

## Fisheries management of the spiny lobster *Panulirus japonicus* in Japan

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**Abstract** Among the palinurid lobsters caught in Japan, *Panulirus japonicus* is the most abundant and commercially important for fisheries. Coastal fisheries management system in Japan is characterized by the community-based management by fishermen organized in the fisheries cooperative associations (FCAs) which are exclusively granted coastal fishing rights under the authority of prefectural government. The management system in FCA is mainly based on spontaneous, self-motivating rules by fishermen, as well as compliance with the prefectural ordinance. Thus co-management of fisheries resources coordinated by fishermen and the government functions effectively as a fundamental framework. Management measures for lobster fisheries largely depend on “input control” and “technical measures”. They include: establishment of closed season or closed areas, introduction of various constraints for gear (type of nets, mesh size, thickness or quality of the net yarn, number of nets per boat), fishing recess around new-moon nights, rotation system of closed areas, limitation for allowable body size for landing, release of berried females or small individuals *etc.* In recent years, efficacy of the conventional management measures has been reinvestigated based on scientific management models, and some gaps between optimal measures and the actual ones are pointed out in some cases. A management model based on the optimal in-season allocation of fishing effort considering the shifts in market price, catchability, operation costs *etc.* was presented using the theory of maximum principle. Also, an optimal fishery model, which aims to integrate the effective utilization of recruited stocks and the reproductive management, was proposed by introducing a concept of economic value of the spawning stock. More detailed scientific examination should be intended to clarify the efficacy and the mechanism of the traditional management measures derived from the spontaneous activities by fishermen.

**Key words:** spiny lobster, *Panulirus japonicus*, fishery management

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