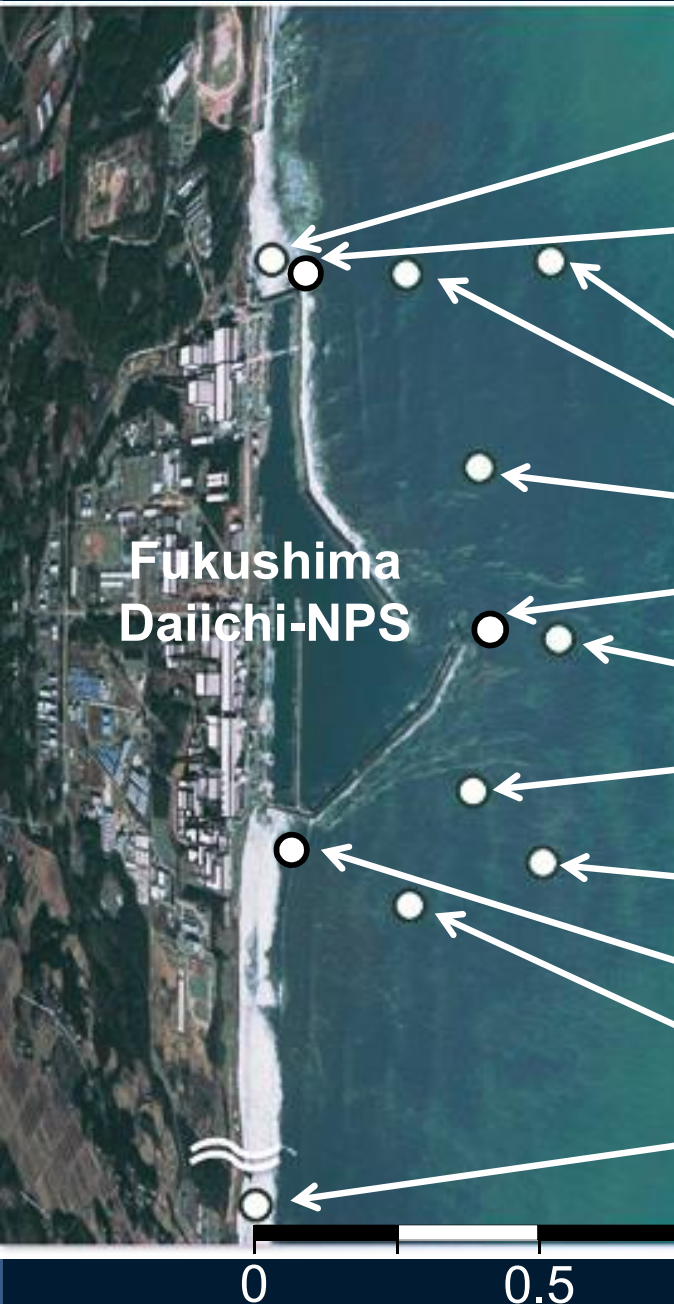


# Sea Area Monitoring

April 05, 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
T-1	2016/3/21	ND(0.73)	ND(0.69)	13 <sup>*1</sup>	ND(1.7)				
	2016/3/14	ND(0.50)	ND(0.57)	13 <sup>*1</sup>	ND(1.5)				
	2016/2/1	ND(0.73)	ND(0.72)	14 <sup>*1</sup>	ND(1.6)	0.028	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( $5.8 \times 10^{-6}$ )	( $1.0 \pm 0.24$ ) $\times 10^{-5}$
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( $9.0 \times 10^{-6}$ )	$9.0 \times 10^{-6}$
T-0-1A	2016/3/21	ND(0.64)	ND(0.69)	ND(17) <sup>*1</sup>	In progress				
	2016/3/14	ND(0.80)	ND(0.69)	ND(15) <sup>*1</sup>	ND(1.9)				
T-0-1	2016/3/21	ND(0.65)	ND(0.60)	ND(17) <sup>*1</sup>	In progress				
	2016/3/14	ND(0.71)	ND(0.60)	ND(15) <sup>*1</sup>	ND(1.9)				
M-101	2016/1/13	0.011	0.054		0.17	0.0036			
	2015/12/9	0.017	0.076		0.14	0.0048			
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( $7.0 \times 10^{-6}$ )	$1.2 \times 10^{-5}$
T-0-2	2016/3/21	ND(0.79)	ND(0.62)	ND(17) <sup>*1</sup>	In progress				
	2016/3/14	ND(0.70)	ND(0.66)	ND(15) <sup>*1</sup>	ND(1.9)				
M-102	2016/1/14	0.0050	0.026		0.10	0.0015			
	2015/12/10	0.022	0.099		0.29	0.0070			
T-0-3A	2016/3/21	ND(0.64)	ND(0.76)	ND(17) <sup>*1</sup>	In progress				
	2016/3/14	ND(0.64)	ND(0.69)	ND(15) <sup>*1</sup>	ND(1.9)				
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( $1.1 \times 10^{-5}$ )	$1.3 \times 10^{-5}$
T-0-3	2016/3/21	ND(0.43)	ND(0.57)	ND(17) <sup>*1</sup>	In progress				
	2016/3/14	ND(0.63)	ND(0.62)	ND(15) <sup>*1</sup>	ND(1.9)				
T-2-1	2016/3/21	ND(0.61)	ND(0.62)	14 <sup>*1</sup>	ND(1.7)				
	2016/3/14	ND(0.78)	ND(0.72)	11 <sup>*1</sup>	ND(1.5)				
	2016/2/1	ND(0.66)	ND(0.63)	11 <sup>*1</sup>	ND(1.6)	ND(0.0062)	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( $5.5 \times 10^{-6}$ )	( $1.8 \pm 0.30$ ) $\times 10^{-5}$

