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We use a single-species discrete-time model to demonstrate changes that introduction of the strong Allee mechanism and periodic exploitations have on compensatory and overcompensatory stock dynamics through comparison with corresponding models that lack such constraints. Periodic and constant exploitations simplify complex overcompensatory stock dynamics with or without the Allee effect. Both constant and periodic exploitations force a sudden collapse to extinction of fisheries systems that exhibit the Allee mechanism. However, in the absence of the Allee effect, fisheries systems decline to zero smoothly under high exploitation. (Received September 15, 2008)