

Snakes in the Grass

ANGELO PERNETTA SHARES THE FASCINATING DETAILS OF THE UK'S LARGEST REPTILE.

For most people in the UK their first encounter with a snake is seeing a flash of grass snake racing away from them. Typically they are a wary species, which makes seeing more than just a glimpse of them a frustrating task. Despite the difficulty in observing these animals there have been a number of comprehensive studies conducted on populations throughout Europe that have provided us with a glimpse into their fascinating natural history.

Description and Distribution

The grass snake (*Natrix natrix*) is one three species of the *Natrix* genus, the other two being the

viperine snake (*Natrix maura*) and the dice snake (*Natrix tessellata*). It is widespread in Europe as far north as Southern Scandinavia and as far south as Sicily. The taxonomy of the grass snake has received much attention in the past resulting in twelve subspecies being described by snake taxonomists. However, of these there are four generally accepted sub-species the eastern grass snake (*N. n. natrix*) the western grass snake (*N. n. helvetica*) which includes the British populations and two other subspecies *N. n. cetti* and *N. n. corsa* that are restricted to Sardinian and Corsica respectively.

The grass snake is the UK's largest reptile with males being recorded in excess of 80 centimetres in length. However, it is the females that claim the title of Britain's biggest reptiles with some individuals being recorded in excess of 180cm. For both sexes the typical dorsal

colouration is olive green with black spots and a characteristic yellow ring at the base of the head. It is this yellow band that has given rise to their second common name – the ringed snake. In contrast the ventral pattern is a chequerboard of black and white scales, the patterns of which are unique to each snake. As with the adder and smooth snake melanism has been recorded in individuals from the UK. However, in contrast to those two species there have also been documented cases of albinism, with one wild caught individual being maintained at London Zoo 60 years ago.

The distribution of the grass snake within the UK has its peculiarities with populations being widespread in Southern and Central England and becomes increasingly patchier as you travel northwards, with no records of natural grass snake populations in Scotland. Quite



why this occurs remains a mystery. However, new research by the National Amphibian and Reptile Recording Scheme (<http://www.narrs.org.uk>) may help to complete the picture of the grass snake's distribution. Typically, where grass snakes do occur, they can be found in the more humid areas of a habitat and can be seen comfortably swimming in rivers, streams, ditches and garden ponds.

Activity and Reproduction

As with the other two British species the grass snakes overwinter in hibernacula with males emerging in early March and females following towards the end of the month. Hibernacula are typically deep leaf litter, mammal burrows, or crevices among tree root systems. Grass snakes may use communal hibernacula in an attempt to overcome particularly cold winter temperatures. On such occasions snakes will actively move deeper within a hibernacula and huddle together to prevent freezing. Once emerged grass snakes may spend the first few days close to their winter refuge, basking in the spring sunshine. However, within a few weeks the snakes move towards their feeding habitats, which may be several hundred metres away. Radio-tracking of individuals has shown snakes to move upwards of 120 metres per day using hedgerows, ditches and banks as dispersal corridors. Research into the home range of animals has shown that an individual may roam over an area as big as 33 hectares in a single year and like most snake species it is the males that disperse further when seeking out suitable mates.

Courtship behaviour of grass snakes does not involve male combat like the adder but numerous males have been recorded vying for the attention of a single female. In such 'mating balls' several males surround a single female in an attempt to copulate with her and attempt to wrestle the other males for position with their tails. Experimental studies in which male's numbers and size have been controlled have shown a definitive preference by females for larger males. Unlike males, female grass snakes will only mate once in a year after which they move off in search of egg-laying sites. In contrast to our other two British species grass snakes lay eggs with clutch sizes ranging from 10 eggs for smaller females up to an in excess of 40 eggs for large adult females. As with most reptiles the important factors that determine successful egg incubation are temperature and humidity and as a result female grass snakes will actively seek out decomposing organic matter as sites for egg decomposition. Dunghills, compost heaps and even



piles of rotting seaweed have all been used, and like hibernacula, these sites are communal with some heaps containing in excess of 250 incubating eggs. Eggs are typically laid June or July and hatch at the end of August and beginning of September.

Feeding and diet

Aside from mating and egg-laying grass snakes spend most of their time feeding. Unlike adders grass snakes are typical 'active' foragers, frequently entering water-bodies in search of their prey. Grass snakes are particularly good swimmers and can dive in search of their prey, staying under water for up to half an hour.



This behaviour is maintained for a number of minutes but as soon as they think they can get away with it the snakes will right themselves and disappear into the nearest undergrowth.

Despite their smelly secretions and wary behaviour, grass snakes have proved to be fascinating animals to study. It is worrying to note that populations throughout the UK are thought to be on the decline so if you do happen to see one please forward details of the sighting to the Herpetological Conservation Trust (<http://www.herpconstrust.org.uk/>) as it may provide useful information for their future conservation.

Studies conducted on populations in Dorset suggest newts, frogs and toads compose the majority of their diet, with the size of the prey taken corresponding to the size of the snake. After amphibians fish are thought to be the next most common prey item with smaller species such as gudgeon being the most common species. Unfortunately for ornamental fish keepers grass snakes do not differentiate between highly prized pet goldfish and they're more common cousins meaning ponds that neighbour suitable grass snake habitat often suffer mysterious fish disappearances. Unlike adders and smooth snakes the grass snake does not possess any special adaptations for overwhelming their prey. As a result preys are consumed live and are only prevented from escaping by the inward pointing teeth. When captured, grass snakes have a propensity to regurgitate their most recent meal and some researchers have been shocked to have a frog or toad hop away unharmed following

regurgitation!

Defensive tactics

Grass snakes can be susceptible to a number of bird and mammal predators including; buzzards, badgers and hedgehogs and as a result have developed two distinct behaviours in an attempt to stay alive. The first of these is instantly recognisable to anyone who has attempted to pick one up. Almost instantly on being grasped a grass snake expels a foul-smelling fluid from their anal glands! But if that is not enough to put off potential predators grass snakes will feign death, throwing themselves onto their back with their mouths open and tongue hanging out.

Grass snake facts

LATIN NAME– *Natrix natrix*

VENOMOUS – Yes the grass snake does have mild venom. However, they do not possess a venom delivery system and are therefore harmless.

DISTRIBUTION – widespread throughout Europe and parts of Northern Africa. Although absent from many Mediterranean islands.

CONSERVATION STATUS – Least Concern. However, populations are thought to be declining in a number of countries within its distribution.

LEGAL PROTECTION – Protected by the Wildlife and Countryside Act 1981. It is an offence to intentionally injure, kill or trade these snakes in any way.