

1 **Simulating Benefits, Costs, and Tradeoffs**  
2 **of Spatial Management in Marine**  
3 **Social-Ecological Systems**

4 **Supporting Information**

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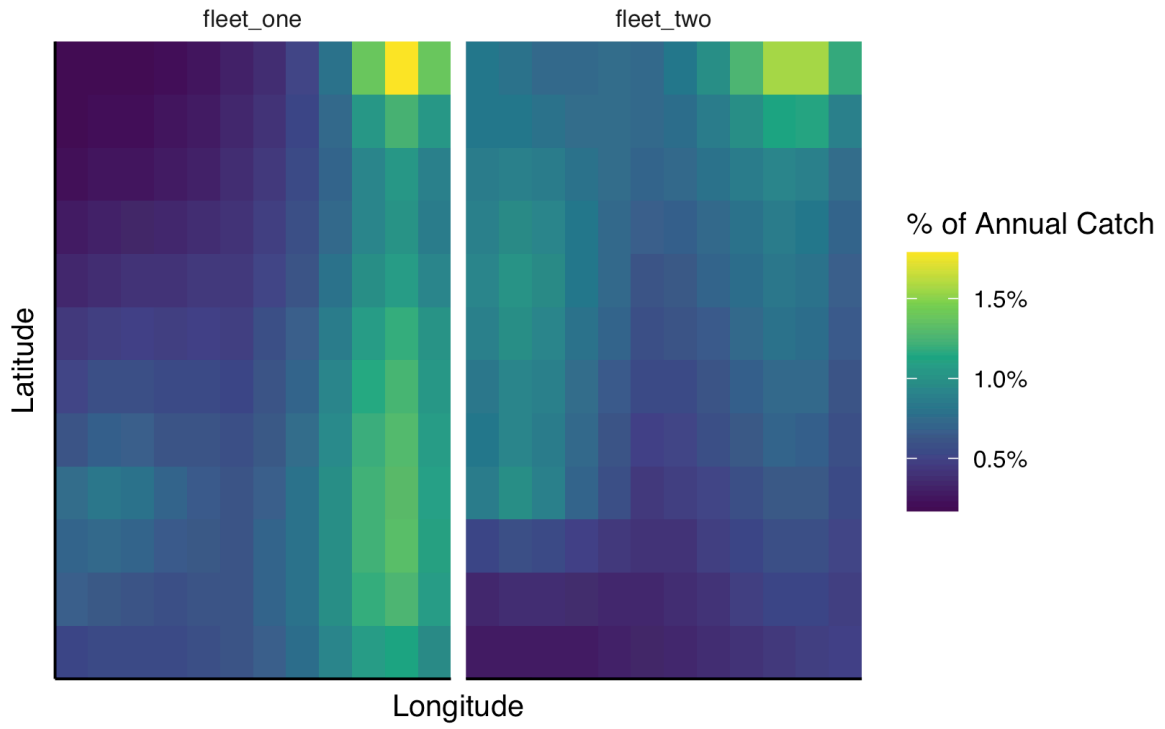


Figure S1: Distribution of annual catches by fishing fleet prior to MPAs under the coral reef case study simulation.

