

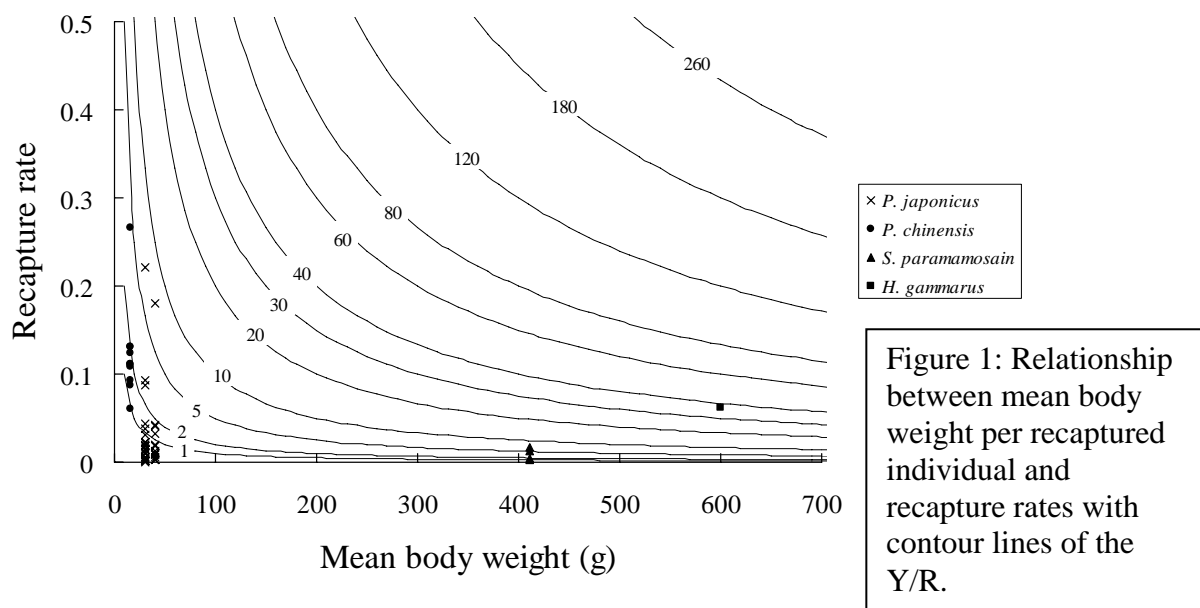
EVALUATION OF STOCK ENHANCEMENT PROGRAMMES FOR DECAPOD CRUSTACEANS

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To evaluate the potential of stock enhancement programmes for decapod crustaceans, we examined recapture rates and yields from released individuals (Y/R) of four species for which the effectiveness of stocking programmes has been intensively surveyed: the penaeid prawns *Penaeus japonicus* (Hamasaki and Kitada, 2006) and *Penaeus chinensis* (Xu et al., 1997); the mud crab *Scylla paramamosain* (Obata et al., 2006); and the European lobster *Homarus gammarus* (Agnalt et al., 2004).

The recapture rate is the ratio of the number recaptured to the number released. Y/R is calculated by multiplying the recapture rate by the mean body weight (g) per recaptured individual. The estimated recapture rates were plotted against the mean body weight for each species in Figure 1 with contour lines of the Y/R. Maximum values of the recapture rates were higher for the penaeid prawns than for the other species. However, the recapture rates were low in many cases for *P. japonicus*, which were similar to *S. paramamosain*. The higher values of Y/R tended to be obtained at lower recapture rates for the large-sized *S. paramamosain* and *H. gammarus* species than for the two small-sized penaeid prawn species.



Although the recapture rates were low for *S. paramamosain*, the release of juveniles might affect areas with small stocks due to its higher Y/R, because this crab is distributed in restricted areas such as bays and estuaries. This scenario might also be inferred for *H. gammarus*, which had the highest Y/R and does not generally migrate from the release site. On the other hand, a large-scale release and/or higher recapture rates (= survival rates) would be required to augment the total production of penaeid prawns, even in small populations. Local populations of large-sized species with a limited distribution should be targeted when undertaking stock enhancement programmes for decapod crustaceans.