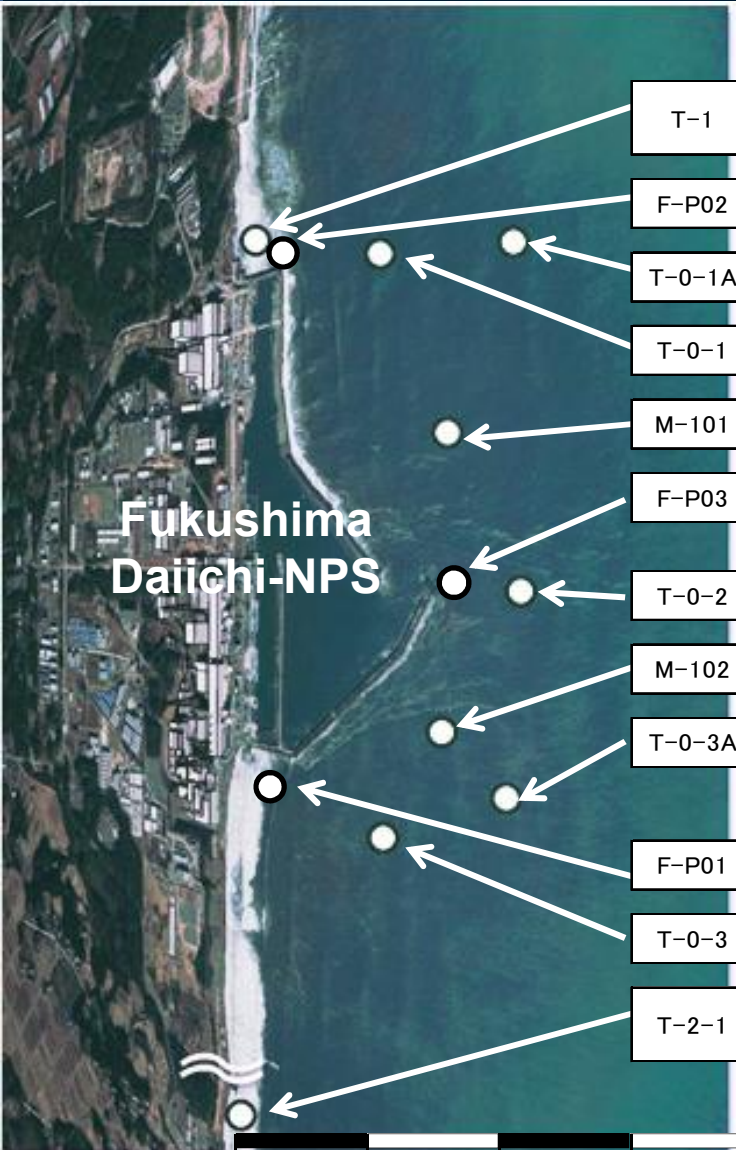


# Sea Area Monitoring

October 14, 2014

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+Pu-240
----------------	---------------	--------	--------	---------------	-----	-------	----------------	--------	---------------

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	2014/10/1	ND(0.85)	ND(0.72)	16 <sup>*1</sup>	ND(1.6)				
	2014/8/4	ND(0.76)	1.3	12 <sup>*1</sup>	2.1	0.23	ND(1.6)		
	2014/4/10	ND(0.85)	ND(0.82)					ND( $5.6 \times 10^{-6}$ )	( $9.4 + 2.2$ ) $\times 10^{-6}$
F-P02	2014/7/7	ND(0.062)	0.17	0.09 <sup>*2</sup>	0.44	0.083		In progress	In progress
	2014/6/16	ND(0.066)	ND(0.050)	0.03 <sup>*2</sup>	ND(0.41)	0.002		ND( $7 \times 10^{-6}$ )	ND( $7 \times 10^{-6}$ )
T-0-1A	2014/10/1	ND(0.68)	ND(0.58)	ND(17)	In progress				
	2014/9/22	ND(0.71)	ND(0.53)	ND(17)	ND(1.7)				
T-0-1	2014/10/1	ND(0.84)	ND(0.58)	ND(17) <sup>*1</sup>	In progress				
	2014/9/22	ND(0.69)	ND(0.53)	ND(17) <sup>*1</sup>	1.8				
M-101	2014/7/18	0.010	0.032		0.17	In progress			
	2014/6/17	0.012	0.039		0.12	0.0079			
F-P03	2014/7/7	0.24	0.72	0.38 <sup>*2</sup>	2.6	0.66		In progress	In progress
	2014/6/16	ND(0.080)	ND(0.071)	0.03 <sup>*2</sup>	ND(0.41)	0.003		ND( $1.3 \times 10^{-5}$ )	ND( $1.1 \times 10^{-5}$ )
T-0-2	2014/10/1	ND(0.63)	ND(0.62)	ND(17) <sup>*1</sup>	In progress				
	2014/9/22	ND(0.86)	ND(0.45)	ND(17) <sup>*1</sup>	2.4				
M-102	2014/7/19	0.017	0.054		0.20	In progress			
	2014/6/16	0.021	0.057		0.15	0.0094			
T-0-3A	2014/10/1	ND(0.52)	ND(0.54)	ND(17) <sup>*1</sup>	In progress				
	2014/9/22	ND(0.64)	ND(0.52)	ND(17) <sup>*1</sup>	ND(1.7)				
F-P01	2014/7/7	ND(0.064)	ND(0.068)	0.04 <sup>*2</sup>	ND(0.42)	0.004		In progress	In progress
	2014/6/16	ND(0.056)	0.074	0.04 <sup>*2</sup>	ND(0.41)	0.012		ND( $6 \times 10^{-6}$ )	ND( $6 \times 10^{-6}$ )
T-0-3	2014/10/1	ND(0.79)	ND(0.66)	ND(17) <sup>*1</sup>	In progress				
	2014/9/22	ND(0.44)	ND(0.69)	ND(17) <sup>*1</sup>	2.7				
T-2-1	2014/10/1	ND(0.85)	ND(0.76)	13 <sup>*1</sup>	ND(1.6)				
	2014/8/4	ND(0.62)	ND(0.78)	16 <sup>*1</sup>	ND(1.9)	ND(0.0087)	ND(1.6)		
	2014/4/10	ND(0.70)	ND(0.58)	9.0 <sup>*1</sup>				ND( $5.6 \times 10^{-6}$ )	( $3.1 + 0.41$ ) $\times 10^{-5}$

