

Electronic Supplementary Information ESI

The dilemma in prioritizing chemicals for environmental analysis: known versus unknown hazards

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This document contains

- Questions and answers from the survey
- List of substances and substance groups contained in the database
- A list of the monitoring studies that formed the basis of the dataset used in this study

Survey

Question 1. What were the main reasons for choosing to analyse the environmental concentrations of the specific chemical(s) in your paper? Mark all options that apply to you and please write as many additional reasons as you want in “other”.

Response options	Response frequency (n)
We had information about, or reason to suspect, this type of contamination	73% (16)
The chemicals are known hazardous substances	86% (19)
Other related research for comparison was available	41% (9)
There is a lack of reliable research methods for other substances	32% (7)
We can do these analyses with high quality and at a reasonable cost	59% (13)
Models or usage data suggests that it can be present in the studied matrix	9% (2)
There was no or few previous data on the environmental concentrations in this matrix	45% (10)
Other	27% (6)

Question 2. Have you included other emerging chemicals in your research, for which the results were not published? (With emerging chemicals we mean recently or yet to be recognized contaminants)

Response options	Response frequency (n)
Yes	24% (5)
No	76% (21)

Question 3. If you answered yes to Question 2, why? Mark all options that apply to you.

Response options	Response frequency (n)
The uncertainty of the results were too high, e.g. due to the method not being optimised/validated	20% (1)
It did not fit well into the scope of the article	40% (2)
It did not fit well into the scope of the article	20% (1)
Other	20% (1)

Question 4. Do you think that focusing your research on known hazardous chemicals, such as POPs, affect the chance to receive funding?

Response options	Response frequency (n)
Yes, it increases the chance	41
Yes, it decreases the chance	18
No	41

Question 5. Other information or ideas, as well as comments on the questionnaire (Please note that some answers have been edited to keep them anonymous).

I would say this questionnaire is focused mainly on environmental aspects of contamination and does not take too much into account that fish is not only bioindicator of sea pollution but it has to be assessed also as dietary source of contaminants. Until health risk is not assessed, the regulation is impossible. In any case not all the manmade chemicals accumulate in fish....

The vast majority of chemicals of commerce are not persistent, bioaccumulative and toxic. However, there are many unidentified POPs for sure and novel methods are needed to identify them. There are also non-persistent chemicals where exposures can be high and widespread.

I focus my research on contaminants which are supposed to be hazardous but my chose is also determined by the analytical equipment which is necessary for analysis; e.g. if I don't have LC/MS I will not measure the contaminants which should be determined with using of that technique; also the availability of standards is an important issue.

Non-target screening projects for prioritizing chemicals for large scale monitoring are certainly warranted in the Baltic region.

