



## Baltic Marine Environment Protection Commission

Expert Group on Monitoring of Radioactive Substances  
in the Baltic Sea

MORS EG 5-2015

Oulu, Finland, 19-21 May 2015

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<b>Document title</b>	Preliminary results of Swedish data 2014
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<b>Submitted by</b>	Sweden
<b>Reference</b>	

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### Background

This document presents preliminary results from Sweden of certain biota, sea water and sediment data.

### Action required

The Meeting is invited to take note of the information.

# Report from Sweden

Maria Lüning, SSM, Sweden

The following paper presents preliminary results of certain biota, sea water and sediment data.

## 1. Results for biota 2014

All data are now available and will be sent to the database before deadline.

1.1 Fish, all data are reported as activity for fresh weight according to the Recommendation 26/3.

Station/ date	Location	Basin M/H	Species (Number)	K-40 Activity in Bq/kg	Uncertainty %	Cs-137 Activity in Bq/kg	Uncertainty %
SW1a 2014-09-28	65°35'N 22°53'E	7/7	Clupea (120)	99,5	3	4,80	3
SW2 2014-09-15	60°44'N 17°52'E	1/8	Clupea (59)	93,10	3	5,30	3
SW3a 2014-11-10	58°17'N 17°50'E	10/10	Clupea (50)	91,0	3	3,20	4
SW4 2014-11-10	55°57'N 15°47'E	6/6	Clupea (30)	119,70	4	4,40	5
SW6 2014-10-14	57°14'N 11°50'E	12/12	Gadus (10)	115,20	3	0,40	10
SW6 2014-08-21	57°14'N 11°50'E	12/12	Clupea (45)	120,70	3	0,50	13
SW8 2014-08-04	63°33'N 19°54'E	7/17	Clupea (33)	105,10	7	4,90	6
SWF22 2014-10-04	60°26,70'N 18°13,50'E	1/8	Clupea (41)	123,30	1	6,00	1

No fish was sampled at SW5 east of Gotland.

## 1.2 Benthic animals

Station/ date	Location	Basin M/H	Species (Number)	K-40 Activity in Bq/kg	Uncertainty %	Cs-137 Activity in Bq/kg	Uncertainty %
SW6a 2014-09-04	57°18'N 11°54'E	12/12	Mytilus (20)	199,00	8	< 3,10	
SW7 2014-10-22	58°35'N 11°16'E	15/18	Mytilus (29)	213,00	7	< 2,50	
SWS15 2014-05-16	57°15,14'N 16°48,20'E	10/10	Mytilus (301)	72,00	10	1,30	17
SWS20 2014-04-24	57°26,97'N 16°44,03'E	10/10	Macoma (358)	150,00	14	2,00	29
SWF108 2014-09-18	60°22,40'N 18°23,74'E	1/8	Macoma (144)	76	20	7,90	14

The samplers in the Forsmark area have reported that a new mussel species, *Mytilopsis* that might use the same ecological niche as *Mytilus* has occurred. This new species was sampled during 2014 and Forsmark analysed very low concentration for K-40 (34 Bq/kg DW) and for Cs-137 (0,56 Bq/kg DW). The uncertainty for both radionuclides is high. The sampling and analyses will continue. The mussel has also been found in the warm discharge water in the outlet channels and Forsmark will make further investigations during this summer's outage. Have any other Laboratory around the Baltic Sea sampled and analysed this mussel?

## 1.3 Aquatic plants

Station/ date	Location	Basin M/H	Species (Number)	K-40 Activity in Bq/kg	Uncertainty %	Cs-137 Activity in Bq/kg	Uncertainty %
SWS15 2014-10-30	57°15,14'N 16°48,20'E	10/10	Fucus	910,00	2	15,00	3
SWB16 2014-06-25	55°53,35'N 12°42,60'E	13/13	Fucus	1030	1	9,27	4
SWR25 2014-09-04	57°20,11'N 12°04,45'E	12/12	Fucus	774,00	1	2,41	3
SWF111 2014-09-18	60°30,20'N 18°22,00'E	1/8	Fucus	600,00	1	13,00	3

\* Results given in Bq/kg wet weight, all others in Bq/kg dry weight

## 2. Results for sea water

The data are not available yet but will be sent to the database as soon as they are ready.

