

**Natural England Notification Strategy:
SSSI Notification Review for
Amphibians & Reptiles**

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Cover Photo: Woolmer Forest SSSI, Hampshire – one of the most important protected sites for amphibians and reptiles in England

Contents

| | |
|--|----|
| 1. Summary | 4 |
| 2. Introduction | 5 |
| 3. History of Site Designations for Amphibians and Reptiles | 6 |
| 4. Approach | 6 |
| 4.1. Characteristics of an Appropriate SSSI Series for Amphibians and Reptiles | 7 |
| 4.2. Evaluation of Features | 7 |
| 4.3. Representativeness of the Current SSSI Series | 7 |
| 4.4. Identification of Site Amendments Required | 11 |
| 4.5. Revising the SSSI Guidelines | 11 |
| 5. Results and SSSI Notification Proposals for Amphibians and Reptiles | 11 |
| 5.1. Characteristics of an Appropriate SSSI Series for Amphibians and Reptiles | 12 |
| 5.2. Evaluation of Features | 13 |
| 5.3. Representativeness of the Current SSSI Series | 14 |
| 5.3.1. Range Restricted Species | 14 |
| 5.3.1.i. Natterjack Toad | 14 |
| 5.3.1.ii. Sand Lizard | 15 |
| 5.3.1.iii. Smooth Snake | 17 |
| 5.3.1.iv. Pool Frog | 18 |
| 5.3.2. Widespread Species | 18 |
| 5.3.2.i. Great Crested Newt | 18 |
| 5.3.2.ii. Amphibian Assemblage | 21 |
| 5.3.2.iii. Reptile Assemblage | 22 |
| 5.3.2.iv. Common Toad | 23 |
| 5.3.2.v. Adder | 23 |
| 5.4. Identification of Site Amendments Required | 23 |
| 5.4.1. Improving the Existing Site Series for Range Restricted Species | 24 |
| 5.4.1.i. Natterjack Toad | 24 |
| 5.4.1.ii. Sand Lizard | 24 |
| 5.4.1.iii. Smooth Snake | 25 |
| 5.4.2. Expanding the Site Series for Range Restricted Species | 27 |
| 5.4.2.i. Natterjack Toad | 27 |
| 5.4.2.ii. Sand Lizard | 29 |
| 5.4.2.iii. Smooth Snake | 30 |
| 5.4.3. Widespread Species | 32 |
| 5.5. Revising the SSSI Guidelines | 33 |
| 6. Next Steps and Future Issues | 34 |
| 7. Consequences and Risks | 34 |
| 8. Implementation | 35 |
| 9. References | 35 |
| Appendix I: List of Data Sources | 37 |
| Appendix II: All SSSIs with Notified Amphibian and Reptile Features | 38 |

1. Summary

This document represents Natural England's evaluation of the adequacy of the current SSSI site series (and associated guidance) for the conservation of amphibians and reptiles. This review relied heavily on the invaluable assistance of the staff of Amphibian & Reptile Conservation (ARC), who have been working with Natural England to improve the site series through a number of MoAs.

The native amphibian and reptile species can be clearly grouped into two categories - "range restricted" and "widespread". This distinction influenced both the original SSSI guidelines and the subsequent history of site designations and it also means that this evaluation actually consists of two separate reviews. For both groups the following areas were evaluated:

- Characteristics of an appropriate SSSI network for amphibians and reptiles
- Currently notified amphibian and reptile features in England
- The representativeness of the current site series for each feature
- Identification of amendments to the site series, including improvements to and expansion of the site series (where suitable information exists) or recommendations to guide future notification (where information is lacking), including obtaining the necessary evidence
- The current SSSI guidelines for amphibians and reptiles, especially selection criteria, notifiable features and boundary setting guidance

Relevant information is presented in table form wherever possible. This includes a summary of the current site series for amphibians and reptiles (Appendix II), which consists of 104 SSSIs and 158 notified features.

The review of the range restricted species concludes that the site series for the natterjack toad, sand lizard and smooth snake features is largely adequate, albeit with some important gaps. A series of detailed improvements and amendments is proposed (where current data allow) to improve and expand the site series for these species. Some of the potential improvements to the site series for range restricted species, such as adding features to existing SSSIs following a successful re-introduction, are fairly straightforward. Other, such as expanding SSSIs for natterjack toads into farmland or linking SSSIs for sand lizards and smooth snakes via forestry and mineral sites (to improve ecological resilience), will require further planning and more detailed evidence.

The second review, which covers the widespread great crested newt plus the amphibian and reptile assemblage features, highlights the complete inadequacy of the existing site series for these features as well as a serious lack of the type of information that would be required for designing one. There is significant potential for adding these features to existing SSSIs, and also notifying new sites for them, although the resources and time required for this exercise would be significant.

Prior to any improvements to the site series for herpetofauna, however, the SSSI guidelines will require a major revision in conjunction with the other country agencies and JNCC. The creation of new species features (pool frog, common toad and adder) is proposed and changes to the selection and boundary setting criteria, plus a huge data gathering exercise, will all be needed before the notification process can resume. In tandem with these exercises, the Common Standards Monitoring guidelines for amphibians and reptiles would also have to be revised. All of this work would then help to inform the future condition monitoring of amphibian and reptile features, the revision and improvement of SSSI Favourable Condition Tables and Natural England's Detailed Notification Review process.

2. Introduction

Natural England is currently developing and implementing a strategy that will guide its activities relating to designated sites, covering local, national and internationally recognised designations. This strategy will describe Natural England's approach to how such sites are selected, what they contribute to the conservation of biodiversity, geodiversity and landscape value, and how they meet the requirements of local, national and international conservation policy. The development of the strategy began in 2008 in response to recommendations from the National Audit Office, the Public Accounts Committee and the Innovation, Universities, Science and Skills committee that a strategic approach should be taken to employing designated sites in the UK. The strategy is increasingly supported by, and forms a key delivery mechanism for, the England Biodiversity Strategy, and also forms part of the government's responses to the recommendations of the Lawton Review. The review aims to produce a clear strategy for use of designations that can be implemented from 2015.

Sites of Special Scientific Interest (SSSIs) are a UK-based designation that is designed to recognise and protect sites of the greatest national value and importance for scientific understanding of the diversity of the natural world, and for the cultural heritage these represent. SSSIs should represent the full diversity of features, contain all of our most important sites, reflect and encompass dynamic processes that support the interest on the site, and enable that interest to be resilient and adaptable to environmental change. The process whereby land is brought under a SSSI designation is called notification.

Natural England's use of SSSI notifications is being reviewed as part of the designations strategy. This review involves checking whether the right features are currently being prioritised for SSSI designations, whether the current coverage of the SSSI series adequately represents the range of interest features present in the country, and whether the boundaries of existing SSSIs are adequate to ensure their ongoing conservation. Because of the huge range of different types of features represented by SSSIs, this task is being carried out separately for each group of habitats or species and each review has been led by a relevant Natural England specialist.

This document describes the processes and results of the SSSI review for amphibians and reptiles (often collectively known as "herpetofauna"). The review covers the four species and two species assemblages that are listed in the amphibian and reptile chapter of the Guidelines for the Selection of Biological SSSIs (JNCC 1989), namely:

- Great crested newt (*Triturus cristatus*)
- Natterjack toad (*Bufo/Epidalea calamita*)
- Amphibian Assemblage
- Sand lizard (*Lacerta agilis*)
- Smooth snake (*Coronella austriaca*)
- Reptile assemblage

Three additional species (pool frog, common toad and adder) that will be proposed as new features in the planned revision to the amphibian and reptile chapter are also briefly discussed. The information presented here represents a record of the rationale for Natural England's approach to SSSI notification and, at least for some of the species features concerned at this stage, will provide guidance to inform future notifications,.

3. History of Site Designations for Amphibians and Reptiles

Well before the SSSI guidelines were written, and any sites were designated for amphibians and reptiles, it was recognised that they could be grouped into two distinct categories according to their distribution and status. The first consisted of the very range restricted herpetofauna species, the natterjack toad, sand lizard and smooth snake. The second included the much more widely distributed species, namely the great crested newt and the remaining amphibian and reptile species that were to be grouped together into two species assemblages.

This division between “range restricted” and “widespread” species was subsequently reflected in the guidelines and in the history of site designations for amphibians and reptiles (Table 1). Although the timeline shown by this table is confounded slightly by later site re-notifications, it can still be seen that the range restricted species were, quite correctly, given first priority in the notification process during the 1980s and into the 1990s. However, the next obvious step of increasing numbers of sites being notified for the widespread species features throughout the 1990s and beyond did not occur. In theory, significantly more sites throughout England should have met the selection criteria for widespread species than for the range restricted species although the latter still dominate the site series. A small number of additional sites were notified for great crested newts in the early 2000s but this represented less than a dozen new sites out of the several hundred proposed. This situation still stands and proposals are therefore made in this review for rectifying it.

