



Co-funded by the
Erasmus+ Programme
of the European Union



Development of Regional Joint Master Program in Maritime Environmental Protection and Management - MEP&M -

**2.2.Orientation: Integrated management of the marine-coastal natural environment
2373202. Integrated analysis and diagnosis of pollution in coastal areas
MEP&M-RELATED MASTERS DELIVERED IN THE UNIVERSITY OF CÁDIZ**

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17/05/2021**

Virtual meeting via Zoom application

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2.2.Orientation: Integrated management of the marine-coastal natural environment 2373202. Integrated analysis and diagnosis of pollution in coastal areas

Learning results:

Provide students with the skills, knowledge and tools to



Distinguish pollution and pollution phenomena



Know integrated methods and their application.



Quantify environmental quality

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UCA



2.2.Orientation: Integrated management of the marine-coastal natural environment 2373202. Integrated analysis and diagnosis of pollution in coastal areas

Competences



General

- Understand the theoretical, practical and integrated working methodology in Management of Coastal Areas.
- Integrate knowledge into complex coastal and marine problem-solving models.
- Conduct basic and applied research



Specific

- Design and application of integrated methodologies for evaluation and management
- Characterization, evaluation and management of pollution (processes) in coastal systems for risk management
- Rules governing the use of coastal/marine environment.
- Resources and diversity, and tools and techniques needed for their evaluation and management
- Design and execute projects for the determination and quality management in coastal systems.



Transversal

Make judgments on complex problems related to coastal/marine environmental management

Knowledge on how to gather, select, interpret, relate and analyze data, main sources of information.

Development of critical reasoning.

Taking on leadership and teamwork roles.

Development of entrepreneurial and innovative spirit.

Knowledge of newer and more recent aspects of the evolution of discipline.

Development and presentation of scientific work/projects.

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Implementation

Theory classes

- Master classes
- Participatory classes

Practical lectures

- IT labs
- Specific softwares

Assessment tests

- Exams
- Assignments, critical reviews

Student Autonomous Work

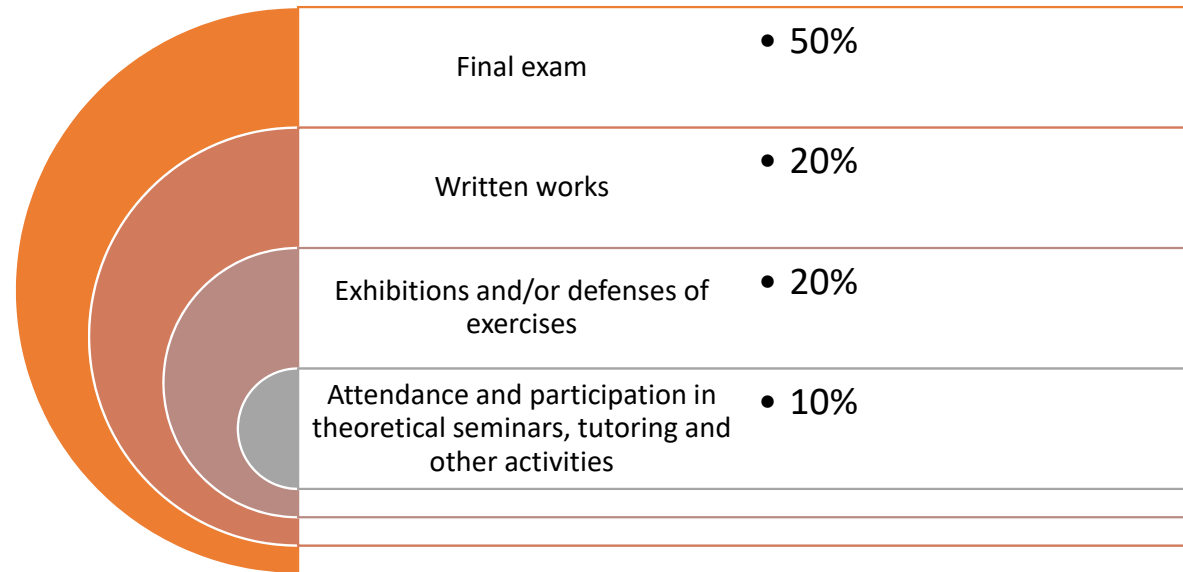
- Individual/groups
- Practical cases
- Preparation of presentations/oral defenses;
searches for information, etc.

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Evaluation:
task/activity weighting



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CONTENT

Inaugural Lesson and Course Presentation.

