

Habitat preferences exhibited by Downy Emerald *Cordulia aenea* at Bomere Pool

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Bomere Pool was surveyed on 10th June, 2013. Conditions were sunny with cloud and a light breeze. The aim was to record the presence of the Shropshire Odonate axiozoan *C. aenea* and to map the bay areas where males were holding territory and where females were ovipositing. As observed in 2012 individuals were present predominantly at the south eastern and north western ends of the mere (Fig.1). Five territories were observed which are outlined below. No ovipositing females were seen.

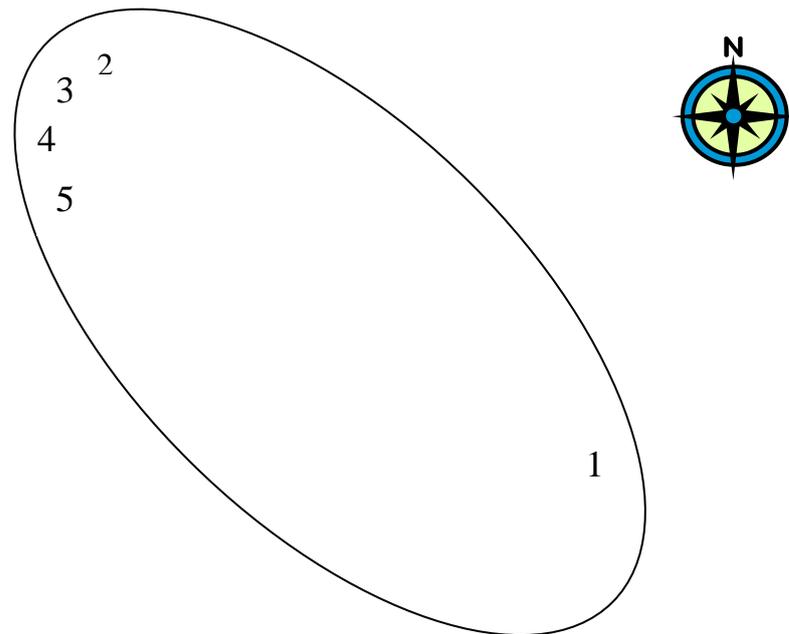


Fig.1. A diagram of Bomere Pool showing the 5 locations where male *C. aenea* was observed holding territory.

Territory 1(Fig 2): Stands of tall vegetation in bare sandy substrate. Male *C.aenea* observed flying back and forth across this corner of Bomere Pool. Very unlikely to be a succesful breeding site due to lack of leaf litter providing larval habitat. Male possibly feeding as many midges present though this is usually done at canopy height in the surrounding deciduous woodland. Only undulation present in shoreline caused by the vegetation stand extending into the water forming a small bay area.



Fig.2. Territory 1 Bomere Pool

Territory 2 (Fig 3): Male *C. aenea* patrolling repeatedly up and down approximately 10m of undulating shoreline. Observed hovering within individual smaller bay areas along this stretch.



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Fig.3. Territory 2 Bomere Pool

Territory 3 (Fig 4): Male observed hawking along undulating shoreline and again hovering within individual bay areas. Far more debris and leaf litter present in the water.



Fig.4. Territory 3 Bomere Pool

Territory 4 (Fig 5): Male observed hovering in bays along a series of undulations before flying off high into the tree canopy of the nearby silver birch. Leaf litter, brambles and twigs present in the water.



Fig.5. Territory 4 Bomere Pool

Territory 5 (Fig 6): Male observed holding territory in this natural bay area further enhanced by overhanging silver birch. Edge undulating and area very sheltered.



Fig.6. Territory 5 Bomere Pool

All of the observed territories are located in areas of naturally undulating shoreline created either by the bank or the vegetation extending into the water. The predominantly straight edged sides of the mere have less extensive vegetation and at time of survey the eastern edge of the mere was less sheltered with an onshore breeze. This coupled with a bare sandy substrate render the area unsuitable for *C. aenea*.

Male *C. aenea* are known to patrol small sunny bay areas created by the waterbody margin and are rarely observed crossing open water. Deeply shaded areas are usually avoided possibly accounting for a lack of observation in the north eastern corner of Bomere Pool which is presumably shaded for a significant part of the day. Though single males were observed in each territory *C. aenea* are known to timeshare a territory with each individual male holding the territory for approximately 30 minutes before flying into the tree canopy. Once vacant the territory is quickly occupied by a different male allowing suitable bays to provide successful breeding habitat for a number of individuals.

Recommendation: It is unrealistic to attempt to mirror the habitat conditions of bays where males hold territory in all areas around the shoreline. It is more important to recognize the variety within the mere and ensure that important breeding areas for *C. aenea* primarily in the north west corner are maintained. The aspects of this habitat that make it suitable are undulations in the shoreline creating small bay areas and the presence of significant leaf litter providing suitable habitat niches for developing larvae. Nearby tree canopy therefore remains essential not only for feeding, mating and roosting sites, but also in the provision of leaf litter.

Actions for 2014: Annual checks to ensure bay areas are maintained and *C.aenea* are present.