0 0.5 1km

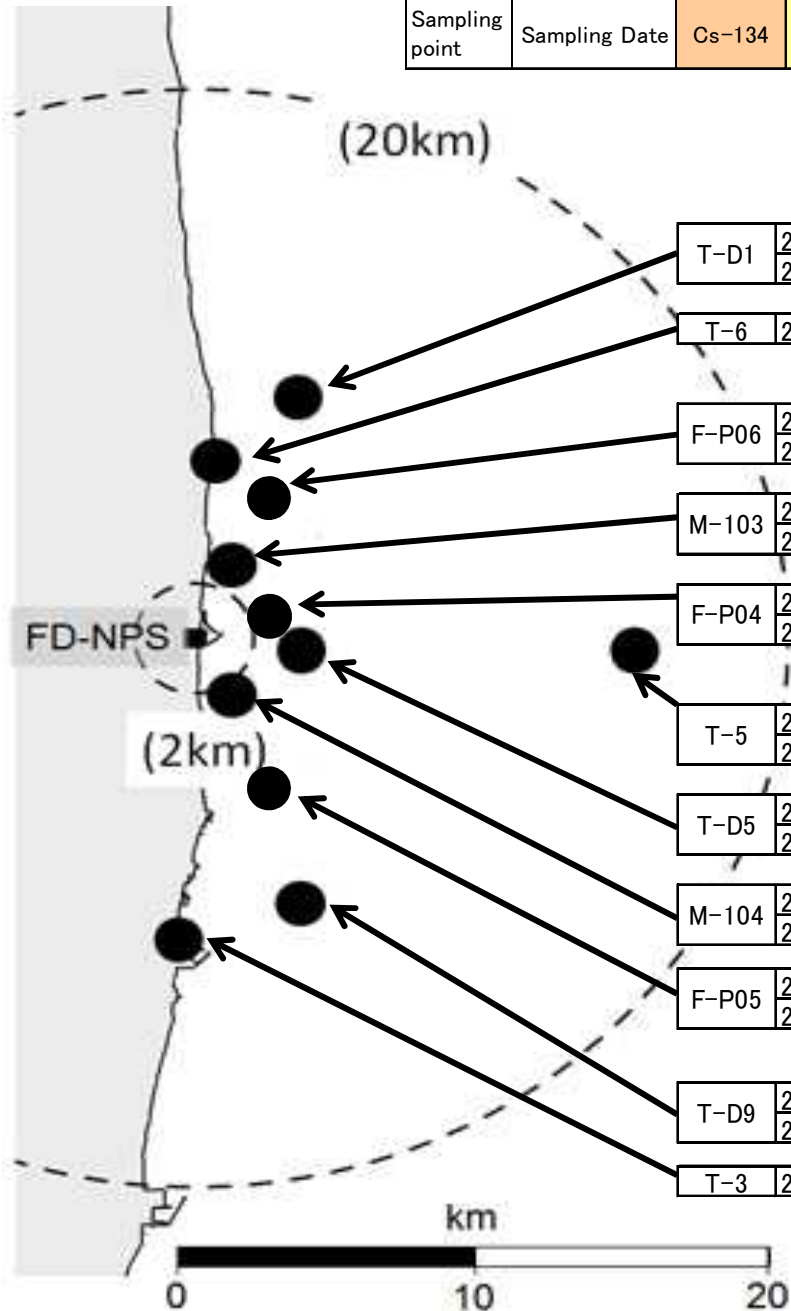
# Sea area between 2-20km radius from the NPS (1)

Sampling point	Sampling Date	Cs-134	Cs-137	total $\beta$	H-3	Sr-90	total $\alpha$	Pu-238	Pu-239+Pu-240	S	S:2m below sea level
----------------	---------------	--------	--------	---------------	-----	-------	----------------	--------	---------------	---	----------------------

