



Revision of the ICP Waters Programme Manual

For discussion at the 24th Task Force Meeting in
Budapest

6.-8. October 2008

Plan for revision of the manual (1)



The Manual describes requested data and appurtenant methods for sampling and analysis

The Programme Centre (PC):

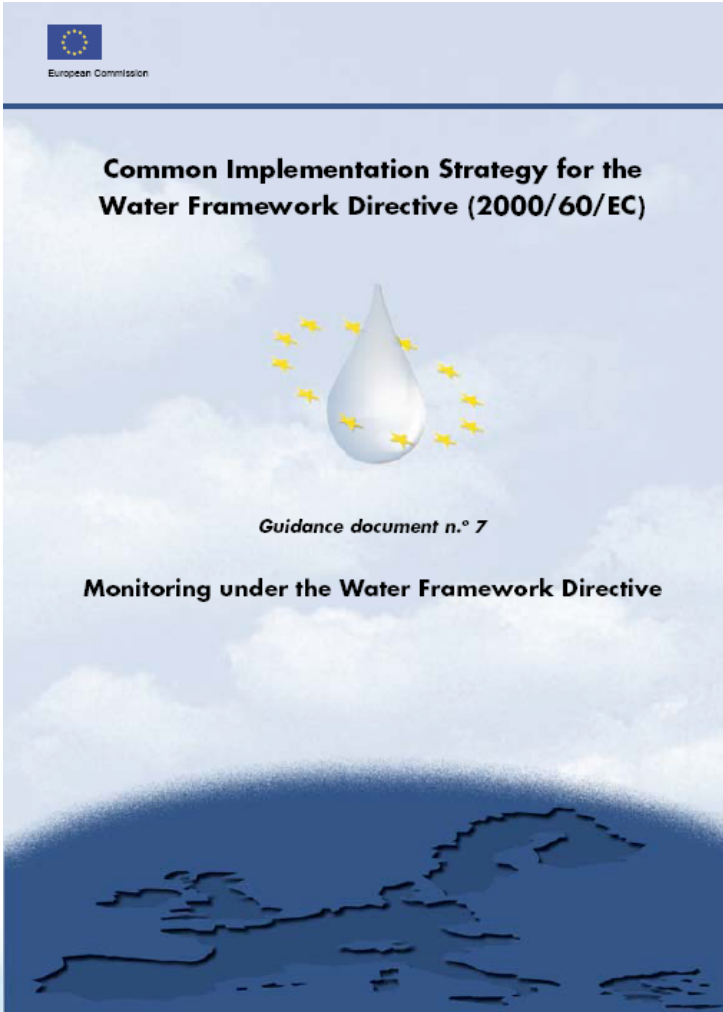
- Elaborates the Manual, but uses Reference Groups (RG) for each topic to secure the methods and descriptions
- Follow up on guidelines and recommendations to be in line with WFD.
- Suggests using a modified version the EMERGE LAKEFORM/ICP Forest EXCEL sheet as basis for data quality check and reporting for ICP Waters.

Plan for revision of the manual (2)



- For all chapters/subchapters standard headlines are preferred. Extra subchapters and headlines are included when necessary.
 - Introduction
 - Sampling
 - Analysis
 - QA/QC
 - Data reporting
 - References
- Included topics need a list, to be decided by the TF meeting, for:
 - Mandatory data (sampling and analysis)
 - Recommended (sampling and analysis)
 - Optional data (sampling and analysis)
- A draft of an updated version will be presented at the TF-meeting in 2009. A final version at the TF-meeting in 2010.

