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SCREENING IN
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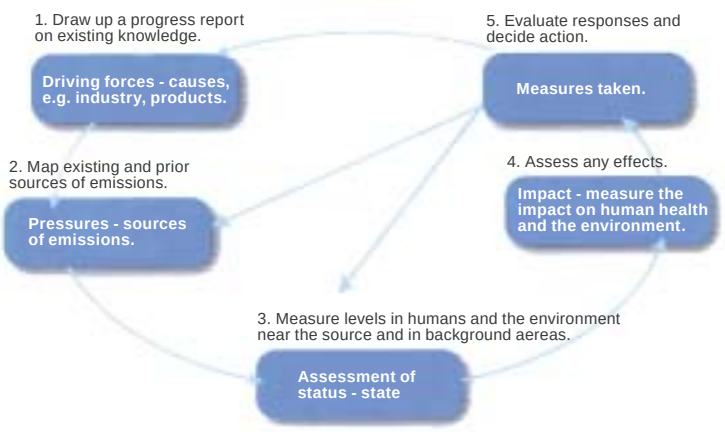
Screening



The screening strategy according to the DPSIR model. (From a lecture given by Henrick Blank, County Administrative Board of Jönköping County, 2001)

For some considerable time, Sweden has been carrying out environmental monitoring of well-known environmental pollutants, such as PCB, DDT and dioxins. These monitoring programmes have produced lengthy time series of changes in concentrations. Currently, new potential environmental pollutants are emerging, together with other potential problems in society. For this reason, the environmental monitoring programmes have been enhanced by the introduction of a screening programme.

Screening surveys are the first step in identifying chemical substances which may trigger problems for human health and the environment. In a screening study samples are taken on one or two occasions, in order to verify the incidence of a substance in the environment and its impact on humans and the environment.

Screening was introduced on a small scale in 1996–97 and has increased in scope over time. Since the launch, many substances have been screened (see table on the next page). A screening study can be designed in different ways and include different matrices. In recent years, certain types of matrices have been used more often to get the investigation more standardized. The table on page 3 shows a breakdown of the screened substances and types of areas.

FACTS

WHAT IS SCREENING?

Screening involves making an inventory for the purpose of determining whether a substance or a group of substances may be found in the environment and whether humans are at risk of exposure. A screening study may take anything from one year to several years, depending on the substance being surveyed.

FACTS MATRIX

The matrix is the medium being subjected to analysis, e.g. water, sludge, air or fish.

INFORMATION FACTS

UNDER INFORMATION FACTS THE SWEDISH EPA PRESENTS FACTS ABOUT DIFFERENT ISSUES

SUBSTANCE GROUP	YEAR
BTEX (benzene, toluene, etc.), pesticides, a large number of metals	1996–1999
Hexabromocylododecane (HBCDD)	2000
Chlorinated phenols	2001
Organotin compounds	2001
Octylphenol	2001
Phosphorus-based flame retardants	2001–2002
Perfluorinated substances (PFAS)	2001–2003
Musk compounds	2002
Triclosan	2002
TBBPA	2001-2002
Antimony compounds	2001
Phthalates	2002–2003
Certain pharmaceuticals	2002
Hexachlorobutadeine (HCBD) and chlorinated benzenes	2002
Chlorinated paraffins	2002–2003
Bisphenols and 2,4-chlorophenyl-sulphon	2003–2005
Antioxidants, methylphenols, alkylphenols	2003–2004
Measurements of various substances and groups of substances in sludge	2002–
Adipates, limonene, mirex, isocyanates	2004–2005
Octachlorostyrene, siloxanes, endosulfan	2004–2006
Measurements of substances on the Water Directive priority list	2001–2005
Antibiotics, anti-inflammatory substances, hormones	2005–2007
Certain perfluorinated substances	2005–2007
Bronopol, resorcinol	2005–2007
Organotin compounds	2005–2007
Benzotriazoles, 4-chloro-3-cresole, n-didecyl dimethyl ammonium chloride, propiconazol, parabenes	2005–2005
Certain other pharmaceuticals, veterinary medical products, catalysotormetals, certain phthalates, cyclododecatriene, chromium compounds, zinc pyrithione	2006–2007
Measurements of substances in water prioritised by the Water Directive	2005-2008
Certain phenolic substances	2006-2008
Certain amines, esters and amides, certain biocides, certain organic iodine compounds, certain organic halogens, pigment dyes, concrete additives, sucralose, musk substances, silver	2007-
Analysis of certain matrices, certain biocides, unintentionally produced substances, lubricants, nonylphenol	2008-

See next table for a breakdown of the types of areas in which the measurements were taken.

