

WHY LEAVE A FEEDING PATCH: PATCH CHOICE, PATCH DEPLETION AND NUTRIENT MIXING IN PERUVIAN TAMARIN MONKEYS (*Saguinus mystax* and *Saguinus fuscicollis*)

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Tamarins are small-bodied primates whose diet includes ripe fruit, insects, nectar, and plant exudates. These resources differ in nutritional content, seasonal availability, patch size, rates of renewal, and require different foraging strategies for their efficient acquisition. Models of optimum foraging generally assume that foragers leave a patch when food is depleted, falls below the average value of patches in the habitat, and/or the forager is satiated. In this study we present the results of a 7 month field study of tamarin diet, patch choice, and patch productivity to examine the question: Why leave a patch? Data on tamarin feeding behavior was collected at 2 minute intervals throughout the day (N=3180 feeding records). Feeding bouts were scored as satiation (when after feeding, tamarins rested or engaged in social interactions for > 30 min), nutrient mixing (when tamarins fed on one food type and then switched to a different food type), or patch depletion (when the tamarins left a food patch and then traveled to another tree of the same species to feed and did not revisit the patch the same day or the following day). Results indicate that nutrient mixing accounted for 46.9% of all feeding bouts, with switching from fruit to insect most common. In only 14.6% of cases were tamarins scored as satiated. We argue that resources exploited by tamarins are not nutritionally interchangeable and that requirements of nutrient-mixed need to be considered in understanding primate responses to resource scarcity and distribution.

Keywords: foraging strategies, decision-making, nutritional ecology