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

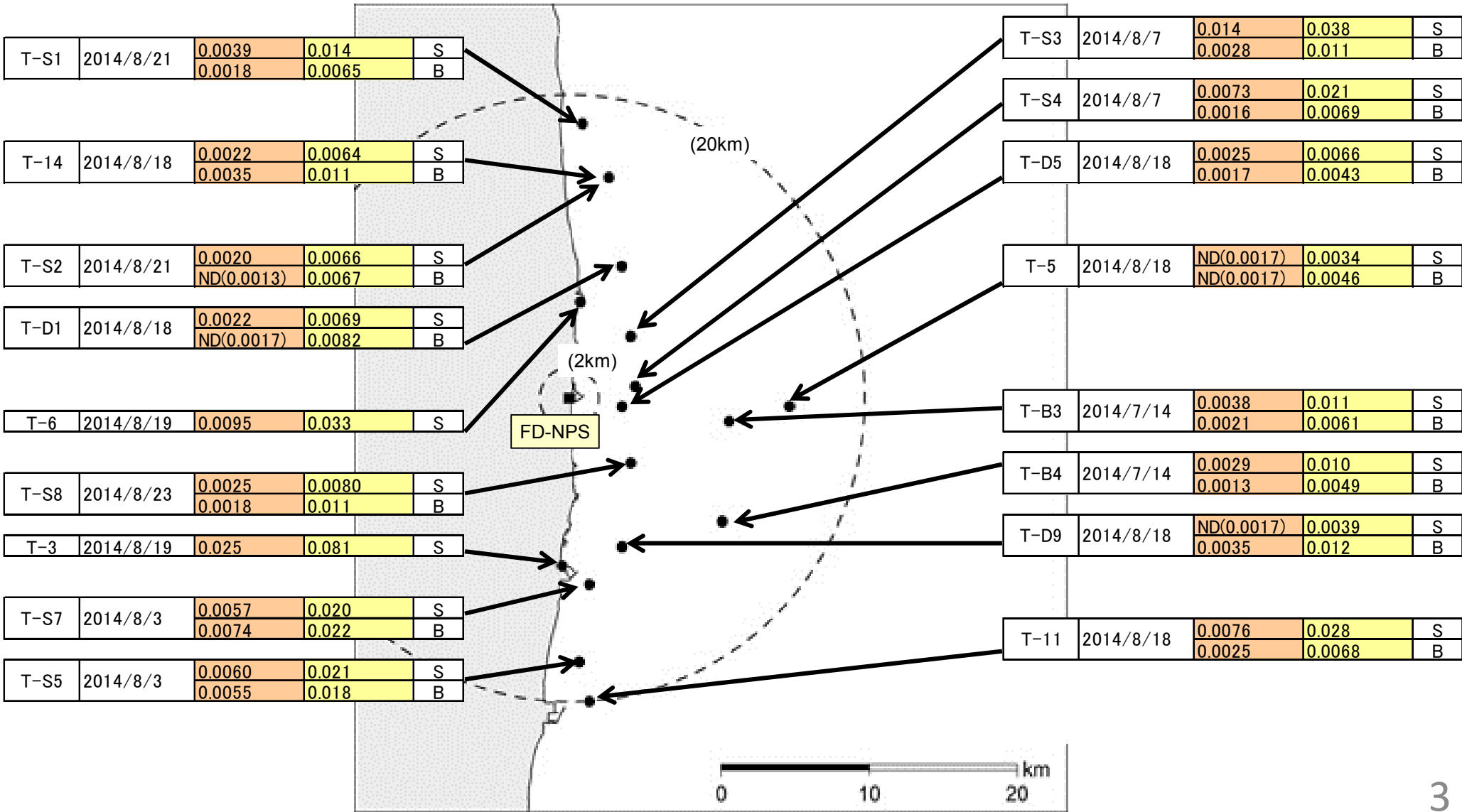


T-D1	2014/8/4	ND(0.0015)	0.0059	ND(17) <sup>*1</sup>	ND(0.32)	ND(0.01)	ND(2.0)			S
	2014/4/1	0.0027	0.0086	ND(17) <sup>*1</sup>	ND(0.30)	ND(0.009)	ND(1.9)	ND( $5.3 \times 10^{-6}$ )	( $5.7 \pm 1.7$ ) $\times 10^{-6}$	S
T-6	2014/8/19	0.0095	0.033	ND(17) <sup>*1</sup>	ND(0.32)					S
F-P06	2014/7/7	ND(0.056)	ND(0.051)	0.02 <sup>*2</sup>	ND(0.42)	0.003		In progress	In progress	S
	2014/6/16	ND(0.055)	ND(0.055)	0.03 <sup>*2</sup>	ND(0.40)	0.001		ND( $1.4 \times 10^{-5}$ )	ND( $1.3 \times 10^{-5}$ )	S
M-103	2014/7/18	0.0038	0.012		0.12	In progress				0.5m
	2014/6/17	0.010	0.033		0.13	0.0019				0.5m
F-P04	2014/7/7	ND(0.065)	ND(0.065)	0.04 <sup>*2</sup>	ND(0.42)	0.004		In progress	In progress	S
	2014/6/16	ND(0.074)	ND(0.053)	0.03 <sup>*2</sup>	ND(0.41)	0.004		ND( $6 \times 10^{-6}$ )	$6 \times 10^{-6}$	S
T-5	2014/8/5	ND(0.0017)	0.0037	ND(17) <sup>*1</sup>	ND(0.32)	ND(0.01)	ND(2.0)			S
	2014/4/2	ND(0.0014)	0.0044	ND(17) <sup>*1</sup>	ND(0.30)	ND(0.009)	ND(1.9)	ND( $5.5 \times 10^{-6}$ )	( $8.3 \pm 2.1$ ) $\times 10^{-6}$	S
