S	1m
		ND(1.2)	ND(1.3)		

M-J1	2014/1/13	0.0027	0.0076	0.00079	1m
		0.0026	0.0082		40m

T-C	2014/6/11	ND(1.2)	ND(1.3)	S	1m
		ND(1.2)	ND(1.3)	B	10m
	2014/5/26	ND(1.1)	ND(1.2)	ND(0.011)	S

M-K1	2014/1/12	0.00077	0.0039	1m
		0.0015	0.0040	19m

T-D	2014/6/10	ND(1.2)	ND(1.3)	S	1m
		ND(1.2)	ND(1.3)	B	10m

M-M1	2014/1/11	ND(0.00092)	0.0029	1m
		ND(0.00073)	0.0038	101m

M-I0	2014/1/13	0.0043	0.014	1m
		0.0054	0.013	63m

M-I1	2014/1/15	0.0043	0.011	1m
		0.0050	0.013	50m
		0.0060	0.015	90m

M-I3	2014/1/15	0.00099	0.0040	1m
		0.0013	0.0040	100m
		0.0012	0.0043	175m

M-IB2	2014/1/12	0.00092	0.0029	0.0011	1m
		0.0047	0.012		104m

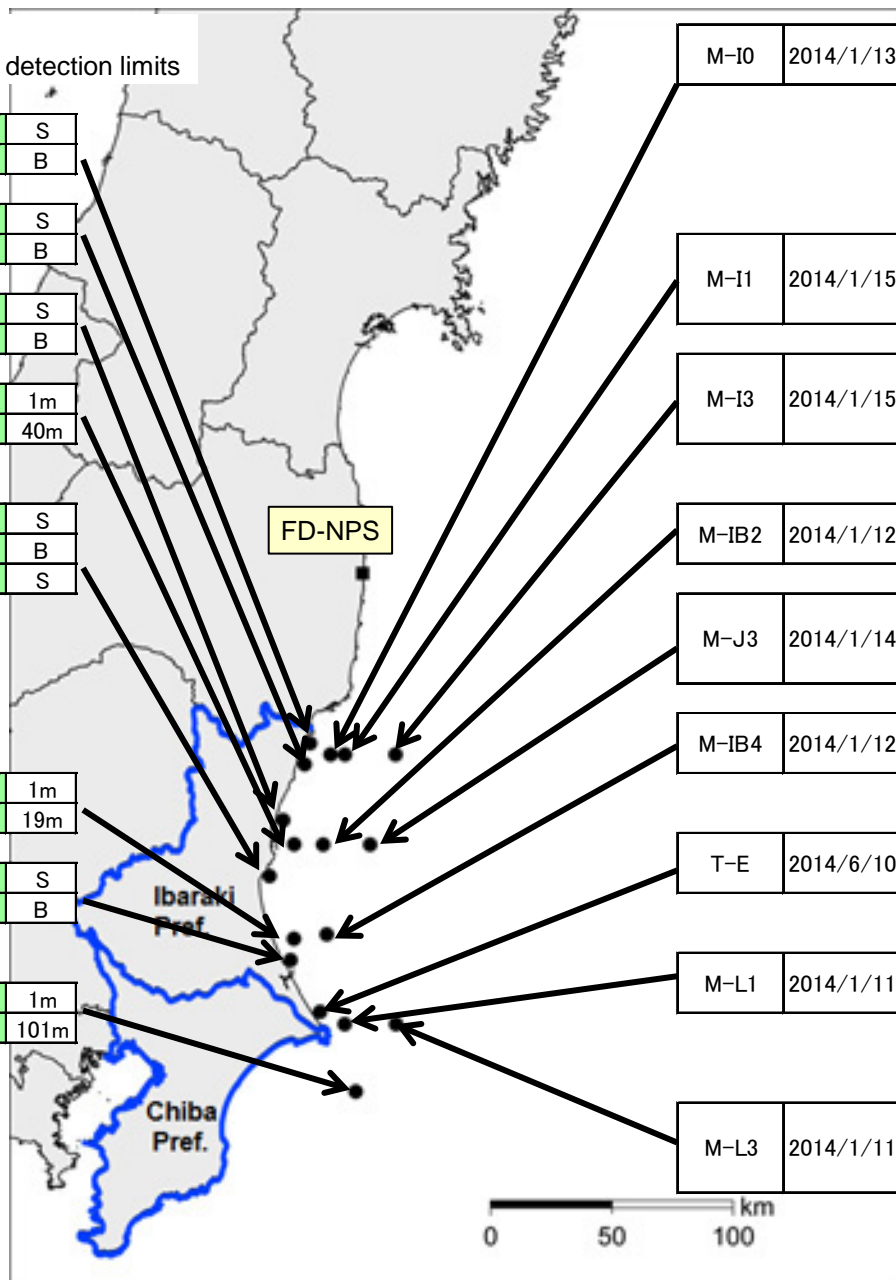
M-J3	2014/1/14	ND(0.00069)	0.0023	1m
		ND(0.00068)	0.0025	100m
		ND(0.00061)	0.0011	560m

M-IB4	2014/1/12	ND(0.00089)	0.0031	1m
		0.00099	0.0029	107m

T-E	2014/6/10	ND(1.2)	ND(1.3)	S	1m
		ND(1.2)	ND(1.3)	B	10m

M-L1	2014/1/11	ND(0.00089)	0.0024	1m
		0.0012	0.0030	35m

M-L3	2014/1/11	ND(0.00083)	0.0023	1m
		ND(0.00091)	0.0029	100m
		0.00088	0.0027	156m





