Title

Birdsong variation as a source of information for migrating common yellowthroats

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Abstract

Social information affects the movement decisions of animals and is often an essential factor in habitat selection. Social information should be especially relevant to long-distance migrating birds that navigate over long distances through unfamiliar habitats to find resources to survive. This information likely varies in both availability and importance at the different spatial scales relevant to migrating birds. Using the common yellowthroat as a case study, I tested whether cues might be available in the songs of locally breeding birds at the continental, within-site, and within-territory scales. At the continental scale, I described the geographic variation in song among genetic groups and subspecies, which may provide useful information for migrants navigating across the continent. I found differences in song structure including the duration of silences between notes, number of notes, and bandwidths which might provide cues. Additionally, bandwidth was related to habitat density. At the within-site scale, I tested whether there is a relationship between song, habitat structure, habitat quality, bird size, and bird quality. I found no evidence that song variation is an available source of information about habitat type or quality to migrants exploring habitat variation at the within-site scale. At the same scale, I tested whether migrating common yellowthroats use the presence of song to find habitat by broadcasting song recordings in suitable and unsuitable habitat patches, but did not lure any migrants. However, when I compared the distance between local singing males and the capture locations of migrant common yellowthroat in a passive mist-netting array to the distances expected by chance, I found that migrants were further away from singing local males than expected, perhaps to avoid costly aggressive interactions. At the within-territory scale, I tested whether a singer's location is predictive of microhabitat structure or food abundance, and whether song rate or duration is predictive of a local male's activities. I found that the location of a singing bird may provide migrants with information about the location of food and structurally denser habitat. Song variation may also predict the likelihood of attack should a migrant intrude in the local male's territory.

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