Entry of HAB data from the east coast of Russia into the ICES/PICES HAE-DAT database

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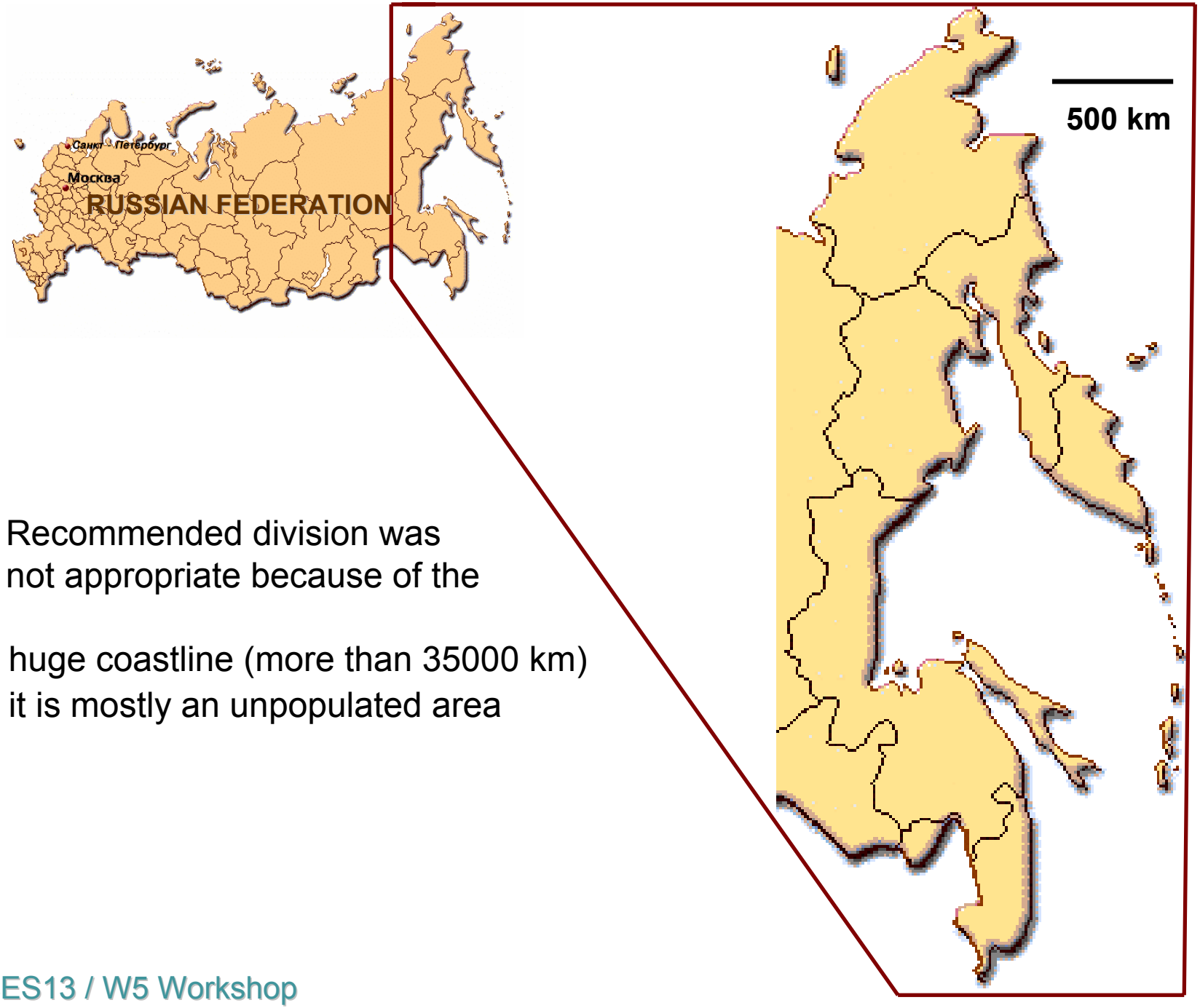
Instructions for HAE-DAT joint database

http://ioc.unesco.org/hab/data33.htm

- The PICES HAB section members should consider dividing their country's coastline into 100-200 km length sections.



Recommended division was not appropriate because of the

- huge coastline (more than 35000 km)
- it is mostly an unpopulated area

We suggest dividing Russian east coastline into 6 regions which correspond to the Russian Federation administrative territories such as:

1 Primorskii Krai
2 Sakhalinskaya Oblast
3 Khabarovskii Krai
4 Magadanskaya Oblast
5 Kamchatka (including both Kamchatskaya Oblast and Koryakskii Avtonomnii Okrug)
6 Chukotka (Chukotskii Avtonomnii Okrug)

