

Notes from Local Interest Group 29th June 2017

Present: Maureen Lloyd (ML), Hannah Shaw (HS), Wendy and Dainis Ozols, Sue and John Ievers, Richard Thomas, Jenny Francis, Tim Francis, Richard Martin, Roy Lloyd, Catherine, Johnny, Carys and Huw Hughes, Ali Sheppard, Ginny Guy, Celia Price, Bill Johnson, Sue and Dennis Boon, Christine and Jeremy Rose, John and Margaret Price (Hay), Gethin, Hannah and Ellis Davies, Evelyn Bally.

Begwns Ponds Visit

ML welcomed everyone and explained that the evening's visit to the ponds on the Begwns had been organised by Hannah Shaw of the Freshwater Habitats Trust (FHT). She introduced Hannah, who explained that some of Wales' best ponds can be found on the Begwns and that they have been designated as Flagship Ponds because they have important species in them, such as Pillwort and Tubular Water Dropwort. HS went on to say that the evening's walk would be led by Penny Williams, the Technical Director of the FHT, based in Oxford

Penny Williams thanked HS for inviting her back to the Begwns; she first came here 25 years ago to record the ponds for the National Pond Survey. This nationwide survey told the FHT that ponds are a very important habitat, and one that had been somewhat overlooked as such previously and so they had not been properly monitored. The survey discovered that two thirds of all freshwater vegetation and invertebrates are found in ponds. Rivers and lakes had also been surveyed, but ponds were found to be far more biodiverse than larger freshwater bodies. For this reason, ponds were made Biodiversity Action Plan Habitats in the UK. Penny went on to explain that there are three main reasons why ponds are so important.

1. They are very natural habitats. It is true that 99% of ponds are now man-made but, natural ponds were very common in the past, including in pre-historic times, and this makes them ancient habitats.
2. Individually, ponds are very different. They have small catchments with distinctive characteristics, so a forest pond, for example, will be physically and biologically very different from a moorland pond. In contrast, streams and rivers draw water from large areas and their water quality and biology tend to be more similar and homogeneous.
3. Ponds usually contain "clean" water. In modern-day environments, rivers and lakes are easily affected by pollutants (e.g. run-off from farmland), but ponds, with their small catchments, can remain almost pristine. The Begwns ponds are good examples of pristine ponds.

An important aspect of the Begwns is that there are many ponds, of varying sizes and depths. Around 70% of larger pond animals can fly and so this high number and close proximity make it possible for them to move quite easily from pond to pond. There are some permanent ponds, but also quite a few that are temporary and this helps the ponds to support a very wide variety of wetland plants and animals.

Hannah and Penny then took us to look more closely at three of the ponds, starting with Bombhole Pond, near the road beneath the Roundabout (SO 16020 44139). Penny explained that most invertebrate life is found within the first metre around the edge of the pond in very shallow water, only a couple of centimetres in depth. Many invertebrates are air breathing and therefore the best habitat for them is around the edge where they can get to the surface quickly, and where there will also be much vegetation in which they can shelter and algae and other creatures that they can eat. HS used a net to take a sample and found the following: a baby newt (Palmate or Smooth), Mosquito

larva, Pond Skater, Damselfly larva (possibly an Emerald Damselfly), Greater Water Boatman (these swim on their backs and are carnivores; they can also give a nasty nip if their hypodermic needle-like mouth parts pierce your skin), Caddis Fly case and Red Bloodworm. The Greater Water Boatman and Damselfly are indicative of a permanent pond as they need more than a year to develop. Penny tested the water in the pond and found it had low levels of both phosphate and nitrate, thus indicating that the water is really clean. In the pond, the following plants were growing: Unbranched Bur-reed, Floating Club Rush (this is common in Wales, but is on the Red List in England because it has become so rare), a Water Starwort (which likes slightly acid water) and Broad-leaved Pondweed. All of these plants again indicated that the water is clean.

We then walked up past the Roundabout and down the hill to Pond B10(SO 14914 44311). This pond is large and round in shape. Penny told us that there are two things that are important about the pond.

