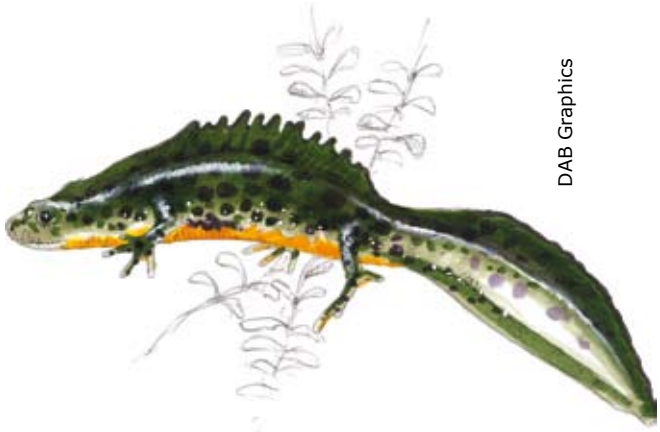

DAB Graphics

Looking at the wildlife

The great crested newt survey

A great crested newt survey was a requirement of the project. The survey set out to confirm the presence or absence of the newts, to establish the size of their population and to assess the value of the site as a newt breeding habitat. The results were used to decide the best way of protecting the newts while the de-silting work was going on.

Ben Burgess of Creative Nature carried out the survey between April and June 2009. This was during the newts' breeding season, and at this time of the year the adults are in their aquatic habitat. Later in the summer they leave the water and become terrestrial, returning the following spring to breed again.

The life cycle of the newt:

The life cycle of the newt is similar to that of frogs, with the young developing through a tadpole (larval) stage over the spring and summer and leaving the water when they are mature. Newts are nocturnal (they are most active at night) and they hibernate during the winter.

John Farrow

Great crested newts are Britain's largest species of newt (up to 17cm). They are dark grey-brown in colour with yellow or orange undersides spotted with black. The males are identifiable by the jagged crest that runs along their backs.

Newts eat other newts, tadpoles, young froglets, worms, insect larvae and water snails, and they would not be able to find enough to eat during the winter. At the end of the autumn they hide themselves away in crevices and under stones away from the water and go to sleep until the weather starts to warm up in the spring. The castle ruins have plenty of nooks and crannies where they can hide. This is one of the reasons why they like living here.

In the spring they wake up and move into the water and get ready to produce their young. The female newt lays her eggs on the leaves of water plants. Whereas frogs lay clumps of lots of eggs together (frogspawn), newts lay separate eggs one at a time. They carefully make a parcel for each egg by wrapping it up in an under-water plant leaf (top picture). They often choose leaves that are close to the surface of the pond where the water is warmer and the eggs can develop more quickly. The female newt lays two or three eggs each day between March and mid July (about 200 to 300 eggs in total). Not all of these will survive and develop into adult newts. Some do not hatch out at all and many are eaten by other animals that live in the pond. Fish especially like to eat newt larvae. There are no fish in the moat at Bolingbroke which is another reason why it is a good place for newts to live. Once the eggs have all been laid the adults start to leave the water.

The eggs hatch after about three weeks and it takes about four months for the larvae (middle picture) to develop into adults. During this time they live in the water and eat tadpoles, worms, insects and insect larvae. They breathe through frond-like external gills which they later lose. Once they have become adults (bottom picture) they live mostly on land where they hunt for their food in areas where there is a good covering of vegetation. The areas of undergrowth and brambles around the castle and the rough grass in the rout yard are ideal for this, which is a third reason why the site is such a good newt habitat.

DAB Graphics

HTL

The great crested newt survey took place during 6 overnight visits (when the newts are at their most active) with a variety of techniques being used on each occasion, including bottle trapping, netting and torchlight and egg searches. The findings of all the visits were brought together and analysed and a full report into the results was produced. The results allowed Ben to estimate how many newts were living around the castle. They confirmed a medium density population of great crested newts and rated the habitat suitability of the castle site as excellent.

John Farrow

Above top: Setting the bottle traps
Above bottom: Recording the catch the next morning

The invertebrate survey

The survey was undertaken to assess the importance of the invertebrate creatures in the castle moat. It involved collecting samples of silt from 3 different parts of the moat. As a result the moat habitat was rated as moderate to good with the potential for this to be improved by the restoration work. The report that was produced contains a list of the species that were found. They include some quite uncommon ones including the lesser diving beetle and the phantom cranefly. Some of the invertebrates that were recorded are shown here along with other animals discovered during pond dipping events that were held as part of the project.

John Farrow

Pond dipping

Phantom crane fly

Great diving beetle

John Farrow

Water snail

Common toad

The moat restoration removed large amounts of silt and created much more open water in parts of the moat. However, it would take some time for the wildlife to recolonise the newly restored areas. In order to gauge how successful the restoration had been in improving the habitat we also included provision in the project plan to resurvey the newt population after about 3 years once the moat had had time to settle down.

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