Table 1: Number of Amphibian and Reptile Features Notified per Decade (total = 104 SSSIs)

| Notified Feature | 1980s | 1990s | 2000s | 2010s | Totals |
|---------------------------------|-----------|-----------|-----------|----------|------------|
| Range Restricted Species | | | | | |
| Natterjack toad | 9 | 4 | 1 | 0 | 14 |
| Sand lizard | 30 | 15 | 1 | 0 | 46 |
| Smooth snake | 27 | 14 | 0 | 0 | 41 |
| Totals | 66 | 33 | 2 | 0 | 101 |
| Widespread Species | | | | | |
| Great crested newt | 16 | 8 | 11 | 1 | 36 |
| Amphibian assemblage | 9 | 4 | 0 | 2 | 15 |
| Reptile assemblage | 1 | 5 | 0 | 0 | 6 |
| Totals | 26 | 17 | 11 | 3 | 57 |
| Totals for all Features | 92 | 50 | 13 | 3 | 158 |

4. Approach

The following broad approach was used to undertake this review. This can be divided into:

- Characteristics of an appropriate SSSI network for amphibians and reptiles
- Evaluation of currently notified amphibian and reptile features in England
- Review of the representativeness of the current site series for each feature
- Identification of new sites and changes to existing sites (where suitable information exists) or recommendations to guide future notification (including obtaining the necessary evidence)
- Review of the SSSI selection and boundary setting guidance for amphibians and reptiles

4.1. Characteristics of an Appropriate SSSI Series for Amphibians and Reptiles

Amphibians and reptiles have limited mobility compared to many other taxa but it would be a mistake to assume that an appropriate site series to ensure their conservation could be limited to small or isolated sites. Some species movements can cover many kilometres, and a wide range of different habitats, within a season and all amphibians and reptiles require good links to other populations in order to maintain genetic integrity and resilient populations. Since most species function as metapopulations, scattered over the landscape as a series of smaller, inter-connected sub-populations, simply notifying the largest population in any Area of Search may not be adequate.

Great crested newts are a good example of this, in that the current SSSI guidance has favoured the notification of large single populations that have been boosted, often temporarily, by the presence of old mineral workings and brick pits. The more numerous, more natural, more resilient and more important meta-populations of great crested newts that occur in farmland and woodland in certain lowland areas have been all but excluded from the site series as a result.

The evaluation of the current site series, and any amendments suggested at this stage, have therefore been considered in the light of the ecological requirements of amphibians and reptiles and the need to ensure that resilient populations are maintained, especially in the face of future threats such as climate change (Dunford & Berry 2012; Russell 2012). In some cases, notification may not be the best way forward so improving the connectivity of SSSIs to the wider landscape and to each other, e.g. through agri-environment schemes, is also crucial.

4.2. Evaluation of Features

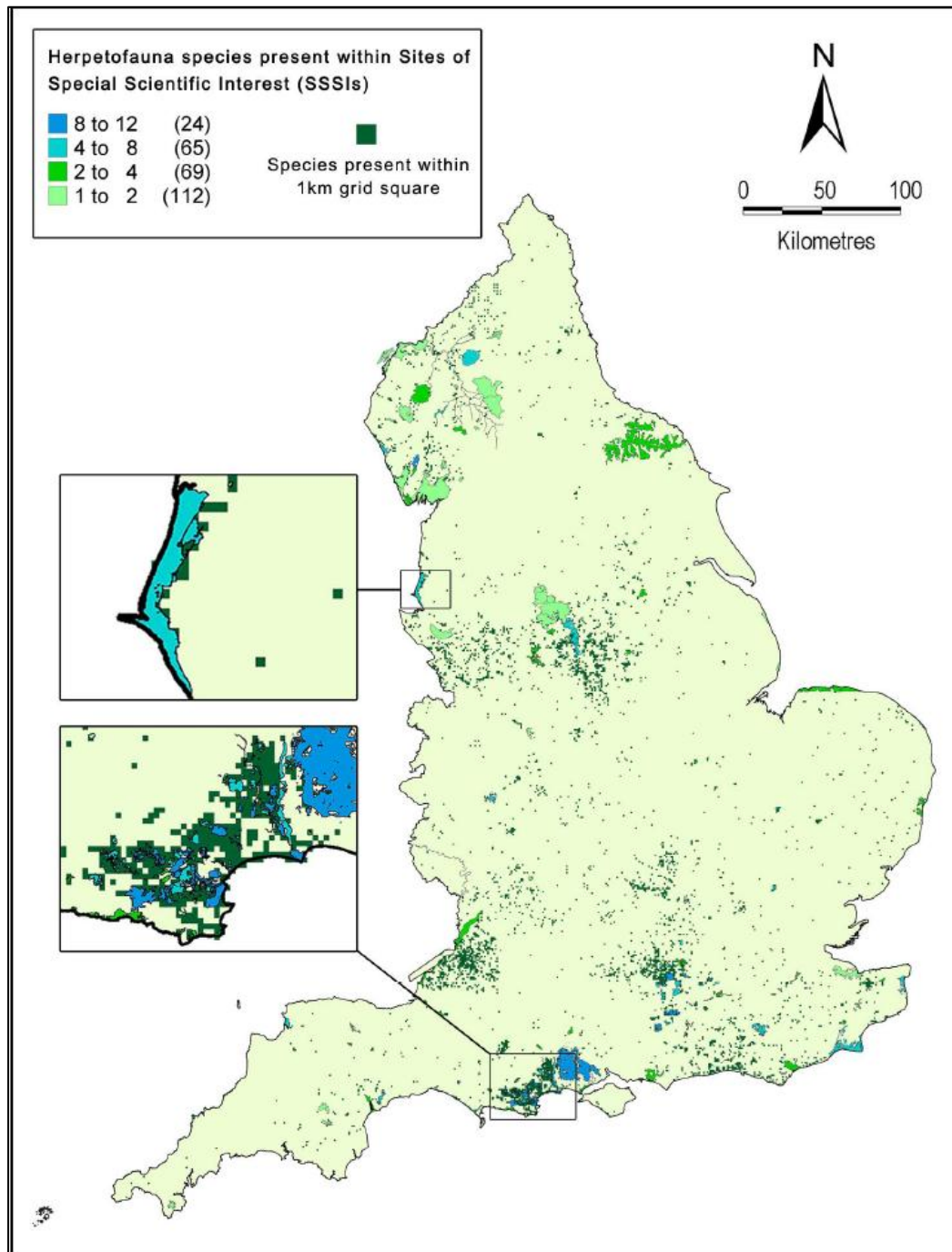
This part of the review is a simple one for amphibians and reptiles. Although they occur in many sites and habitats throughout England, potentially requiring a huge increase in the number of SSSIs for their effective conservation, the number of features involved is very small. Along with a review of the current SSSI guidelines for amphibians and reptiles, each of the current notifiable features was assessed for continued inclusion or exclusion in the site series and for any other potential changes (e.g. splitting individual species from assemblages). This draft review has been compiled by Natural England's Senior Specialist for amphibians and reptiles but relied heavily on the considerable background work, analysis of datasets and other invaluable help and advice from Amphibian & Reptile Conservation, plus discussions and workshops with NRW and SNH.

4.3. Representativeness of the Current SSSI Series

The extent to which the current SSSI series in England adequately represents the amphibian and reptile features selected using the process above (including proposed new features) was judged by using a geographical analysis of the relationship between SSSI extent, and other data indicating the known distribution of these features (where possible). These data were also used to identify where notifiable features are already present within SSSIs but are not mentioned as reasons for designation in the citation. This work was largely done by Amphibian & Reptile Conservation (Limburn, Arnell & Wilkinson 2012) and via a series of subsequent SSSI MoAs between ARC and Natural England (but see also Langton, Beckett & Dunsmore 1993; Mitchell-Jones & Gent 1997).

Although incomplete for many species, and often reflecting recorder effort more than actual distribution, records of individual amphibian and reptile species were available from a variety of sources (see Appendix I). The data were analysed against the distribution of current SSSIs (Figure 1) as well as other designations. The “Important Herpetofauna Areas” (Table 2) of the Sefton Coast (top box) and the Dorset Heaths/New Forest are clearly shown in the inset maps of Figure 1.

