

SETTING THE RECORD STRAIGHT #3

In the second posting of this series we presented data indicating that the Sports Centre supports very, very low populations of amphibians. Why should this seem to be the case?

Neither the Sports Centre in general, nor the boating lake in particular, appear to provide the types of environment that various amphibians need, anymore than they do for, for some other aquatic species (like water voles).

Ecologically speaking, success isn't defined by laying eggs, but by the number of those eggs which survive to grow into mature, reproductive adults to replace the parents and maintain or increase population levels. This is why frogs, toads and newts lay so many eggs; so few actually make it and any factors which adversely affect them would further limit the populations.

- Much of the Sports Centre is short mown grass which provides no shelter for amphibians as they move about looking for shelter, food etc. In such exposed areas they are very vulnerable to predation by magpies, crows, jackdaws, gulls, blackbirds etc., all of which are common on the site.
- Short mown, dressed grass, required for playing pitches is a pretty "sterile" environment with relatively low invertebrate populations (food for the amphibians). The very act of mowing, necessary to maintain the playing fields can also maim or kill any amphibians accidentally caught in the mowing machinery.
- Dogs are frequent killers of toads (source: Sussex Wildlife Trust) and in an area where dogs are running free this may inadvertently happen.
- Paths, paving, concrete and tarmac pose another major threat, not just from traffic but from innocent footfall. It is easy to miss a slow moving tiny, juvenile toad or newt, less than 2 cm long and tread on it by mistake? In hot weather, such surfaces can get very hot and immature individuals will stick to them, get trapped, desiccate and die. This is especially true for the path around the boating lake where in late 2014, numerous dead, desiccated froglets / toadlets were seen, which died trying to make their way across hard standing to shade and shelter.

Historically, the boating lake site has been the only major water body on the Sports Centre, and therefore it may well have been used, simply because it was there, as a breeding site by the few amphibians that frequent the Centre. Numerous early tadpoles / toadpoles, does not mean large adult populations – a single clump of frogspawn or a single string of toadspawn can contain hundreds or thousands of eggs.

What are the actual requirements for amphibian breeding sites? In particular does the boating lake meet them?. The following guidelines and criteria are taken from a range of authoritative guides to constructing amphibian-friendly ponds including.

- Million Ponds Project - creating ponds for amphibians and reptiles - http://www.freshwaterhabitats.org.uk/wordpress/wp-content/uploads/2013/09/MPP-Toolkit-core-sheets-1-8_June2011.pdf
- Norfolk Wildlife Trust - Amphibian Friendly Gardens - <https://www.norfolkwildlifetrust.org.uk/documents/a-living-landscape/wildlife-advice/garden/nwt-amphibians-in-your-garden>
- Pond Design and planting - Scottish Golf Environment Group - <http://www.sgeg.org.uk/documents/Advice/Nature/Pond%20design%20and%20planting%20%28SGEG%202013%29.pdf>
- Amphibian and reptile conservation - common toads and roads - guidance for planners and highway engineers (England) - <http://www.arc-trust.org/Resources/Arc%20Trust/Documents/common-toads-and-roads.pdf>

Avoid disturbance. The main problems are addition of fish (particularly carp) and regular swimming by dogs, both of which can stir up the water and make it permanently cloudy. FAILS - much disturbance by dogs using it as a play area.

Single ponds are valuable in their own right, especially if they are part of an already pond-rich landscape. Pond complexes are even more valuable: particularly if they have pools of different depths and permanence, including temporary ponds which dry up every year. This variety increases the range of wildlife that can colonise a site. FAILS - a single and single depth pond.

Keep most bank angles very shallow with a broad, almost flat zone near the pond edge (less than 5°). The most diverse area of a pond is its shallows. FAILS - uniform depth, vertical concrete sides which trap amphibians hence FoSSC needing to rescue 100's of trapped juvenile newts when it was drained in Autumn 2014 for the EA to make good damage they had done.

Allow submerged plants and insects to thrive - important habitat and food for all of the UK's amphibians. FAILS - annual drainage kills off wildlife does not let wildlife establish

Locate ponds within the dispersal distance of the target species.... make sure that there are no barriers to dispersal. FAILS - if amphibians manage to climb up the vertical; concrete walls (with overhangs in many places), they face a long distance trek across exposed and hot tarmac to any vegetation (short grass) and a very long distance to long, dense cover.

Design ponds with broad, shallow margins, variable pond depths and variable designs. FAILS – single pond, single depth, no shelter.

Submerged and emergent vegetation. FAILS - no established vegetation for egg laying (toads and newts), only choking, annual blanket weed growth.

Fairly extensive marginal planting. FAILS – none.

Absence of waterfowl which prey on adult amphibians and eggs, eat vegetation and foul water. FAILS - site often home to numerous gulls and occasional ducks, active predation. As water levels fall through evaporation and leaks, also then vulnerable to predation by crows, magpies etc..

Safe areas to move around in and search for food - they do not like being exposed on short grass or hard surfaces which make them vulnerable to predation. Surrounding cover, local shade damp resting and hibernation places to move into and rich invertebrate life for food. FAILS – surrounded by tarmac, then short grass, low in food species, suitable habitats a long distance away.

Rough grassland buffer stripsThis increases the naturalness of the featureMany species such as frogs, toads and newts spend much of the year on land and rough vegetation around the water will provide foraging and hibernating areas. FAILS – none.

Ponds, designed for wildlife do not need to be deep. A maximum depth of 1.5m is adequate and combined with varied edges will provide ideal wildlife habitat. If possible create several satellite ponds rather than one large pond. Ponds should have shallow, irregularly shaped edges, with a variety of depths to create a diversity of conditions to increase the amount of wetland fringe to benefit a wide range of flora and fauna. Habitat rock piles and pebble or gravel edges on part of the margin would further enhance the habitat value. Such a pond would create an ideal breeding area for frogs, toads, newts, dragon and damselfly larvae and other invertebrates. It will provide drinking water for deer, foxes and other mammals. FAILS

Therefore, as you can see, the boating lake fulfils absolutely none of these requirements needed for successful amphibian breeding sites. FoSSC therefore believes that it a poor site and increased predation and mortality are likely to limit the success of amphibian species.

In the next posting of this series, we will look in more detail at specific requirements for successful toad breeding sites, as different amphibian species have somewhat different requirements.

Accompanying pictures

