

Impact of Pacific white shrimp culture on wild population of Tiger shrimp in Andhra Pradesh

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Andhra Pradesh is the leading producer of shrimp through aquaculture in India where production was 279727 t in 2014-2015 (MPEDA). The bulk of it (276077 t) came from the Pacific white shrimp,

Litopenaeus vannamei production. This species is a relative new comer to the aquaculture scenario of Andhra Pradesh with official recorded production starting from 2009 onwards. By 2013 majority of

the hatcheries in Andhra Pradesh were involved in seed production of the Pacific white shrimp.

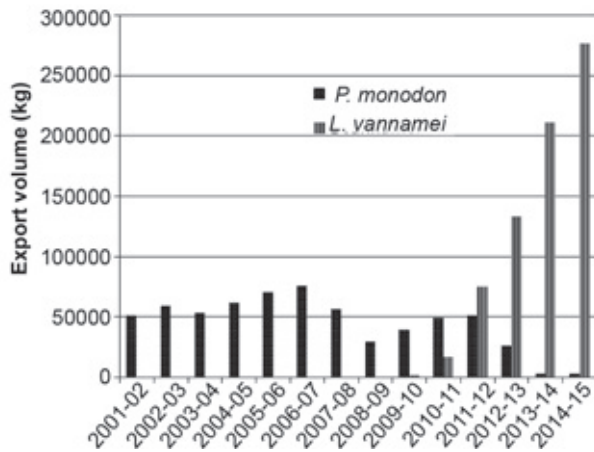


Fig. 1. Export volume (kg) of *P. monodon* and *L. vannamei* from Andhra Pradesh (Source: MPEDA)

Before the advent of the Pacific white shrimp, the bulk of Andhra Pradesh's shrimp production came from the Tiger shrimp, *Penaeus monodon*. The culture industry depended on two sources for *P. monodon* culture - broodstock collected from the wild and seed collected from the wild. During the peak culture periods of Tiger shrimp (1995-2005), targeted fishing for gravid broodstock of Tiger shrimp existed when nearly 100-150 brooders were landed daily fetching anywhere from ₹ 2000 to 30,000 per piece (Sreeram *et al.*, 2004, *Journal of Indian Fisheries Association* 31: 37-46). This led to concerns that rampant broodstock collection from the wild would have deleterious effects on the wild populations of Tiger shrimp.

However, the Tiger shrimp has taken the back seat in the aquaculture scenario of Andhra Pradesh presently. A survey of traders and fishermen was carried out during August 2015 in Visakhapatnam, Kakinada and Machilipatnam to understand the current status of broodstock trade of *P. monodon*. As per this information, at Visakhapatnam the

demand for broodstock which was nearly 1.5 lakh pieces per year, has come down to only 5000 pieces per year with a brooder fetching only ₹ 1500 to ₹ 3000. Targeted fishing for broodstock of Tiger shrimp is being carried out only if demand exists. Presently demand for broodstock of *P. monodon* comes from some hatcheries in Odisha and West Bengal and very few hatcheries in Andhra Pradesh are working with this species currently.

It is expected that reduced fishing of Tiger shrimp brooders will have a beneficial impact on wild populations of the species. An analysis of trawl catch rates reveals this to be the case. During 2000-2005 the average annual catch rate of *P. monodon* in *Sona* boats off Visakhapatnam was 0.0656 kg/h. Further from 2008 to 2013 there was a steady decline in the catch rate of *P. monodon* from 0.217 kg/h to 0.067 kg/h. During 2014 however the catch rate of *P. monodon* increased to 0.315 kg/h and during

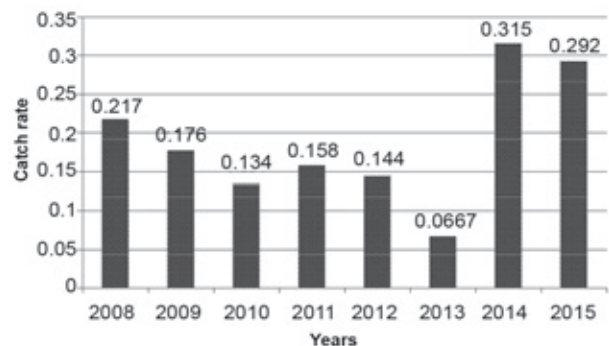


Fig. 2. Catch rate (kg/h) of *P. monodon* in trawlers operating from Visakhapatnam

January-June 2015 period it was 0.292 kg/h. The increase in catch rates is probably an indicator of increased presence of *P. monodon* in the wild. Thus the reduced demand for Tiger shrimp brooders due to *L. vannamei* culture has probably resulted in more seed production in the wild leading to higher recruitment to the fishery and consequently led to a resurgence of its catch rates in the capture fisheries sector.