

## Cross-scale exploitation patterns and marine population collapse in international seafood markets

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Seafood is one of the most globalized food commodities with 40% traded internationally. Alarming, the majority of global fish stocks are either fully- (58.1%) or over-exploited (31.4%). Case-study evidence has attributed patterns of exploitation and fisheries collapse to globalized trade. Sea urchins and sea cucumbers (specialty, high-value species) have undergone rapid, sequential depletion of stocks around the world in a pattern that scholars have labeled, “roving banditry” or “contagious exploitation”. However, linkages between global trade and fisheries collapse have not been systematically tested across fisheries globally. From economic theory, international trade could also lead to stock recovery in some cases, by reducing fishing costs, increasing benefits relative to costs, and thus reducing optimal harvest rate. Clearer empirical examination linking international trade to fisheries collapse, as well as secondary interactions with marine social-ecological systems, is necessary for effective fisheries management in the modern era. In this project, we systematically test hypothesized patterns of exploitation, collapse, international markets, and bilateral trade agreements using paired comparative analysis of fisheries in two global databases (RAM Legacy Stock Assessment Database and the FAO Landings Database). We then add detail and context to these patterns using a case-study in North western Mexico. Our results will provide empirical evidence connecting globalized trade to fisheries status, will generate indicators for positive and negative effects of international trade and with that will help managers design fisheries management tools that account for ecological and economic factors in the context of globalized trade.

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