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Disentangling the effects of climate, species, and management on growth and mortality of southeast Asian mangroves

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Mangrove forests are one of the most biologically important ecosystems of the littoral tropics. They provide a wide range of ecosystem services including tsunami protection, food production, and waste processing. They are also rapidly disappearing due to increasing rates of clearance for development and aquaculture. It remains unclear how mangroves will respond to changing climatic conditions. Here we discuss the results of a long-term study that explored the interacting effects of climate, species, and management practices on annual variability of growth and mortality of mangroves in peninsular Thailand. The 15-year study period included the extreme 1997-98 ENSO event that led to widespread drought-induced mortality and forest fires across the region, but which appeared to have little impact on the mangroves. Our results provide an important, and much-needed, framework for conservation and forest management planning in these mangrove forests given future concerns and uncertainty about climate change in the tropics.