The early warning system

A well-planned screening survey can also be used for the purposes of risk assessment. The objective is to design a screening which functions as an "early warning system" for new environmental pollutants, on the basis of which subsequent surveys may be necessary to assess pollutant sources and flows. This is also a method of gathering information on all the chemical substances included on international lists which we have undertaken to verify.

In addition, screening informs our decisions on whether a substance should be included in regular time series (monitoring) or whether its concentration should be re-measured at a later stage. For the most part, the results obtained from screening provide a platform for other measures, e.g. rules governing the use of chemicals and the need for post-treatment.

MATRICES ANALYSED IN DIFFERENT AREA TYPES IN RESPECT OF DIFFERENT SUBSTANCES SCREENED.

		Coast & sea				Fresh waters				Land			Air		Point source					Urban								Humans		
Substance	Year	Surface waters	Fish	Other biota	Sediment	Surface waters	Groundwater	Fish	Sediment	Soil	Plants	Elk	Background air	Background precipit./ deposit.	Air	Soil	Water	Fish/biota	Sediment/sludge	Urban Air	Urban precip./deposit.	Sludge from WWTPs	Water from WWTPs	Fish/biota	Sediment	Surf. water/surf.	Raw water/drinking w.	Leachate - landfills	Food	Breast milk	Blood / Urine
BTEX (benzene, toluene, etc.)	1997-1998				X	X		X																						
Chlorinated paraffins I	1999											X																		
Pesticides	1999					X											X					X				X				
Hexabromocyclododecane	2000		X	X									X	X	X	X	X	X	X	X	X	X						X	X	X	
Extended number of metals (55 basic elements)	1999-2000				X				X	X	X											X									
Organotin compounds I	2001-2003	X	X	X	X																	X	X	X							
Pentachlorophenol	2001-2002		X							X		X	X	X	X	X	X	X	X	X	X	X				X			X		
Perfluorinated substances	2001-2002		X	X	X	X		X	X					X			X					X	X	X							
Tetrabromobisphenol A	2001-2002		X					X		X		X	X	X	X	X	X	X	X	X	X	X				X			X		
Triclosan	2002-2003		X					X		X		X	X	X	X	X	X		X	X		X	X	X							
Antimony	2001		X							X	X			X	X	X	X	X	X			X	X								
Phthalates	2002-2003																													X	X
Musk I	2002													X				X				X								X	
Hexachlorobutadeine, chlorinated benzenes	2002		X	X				X	X				X	X	X					X	X	X									
Pharmaceuticals	2002		X		X												X	X	X			X	X	X							
Organophosphates	2002-2004												X	X							X	X	X								
Octyl, nonyl and dodecylphenols	2003-2004														X	X	X		X	X		X	X		X	X	X				
Chlorinated paraffins II	2003-2004		X					X	X		X							X	X	X		X			X						
Bis(4-chlorophenol-)sulphonamide	2003-2004						X	X	X				X							X		X	X				X	X			
Bisphenols A and tetrabutyl diphenol	2003-2004						X	X	X				X							X		X	X				X	X			
Methyl phenols	2003-2004		X			X			X				X		X	X	X	X		X		X	X								
Tertiary butyl phenols	2003-2004		X					X					X		X	X	X		X	X		X	X		X	X					

MATRICES ANALYSED IN DIFFERENT AREA TYPES IN RESPECT OF DIFFERENT SUBSTANCES SCREENED.