Marine Strategy Framework Directive

Legislation on coastal pollution I + II

Types of pollutants in the coastal environment and their associated risks

Distribution and reactivity of contaminants in aquatic systems I + II

Contaminant distribution models in aquatic systems

Assessment of exposure effects to pollutants I + II + III

Bases of integrated pollution analysis in coastal areas

Integrated methodologies in the analysis and management of pollution in coastal areas

Design and quantification for integrated analysis of pollution in coastal areas

Integrated pollution analysis and diagnosis in coastal areas. Case study

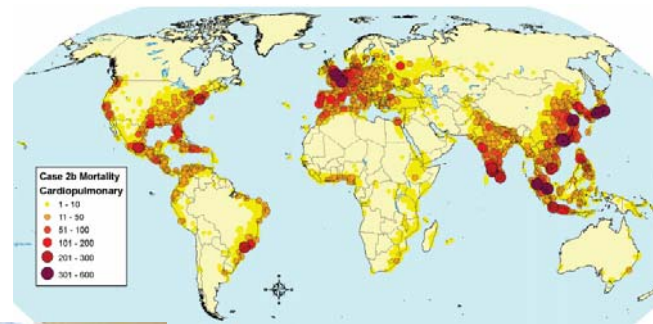
Design, valuation and execution of projects

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Inaugural lesson and course presentation.



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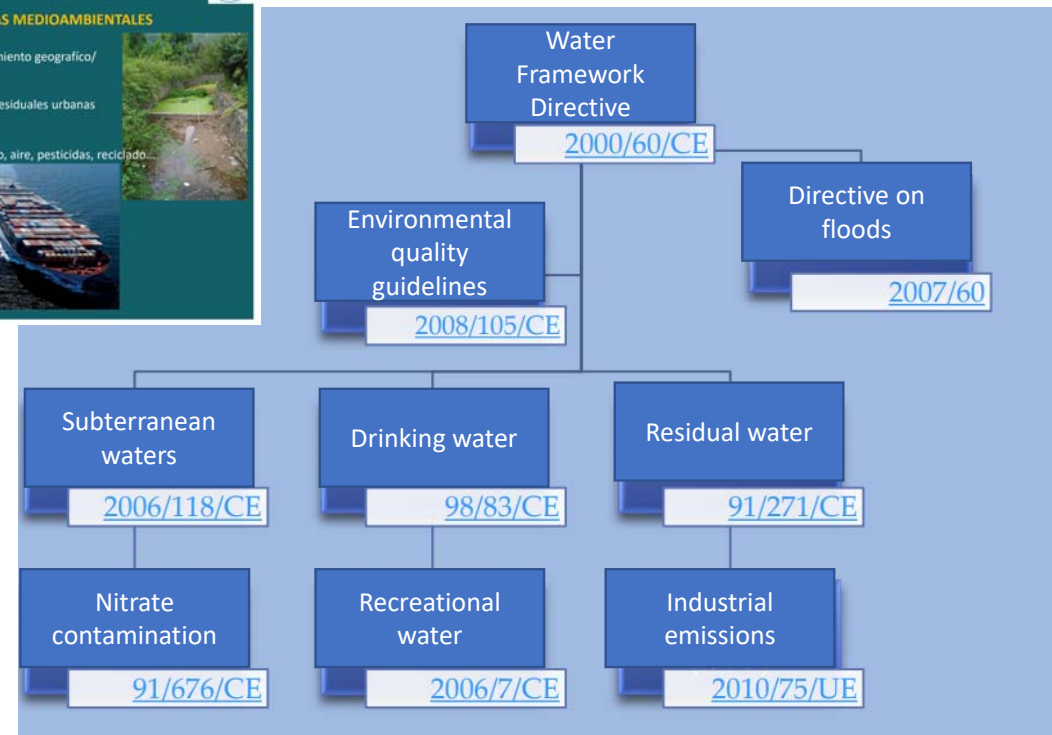
Marine Strategy Framework Directive Legislation on coastal pollution I and II



CONCORDANCIA CON OTRAS POLÍTICAS

1. Sinergias con OTRAS MEDIDAS MEDIOAMBIENTALES

- La Directiva Marco de Agua (Solapamiento geografico/ parámetros)
- Directivas de tratamiento de aguas residuales urbanas
- Directivas de hábitats de la UE
- Otras Estrategias Temáticas: petróleo, aire, pesticidas, reciclado...