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

0 0.5 1km

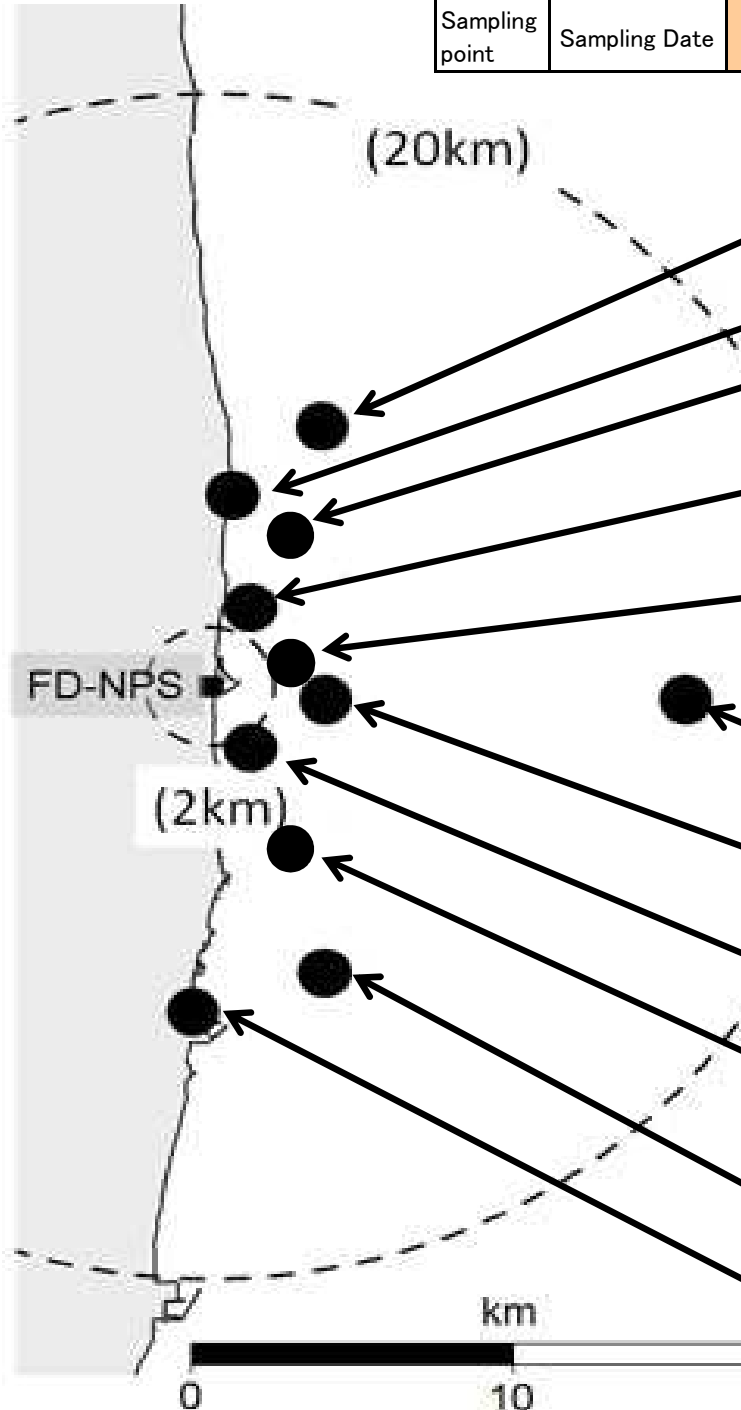
# Sea area between 2-20km radius from the NPS (1)

