

Figure 1. Food web of a coral reef ecosystem as implemented in CAFFEE, including 27 functional groups and their trophic interactions (solid black arrows). Non-trophic transfers of organic matter (e. g. detrital transfers) are indicated by dotted lines. Extraction of pelagic resources by fisheries is shown in grey solid arrows.

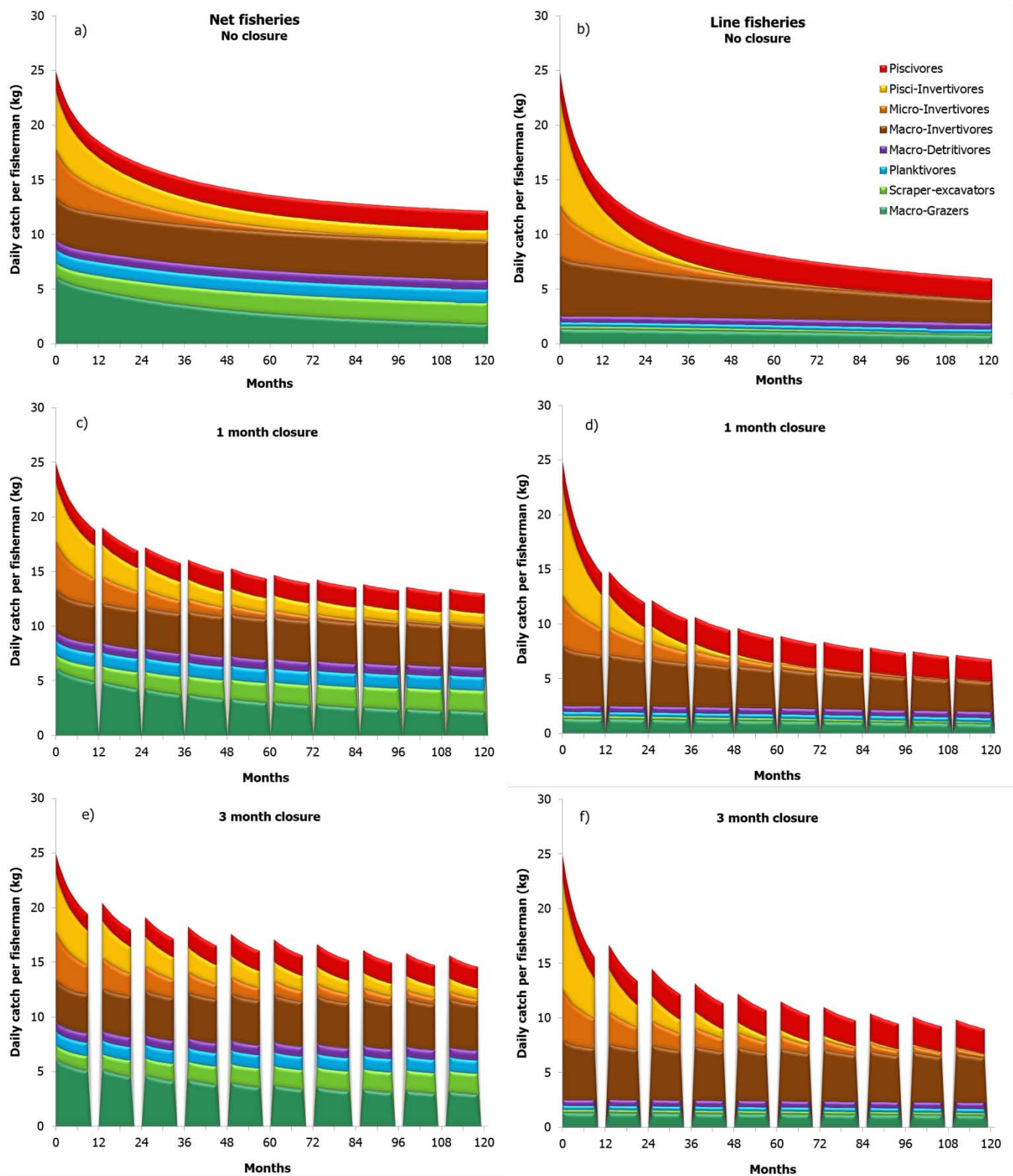


Figure 2. Effect of temporal closures on fisheries daily catch. Results of CAFFEE simulations on the medium-term (10 years) effects of closed seasons on gill net fisheries (left panels) and line fisheries (right panels). No closed season (a, d), 1-month closed season (b, e), and 3-month closed season (c, f).

