

ビデオロガーを用いた回遊中のキタゾウアザラシの採餌行動に関する研究

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Prey species of female northern elephant seals during their post-breeding migrations, as observed by video data loggers.

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Northern elephant seals migrate long distances over the North Pacific Ocean. Relatively little is known about the diet of this species during its long migrations. In this study, we aim to identify where and what female northern elephant seals forage on during their oceanic migrations. We tracked seals' movement with satellite telemetry, and also obtained underwater video footages with newly developed jaw- or head- mounted video data loggers. We set three-step triggers to start recording of the video loggers: 1) delay timer, 2) depth (depth deeper than 300m, 400m, or 800m), and 3) certain acceleration signals associated with feeding, to save battery consumption. Fieldwork was conducted at Ano Nuevo Nature Reserve in the post-breeding seasons of 2013 (n=2 seals) and 2015 (n=8 seals). We attached 9 head-cameras (2013, 2015) and 1 jaw-camera (2015) on the seals. We recorded 28.8 h of video footage in total and observed 1190 prey items from the 10 seals. Fish dominated the prey composition (c. 80% of all items), followed by cephalopods (3%) and crustaceans (0.6%). Unidentified other prey group also occurred (13%). Seals appeared to forage at deeper depths (>600m) on cephalopods than on other prey groups. Seals foraged on fish and cephalopods over the coastal as well as pelagic part of their migrations. In contrast, they foraged on crustaceans only in coastal part (70-370 km from the coast). A previous study reported that northern elephant seals forage more on cephalopods and crustaceans than on fish, based on stomach content analysis, which inevitably has biases toward recently-fed items and items with hard-parts (e.g. squid beaks). Our new results based on in-situ video observation contrast with the previous study, and suggest that fish may be more important as prey for elephant seals than previously thought.