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The community ecology of *Ribautodelphax imitans*, a rare UK planthopper in a distinct grassland habitat

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Ribautodelphax imitans is a rare planthopper (Delphacidae) in the UK; one of just a handful of Auchenorrhyncha recognised as a conservation priority. After the species was discovered on Coe Fen, Cambridge (an extensively managed meadow in the centre of Cambridge) a study was started to understand more about its ecology and how this could be later fed into its conservation. In the first study year (2012), systematic random sampling of the site occurred April to October, in which all adult Auchenorrhyncha were collected and identified. This helped establish the size of the *R. imitans* population, whilst illustrating how other species overlap with *R. imitans*. Subsequently information on Coe Fens plant biodiversity was incorporated into a series of field based modelling and lab based experimental approaches. One of the key structural characteristics that *R. imitans* appeared to respond to were tussocks of its host plant *Schedonorus* (= *Festuca*) *arundinaceus* with only weak responses to non-tussock *S. arundinaceus* observed. This highlights the importance of mature tussock forming *S. arundinaceus* in *R. imitans* conservation. The strength of fidelity towards tussocks was increased by shorter surrounding sward heights, indicative of microhabitat preference and refugia utilisation. Within tussocks a negative response to cutting was recorded, however no patterns were observed for *R. imitans* attributed to small numbers collected. In experimental manipulations, the positive response to tussocks was increased by nitrogen input, whilst sward density was the most important structural characteristic Delphacidae responded to. Data collected in 2011 suggested that there was considerable spatial and temporal overlap between *R. imitans* and other delphacids, illustrating possible interspecies interactions. This discovery fed into various interaction experiments with more abundant species including *Javesella pellucida* the results of which are also discussed.