

Competency Standard for Reptile Survey, Mitigation and Management

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CIEEM

Acknowledgements

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Notes

a) Achievement of the **Capable** level requires meeting all criteria at both **Foundation** and **Capable** levels. Achievement of the **Proficient** level requires meeting all criteria across all three levels.

b) '**Experience**' means that you have done so on numerous occasions.

All practitioners should have knowledge and understanding of:	
Reptile ecology and behaviour	1) Behaviour (including differences between UK species where relevant), how reptiles use summer, breeding and winter sites and the seasonal timing for each 2) Typical dispersal distances and time of year of migration/dispersal 3) Habitat and micro-habitat requirements and competition for resources 4) Population structure and dynamics and how this may vary in different landscapes 5) Different reproductive methods between reptile species
Distribution	Distribution of reptiles, including where reptiles are absent, where to expect to find them in lower/higher numbers and (for those working in the UK) where sand lizard and smooth snake are generally distributed.
Conservation status	Conservation status of all naturally occurring reptile species with reference to constituent parts of UK and Europe as a whole. Understanding of the key threats to each reptile species population, range and survival and the reasons for their decline (e.g. habitat loss, habitat fragmentation, intentional disturbance, climate change).
Health and safety	Health and safety issues associated with reptile survey, including safe survey techniques and survey-specific risks, e.g. manual handling of refugia, working in proximity to venomous species where relevant (adder), and ticks. Able to plan and undertake work in a safe manner.
Biosecurity	Appropriate biosecurity risk, precautions and procedures when surveying and handling reptiles. Undertake, as standard, appropriate biosecurity measures and personal hygiene precautions relating to working with animals. Able to undertake the 'check, clean, dry' methodology and has an awareness of reptile disease.
Key References and Reading List	See relevant section of CIEEM's Good Practice Guidance for Habitats and Species V3 (May 2021) (see https://cieem.net/resource/good-practice-guidance-for-habitats-and-species/).

Competency Standards			
Activity	**Foundation**	**Capable**	**Proficient**
Policy, legislation and standards (P1.1)	Aware of key legislation and basic understanding of the different levels of protection afforded to different naturally occurring reptile species. Aware of when survey licences/development licences are required.	Knowledge and understanding of legislation and offences. Also understands priority species legislation and policy guidance in relevant geographic context. Can correctly interpret the legislation in regard to specific scenarios (e.g. site work), and able to provide accurate advice. Understands when habitats regulations assessment is necessary (where a qualifying Annex II species). Knowledge of development licence process and good understanding of when a licence is required (can provide examples of typical licensable development activities), awareness of three test/ considerations to obtain licence, understanding of what an appropriate level of mitigation is.	Is regularly approached for advice and may provide training to other ecologists on policy and legislation in respect to reptiles. Experience with managing the risks to landowners, developers and contractors arising out of environmental, legal and policy requirements. May have experience of smooth snake and sand lizard development licences and can produce a suitably detailed method statement. May hold relevant smooth snake and sand lizard licences.
Survey (S1.1) Habitat suitability assessment	Aware of reptile habitat requirements and ability to assess the suitability of habitat for reptiles.	Able to lead reptile habitat assessments. Able to quantify suitability (e.g. as negligible, poor, good or exceptional) and spot 'foci' within habitats (e.g. edges/ecotones, ridges, hummocks, sunny slopes, brash heaps).	Understanding of habitat utilisation of all native species, including seasonal variation, and demonstrates a landscape-scale understanding including micro habitat utilisation for all life stages. Able to consider limitations and apply professional judgement in relation to habitat suitability assessment.

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Activity	**Foundation**	**Capable**	**Proficient**
Survey (S1.2) Methodology, bias and data collection	Aware of principles behind standard survey methodology and appropriate survey methods for different species and at different times of year. Able to follow a defined transect route where used and make use of visual observation, existing refugia (i.e. natural/ semi-natural) and artificial basking places on site for detecting reptiles. Aware of the range of potential materials for artificial refugia. Aware of potential survey bias and limitations and the range of factors that affect survey and may lead to these. Able to record reptile sightings, photograph, take notes and record weather conditions. Has some experience of population size class estimation (low, good, exceptional) for a single species.	Able to deploy, monitor and retrieve refugia effectively (using suitable materials and sizes, deployment densities, 'bedding-in' period, locations, security risks), safely and in a manner that will not pose a risk to any reptiles or surveyors present. Able to detect reptiles using standard survey methodology including visual observation and examination of refugia (demonstrating understanding of appropriate timing, safe lifting and replacement of refugia, hand capture, welfare). Able to demonstrate familiarity with techniques of individual reptile identification (such as photographing unique identifying features). Able to define transect routes, where used, to take account of daily and seasonal variations in species behaviour. Able to clearly explain when bias of survey and false negatives may occur. Able to record habitat conditions and identify potential threats at a location. Experience of undertaking population size class estimates for multiple species on more than one site.	Can demonstrate extensive experience of survey design and deployment and monitoring of refugia for all naturally occurring reptile species where present. Is regularly approached for advice and may provide training to other ecologists on survey methods. Knowledge of less obvious reasons for survey result bias and can interpret these when drawing conclusions. Is aware of, and can explain to others, limitations to existing methods when undertaking a population size class estimate for different species. Can identify true population size class estimates to inform mitigation based on unique site characteristics. Able to record future impacts and advise and assist others in their assessments.
Survey (S1.3) Identification	Able to accurately identify all native reptiles.	Able to identify all life stages (from juveniles, sub-adults and adults) for all native reptile species. Able to sex individuals in the field. Demonstrates a knowledge and understanding of other evidence that indicates reptile presence (e.g. sloughs, eggs) including to species level where material is in good condition.	Is regularly approached for advice and may provide training to other ecologists regarding reptile identification. Aware of non-native reptiles that may occasionally be encountered.

