

MODELING CORAL REEFS PROBLEMS IN ECOLOGICAL CONSERVATION

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Mathematical modeling of coral growth is naturally embedded in discrete-time population theory and, since there is experimental evidence that crowding effects influences the recruitment process, we need to consider non-linear models for a realistic description to be used in the long term perspective.

In the talk we will present results and problems within a collaboration that aims to build realistic models, based on experimental data, for producing possible scenarios on the long term behavior of various gorgonians populations. Different themes will be discussed such as conservation of endangered species (*Corallium rubrum* [1, 2]), climate changes and ocean acidification (*Pocillopora damicornis* [3]), ecological shift in community structure (*Eunicea flexuosa*-*Porites astreoides* [4]).

Future work aims to provide more refined models in connection with the different populations. In turn collection of data is oriented to provide basic information to be included into the models.

References

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