T-D5	2014/8/4	0.0019	0.0079	ND(17) <sup>*1</sup>	ND(0.32)	ND(0.01)	ND(2.0)			S
	2014/4/1	0.0058	0.012	ND(17) <sup>*1</sup>	ND(0.30)	ND(0.009)	ND(1.9)	ND( $5.2 \times 10^{-6}$ )	ND( $4.5 \times 10^{-6}$ )	S
M-104	2014/7/19	0.0048	0.017		0.18	In progress				0.5m
	2014/6/16	0.029	0.081		0.19	0.030				0.5m
F-P05	2014/7/7	ND(0.056)	ND(0.059)	0.04 <sup>*2</sup>	ND(0.41)	0.006		In progress	In progress	S
	2014/6/16	ND(0.060)	ND(0.076)	0.03 <sup>*2</sup>	ND(0.41)	0.001		ND( $6 \times 10^{-6}$ )	$6 \times 10^{-6}$	S
T-D9	2014/8/5	0.0021	0.0075	ND(17) <sup>*1</sup>	ND(0.31)	ND(0.01)	ND(2.0)			S
	2014/4/2	0.0041	0.010	ND(16) <sup>*1</sup>	ND(0.30)	ND(0.008)	ND(1.9)	ND( $4.7 \times 10^{-6}$ )	ND( $4.5 \times 10^{-6}$ )	S
T-3	2014/8/19	0.025	0.081	ND(17) <sup>*1</sup>	0.40					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
----------------	---------------	--------	--------	-----	---

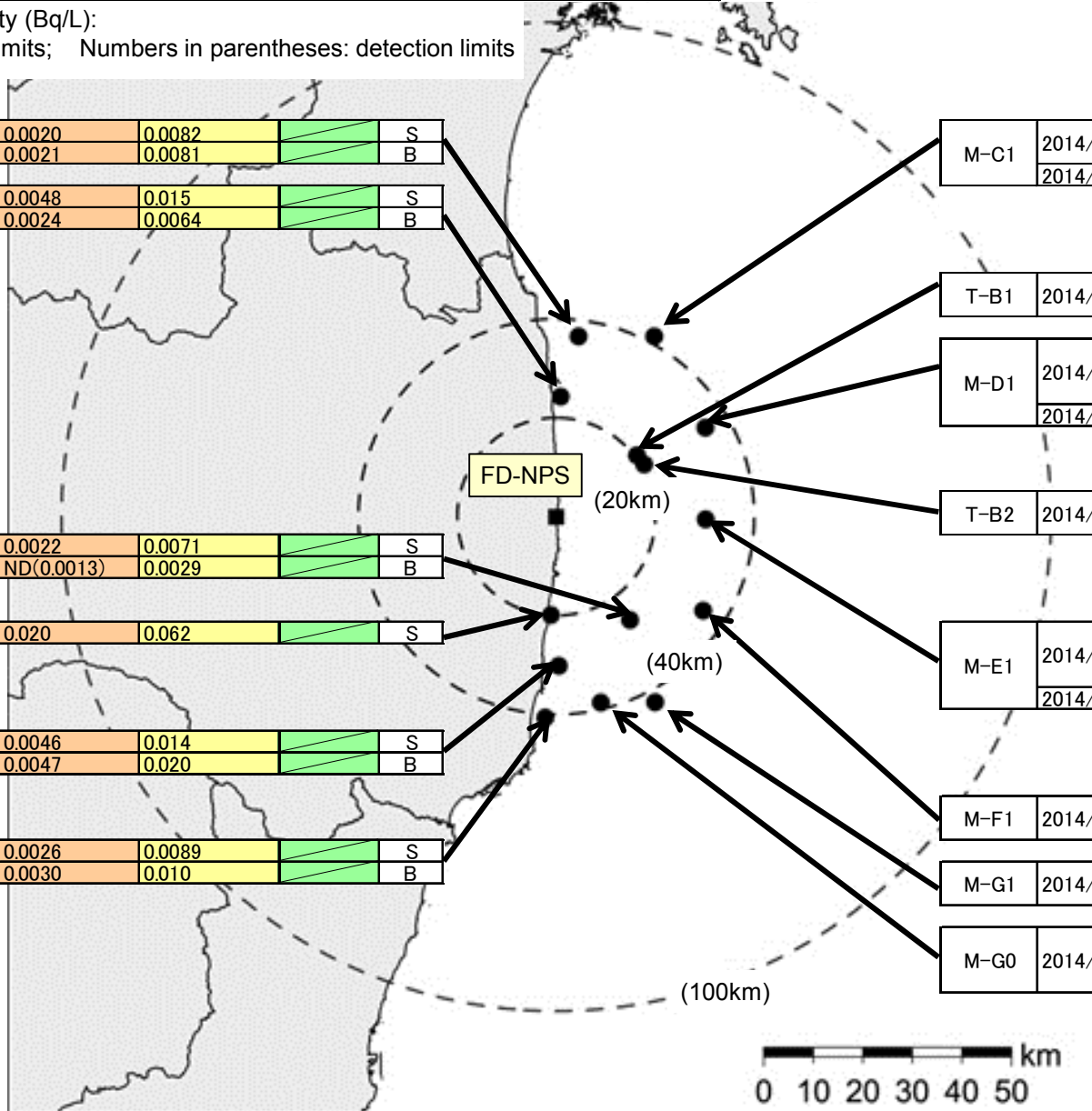
Sea water radioactivity (Bq/L):  
 ND: under detection limits; Numbers in parentheses: detection limits