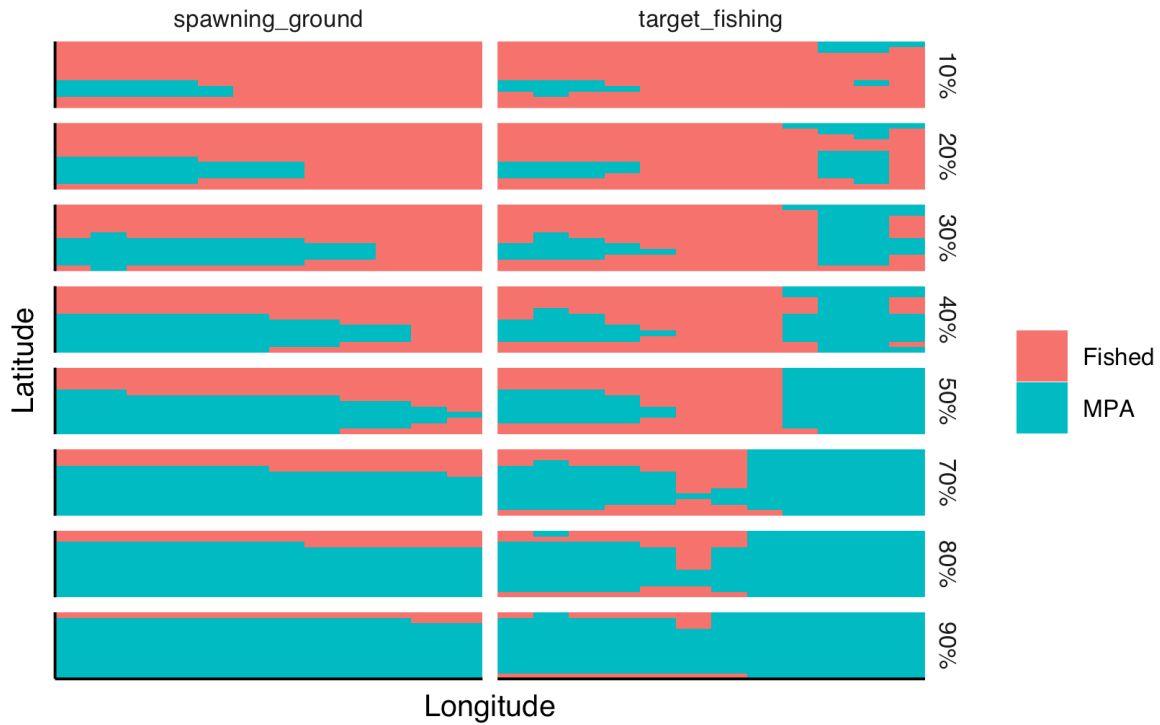


Figure S2: Location of MPAs under the *Spawning Ground* and *Target Fishing* placement strategies for the coral reef case study simulations. Columns indicate whether MPA was designed around location of spawning grounds, or locations where the most biomass of fish was caught. Rows indicate the percent of the simulation grid placed in a no-take MPA. MPA sizes between 10% and 90% plotted.

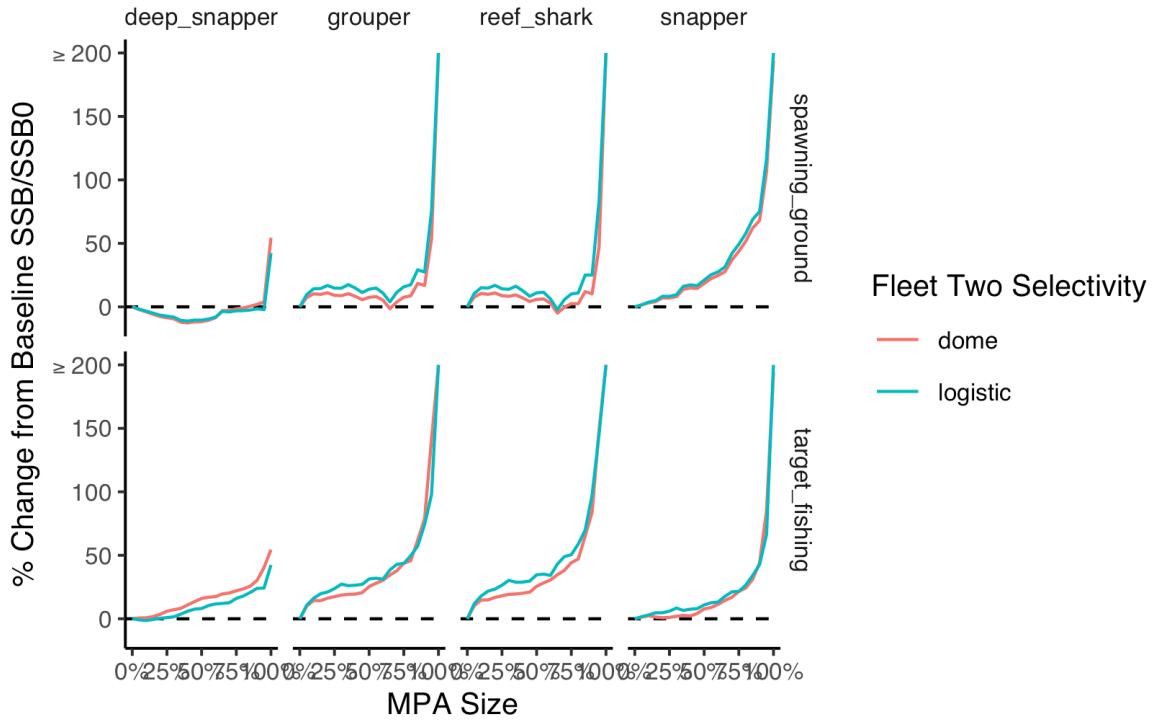


Figure S3: Change in SSB/SSB0 of simulated coral reef species relative to pre-MPA levels under alternative contact selectivity assumptions. ‘dome’ indicates that the contact selectivity of Fleet Two is assumed to be dome shaped for the snapper and grouper species (the default value presented in the main results). Logistic indicates that the contact selectivity of Fleet Two is assumed to be logistic (asymptotic) for all species.

