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à 14h30 à la bibliothèque du CRIOBE,



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### **Demographic approaches to conservation in marine ecosystems**

Demography is the science studying populations and their evolution in time (i.e. population dynamics). Demography was born to study human populations but it is now commonly applied to animal populations with conservation and management purposes.

Demographic models allow to project population trends overtime under different scenarios. Apart for their forecasting capacities, models are applied also to understand the dynamics of populations giving insights for conservation and management actions.

Between the different classes of models, matrix population models are best suited for structured populations of long-lived species. Corals are between the most long-lived marine species and they form structured populations composed by individuals (colonies) of different ages and sexes and they are therefore suitable for the application of matrix population models.

I will present three case studies in which the application of matrix population models allowed to answer different questions linked to conservation and climate change effects:

1. Conservation and management of the overexploited Mediterranean red coral (*Corallium rubrum*)
2. Climate change effects on the scleractinian coral *Pocillopora damicornis* in Taiwan
3. Cryptic phase shift from scleractinians to octocorals in the Caribbean (U.S. Virgin Islands).