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Several field studies of marine birds (glaucous-winged gull breeding colonies) on Protection Island National Wildlife Refuge in the Strait of Juan de Fuca (State of Washington, USA) motivate mathematical “proof-of-concept” models designed to investigate plausible causal mechanisms of observed changes in population dynamics and life history strategies. This lecture will focus on one of these phenomena, namely, increased cannibalism in response to decreased environmental resource availability. Mathematical analysis of a model describing the dynamics of a cannibalistic population (using the Fundamental Bifurcation Theorem for matrix population dynamic models) shows that low resource availability and high cannibalism intensity result in a backward bifurcation and the creation of a strong Allee effect. The result is the survival of the population in a case when it would go extinct without cannibalism. (Received September 11, 2013)