

PhD Dissertation
Department of Environmental Science and Policy
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Title: Fisheries Co-management: Evaluation and Long-term Outcomes in Tárcoles, Costa Rica

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ABSTRACT

Co-management of fisheries resources, where communities collaborate with government regulators to develop fishery policy, has gained traction in Costa Rica. The "Area Marina de Pesca Responsable de Tárcoles" (Tárcoles Responsible Fishing Marine Area or RFMA) is an example where the Tárcoles artisanal fishing cooperative, CoopeTárcoles R.L., has developed and implemented a regulatory structure using the co-management model. This research evaluates the short term outcomes of the RFMA using actual landings data. The analysis is extended to year 2017 using an Ecopath with Ecosim (EwE) multi-species model to further estimate the effectiveness of the RFMA. EwE output is then incorporated in the evaluation of fishery policy alternatives, with the optimal policy selected based on ecological and socio-economic factors.

This EwE analysis also represents the first multi-species, time-dynamic model of the Gulf of Nicoya. Results of this analysis can inform CoopeTárcoles R.L. and the conservation community of those factors that may contribute to the success of the Tárcoles RFMA. Lessons and insights gained from researching the Tárcoles RFMA can also supplement management efforts for other RFMAs established in Costa Rica.