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It is well established in the fisheries management literature that marine ecosystems are complex and marine species depend on one another. As a result, it is important to account for species diversity to ensure sustainable management. In addition, recent research published in the marine sciences literature has provided unequivocal evidence that fishing activities destroy habitats and inhibit production of planktons. This paper illustrates that if a conventional bio-economic model is employed, an optimum effort policy as opposed to quota appears to result in sustainable management even if fishing impacts carrying capacity. However, the so-called optimum effort may collapse the stock if species diversity is not accounted for. Conversely, if species diversity and the impact of fishing on carrying capacity are considered, neither the equilibrium quota nor effort may guarantee sustainable yield.

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