		Coast & sea				Fresh waters				Land			Air		Point source					Urban									Humans			
Substance	Year	Surface waters	Fish	Other biota	Sediment	Surface waters	Groundwater	Fish	Sediment	Soil	Plants	Elk	Background air	Background precipit./	Air	Soil	Water	Fish/biota	Sediment/sludge	Urban Air	Urban precip./de-posit.	Sludge from WWTPs	Water from WWTPs	Fish/biota	Sediment	Surf. water/surf.	Raw water/drinking w.	Leachate - landfills	Food	Breast milk	Blood / Urine	Household envir.
Substances prioritised by the Water Directive	2003-2004		X		X		X	X	X				X																			
Isocyanates	2004												X		X					X												
Mirex	2004		X		X				X				X	X						X	X	X	X		X							
Limonene	2004	X			X	X		X	X				X		X		X		X	X		X	X					X				
Endosulfan	2004		X		X				X				X	X						X		X	X		X			X				
Adipates	2004-2006		X		X			X	X				X		X		X	X	X	X		X	X		X			X		X		
Chlorinated and brominated styrenes	2004-2006		X		X			X	X				X	X	X		X	X	X	X	X	X			X							
Siloxanes	2004-2006		X		X			X	X				X		X		X	X	X	X		X	X		X							
Biocides (Benzotriazoles, Bronopol, 4-chloro-3-cresol, Propiconazol, Resorcinol, N-didecyl dimethyl ammonium chloride, Parabenes)	2005-2006					X		X	X				X	X	X		X	X	X	X	X	X	X	X	X				X	X		X	
Antibiotics, anti-inflammatory substances, hormones	2005-2006					X			X								X		X			X	X					X	X			
Certain PFAS substances	2005-2006	X				X		X	X				X	X	X	X	X	X	X	X		X			X			X				
Organotin compounds II	2005-2006		X	X				X									X		X			X	X	X	X			X	X	X		
Dibenzotiophenes (PCDT)	2005-2006		X		X	X			X		X		X	X						X	X	X							X	X		
Measurement of various substances and groups of substances in sludge	2004-																					X										
Veterinary medicinal products						X		X	X								X	X	X										X			

MATRICES ANALYSED IN DIFFERENT AREA TYPES IN RESPECT OF DIFFERENT SUBSTANCES SCREENED.

		Coast & sea				Fresh waters				Land			Air		Point source					Urban							Humans			
Substance	**Year**	Surface waters	Fish	Other biota	Sediment	Surface waters	Groundwater	Fish	Sediment	Soil	Plants	Elk	Background air	Background precipit./ deposit.	Air	Soil	Water	Fish/biota	Sediment/sludge	Urban Air	Urban precip./de-posit.	Sludge from WWTPs	Water from WWTPs	Fish/biota	Sediment	Surf. water/surf.	Raw water/drinking w.	Leachate - landfills	Food	Breast milk	Blood / Urine	Household envir.
Phthalates (DINP, DIDP)	2006-2007		X		X								X		X			X	X	X		X		X	X				X		X	
Zinc pyrithione	2006-2007					X		X	X								X	X	X			X	X	X	X						X	
Drugs / Psychopharmaceutical drugs	2006-2007					X		X	X										X			X	X	X	X			X				
Chromium compounds	2006-2007					X		X	X	X			X	X	X				X	X	X	X		X	X						X	
1,5,9-cyclododecatriene	2006-2007		X		X					X			X		X	X		X	X	X		X		X	X							
Substances prioritised by the Water Directive Framework II	2006-2007					X																										
Catalyst metals	2006-2007								X	X			X							X		X	X		X				X		X	
Certain phenolic substances	2006-2008																					X	X		X	X						
Chlorinated paraffins III	2007-2008																															X
Certain amines	2007-					X			X	X					X	X	X		X	X		X	X		X	X						
Certain esters	2007-					X		X	X	X							X		X			X	X		X	X						
Organic iodine compounds	2007-					X			X	X						X	X		X			X	X		X	X						
Pigment dyes	2007-	X	X		X												X		X			X	X	X	X							
Certain biocides	2007-					X		X		X						X	X	X				X	X			X			X			
Certain organic halogens	2007-					X		X	X	X							X	X	X			X	X			X			X		X	
Concrete additives	2007-					X		X	X	X							X	X	X			X	X									
Sucralose	2007-	X	X	X	X	X		X	X								X	X	X			X	X	X	X							
Musk substances II	2007-							X	X	X						X	X	X	X			X	X	X	X						X	
Silver	2007-	X	X		X	X	X	X	X								X		X			X	X			X						

Screening – a study in 4 parts

A screening study consists of different, closely related parts – Substance selection, preliminary theoretical research, measurement study and survey follow-up. These components are described in greater detail in the following sections:

Step 1: Substance selection

As early as the selection stage, consideration should be given to the question of for what purpose the results will be used. In the authorities' view, screening is not primarily intended to support research on new environmental pollutants, but, rather, constitutes compliance with the requirements to report certain substances laid down in a number of EU directives and international conventions. Many of such substances are of no relevance to Sweden and screening in these cases might be a useful instrument in demonstrating this, so that in future we can avoid investing major resources into measuring them. Another purpose is to follow up work in order to achieve a pollutant-free environment, and this includes substances other than "traditional environmental pollutants" alone. Substances found in high concentrations can be followed up over a lengthy period of time by means of time series. Yet one more possible purpose is to detect substances which affect human health and which might be covered by health-related environmental monitoring, which, in turn, requires another substance selection method.

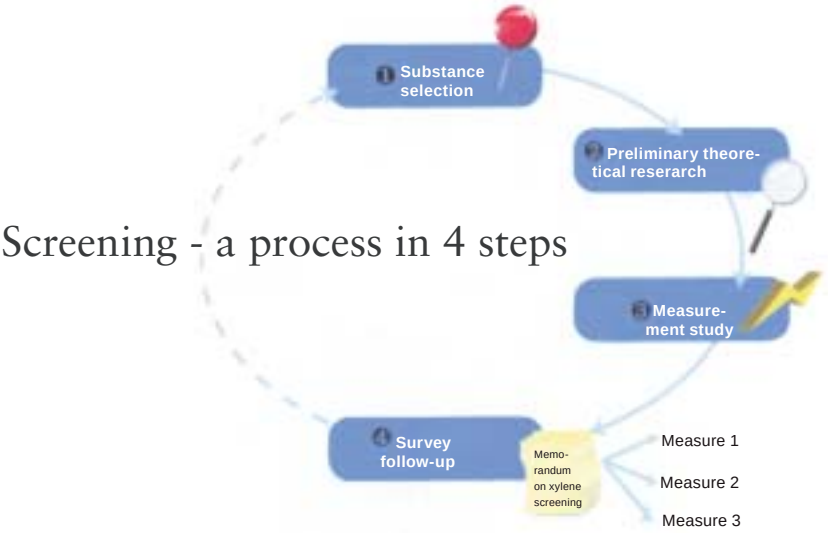
Another one of the reasons for selecting a certain substance might be to use the results in order to plug data holes for the purposes of risk assessment or justifying a risk-reducing measure.

GENERATE GREATER AWARENESS OF CASES OF POLLUTION

Another important aspect is to generate greater awareness of new cases of pollution. Informing the public without spreading panic is important, but an even more important aspect is delivering data to parties involved in risk-reducing chemicals work, i.e. authorities of various kinds. One purpose of this is to expand the existing list of possible cases of environmental pollution, e.g. blacklists or lists for different types of reporting, substances subject to supervision etc. Substances selected for screening are regularly reviewed and prioritised, which results in a number of candidates for subsequent monitoring.

SELECTING SUBSTANCES FROM THE PRODUCT REGISTER

The Environmental Monitoring Programme has developed a methodology for selecting candidates for screening from the Product Register, i.e. from among chemicals used in large volumes. This method is currently being tested by substances from this list having been selected for literature review prior to 2007 screening.



A screening study can be divided into several parts, from the stage when a substance is selected, to the stage when action is taken on the basis of the results.
(From Report 2003:37, County Administrative Board of Jönköping County.)

EXPOSURE AND MANAGEMENT INDEX

This method is based on a confidential data protection method applied to chemicals entered on the Swedish Chemicals Agency's product register, so that we can produce a non-confidential exposure index based on Swedish chemicals management. This index enhances our existing knowledge of industrial point sources by focusing primarily on diffuse pollution.

The calculation is carried out in several stages. First to be calculated is the index known as "the management index", which describes a chemical's general potential for dispersal from a certain type of chemical plant. This is calculated for each individual quantity of chemicals contained in the product concerned. Thereupon, the management index for the substance in question is added up to produce a substance-specific management index. The last stage involves adding quantitative data for each substance, in order to produce what is known as "the exposure index". An exposure index has been produced for approximately 10,000 substances and is a rough measure of the probability of exposure of a recipient to a specific substance.