# 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	2014/7/24	0.0020	0.0082		S
		0.0021	0.0081		B
T-13-1	2014/7/24	0.0048	0.015		S
		0.0024	0.0064		B

M-C1	2014/5/13	0.0013	0.0039		1m
		0.0015	0.0050		46m
	2014/1/26	0.00096	0.0034	0.00090	1m

T-B1	2014/8/20	ND(0.0013)	0.0031		S
		ND(0.0013)	0.0048		B

M-D1	2014/5/20	0.0017	0.0048		1m
		0.0016	0.0051		50m
		ND(0.00056)	0.0023		116m
	2014/1/23	0.00094	0.0033	0.00085	1m

T-B2	2014/8/20	ND(0.0013)	0.0024		S
		ND(0.0013)	0.0043		B

T-7	2014/8/6	0.0022	0.0071		S
		ND(0.0013)	0.0029		B

M-E1	2014/5/17	0.0012	0.0046		1m
		0.00096	0.0036		50m
		ND(0.00059)	0.0020		125m
	2014/1/23	ND(0.00059)	0.0027	0.00081	1m

T-4	2014/8/19	0.020	0.062		S
-----	-----------	-------	-------	--	---

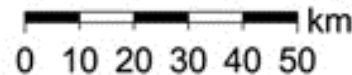
T-12	2014/8/2	0.0046	0.014		S
		0.0047	0.020		B

M-F1	2014/5/17	0.0016	0.0049		1m
		ND(0.00068)	0.0020		133m

T-17-1	2014/8/2	0.0026	0.0089		S
		0.0030	0.010		B

M-G1	2014/5/24	ND(0.00055)	0.0015		1m
		ND(0.00065)	0.0019		129m

M-G0	2014/5/24	ND(0.00055)	0.0017		1m
		ND(0.00064)	0.0028		50m
		0.00068	0.0036		93m





# 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	2014/8/16	In progress	In progress	0.021	In progress	In progress	1m
		0.0017	0.0063	0.024	0.11	In progress	1m
	2014/5/13	0.00071	0.0023				50m
		ND(0.00061)	0.0015				124m
2014/1/19	0.00086	0.0024	0.021	0.045	0.0011	1m	

T-22	2014/7/24	0.0025	0.0079				S
		0.0023	0.0086				B

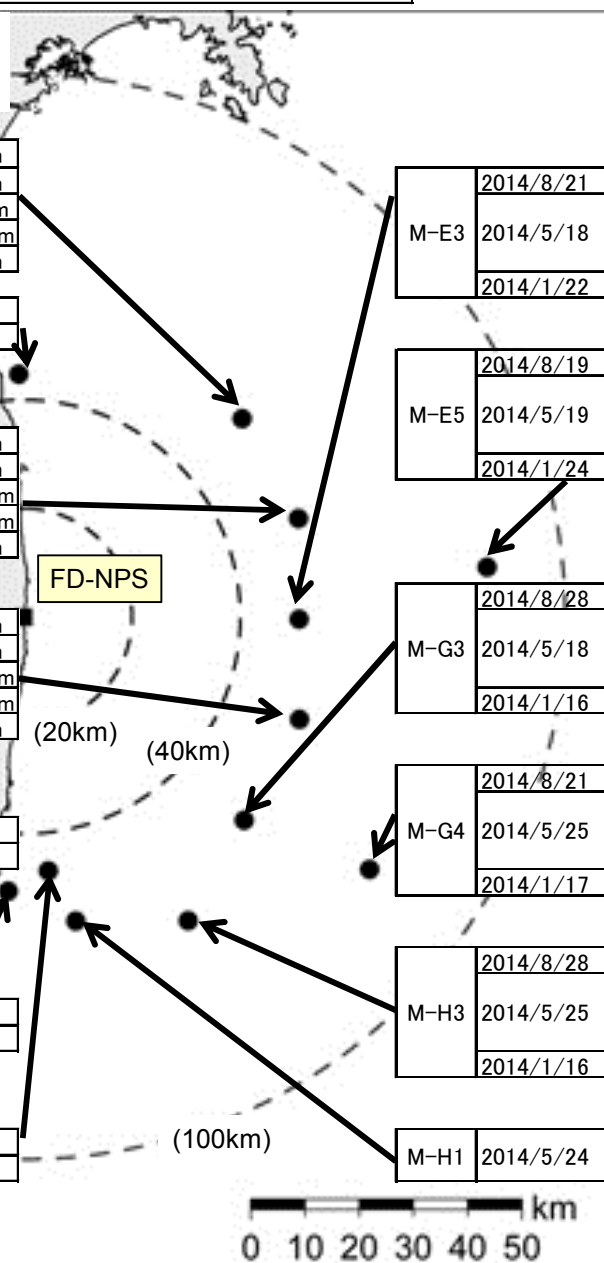
M-D3	2014/8/23	In progress	In progress	0.025	In progress	In progress	1m
		0.0017	0.0061	0.018	0.080	In progress	1m
	2014/5/16	ND(0.00061)	0.0020				100m
		ND(0.00061)	0.0014				210m
2014/1/22	ND(0.00064)	0.0025	0.021	0.073	0.00099	1m	