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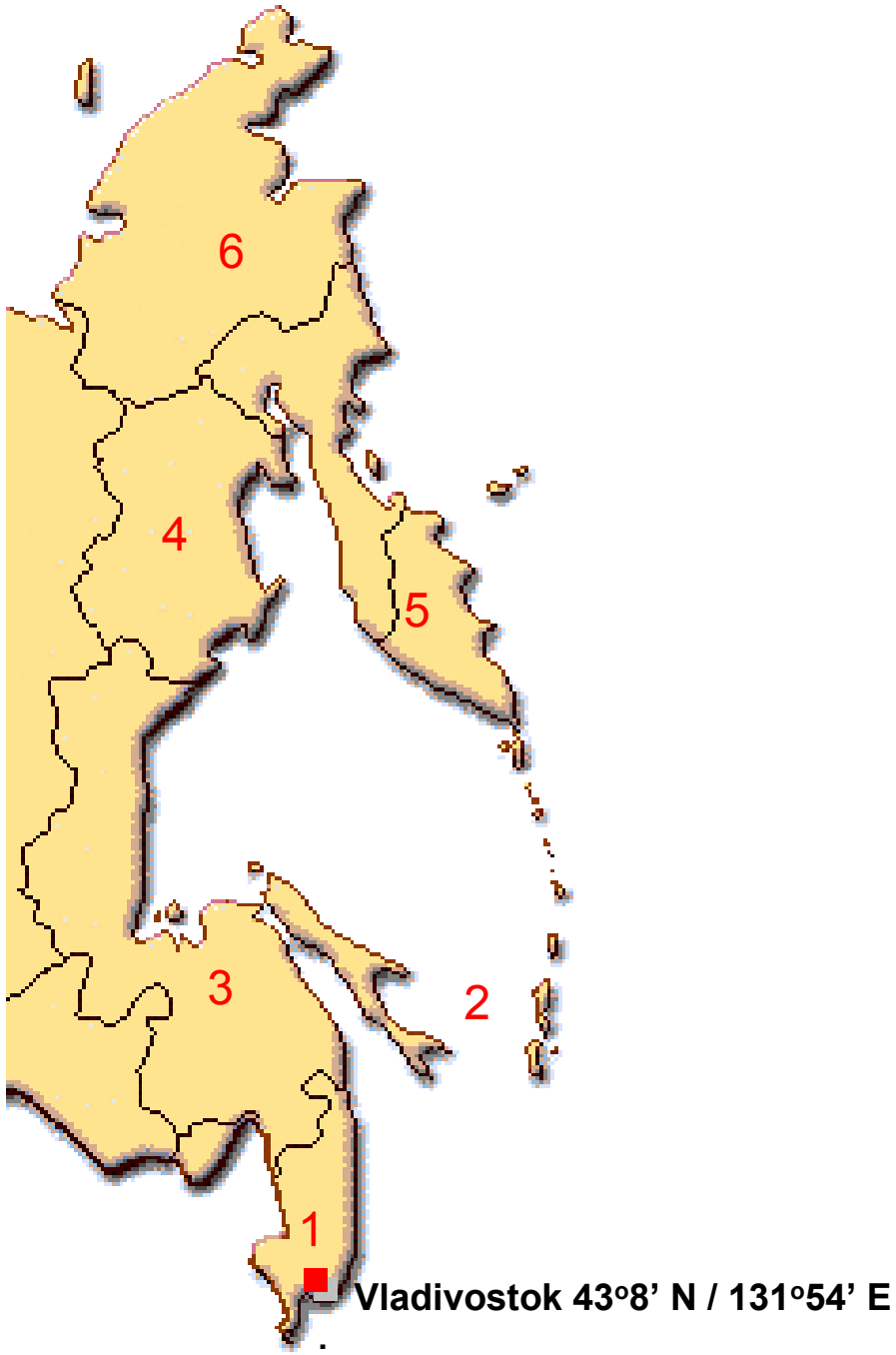
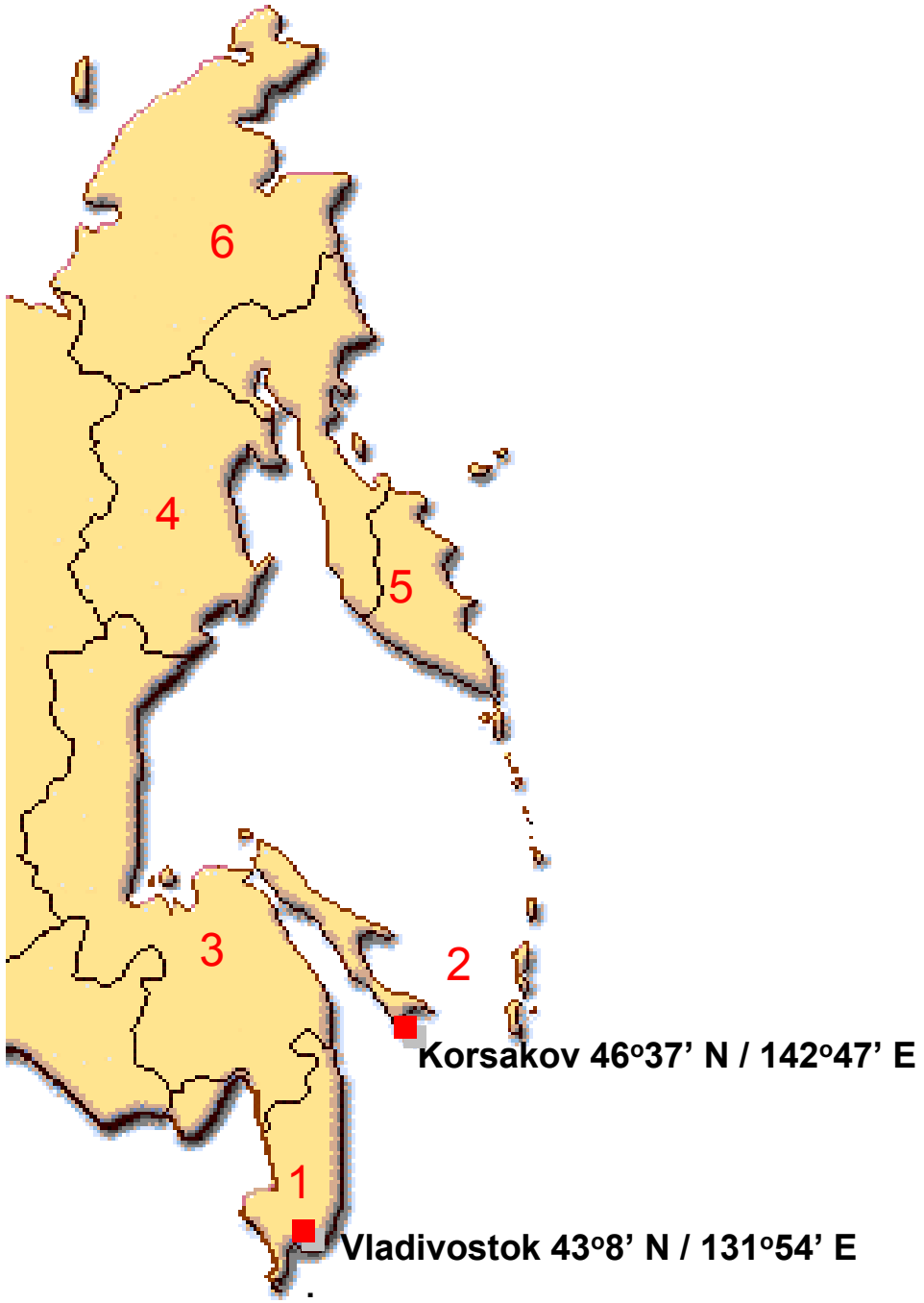
- The PICES HAB section members should consider dividing their country's coastline into 100-200 km length sections
- with central dot as a focal point of reference for the different maps

