A one-year odonata-survey of a recently repaired pond in a welsh public park

Chloe Griffiths, Penparcau, David and Meg Kirby, Aberystwyth.

Parc y Llyn is a strip of land of about 4 hectares in area alongside the Rheidol river in Aberystwyth. It is owned by Ceredigion County Council. Around 2010 they decided to convert this strip into a small nature reserve. This included creating a small pond lined with a sodium bentonite membrane at map reference SN 5905 8076 in January 2011. In 2016 it was obvious that the lining had failed, the pond no longer held water. Frogs returning in February 2017 were attempting to mate on dry land [photograph 1].

photograph 1

In March 2019 the pond was re-profiled and relined to cover an area approximately 5 metres by 9 metres [photograph 2]. It was subsequently surrounded with a small, temporary fence and planted with a variety of species including bullrushes, marsh marigolds, water mint and water plantain.

photograph 2

It was decided to survey the pond for odonata during the 2020 season. Because of coronavirus constraints the 2 observers made separate visits whenever it was convenient and the weather was suitable. 29 observation visits of at least 10 minutes duration were made between March and October. On four visits, mainly early or late in the season, no evidence of odonata was seen. Records were kept in a standard format and entered into an Excel spreadsheet for data analysis.

Recolonisation of the pond by other animals

Frog and toad spawn was seen in February 2020 with tadpoles hatching in March. Palmate newts were seen at an evening visit.

Sticklebacks were observed in June.

Aquatic insects (other than odonata) included water boatmen and whirligig beetles in March and pond skaters and a large diving beetle in June.

Dry weather in May resulted in falling water levels and a proliferation of algae. Photograph 3 shows the pond recovering after rain in mid-July.

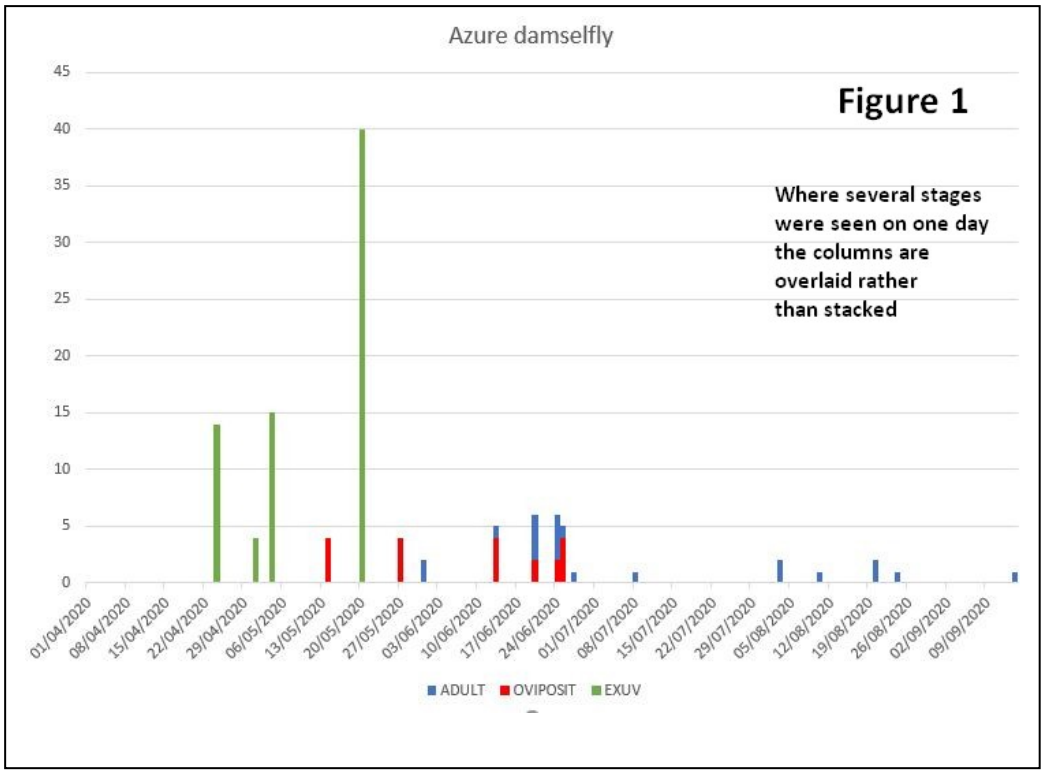
Photograph 3

Damselfly observations

Table 1 shows the species and stage in the life cycle for the 166 Damselfly observations made during the 2020 season. Azures were the dominant species seen as adults and were responsible for all the damselfly exuvia found. All emergences were in April or May suggesting pond colonisation in 1999 [Figure 1].