FACTS THE PRODUCT REGISTER

The product register contains information about the chemical composition of chemical products, their function and field of application, quantities, consumer availability and the hazard symbol on their labels. The register contains annually updated information on 65,000 products which contain around 15,000 different substances.

FORECASTING DISPERSAL

This method calculates indices for five different recipients: surface waters, soil, air, waste water treatment plants and humans. Because chemical and physical data cannot be included for a large number of substances, this method is only able to generate a forecast as to their dispersal in the immediate surroundings of various chemical plants. For this reason, these are referred to as "primary recipients".

The substances allocated the highest index in respect of treatment and exposure are expected to be the likeliest candidates as measurable pollutants in different environmental matrices. By comparing the results for known pollutants, and by measuring the levels of new pollutants with the screening method, these indices can be verified. The forecast method seems promising for the screening of substances where we attach great importance to actual use, and it can capture new substances on the way to causing major problems and function as an early warning system. Since 2006, substances singled out using this method and not previously screened have been selected for screening.

Step 2: Preliminary theoretical research

Certain information about the properties, use and dispersal of a substance is required in order to set up sampling and analysis as part of the measurement study. Other basic facts may be required, too, in order to find answers to the questions underpinning the choice of substance. Naturally, data sources must be indicated, so as to enable an assessment of their quality.

Theoretical research should also collect data on the different types of impacts the substance produces. That way, when performing the risk assessment, we can decide whether the concentrations being measured necessitate action or not. On the basis of substance properties, we can also, for example, compare concentrations to those of other known substances or groups of substances, such as PCB, in order to obtain an "estimated screening reference value", against which to make a comparison when a concentration is high.

KNOWLEDGE ROUNDUP

Screening, therefore, provides a roundup of knowledge about the substances concerned, which includes details about how and where the substances are used, their properties and some details as to their possible impact. This may be helpful for purposes other than those of the measurement study itself. Since 2003, we have been compiling literature reviews about the substances we intend to screen in the subsequent year. The substances covered by this literature review are shown in the table on the next page.

SUBSTANCES STUDIED AS PART OF LITERATURE REVIEW PRIOR TO ACTUAL SCREENING

Prior to	Substances studies as part of literature review	Reference*
2007	Pigment dyes	SWECO 2007 – Commission No 1270201000
	Osmium and osmium compounds	
	Amines	
	Biocides	
	Esters	
	Heterocyclic compounds	
	Organic phosphates	
	Organic halogens	
	Organic iodine compounds	
	Nanoparticles	
	Concrete additives	
2006	Pigment dyes	Structor 2005, report 25
	Lanthanides	
	Di-isononyl phthalate (DINP)	
	Cyclododecatriene	
	Veterinary medicinal preparations	
2006	Prioritised substances as per Annex 10 of the Framework Directive for Water	
2005	Polychlorinated dibenzothiophenes (PCDTs)	WSP 2004, report 28
	Styrene	
	Benzene	
	1,2-dichloroethane	
	Dichloromethane	
	Tetrachloroethene	
	Trichloroethene	
	Hexachlorobutadeine	
	Xylenes	
	Trimethylbenzenes	
	Organotin compounds	
	Mercaptobenzothiazole	
	2-(thiocyanomethylthio)benzothiazole (TCMTB)	
	Bronopol	
	4-chloro-3-cresol	
	Symclosene	
	N-didecyl dimethyl ammonium chloride	
	Chromium	
	N,N'-bis(2-aminoethyl)-1,2-ethanediamine	
	Bisphenol-A-diglycidylethers	
	2-Benzyl-2-dimethylamino-4-morpholinobutyrophenone	
	Methane sulphonamide	
	Polyfluorinated alkyl sulphonate (PFAS) substances	
2004	Adipates, acrylonitrile, octachlorostyrene and others, limonene, siloxanes, mirex, chlorinated naphthalenes, endosulfan, isocyanates	Environplanning 2003, report 29

* = authors of literature reviews for all substances, per respective year.

Step 3: Screening survey – measurement study

On the basis of what is known about the properties of substances and the information available on their dispersal conditions and routes, we must choose a type of matrix (i.e. the medium being analysed, such as water, sludge, air or fish), as well as a sampling strategy. The objective of the survey and the reason why we have selected one substance in particular are relevant to the choice of location and matrix. However, in most cases, we seek to obtain information on sources, background levels and any human exposure which must clearly be presented in the study.