All simulations assume a fishing effort level of 5 fishermen per km² and initial conditions corresponding to previously non-fished reefs.

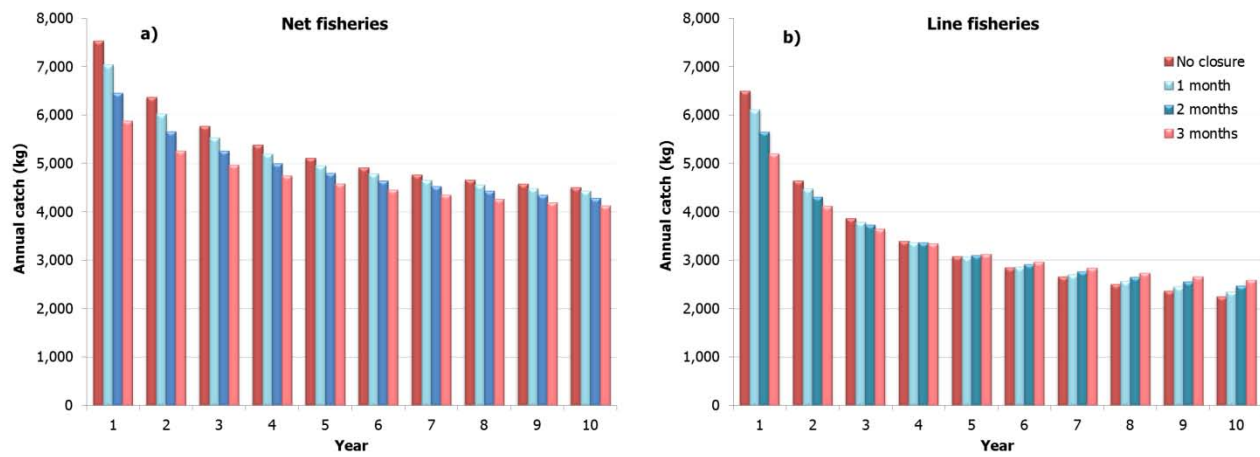


Figure 3. Effect of temporal closures on gill net (a) and hand line (b) fisheries annual catch.

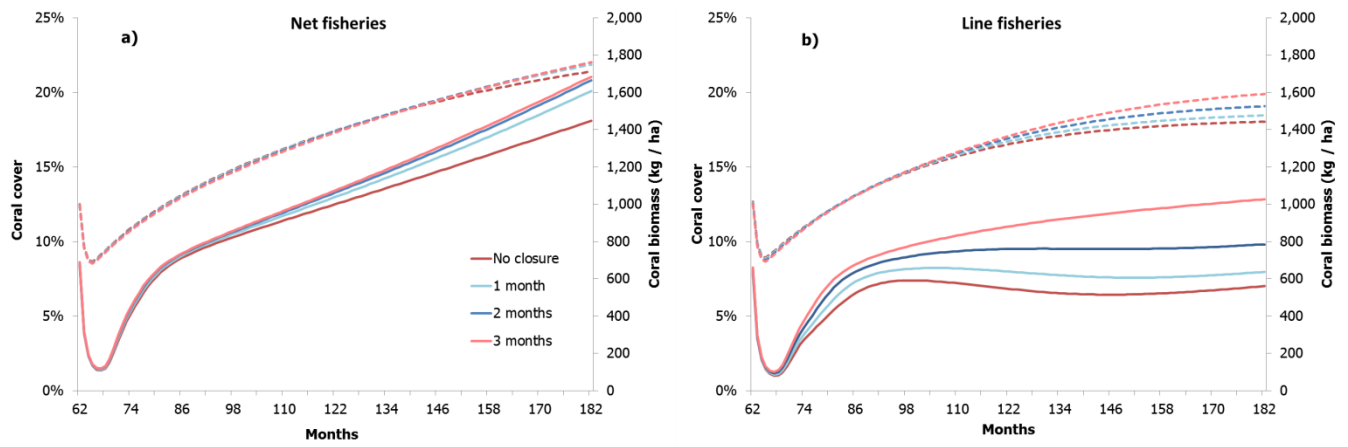


Figure 4. Changes in coral benthic cover and biomass after a severe bleaching event in the case of gill net (a) and hand line (b) fisheries managed with temporal closures. Dotted lines indicate coral cover and solid lines indicate coral biomass.