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Types of pollutants in the coastal environment and their associated risks
Distribution and reactivity of contaminants in aquatic systems I and II
Contaminant distribution models in aquatic systems



Types of marine contaminants

- Chemical contaminants
- Sewage (municipal, industrial, agricultural)



Factors governing contaminant distribution and reactivity

- Physical chemical characteristics
- Environmental characteristics
- Bioavailability



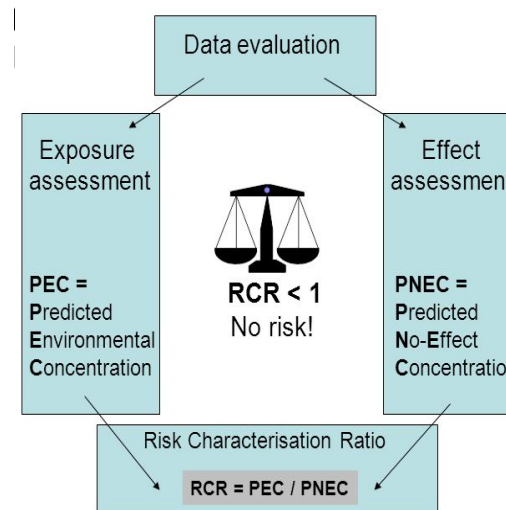
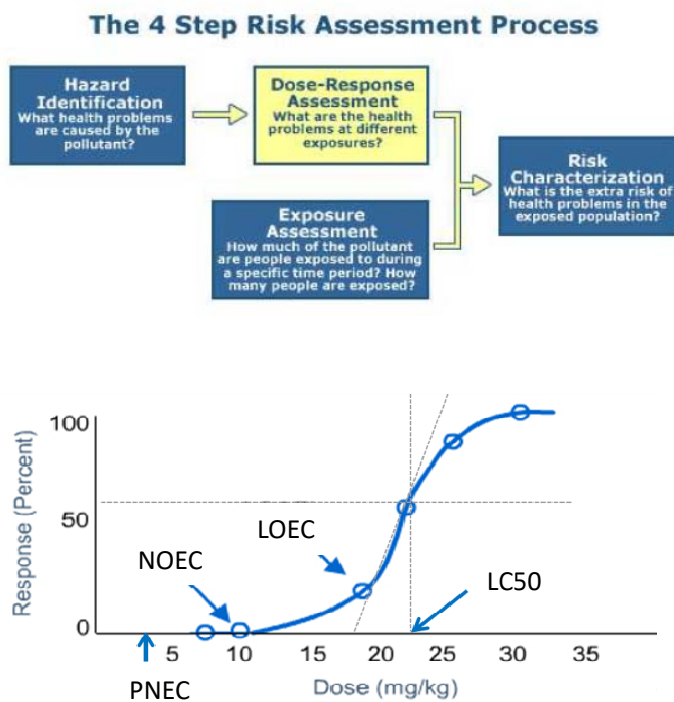
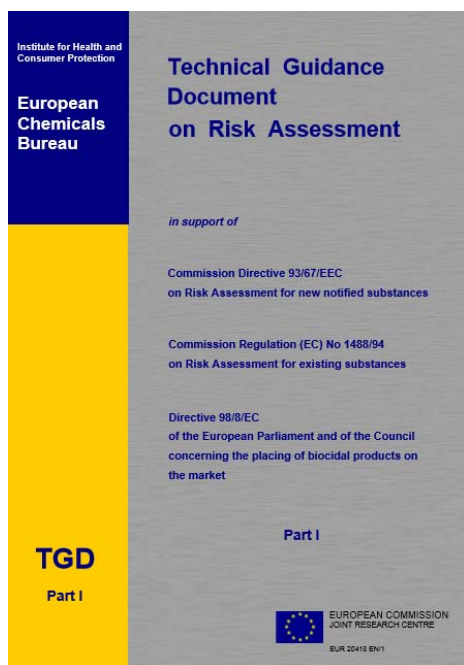
Prediction of distribution using models

- Software
- Data input
- Results

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Assessment of exposure effects to pollutants I + II + III



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Bases of integrated pollution analysis in coastal areas

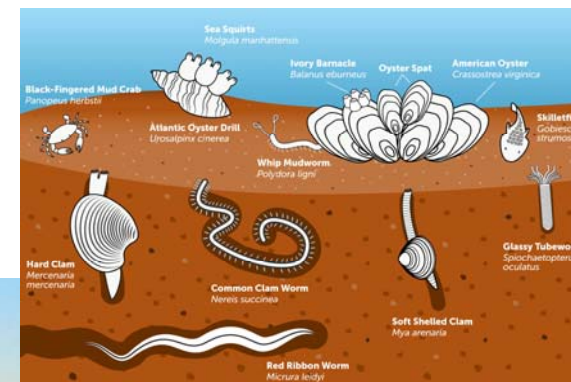
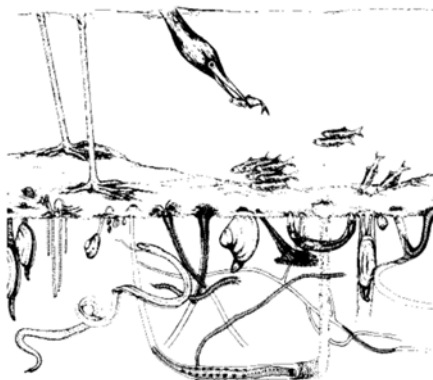
Integrated methodologies in the analysis and management of pollution in coastal areas