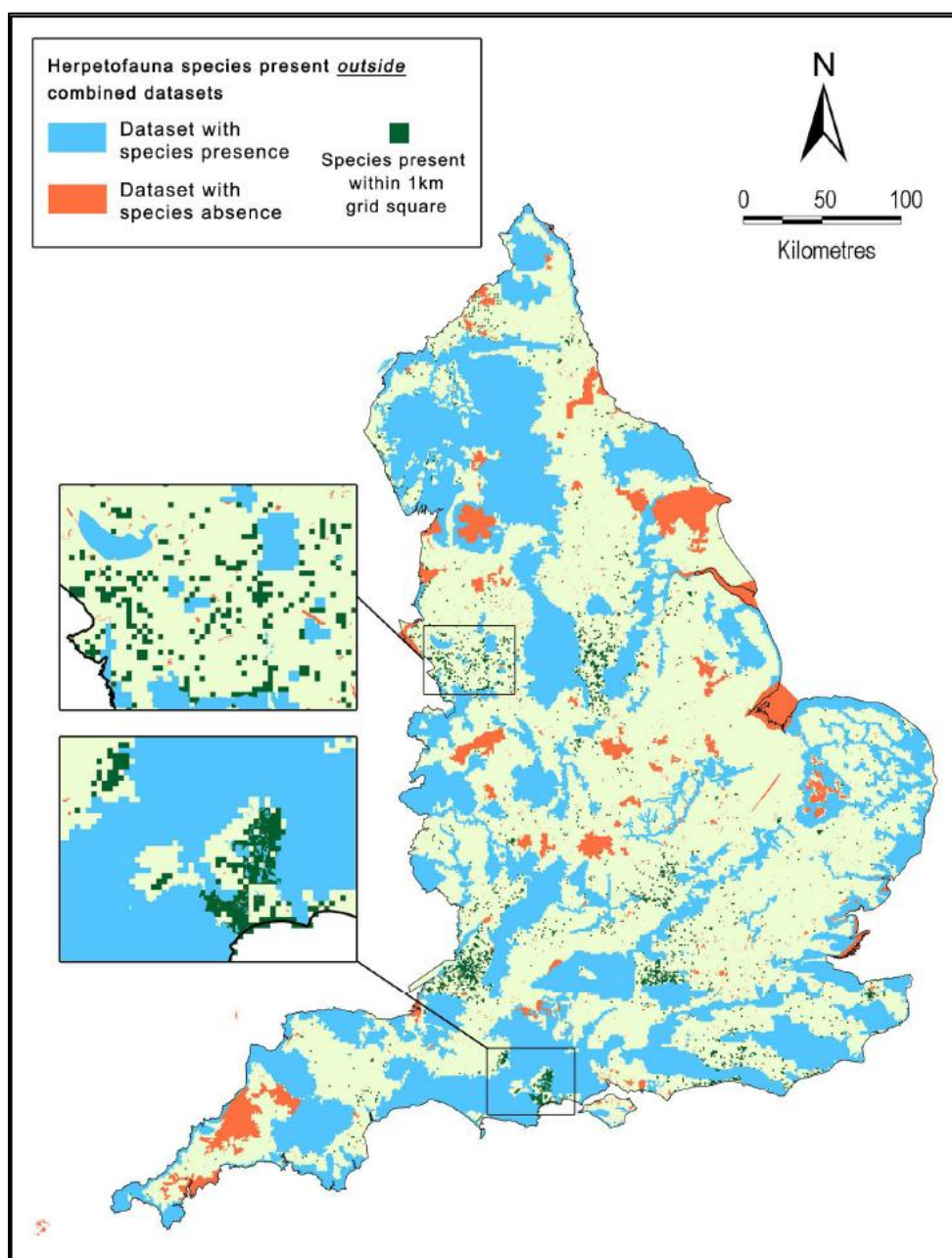
Figure 1: Herpetofauna Species Records Analysed by SSSI
 (Limburn, Arnell & Wilkinson 2012)



The data were also analysed against the distribution of combined datasets that included SSSIs, NNRs, Local Nature Reserves, HLS target areas and Nature Improvement Areas. This analysis highlighted gaps where the conservation of amphibian and reptile species was potentially not being ensured by any of the above (Figure 2). For example, the inset maps in Figure 2 show numerous records of great crested newts in their north-western hotspot centred on Cheshire (Table 3), as well as records of sand lizards and smooth snakes in forestry and mineral areas on the Dorset/Hampshire border, all well outside of any SSSIs or other conservation designations.

Figure 2: Herpetofauna Species Records Analysed by Combined Datasets

(Limburn, Arnell & Wilkinson 2012)



In addition, the representativeness of the site series was judged against the best known “Important Herpetofauna Areas” (IHAs) for several species. These IHAs, which are not yet formally embedded in amphibian and reptile conservation strategy, are essentially a means of prioritising effort and limited resources for key areas. Based on National Character Areas, as are the SSSI Areas of Search in England, the top five IHAs for the range restricted species (the smooth snake effectively only occurs in four, although re-introductions should expand this) are shown in Table 2.

Table 2: Important Herpetofauna Areas for Range Restricted Species in England

| Important Herpetofauna Area | Associated National Character Area(s) | Rankings | | |
|-----------------------------|---------------------------------------|-----------------|-------------|--------------|
| | | Natterjack Toad | Sand Lizard | Smooth Snake |
| Cumbria Coast | 6. Solway Basin | 1 | - | - |
| | 7. West Cumbria Coastal Plain | | | |
| | 19. South Cumbria Low Fells | | | |
| Sefton Coast | 57. Sefton Coast | 2 | 3 | - |
| East Anglian Coast | 76. North West Norfolk | 3 | - | - |
| | 77. North Norfolk Coast | | | |
| | 78. Central North Norfolk | | | |
| | 79. North East Norfolk & Flegg | | | |
| | 80. The Broads | | | |
| | 82. Suffolk Coast & Heaths | | | |
| Wealden Heaths | 120. Wealden Greensand | 4 | 2 | 3 |
| Thames Basin Heaths | 129. Thames Basin Heaths | - | 4 | 4 |
| New Forest | 131. New Forest | - | 5 | 2 |
| Dorset Heaths | 135. Dorset Heaths | 5 | 1 | 1 |

Among the widespread species, the great crested newt is the only one where we have any idea of IHAs. The top three hotspots for this species in England (there are several others), which actually support internationally important populations, are listed in Table 3.

Table 3: Important Herpetofauna Areas for Great Crested Newt in England

| Important Herpetofauna Area | Associated National Character Area(s) | Ranking |
|-----------------------------|--|---------|
| Northwestern Claylands | 32. Lancashire & Amounderness Plain | 1 |
| | 56. Lancashire Coal Measures | |
| | 59. Wirral | |
| | 60. Mersey Valley | |
| | 61. Shropshire, Cheshire & Staffordshire Plain | |
| | 68. Needwood & South Derbyshire Claylands | |
| East Anglian Claylands | 83. South Norfolk & High Suffolk Claylands | 2 |
| | 84. Mid Norfolk | |
| | 86. South Suffolk & North Essex Claylands | |
| | 88. Bedfordshire and Cambridgeshire Claylands | |
| Wealden Claylands | 111. Northern Thames Basin | 3 |
| | 121. Low Weald | |
| | 122. High Weald | |
| | 123. Romney Marshes | |
| | 124. Pevensey Levels | |

4.4. Identification of Site Amendments Required

The identification of required site amendments was again divided into the range restricted species, where reasonable information is available to inform decisions, and the widespread species features, where evidence is seriously lacking. The approach taken for the former group was further divided into:

1. An evaluation of improvements that are needed to ensure the existing site series is fit for purpose for currently notified features (this was possible for sand lizard and smooth snake). This is considered essential before any consideration is given to expanding the site series
2. Proposals for potential actions to expand the site series through extending existing herpetofauna sites, adding amphibians and reptile features to other SSSIs and creating brand new sites (this was partially possible for natterjack toad, sand lizard and smooth snake although more detailed evidence and planning is still required)

With the exception of a few individual sites, it was not possible at this stage to identify detailed site amendments for the widespread species, especially any aimed at expanding the series for these features. The revision of the SSSI guidelines and a major data gathering exercise would be required before this would be possible.

4.5. Revising the SSSI Guidelines

Based on the approach outlined above, consideration was also given to the need for revising the amphibian and reptile chapter of the current SSSI guidelines. This would include a revision of the selection and boundary setting criteria, plus the actual notified features themselves. Clearly, this work will be required first to inform the next stage of the SSSI review, i.e. detailing various proposals for potential site linkages for the range restricted species and for improving the entire widespread species network. This document therefore does not include any new guidance at this stage.

5. Results and SSSI Notification Proposals for Amphibians and Reptiles

The results of the above processes have resulted in a limited number of detailed proposals for improving the site series for the range restricted species. In addition, suggestions are made for the gathering of improved evidence that, along with revision to the SSSI and CSM guidelines, will guide future SSSI notification to conserve and enhance amphibians and reptiles

5.1. Characteristics of an Appropriate SSSI Network for Amphibians and Reptiles

Amphibians and reptiles are not uniformly distributed across England, and some areas are significantly more important than others, so the characteristics of an appropriate SSSI network will vary. The following range of broad principles (which should be reflected in the revised guidelines) is

therefore suggested to guide the development of an effective network that will be sufficiently flexible to accommodate different species as well as local and regional variations:

- **Inclusive Approach.** In this situation, the vast majority, if not all, populations of a feature within a particular Area of Search are automatically included in the site series
- **Exemplar Approach.** The best example of a feature within each Area of Search is notified
- **Minimum Standards Approach.** All features that meet the minimum selection criteria in any Area of Search are notified
- **Important Herpetofauna Area (IHA) Approach.** This approach combines elements of all the approaches above and applies them according to the relative importance of an Area of Search to a particular feature. For example, in some areas all examples of a feature would be notified, in others a minimum standard would have to be met and in others the very best example(s) only might suffice. This approach has the potential to more effectively target improvements to the site series for the widespread species in particular.