Water Framework Directive



WFD gives important guidelines for monitoring

Guidance document no 7

Manuals on internet



- <http://www.icp-waters.no/>
 - ICP Waters Manual
 - Links to the other ICP programmes

The screenshot shows the ICP Waters website homepage. The main heading is "ICP WATERS" in large white letters on a dark background. Below the heading is a navigation menu with links: Home, About ICP Waters, Major Results, Manual, Activities, Publications, Relevant links, Web, and Site. The "Manual" link is highlighted, and a dropdown menu is visible with the following items: "... Manual ...", "The programme manual", "site selection", "water chemistry monitoring", "recommended analytical methods", "sampling frequency", and "biological monitoring". Below the dropdown menu, there is a paragraph of text: "The Programme international harm operations in order to promote s. The manual is also an overall guide to activities of, and priorities set, by the Programme Centre." followed by "The manual is under revision in 2008." and "A short version of some of the main issues in the old Programme Manual is given below. The entire programme manual, not yet revised, can be found here." Below this text is a bulleted list of items: "Site selection", "Water chemistry monitoring", "Recommended analytical methods", "Sampling frequency", and "Biological monitoring".

Manuals on internet



- <http://www.mountain-lakes.org/>
 - EMERGE
 - MOLAR

European Mountain lake Ecosystems: Regionalisation,
diaGnostics & socio-economic Evaluation

EMERGE

04

CHEMICAL ANALYSIS OF MAJOR IONS
AND NUTRIENTS
ANALYTICAL QUALITY CONTROL

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
EMERGE LAKE FORM data check and transmission					Columns highlighted in green contain formulas.																
Code	Lake name	Date	Sampling depth	pH	Cond.	Cond.	Cond.	NH ₄	Ca	Mg	Na	K	Alk	SO ₄	SO ₄ ²⁻	NO ₃	Cl	F	TN	TP	Si
			m		µS/cm 20°C	µS/cm 25°C	mS/m 25°C	µgN/l	mg/l	mg/l	mg/l	mg/l	µeq/l	mg/l	mg/l	µgN/l	mg/l	µg/l	µgN/l	µg/l	mg Si
PT0060	Panelatte	07.09.2000	1,0	7,04	17,6	19,5	2,0	10	2,38	0,14	0,60	0,23	110	1,72	1,70	280	0,18		450	5	1,15
PT0060	Panelatte	07.09.2000	3,0	7,20	18,8	20,9	2,1	10	2,44	0,15	0,62	0,22	115	1,72	1,70	280	0,21		500	9	1,17
PT0064	Muino Inferiore	14.09.2000	0,0	6,42	9,8	10,9	1,1	9	0,84	0,13	0,43	0,15	32	1,97	1,96	125	0,10		180	7	1,26
PT0062	Muino Superiore	14.09.2000	0,0	6,21	10,8	12,0	1,2	26	0,70	0,14	0,48	0,29	14	1,84	1,82	320	0,21		490	6	0,96
PT0062	Muino Superiore	14.09.2000	2,0	6,16	10,5	11,7	1,2	33	0,69	0,13	0,48	0,26	14	1,85	1,83	320	0,25		480	7	0,96
PT0027	Paione Superiore	27.07.2000	1,0	5,88	8,5	9,5	0,9	17	0,63	0,09	0,23	0,28	3	1,37	1,36	382	0,13			5	0,40
PT0027	Paione Superiore	27.07.2000	5,0	5,97	8,6	9,5	1,0	16	0,63	0,09	0,23	0,30	6	1,36	1,35	385	0,14			5	0,40
PT0027	Paione Superiore	27.07.2000	9,0	5,95	8,4	9,4	0,9	17	0,63	0,09	0,23	0,25	7	1,22	1,21	336	0,11			5	0,38
PT0027	Paione Superiore	12.09.2000	1,0	6,06	9,2	10,2	1,0	25	0,67	0,08	0,24	0,29	3	1,62	1,60	353	0,18		430	6	0,43
PT0027	Paione Superiore	12.09.2000	5,0	6,05	8,9	9,9	1,0	19	0,70	0,08	0,22	0,30	3	1,60	1,59	350	0,14		400	5	0,43

Rosario Mosello,
Bente M. Watnøe

Manual of unified methods used throughout the EMERGE project

Here you can find the EMERGE [know-how](#) in PDF documents. **Adobe Acrobat Reader** is needed to read them. If you prefer to save them to your local disk, try to click by right mouse button and choose something like "Save file/target as..". Indeed, you can save the file within the Acrobat Reader, too.