M-F3	2014/8/21	In progress	In progress	0.026	In progress	In progress	1m
		0.0016	0.0048	0.027	0.089	In progress	1m
	2014/5/18	ND(0.00057)	0.0015				100m
		ND(0.00066)	0.0015				222m
2014/1/22	ND(0.00058)	0.0020	0.027	0.066	0.0011	1m	

T-18	2014/8/6	0.0027	0.0074				S
		0.0026	0.0073				B

T-20	2014/8/2	0.0015	0.0068				S
		0.0019	0.0077				B

T-M10	2014/8/6	ND(0.0013)	0.0023				S
		ND(0.0013)	0.0038				B



M-E3	2014/8/21	In progress	In progress	0.029	In progress	In progress	1m
		0.0015	0.0038	0.024	0.10	In progress	1m
	2014/5/18	ND(0.00064)	0.0019				100m
		ND(0.00064)	0.0014				218m
2014/1/22	ND(0.00055)	0.0018	0.030	0.056	0.00099	1m	

M-E5	2014/8/19	In progress	In progress	0.025	In progress	In progress	1m
		ND(0.00059)	0.0015	0.021	0.076	In progress	1m
	2014/5/19	ND(0.00056)	0.0018				100m
	ND(0.00075)	0.00062				522m	
2014/1/24	ND(0.00071)	0.0024	0.031	0.055	0.0011	1m	

M-G3	2014/8/28	In progress	In progress	0.022	In progress	In progress	1m
		0.0011	0.0029	0.027	0.076	In progress	1m
	2014/5/18	ND(0.00056)	0.0016				100m
		ND(0.00064)	0.0016				196m
2014/1/16	ND(0.00071)	0.0017	0.021	0.097	0.0011	1m	

M-G4	2014/8/21	In progress	In progress	0.024	In progress	In progress	1m
		ND(0.00063)	0.0028	0.024	0.059	In progress	1m
	2014/5/25	ND(0.00059)	0.0016				100m
		ND(0.00080)	0.00057				645m
2014/1/17	ND(0.00063)	0.0019	0.023	0.063	0.0010	1m	

M-H3	2014/8/28	In progress	In progress	0.025	In progress	In progress	1m
		ND(0.00060)	0.0021	0.020	0.084	In progress	1m
	2014/5/25	ND(0.00056)	0.0017				100m
		ND(0.00053)	0.0017				214m
2014/1/16	ND(0.00087)	0.0018	0.025	0.077	0.0010	1m	

M-H1	2014/5/24	0.0016	0.0049				1m
		ND(0.00059)	0.0020				122m

# Sea area along and off the coast of Miyagi Prefecture

Sampling point	Sampling Date	Cs-134	Cs-137	Sr-90	S/M/B
----------------	---------------	--------	--------	-------	-------