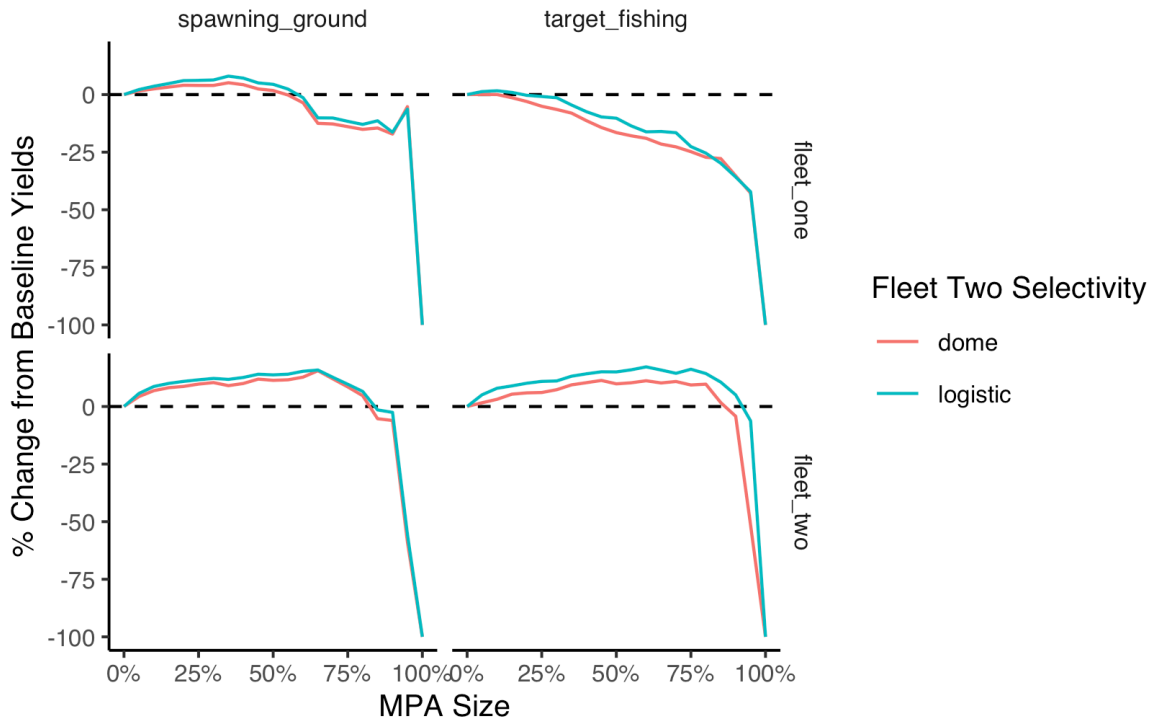


Figure S4: Change in total yield (biomass of fish caught) of simulated coral reef fishing fleets relative to pre-MPA levels under alternative contact selectivity assumptions. ‘dome’ indicates that the contact selectivity of Fleet Two is assumed to be dome shaped for the snapper and grouper species (the default value presented in the main results). Logistic indicates that the contact selectivity of Fleet Two is assumed to be logistic (asymptotic) for all species.