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 Depth(m) from 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	2016/2/16	0.0029	0.014	ND(15) <sup>*1</sup>	ND(0.36)						S
	2016/2/1	0.0060	0.027	ND(17) <sup>*1</sup>	ND(0.31)	ND(0.0080)	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	2016/2/16	0.012	0.047	ND(15) <sup>*1</sup>	ND(0.31)						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	2016/1/13	0.0031	0.015		0.087	0.0016					0.5m
	2015/12/9	0.011	0.051		0.10	0.0033					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	2016/2/18	ND(0.0014)	0.0047	ND(18) <sup>*1</sup>	ND(0.37)						S
	2016/2/2	ND(0.0012)	0.0039	ND(15) <sup>*1</sup>	ND(0.30)	ND(0.0073)	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( $5.1 \times 10^{-6}$ )	$(7.2 \pm 1.9) \times 10^{-6}$		S
T-D5	2016/2/16	0.0023	0.011	ND(15) <sup>*1</sup>	ND(0.36)						S
	2016/2/1	0.0027	0.012	ND(17) <sup>*1</sup>	ND(0.31)	ND(0.0078)	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	2016/1/14	0.0045	0.022		0.11	0.0017					0.5m
	2015/12/10	0.0045	0.022		0.061	0.0019					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	2016/2/18	0.0027	0.013	ND(18) <sup>*1</sup>	ND(0.37)						S
	2016/2/1	0.0019	0.0097	ND(17) <sup>*1</sup>	ND(0.31)	ND(0.0082)	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( $5.2 \times 10^{-6}$ )	ND( $5.0 \times 10^{-6}$ )		S
T-3	2016/2/16	0.012	0.049	ND(15) <sup>*1</sup>	ND(0.30)						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	2016/2/18	ND(0.0015)	0.0079	S
		0.0030	0.017	B

T-14	2016/3/2	0.0021	0.010	S
		ND(0.0014)	0.0080	B

T-D1	2016/3/2	0.0021	0.010	S
		0.0020	0.0090	B

T-6	2016/3/1	0.014	0.059	S
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T-S8	2016/2/7	0.0026	0.013	S
		0.0017	0.011	B

T-3	2016/3/1	0.0097	0.047	S
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T-S7	2016/2/9	0.0050	0.022	S
		0.0038	0.017	B