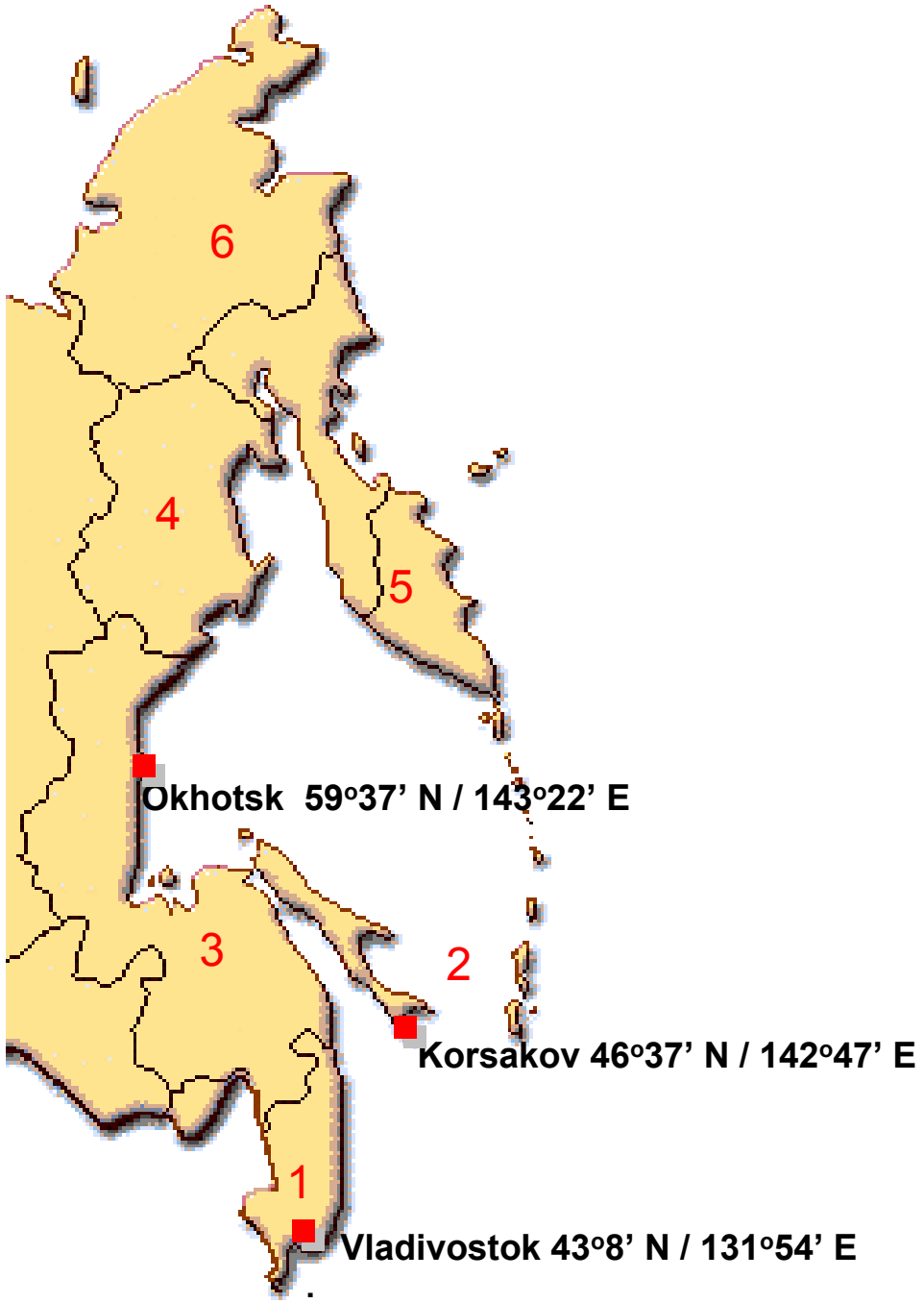
We suggest using largest coastal settlement in each region as the focal point of reference (longitude/latitude identification with grades, minutes and seconds are provided)



