

**An Activity of MAMA Workpackage 1
in collaboration with EDIOS**

Questionnaire on marine monitoring activities in the Mediterranean

Annex 3.
Reference methods (bibliography).

UNEP/IOC/IAEA

**REFERENCE METHODS AND TECHNICAL
BULLETINS FOR MARINE POLLUTION
STUDIES**

CURRENT STATUS

IAEA-MEL/MESL, November 1996

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IOC/IAEA
REFERENCE METHODS FOR MARINE POLLUTION STUDIES
(IAEA-MEL, NOVEMBER 1995)

1. Sanitary quality of coastal recreational and shellfish-growing waters

No. 1	UNEP/WHO: Guidelines for monitoring the quality of coastal recreational and shellfish-areas.	Rev 1(E) 1988 Rev 1(F) 1988 Rev 1(S) 1988 Rev 2(E) in print 1995
No. 2	UNEP/WHO: Determination of total coliforms in sea water by the membrane filtration (MF) culture method.	Rev. 1(E) 1983 Rev. 1(F) 1983
No. 3	UNEP/WHO: Determination of faecal coliforms in sea water by the membrane filtration culture method.	Rev. 1(E,F) 1983 Rev. 1(E) in print 1995
No. 4	UNEP/WHO: Determination of faecal streptococci in sea water by the membrane filtration (MF) culture method	Rev. 1(E,F) 1983 Rev. 2(E) in print 1995
No. 5	UNEP/WHO: Determination of faecal coliforms in bivalves by the multiple test tube method.	Rev. 1(E,F) 1983 Rev. 2 (E) in print 1995
No. 21	UNEP/WHO: Determination of total coliforms in sea water by multiple test tube (MPN) method.	draft(E) 1985 draft(F) 1987 Rev. 1 (E) in print 1995
No. 22	UNEP/WHO: Determination of faecal coliforms in sea water by the multiple test tube (MPN) method.	draft(E) 1985 Rev. 1(E) in print 1995
No. 23	UNEP/WHO: Determination of faecal streptococci in sea water by the multiple test tube (MPN) method.	draft(E) 1985 Rev. 1(E) in print 1995

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No. 28	UNEP/WHO: Determination of <i>Staphylococcus aureus</i> in sea water and sewage by the membrane filtration (MF) culture method.	draft(E) 1986 Rev. 1(E) in print 1995
No. 29	UNEP/WHO: Determination of <i>Pseudomonas aeruginosa</i> in sea water and sewage by the membrane filtration culture method.	draft(E) 1986 Rev. 1(E) in print 1995
No. 30	UNEP/WHO: Isolation/enumeration of <i>Salmonella</i> from sea water and sewage.	draft(E) 1986 Rev. 1(E) in print 1995
No. 47	UNEP/WHO: Determination of faecal coliforms in sediments by the pour plate (PP) method.	draft(E) 1988 Rev. 1(E) in print 1995
No. 55	UNEP/WHO: Statistical methods for the evaluation of results from monitoring the quality of coastal recreational and shellfish areas.	draft (E) 1989 draft (F) 1989 Rev. 1(E) in print 1995
No. 66	UNEP/WHO: Quality Assurance and Good Laboratory Practice for marine microbiological measurements.	(E) in print 1995
No. 67	UNEP/WHO: Determination of <i>Staphylococcus aureus</i> in sea water and sewage by the multiple test-tube (MPN) method.	(E) in print 1995
No. 68	UNEP/WHO: Determination of <i>Camphylobacter</i> in sea water and sewage by the multiple test-tube (MPN) method.	(E) in print 1995
No. 69	UNEP/WHO: Determination of mesophylic aeromonads in sea water by the membrane filtration (MF) culture method.	(E) in print 1995
"AC"	UNEP/WHO/IAEA: Determination of selected neurotoxins in marine organisms.	planned for 1997/98

2. Chemical contaminants in marine organisms

No. 6	UNEP/FAO/IOC/IAEA: Guidelines for monitoring chemical contaminants in marine organisms.	Rev. 1(E, F) 1994
No. 7	UNEP/FAO/IOC/IAEA: Sampling of selected	Rev. 2(E) 1988

