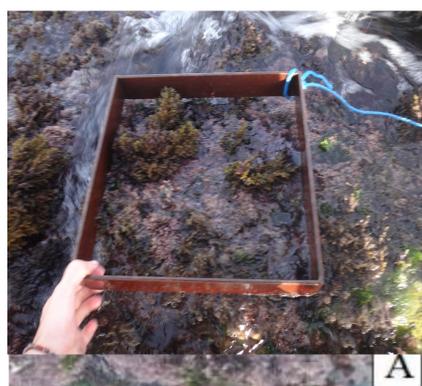


Abstract:

The present work shows the effect of the invasive alga *C. cylindracea* on the biodiversity of a macroalgal ecosystem in the region of Algiers. The sampling sites were located on the Center region of Algiers and were characterized by the same bathymetry and hydrodynamic regime. The study proposes to perform an inventory of algal species of benthic assemblages invaded and non-invaded by *C. cylindracea* and to quantify the effects of the invasive species on the spatial and temporal organization of algal assemblages. The total effective in the non-invaded assemblages is relatively high. In contrast, in assemblages invaded by *C. cylindracea*, the values of the indexes of the specific diversity (H') and equitability (E) are particularly low. These low values of diversity reflect the instability of invaded assemblages, and thus an imbalance of the ecosystem

1.Introduction : An invasive species is defined as an **introduced exotic species** established that can induce negative effects to **the ecological and/or economic** levels. These biological invasions may be considered as disturbances in the measure where some introduced species in an ecosystem may have significant ecological impacts on the structure and the functioning of the ecosystem (Moore et al., 2001). The study proposes to perform the analysis of the vegetation of invaded (fig.1) versus non-invaded assemblages, to give an idea on the composition and the structure of the algal cover in order to be able to quantify the risks of **modification of the environment**.

2.Materials and Method:



A: before sampling macroalgae
B: After sampling macroalgae



The sampling sites were located on the Center region of Algiers and have been characterized by the same bathymetry and hydrodynamic regime. The samples were obtained by full levy of the rock and the settlement by scraping using a hammer and a chisel, on a surface immersed 900 cm², i.e. a square of 30 cm on 30 cm side of Ponte horizontal at 0.5 to 1.5 m. The adapted method is that developed by Boudouresque (1970, 1971) and Peres & Picard (1964).

3.Results and discussion: The analysis has identified a total of 62 taxa with 57 taxa in the reference assemblages and 29 taxa in the assemblages invaded by *C.cylindracea* (Tab 1, Fig 3).

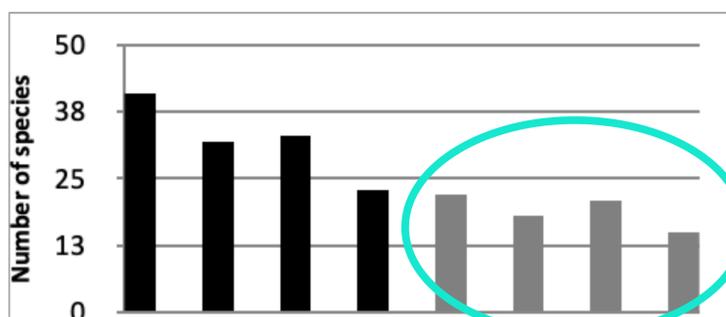


Fig 3: Number of taxa in the assemblages invaded by *C.cylindracea*

Table 1: maximum and minimum values of analytical parameters and diversity indices:

	Reference samples (Cr-)				Invaded samples (Cr+)			
	Ra1	Ra2	Ra3	Ra4	Ia1	Ia2	Ia3	Ia4
N	41	32	33	23	22	18	21	15
Rt	429,8	355,18	146,39	210,23	394,52	370,16	157,32	245,43
H'	4,25	3,42	2,87	3,08	3,05	2,73	1,83	2,76
E	0,79	0,68	0,56	0,68	0,69	0,65	0,41	0,69



Figure 1: Invasion *Caulerpa cylindracea* on the the indigenous macroalgal community of Algiers (Algeria-Mediterranean sea)

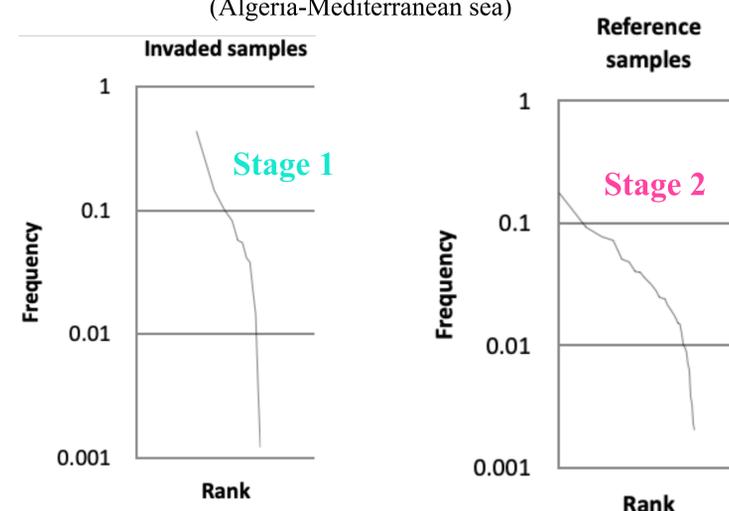


Figure 2: Diagramme Rank -Frequency of algal assemblages of the two study sites (Algeria- Mediterranean).

Stage 1: This is indicated by the gait curves, concave in the left part, what characterizes the predominance of a species, then the curves become convex and fall quickly for species where the dominance is less than 10%,

Stage 2: Diversity increases and becomes maximal and explains a significant number of species of average abundance, without strongly species dominant

low values of diversity reflect the instability of the stand, and thus an imbalance of the ecosystem. The species are not installed in a stable manner; this is probably due to the dominance of a few species such as *Caulerpa cylindracea*. (Fig 2)

4.Conclusion: This study showed that invasions of introduced macroalgae can strongly affect the main Mediterranean coastal assemblages. In fact, assessing the structure of populations or habitats, their evolution and their conservation at a given time require analyzing the changes in the medium and long term.