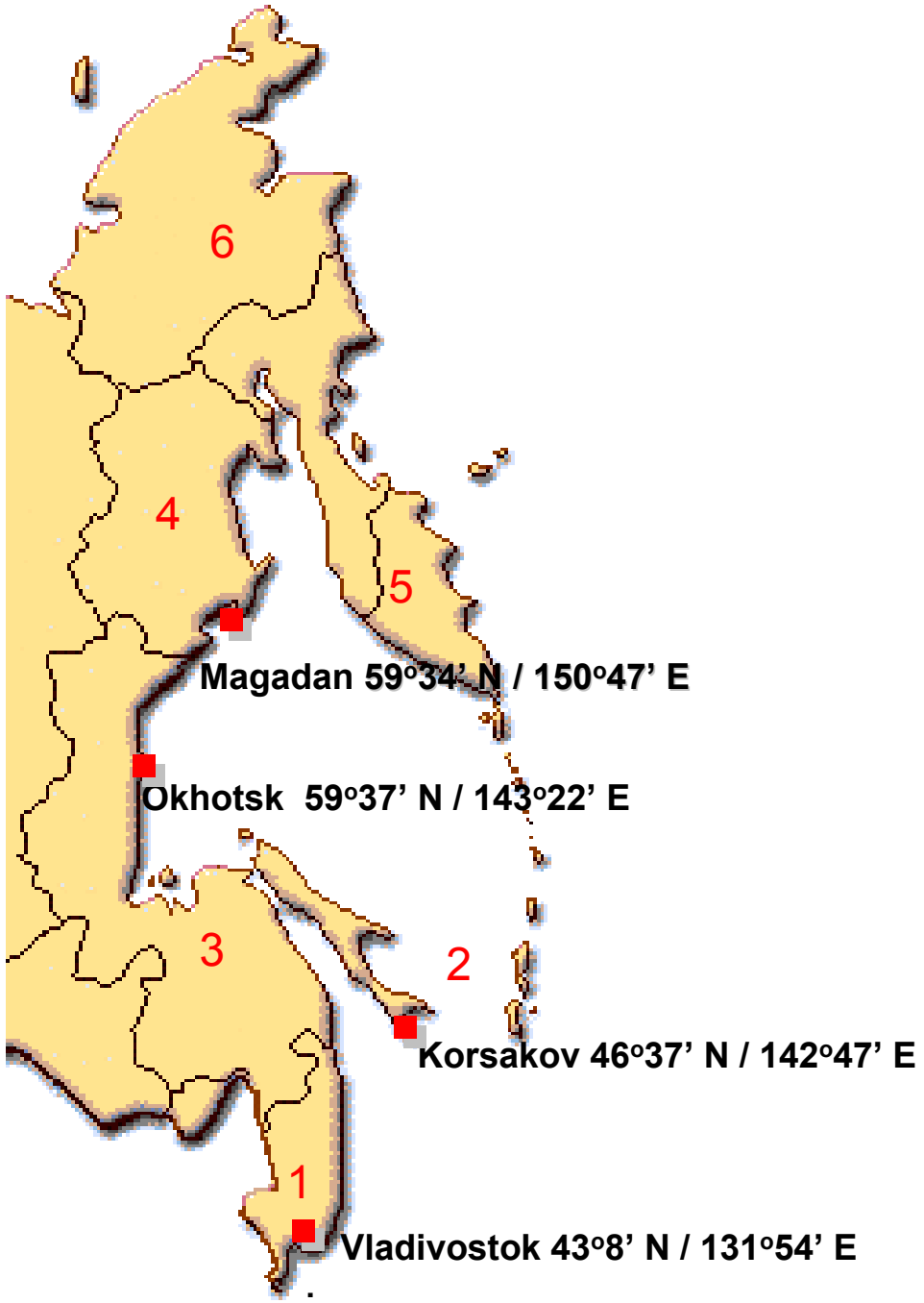
1 Primorskii Krai



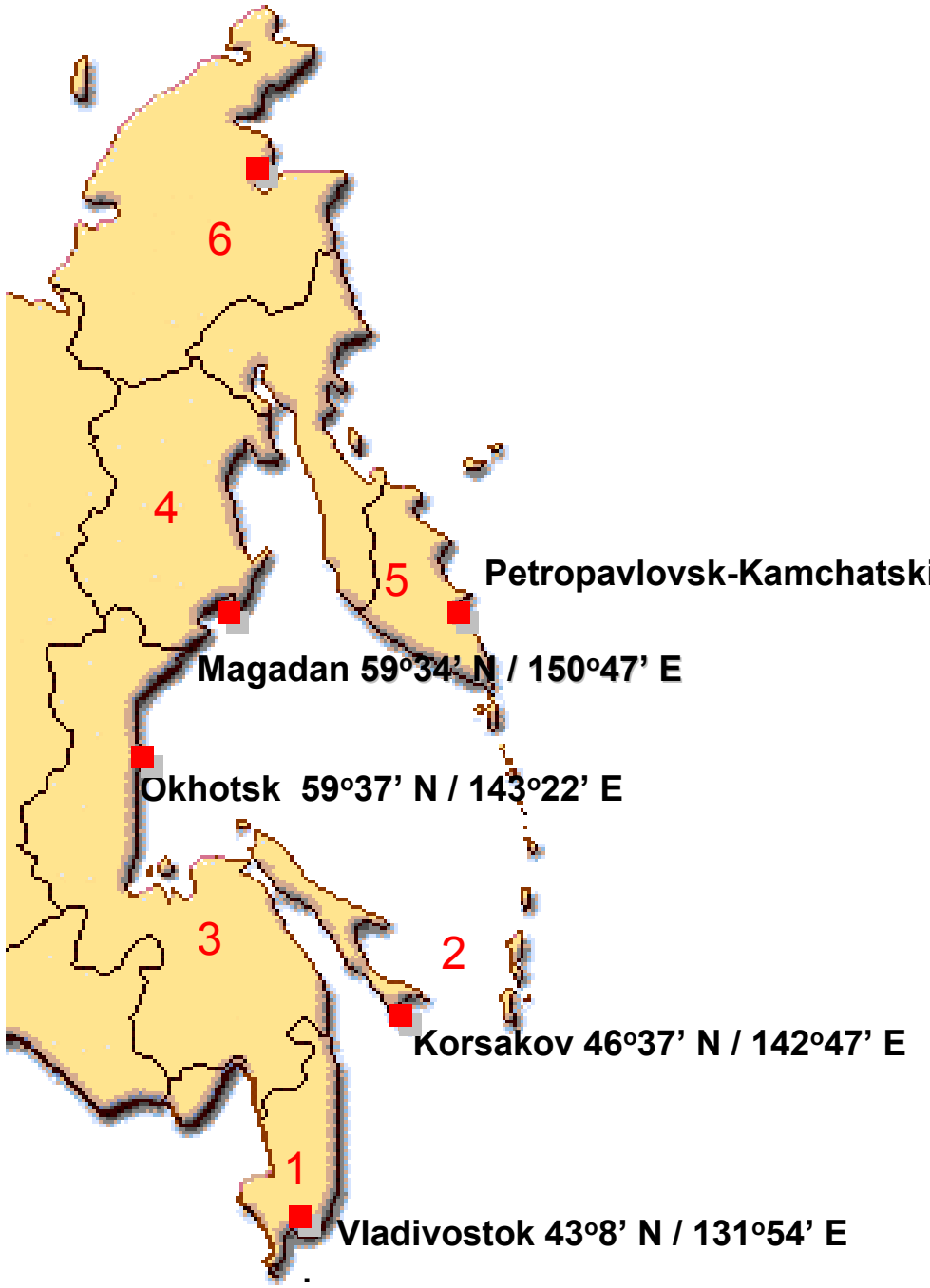
1 Primorskii Krai
2 Sakhalinskaya Oblast



