

Spatial information use by foraging bellbirds (*Anthornis melanura*)

Miss Jennifer Dent¹

¹*Lincoln University*

Nectarivores rely on floral resources whose availability, quality and quantity can vary both spatially and temporally. Thus, they must constantly make foraging decisions about which resources to visit, partly as a function of the nectar reward. The uncertainty of these decisions would be greatly reduced if individuals could remember information about the location and quality of specific resources. In this study we carried out a series of experimental trials to determine whether the foraging behaviour of bellbirds (*Anthornis melanura*) is informed by previously collected spatial information. Bellbirds were trained to use artificial sugar water feeders at five sites throughout Christchurch and Akaroa. During each trial an array consisting of four identical feeders was erected and birds were allowed to visit over the course of a day. The sugar water content of each feeder was manipulated so that one feeder had a high concentration reward (20% sucrose) and the other three feeders had lower concentration rewards (5% sucrose). Each trial consisted of two phases; a search phase and a return phase. During the search phase birds were allowed to freely search the array until the high concentration feeder had been sampled. After this single learning event, the revisitation behaviour of individual birds was assessed in the return phase. Preliminary results indicate that in the search phase subjects performed no better than expected by chance, indicating that they were not using intrinsic cues such as smell or sight. In the return phase, although there was some individual and sexual variation, subjects performed significantly better than expected by chance. This suggests that information gained during the single learning event was being used to inform subsequent visitation behaviour. The next phase of this research will examine the role of additional factors such as visual cues and concentration gradient in the accuracy of memory formation.