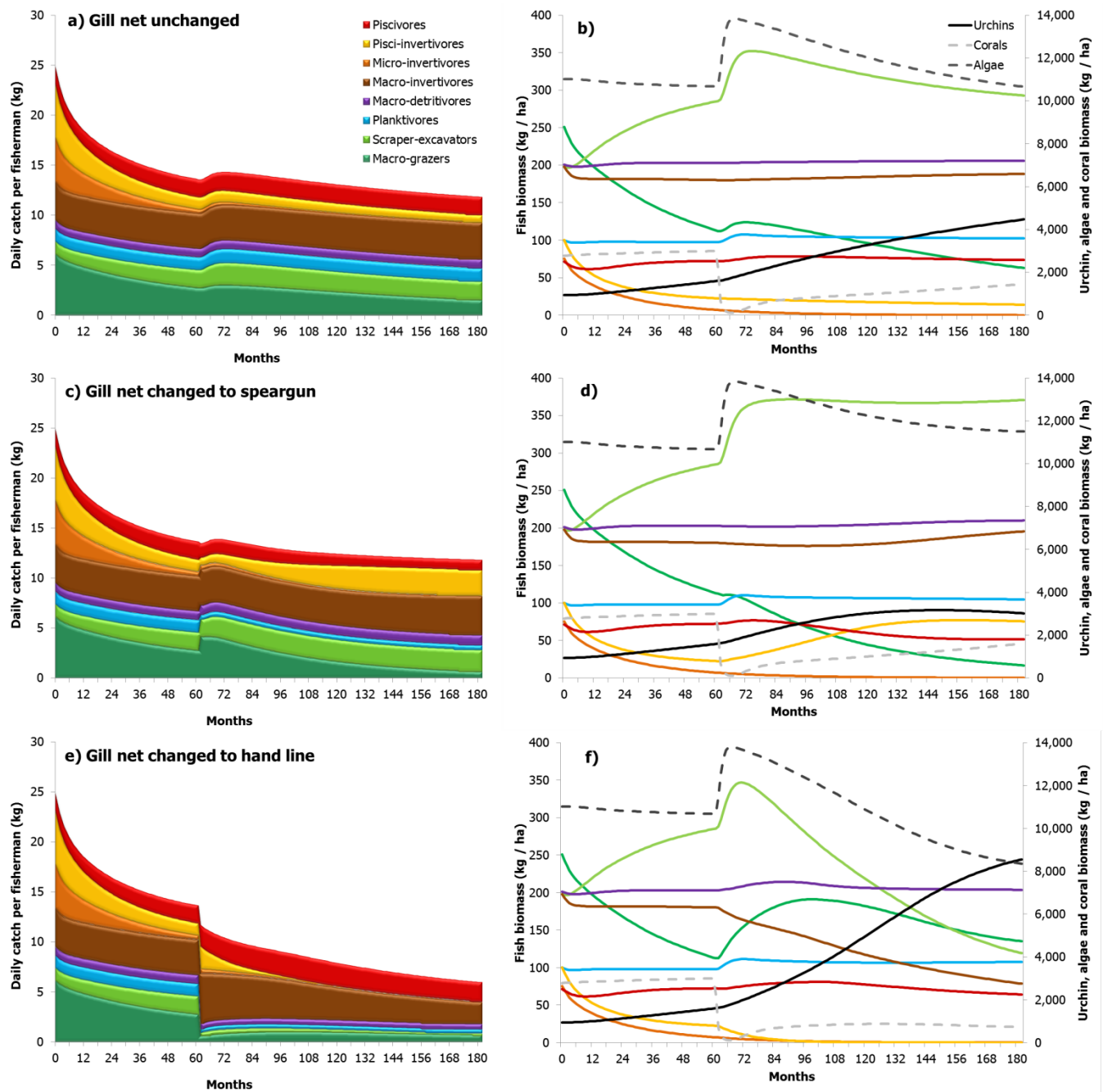


Figure 5. Effects of switching fishing gear after a bleaching event on fisheries catch and fish biomass. All simulations based on a coral reef supporting a gill net fishery with 5 fishermen per km² that experiences a single severe bleaching event (loss of 80% of symbionts) five years from the start of the simulation. Left panels indicate daily catch and composition and right panels show the biomass of fish, urchins, corals and algae. Gill nets were either unchanged (a,b), switched to spear guns (c,d) or to hand lines (e,f) after the bleaching event.