T-S5	2016/2/9	0.0035	0.022	S
		0.0033	0.018	B

T-S3	2016/2/16	0.0028	0.0086	S
		0.0051	0.028	B

T-S4	2016/2/16	ND(0.0014)	0.010	S
		0.0027	0.013	B

T-D5	2016/3/2	0.0017	0.011	S
		0.0021	0.011	B

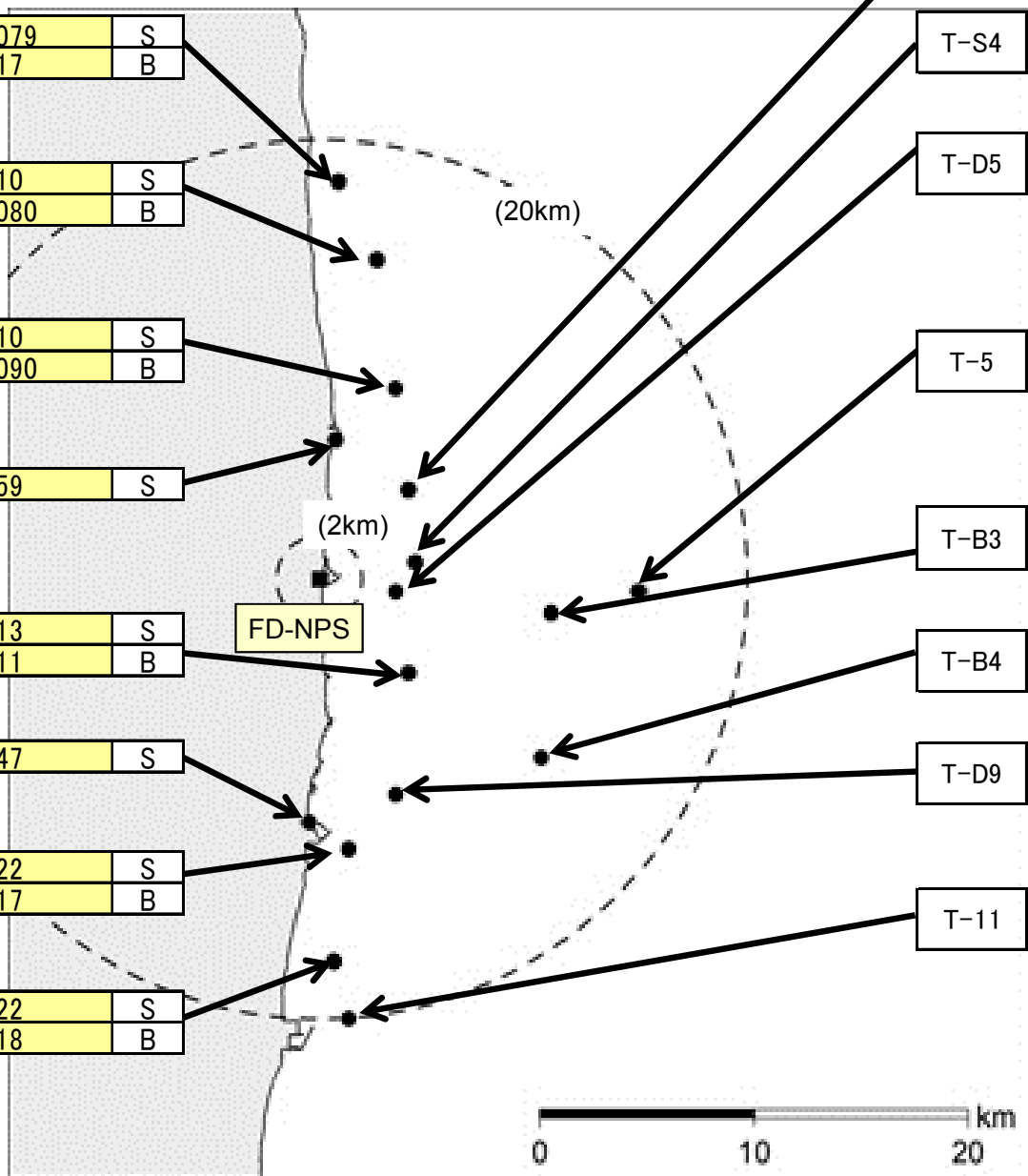
T-5	2016/3/2	ND(0.0011)	0.0049	S
		ND(0.0012)	0.0053	B

T-B3	2016/2/12	0.0013	0.0047	S
		0.0017	0.0053	B

T-B4	2016/2/12	ND(0.0013)	0.0054	S
		ND(0.0014)	0.0052	B

T-D9	2016/3/2	0.0023	0.011	S
		0.0036	0.019	B

T-11	2016/3/2	0.0035	0.018	S
		0.0061	0.026	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

T-MA	2016/2/4	ND(0.0014)	0.0076		S
		ND(0.0013)	0.0045		B

T-13-1	2016/2/4	0.0026	0.012		S
		0.0019	0.011		B

T-7	2016/3/4	ND(0.0010)	0.0027		S
		ND(0.0014)	0.0029		B

T-4	2016/3/1	0.010	0.055		S
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T-12	2016/2/4	0.0042	0.020		S
		0.0031	0.014		B

T-17-1	2016/2/4	0.0032	0.017		S
		0.0031	0.015		B

M-C1	2016/2/3	0.00096	0.0051	0.0012	1m
		0.00074	0.0051		49m

T-B1	2016/3/3	ND(0.0013)	0.0029		S
		ND(0.0014)	0.0042		B

M-D1	2016/2/1	0.00038	0.0029	0.0012	1m
		0.00029	0.0027		50m
		0.00025	0.0022		113m

