

The Impact of Mining Marine Sand on the Sand Lance Population in the Seto Inland Sea - A Review

Nagai, Tatsuki.

Nat. Res. Inst. of Fish. and Env. of Inland Sea, Hiroshima, Japan

The marine sand of six hundred millions m³, i.e. 12 thousands cubic volume of the Kasumigaseki building, has been mined in the Seto Inland Sea for the past 30 years. The sand extraction flourishes remarkably in the Bisan-Seto where is the biggest spawning area of the sand lance, *Ammodytes personatus*, in the Seto Inland Sea. The sand lance having the peculiar behaviour of sleeping during summer in the sandy sea floor, the decrease of sandy sea bottom area is to result in the decrease of sand lance population.

According to the report by Kagawa prefecture, the sand lance biomass in 1997 and 1998 decreased one sixth compared that in 1980 when the fish abundance was high. On the other hand, the mining area and the affected area of drain (SS>25mg/L) spilled by mining ships were accounted for more than one fourth of the suitable area for spawning in winter and sleeping in summer (410 km²). The decrease of sand lance population in the Bisan-Seto seemed to be influenced by mining marine sand in the area. The sand lance is important as prey for carnivorous fishes such as red sea bream and Spanish mackerel.

The author will review on some assessment works concerning the impact by sand extraction on the sand lance population in the Seto Inland Sea, and discuss the effect of fish production in higher trophic level.