Decay process of sea turtle-falls and their related ecosystems

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Molecular studies on some organisms included in the whale-fall community suggested that the origin of the vent- and/or seep-restricted animals have come from through environments formed around such organic-falls. In this point of view, the reptile-falls would be more important than the whale-falls because of its longer fossil record than the marine mammals. The ecosystem on the reptile-fall hasn’t been studied in details. Thus, we examined the decaying process of four sea turtles deployed on shallow sea floor (11 to 14 m in depth) in Tsukumo Bay, Noto Peninsula, Japan. Two small carcasses were observed by scuba, and some bones of the carcasses were recovered time to time to examined organisms which lived on/in the bones. As a result, 5 days after deployment, the sea turtle carcasses were covered by white microbial mat (Bggiaioa spp., of sulphophilic stage). 21 days after deployment, the carcass was eaten by fish (mobile scavenger stage). Zoothamnium sp. (sulphophilic stage) was observed on the carcass. 36 days after deployment, dorvilleid and nereidid polychaetes (opportunistic stage) lived in the bones and barnacles (Crustacea; reef stage) were attached to the bone. Thus, all four stages of ecological succession observed on whale-falls have also been observed on the sea turtle falls within 36 days after deployment. It is noteworthy that the sea turtle-fall sustained chemosynthetic community as same as whale-falls. We also document opportunistic and sulphophilic stages occurred simultaneously but in different places, i.e. inside and surface of the bone respectively.