

Common format for toxin-producing plankton bloom and shellfish poisoning

Country	Event No.			Duration (Start)			Duration (End)			Continuous days	Locatio of occurrence		Monitoring date		Causative species (*1)	Maximum density (cells·inds./L)	Fishery damage			Environmental parameters (*2)			
	Pref. Code	Year	No.	Year	Month	day	Year	Month	day		Sub-area	Spot	Date	Time			Fish/Shellfish species	Shellfish poisoning	Toxin level (MU/g)	Temp. (°C)	Salinity	DO (mg/L)	
China	DL	1999	4	1999	7	?	?	?	?	?	Dalian	Dalian Bay			<i>Exuviaella marina</i>	8,100,000		DSP					
	DL	2004	7	2004	9	25	?	?	?	?	Dalian	Jinshatan			<i>Alexandrium catenella</i>								
Japan	YM	2007	1	2006	12	26	2007	2	21	58	Coastal area of Yamaguchi Pref.	Sensaki Bay			<i>Gymnodinium catenatum</i>	1,211	Japanese oyster	PSP	6.18- 12.2	9.1- 13.6	28.9- 34.3		
Japan	YM	2008	1	2008	11	14	?	?	?	?	Coastal area of Yamaguchi Pref.	Sensaki Bay			<i>Gymnodinium catenatum</i>	20,678	Japanese oyster	PSP	5.25- 59	-	-	-	
Korea																							
	AB	1992	1	1992	6	25	1992	7	10	16	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens/multiseriis</i>	11,000,000				19.0- 23.0	27.0- 28.0		
	AB	1996	2	1996	6	19	?	?	?	<7	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuta</i>	800				13.0	31.0		
	AB	1996	6	1996	7	29	?	?	?	<7	Amurskii Bay	Amurskii Bay			<i>Dinophysis fortii</i>	200				23.0	24.0		
	AB	1997	2	1997	6	4	?	?	?	<7	Amurskii Bay	Amurskii Bay			<i>Dinophysis norvegica</i>	60				12.0	31.0		
	AB	1997	3	1997	6	13	1997	7	22	50	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuminata</i>	12,800				15.0- 20.0	28.0- 30.0		
	AB	1997	6	1997	9	4	1997	11	19	66	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia delicatissima</i>	2,700,000				1.0- 19.0	31.0- 35.0		
	AB	1997	8	1997	11	11	1997	11	19	9	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia calliantha</i>	500,000				1.0- 5.0	34.0- 35.0		
	AB	1998	3	1998	3	26	?	?	?	<7	Amurskii Bay	Amurskii Bay			<i>Dinophysis rotundata</i>	600				0.2	33.0		
	VB	2001	2	2001	8	29						Vostok Bay	Vostok Bay			<i>Alexandrium tamarense</i>	1600						
	VB	2001	3	2001	8	29						Vostok Bay	Vostok Bay			<i>Dinophysis fortii</i>	400						
	VB	2001	5	2001	9	30						Vostok Bay	Vostok Bay			<i>Pseudo-nitzschia pseudodelicatissima</i>	686000				14.7	33.6	
	VB	2002	1	2002	7	14						Vostok Bay	Vostok Bay			<i>Dinophysis acuminata</i>	500				16.4	32.1	
	VB	2002	3	2002	10	15						Vostok Bay	Vostok Bay			<i>Pseudo-nitzschia pungens</i>	2600				14.2	33.2	
	VB	2003	2	2003	6	30						Vostok Bay	Vostok Bay			<i>Dinophysis acuminata</i>	100				17.5	33.2	
	ANB	2004	1	2004	7	8	2004	12	25	171	Aniva Bay	Aniva Bay			<i>Alexandrium tamarense</i>		Mizuhopecten yessoensis	PSP	2.5-1-7.5				
	ANB	2004	2	2004	9	10	2004	9	12	3	Aniva Bay	Aniva Bay			<i>Pseudo-nitzschia spp.</i>		Mizuhopecten yessoensis	ASP	100-110				
	ANB	2004	3	2004	11	20	2004	11	30	11	Aniva Bay	Aniva Bay			<i>Pseudo-nitzschia spp.</i>		Mizuhopecten yessoensis	ASP	19-65				
	VB	2004	1	2004	8	1	2004					Vostok Bay	Vostok Bay			<i>Dinophysis acuminata</i>	200				23.2	28.5	
	ANB	2005	1	2005	4	20	2005	11	27	222	Aniva Bay	Aniva Bay			<i>Alexandrium tamarense</i>		Mizuhopecten yessoensis	PSP	2.5-80				
	AB	2005	1	2005	10	20	2005	10	28	9	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia calliantha</i>	200,000				6.0- 12.0	32.0- 33.0		
	AB	2005	2	2005	10	26	?	?	?	<7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia fraudulenta</i>	38,000				8.0	34.0		
	AB	2005	3	2005	10	5	2005	10	26	22	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia multistriata</i>	800,000				15.0	33.0		
	AB	2005	4	2005	12	5	2005	12	30	26	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia delicatissima</i>	80,000				-1.7- -1.8	33.0- 35.0		
AB	2005	5	2005	12	5	2005	12	29	25	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	60,000				-1.7	34.0- 35.0			
AB	2005	7	2005	9	4	2005	9	10	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia seriata</i>	9,100				20.0	31.0			
VB	2005	2	2005	11	1						Vostok Bay	Vostok Bay			<i>Pseudo-nitzschia pseudodelicatissima</i>	87,000				3.0	32.6		
AB	2006	1	2006	3	1	?	?	?	<7	Amurskii Bay	Amurskii Bay			<i>Dinophysis rotundata</i>	500				-1.7	34.0			

