



Sand lizard 'Test' egg-burrow surveying

Introduction

The sand lizard (*Lacerta agilis*) is the UK's only native egg-laying lizard. From late-May until mid-June, a female may from to 6 to 13 eggs in an enclosed burrow some 5 to 7cm in depth. To ensure that the burrow has the correct characteristics for successful incubation (warmth and humidity), a female will dig several 'test burrows', and only when she feels the conditions are right will she lay eggs and backfill the burrow.

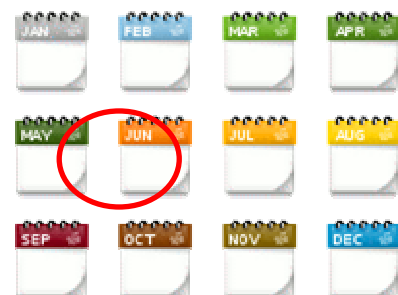
Sand lizards are our most difficult native terrestrial reptile to monitor. The animals are cryptic, well camouflaged and their activity levels can be extremely weather-sensitive. This species is consistently under-recorded by less-experienced surveyors.

As sand lizard 'test-burrows' are not covered by the digging female, and they tend to be on open ground, away from vegetation, the short window of burrowing can offer a surveillance opportunity for the detection of sand lizard presence and range. For site condition status, this evidence of breeding behaviour is important, and sand lizard laying areas should be identified on site habitat management plans.



When?

Currently, sand lizards in the UK usually lay their eggs from late-May to mid-June (historically, as late as July). Timing is variable and highly weather dependant. Peak levels of activity can be most noticeable during prolonged warm and sunny spells, often with high humidity. Test burrows are abandoned and left open. Such digging can occur over a number of weeks and, although varied, digging females can be most readily observed during the late afternoon (15:00-20:00).



Occasionally, a second clutch of eggs (and test-burrow excavation) can occur in late summer (August).



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Where?

Before they lay eggs females are increasingly noticeable in areas with open sand e.g. paths and managed sand strips. When the animals do lay their eggs only one burrow is used, this is then backfilled with loose sand.

They are most commonly found on south facing un-shaded sand and 20-30cm away from vegetation (to maximise exposure to the sun and, to reduce desiccation associated with plant roots). When freshly dug the excavated material is often left as a ramp outside the burrow. The animals prefers to lay eggs in quite firm sand, these areas are often the easiest to record burrows on, as long as there is minimal disturbance.

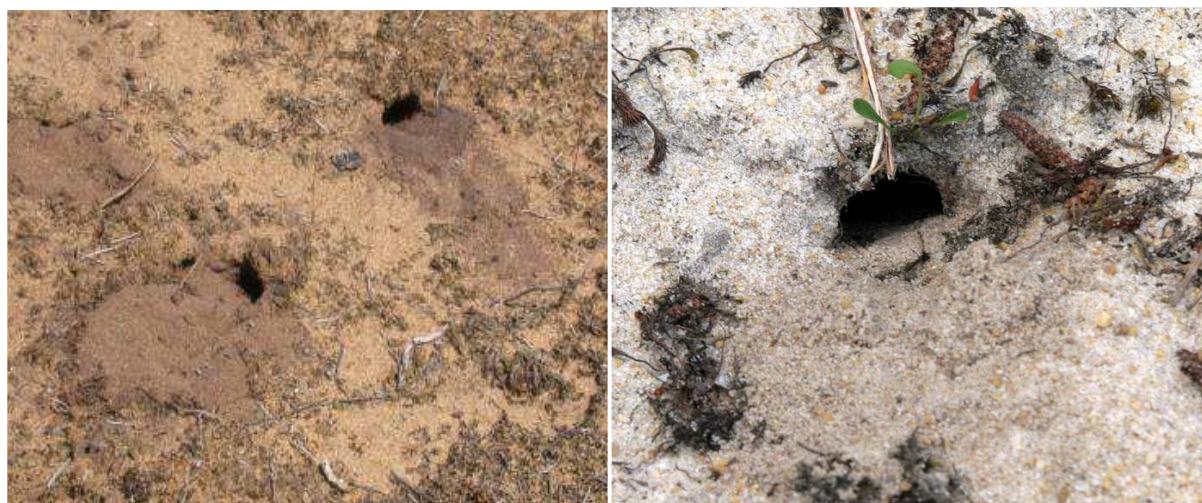
This monitoring approach is most applicable to dry lowland heath; it is of limited value for dune monitoring. Although animals will lay their eggs in soft and often disturbed sand we can only monitor, with any confidence, on firm sandy paths and managed strips.



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Identification

Test burrows are generally oval shaped (never circular) and usually about one inch (2.5cm) across. They are sometimes described as 'D'-shaped, with a flattened base and an arched top. The female digs the burrow by pushing her nose into the sand, then clearing and excavating with both front limbs, alternately. Her chin creates a flat base, with spoil pushed away from either side of the animal, and an arched roof as the nose is moved from side to side in an arc.



Sand lizard test burrows will have excavated spoil on one side of the burrow only. Many insect burrows (below left), such as beetles will have a circular spoil heap, as the animal rotates around the hole whilst digging. Insect burrows tend to be circular, rather than oval in shape.

Sand lizard refuge or hibernation burrows (below right) tend to be more circular (due to erosion over extended use), but will never be found on bare ground, they are always hidden within vegetation.





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Recording

Evidence of "test" burrows is essential to record. It is evidence of presence, breeding behaviour and can additionally establish range of the species on site. A major advantage is that surveys can be done at any time of day. It does allow large areas of sites to be surveyed at one visit, though effectiveness degrades after heavy rain or disturbance (such as horse-riding or public pressure).

This method of survey also has limitations. It is always uncertain when peak activity will occur. Misidentification can be easy with both small mammal and insect burrows; do not record if you are uncertain.

As each female can dig multiple test burrows over 20m of sandy path do not record each burrow, only record once per occurrence on a 5m strip. From this we can help establish minimum population levels. This type of survey cannot, on its own, be used to establish species absence.



Steve Langham (SARG) 2015 – Based on the advice note issued by Nick Moulton (ARC) 2015.