1 Primorskii Krai
2 Sakhalinskaya Oblast
3 Khabarovskii Krai



1 Primorskii Krai
2 Sakhalinskaya Oblast
3 Khabarovskii Krai
4 Magadanskaya Oblast



1 Primorskii Krai
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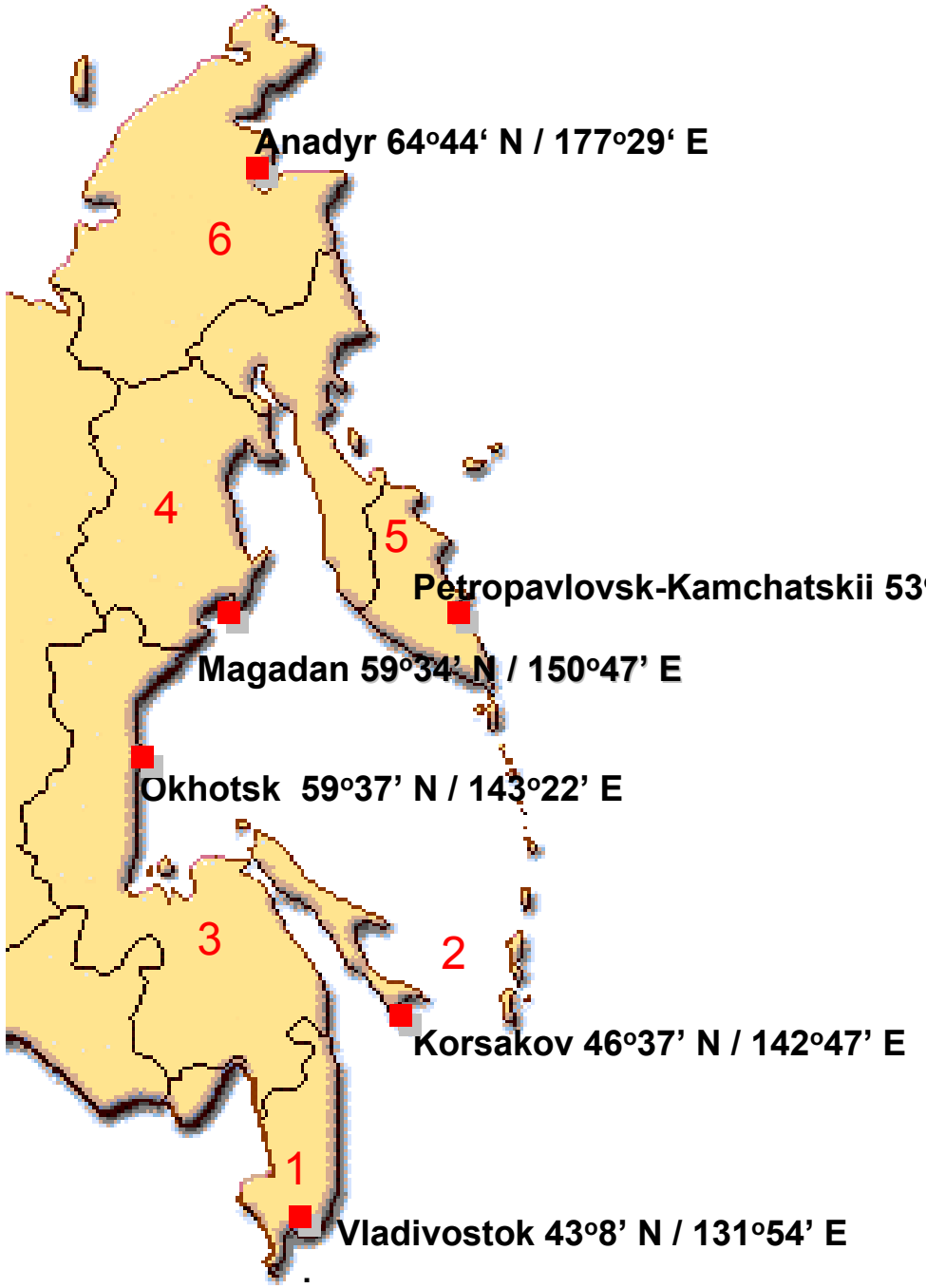
3 Khabarovskii Krai
4 Magadanskaya Oblast
5 Kamchatka



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- Each country will enter one year's HAB* data in the database using the year of their choice.

