

THE ECOLOGICAL QUALITY STATUS OF SANDY BEACHES ECOSYSTEMS AROUND CASABLANCA (ATLANTIC, MOROCCO)

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INTRODUCTION

The change of the sandy beaches of Casablanca became more and more important.

Indeed, the coastal zone of Casablanca undergo several anthropogenic disturbances: the setting-up of ports, human frequentation especially in summer, the urban discharge and the industrial waste, these last ones constitute a danger growing for this coastal environment.

Within the framework of a multidisciplinary project, Supported by 'La Lyonnaise des Eaux de Casablanca, LYDEC'

It was undertaken to evaluate the effects of these disturbances namely the sewage discharges, on coastal and marine ecosystems

= "Ecological Quality status (EcoQ) of coastal and marine ecosystems of Casablanca"

The study aimed, on the managers point of view, to establish if there's a need or not for actions to be taken to restore these ecosystems under diverse disturbances.

METHODS

Ecological Quality Status

Benthic macrofauna

Simple Biotic index:

H' (Vincent *et al.*; 2000)

AMBI (Borja *et al.*; 2002)

BENTIX (Simboura & Zenetos; 2002)

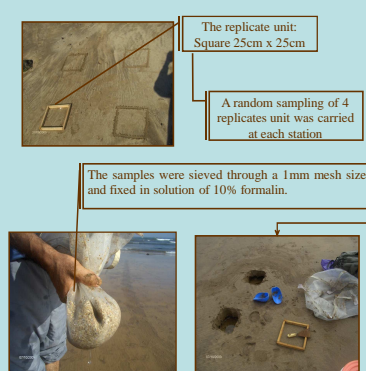
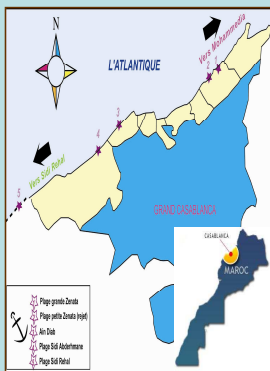
BOPA (Dauvin & Ruellet; 2007)

Multimetric Biotic index:

M-AMBI (Muxika *et al.*; 2007)

Study sites = 5 sandy beaches constrained by:

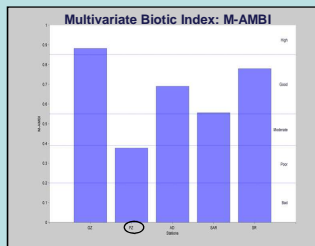
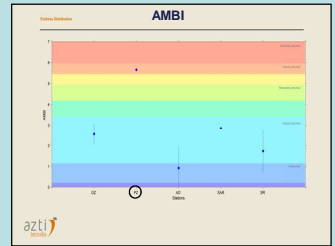
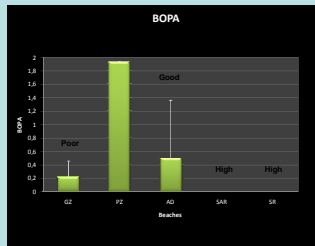
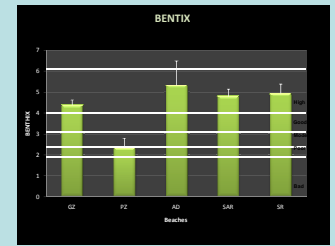
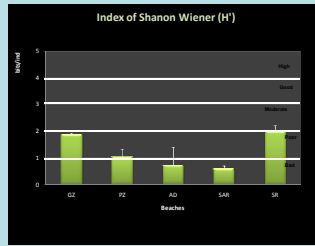
- Nearby industrial effluent: Grande Zenata (GZ)
- Sewage discharge: Petite Zenata (PZ)
- Tourism and Human frequentation: Ain Diab (AD); Sidi AbdeRhmane (SAR); Sidi Rehal (SR)



Localisation of the study sites

Sampling strategy of the benthic macrofauna

RESULTS & DISCUSSION



	H'	AMBI	BENTIX	BOPA	M-AMBI
GZ	Poor	Good	Good	Poor	High
PZ	Poor	Poor	Poor	Poor	Poor
AD	Bad	High	Good	Good	Good
SAR	Bad	Good	Good	High	Good
SR	Poor	Good	Good	High	Good

Graphics: Utilisation of different Biotic Indices

Recapitulatif table of the Biotic Indices' results

Blanchet *et al.* (2008) approach was adopted

BI	EcoQ	Decision
High Good	Acceptable (1)	This mean that, on the managers point of view, no action has to be taken to restore the ecosystem
Moderate Poor Bad	Not acceptable (0)	Restoration measures must be taken in order to reach « Good Status »

	H'	AMBI	BENTIX	BOPA	M-AMBI	Sum of Scores
GZ	0	1	1	0	1	3
PZ	0	0	0	0	0	0
AD	0	1	1	1	1	4
SAR	0	1	1	1	1	4
SR	0	1	1	1	1	4

Recapitulatif table of the sum of scores

CONCLUSION

- PZ (0) = Full agreement of the five BI « moderate » or worse EcoQ ('Not Acceptable'): **action has to be taken to restore the ecosystem**
- GZ (3) = Disagreement between the five BI
- AD, SR & SAR (4) = Partial agreement: four agreements out of the five biotic indices on 'Good' or higher EcoQ status ('Acceptable'): **No action has to be taken to restore the ecosystem**

Ultimately, the present study aimed to establish a reference state for the Casablanca beaches that should be used as a scientifically robust approach to monitoring the environmental change in the framework of a future appropriate management approach aiming to achieve a good EcoQ within the Casablanca coastal waters.

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