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EPA's Contaminated Sediment Management Strategy

Sediments



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Bases of integrated pollution analysis in coastal areas

Integrated methodologies in the analysis and management of pollution in coastal areas

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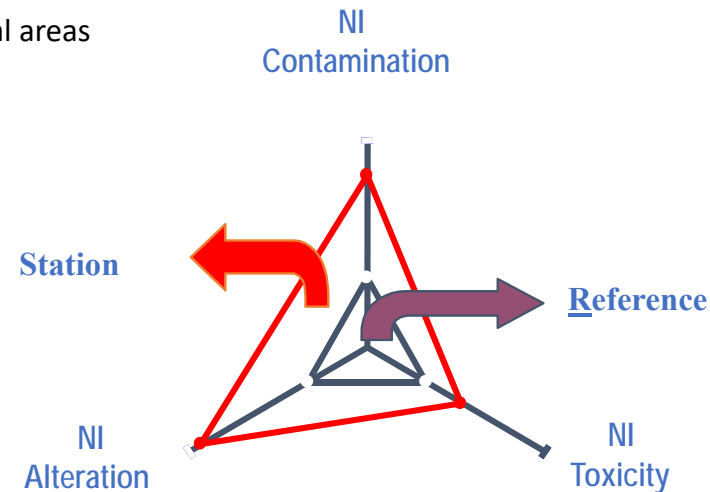
Integrated pollution analysis and diagnosis in coastal areas. Case study

Triaxial method

Input:

- Sediment contaminant concentrations
- Laboratory effects
- In situ effects

Reference site



$$RTR_i = \frac{v_i}{(v_i)_b}$$

$$RTM_i = \frac{RTR_i}{(RTR - m_i)}$$

$$NI = \frac{\sum_{i=n} RTM_i}{\left(\sum_{i=n} RTM_i \right)_0} \quad \forall i$$

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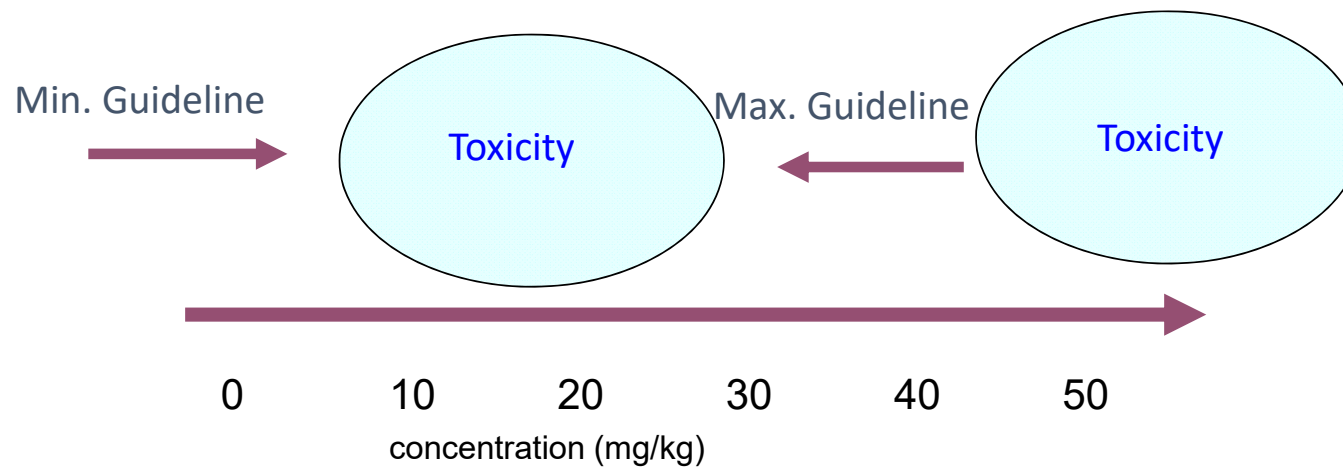
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> ADVERSE EFFECT

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¡GRACIAS!

Thank you

Faleminderit

Hvala.

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OTHER INFORMATION:

[Links to the oficial web of the master or personal information]

