

Feature Species

Feature Species – the Smooth Newt

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The Smooth Newt (*Lissotriton vulgaris*)

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Figure 1: Adult Smooth Newt (Robert Thompson)

The smooth newt is one of only three amphibians to be found in Ireland. It is also the only member of the order ‘Urodela’ or the tailed amphibians in the country. The two remaining Irish amphibians are from the order ‘Anura’ or tailless amphibians, the common frog (*Rana temporaria*) and the natterjack toad (*Bufo calamita*) (Becart *et al.*, 2007). Ireland’s only native terrestrial reptile, the common lizard (*Lacerta vivipara*), is regularly confused with the smooth newt due to its similar size and body shape. However, distinctive differences are apparent on inspection with the lizard having dry scaly skin whilst the newt has moist smooth skin.

The adult smooth newt is typically between 8-11cm in length. The males are brownish grey with dark spots with a wavy edged crest on their back which travels down to the tail. The male crest is less obvious outside of the breeding season. The females are light brown in colour and sometimes have dark spots on their tails. Both males and females have an off white throat with dark spots (Inns, 2011). In late winter or early spring depending on the ambient air temperature, adult smooth newts travel to their chosen breeding pond. Male smooth newts typically arrive to the breeding ponds before the females in order to feed well and develop their crest and webbed toes. Prior to entering the pond, both males and female newts develop a colour change with the skin becoming brighter and paler and development of the nuptial finery in the male (Wisniewski, 1989). In the water, male newts carry out elaborate courtship displays for the females on the floor of the waterbody and if he manages to impress the female sufficiently, mating will take place. The female typically lay between 300-500 eggs which she lays during the day at a suitable temperature of 9°C or above. Once the eggs are laid, development into the larvae stage occurs within 10-20 days, dependent on temperature. A newt tadpole is referred to as an “eft”.

Newt and common frog larvae are quite similar at early stages of development but can be differentiated by examination of limb development with front legs developing before hind legs in newt larvae. During development in the summer, the juveniles develop their back legs and lose the external gills which are replaced by lungs (IWT, 2011). Typically, these juvenile newts leave the ponds in September, spending the next 2-3 years on land until reaching sexual maturity when they return to the ponds once more to breed (IWT, 2010).

Newts begin hibernation or what is also known as their “winter torpor” in early winter. Newts are very tolerant of low temperatures and remain active down to temperatures of 0°C (IWT, 2010). Newts tend to hibernate under terrestrial refuge such as stones, logs, etc, and in studies in Britain newts have been observed to descend up to 10cm in humus as temperatures drop to avoid the frosty conditions (Wisniewski, 1989). The end of hibernation typically occurs in late February to early March and smooth newts migrate toward ponds to breed. Newts also have the ability to hibernate in water, which is particularly prevalent in non-metamorphosed larvae, juveniles and young adults in their first breeding season (Bell, 1977).

The main predators of newts in Ireland include herons, fish, badgers and foxes. The newt larvae also face predation from fish, birds and even some insects, most notably the diving beetle larvae (Wisniewski, 1989). They are typically found in relatively small shallow standing water bodies, in ponds rather than lakes. The water bodies are usually well vegetated and have terrestrial refuge within 100 metres of them. These refuges include stones, deadwood, tufts of vegetation, etc.

The Smooth Newt is legally protected in Ireland under the Wildlife Act, 1976 and the Wildlife Amendment Act, 2000. Under this legislation it is an offence to capture or kill a smooth newt without a licence. However, unlike our other amphibian species, the common frog and the natterjack toad, the smooth newt is not given any special protection by the EU Habitat Directive. The smooth newt is also protected under Annex III in “protected fauna species” of the Bern Convention.

Disease has emerged as the principal cause of amphibian decline on a worldwide scale. Four principal diseases have emerged as causes of this mass mortality and global decline of amphibians - chytridiomycosis, ranavirus disease, saprolegniosis and *Ribeiroia* sp. Infection (Daszak *et al.*, 2003).

Habitat loss is the most commonly cited explanation for amphibian declines in a survey of herpetologists and wildlife biologist in Britain (Marnell, 1996). The conversion of wetlands to agricultural land in recent decades has no doubt decreased the populations of many amphibians and placed some in endangered status (Arnold *et al.*, 2004).

In 2010, the Irish Wildlife Trust (IWT) carried out a pilot smooth newt survey due to concerns of current and potential conservation issues for the smooth newt and in order to update distribution data. It was a pilot survey in order to develop and establish a smooth newt monitoring program in Ireland. It aimed to gather new data on their distribution in Ireland and gather information on the state of Ireland’s wetland habitats. The survey was very successful survey and was carried out again in 2011, 2012 and 2013 nationwide. These surveys have added greatly in building a more detailed distribution map of smooth newt throughout the country.

The Smooth Newt in Co. Clare

The smooth newt has in the past been widely under studied in Ireland and consequently there are had been few positive sightings in Co. Clare. The map in figure no. 2 shows the locations the smooth newt was positively located in a study carried out in the 1970's. In 2012, these four 10km² areas were again sampled for the presence of the smooth newt for a Masters research project. This area was chosen to determine if there was still a population present despite the increase in pressures from agriculture and development in the in proceeding 40 years.

