

COST-Action 626

European Aquatic Modelling Network
EAMN

State-of-the-Art report

**Working Group 1
"Raw Data"**

DRAFT-Version 13-May-2002

Contents

Introduction

Part A

Instrumentation (I) & Measurement Techniques (MT)

draft received

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1. State of the Art

1.1. Best available I&MT

1.1.1. Parameters

1.1.1.1. Velocity

1.1.1.2. Shear Stresses

1.1.1.3. Water depth

1.1.1.4. Discharge

1.1.1.5. Morphology

1.1.1.6. Suspended Load

1.1.1.7. Bed Load

1.1.2. Instruments

1.1.2.1. Velocity

1.1.2.2. Shear Stress

1.1.2.3. Water depth

1.1.2.4. Discharge

1.1.2.5. Morphology

1.1.2.6. Suspended Load

1.1.2.7. Bed Load

1.2. Available I&MT of the Cost-Members (out of questionnaires)

1.2.1. Details see chapter 1.1

1.3. I&M for further use (definition)

1.3.1. High, good, moderate status of I & MT

1.3.2. Highest resolution

1.3.3. Easiest handling

1.3.4. „Cheapest and best“

2. Research needs

2.1. I for data collection - velocity, morphology, substrate, cover

2.2. MT for data collection - velocity, morphology, substrate, cover

2.3. Data interpolation in space

2.4. Grid dimensions (for key species, single parameters ...)

2.5. Data quality (1-2-3 D, resolution, single point, time series ...)

2.6. Exchange of information (other working groups) !!

3. Data structure

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3.2. Digital terrain model (morphology)

3.3. Velocities

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3.3.2. Mean velocities

3.3.3. Bottom near velocities

3.4. Substrate

3.4.1. Maps (overlay)

3.4.2. Grain size

3.4.3. Percentage

3.5. Cover

- 3.5.1. Maps
- 3.6. Discharge
- 3.7. Water levels
- 4. Grid size
 - 4.1. Amount of collected data
 - 4.2. Grid size
 - 4.2.1. Grid size for key species
 - 4.2.2. Grid size for single parameters
 - 4.3. High quality interpolation modules (costs)
 - 4.4. Widening and lowering the grid size (10/10/10cm – meters)
 - 4.4.1. (single key species, bottom near, open water zone ..)
- 5. Output
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 - 5.2. Specific information
 - 5.2.1. examples: equivelocitylines in a cross section
 - 5.2.2. shear stress in a longitudinal cut
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- 6. Problems
 - 6.1. lots of different I&M
 - 6.2. “gap“ old and new technologies (Comparison of data,..)
 - 6.3. huge amount of data (management problems)
 - 6.4. costs

Part B

Macroinvertebrates

- 1. Objectives Javier Alba-Tercedor, Maria Angeles Puig, Timo Muotka, Peter Goethals, Nikolai Friberg & Alain Dohet
- 2. Sampling sites and protocols Javier Alba-Tercedor, Timo Muotka, Peter Goethals, Nikolai Friberg & Alain Dohet
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 - 2.1.1. Training Javier Alba-Tercedor
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 - 2.1.3. Sample processing Javier Alba-Tercedor
 - 2.1.4. Identification Alain Dohet
 - 2.1.5. Database setup and maintenance Peter Goethals
 - 2.2. Scale (spatial/temporal resolution) Timo Muotka, Nikolai Friberg & Alain Dohet
 - 2.2.1. Micro-habitats (size of sample) Timo Muotka
 - 2.2.2. Meso-habitats (morphological entities: riffles, pools, ...) Timo Muotka
 - 2.2.3. Macro-habitats (river stretch) Timo Muotka
 - 2.2.4. Different identification level and additional measurements Timo Muotka, Nikolai Friberg & Alain Dohet
 - 2.3. Sampling design Peter Goethals
 - 2.4. Sampling methods Peter Goethals
 - 2.5. Comparison of standard methods between different European countries Javier Alba-Tercedor
- 3. Identification level Alain Dohet
 - 3.1. Taxonomists (identification keys) Alain Dohet
 - 3.2. Identification costs Alain Dohet
- 4. Relations between physical and biological components Nikolai Friberg & Maria Angeles Puig
- 5. Quality Assurance and Quality Control (QA/QC) Javier Alba-Tercedor, Alain Dohet & Peter Goethals
 - 5.1. Training Javier Alba-Tercedor
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- 7. Conclusions Javier Alba-Tercedor, Maria Angeles Puig, Timo Muotka, Peter Goethals, Nikolai Friberg & Alain Dohet

Part C

Fish

- **Questionnaire results** (Andreas Zitek, **draft received**)
- **Fish data sampling**
 - Microhabitat modelling (Responsibility: proposed Ari Husko, **draft received**)
 - Mesohabitat modelling (Responsibility: proposed Teppo Vehanen, **draft received**)
 - Catchment scale (Responsibility: Armin Peter)
- **Single species/life stage versus community modelling** (Responsibility: Stefan Schmutz, **draft received**)
- **Habitat Supply Based Fish Population Modeling** (Responsibility: Dave Scruton, **draft received**)
- **Experimental channels** (Testing and validation under controlled conditions) (Responsibility: Mari Nyakänen, **draft received**)
- **Measurement of physical habitat from a fish perspective**
 - Microhabitat modelling including bioenergetic models (Responsibility: Jo Halvard Halleraker) **draft received**)
 - Mesohabitat modelling (Responsibility: Jo Halvard Halleraker) **draft received**)
 - Catchment scale (Responsibility: Armin Peter, Berthold Kappus)