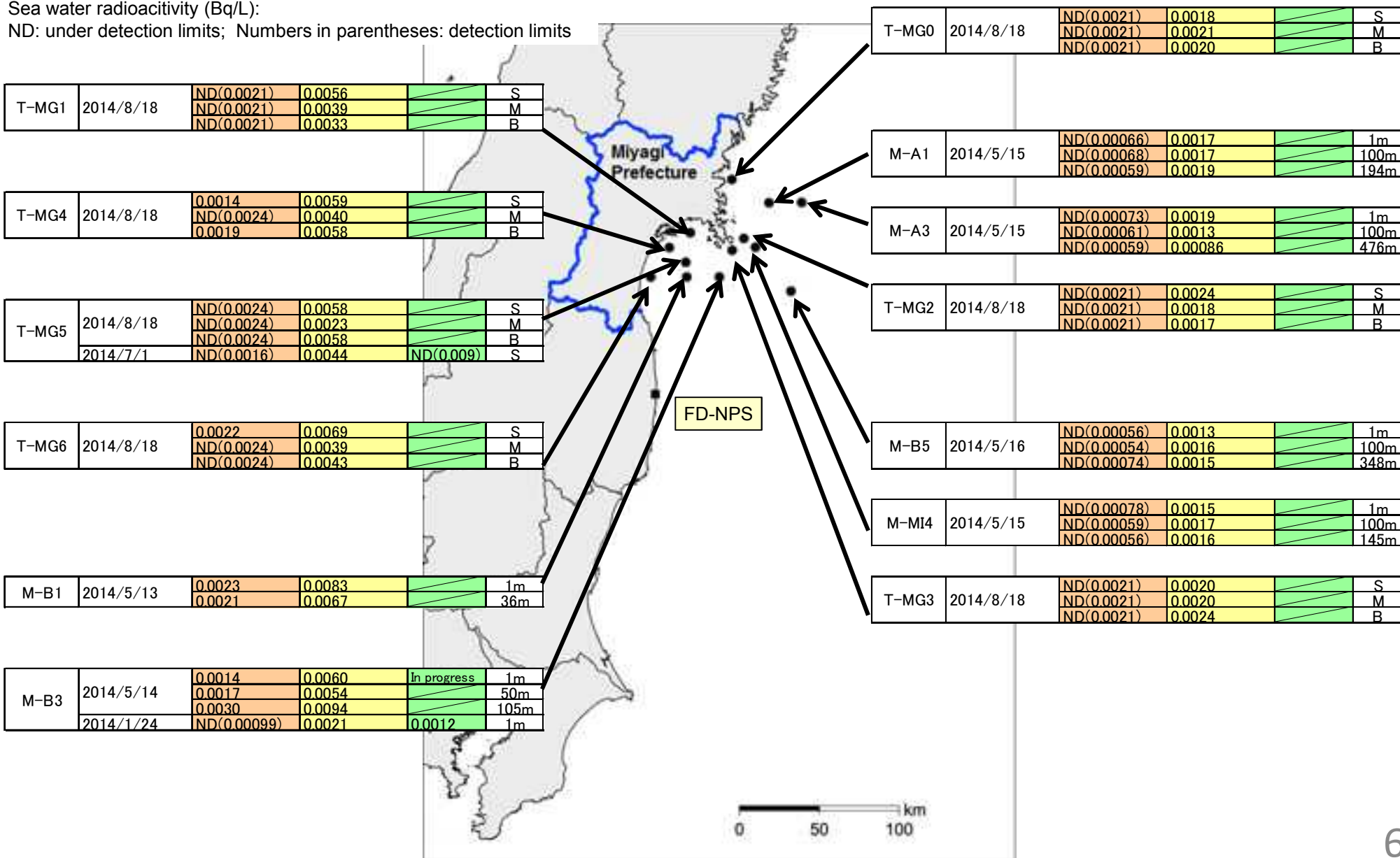
S:2m below sea level

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	2014/8/19	ND(1.1)	ND(1.3)		S
		ND(1.1)	ND(1.3)		B

T-A	2014/8/19	ND(1.1)	ND(1.3)		S
		ND(1.1)	ND(1.3)		B

T-B	2014/8/20	ND(1.1)	ND(1.3)		S
		ND(1.1)	ND(1.3)		B

M-J1	2014/5/27	0.0015	0.0053	In progress	1m
		0.0015	0.0045		39m
	2014/1/13	0.0027	0.0076	0.00079	1m

T-C	2014/8/20	ND(1.1)	ND(1.3)		S
		ND(1.1)	ND(1.3)		B
	2014/7/8	ND(1.2)	ND(1.3)	ND(0.009)	S

M-K1	2014/5/27	0.00084	0.0035		1m
		0.0012	0.0040		23m

T-D	2014/8/19	ND(1.1)	ND(1.3)		S
		ND(1.1)	ND(1.3)		B

M-M1	2014/5/29	ND(0.00074)	0.0025		1m
		ND(0.00057)	0.0029		100m

M-I0	2014/5/26	0.0015	0.0054	In progress	1m
		0.0014	0.0046		63m
	2014/1/13	0.00092	0.0029	0.0011	1m

M-I1	2014/5/26	0.0015	0.0056		1m
		0.0027	0.0062		50m
		0.00070	0.0034		89m

M-I3	2014/5/26	ND(0.00079)	0.0022		1m
		ND(0.00059)	0.0017		100m
		ND(0.00074)	0.0019		170m