EMERGE Manuals - protocoles

- [01 - Climatology and Meteorology.pdf](#)
- [02 - Atmospheric deposition - Sampling and analysis of direct deposition and snow pack.pdf](#)
- [03 - Surface water - sampling and analysis.pdf](#)
- [04 - Chemical Analysis of Major Ions and Nutrients.pdf](#)
- [05 - Fish ecotoxicology - The EMERGE fish sampling manual for live fish.pdf](#)
- [06 - Invertebrate sampling - field and laboratory methods.pdf](#)
- [07 - Plankton Food Web - Sampling.pdf](#)
- [08 - Microbial pelagic food webs.pdf](#)
- [11 - Zooplankton sampling.pdf](#)
- [13 - Sediment cores.pdf](#)
- [15 - Sediment Cladocera.pdf](#)
- [16 - Diatom sampling.pdf](#)
- [19 - Sedimentary pigment analysis.pdf](#)
- [20 - Spheroid Carbon Particles - SCPs.pdf](#)
- [21 - Analysis of organic micropollutants in water, soil, sediments etc.pdf](#)
- [22 - Analysis of organic micropollutants in fish.pdf](#)
- [25 - Lake sediments - Extraction method of elements soluble in aqua regia.pdf](#)
- [26 - Soil sampling and analysis.pdf](#)
- [27 - Catchment hydrology.pdf](#)
- [28 - Sediment traps.pdf](#)

Some of the manuals above refer to the protocols used in the preceding

MOLAR project:

- [Atmospheric deposition.pdf](#)
- [Chemical analysis of major ions and nutrients and analytical quality control.pdf](#)
- [Chrysophycean analysis.pdf](#)



- Home
- Teams
- Lake Districts
- Tasks
- Methods
- Publications
- More
- Links



Submission of data through the homepage



Friday, October 03, 2008



Home About ICP Waters Major Results Manual Activities Publications Relevant links Web Site Search Register Login

... Activities » Data submission ...

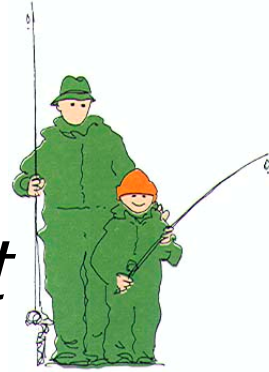
[Data submission](#)

This page is under development.

Focal points should send their annual data on chemistry to [Bente Wathne](#).

- Quality control
- Data submission**
- TF meetings

Revised ICP Waters Manual



- *Presented electronically on internet*
- *Module based - Separate main parts in separate documents, easy to download*
- *Forms for submission on homepage*

Friday, October 03, 2008

A screenshot of the ICP Waters website homepage. The header features a large image of a lake with snow on the shore and the text "ICP WATERS" in white. Below the header is a navigation menu with links: Home, About ICP Waters, Major Results, Manual, Activities, Publications, Relevant links, Web, and Site. A search bar is also present. The "Activities" menu is open, showing sub-links: Quality control, Data submission, and TF meetings. The "Data submission" link is highlighted. Below the navigation, there is a message: "...: Activities » Data submission ...: Data submission This page is under development." and a note: "Focal points should send their annual data on chemistry to Bente Wathne."

