Title: **Strictly for the Birds? A Note on the Ecosystem Effects of the Collapse of the Pacific Sardine**

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Abstract: In the 1950s the Pacific sardine collapsed, and the fishery declined from a historical peak of over 600,000 metric tons in 1936 to less than 100,000 tons after 1951 and was virtually nonexistent for 25 years (1965-90). Despite this, the landings of sardine predators increased after the sardine collapse and fell as the sardine stock recovered. Using an error correction model it is nevertheless possible to identify individual species on which the sardine collapse has a discernible and expected effect. According to this, the landings of seven species (barracuda, bluefin tuna, giant sea bass, sheephead, skipjack tuna, white sea bass, and yellowtail) can be expected to decline with the sardine stock, but the effects are small. It is hypothesized that variations in the sardine stock mainly affects non-commercial predators such as marine mammals and especially sea birds. This poses severe challenges to an ecosystem-based management of the sardine fishery.