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	marine organisms and sample preparation for trace metal analysis.	Rev. 2(S) 1988
No. 8	UNEP/FAO/IOC/IAEA: Determination of total mercury in selected marine organisms by cold vapour atomic absorption spectrophotometry.	Rev. 1(E) 1984 Rev. 1(S) 1987 Rev. 2 in preparation
No. 9	UNEP/FAO/IAEA: Determination of total arsenic in selected marine organisms by hydride generation atomic absorption spectrophotometry.	draft(E) 1985 Rev 1. in preparation
No. 10	UNEP/FAO/IAEA: Determination of total selenium in selected marine organisms by hydride generation atomic absorption spectrophotometry.	(E) 1984 Rev 1. in preparation
No. 11	UNEP/FAO/IOC/IAEA: Determination of total cadmium, zinc, lead and copper in selected marine organisms by flameless atomic absorption spectrophotometry.	Rev. 1(E) 1984 Rev. 1(S) 1984 Rev. 2 final editing
No. 12	UNEP/FAO/IAEA: Sampling of selected marine organisms and sample preparation for the analysis of chlorinated hydrocarbons.	Rev. 1(S) 1987 Rev. 2(E) 1991
No. 13	UNEP/FAO/IAEA: Determination of methyl-mercury in selected marine organisms by gas chromatography.	(E) 1984 (S) 1988 Rev. 1(E) 1992
No. 14	UNEP/FAO/IOC/IAEA: Determination of DDTs and PCBs in selected marine organisms by packed column gas chromatography.	Rev. 1 (E) 1986 Rev. 1 (S) 1988 <i>Withdrawn 1993</i>
No. 40	UNEP/IOC/IAEA: Determination of DDTs and PCBs in selected marine organisms by capillary column gas chromatography.	(E) 1988
No. 59	UNEP/IAEA/IOC/FAO: Determination of organotins in environmental samples.	(E) 1995
No. 71	UNEP/IAEA/IOC/FAO: Sample work-up for the analysis of chlorinated hydrocarbons in the marine environment.	in preparation
No. 72	UNEP/IOC/IAEA/FAO: Determination of in review hydrocarbons in selected marine organisms	in review

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"V"	UNEP/IAEA/IOC/FAO: Guidelines for the determination of organohalogen contaminants (other than DDTs or PCBs) in selected marine organisms.	planned for 97/98
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3. Chemical contaminants in sea water

No. 50	UNEP/IOC/IAEA: Standard chemical methods for marine environmental monitoring.	(E) 1991
No. 16	UNEP/IOC/IAEA: Determination of DDTs, PCBs, PCCs and other chlorinated hydrocarbons in sea water by gas chromatography.	Rev.(1) in prep. <i>withdrawn (1993)</i>
No. 18	UNEP/IOC/IAEA: Determination of total dissolved cadmium in sea water by differential pulse anodic stripping voltammetry.	Rev.(1) in prep. <i>withdrawn (1993)</i>
No. 56	UNEP/IOC/IAEA: Determination of dissolved/dispersed hydrocarbons in marine waters.	in preparation
"AS"	UNEP/IAEA/IOC: Determination of selected organophosphorus contaminants in estuarine and coastal water.	in preparation
"AT"	UNEP/IAEA/IOC: Measurement of suspended matter in sea water.	pending

4. Chemical contaminants in marine sediments and suspended matter

No. 20	UNEP/IOC/IAEA: Monitoring of petroleum hydrocarbons in sediments.	(E) 1992
No. 26	UNEP/IAEA: Determination of total mercury in marine sediments and suspended solids by cold vapour atomic absorption spectrophotometry.	draft(E) 1985 Rev. 1 in preparation
No. 27	UNEP/IAEA: Determination of total cadmium in marine sediments by flameless atomic absorption spectrophotometry.	(E) 1985 <i>Withdrawn 1995</i>
No. 31	UNEP/IAEA: Determination of total chromium in marine sediments by flameless atomic absorption spectrophotometry.	(E) 1985 <i>Withdrawn 1995</i>

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No. 32	UNEP/IAEA: Determination of total cobalt in marine sediments by flameless atomic absorption spectrophotometry.	(E) 1985 <i>Withdrawn 1995</i>
No. 33	UNEP/IAEA: Determination of total copper in marine sediments by flameless atomic absorption spectrophotometry.	(E) 1985 <i>Withdrawn 1995</i>
No. 34	UNEP/IAEA: Determination of total lead in marine sediments by flameless atomic absorption spectrophotometry.	(E) 1985 <i>Withdrawn 1995</i>
No. 35	UNEP/IAEA: Determination of total nickel in marine sediments by flameless atomic absorption spectrophotometry.	(E) 1985 <i>Withdrawn 1995</i>
No. 36	UNEP/IAEA: Determination of total vanadium in marine sediments by flameless atomic absorption spectrophotometry.	(E) 1985 <i>Withdrawn 1995</i>
No. 37	UNEP/IAEA: Determination of total iron in marine sediments by flame atomic absorption spectrophotometry.	(E) 1985 <i>Withdrawn 1995</i>
No. 38	UNEP/IAEA: Determination of total manganese in marine sediments by flame atomic absorption spectrophotometry.	(E) 1986 <i>Withdrawn 1995</i>
No. 39	UNEP/IAEA: Determination of total zinc in marine sediments by flame atomic absorption spectrophotometry.	(E) 1986 <i>Withdrawn 1995</i>
"Z"	UNEP/IOC/IAEA: Determination of aluminium in sediments.	canceled
No. 63	Manual for the geochemical analysis of marine sediments and suspended particulate matter	(E) 1995
No. 58	Guidelines for the use of sediments for marine pollution monitoring programmes.	in preparation
"R"	Guidelines on the sampling and preparation of sediments for marine pollution monitoring.	planned for 1997/98
"AE"	UNEP/FAO/IOC/IAEA: Determination of organophosphorus compounds in marine	in preparation

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sediments.