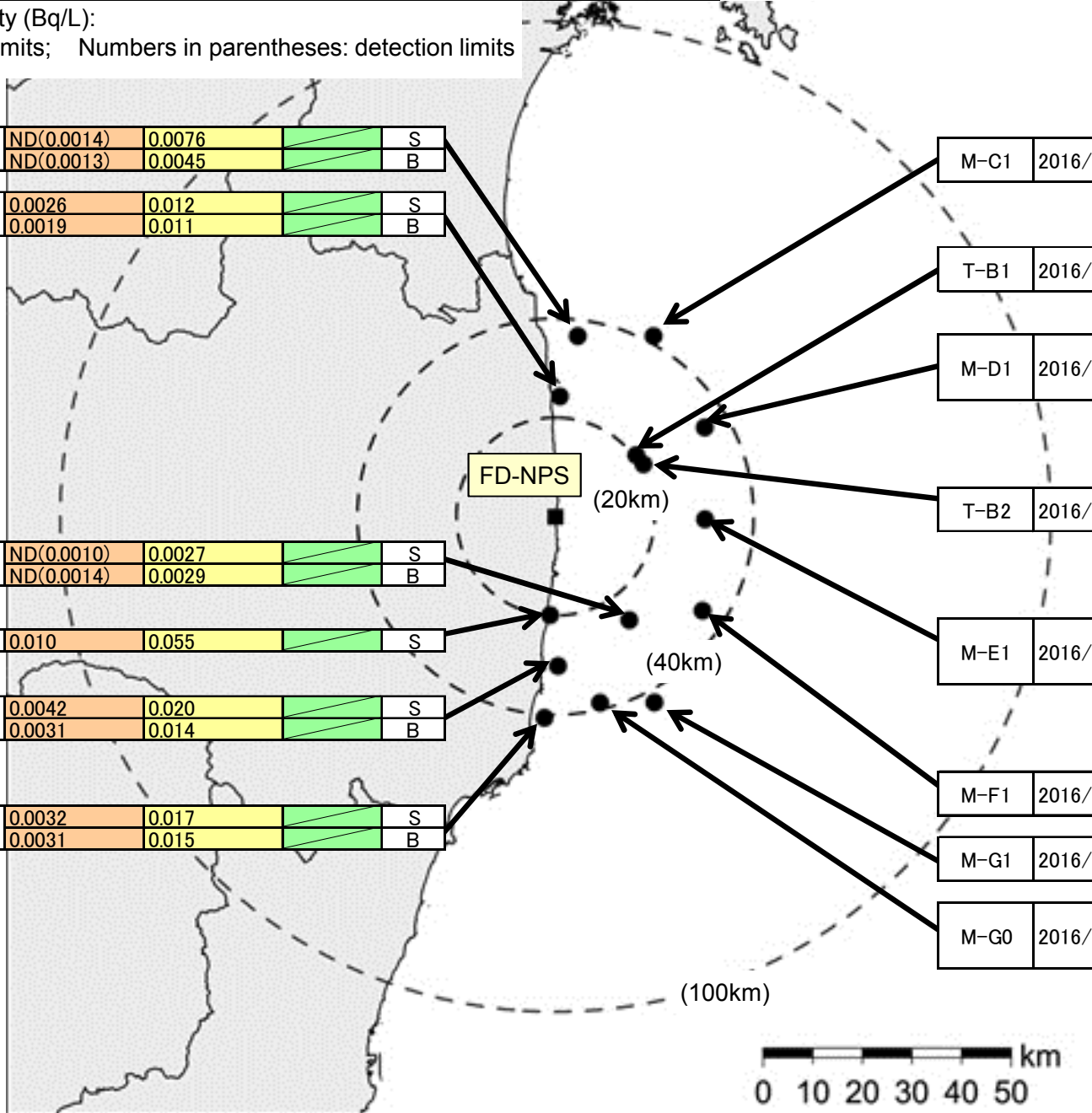
T-B2	2016/3/3	ND(0.0014)	0.0034		S
		ND(0.0013)	0.0036		B

M-E1	2016/1/26	0.00024	0.0018	0.0012	1m
		0.00017	0.0021		50m
		0.00026	0.0020		129m

M-F1	2016/1/25	0.00015	0.0019		1m
		0.00022	0.0020		133m

M-G1	2016/1/24	0.00025	0.0023		1m
		0.00022	0.0022		130m

M-G0	2016/1/24	0.00018	0.0024		1m
		0.00035	0.0025		50m
		0.00028	0.0025		100m





# 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
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Depth(m) from sea level
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Sea water radioactivity (Bq/L):

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

\*Total β: excluding K-40

M-C3	2016/2/1	0.00017	0.0020	0.024	0.091	0.0018	1m
		0.00014	0.0018				50m
		0.00017	0.0019				123m

T-22	2016/2/4	ND(0.0014)	0.0065				S
		0.0013	0.0064				B

M-D3	2016/2/1	0.00013	0.0018	0.029	0.076	0.0013	1m
		0.00013	0.0018				100m
		ND(0.00015)	0.0019				211m

