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The arrival of the water ladybird *Anisosticta novemdecimpunctata* (Coleoptera: Coccinellidae) in the Greater Glasgow area, Scotland

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The Scottish distribution of the water ladybird, *Anisosticta novemdecimpunctata* (Linnaeus, 1758), is limited to the southern part of Dumfries and Galloway, according to reference books published in recent years (for example: Duff, 2016; Roy, 2018). The National Biodiversity Network (NBN) Atlas at the time of writing tells the same story (NBN, 2023a). Recently, however, it has been observed at several locations in the Greater Glasgow area, so it seems appropriate to note this change as an example of the northward expansion of a number of insect species, perhaps due to climate change. The water ladybird, as its name suggests, lives in tall waterside vegetation in wet habitats, such as fens and marshes, where it feeds on aphids, and overwinters in grass tussocks and leaf sheaths (Duff, 2016). It is relatively small (ca. 4 mm in length), buff or red in colour with 14-19 black spots on the elytra, and six on the pronotum; it is more elongated and flattened than most ladybirds (Fig. 1).



Fig. 1. Water ladybird (*Anisosticta novemdecimpunctata*), Auchinlea Park, Glasgow, Scotland, 9th June 2023. (Photo: N. Digruber)

The water ladybird was first observed in the Greater Glasgow area at RSPB Baron's Haugh Reserve in September 2020 by Davie Abraham on reedmace ("bulrush", *Typha latifolia*) between the "Causeway" & "Phoenix" hides. This was a single individual. There have been sightings by the same observer on the Reserve in each subsequent year to 2023, including one record of ca. 12 individuals in 2021. And in May 2022, Davie Abraham reported another two individuals on emergent vegetation in the large pond beside the M74 service area at Hamilton Low Parks Local Nature Reserve (LNR).

It was first observed in Glasgow in May 2023 by Nicole Digruber at Auchinlea Park in the Easterhouse area (Fig. 1). In September, I myself swept one from emergent vegetation, mainly reed canary-grass (*Phalaris arundinacea*), in the recently constructed Sustainable Drainage System (SuDS) pond at Hamiltonhill Claypits LNR.

It is highly possible that the northward spread of this species is due to the effects of climate change, in particular the increase in average monthly temperatures. The limiting factor is presumably the temperature in the hills between the Solway lowlands and the central Scottish lowlands. It would be interesting to look for this species in other suitable waterbodies such as at Lanark Loch and the pools alongside the Douglas Water, both South Lanarkshire, particularly those at Douglas Castle Estate, and further downstream at Douglas Water village, which are likely to have suitable "fenny" margins. Now, of course, we should also look out for it in the northern part of the Glasgow conurbation, particularly at Possil Loch Scottish Wildlife Trust (SWT) Reserve, and at Bardowie Loch, Kilmardinny Loch LNR in Bearsden, both East Dunbartonshire, and perhaps even as far north as Loch Ardingning SWT Reserve near Strathblane, Stirlingshire.

However, the relationship between ladybirds and temperature is complex. For example, in species such as the water ladybird, which undergo a winter diapause (hibernation), warm spells during the winter can rouse the insects into activity at a time when food is scarce, resulting in them using up stored energy resources, and increasing the risk of winter mortality (Roy, 2013).

The general status of the water ladybird in Britain is that it is "declining" (Duff, 2016; Roy, 2018), so it is encouraging to see it apparently flourishing in new locations in this area.

The records mentioned have been submitted to the NBN and now appear in the NBN Atlas (NBN, 2023b), which also corrects an erroneous record at Balloch Castle Country Park.

I am grateful to Davie Abraham for first alerting me to the presence of this species in the Glasgow area and then keeping me updated, and to Nicole Digruber for details of her Glasgow observation.

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