## 3. Results for sediment stations

Station/ date	Location	Basin M/H	Sample slice cm	K-40 Activity in Bq/m <sup>2</sup>	Uncertainty %	Cs-137 Activity in Bq/m <sup>2</sup>	Uncertainty %
A5 2014-09-10	65°10,00'N 23°14,00'E	7/7	0-5	9,21E+03	2,85	3,12E+03	1,85
			5-10	1,60E+04	0,25	2,97E+03	2,00
	10-15		2,39E+04	2,66	1,97E+02	0,80	
	15-20		2,20E+04	2,74	<		
	20-25		1,99E+04	2,74	<		
	0-5 pool		1,12E+04	2,93	4,18E+03	1,97	
	5-10 pool		1,52E+04	2,85	2,60	2,25	
A13 2014-09-11	64°42,50'N 22°04,00'E	7/7	0-5	1,09E+04	2,55	2,41E+03	1,96
			5-10	1,89E+04	2,81	4,96E+02	4,54
	10-15		1,79E+04	2,22	<		
	15-20		2,02E+04	2,69	<		
	20-25		2,12E+04	2,21	<		
	0-5 pool		1,17E+04	2,36	2,66E+03	2,02	
	5-10 pool		1,84E+04	2,28	5,40E+02	2,96	
C3 2014-09-09	62°39,17'N 18°57,14'E	8/8	0-5	9,13E+03	2,14	6,27E+03	1,71
			5-10	2,04E+04	2,29	1,96E+04	1,83
	10-15		1,79E+04	2,22	2,16E+04	1,77	
	15-20		1,48E+04	2,32	1,78E+04	1,77	
	20-25		2,85E+04	1,67	1,26E+04	1,86	
	0-5 pool		7,90E+03	2,78	4,78E+03	1,90	
	5-10 pool		1,61E+04	2,20	1,40E+04	1,77	
C14 2014-09-09	62°05,99'N 18°32,91'E	8/8	0-5	1,62E+04	2,18	7,70E+03	1,83
			5-10	2,84E+03	20,91	1,27E+03	2,24
	10-15		3,33E+04	0,25	5,88E+01	19,05	
	15-20		3,20E+04	2,17	<		
	20-25		3,28E+04	2,20	<		
	0-5 pool		2,43E+04	2,90	1,04E+04	2,16	
	5-10 pool		3,46E+04	2,11	9,90E+02	2,63	

Station/ date	Location	Basin M/H	Sample slice cm	K-40 Activity in Bq/m <sup>2</sup>	Uncertainty %	Cs-137 Activity in Bq/m <sup>2</sup>	Uncertainty %
SWF135 2014-09-18	60°31,20'N	1/8	0-2	3,53E+03	6,01	1,52E+03	5,70
	18°21,43'E						
SWR35 2014-09-11	57°14,08'N	13/13	0-2	4,73E+03	1,30	4,62E+01	4,80
	11°56,71'E						
SWB38 2014-09-01	55°43,63'N	12/12	0-2	4,92E+03	1,21	1,67E+02	1,68
	12°50,62'E						
SWS36 2014-10-31	57°25,30'N 17°00,00'E	10/10	0-2	8,93E+03	2,00	4,46E+02	2,00
			2-4	1,05E+04	2,00	2,94E+02	2,00
			4-6	1,12E+04	2,00	7,34E+01	6,00
			6-8	1,40E+04	1,00	2,34E+01	13,00
			8-10	1,11E+04	2,00	<	