When selecting samples, we must make a balanced choice between mapping as many different matrices as possible, disseminating measurement data across the country or detecting statistical differences. In this respect, too, the choice of substance informs our decision as to which substance should be given priority in a given study.

CHALLENGES IN ANALYTICAL DEVELOPMENT

It is difficult to analyse substances by means of the method used in screening. To date, we have tried to select substances for which we know analytical methods exist. Screening is not intended for the purpose of developing analytical methods, but since measurement studies often require new substances to be analysed, we often feel that it is more or less necessary to develop the analytical method. This primarily concerns the pre-treatment part of the analysis, which involves the preparation of samples and treatment before the chemical analysis. Even where analytical methods exist, they are put to hard tests. For example, we may have to carry out analysis in different and often complicated matrices, which means there is a large risk of contamination or interference from other substances. Furthermore, a low detection limit, which is marginally under the minimum known impact limit, is often required.

In many screening studies, results are often subject to delays and in some cases the desired sample responses cannot be obtained, due to difficulties involved in analyses. When we consider possible outcomes, however, this works surprisingly well, thanks to executors' competence and their genuine interest in screening.

WHAT DO THE RESULTS TELL US?

The measurement study in this case not only consists of the analysis itself, which produces measurement data, but also of a large portion of the job involving evaluating data and drawing up a report, which provides a good description of the situation. What do the results actually tell us? Are values high or low, based on the available knowledge of impacts?

How accurate are values arrived at through analyses conducted in other countries and other measurements? Evaluation is performed on the basis of literature review and our rationale for the choice of substance to be submitted for screening. It is also important that all the information on samples, matrices, localities and methods considered relevant for future use is well-documented in the report. Given international interest in the results, in recent years our reports have been written in English.

Step 4: Survey follow-up

Evaluation is an important part of the screening survey. Can the screening be considered final or do we need further data to be able to draw conclusions and answer questions we asked ourselves when selecting the substance? Disseminating the results is also important, as is reflecting on whether the results will lead to some kind of action. To whom should the proposals put forward be addressed? First of all, we should assess whether the measurement study of a screening has been successful, in purely technical terms, i.e. whether we have obtained the result of a sufficient quantity and good quality.

MEASURES

There are a variety of measures to which we have recourse in respect of different substances, provided they have been detected at the right place and at the right time. A measure does not necessarily have to result in a ban, which then takes several years to put into effect. When conducting supervision and review, authorities have the option of, for example, influencing the choice of substances companies make for both their processes and products.

Another measure might be to produce relevant impact data in order to make a risk assessment, especially if substances are found in many different environments or if their levels are high in a particular locality or in a particular matrix. Yet another measure could be to decide to include the substance in a time series, schedule it for a new screening in, for example, five years' time, or take samples from the sample bank and analyse several years' old material, in order to delineate a trend. It is difficult to estimate how many of the substances screened will qualify for monitoring and which will require more frequent measuring intervals in order for measures to be implemented. For some substances, an occasional follow-up measurement will, perhaps, suffice.

FINAL MEMORANDUM

When a screening survey has been reported, conclusions are drawn about the study carried out and information is gathered in a final memorandum. Conclusions are drawn by competent authorities and by the consultants/researchers who carried out the study. The memoranda published to date are probably the most popular writing on screening results which the Swedish Environment Protection Agency has published in order to disseminate information about screening results.

Result to date

Over the course of the period of almost 10 years in which it has been undertaken, screening has been expanded and has matured in its role. Whilst it has been systematised, some room has been left for flexibility and innovation, which are important ingredients if screening is to function optimally. Screenings performed in the first few years focused on answering well-defined questions, e.g. Where in agricultural areas should we measure levels of pesticides? Which other metals must be measured? Present and future screening requires data holes to be plugged and levels of known environmental pollutants in certain matrices to be described.

For example, we continued plugging data holes as we were addressing international requirements pertaining to such issues as the substances prioritised by the Water Directive or other requirements pertaining to the measurement of levels needed to describe the situation in Sweden. In recent years, the number of surveys undertaken to detect potential new environmental pollutants or cases of pollution has grown. These are sometimes undertaken on the basis of international requirements, but also as a follow-up to scares and research reports. In some surveys, substances have been screened because of special patterns in their use or possible problematic properties.