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* Only report information about harmful algae events

Harmful algal event - HAE is defined as:

- water discoloration, scum or foam causing a socio-economic impact due to the presence of toxic or harmful microalgae
- biotoxin accumulation in seafood above levels considered safe for human consumption
- any event where humans, animals or other organisms are negatively affected by algae

We selected data for three years because only 14 cases during the period from 2000 to 2003 fit in to ICES HAE meta database format.

HABs have been monitored in Russian waters only in the coastal waters of Vladivostok city in Primorye.

It is a part of routine plankton monitoring program, which is being conducted by researchers of Phytoplankton Research Group of the Institute of Marine Biology of the Far East Branch of Russian Academy of Sciences.

Stations: 1 - Krasnii Mys 2000-2003
2 - Rynda Bay 2000
3 - Golden Horn 2001-2002
4 - Ussuriiskii Bay 2001-2002
5 - Моргородок 2002-2003
6 - De-friz 2002-2003

National HAB Report IOC-ICES	COUNTRY :	RUSSIA
	Region :	Primorye
	Year :	2002

1 - GENERAL INFORMATION

Please note: NOT all information requested on this form is required. Some respondents may choose to stop at the end of the first page, but others may wish to add detailed bloom information, as requested on page 2. Any information you provide is of value.

Indicate the nature of the reported harmful event:

[X] Water discoloration	[ ] High Phyto concentration	[ ] Seafood toxin
[ ] Mass mortalities	[ ] Foam/mucilage in the coast	[ ] Other:

Has the event directly affected?

[ ] Planktonic life	[ ] Natural Fish	[ ] Birds
[ ] Benthic life	[ ] Aquaculture Fish	[ ] Other terrestrial :
[ ] Shellfish	[ ] Aquatic mammals	[ ] Humans

Has any toxicity been detected? [ ] Yes [X] No If yes, approximate range:

Associated syndrome [ ] PSP [ ] DSP [ ] ASP [ ] AZP [ ] NSP [ ] CFP [ ] Other:

Unexplained toxicity [ ] Yes [ ] No If yes, comments:

If intoxications occurred, please indicate the species implicated in the transmission of toxins (Transvector):

Additional comments:

Is this report the outcome of a monitoring programme? [X] Yes [ ] No

If yes, which programme(s)? Plankton monitoring programme of the Institute of Marine Bology FEB RAS

Has this event occurred before in this location? [ ] Yes [ ] No If yes, comments: Detected sporadically from 1993

Individual(s) to contact (name, address, e-mail, web page, etc.): Tatiana Yu. Orlova (torlova@imb.dvo.ru), Marina S. (marsel@imb.dvo.ru), Inna V. Stonik (innast@imb.dvo.ru) Institute of Marine Biology, Vladivostok, 690041, Russia

2 - LOCATION AND DATE

Location (if a single site)	Latitude:	43 15 3 ° N	° S
	Longitude:	131 90 2 ° E	° W
General location information	Name of the area: Amurskii Bay (Peter the Great Bay) Region: Primorskii Krai, Southeast Russia HAE Area code:		

Additional location information (i.e., length of covered shoreline or aerial coverage of bloom, ecosystem type, etc.):
The area of bloom is heavily polluted with domestic sewage.

Date of detection of quarantine levels (dd/mm/yy) :	Detection date: 01/08/2002	Final date: 16/08/2002

Additional information (i.e., start and end date of the bloom): Before and after this data, species was found in the water in low concentrations.

3 - MICROALGAE

Causative organism known? [X] Yes [ ] No

Causative species	Causative species/genus	Taxonomical class	Cells/L (max.)	Comments
	Prorocentrum minimum	Dinoflagellates	11940000	Identified by electron microscopy
Co-occurring dominant species	**Species/genus**	**Taxonomical class**	**Cells/L (max.)**	**Comments**
	monospecific			

Chlorophyll concentration, if known (µg/l):

Additional Bloom Information :	The bloom zone has an area of 10-15 square meters.
Event-related Bibliography:	Stonik, 1994

4 - ENVIRONMENTAL CONDITIONS

The information herein provided should correspond to the environmental conditions at a reported location and day of an event. Complimentary information can be provided if possible in the "Additional Environmental Information" field.

Location and date:	Station 5, Amurskii Bay 01/08/2002				
Weather:		Turbidity (NTU):		Wind direction:	
Stratified water:	☐ Yes ☐ No	Oxygen content (mL/L):		Wind velocity:	
Temperature (ºC):	26.5	Oxygen saturation %:		Current direction:	
Secchi disk (m):		Salinity:	10.8	Current velocity:	
Nutrient information:					

Please, if available, indicate here maximum/minimum temperature and salinity recorded during the whole duration of the event:	Maximum Temperature (ºC):	26.5	Maximum Salinity:	18.3
	Minimum Temperature (ºC):	24.9	Minimum Salinity:	10.8

	Location in the water column:	☐ Whole water column	☐ Subsurface bloom	☒ Surface bloom
ALGAL BLOOM	Advected or *in situ* growth: Comments:	☐ Advected	☐ *In situ*	
	Additional environmental information:	Bloom was observed after the heavy rain		