Suggested Main Parts (1)



No	Topic	New part	Updating existing version
1	Introduction and general info		X
2	Site selection		X
3	Acidification - Water chemistry monitoring		X
4	Acidification - Monitoring and assessment of Invertebrates (Biological monitoring and assessment/Invertebrates)		X
5	Acidification - Monitoring and assessment of Diatoms (Biological monitoring and assessment/Diatoms)		X
6	Acidification - Monitoring and assessment of Fish (Biological monitoring and assessment/Fish)		X
7	Heavy metals - Surface Water	X	


Suggested Main Parts (2)



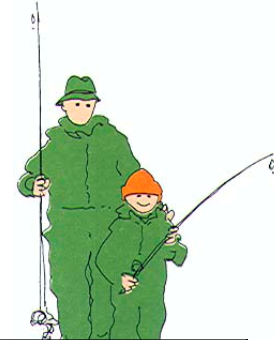
No	Topic	New part	Updating existing version
8	Heavy metals - Lake sediments	X	
9	Heavy metals and Persistent Organic Pollutants - Biota/Fish	X	
10	Persistent Organic Pollutants - Surface Water	X	
11	Persistent Organic Pollutants -Lake sediments	X	
12	Quality assurance and quality control – overview and summary of the separate parts		X
13	Assessment methods	X	
14	Data handling and delivery - overview and summary of details given in the separate parts		X

Basic info for the Manual (1)



No	Topic	Mandatory components/data	Optional components/data	Reference Group	Completion date	Comments
1	Introduction and general info			1, 2, 3		
2	Site selection			1, 2, 3		
3	Acidification - Water chemistry monitoring	ALK, SO ₄ , NO ₃ N, Cl, pH, DOC/PERM, Ca, Mg, Na, K, NH ₄ N, LAL, K25	T, Q, TOTN, TOTP, ORTP, DO, SiO ₂ , F, turb, colour,	1		
4	Acidification - Monitoring and assessment of Invertebrates	Ephemeroptera, Plecoptera, Trichoptera, Turbellaria, Mollusca, Hirudinea Daphnia, Malacostraca,	Odonata, Diptera, Coleoptera	1		
5	Acidification - Monitoring and assessment of Diatoms			1		
6	Acidification - Monitoring and assessment of Fish			1		
7	Heavy metals - Surface Water	Pb, Cd, Hg	Fe, Mn, Zn, Ni	2		

Basic info for the Manual (2)



No	Topic	Mandatory components/data	Optional components/data	Reference Group	Completion date	Comments
8	Heavy metals - Lake sediments	Pb, Cd, Hg	Fe, Mn, Zn, Ni	2		
9	Heavy metals and Persistent Organic Pollutants - Biota/Fish			1, 2, 3		
10	Persistent Organic Pollutants - Surface Water			3		
11	Persistent Organic Pollutants -Lake sediments			3		
12	Quality assurance and quality control			1, 2, 3		
13	Assessment methods			1, 2, 3		
14	Data handling and delivery			1, 2, 3		

POPs in UNEP/Århus Protocol (16) and Stockholm Convention (12)



Substance	Pesticide	Industrial compound	Unintended by-product
Aldrin	X		
Endrin	X		
Dieldrin	X		
Chlordane	X		
DDT	X		
Heptachlor	X		
Mirex	X		
Toxaphene	X		
Hexachlorobenzene	X	X	X
PCB		X	
Dioxins and furans			X
Polybrominated dephenyl ethers, PBDE		X	
Short chained chlorinated paraffins, SCCP		X	
Polychlorinated naphtalenes, PCN		X	
Polycyclic aromatic hydrocarbons, PAH			X

Proposed POPs



- An excel file is prepared by the PC showing :
 - The 16 POPs listed by the UNEPs POPs Protocol (Århus Protocol) and the Stockholm Convention, the “Dirty Dozen”
 - Suggestions for water
 - Suggestions for sediments
 - Suggestions for biological matter/fish
- Which components should be respectively recommended and optional?

Reference Groups (RG)



A minimum of 3 persons in each RG

- RG 1 - Acidification and general parts:
- RG 2 - Heavy metals and general parts:
- RG 3 - POPs and general parts: