



B1. ENVIRONMENTAL RISK ASSESSMENT

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Course outline-lectures

1. Introductory issues

- Definition of Ecological Risk Assessment (ERA) procedure
- European Directives and normative guidelines referring to ERA procedures

2. Definition of site-oriented Conceptual Model for ERA

- Anthropogenic use and sensitivity of sites
- Biological and ecological receptors
- Sources and fate of pollutants
- Human health implications

3. Screening ERA and Detailed ERA

- Discussion and criteria for deciding appropriate, site-oriented lines of evidence (LOEs)
- Habitat morphology, dynamics and use
- Chemical characterization
- Toxicity Identification Evaluation (TIE) and Effect Directed Analysis (EDA)
- Biological, toxicological effects (biomarkers, bioassays, bioaccumulation, biomagnification)
- Biological, ecological effects (benthic communities, microbial communities, colonization)

4. Elaboration of complex and heterogeneous data

- Qualitative decisional matrices
- Quantitative Weight Of Evidence (WOE) approach
- Logical flow-charts and mathematical algorithms
- Hazard indices for different LOEs (sediment chemistry, bioavailability, ecotoxicological bioassays, biomarkers, benthic communities)
- WOE elaboration and integrated Risk assessment

5. Conclusion of an ERA procedure

- Ecological Risk indices and potential management suggestions
- Risk communication



ERACOM

JOINT MASTER PROGRAM IN
ENVIRONMENTAL RISK ASSESSMENT
AND COASTAL MANAGEMENT

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6. Discussion and application of real, field case-studies

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