# 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	2013/10/19	ND(0.00080)	0.0026	1m
		ND(0.00079)	0.0029	100m
		ND(0.00056)	0.0018	200m
		ND(0.00064)	0.0012	300m
		ND(0.00071)	0.00080	500m

M-14	2013/10/28	ND(0.00078)	0.0025	1m
		ND(0.00069)	0.0018	100m
		ND(0.00058)	0.0016	200m
		ND(0.00058)	0.0016	300m
		ND(0.00065)	0.00091	500m

M-19	2013/10/30	ND(0.00082)	0.0018	1m
		ND(0.00069)	0.0025	100m
		ND(0.00058)	0.0021	200m
		ND(0.00069)	0.0015	300m
		ND(0.00066)	0.00093	500m

M-20	2013/10/30	ND(0.00060)	0.0017	1m
		ND(0.00071)	0.0022	100m
		0.0014	0.0050	200m
		ND(0.00089)	0.0038	300m
		ND(0.00060)	0.0014	500m

M-25	2013/10/31	ND(0.00080)	0.0014	1m
		ND(0.00065)	0.0019	100m
		0.00084	0.0034	200m
		0.0025	0.0068	300m
		ND(0.00057)	0.0022	500m

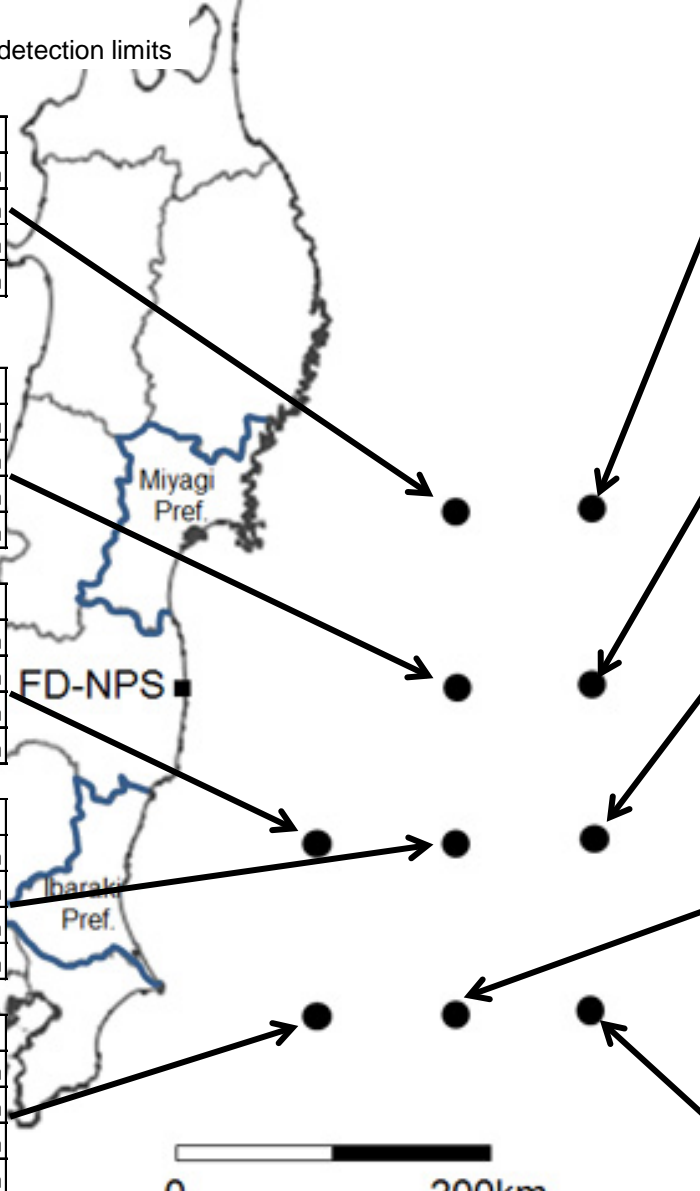
M-11	2013/10/19	ND(0.00064)	0.0022	1m
		0.0020	0.0061	100m
		0.00071	0.0029	200m
		ND(0.00077)	0.0025	300m
		ND(0.00054)	0.0013	500m

M-15	2013/10/29	ND(0.00069)	0.0019	1m
		0.00091	0.0018	100m
		ND(0.00070)	0.0019	200m
		ND(0.00050)	0.0018	300m
		ND(0.00057)	0.00065	500m

M-21	2013/10/29	ND(0.00083)	0.0017	1m
		ND(0.00060)	0.0015	100m
		0.00097	0.0039	200m
		0.00078	0.0028	300m
		ND(0.00072)	0.0011	500m

M-26	2013/10/31	ND(0.00085)	0.0024	1m
		ND(0.00068)	0.0026	100m
		0.0012	0.0038	200m
		0.0022	0.0061	300m
		ND(0.00081)	0.0034	500m

M-27	2013/11/1	ND(0.00068)	0.0021	1m
		ND(0.00060)	0.0016	100m
		0.00083	0.0029	200m
		0.0015	0.0047	300m
		0.0011	0.0038	500m



0 200km