The benefits of the approaches outlined above to both the range restricted and widespread species are compared in Table 4. In reality, no single approach will produce the ideal site series. There will also be situations, such as great crested newts on farmland, where it would be difficult to include the whole of a metapopulation and all relevant functional habitats within protected sites. Improvements to the site series therefore need to be planned in conjunction with the management of the wider countryside, including the targeting of agri-environment schemes.

Table 4: Proposed Principles for Improving the SSSI Network for Herpetofauna

| SSSI Notification Principles | Range Restricted Species | Widespread Species |
|-------------------------------------|---|---|
| Inclusive Approach | This approach has already been employed for this group. Also recommended in future to notify new species features on existing SSSIs (e.g. where re-introduced) | May be of use when targeted to key areas for some widespread species features, but probably not appropriate for most Areas of Search |
| Exemplar Approach | Not relevant | Suitable for some areas but only if good distribution data is available, otherwise there is the potential to notify the “wrong” sites and/or miss opportunities |
| Minimum Standards Approach | Not relevant | Not appropriate if applied nationally as this could result in huge numbers of SSSIs. In some cases large populations may not need notification in order to ensure their protection (e.g. common toads breeding in fishing lakes) but would benefit from other measures (e.g. amphibian tunnels under roads that cross migration routes) |
| IHA Approach | Recommended for extending sites to provide linkages and improve resilience. Further planning is required in sensitive areas, e.g. farmland for natterjacks, forestry for sand lizards and smooth snakes. This should be followed by a revision of the SSSI guidance | Recommended in “hot spots” and elsewhere where the widespread species require additional protection, e.g. where key populations are not included in the current site series, or the management of existing SSSIs is clearly damaging important populations |

5.2. Evaluation of Features

Table 5 shows the results of the feature evaluation.

Table 5: Amphibian and Reptile Feature Evaluation

| Notifiable Feature Name | JNCC Selection Guidelines | Specialist Reviewers | Are SSSIs Required for this Feature? | Do the Existing Guidelines Cover this Feature? | Amendment Required to Guidelines to Add or Remove Feature? |
|---------------------------------|---------------------------|----------------------|--------------------------------------|--|--|
| Restricted Range Species | | | | | |
| Natterjack Toad | Amphibians & Reptiles | NE/NRW/SNH/ARC | Yes | Yes | No amendment required |
| Sand Lizard | Amphibians & Reptiles | NE/NRW/SNH/ARC | Yes | Yes | No amendment required |
| Smooth Snake | Amphibians & Reptiles | NE/NRW/SNH/ARC | Yes | Yes | No amendment required |
| Pool Frog | Currently not included | NE/NRW/SNH/ARC | Yes | No | Add feature to guidelines |
| Widespread Species | | | | | |
| Great Crested Newt | Amphibians & Reptiles | NE/NRW/SNH/ARC | Yes | Yes | No amendment required |
| Amphibian Assemblage | Amphibians & Reptiles | NE/NRW/SNH/ARC | Yes | Yes | No amendment required |
| Reptile Assemblage | Amphibians & Reptiles | NE/NRW/SNH/ARC | Yes | Yes | No amendment required |
| Common Toad | Currently not included | NE/NRW/SNH/ARC | Yes | No | Add feature to guidelines |
| Adder | Currently not included | NE/NRW/SNH/ARC | Yes | No | Add feature to guidelines |

The existing amphibian and reptile features were considered to be satisfactory and there is no requirement to remove any from the SSSI guidelines. However, three new species features are proposed for NE Board consideration, one brand new and two “pulled out” of assemblage features where this is considered to be the most effective way of ensuring their conservation. These new features are:

- **Pool Frog.** The northern clade of this species is considered by many to have once been a native (Buckley & Foster 2005) so has been re-introduced to two sites in Norfolk. Although this decision is still contested, significant expense has already been incurred on these projects so the addition of this species to the guidelines and its subsequent notification (to create a new SSSI for one re-introduction site and to add this species as a feature to an existing SSSI for the other) should be considered
- **Common Toad.** This species can theoretically be protected as part of an amphibian assemblage. However, nationally important populations of common toads can occur without an accompanying amphibian assemblage and, since this species has suffered significant, often unexplained declines (Carrier & Beebee 2003; Hitchens & Beebee 1998; Young & Beebee 2004), it is proposed that it is made a new standalone feature. This proposal has the support of both NRW and SNH

- **Adder.** Similarly, important populations of adders may occur on sites where the wider reptile assemblage doesn't meet the selection criteria for notification. Furthermore, since the adder has been experiencing catastrophic declines in many areas, including county-level extinctions (Baker, Suckling & Carey 2004; Wilkinson & Arnell 2011; 2013), and since many of these losses have seemingly occurred as a result of habitat management within existing SSSIs (Gleed-Owen & Langham 2012), there is a very strong case for the creation of the adder as a standalone feature and the subsequent notification of key populations. This proposal also has the support of NRW and SNH

5.3. Representativeness of the Current SSSI Series

The contrast between the representativeness of the current SSSI series for range restricted species and that for the widespread species is dramatic. In general >90% of the populations of the former are included as features in SSSIs, whereas for widespread species considerably less than 1% of any of their populations are included as features. In addition, the presence of widespread species within SSSIs where they are not notified features has not always ensured their conservation. For example, there is increasing evidence that one threat to the conservation status of the adder in many English SSSIs is habitat management for other features. The current site series and its general representativeness for each current and proposed amphibian and reptile feature is summarised below (NE Responsible Officers are listed for each site for completeness).

5.3.1. Range Restricted Species

5.3.1.i. Natterjack Toad

The natterjack toad, which is also an Annex IV European Protected Species, is a notified feature on 14 SSSIs in England. The majority of its populations occur on sand dunes, upper saltmarsh and lowland heathland and are included within SSSIs, although some use farmland in certain areas.

Table 6: All SSSIs with Natterjack Toad as a Notified Feature

| SSSI Name | Date Notified | National Character Area | Responsible Officer |
|---|---------------|------------------------------------|---------------------|
| 01. Annaside | 30.08.1989 | 7. West Cumbria Coastal Plain | Nicola Evans |
| 02. Cockerham Marsh | 16.12.1985 | 31. Morecambe Coast & Lune Estuary | Margaret Dickinson |
| 03. Drigg Coast | 02.05.1986 | 7. West Cumbria Coastal Plain | Nicola Evans |
| 04. Duddon Estuary | 27.02.1991 | 7. West Cumbria Coastal Plain | Nicola Evans |
| 05. North Norfolk Coast | 01.02.1986 | 77. North Norfolk Coast | John Ebbage |
| 06. Red Rocks | 01.11.1983 | 59. Wirral | Hannah Birtles |
| 07. Saltfleetby-Theddlethorpe Dunes | 01.05.1988 | 42. Lincolnshire Coast & Marshes | Claire Weaver |
| 08. Sefton Coast | 16.08.2000 | 57. Sefton Coast | Margaret Dickinson |
| 09. Silloth Dunes & Mawbray Bank | 30.01.1991 | 6. Solway Basin | Kate Doughty |
| 10. Subberthwaite, Blawith & Torver Low Commons | 29.09.1994 | 19. South Cumbria Low Fells | Matthew Powell |
| 11. Syderstone Common | 10.01.1984 | 76. North West Norfolk | Helen Dixon |
| 12. Upper Solway Flats & Marshes | 06.06.1988 | 6. Solway Basin | Kate Doughty |
| 13. Winterton-Horsey Dunes | 01.03.1989 | 80. The Broads | Adrian Gardiner |
| 14. Woolmer Forest | 28.06.1994 | 120. Wealden Greensand | Harold Makant |

While the site series covers populations of natterjacks very well in terms of absolute numbers of breeding adults, it is not as representative when it comes to their overall distribution. A number of smaller populations are excluded in certain IHAs (although some would not qualify for notification under the current selection criteria anyway), particularly some recent introductions and also populations occurring on farmland along the Cumbrian and East Anglian coasts (Table 7).

Table 7: SSSIs in Natterjack Toad “Important Herpetofauna Areas”

| Important Herpetofauna Area | Ranking | Associated National Character Area(s) | Number of Natterjack SSSIs | Adequate Coverage by SSSIs? |
|-----------------------------|---------|---------------------------------------|----------------------------|-----------------------------|
| Cumbria Coast | 1 | 6. Solway Basin | 2 | No |
| | | 7. West Cumbria Coastal Plain | 3 | |
| | | 19. South Cumbria Low Fells | 1 | |
| Sefton Coast | 2 | 57. Sefton Coast | 1 | Yes |
| East Anglian Coast | 3 | 76. North West Norfolk | 1 | No |
| | | 77. North Norfolk Coast | 1 | |
| | | 78. Central North Norfolk | 0 | |
| | | 79. North East Norfolk & Flegg | 0 | |
| | | 80. The Broads | 1 | |
| 82. Suffolk Coast & Heaths | 0 | | | |
| Wealden Heaths | 4 | 120. Wealden Greensand | 1 | No |
| Dorset Heaths | 5 | 135. Dorset Heaths | 0 | No |

5.3.1.ii. Sand Lizard

A notified feature on 46 SSSIs in England (Table 8), the sand lizard is confined to lowland heathland and a handful of sand dune sites. Also an Annex IV European Protected Species, the site series covers well over 90% of sand lizard populations and is crucial to their continued survival in England.