5. Chemical contaminants in estuarine waters and suspended matter

"C"	UNEP/IOC/IAEA: Guidelines for collecting and interpreting data on estuaries.	withdrawn/pending
No. 41	UNEP/IOC/IAEA: Guidelines for the determination of riverine inputs of inorganic contaminants to estuaries.	(E) 1987
No. 19	UNEP/IOC/IAEA: Determination of total mercury in estuarine waters and suspended sediment by cold vapour atomic absorption spectrophotometry.	draft (E) 1985
No. 52	UNEP/WHO/IOC/IAEA: Determination of phosphorus in suspended matter and sediments.	planned for 1997/98
No. 53	UNEP/WHO/IAEA: Determination of nitrogen in suspended matter and sediments.	planned for 1997/98
"G"	UNEP/WHO/IOC/IAEA: Determination of BOD ₅ and COD in estuarine waters.	planned for 1997/98
"I"	UNEP/IOC/IAEA: Determination of total cadmium in estuarine waters and suspended matter.	withdrawn/pending

6. Chemical contaminants floating or on beaches

No. 15	UNEP/IOC/IAEA: Monitoring of tar on marine beaches.	draft(E) 1985
No. 62	UNEP/NOAA/IOC/IAEA: Marine debris survey manual.	(E) final editing

7. Atmospheric chemical contaminants

No. 24	UNEP/WMO/IAEA: Sampling of aerosols and wet precipitation for analysis of chemical pollutants.	draft(E) 1985
No. 42	UNEP/IAEA/WMO: Guidelines for the determination of selected trace metals in aerosols and in wet precipitation.	draft(E) 1988

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"P" **UNEP/IOC/IAEA: Determination of halogenated hydrocarbons in aerosols and in wet precipitation.** pending

"Q" **UNEP/WMO/IOC/IAEA: Sampling of dry deposition.**

8. Effects on marine organisms and ecosystems

**No. 25 SPC/UNEP: Coral reef monitoring handbook. (E) 1984
(F) 1990**

**No. 43 UNEP/FAO/IAEA: Test of acute lethal toxicity of pollutants to marine fish draft and invertebrates. (E) 1989
(S) 1988**

**No. 44 UNEP/FAO/IAEA: Estimation of the toxicity of pollutants to marine phytoplanktonic and zooplanktonic organisms. (E) 1989
draft(S) 1988**

**No. 45 UNEP/FAO/IAEA: Comparative toxicity test of water-soluble fractions of oils and oil dispersants to marine organisms. (E) 1989
draft(S) 1988**

No. 51 UNEP: Sampling and identification of common Mediterranean Scyphomedusae and evaluation of their occurrence. draft(E) 1988

No. 60 UNEP/IOC/FAO/IMO/IAEA: Hepatic mixed function oxidase induction in fish as an environmental monitoring technique (E) 1992

No. 61 UNEP/AIMS: Monitoring coral reefs for global change. (E) 1993

No. 64 UNEP/IOC/FAO/IMO/IAEA: Statistical analysis and interpretation of marine community data (E) 1995

No.73 UNEP/IOC/FAO/IMO/IAEA: Scope for growth determinations in marine bivalve molluscs. in preparation

"AG" UNEP/IOC/IAEA: Guidelines for evaluating the effects of thermal discharges on the marine environment.

"AH" UNEP/IOC/IAEA: Guidelines for detecting and

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**"AL" UNEP/IOC/FAO/WHO/IAEA: Guidelines in preparation
to assess the impact of point sources of pollution.**

12. Technical Bulletins for Marine Pollution Studies

This new series was initiated in 1992 in order to provide a source of information to regional laboratories which will complement the documents strictly dedicated to methods and guidelines. The subject matter should cover the following topics: (1) literature reviews and surveys; (2) intercomparison reports where they are of significance to a wide readership; (3) reports of pilot monitoring exercises, again where the significance is sufficiently wide; and (4) technical workbooks, worked examples, etc. Potentially, this series could also provide an organ for diffusing selected background papers to GEMSI/GESREM/GEEP meetings, etc. Some of these documents have constituted valuable reviews which would otherwise be lost. The advice of the expert groups is sought regarding the future development of this series.

TB 1	UNEP/NOAA/IAEA/IOC: Mussel Watch worldwide literature survey.	(E) 1992
TB 2	UNEP/IOC/IAEA: Marine pollution studies quality assurance workbook for the use of standards and reference materials in the quantification of chlorinated pesticides	(E) in print 1995
TB 3	UNEP/IMO/IOC/IAEA: A compendium of principles and advisory guidelines on marine environmental protection	planned for 1997/98
TB 4	World-wide and regional trends in the quality of analytical data on chemical pollutants in marine sediments	in preparation
TB 5	UNEP/IOC/IMO/IAEA: Current status of biological effects techniques.	tentitive

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