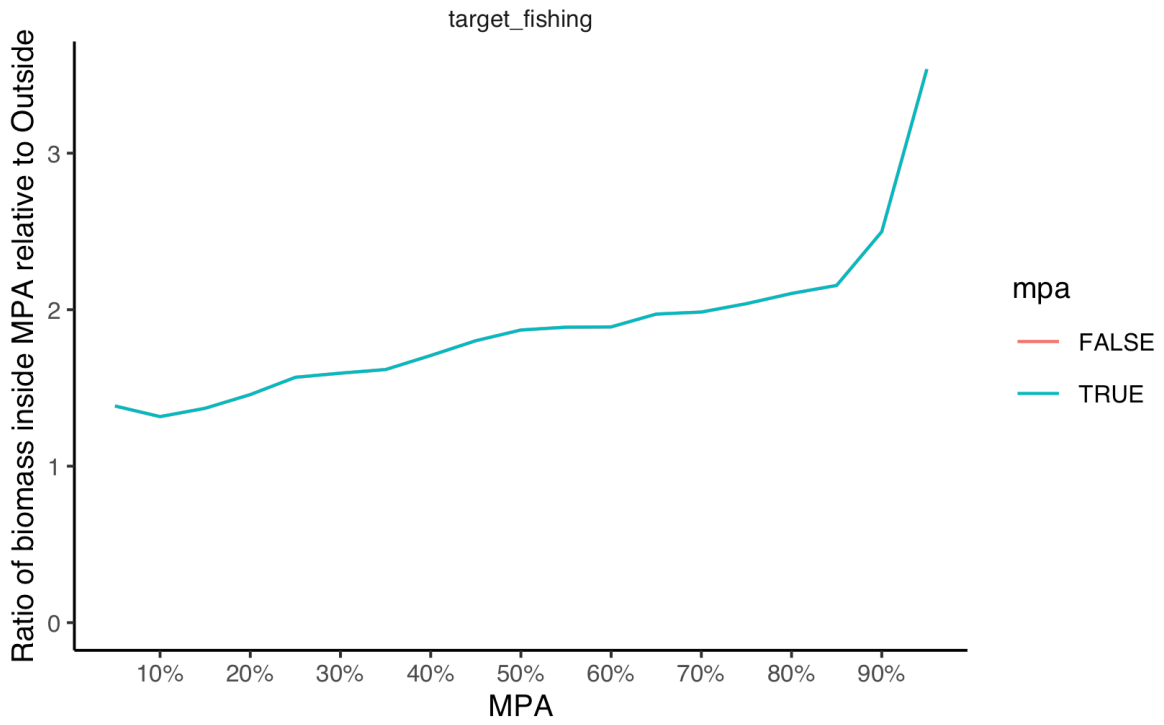


Figure S5: Ratio of mean biomass inside MPAs relative to mean biomass outside MPAs as a function of MPA size. Only *Target Fishing* strategy is shown as biomass is roughly perfectly confounded with MPA location in the *Spawning Ground* design strategy.

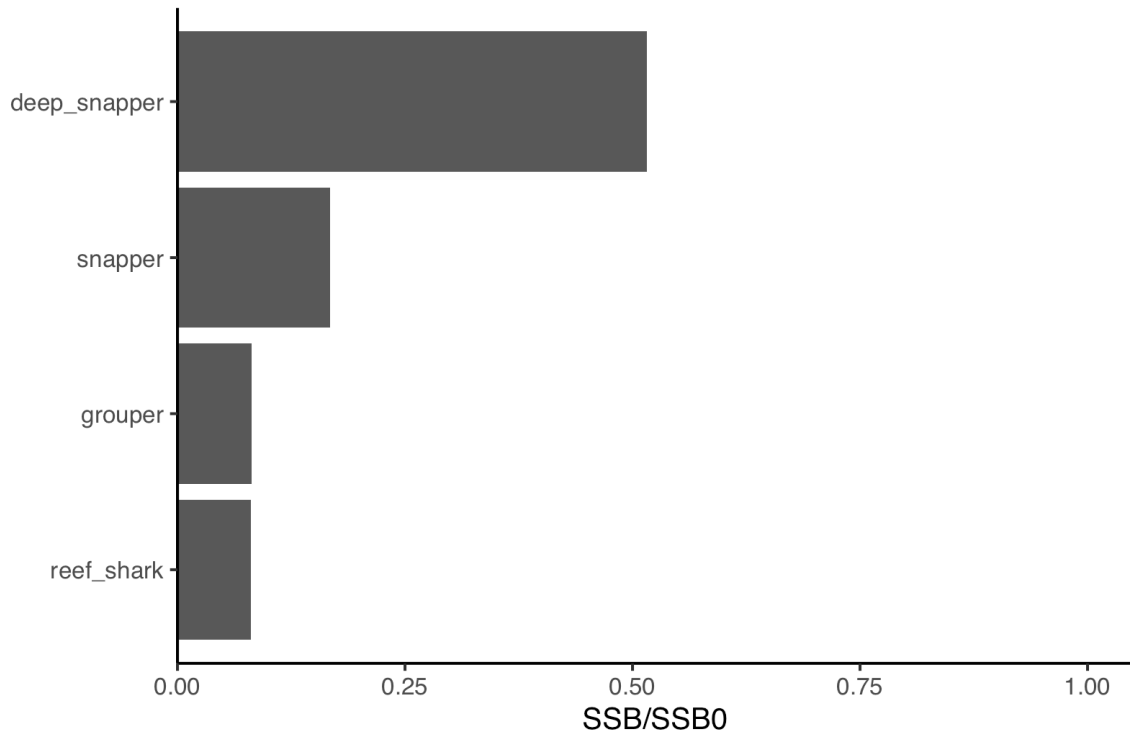


Figure S6: Spawning biomass divided by unfished spawning biomass in the time period prior to implementation of MPAs for the coral reef case study.