"Unsafe bets" not found

The outcome of more "unsafe bets" being screened is often that no substances are found. The screening may appear to have been less successful, but the result should be interpreted more positively, because they cannot be detected with the analytical technology we have today. For us to be entirely on the safe side, however, the level screened must be lower than the known impact level. That said, finding data on impact is very difficult.

IMPACT OF THE SCREENING ON THE PLANNING OF ENVIRONMENTAL MONITORING

Substances included in time series	On course to be included in ongoing monitoring	Repeat screening in a few years	Further studies for subsequent decisions	Do not require regular monitoring
Organotin compounds – blue mussel, fish HBCDD – fish, breast milk, antibiotics – sludge, triclosan – sludge, PFC – sludge, guillemot eggs, fish Siloxanes – sludge	Endosulfan – air and deposition Siloxanes – sludge Substances prioritised by the Water Directive – sludge	BCPS, adipates	Organophosphates – levels in the environment farther away from sources and human exposure, Endosulfan – impact of goods containing this substance, Organotin compounds – not only relevant for marine life, Styrenes – further data on dispersal and transport, Chlorinated paraffins –examine high levels in air, Siloxanes – measurement of levels in blood and breast milk, Biocides, Certain phenolic substances (e.g. nonylphenol, octylphenol)	Limonene, mirex, tetrabutyl diphenol, antimony, butyl phenols, isocyanates, bisphenols A, substances from veterinary medicine, polychlorinated dibenzothiophenes, 2-bromo-2-phenol A, 5-chlorophenol

Creating a time series

In addition to concentrations in different media, of course, the results highlighted by environmental monitoring often require a decision to be made in the reporting stage as to whether, on the basis of the interpretation of such results, the substances concerned should be included in ongoing monitoring for the purpose of creating a time series. Before such a decision is taken, further analyses in other matrices may be recommended, or further development of analysis or a retrospective study in the appropriate matrix. Certain substances, such as for example organic tin compounds in blue mussel, PFAS substances in sludge, HBCD in fish and breast milk, antibiotics and triclosan in sludge, have been included in time series.

In respect of a further few substances, a recommendation has been put forward to include them in time series. Amongst other substances, this applies to PFAS in guillemot eggs, endosulfan in air and deposition and siloxanes in sludge. There are quite a few substances which require further study, either in the form of repeat screening in a few years or expanded screening. Excluded from regular monitoring are substances such as limonene, mirex, tetrabutylphenol, antimony, methyl and butyl phenols and TBBPA.

Increased knowledge of new substances

One very important product of screening is increased knowledge of many substances other than "the traditional environmental pollutants". Both professional reports and different popular summary reports which are available on screening, and not least literature review, make excellent basic material. It is important to generate greater awareness of them and make them accessible to wider circles of users. The executor and the Swedish Environmental Protection Agency have increased their competence, and regional participation in screenings has resulted in the dissemination of knowledge to regional levels.

EXAMPLES OF PROPOSALS FOR SUBSTANCES TO BE SCREENED
Appropriate substances surveyed in previous literature reviews
Continue scanning for substances on the product register project.
Dechlorane – flame retardant of unknown dispersal in the environment
Analysis of certain matrices, e.g. surface waters, sludge
Additives in goods
From the Stockholm Convention list: toxaphene, dieldrin, chlordan, endrin
Repeat screening necessary: adipates, BCPS
Screening parabenes levels in humans as part of a continuation study
3-nitrobenzanthrone – A potent mutagen from diesel emissions
Measurements required for triclocarban – an antibacterial substance similar to triclosan

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Data from the screening

One of the fundamental strategies for the Swedish Environmental Protection Agency's data management is that data should be stored as close to the source as possible. For this reason, we have put in place a system of data hosts who are responsible to us for the quality control, storage and presentation of data. In general, data financed by the Swedish Environmental Protection Agency may be downloaded or ordered over the internet free of charge. Special manual orders may in some cases give rise to costs, depending on the amount of data required and the form of presentation of the results.

The data host for screening is IVL, Swedish Environmental Research Institute Ltd. Data and reports can be downloaded from the following website of the screening data host: www.ivl.se/miljo/db/ivl_screening_registersida.htmEssi

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