Strål  
säkerhets  
myndigheten

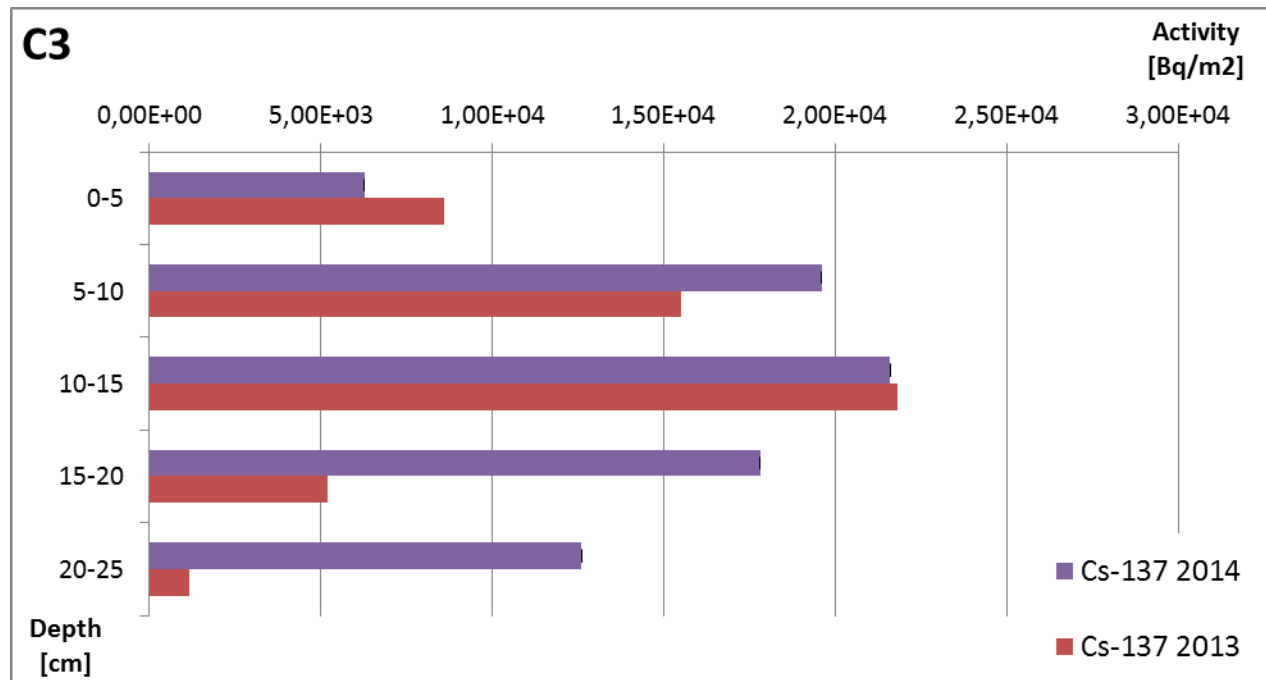
Swedish Radiation Safety Authority

