

OUT OF THE TROPICS: ECOLOGICAL ADAPTATIONS OF TEMPERATE PRIMATES

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Temperate forest is a habitat for various lineages of primates, including those in East Asia, South Asia, South Africa, North Africa, Madagascar and South America. In order to generalize the ecological adaptation of temperate primates, I review the characteristics of temperate forest and its possible implications for temperate primates. Fruit production in temperate forest is smaller than in tropical forest. Proportion of fleshy fruits is smaller in temperate than in tropical forests. Fruiting phenology in temperate forest is more seasonal, having several months a year with no fruits at all, but it is more annually periodic than in tropical forest. In response to these habitat characteristics, Hanya (2004) proposed two dietary adaptations to survive in temperate forests based on the study of Japanese macaques. First, they need to develop the capacity to cope with low-quality fiber-rich food (e.g. mature leaf), to survive the long fruit-poor period. Second, preference for high-quality foods (fruit and seed) is also useful because excess food intake can be saved as fat to survive in the fruit-poor winter. Since the fruiting phenology and climate are highly annually cyclic in temperate forests, it is possible for animals to predict when to start fat deposition and how long a food shortage will last. Assumptions behind these adaptations are discussed in order to clarify whether these adaptations are seen in other lineages of temperate primates, such as golden monkeys.

Keywords: temperate forest, fruiting phenology, diet, macaques