HAE in Russian waters 2000-2003

Causative species	Taxonomical class	Cells/L (max.)	Data of detection
Noctiluca scintillans	Dinoflagellates	970 000	05/05/2002
Noctiluca scintillans	Dinoflagellates	900 000	11/05/2002
Noctiluca scintillans	Dinoflagellates	700 000	15/05/2003
Prorocentrum minimum	Dinoflagellates	11 940 000	01/08/2002
Cochlodinium cf. *polykrikoides*	Dinoflagellates	2 000 000	30/06/2003
Oxyrrhis marina	Dinoflagellates	20 000 000	09/07/2002
Pseudo-nitzschia multiseries/pungens	Diatoms	1 750 000	06/06/2000
Pseudo-nitzschia pungens	Diatoms	1 690 000	11/09/2000
Ditylum brightwellii/Pseudo-nitzschia pungens	Diatoms	1 050 000/250 000	15/08/2000
Heterosigma akashiwo	Raphidophyceae	7 000 000	03/09/2002
Heterosigma akashiwo	Raphidophyceae	25 000 000	17/06/2003
Chattonella globosa	Raphidophyceae	6 600 000	10/09/200
Eutreptia lanowii	Euglenophyceae	15 600 000	12/03/2001
Eutreptiella gymnastica	Euglenophyceae	30 000 000	10/04/2001

5 - TOXIN ASSAY INFORMATION

Species containing the toxin	Toxin type	Toxin details	Max. Concentration (specify units)	Assay type	Use of a kit (if yes, what type of kit)
					☐ Yes ☐ No Type:

ADDITIONAL INFORMATION (e.g. positive animal assay, chemical details, analytical methods, etc.):

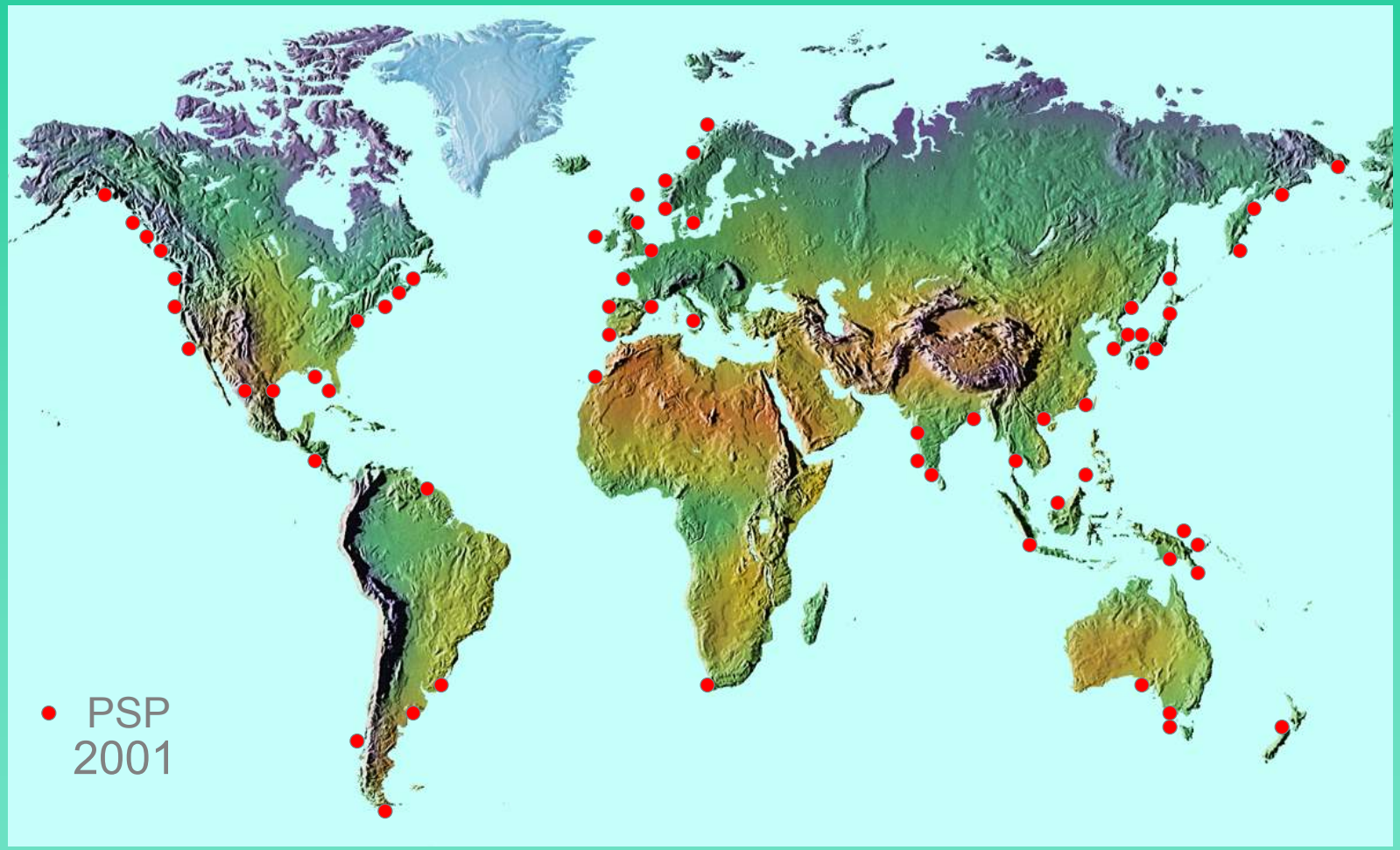
ECONOMIC LOSSES (production value, direct loss, indirect loss...):

MANAGEMENT DECISION:

ADDITIONAL HARMFUL EFFECT INFORMATION:

