

Ecological study of Whale and Marine mammals using radiocarbon

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North Western Pacific including off Japan is rich in biodiversity due to high productivities induced by ocean currents such as Oyashio and Kuroshio. Marine mammals are living in this part of ocean and their ecology have been gradually revealed because of advances in technology such as GPS tagged logging devices. In Hokkaido, stranding of marine mammals are reported occasionally and *The Stranding Network Hokkaido* have been conducted their activity documenting species to better understand their ecology. However ecological information of stranded individuals had not been able to disclose as is an critical data to preserve the marine ecological systems.

Radiocarbon is produced in upper atmosphere and distributed around the world via carbon cycles. North Pacific ocean waters have distinct radiocarbon values because of global ocean circulation. Namely radiocarbon depleted water is existed in Oyashio region due to the influence from upwelled deep Pacific water, whereas higher radiocarbon is characterized in the Kuroshio region.

A single stage accelerator mass spectrometry was installed at Atmosphere and Ocean Research Institute, the University of Tokyo since 2013 and radiocarbon measurements for large number of samples now can be achieved. We have been applying radiocarbon based ecological study for marine organisms including stranded marine mammals. The results show clear picture where they have been migrated as well as their dietary information and we introduce several recent results using this techniques.

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