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Activity	**Foundation**	**Capable**	**Proficient**
Impact assessment (A4)	Must have achieved at least Capable level in relation to survey. Able to accurately interpret results, with guidance from a supervisor, to form a sound judgement or hypothesis of reptile use of a site whilst acknowledging limitations and uncertainties.	Able to accurately interpret results to form a sound judgement or hypothesis of reptile use of a site whilst acknowledging limitations and uncertainties.	Must have achieved at least Proficient level in relation to survey. Able to accurately interpret results relating to major development projects impacting more than one reptile species or large-scale conservation projects, to form a sound judgement or hypothesis of site(s) use whilst acknowledging limitations and uncertainties. Is regularly approached for advice and may provide training to other ecologists.
Mitigation design (M2)	Aware of standard mitigation techniques and when they could be used.	Experience with reptile mitigation schemes and able to clearly explain the different species-specific mitigation habitats/features (e.g. compost heaps).	Must have achieved at least Capable level in relation to implementation of mitigation. Able to design appropriate mitigation in complex cases with multiple species of reptile (where relevant). Is regularly approached for advice and may provide training to other ecologists.
Implementing effective mitigation (M3)	Must have achieved at least Capable level in relation to survey. Understanding of standard development licence requirements, including timing of development works, mitigation techniques, welfare/ safety issues and habitat creation. May have assisted mitigation implementation under supervision.	Experience of overseeing effective mitigation implementation, including precautionary working methods, destructive searches, displacement/ habitat manipulation, translocation and habitat creation. Knowledge of when to curtail or modify mitigation technique due to unsuitable weather, predation, welfare of target and non-target species, etc.	Has experience of leading on the implementation of mitigation strategies for multiple schemes with at least three different species of reptile (UK only).
Implementing effective mitigation (M3) Handling and welfare	Has received foundation training on handling non-venomous reptiles, directly supervised by others, and understands the risks associated with handling on species survival.	Able to legally and humanely handle live reptiles; and maintain the safety of those present (e.g. avoid handling adders). Aware of capture survey methodologies (by hand, by pit fall trap and hand-held noose). May be able to handle adders under supervision where deemed unavoidable (e.g. translocation purposes). Aware of SNCB procedures for reporting any accidental deaths or injury during surveys.	Is regularly approached for advice and may provide training to other ecologists. Trained on all aspects of safely handling venomous reptiles (where relevant). Able to handle adders where deemed unavoidable for more complex procedures (e.g. genetic sampling or radio-tracking). Recognises the associated risks, strictly follows health and safety protocols on handling venomous reptiles and knows what action to take if injury to the surveyor occurs.

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Advising on management (M1)	Aware of reptile habitat requirements, standard management techniques and when they could be used.	Able to clearly explain reptile species-specific approaches to habitat management, the rationale behind them and the setting of appropriate SMART objectives. Aware of potential conflicts which may arise between habitat management and other land use (e.g. grazing).	Able to design appropriate management regimes in complex cases (such as sites that support different species of reptile), with SMART objectives. Is regularly approached for advice and may provide training to other ecologists.
Interpretation (SM3)	Aware of sources of information on known occurrence and distribution of reptiles, including local biological/environmental records and amphibian groups. Able to obtain and interpret available information under supervision and report accurately whilst acknowledging limitations and uncertainties.	Able to obtain and interpret available information as part of a standard, non-complex assessment. Able to interpret results to form a sound judgement or hypothesis of habitat/site use whilst acknowledging limitations and uncertainties.	Able to interpret available information as part of a non-standard, complex assessment including sites supporting multiple reptile species. Leads and advises others on collection and interpretation of data from all relevant available sources. Demonstrates detailed understanding of data limitations and assessment of risk of false negatives.



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