M-F3	2016/2/2	0.00019	0.0019	0.023	0.085	0.0015	1m
		ND(0.00015)	0.0018				100m
		ND(0.00014)	0.0017				221m

T-18	2016/3/4	0.0017	0.0098				S
		0.0021	0.0098				B

T-20	2016/2/4	0.0036	0.020				S
		0.0031	0.018				B

T-M10	2016/3/4	ND(0.0013)	0.0035				S
		ND(0.0012)	0.0037				B

M-E3	2016/2/2	0.00018	0.0020	0.029	0.097	0.0012	1m
		0.00018	0.0019				100m
		0.00021	0.0019				221m

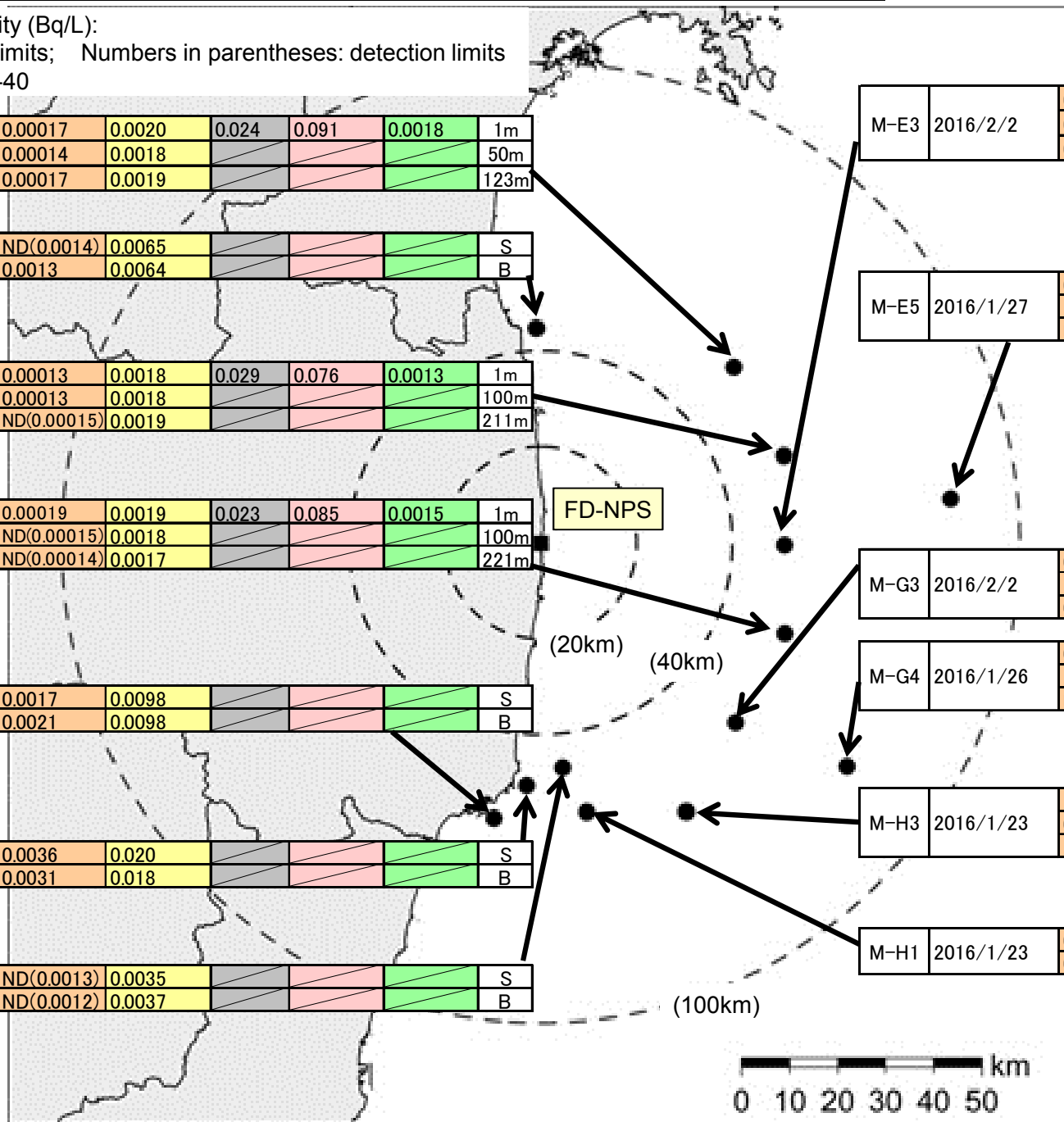
M-E5	2016/1/27	0.00017	0.0021	0.032	0.065	0.0020	1m
		ND(0.00017)	0.0021				100m
		ND(0.000079)	0.00072				520m

