

Multidimensional Tracking of Giant Pacific Octopuses in Northern Japan Reveals Unexpected Foraging Behaviour P. Robin Rigby, Yasunori Sakurai

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Abstract:

Most marine populations are in decline (Pauly, 2000; Leon, 2003) and reports of stable or increasing stocks are viewed with some scepticism (Myers and Worm, 2003).

Compensation for decreasing fish stocks by cephalopod populations has been theorized and reported (O'Dor, 1998; Chotiyaputta et al., 2002). Around Hokkaido Island (northern Japan), catch per unit effort (CPUE) of *Enteroctopus dofleini* is relatively stable (Hokkaido Fisheries Annual Report, 1986-2001). Decreasing inter-specific competition for food, reduced predation pressure by large fishes and a prevailing temperature regime are possible factors in the stability of the *E dofleini* catch rate; but so is the flexible behaviour of octopuses. Neural and behaviour studies (Young, 1961; Mather, 1994; Yamazaki et al., 2002) have alluded to the benefits of the adaptability of octopus behaviour, but no suggestions are as succinct as our findings during a recent radio acoustic tagging study where tagged octopuses stayed in smaller home ranges for longer periods of time than expected (Mather et al., 1985) while feeding off of a gill net. We propose that these findings have direct implications to understanding of the ecology of the species and are an example of why *in situ* monitoring provided by Radio Acoustic Positioning (RAP) technology is an essential part of the planning, and implantation of regional management plans and the development and monitoring of marine protected areas.