Table 8: All SSSIs with Sand Lizard as a Notified Feature

| SSSI Name | Date Notified | National Character Area | Responsible Officer |
|---------------------------------|---------------|-------------------------|----------------------|
| 01. Ambersham Common | 24.10.1986 | 120. Wealden Greensand | Nigel Hiscoke |
| 02. Arne | 30.07.1986 | 135. Dorset Heaths | Andrew Nicholson |
| 03. Blue Pool & Norden Heaths | 01.03.1985 | 135. Dorset Heaths | Tania Kaplan |
| 04. Bourne Valley | 14.03.1995 | 135. Dorset Heaths | Adam Bates |
| 05. Brenscombe Heath | 07.11.1985 | 135. Dorset Heaths | Andrew Nicholson |
| 06. Broxhead & Kingsley Commons | 15.10.1993 | 120. Wealden Greensand | Cressida Wheelwright |
| 07. Burton Common | 26.10.1984 | 131. New Forest | Simon Curson |
| 08. Canford Heath | 12.06.1985 | 135. Dorset Heaths | Adam Bates |
| 09. Corfe & Barrow Hills | 10.03.1986 | 135. Dorset Heaths | Adam Bates |
| 10. Cranborne Common | 23.08.1985 | 135. Dorset Heaths | Sue Moore |
| 11. Ferndown Common | 21.09.1984 | 135. Dorset Heaths | Adam Bates |
| 12. Gong Hill | 01.11.1988 | 120. Wealden Greensand | Julie Russ |
| 13. Ham Common | 11.11.1987 | 135. Dorset Heaths | Adam Bates |
| 14. Hartland Moor | 02.05.1986 | 135. Dorset Heaths | Andrew Nicholson |
| 15. Hesketh Golf Links | 18.12.1989 | 57. Sefton Coast | Margaret Dickinson |
| 16. Holt & West Moors Heaths | 10.07.1988 | 135. Dorset Heaths | Sue Moore |
| 17. Holton & Sandford Heaths | 26.06.1997 | 135. Dorset Heaths | Andrew Nicholson |

| SSSI Name | Date Notified | National Character Area | Responsible Officer |
|--|---------------|-------------------------|---------------------|
| 18. Horton Common | 24.02.1984 | 135. Dorset Heaths | Adam Bates |
| 19. Hurn Common | 17.12.1986 | 135. Dorset Heaths | Adam Bates |
| 20. Lions Hill | 03.05.1985 | 135. Dorset Heaths | Sue Moore |
| 21. Luscombe Valley | 12.03.1996 | 135. Dorset Heaths | Adam Bates |
| 22. Morden Bog & Hyde Heath | 19.02.1996 | 135. Dorset Heaths | Andrew Nicholson |
| 23. Oakers Bog | 29.06.1988 | 135. Dorset Heaths | Andrew Nicholson |
| 24. Parley Common | 24.02.1984 | 135. Dorset Heaths | Adam Bates |
| 25. Poole Bay Cliffs | 06.12.1989 | 135. Dorset Heaths | Adam Bates |
| 26. Poole Harbour | 07.12.1990 | 135. Dorset Heaths | Andrew Nicholson |
| 27. Povington & Grange Heaths | 24.02.1984 | 135. Dorset Heaths | Andrew Nicholson |
| 28. Puttenham & Crooksbury Commons | 31.07.1986 | 120. Wealden Greensand | Julie Russ |
| 28. Rempstone Heaths | 20.02.1987 | 135. Dorset Heaths | Andrew Nicholson |
| 30. Sefton Coast | 16.08.2000 | 57. Sefton Coast | Margaret Dickinson |
| 31. Slop Bog & Uddens Heath | 23.08.1985 | 135. Dorset Heaths | Sue Moore |
| 32. St Leonards & St Ives Heaths | 03.11.1999 | 135. Dorset Heaths | Sue Moore |
| 33. Stoborough & Creech Heaths | 07.02.1986 | 135. Dorset Heaths | Andrew Nicholson |
| 34. Stokeford Heaths | 24.03.1995 | 135. Dorset Heaths | Andrew Nicholson |
| 35. Studland & Godlingston Heaths | 07.10.1986 | 135. Dorset Heaths | Andrew Nicholson |
| 36. The New Forest | 28.02.1996 | 131. New Forest | Jenny Thomas |
| 37. Thrasher's Heath | 31.03.1984 | 135. Dorset Heaths | Andrew Nicholson |
| 38. Thursley, Hankley & Frensham Commons | 23.08.1991 | 120. Wealden Greensand | Graham Steven |
| 39. Town Common | 31.03.1994 | 135. Dorset Heaths | Helen Powell |
| 40. Turbary & Kinson Commons | 08.07.1988 | 135. Dorset Heaths | Helen Powell |
| 41. Turners Puddle Heath | 15.06.1990 | 135. Dorset Heaths | Andrew Nicholson |
| 42. Upton Heath | 12.04.1990 | 135. Dorset Heaths | Sue Moore |
| 43. Verwood Heaths | 08.05.1985 | 135. Dorset Heaths | Sue Moore |
| 44. Winfrith Heath | 05.12.1996 | 135. Dorset Heaths | Andrew Nicholson |
| 45. Woolmer Forest | 28.06.1994 | 120. Wealden Greensand | Harold Makant |
| 46. Worgret Heath | 18.11.1987 | 135. Dorset Heaths | Andrew Nicholson |

Distribution within IHAs is also well covered (Table 9), although a few areas that form key linkages between populations in the Dorset Heaths remain unprotected and some re-introductions have not yet been notified in the Weald and the Thames Basin Heaths. The sand lizard formerly suffered major declines in the latter two NCAs and there is some way to go to re-establish its range there.

Table 9: SSSIs in Sand Lizard “Important Herpetofauna Areas”

| Important Herpetofauna Area | Ranking | Associated National Character Area(s) | Number of Sand Lizard SSSIs | Adequate Coverage by SSSIs? |
|-----------------------------|---------|---------------------------------------|-----------------------------|-----------------------------|
| Dorset Heaths | 1 | 135. Dorset Heaths | 36 | Almost |
| Wealden Heaths | 2 | 120. Wealden Greensand | 6 | Almost |
| Sefton Coast | 3 | 57. Sefton Coast | 2 | Yes |
| Thames Basin Heaths | 4 | 129. Thames Basin Heaths | 0 | No |
| New Forest | 5 | 131. New Forest | 2 | Yes |

5.3.1.iii. Smooth Snake

Another Annex IV European Protected Species, the smooth snake is completely confined to lowland heathland in a handful of NCAs in southern England where it is a notified feature on 41 SSSIs (Table 10). The representativeness of the SSSI series is good for this species, although its population status is still poorly known.

