Rapid assessment of coastal areas as a tool in the decision-taking process for MPAs planning

Field Study, Cabrera NP partner, MEDPAN project Interreg IIIc

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OBJECTIVE:

DEVELOP A METHODOLOGY OF RAPID EVALUATION OF MARINE COASTAL AREAS FROM AN ENVIRONMENTAL POINT OF VIEW TO HELP DECISSION MAKING PROCESSES OF MPA MANAGERS

ACTIVITIES:

1-SELECTION OF A MULTIDISCIPLINARY WORKING GROUP

2-IDENTIFICATION AND SELECTION OF A SET OF INDICATORS

3-SELECTION OF AN STUDY CASE AREA

4-TEST METHODS FOR INTEGRATION OF INDICATORS & DATA ANALYSIS

5-PRODUCE “HOW TO” MANUALS AND OTHER END USER PRODUCTS

1-SELECTION OF A MULTIDISCIPLINARY WORKING GROUP

SET UP A GROUP OF EXPERTS OF DIFFERENT TOPICS

-MPA MANAGER (END USER POINT OF VIEW)
-UNDERWATER SAMPLING
-COASTAL BIOLOGY INDEXES
-GIS PROCESSING
-QUALITY INDICATORS BASED ON FISH POPULATIONS
-QUALITY INDICATORS OF SEAGRASS
-ENVIRONMENTAL SPECIES INDICATORS

EXTERNAL COLABORATORS FOR:

-ENVIRONMENTAL QUALITY INDEXES BASED ON COASTAL ALGAE -COMUNITIES
-GIS PROCESSING
-GENERAL ADVICE

2-IDENTIFICATION AND SELECTION OF A SET OF INDICATORS

INDICATORS REQUIREMENTS:

1- ALREADY TESTED AND PROVED VALID

2- WELL DOCUMENTED

3- CLEAR INTERPRETATION

4- LOW COST

5- FAST SAMPLING

6- POSIBILITY OF SIMPLE PARAMETRIZATION

INDICATORS SELECTED

CLASS I:

- ALLOWS FOR A FIRST ZONATION OF THE AREA
- MAINLY DESK WORK
- BASED ON PREVIOUS STUDIES/INFORMATION ON THE AREA

CLASS II:

- OBTAINED BY FIELD WORK
- SAMPLED IN THE PREVIOSUS IDENTIFIED AREAS

2-IDENTIFICATION AND SELECTION OF A SET OF INDICATORS

INDICATOR LIST CLASS I:

- GEOMORPHOLOGY
- ALREADY EXISTING LAND AND/OR COASTAL WATER PLANNING
- SPILLS
-HIDRODINAMYCS (DEGREE)
-DEPTH GRADIENTS
-PRESENCE OF COLONIES OF SEABIRDS
-MARINE HABITAT HETEROGENEITY
-QUESTIONARIES
-PRESENCE OF BD HOT SPOTS (CAVES, REEFS,..)
-LEGAL ADMINISTRATION, PROTECTION DEGREE

INDICATOR LIST CLASS II (2 SPATIAL SCALES):

-MESOESCALE INDICATORS: HABITAT STRUCTURE

-MICROESCALE INDICATORS

POSIDONIA MEADOWS

HABITAT STRUCTURE

INVASIVE ALGAE

INDICATOR SPECIES

DEMOGRAPHIC BALANCE

ROCKY AREAS INDICATORS

HABITAT STRUCTURE

LANDSCAPE COMPLEXITY/RICHNESS

INVASIVE ALGAE

SEA URCHIN GRAZING AREAS

RICHNESS SPECIES INDICATORS

3- STUY CASE AREA

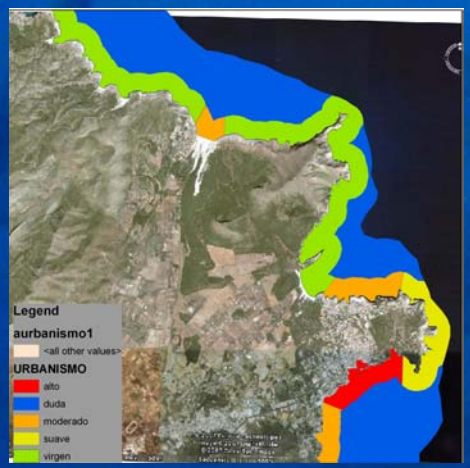
SELECTION CRITERIA:

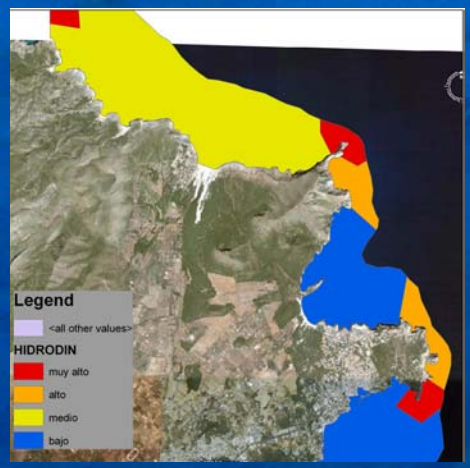
-DIVERSITY OF COASTAL USES
-DIVERSITY OF MARINE
-HABITATS
-ACCESIBILITY
-ALREADY EVALUATED AREA

4-DATA ANALYSIS

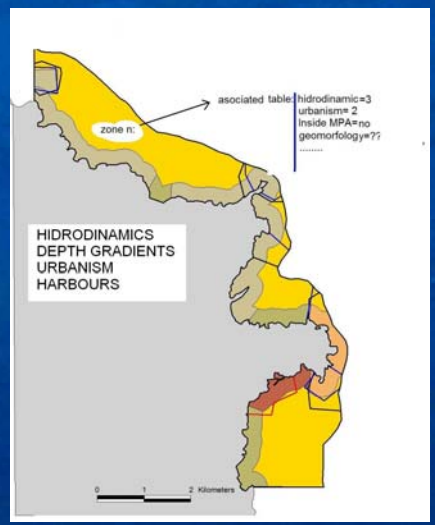
The analysis method must:
- Be easily reproducible
- Be based on low cost tools
- Be adaptable to the managers economical resources

PROCESSING OF INDICATORS CLASS I:



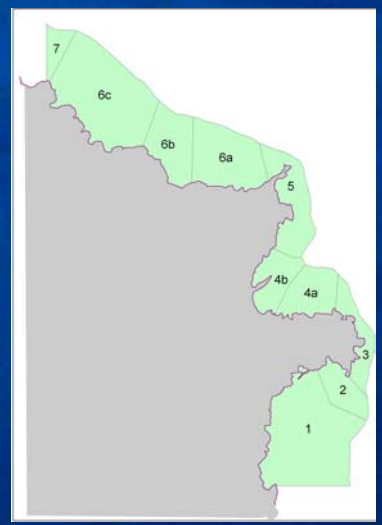


Each indicator generate a map



All maps overlap

The area is evaluated for initial zone classification and design of sampling for indicators class II



4-DATA ANALYSIS

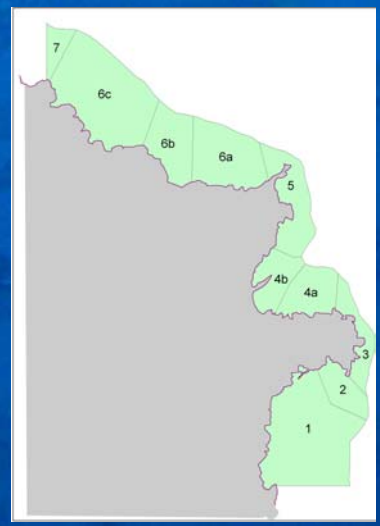
PROCESSING OF INDICATORS CLASS II:

Mesoscale: space stratified sampling

Microscale:

LOCATION OF PROPER HABITATS IN EACH ZONE
IN SITU SAMPLING
DATABASE DEVELOMENT

SITE	Bo des Matzoc	Faralló d'Albarca	s'Albarda	Cap des Freu	Sa Mula
ZONE	6c	7	6a	5	4b
HABITAT_DIVERSITY	2	3	3	4	3
ROUGHNEES	2,5	2	2,5	3	2
LANDSCAPE	2	3	1,5	3	3
INVAASIVE_ALGA	0	0	0	0	0
CONECTIVITY	3	3	1	1,5	2,5
URCHINS	NO DATA	presencia	NO DATA	NO DATA	NO DATA
RICHNESS	2	2	2	2	2
BIOMASS	2	2	2	4	3
SUM	13,5	15	12	17,5	15,5



INTEGRATION OF INDICATORS CLASS II & CLASS I

NEXT:
TEST OF DIFFERENT METHODS FOR NUMERICAL INTEGRATION OF ALL INDICATORS

5- END PRODUCTS:

"HOW TO" DOCUMENTS…..

- Zone identification protocols
- Sampling protocols
- GIS & data analysis protocols
- Final results interpretation document

GRACIAS, شكرا, MERCI, THANKS

THE CREW

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COORDINATOR
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MARINE PHANEROGAMS

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GIS PROCESSING

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FISH BIOMASS (UNDERWATER VISUAL CENSUS)

DIEGO ALVAREZ BERASTEGUI
FISHERIES & GEOINFORMATICS

OTHER COLABORATORS:

-ENRIC BALLESTEROS: ENVIRONMENTAL QUALITY INDEXES BASED ON COASTAL ALGAE COMUNITIES

-ALFONSO RAMOS: GENERAL ADVICE