- It is temporary – it dries out in summer. This means that the organic sediment at the bottom of the pond breaks down and so does not build up and the pond does not fill in. This means that ponds like this can often persist for thousands of years and can “outlive” lakes. Their stability and persistence mean that temporary ponds across the world often have a high number of endemic species.
- Poaching occurs. This happens when grazing animals use the ponds and trample around the edge creating muddy margins, resulting in a mixture of bare and vegetated ground. This creates the perfect habitat for many terrestrial, semi-aquatic and aquatic plants and also invertebrates. Poaching is a very ancient process that pre-dates most of the plants and animals found in present-day ponds and goes back hundreds of millions of years. Going back as far as the Devonian geologic period, plants have evolved with both poaching and grazing (including by dinosaurs!). It is no surprise that there are a lot of wetland plants (many now rare) that depend on bare disturbed muddy edges around ponds, because most animals have always had to drink regularly, so will always have congregated next to water.

Surrounding the margin of this pond was a pale green sward, which is an outstanding patch of Pillwort. This plant is so rare in the UK that it is protected and included on the Red List, but the Begwns ponds are a very important site where it is relatively common. It is a fern and displays a curl in the tips of the fronds that you would expect; it grows on runners. It gets its name from the “pills”, tiny round spore cases at the base of the stems. Pillwort particularly likes temporary ponds and Radnorshire is internationally important for this plant. Also in this pond was Shoreweed (*Littorella uniflora*) which is an indicator plant for important ponds. It has leaves which are spongy on the inside. Water Purslane was also present; this has little pink flowers in the axes between the leaves.

HS pulled out some samples from this pond and found Pond Skater (with wings), Greater Water Boatman, Gnat pupa, Lesser Water Boatman (they swim on their front and are herbivores) and Caddis Fly.

Penny explained that, unlike the situation in many areas of lowland England, most of the important pond plants and animals found on the Begwns are likely to safely persist for many years. This is because there is a wide range of high quality ponds in the area. Natural extinction is surprisingly common amongst species in all habitats. This means that if a plant or animal is to persist at a pond, it will need to be able to re-colonise from near-by if it becomes locally extinct. In much of England, good quality ponds are few and far between, so if a rare species goes extinct it is likely to be lost for good. You can look at the species list from a pond (or other site) and

estimate which of them are essentially doomed, because they will not be able to recolonise once lost. This list is called the site's "extinction debt". One of the wonderful things about the Begwns ponds is that, because of the large number and variety of ponds, extinction debt is not a problem, even for most of the rare species.

The last pond we visited was B5 (SO 14707 44211). This is a long pond which holds more water than the previous one. It is large and has a flat bottom and so the depth is fairly uniform throughout. In this pond, Penny pointed out Unbranched Bur-reed, rare in England but relatively common on the Begwns. There was also Lesser Marshwort, an indicator of very clean water and, again, on the Red List in England. We also saw some Water Crowfoot. At least ten species of this plant are known, with recent genetic analysis suggesting that there are even more, although they are extremely difficult to tell apart. Pillwort surrounds the margins of this pond and we could also see Marsh Bedstraw and Spike Rush around the edge. Smooth Rush was present in abundance and there was also some Star Sedge, on the Red List in England but not Wales. Once again, there was evidence of poaching and grazing and the animals obviously go right out into the middle of the pond.

HS took a sample from the pond and found Diving Beetle, Greater Water Boatman, Daphnia (water flea), Mayfly larva, a newly hatched baby newt (Smooth or Palmate), Dragonfly larva, Caddis Fly and Swimming Caddis Fly.

Penny concluded our visit by telling us that the best way of managing the ponds on the Begwns is to leave them as they are, especially the ones that are temporary. Deepening them would ruin the important habitat. The National Trust is a very good owner and the commoners are responsible users of the hill, in fact poaching by their animals is very important in maintaining the unique environment in the ponds. The ponds are designated Priority Ponds under the Biodiversity Action Plan and this will ensure their continuing importance nationally.

At the end of the walk, ML thanked Hannah Shaw for organising the visit for us and also Penny Williams for giving so generously of her time to come all the way from Oxford to tell us about the significance and importance of the ponds in our local area. We will all look at them in a slightly different light from now on. A most enjoyable and informative evening was had by all.