M-IB2	2014/5/27	0.0019	0.0076		1m
		ND(0.00075)	0.0025		104m

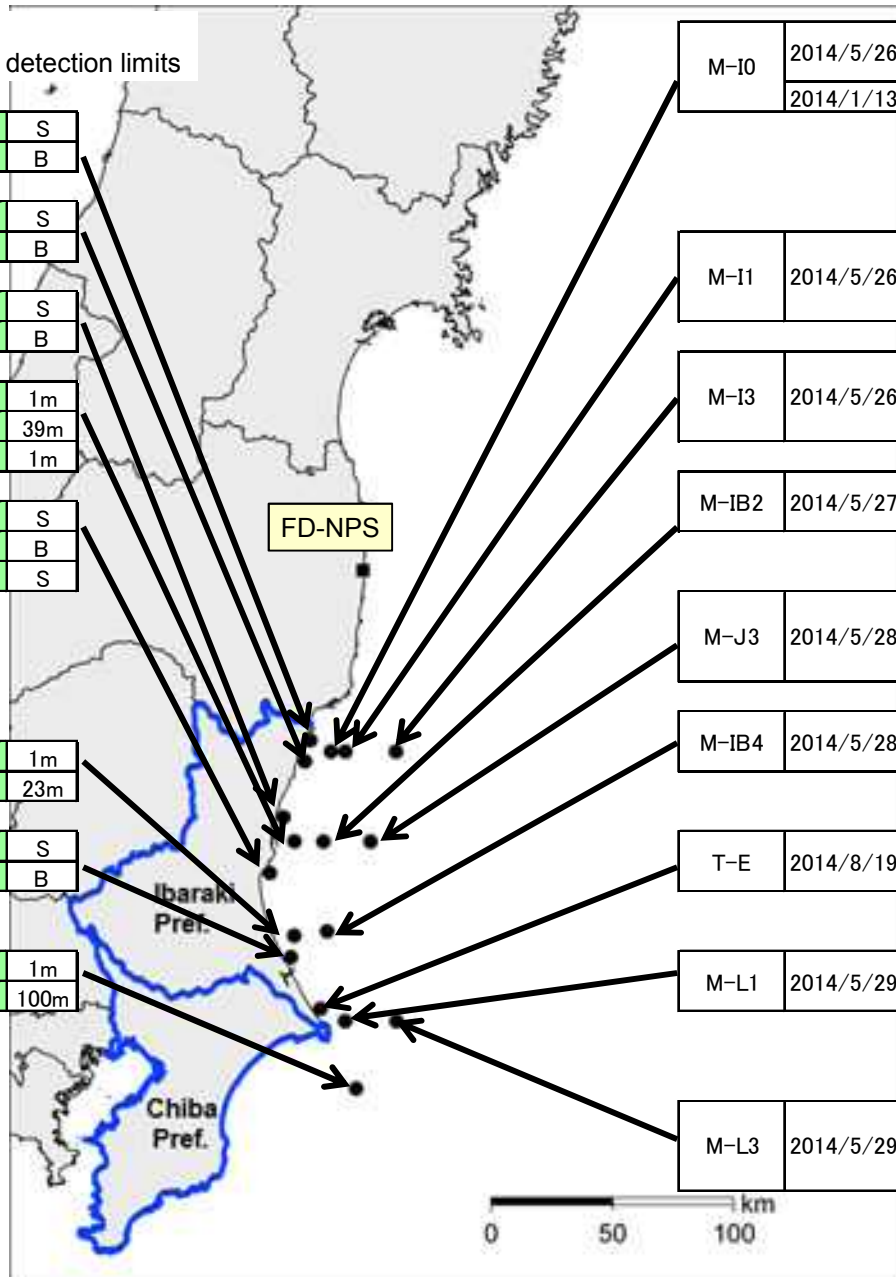
M-J3	2014/5/28	0.00084	0.0032		1m
		ND(0.00061)	0.0015		100m
		ND(0.00054)	0.00055		548m

M-IB4	2014/5/28	0.0017	0.0055		1m
		0.0012	0.0039		107m

T-E	2014/8/19	ND(1.1)	ND(1.3)		S
		ND(1.1)	ND(1.3)		B

M-L1	2014/5/29	ND(0.00062)	0.0030		1m
		0.00080	0.0032		34m

M-L3	2014/5/29	0.00062	0.0026		1m
		ND(0.00064)	0.0027		100m
		ND(0.00063)	0.0027		154m





# Open sea off the coast of Eastern Japan

Sampling point	Sampling Date	Cs-134	Cs-137	Depth(m) from sea level
----------------	---------------	--------	--------	-------------------------

Sea water radioactivity (Bq/L):

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

M-10	2014/6/18	ND(0.00054)	0.0020	1m
		ND(0.00073)	0.0017	100m
		ND(0.00052)	0.0013	200m
		ND(0.00058)	0.0011	300m
		ND(0.00051)	0.00059	500m

M-14	2014/6/19	ND(0.00056)	0.0022	1m
		ND(0.00057)	0.0018	100m
		ND(0.00053)	0.0016	200m
		ND(0.00058)	0.00093	300m
		ND(0.00059)	0.00054	500m

M-19	2014/6/20	0.00095	0.0033	1m
		ND(0.00057)	0.0020	100m
		ND(0.00063)	0.0014	200m
		ND(0.00053)	0.0012	300m
		ND(0.00057)	0.00086	500m

M-20	2014/6/21	0.00067	0.0026	1m
		ND(0.00059)	0.0028	100m
		ND(0.00073)	0.0024	200m
		ND(0.00057)	0.0015	300m
		ND(0.00055)	0.00070	500m

M-25	2014/6/24	ND(0.00057)	0.0016	1m
		ND(0.00055)	0.0019	100m
		0.00069	0.0033	200m
		0.00097	0.0043	300m
		ND(0.00060)	0.0023	500m

M-11	2014/6/18	0.00062	0.0030	1m
		0.00078	0.0028	100m
		ND(0.00052)	0.0020	200m
		ND(0.00054)	0.0014	300m
		ND(0.00059)	0.0012	500m

M-15	2014/6/19	ND(0.00056)	0.0025	1m
		ND(0.00055)	0.0021	100m
		ND(0.00060)	0.0017	200m
		ND(0.00052)	0.0012	300m
		ND(0.00061)	0.00080	500m

M-21	2014/6/21	ND(0.00057)	0.0020	1m
		ND(0.00056)	0.0029	100m
		0.00063	0.0032	200m
		ND(0.00065)	0.0021	300m
		ND(0.00053)	0.0015	500m

M-26	2014/6/23	ND(0.00056)	0.0022	1m
		ND(0.00069)	0.0031	100m
		0.00099	0.0038	200m
		0.0013	0.0047	300m
		0.00066	0.0032	500m

M-27	2014/6/22	ND(0.00057)	0.0028	1m
		ND(0.00070)	0.0027	100m
		0.0010	0.0033	200m
		ND(0.00056)	0.0035	300m
		0.0011	0.0051	500m