# Report from Sweden

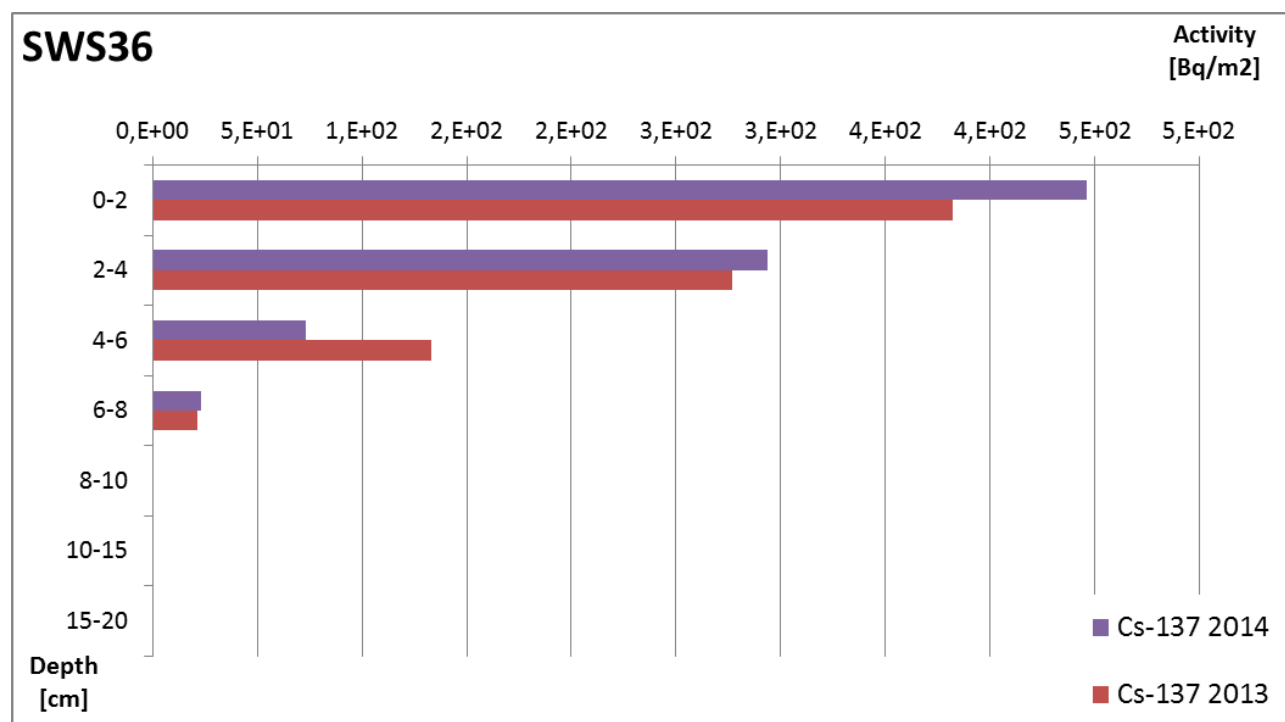
Maria Lüning and Charlotte Lager  
Swedish Radiation Safety Authority