Nine locations within the 40km² area were surveyed as shown in figure 2 and newts were positively located in three of the nine locations. The three positive sites were Shannon, Lisheen and Ballybeg.

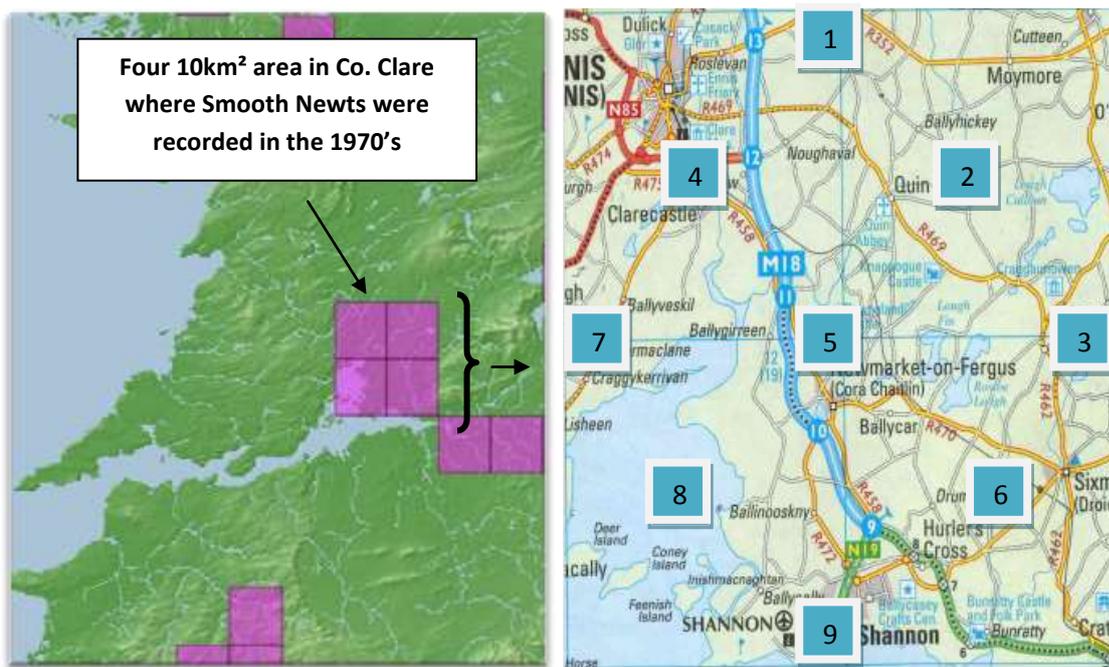


Figure 2: Map of the 40km² Survey Area & Map with the 9 Selected Sites within this 40km²

Smooth Newts in Clarecastle/Ballyyea

During the research carried out for the 2012 study, it appeared that there were no official recordings of smooth newt in the Clarecastle/Ballyyea area since at least the 1970's. However, as was the case in most areas, this did not necessary reflect their abundance but instead the lack of recordings. During that study, newts were confirmed in a small pond in a disused quarry in Ballybeg. Again in February 2014, this pond was checked and a count of 8 adults was confirmed. They were also confirmed to be present in East Lissane in what is commonly

known as Hickeys Pond demonstrating that they are present in the locality.



Figure 3: An Adult Smooth Newt in Ballybeg

Searching for Smooth Newts in your Area

When searching for smooth newts in your area, waterbodies with the following characteristics are a useful key in locating potential habitats:

Criteria	Condition
Water Flow	Very slow- moving or still water (essential)
Vegetation	Some aquatic vegetation present (essential)
Fish	Little or no fish present
Age	Sites over five years in age
Size	Site of a manageable size (essential- no lakes)

Figure 4: Criteria used in Site Selection as used by the IWT Newt Surveys

Surveying of smooth newts can be carried out using the following techniques.

- **Daytime Visual Search:** This involves visiting a suitable area during the day and walking around the perimeter of the waterbody stopping every 2 metres to examine the water for newts of all life cycle stages (IWT, 2011).
- **Torching:** A torch survey involves visiting the sites at dusk/night when smooth newts are at their most active. Again, it involves moving round the perimeter stopping every 2 metres to check the water using the torch. Torching is carried out by shining a high-powered torch into the water examining the water for newts, with particular attention in pond vegetation and on the pond floor (IWT, 2011).
- **Egg Searching:** Smooth newts lay individual eggs and each egg is attached to moss or wrapped in water plants by the female. Egg searching involves day visits to the sites examining pond side vegetation for attached smooth newt eggs (IWT, 2011).



Figure 5: Photo of Smooth Newt Egg in Vegetation (Andrew Malcom)

- **Dip-netting:** Dip-netting is conducted under licence issued by the National Park and Wildlife Service (NPWS). It involved sweeps using a 25cm square hand net with 1mm mesh. It involved running the net through the submerged vegetation and pond substrate over an area of 1m². The sweeps are carried out at random points around the edge and in the middle of the pond (Marnell, 1996).

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