Table 10: All SSSIs with Smooth Snake as a Notified Feature

| SSSI Name | Date Notified | National Character Area | Responsible Officer |
|--|---------------|--|----------------------|
| 01. Arne | 30.07.1986 | 135. Dorset Heaths | Andrew Nicholson |
| 02. Ash To Brookwood Heaths | 19.11.1993 | 129. Thames Basin Heaths | Des Sussex |
| 03. Black Hill Heath | 15.12.1989 | 135. Dorset Heaths/134. Dorset Downs & Cranborne Chase | Andrew Nicholson |
| 04. Blue Pool & Norden Heaths | 01.03.1985 | 135. Dorset Heaths | Tania Kaplan |
| 05. Bourne Valley | 14.03.1995 | 135. Dorset Heaths | Adam Bates |
| 06. Bramshott & Ludshott Commons | 26.10.1984 | 120. Wealden Greensand | Cressida Wheelwright |
| 07. Brenscombe Heath | 07.11.1985 | 135. Dorset Heaths | Andrew Nicholson |
| 08. Burton Common | 26.10.1984 | 131. New Forest | Simon Curson |
| 09. Canford Heath | 12.06.1985 | 135. Dorset Heaths | Adam Bates |
| 10. Corfe & Barrow Hills | 10.03.1986 | 135. Dorset Heaths | Adam Bates |
| 11. Cranborne Common | 23.08.1985 | 135. Dorset Heaths | Sue Moore |
| 12. Ferndown Common | 21.09.1984 | 135. Dorset Heaths | Adam Bates |
| 13. Ham Common | 11.11.1987 | 135. Dorset Heaths | Adam Bates |
| 14. Hartland Moor | 02.05.1986 | 135. Dorset Heaths | Andrew Nicholson |
| 15. Holt & West Moors Heaths | 10.07.1988 | 135. Dorset Heaths | Sue Moore |
| 16. Holton & Sandford Heaths | 26.06.1997 | 135. Dorset Heaths | Andrew Nicholson |
| 17. Hurn Common | 17.12.1986 | 135. Dorset Heaths | Adam Bates |
| 18. Lions Hill | 03.05.1985 | 135. Dorset Heaths | Sue Moore |
| 19. Morden Bog & Hyde Heath | 19.02.1996 | 135. Dorset Heaths | Andrew Nicholson |
| 20. Oakers Bog | 29.06.1988 | 135. Dorset Heaths | Andrew Nicholson |
| 21. Parley Common | 24.02.1984 | 135. Dorset Heaths | Adam Bates |
| 22. Poors Common | 30.01.1992 | 131. New Forest | Simon Curson |
| 23. Povington & Grange Heaths | 24.02.1984 | 135. Dorset Heaths | Andrew Nicholson |
| 24. Puttenham & Crooksbury Commons | 31.07.1986 | 120. Wealden Greensand | Julie Russ |
| 25. Rempstone Heaths | 20.02.1987 | 135. Dorset Heaths | Andrew Nicholson |
| 26. Slop Bog & Uddens Heath | 23.08.1985 | 135. Dorset Heaths | Sue Moore |
| 27. St Leonards & St Ives Heaths | 03.11.1999 | 135. Dorset Heaths | Sue Moore |
| 28. Stoborough & Creech Heaths | 07.02.1986 | 135. Dorset Heaths | Andrew Nicholson |
| 29. Stokeford Heaths | 24.03.1995 | 135. Dorset Heaths | Andrew Nicholson |
| 30. Studland & Godlingston Heaths | 07.10.1986 | 135. Dorset Heaths | Andrew Nicholson |
| 31. The New Forest | 28.02.1996 | 131. New Forest | Jenny Thomas |
| 32. Thrasher's Heath | 31.03.1984 | 135. Dorset Heaths | Andrew Nicholson |
| 33. Thursley, Hankley & Frensham Commons | 23.08.1991 | 120. Wealden Greensand | Graham Steven |
| 34. Town Common | 31.03.1994 | 135. Dorset Heaths | Helen Powell |
| 35. Turbary & Kinson Commons | 08.07.1988 | 135. Dorset Heaths | Helen Powell |
| 36. Turners Puddle Heath | 15.06.1990 | 135. Dorset Heaths | Andrew Nicholson |
| 37. Upton Heath | 12.04.1990 | 135. Dorset Heaths | Sue Moore |
| 38. Verwood Heaths | 08.05.1985 | 135. Dorset Heaths | Sue Moore |
| 39. Warmwell Heath | 12.06.1987 | 135. Dorset Heaths | Andrew Nicholson |
| 40. Winfrith Heath | 05.12.1996 | 135. Dorset Heaths | Andrew Nicholson |
| 41. Woolmer Forest | 28.06.1994 | 120. Wealden Greensand | Harold Makant |

Similarly, the distribution of the smooth snake is imperfectly understood, although the SSSI series covers most known populations in the four main National Character Areas where this species occurs (Table 11). Surveys in the New Forest have barely begun to define the distribution, status and movements of the smooth snake within its dynamic heathland habitats there, although of course the whole area is already included within a huge SSSI. The exception is the Thames Basin Heaths NCA where there are a number of sites where smooth snake presence is suspected but has not yet been confirmed, as well as several recent introductions.

Table 11: SSSIs in Smooth Snake “Important Herpetofauna Areas”

| Important Herpetofauna Area | Ranking | Associated National Character Area(s) | Number of Smooth Snake SSSIs | Adequate Coverage by SSSIs? |
|-----------------------------|---------|---------------------------------------|------------------------------|-----------------------------|
| Dorset Heaths | 1 | 135. Dorset Heaths | 32 | Mostly |
| New Forest | 2 | 131. New Forest | 3 | Yes |
| Wealden Heaths | 3 | 120. Wealden Greensand | 4 | Mostly |
| Thames Basin Heaths | 4 | 129. Thames Basin Heaths | 1 | No |

5.3.1.iv. Pool Frog

As the pool frog is currently not a notifiable feature it is not represented in the SSSI site series. Of the two re-introduction sites in Norfolk, one is a non-SSSI forestry site and the other is within an existing SSSI (Thompson Water, Carr and Common). The need to revise the guidance to include this species as a feature should therefore be considered.

5.3.2. Widespread Species

5.3.2.i. Great Crested Newt

The great crested newt occupies a wide variety of habitats, particularly deciduous woodland, grassland and farmland, often on clay soils, and is a notified feature on 36 SSSIs (Table 12). These sites represent only 0.9% of the whole site series. With an estimated 18,000 or so breeding ponds occupied by this species, although some estimates are higher (Wilkinson *et al* 2011) it is clear that, unlike the range restricted species above, the great crested newt would meet the selection criteria on many more sites, probably hundreds, and is therefore is not well represented by the site series.

On top of the poor national representation within the site series, great crested newt SSSIs have also been poorly targeted, with over-emphasis being given to old quarries and mineral sites (this is partly due to the current selection criteria), rather than to the important metapopulations that, for example, occupy significant “pondscapes” in the three largest IHAs for this species. It can be seen from Table 13 that only five of the 36 great crested newt SSSIs occur within these internationally important hotspots. All the available evidence points to large declines of great crested newts in the wider countryside but, while a great deal of attention has been paid to dealing with development mitigation issues caused by this species, very little has been focussed on its conservation.

Table 12: All SSSIs with Great Crested Newt as a Notified Feature

| SSSI Name | Date Notified | National Character Area | Responsible Officer |
|---|----------------------|---|----------------------------|
| 01. Annesley Woodhouse Quarries | 22.06.2010 | 30. Southern Magnesian Limestone | Ruth Tall |
| 02. Beeding Hill to Newtimber Hill | 10.11.1986 | 125. South Downs | Nigel Hiscoke |
| 03. Bee's Nest & Green Clay Pits | 18.07.1990 | 52. White Peak | Ruth Keeley |
| 04. Blue Pool & Norden Heaths | 01.03.1985 | 135. Dorset Heaths | Tania Kaplan |
| 05. Chanctonbury Hill | 08.03.1985 | 125. South Downs | Susan Simpson |
| 06. Clints Quarry, Moota | 03.02.1997 | 8. Cumbria High Fells | Matthew Powell |
| 07. Crookhill Brick Pit | 25.11.2003 | 138. Weymouth Lowlands | Ruth Carpenter |
| 08. Denby Grange Colliery Ponds | 29.09.1997 | 38. Nottinghamshire, Derbyshire & Yorkshire Coalfield | Michelle Dickinson |
| 09. Dew's Ponds | 18.08.2000 | 83. South Norfolk & High Suffolk Claylands | Matthew Ginn |
| 10. Drewton Lane Pits | 28.05.1993 | 27. Yorkshire Wolds | Chris McGregor |
| 11. Dungeness, Romney Marsh & Rye Bay | 16.08.2006 | 123. Romney Marshes | Jo Dear |
| 12. Fens Pools | 27.09.1989 | 67. Cannock Chase & Cank Wood | Tracey Hill |
| 13. Fritton Common | 01.10.1985 | 83. South Norfolk & High Suffolk Claylands | Emily Swan |
| 14. Hockering Wood | 01.09.1984 | 84. Mid Norfolk | Emily Swan |
| 15. Holnest | 03.02.2004 | 133. Blackmoor Vale & Vale of Wardour | Sean Cooch |
| 16. Houghton Regis Marl Lakes | 01.06.1988 | 110. Chilterns | Justin Tilley |
| 17. Kirk Deighton | 16.08.2000 | 30. Southern Magnesian Limestone | Michelle Dickinson |
| 18. Little Wittenham | 16.08.2000 | 108. Upper Thames Clay Vales | Alison Muldal |
| 19. Lyppard Grange Ponds | 16.08.2000 | 106. Severn & Avon Vales | Danielle Newman |
| 20. New Hartley Ponds | 01.01.1985 | 13. South East Northumberland Coastal Plain | Monique Speksnyder |
| 21. Orton Pit | 23.03.2004 | 88. Bedfordshire & Cambridgeshire Claylands | Justin Tilley |
| 22. Peter's Pit | 16.08.2000 | 119. North Downs | Phil Williams |
| 23. Powerstock Common & Wytherston Farm | 25.02.2000 | 139. Marshwood & Powerstock Vales | Sean Cooch |
| 24. Ripon Parks | 01.02.1983 | 30. Southern Magnesian Limestone | Joanne Newton |
| 25. Rixton Clay Pits | 12.12.1990 | 60. Mersey Valley | Paul Thomas |
| 26. Salisbury Plain | 29.01.1993 | 132. Salisbury Plain & West Wiltshire Downs | Sarah Grinsted |
| 27. Sefton Coast | 16.08.2000 | 57. Sefton Coast | Margaret Dickinson |
| 28. Silloth Dunes & Mawbray Bank | 30.01.1991 | 6. Solway Basin | Kate Doughty |
| 29. Southampton Common | 24.02.1987 | 128. South Hampshire Lowlands | Charlotte Rose |
| 30. Stones Road Pond | 20.06.1985 | 114. Thames Basin Lowlands | Georgina Terry |
| 31. Sundon Chalk Quarry | 01.05.1989 | 110. Chilterns | Justin Tilley |
| 32. Swannington Upgate Common | 01.12.1985 | 78. Central North Norfolk | Dave Weaver |
| 33. The New Forest | 28.02.1996 | 131. New Forest | Jenny Thomas |
| 34. Thompson Water, Carr & Common | 01.10.1988 | 85. The Brecks | Helen Edmondson |
| 35. Wilsford & Rauceby Warrens | 01.05.1986 | 47. Southern Lincolnshire Edge | Delphine Suty |
| 36. Yardley Chase | 26.07.1984 | 91. Yardley Whittlewood Ridge | Nicola Orchard |