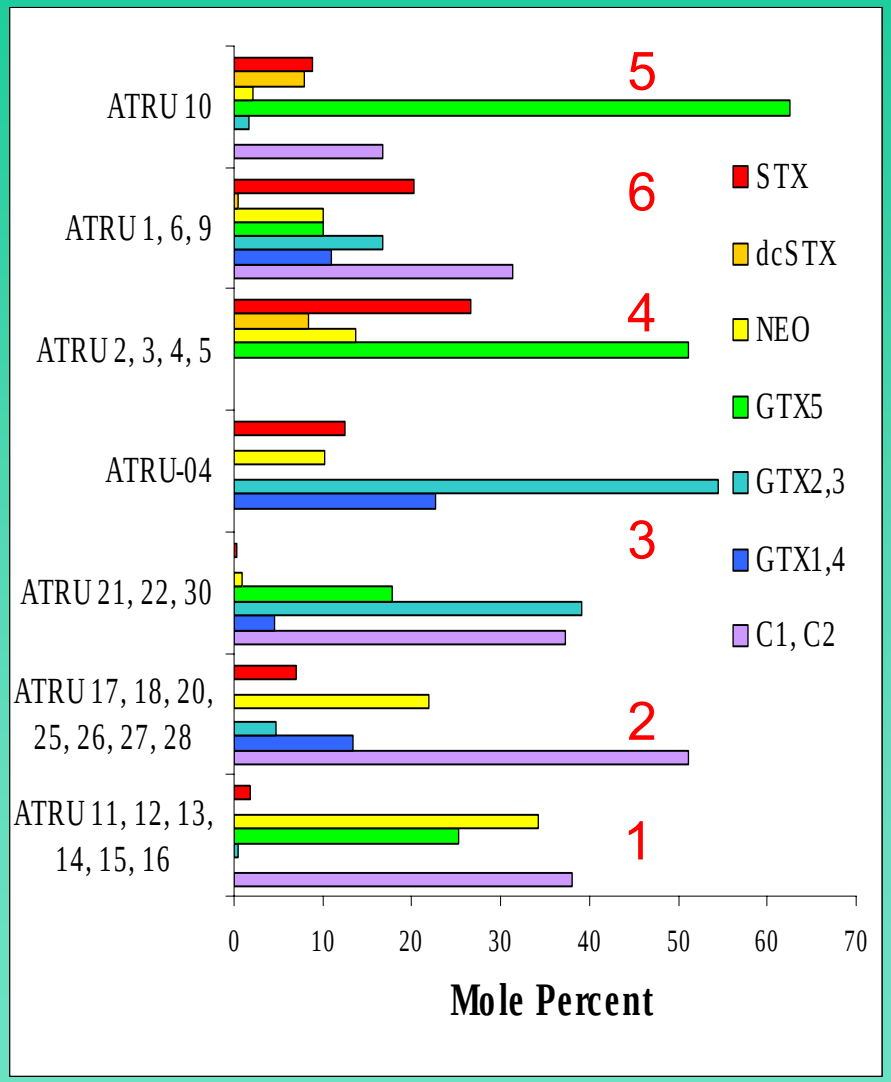
Global distribution of paralytic shellfish poisoning PSP

(D. Anderson, 2001)



The toxin composition in isolates of *Alexandrium tamarense* from the East Coast of Russia

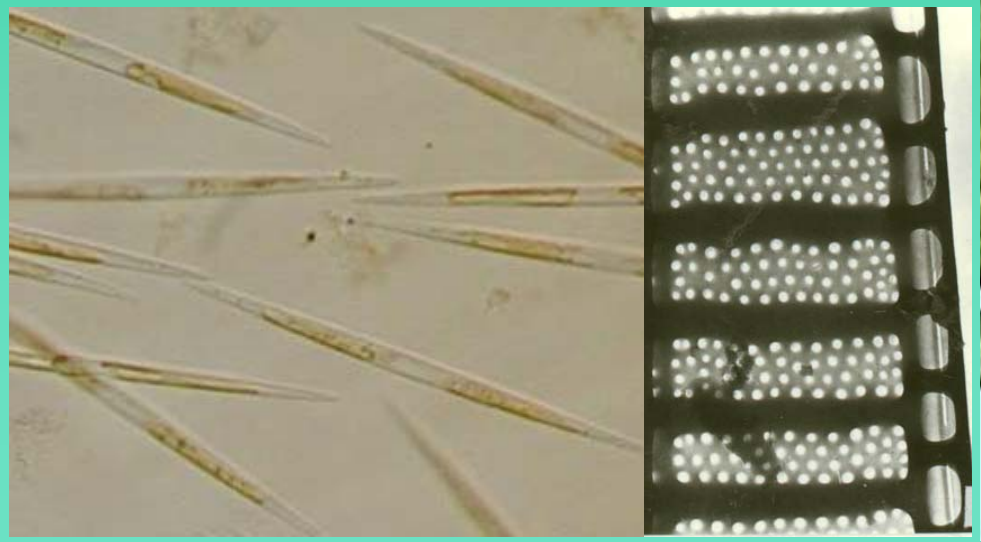
(Orlova et al., 2002)



Toxicity of *Pseudo-nitzschia multiseries* isolate from the Southeast coast of Russia

The domoic acid concentration of 760 ng mL^{-1} was detected* in a 27 day-old culture of *P. multiseries* (clone PM02), which was isolated from Amurskii Bay in Primorye

***by S. Bates, Gulf Fisheries Centre, New Brunswick, Canada**



PROBLEMS:

Significant problem with completing “report” card is the lack of HAE data for the Russian waters
Russian data on HAE are not sufficient for the completion of many data fields in the recommended “report” card.

Available data mainly include only:

- causative organisms,
- abundance,
- location
- date
- environmental conditions

In all cases the nature of harmful events is <u>water discoloration.</u>

- there are no any data on toxicity
- no data on biotoxin accumulation in seafood
- no data on socio-economic impacts due to the presence of toxic or harmful microalgae.

CONCLUSION:

The Russian Federation, in contrast to other PICES member countries does not have a governmental HAB monitoring program.

Establishment of permanent Federal program of HAB monitoring (including monitoring of toxicity) in Russian coastal waters is a necessity.