



Great Crested Newts (*Triturus cristatus* Laurenti, 1768) Found Trapped in an Abandoned Car Tire at Litcham Common, Norfolk

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The Great Crested Newt (*Triturus cristatus*) is a large newt with rough and warty skin. Both sexes have a dark brown or black back and flanks, the head and lower flanks are covered in prominent white speckles (Inns 2009). The abdomen is a vivid bright orange with irregular black spots which are unique to each individual, the throat is dark, often with white speckling. During the breeding season, males have an impressive jagged crest which runs along the length of the body, except for a break in the lower back and the base of the tail. Also in males, the tail has a silvery flash along the center whereas, in females, there is a vivid orange stripe along the base of the tail (Inns, 2009). Great Crested Newts are found in a variety of habitats such as lowland river valleys or spring-fed ponds with a generally neutral pH. Great Crested Newts prefer larger ponds or small lakes that are fish free, and preferably flooded with mineral workings (Inns 2009). However they have been found to breed in smaller garden ponds where they often coexist with Smooth Newts (*Lissotriton vulgaris*). Terrestrial habitats are very important to Great Crested Newts as they favor deciduous woodland, mature hedgerows, and undisturbed grassland (Inns 2009).

Great Crested Newts are listed as Least Concern (LC) on the IUCN Red List (Arntzen et al. 2009). The Great Crested Newt has a wide distribution, covering around 200,000 km², and a population in their active breeding ponds that was assessed in the tens of thousands. However, this does not demonstrate the decline of the Great Crested Newts on a regional scale in recent decades (Foster et al. 2021). In Great Britain, Great Crested Newts have been in decline since the 1950s, following a loss of aquatic breeding habitat. Great Crested Newts are protected under the 1981 Wildlife and Countryside Act. The Act prohibits anyone without a licence interfering with Great Crested Newts at any life stage. It also protects the habitats which they use to breed or rest, as well as placing a requirement for all developers to carry

out adequate surveys and mitigate any destruction of breeding ponds by offsetting any loss (Inns 2009).

At approximately 1200 h on 10 April 2022, while surveying Litcham Common, Norfolk, England for the presence of amphibians and reptiles I found 8 (4 male, 2 female, and 2 juvenile) Great Crested Newts in a discarded tire semi-submerged in one of the ponds (52.717793°N, 0.790280°E). During the process of removing the tire from the pond so that it could be disposed of properly, a Great Crested Newt fell out, which prompted further investigation. These amphibians were initially thought to have been Smooth Newts due to the size of the juvenile, and the fact that they had previously been recorded at the site. Once an adult had been removed from the tire, it was evident that these were in fact Great Crested Newts. Upon discovering the newts within the tire, they were carefully removed one-by-one and returned to the pond after a quick observation in a bucket of pond water, to ensure that they were in good health (Fig. 1). This is the first time that Great Crested Newts have been recorded at



Fig 1. A female Great Crested Newt (*Triturus cristatus*) during the visual health inspection after being discovered in a discarded tire at Litcham Common, Norfolk, England.

Litcham Common. The pond the Great Crested Newts were discovered in was approximately 10 m by 5 m, and roughly 60 cm deep.

It is not known why the Great Crested Newts were in the tire, although there are a number of possible explanations. Given the mix of sexes and age classes present inside, it is likely that the tire may have attracted the newts in some way, or functioned as a trap. A range of funnel traps are often used during the breeding season to determine the presence or absence of Great Crested Newts at breeding ponds (Madden and Jehle 2013). Bottle traps are the most common of these, which are deployed overnight and checked in the morning, ensuring an air bubble is present so the newts don't drown (Madden and Jehle 2013). The tire was found half submerged in the pond, the newts would have been able to swim in, and may have become subsequently trapped following a reduction in the water level, or if someone prior to myself disturbed the tire. Given the material and color of the tire, the water contained within would have been considerably warmer than the rest of the pond, so perhaps the warmth helped to attract the newts, especially given the time of year. The presence of food may have also played a role in attracting the newts to the tire, which could have been attractive to invertebrates seeking refuge, if warmer than the surrounding water. Finally, the Great Crested Newts themselves may have been seeking refuge, which is often under logs or rocks in the terrestrial environment (Drechsler et al. 2010), with the tire fortuitously located on the boundary between both the aquatic and terrestrial habitats.

Pollution has been identified as one of the risks to Great Crested Newt populations here in the UK (Foster et al. 2021). Rubber tires are dangerous to most aquatic organisms, due to their ability to leach toxic chemicals such as zinc, rubber polymers, and vulcanization chemicals (Wik 2007). Tire rubber is a complex mixture of a variety of chemicals, i.e., carbon blacks, silicas, process and extender oils, and chemical antidegradants including those previously mentioned (Barbin and Rodgers 1994). A wide range of aquatic animals such as fish have been found to be affected by these chemicals (Evans 1997), so it is likely that amphibians are also prone if exposed. Amphibians can be used as biological indicators, due to their biphasic life cycle. It is due to this that amphibians

which have both an aquatic phase and a terrestrial phase are twice as likely to be exposed to toxic contaminants (Wik 2007). Amphibians accidentally pick up environmental contaminants from the water during all life stages, with the ability to bioaccumulate certain toxic chemicals (Wik 2007). Once they leave the water and start their terrestrial phase, they can pick up contaminants from burrowing in contaminated soils (Wik 2007).

In summary, this is the first time that Great Crested Newts have been confirmed to be present at Litcham Common, Norfolk. It is not known why the tire attracted the newts, although more research is needed to determine which of the hypotheses presented herein is the most probable. Upon inspection, all of the newts appeared healthy, and were able to respond to stimuli which may have indicated a potential predator. This indicates that the tire was likely to have only been present in the pond for a short space of time, as the Great Crested Newts showed no signs of being poisoned by leached toxins. Handling was kept to a minimum to reduce any additional stress, with the newts being placed back in the pond they came from after the visual inspection.

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