Table 13: SSSIs in Great Crested Newt “Important Herpetofauna Areas”

| Important Herpetofauna Area | Ranking | Associated National Character Area(s) | Number of Great Crested Newt SSSIs | Adequate Coverage by SSSIs? |
|-------------------------------------|----------------|--|---|------------------------------------|
| Northwestern Claylands (One SSSI) | 1 | 32. Lancashire & Amounderness Plain | 0 | No |
| | | 56. Lancashire Coal Measures | 0 | |
| | | 59. Wirral | 0 | |
| | | 60. Mersey Valley | 1 | |
| | | 61. Shropshire, Cheshire & Staffordshire Plain | 0 | |
| | | 68. Needwood & South Derbyshire Claylands | 0 | |
| East Anglian Claylands (Four SSSIs) | 2 | 83. South Norfolk & High Suffolk Claylands | 2 | No |
| | | 84. Mid Norfolk | 1 | |
| | | 86. South Suffolk & North Essex Claylands | 0 | |
| | | 88. Bedfordshire and Cambridgeshire Claylands | 1 | |
| | | 111. Northern Thames Basin | 0 | |
| Wealden Claylands (One SSSI) | 3 | 121. Low Weald | 0 | No |
| | | 122. High Weald | 0 | |
| | | 123. Romney Marshes | 1 | |
| | | 124. Pevensey Levels | 0 | |

As an Annex II (as well as Annex IV) European Protected Species there is also a requirement to notify SACs for this species – great crested newts are a primary feature on 15 SACs in England and a qualifying feature on a further nine, all of which are underpinned by the SSSI series shown in Table 12. Although this is far lower than the number of great crested newt SACs in other EU countries (Germany has over 800), the European Commission has made it clear that conservation of this species through well targeted agri-environment schemes is a suitable alternative to site protection, especially on farmland where extensive notification would be politically difficult.

However, agri-environment schemes, even the Higher Level Stewardship Scheme, have not delivered obvious benefits for great crested newt conservation in England. Defra’s Great Crested Newt Task Force has estimated that the creation of at least 5,000 new ponds is necessary for achieving Favourable Conservation Status for this species. The capital items for creating new ponds that were available in HLS, along with capital items for the restoration of existing ponds, annual options for maintaining ponds of high wildlife value and a range of suitable terrestrial options, all clearly had the potential for contributing to this aspiration and greatly enhancing conservation efforts for this species. Unfortunately, the rate of creation of any new ponds in HLS has been very low (less than 2% of all agreements) and, furthermore, the percentage of these new ponds that were created specifically for great crested newts appears to have been zero (Table 14).

Table 14 summarises GenRep data for all HLS agreements with start dates between 1st January 2005 and 1st December 2014 showing uptake of the following six pond options/capital items:

- **HQ1** Maintenance of ponds of high wildlife value < 100 sq m
- **HQ2** Maintenance of ponds of high wildlife value > 100 sq m
- **PC** Pond creation, first 100 sq m
- **PCP** Pond creation > 100 sq m
- **PR** Pond restoration, first 100 sq m
- **PRP** Pond restoration > 100 sq m

The total number of HLS agreements during this period was 14,097, of which 660 (4.68%) had at least one aquatic or terrestrial option/capital item linked to great crested newts (GCN) in Genesis.

Table 14: Total Numbers of HLS agreements with Pond Options

| HLS Option/ Capital Item | No. of HLS agreements* in England with a pond option/capital item | % of all HLS agreements in England (14,097) | No. of HLS agreements* with a pond option/capital item linked to GCN | % of HLS agreements with this pond option/capital item linked to GCN | % of all HLS agreements in England (14,097) |
|-----------------------------|--|---|--|--|---|
| HQ1 | 692 | 4.9 | 117 | 16.9 | 0.8 |
| HQ2 | 1,123 | 8.0 | 157 | 14.0 | 1.1 |
| PC | 239 | 1.7 | 0 | 0 | 0 |
| PCP | 145 | 1.0 | 0 | 0 | 0 |
| PR | 398 | 2.8 | 0 | 0 | 0 |
| PRP | 287 | 2.0 | 0 | 0 | 0 |

*Agreements not totalled as some HLS agreements may include several different pond options. Note that an individual HLS agreement may include other ponds with no options/capital items applied.

Although the great crested newt should benefit from the Farm Wildlife Package available for the Higher Tier of the new Countryside Stewardship scheme, and the specific targeting of the great crested newt hotspots shown in Table 13 will also be available, this scheme will cover a much smaller area than Environmental Stewardship. In addition, there will be no pond creation options available in the Middle Tier of Countryside Stewardship and the encouragement of pond creation in Ecological Focus Areas is not a feature of the Basic Payment Scheme. Consideration should therefore be given to SSSI notification playing a greater part in great crested newt conservation, especially if we are to satisfy our obligations under the Habitats Directive.

5.3.2.ii. Amphibian Assemblage

This feature is barely represented by the site series, with a mere 15 SSSIs (0.4% of the total) having an amphibian assemblage feature. Since the widespread amphibians occur throughout England, often in significant but increasingly vulnerable assemblages, it is somewhat surprising that this figure is not much higher.

Table 15: All SSSIs with Amphibian Assemblage as a Notified Feature

| SSSI Name | Date Notified | National Character Area | Notified Herp Features |
|-----------------------------------|----------------------|---|-------------------------------|
| 01. Annesley Woodhouse Quarries | 22.06.2010 | 30. Southern Magnesian Limestone | Ruth Tall |
| 02. Bewick & Beanley Moors | 30.06.2010 | 2. Northumberland Sandstone Hills | Steve Pullan |
| 03. Denby Grange Colliery Ponds | 29.09.1997 | 38. Nottinghamshire, Derbyshire & Yorkshire Coalfield | Michelle Dickinson |
| 04. Drewton Lane Pits | 28.05.1993 | 27. Yorkshire Wolds | Chris McGregor |
| 05. Drigg Coast | 02.05.1986 | 7. West Cumbria Coastal Plain | Nicola Evans |
| 06. Epping Forest | 05.03.1990 | 111. Northern Thames Basin | Neil Fuller |
| 07. Fens Pools | 27.09.1989 | 67. Cannock Chase & Cank Wood | Tracey Hill |
| 08. Gibside | 01.06.1989 | 16. Durham Coalfield Pennine Fringe | Amanda Hunter |
| 09. New Hartley Ponds | 01.01.1985 | 13. South East Northumberland Coastal Plain | Monique Speksnyder |
| 10. Offham Marshes | 21.03.1989 | 121. Low Weald | Robin Kelly |
| 11. Pockerley Farm Pond | 01.11.1984 | 16. Durham Coalfield Pennine Fringe | Sarah Bolton |
| 12. Priddy Pools | 21.04.1986 | 141. Mendip Hills | Justin Gillett |
| 13. Southampton Common | 24.02.1987 | 128. South Hampshire Lowlands | Charlotte Rose |
| 14. The New Forest | 28.02.1996 | 131. New Forest | Jenny Thomas |
| 15. Thompson Water, Carr & Common | 01.10.1988 | 85. The Brecks | Helen Edmondson |

5.3.2.iii. Reptile Assemblage

Although reptiles are increasingly under threat from a range of factors, even fewer SSSIs support a notified reptile assemblage feature - just six sites (0.1% of the total number of sites).

Table 16: All SSSIs with Reptile Assemblage as a Notified Feature

| SSSI Name | Date Notified | National Character Area | Responsible Officer |
|--------------------------------|----------------------|-------------------------------------|----------------------------|
| 01. Bickerton Hill | 13.12.1999 | 62. Cheshire Sandstone Ridge | Stuart Morris |
| 02. Gibside | 01.06.1989 | 16. Durham Coalfield Pennine Fringe | Amanda Hunter |
| 03. The New Forest | 28.02.1996 | 131. New Forest | Jenny Thomas |
| 04. Woolbeding & Pound Commons | 22.09.1998 | 120. Wealden Greensand | Carol Mortimer |
| 05. Woolmer Forest | 28.06.1994 | 120. Wealden Greensand | Harold Makant |
| 06. Wyre Forest | 08.04.1998 | 66. Mid Severn Sandstone Plateau | Francis Flanagan |

5.3.2.iv. Common Toad

Since the common toad is currently not a notifiable feature it is not represented in the SSSI site series. Revision of the guidelines to add the common toad as a standalone notifiable feature, rather than as part of an amphibian assemblage (especially as other species would not meet the selection criteria on many toad breeding ponds), would start to address the huge recent declines being suffered by this species.