	SINGLE ADULT	PAIRS IN COP	OVIPOSIT	EXUVIA	EMERGE
Azure damselfly	41	5	15	73	
Blue-tail damselfly	21	1	3		
Emerald damselfly	1				
Large Red damselfly	4		1		
Not identified					1
Totals	**67**	**6**	**19**	**73**	**1**

Table 1



Dragonfly observations

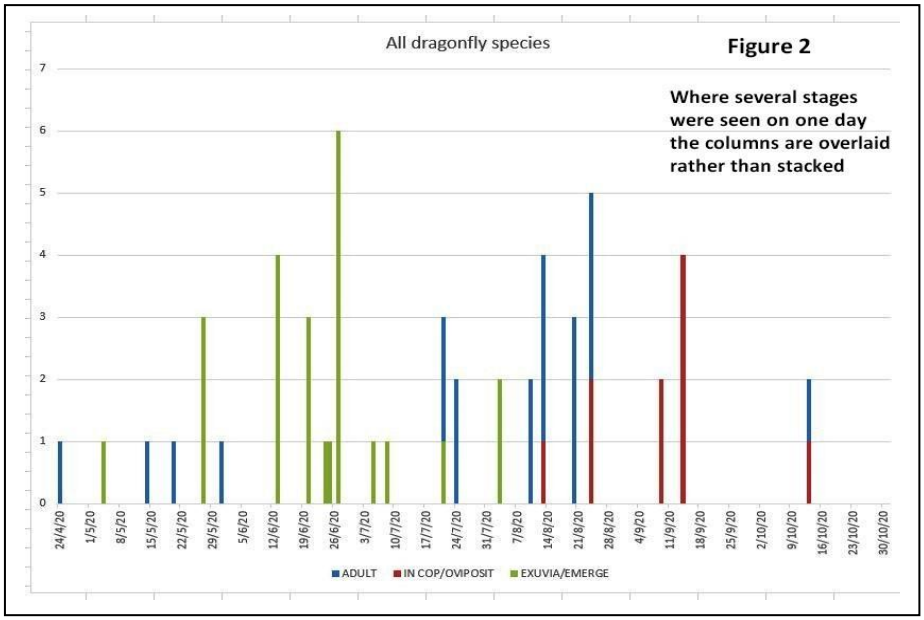
	SINGLE ADULTS	PAIRS IN COP	OVIPOSIT	EXUVIA	EMERGE
4-spotted chaser	1			3	
Broad-bodied chaser	7		2		
Common darter	28		9	16	2
Common hawker	1				
Emperor dragonfly	1		1	2	
Southern Hawker	4	1			
Not identified				1	1
Totals	**42**	**1**	**12**	**22**	**3**

Table 2

Table 2 shows the species and stage in the life cycle for the 80 Dragonfly observations made during the 2020 season.
Common darters were the dominant species.
The exuvia were identified as :-

- 4-spotted chasers in May
- Emperor dragonfly in June and July
- Common darter: 14 in June and 2 in August

Typically 4-spot chasers take 2 years to complete their life cycles. As far as we know the pond was refilled with mains water. Perhaps the chaser larvae were introduced in water surrounding the purchased plants. The Emperor exuvia were also interesting, a 2 year cycle being the commonest. However the summer emergence suggests these were from eggs laid the previous year and that there was good food supply for a one year cycle despite this being a new pond.



Damselfly activity was first noted on 24th April 2020 whereas no evidence of dragonflys was noted before 26th June.

The results show how quickly a restored pond can be recolonised. We hope to continue observations this year to see how the species prevalence changes as the pond matures.