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2015-05-13

# Results from sedimentstation C3 in Gulf of Bothnia, 2013

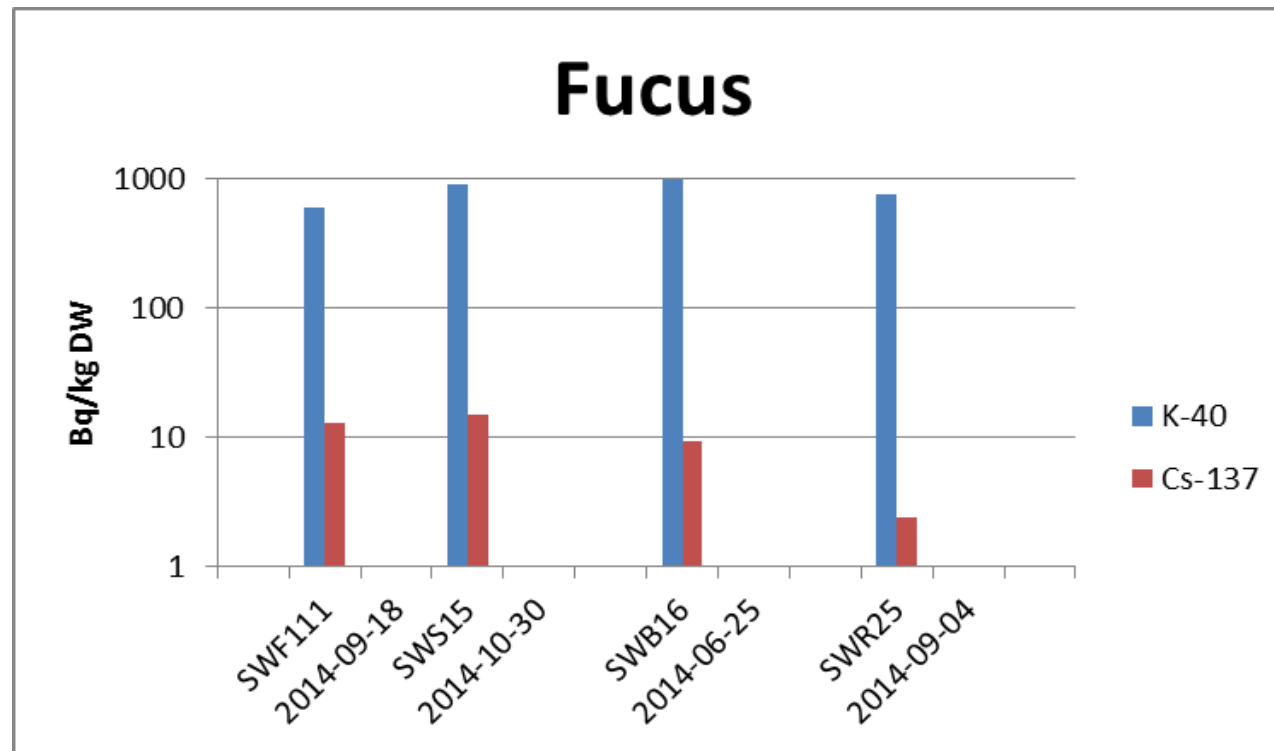


# Results from sedimentstation SWS36 in Baltic proper, 2013

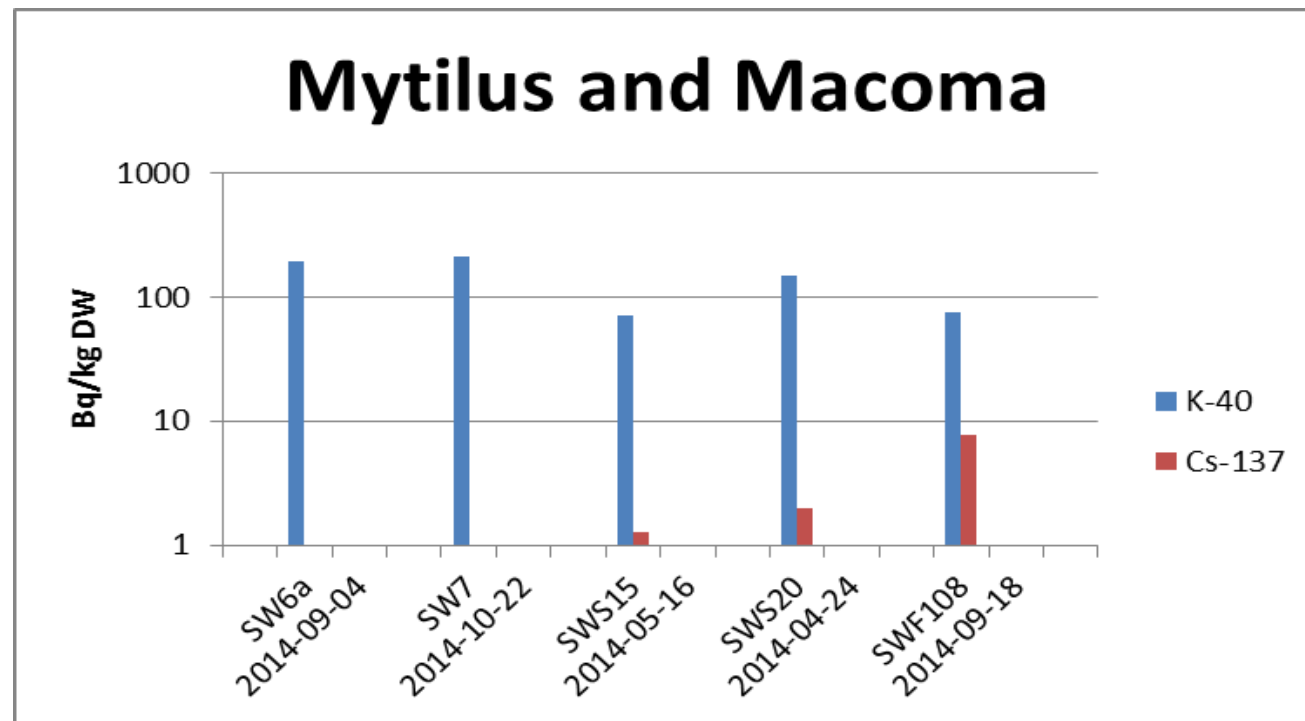




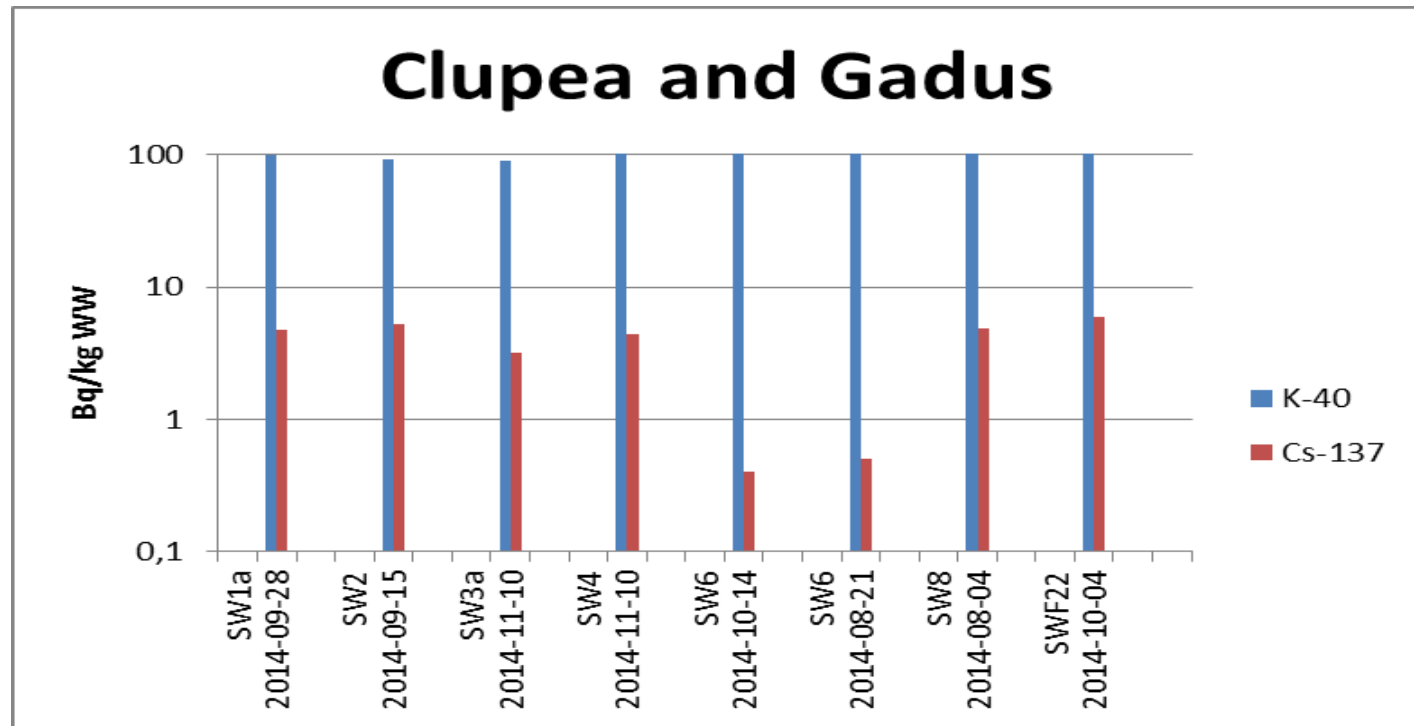
# Fucus results at stations close to the Swedish NPPs



# Results from Macoma and Mytilus at Swedish stations



# Results from Clupea and Gadus at Swedish stations





## Mytilopsis leucophaeta



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2015-05-13



Thank you for your attention

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