Russia

AB	2006	3	2006	6	20	2006	7	3	14	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuminata</i>	12,800					13.0-22.0	17.0-20.0
AB	2006	4	2006	6	20	?	?	?	<7	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuta</i>	500					13.0	17.0
VB	2006	1	2006	8	4					Vostok Bay	Vostok Bay			<i>Alexandrium tamarense</i>	5,000					22.6	30.6
AB	2007	1	2007	7	11	2007	7	25	14	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuminata</i>	686					18.0-22	26.0-26.7
AB	2007	2	2007	7	11	2007	7	11	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia delicatissima</i>	686					18.0	26.0
AB	2007	3	2007	11	9	2007	11	9	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia delicatissima</i>	340					6.8	31.9
AB	2007	4	2007	8	6	2007	9	17	42	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia delicatissima</i>	83,385					20.0-22.0	26.8-32.7
AB	2007	5	2007	7	11	2007	7	11	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia calliantha</i>	7,800					18.0	26.0
AB	2007	6	2007	9	5	2007	9	17	12	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia calliantha</i>	173,400					20.0-22.0	30.2-32.7
AB	2007	7	2007	10	30	2007	10	30	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia calliantha</i>	1,540					6.5	31.2
AB	2007	8	2007	7	25	2007	7	25	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	58,800					22.0	26.7
AB	2007	9	2007	9	17	2007	10	9	22	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	4,800					12.0-20.0	30.5-32.7
AB	2007	10	2007	7	25	2007	7	25	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia fraudulenta</i>	3,600					22.0	26.7
AB	2008	1	2008	3	4	2008	4	7	34	Amurskii Bay	Amurskii Bay			<i>Dinobryon balticum</i>	1,054,280					-1.8-5.5	30.6-33.6
AB	2008	2	2008	9	15	2008	9	15	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia callianta</i>	2,640					20.9	29.7
AB	2008	3	2008	7	28	2008	9	29	62	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia delicatissima</i>	8,800					15.2-23.5	22.5-30.5
AB	2008	4	2008	3	4	2008	3	4	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia multistriata</i>	270					-1.8	32.6
AB	2008		2008	4	9	2008	11	4	208	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia spp.</i>		Crenomytilus grayanus	ASP	0.01			
AB	2008		2008	4	11	2008	4	11	1	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia spp.</i>		Modiolus modiolus	ASP	0.02	5.5		
AB	2008	5	2008	7	28	2008	7	28	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia multistriata</i>	1,257					23.5	22.5
AB	2008	6	2008	6	7	2008	6	7	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	640					16.7	18.8
AB	2008	7	2008	7	14	2008	7	14	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	330					23.2	26.0
AB	2008	8	2008	8	29	2008	9	15	18	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	1,320					20.5-20.9	28.1-29.8
AB	2008	9	2008	12	19	2008	12	19	7	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	857					-1.6	33.4
AB	2008	11	2008	6	7	2008	6	7	7	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuminata</i>	3,200	Crassostrea giga	DSP	81.1		16.2	18.8
AB	2008	12	2008	5	5	2008	7	14	70	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuminata</i>	4,480	Modiola modiolu	DSP	125.9	9.0-23.3	18.8-28.6	
AB	2008	13	2008	8	11	2008	8	11	7	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuminata</i>	1,900	nomytilus grayan	DSP	155.1	22.7	26.7	
AB	2009	1	2009	3	12					Amurskii Bay	Amurskii Bay			<i>Dinophysis acuta</i>	100					0.5	33.08
AB	2009	2	2009	6	8					Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	200					14.1	30.0
AB	2009	3	2009	6	8	2009	7	1	22	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuminata</i>	1,400					14.1-17.2	30
AB	2009	4	2009	8	2	2009	8	25	23	Amurskii Bay	Amurskii Bay			<i>Dinophysis acuminata</i>	2,600					22.5-23.0	20.0-27.0
AB	2009	5	2009	10	26					Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia cf. seriata</i>	1,800					10.5	30.55
AB	2009	6	2009	10	26					Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia calliantha</i>	19,200					10.5	30.55
AB	2010	1	2010	1	28	2010	2	10	13	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	500					-1.8	32.99

AB	2010	2	2010	1	28	2010	2	10	13	Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia cf. seriata</i>	200					-1.8	32.99
AB	2010	3	2010	7	30					Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia pungens</i>	2,000					22.5-23.5	22.59
AB	2010	4	2010	8	31					Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia cf. delicatissim</i>	32,800					24.0	27.74
AB	2010	5	2010	8	31					Amurskii Bay	Amurskii Bay			<i>Pseudo-nitzschia cf. seriata</i>	800					24.0	27.74

*1 Scientific name is based on the Integrated Report on Harmful Algal Blooms (HABs) for the NOWPAP Region (NOWPAP CEARAC, 2005).

*2 In case of Japan and Russia, the range of environmental parameters means the value which observed during event.