M-G3	2016/2/2	0.00018	0.0019	0.025	0.076	0.0015	1m
		ND(0.00015)	0.0020				100m
		0.00017	0.0019				200m

M-G4	2016/1/26	0.00018	0.0019	0.029	0.058	0.0017	1m
		ND(0.00017)	0.0020				100m
		ND(0.000090)	0.00050				645m

M-H3	2016/1/23	ND(0.00016)	0.0020	0.027	0.065	ND(0.00062)	1m
		0.00018	0.0020				100m
		ND(0.00015)	0.0019				224m

M-H1	2016/1/23	0.00039	0.0029				1m
		0.00079	0.0040				125m

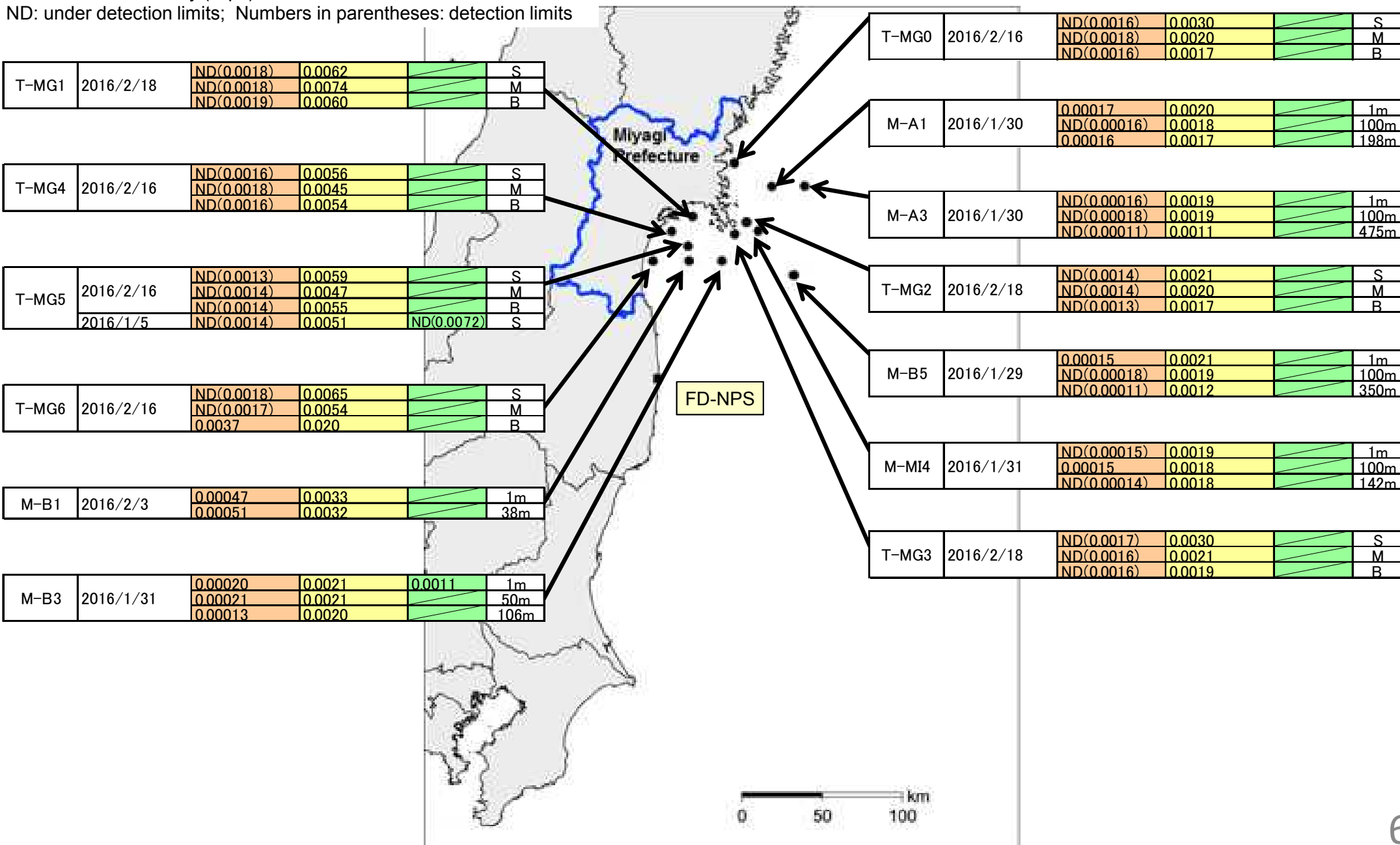


# Sea area along and off the coast of Miyagi Prefecture

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

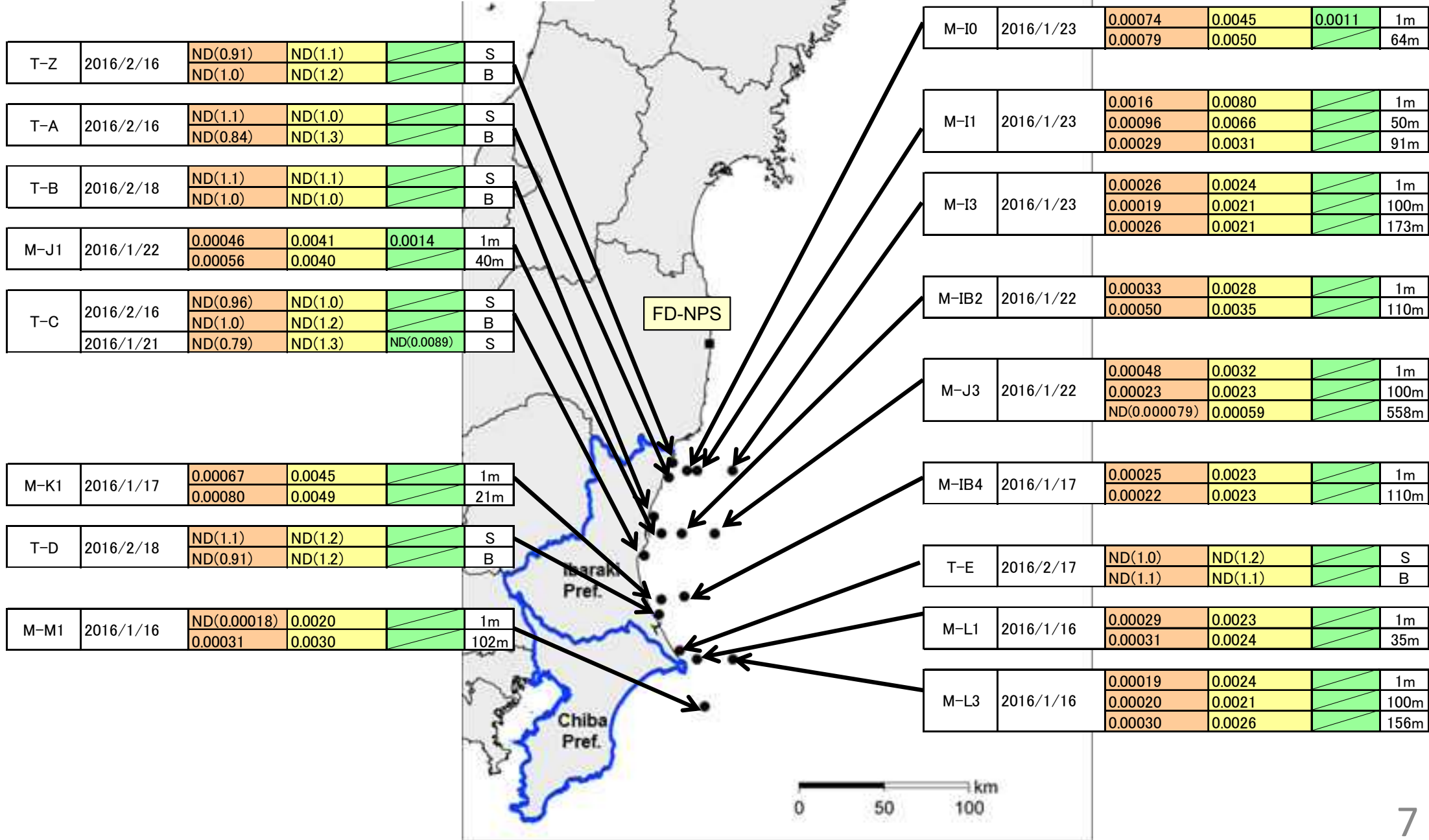


# Sea area along and off the coast of Ibaraki Pref. and Chiba Pref.

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





# 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

