Seasonally consistent small home range and long ranging distance in Presbytis rubicunda in Danum Valley, Borneo

Abstract

Seasonal fluctuation in food availability is a universal problem for wild animals. One common response to dietary changes is to modify ranging patterns. We studied the ranging pattern of one group (8–12 individuals) of red leaf monkeys (Presbytis rubicunda) in the lowland dipterocarp forest of Danum Valley, Borneo from December 2006 to December 2008. The seasonal availability of fruits varies significantly in this forest because of mast fruiting. We tested the hypothesis that changes in ranging pattern are linked with seasonal changes in diet in this species. We recorded activity, foods eaten, and location every 10 min from around 06:00 until 16:00 h, 5–10 days/mo. The home range size was 21.4 ha over the 25-mo study (95% kernel contour). There were no statistically significant relationships between feeding times on the four major nonexclusive dietary components (all species of seeds, all species of young leaves, young leaves of Spatholobus macropterus, and other species of young leaves) and either the home range (95% kernel contour) or the core area (50% kernel contour). The areas used in the seed-eating and non-seed-eating seasons overlapped to a large extent. The daily path length was 1160 ± 340 m (mean ± SD, range: 550–2140 m). Neither daily path length nor monthly mean travel rate was significantly related to feeding time on any of the four major dietary components. The group's ranging patterns may be related to the unusual fallback strategy of this population, which depends on the young leaves of an abundant liana (S. macropterus), which are available in small patches. The monkeys need only a small home range because of the high abundanceof these leaves. However, they range a relatively long distance because the patches of S. macropterus are easily depleted; thus the ranging distance does not decrease in nonseed-eating periods.