Pond Conservation

For Life in Fresh Waters

Spring Newsletter
March 2010

What to Look Out For This Spring

Amphibians

Frog spawn is normally laid in February or March, spreading across Britain from the South West. The cold winter this year does appear to have an effect on spawning, which was delayed by a few weeks in many parts of the UK. For more information on this you can visit www.naturescalendar.org.uk.

Newts, Smooth, Palmate or, for the very lucky few, Great Crested, and Common Toads will be laying their eggs from April onwards. Look out for the 'ropes' of toad spawn. Newts lay individual eggs in rolled up water weeds, so are harder to spot.

We don't recommend that you move spawn about as there's a risk of transfering amphibian diseases and of moving non-native plants from one pond to another. If your pond is a good breeding site for amphibians, they'll probably find your pond and make the decision whether it's the right place for themselves.

The Green Great Diving Beetle

Other pond animals

On warmer days backswimmers, water beetles, pond skaters and lesser water boatmen will be flying to and from your pond. You can also spot Pond Olive mayflies which are beginning to emerge and, as spring progresses, brightly coloured yellow and black hoverflies. Their rat-tailed maggot larvae which live in the water are the ultimate ugly ducklings! Shrimps, water slaters, pond snails and other animals will also start to breed as the water warms up

The green great diving beetle is one of our rarer species - *Dytiscus circumflexus*. If you've got great diving beetles in your pond they're most likely to be the common (and well-named) common great diving beetle (*Dytiscus marginalis*) or the black-bellied great diving beetle (*Dytiscus semisulcatus*).

Plants

Marginal and underwater plants will start to grow at this time, and any plants added to the pond at this time of the year will grow quickly. Plant any new plants in nutrient poor sand and gravel to avoid adding nutrients to the pond, or simply throw them in and let them take their chance!

You can trim back existing plants to keep things tidy, but if you want to encourage wildlife don't get too carried away with this, as generally the more cover there is the better. If you decide to remove non-native plants carefully compost them (don't put into any other water course). However, remember that, in some cases, they may be the only habitat available for your animals.

The Big Pond Thaw

The winter of 2009/10 was the hardest for 30 years in the United Kingdom. Because of this, many ponds froze for much longer than in recent years, with ice cover persisting for a month or more in many places. As the ice melted, Pond Conservation started to receive reports from distressed pond owners about dead amphibians, mainly frogs, that had been overwintering in their ponds.

We already had evidence that the usual advice given to protect wildlife in garden ponds in cold weather – 'make a hole in the ice' – was having little effect. So we asked Pond Conservation's supporters, and other pond lovers, to tell us more about their ponds during the freezing weather, so that we could find out if the things people did to protect their pond wildlife were having an effect.

Contrary to the usual advice, the results showed that making a hole in the ice didn't make any difference to the likelihood of mortalities. In ponds where holes were made amphibian deaths were as common as those where no hole was made (63% of ponds where a hole was made suffered deaths compared with 64% where no hole was made). The picture was the same for fish: the proportion of ponds in which fish died was very similar, around half, whether or not a hole was made in the ice.

Looking more generally at what the survey suggests about the possible causes of amphibian deaths there is a hint that more died in deeper ponds, and in ponds where the snow lay for longer. Fewer amphibians were found dead where a pump was run, and (or) where there was a greater variety of wetland plant types.

Overall these results suggest that many deaths in garden ponds are probably associated with lack of oxygen in the water, although at this stage we can't rule out build-up of toxic gases as a contributory factor.

Million Ponds Project up-date

Ponds created at the BBOWT Gallow's Bridge Farm site in Buckinghamshire, with support from Million Ponds Project funding, featured on the BBC website as Jeremy Biggs demonstrated the difference between clean and polluted ponds.

Pascale Nicolet, who runs the Million Ponds project day-to-day had earlier done a conductivity survey of the ponds on the site, which showed that all had a satisfyingly low conductivity of around 250. This is the key aim of the Million Ponds Project – to create new clean-water habitat in the countryside, something which has become very rare.

The conductivity of Loch Morar (Scotland) – where this picture was taken - is amongst the lowest in the UK - purer than the rainwater in the south of England!

Conductivity is a simple but reliable measurement that can be used to get a quick idea of how polluted your water is. Look out for more advice from Pond Conservation, on how to do this soon.

We're very grateful to all of the supporters of the Million Ponds Project: our main partners (see the website for the full list), The Tubney Charitable Trust and Biffaward.

News and Views

Waterfleas hitchhike on Backswimmers

A *Daphnia* egg remains attached to the hairs on a backswimmer's abdomen.
courtesy: Frank Van de Meutter

Spontaneous generation has long been discredited as a theory of existence. However, it is remarkable just how quickly new ponds become colonised. Of course, many animals can walk, hop or fly to their new homes, but water fleas (*Daphnia*) have long been a puzzle, since they are unable to survive outside of water.

Biologist, Frank van de Muetter and his colleagues at the Catholic University of Leuven in Belgium think they have found a solution to this problem. They have observed that *Daphnia* hitch a ride on *Notonecta* (backswimmers) as they fly between ponds. Or, more specifically, the resting eggs of Daphnia, which are tough enough to survive the flight from pond to pond.

A spotted backswimmer (*Notonecta maculate*) a common species seen in many British gardens prepares for flight
Courtesy: Frank Van de Meutter

Van de Meutter's team put a group of backswimmers into a bucket of water with 1000 eggs of the *Daphnia* water flea. The backswimmers were allowed to take flight, and then caught and examined for the presence of *Daphnia* eggs. Of 45 backswimmers caught in flight, 30 had eggs attached. The biologists found that the insects' hairy abdomens allowed the eggs to easily latch on, explaining how the *Daphnia* can move from pond to pond.

Frank says "Even after the backswimmers were rather roughly caught with a bucket, *Daphnia* eggs remained attached to the body, especially on the hairy keel at the underside of the abdomen and on the haired parts of the legs".

You can read a technical summary of the article, which was published in the journal: Biology Letters (2008) 4, 494-496. If you'd like to have a full copy let us know and we can send one to you.