Table S1. Substances

Substance Group	Substance
Metals&Elements	As/ Ca/ Cd/ Cr/ Cu/ Hg + MeHg/ Ni/ P/ Pb/ Pu/ Sb/ Se/ Sr/ Zn
Chlorinated Benzenes	Chlorobenzene/dichlorobenzene 1,2 /1,3 /1,4; trichlorobenzene 1,2,3 /1,2,4 / 1,3,5/TCBz/tetrachlorobenzene 1,2,4,5 /1,2,3,4 /1,2,3,5/pentachlorobenzene; hexachlorobenzene
Polychlorinated biphenyls (PCB)	#207/206/200/199/196/194/189/187/183/180/18/170/169/167/157/156/153/152/ 151/149/141/138/132/128/126/123/122/118/114/110/105/101/99/81/77/74/70/66/60 /52/51/49/47/44/33/31/28/
Brominated diphenylethers (BDE)	#15/17/28/35/47/49/66/71/75/77/85/99/100/119/126/138/153/154/155/166/181/183 /190/203/204/205/207/206/209/sumBDE
Polychlorinated dibenzodioxins and polychlorinated dibenzofurans (PCDD/F)	PCDD + dibenzo-p-dioxin HpCDD (1,2,3,4,6,7,8/HpCDD sum) OctaCDD HxCDD(1,2,3,4,7,8/ 1,2,3,6,7,8; 1,2,3,6,8,9; 1,2,3,7,8,9/HxCDD sum) HpCDF (1,2,3,4,6,7,8/ 1,2,3,4,7,8,9/ 1,2,3,4,7,8,9) pentaCDD (1,2,3,7,8) tetraCDD (2,3,7,8) HpCDF (1,2,3,4,6,7,8/ 1,2,3,4,7,8,9/ 1,2,3,4,7,8,9) HxCDF (1,2,3,6,7,8/ 1,2,3,4,7,8/ 1,2,3,7,8,9/ 2,3,4,6,7,8/) pentaCDF (2,3,4,7,8/ 1,2,3,7,8) tetraCDF(2,3,7,8/ 3,2,7,8) OctaCDF PCDF, PCDF sum + "dibenzofuran"
Polybrominated dibenzodioxins and polybrominated dibenzofurans (PBDD/F)	pentaBDD (1,2,3,7,8) hexaBDD (1,2,3,4,7,8/ 1,2,3,6,7,8/ 1,2,3,7,8,9) HpBDD (1,2,3,4,6,7,8) BDD octa tetraBDD (2,3,7,8) octaBDF heptaBDF (1,2,3,4,6,7,8) hexaBDF (1,2,3,4,7,8) pentaBDF (1,2,3,7,8/ 2,3,4,7,8) tetraBDF (2,3,7,8) PBDF
Polychlorinated naphthalenes (PCN)	#27/36/42/48/52/53/54/68/70/73/74/PeCN/HpCN/HxCN/DiCN/TeCN/OCN
Polybrominated biphenyls (PBB)	#29/49/52/101
Organochloride pesticides	Aldrin Dieldrin Endrin Cis-clordane, trans-clordane, cis-nonachlor, trans-nonachlor, MC4, MC5, MC6, MC7, U82, oxychlordane, heptachlorepoxyde, CHL DDT, including: DDT (sum, o'p, p'p), DDD (p'p; o'p), DDE (p'p, o'p, 4'4) Endosulfan & Endosulfan sulphate HCH; alfa;beta;gamma Isodrin

	Methoxychlor Mirex Heptachlor epoxide Toxaphene
Other pesticides	Bronopol Irgarol TBT TPhT (triphenyltin) + DPhT (diphenyltin) + MPhT (monophenyltin) TPT Triclosan
PAH & metabolites	PAHsum/phenanthrene/naphthalene/OHP1-/,hydroxyphenanthrene/biliverdin
Siloxanes	D4/D5/D6/MD2M/MD3M/MDM/MM
Perfluorinated compounds	PFBS/ FTS6:2/ PFBA/ PFDA/ PFDCA/PFDcS/PFDOA/ PFHpA/ PFHpS/ PFHxA/ PFHXS/ PFNA/ PFOA/ PFOS/ PFOSA/ PFPA/ PFPeA/ PFPEDA/ PFTEA/ PFTRIA/ PFUNA
Phthalates	BBzP/DBP/DBPT/ dBPhP/ DEHP/ DEP/ DIBP/ DIDP/ DINP/ DOP/dnop
Other flame retardants	BdPhP/ DBrF/ EHDPP/ HBCD/ PBrF/ TBBPA (PeCBz)/ TBrF/TCEP/ TCPP/ TDCPP/ TPP
Polychlorinated dibenzotriphenes	HpCDBT/ OCDBT/ HxCDBT/ PeCDBT/ TeCDBT/ TrCDBT/ MCDBT
Phenolic substances	4NP/4NPEO1/4NPEO2/4tOP/4tOPEO1/ BCPS/4tOPEO2/ BPA BPA
Others	Bromostyrene beta/ SCCP/MCCP/limonene/OCS/sucralose/TBEP/TBP/ Chlorostyrene/ Sulphenone/ Tetradifon/ TCP/ ToCP/ TeBT/ DBT/ DOT/ DPT/ MBT/ MOT/ MPT/ TCHT

Swedish Monitoring Reports. All data is available at the Swedish Environmental Research Institute (IVL), [www.ivl.se](http://dvsb.ivl.se/dvss/registersida.aspx), <http://dvsb.ivl.se/dvss/registersida.aspx>

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