5.3.2.v. Adder

Information obtained from Evidence suggests that the adder is already a notified feature on a single SSSI in England (Table 17), although as this species is not included in the current guidelines this should not be technically possible at the moment. The adder has therefore not been included in Table 1 or Appendix 2 as a formal feature. However, since revision of the guidelines to allow notification of this species in its own right is proposed this anomaly will hopefully be rectified soon.

Table 17: All SSSIs with Adder thought to be a Notified Feature

| SSSI Name | Date Notified | National Character Area | Responsible Officer |
|---------------------------------|----------------------|--------------------------------|----------------------------|
| 01. Eastern Peak District Moors | 22.12.1999 | 51. Dark Peak | Jenny Parker |

5.4. Identification of Site Amendments Required

Thanks to the MoA work with Amphibian and Reptile Conservation, it has been possible to provide detailed information about potential site amendments required for certain species features – this includes suggested changes for the sand lizard and smooth snake right down to the level of SSSI units. At this stage, the identification of required site amendments is only possible for the range restricted species. The information provided here also separates necessary improvements to the existing site series from suggested amendments to subsequently expand the site series. It is clearly essential to ensure that what we currently have is working properly before enlarging it!

As far as improvements to the current situation is concerned, a requirement common to all notified amphibian and reptile features is the need to revise the site's Favourable Condition Table (FCT) in order to define Favourable Condition. In many cases the national guidance has simply been pasted into the FCT, with no attempt made to set any clear, site-specific objectives for any attributes. Rectifying this problem would facilitate effective condition monitoring of amphibian and reptiles features (which had almost never been carried out on any site prior to the MoA work with ARC starting in 2012/13), although the CSM guidance itself also requires revision. However, before any improvements can be made to existing sites further survey work will often be required to elucidate the distribution of individual species as reportable features in SSSI units (e.g. Tables 18 and 19).

Some amendments to subsequently expand the site series will be straightforward, e.g. adding a feature to an existing SSSI following a successful re-introduction. Others, especially SSSI extensions into forestry or farmland, will require further detailed evidence gathering and planning before progress can be attempted.

5.4.1. Improving the Existing Site Series for Range Restricted Species

5.4.1.i. Natterjack Toad

Site units for natterjack toads have not been examined in detail yet.

5.4.1.ii. Sand Lizard

Table 18 lists the units on all sand lizard SSSIs where this species is already a reportable feature and suggests further units where it could also be present. Although the sand lizard is comparatively well studied, reptile monitoring can be extremely difficult and time consuming and further surveys are still required for this species on 19 (41%) of the 46 SSSIs where it is a notified feature. These include two sites, Burton Common SSSI and Slop Bog & Uddens Heath SSSI, where it is thought the sand lizard has been lost (for unknown reasons).

Table 18: Improving Existing SSSIs with the Sand Lizard as a Notified Feature

| SSSI Name | Current Site Units | Potential New Units | Notes |
|---------------------------------|---|---------------------|---|
| 01. Ambersham Common | 5,10 | 6,9,11 | Further surveys required |
| 02. Arne | 4,6,7,8,10,12,13,15 | 1,2 | Further surveys required |
| 03. Blue Pool & Norden Heaths | 1,2,3,4,7,11,12 | - | Distribution fairly well known |
| 04. Bourne Valley | 1,2,6,8,9,10 | - | Distribution fairly well known |
| 05. Brenscombe Heath | 1 | 2,3 | Further surveys required |
| 06. Broxhead & Kingsley Commons | 2 | - | Distribution fairly well known |
| 07. Burton Common | 1,2? | ? | Further surveys required. Species has probably been lost from site, reintroduction planned if confirmed |
| 08. Canford Heath | 1,2,3,4,5,6,7,9,12,13,15,16 | - | Distribution fairly well known |
| 09. Corfe & Barrow Hills | 3,5,6,8,9 | - | Distribution fairly well known |
| 10. Cranborne Common | 4,11 | 1 | Further surveys required |
| 11. Ferndown Common | 1,2,3,4 | - | Distribution fairly well known |
| 12. Gong Hill | 1,2 | - | Distribution fairly well known |
| 13. Ham Common | 1,2,3,4,5,6 | - | Distribution fairly well known |
| 14. Hartland Moor | 1,2,3,4,5,6,9,10,11,12,17 | 18 | Further surveys required |
| 15. Hesketh Golf Links | 1 | - | Distribution fairly well known |
| 16. Holt & West Moors Heaths | 5,7,9,11,14,15,16,17,19 | 6,22,23 | Further surveys required |
| 17. Holton & Sandford Heaths | 7,8,12,14,15,16,18,20,22 | 6,11 | Further surveys required |
| 18. Horton Common | 1,2 | - | Distribution fairly well known |
| 19. Hurn Common | 28,29 | - | Distribution fairly well known |
| 20. Lions Hill | 1,2 | - | Distribution fairly well known |
| 21. Luscombe Valley | 1,2,3,4 | - | Distribution fairly well known |
| 22. Morden Bog & Hyde Heath | 1,2,6,7,9,10,11,12,13,14,15,16,18,19,20,22,23,24,25,28,29,30,32,33,34,35,36,37,38 | 39,40 | Further surveys required |

| SSSI Name | Current Site Units | Potential New Units | Notes |
|--|---|---------------------|---|
| 23. Oakers Bog | 2,3 | - | Distribution fairly well known |
| 24. Parley Common | 5,6,10,11,12,16,21,22,23,25,27 | - | Distribution fairly well known |
| 25. Poole Bay Cliffs | 1,2,7,8 | - | Distribution fairly well known |
| 26. Poole Harbour | 18,19,20 | - | Distribution fairly well known |
| 27. Povington & Grange Heaths | 1,8,11,13,15,26,27,29,30 | 14,23,24,25 | Further surveys required |
| 28. Puttenham & Crooksbury Commons | 6 | - | Distribution fairly well known |
| 28. Rempstone Heaths | 4,5,6,12,16,18,19,22,23,24,25 | 28 | Further surveys required |
| 30. Sefton Coast | 7,8,9,10,11,12,13,14,15,16,16,17,18,19,20,21,22,23,24,25,26 | - | Distribution fairly well known |
| 31. Slop Bog & Uddens Heath | 1,4,7? | ? | Further surveys required. Species has probably been lost from site, reintroduction planned if confirmed |
| 32. St Leonards & St Ives Heaths | 3,6,7,9,10,11,13,14,17,18,19,20,21,22,23,24,28,30,31 | 5,8,12,26,27 | Further surveys required |
| 33. Stoborough & Creech Heaths | 1,3,4,6,7,9,10,14 | 2 | Further surveys required |
| 34. Stokeford Heaths | 1,2,3,5,6,7,8,9,11,14 | 4,10,12,13 | Further surveys required |
| 35. Studland & Godlingston Heaths | 2,3,4,5,7,11,13,17 | - | Distribution fairly well known |
| 36. The New Forest | 120,338,505,531 | 226,230 | Further surveys required |
| 37. Thrasher's Heath | 2,4 | - | |
| 38. Thursley, Hankley & Frensham Commons | 3,4,6,11,12,13,16,27,28,29,45 | 18,32 | Further surveys required |
| 39. Town Common | 1,2,3,4,5,6,7,8,9,10,13,14,16,17,18,19,20,21,24,25 | - | Distribution fairly well known |
| 40. Turbary & Kinson Commons | 1,2,3 | - | Distribution fairly well known |
| 41. Turners Puddle Heath | 3,4,5,8,9,10,11,12,13,14,17 | 6,7 | Further surveys required |
| 42. Upton Heath | 4,7,8,9,10,12,13,14,15,16,17,18,19,21,23 | - | Distribution fairly well known |
| 43. Verwood Heaths | 1,2,3 | - | Distribution fairly well known |
| 44. Winfrith Heath | 2,4,7 | - | Distribution fairly well known |
| 45. Woolmer Forest | 12,13,16,23,28,31 | 17,20,24 | Further surveys required |
| 46. Worgret Heath | 1,2 | - | Distribution fairly well known |

5.4.1.iii. Smooth Snake

The smooth snake is an elusive and particularly difficult species to monitor so it is no surprise that even more additional survey work is required on more sites, and a lot more units, than for the sand lizard. Further surveys are therefore required on 30 (73%) of the 41 SSSIs where it is a notified feature. These include two sites (Burton Common and Slop Bog & Uddens Heath again), where it is thought the smooth snake has been lost and two sites where its status is currently unknown.

Table 19: Improving Existing SSSIs with the Smooth Snake as a Notified Feature

| SSSI Name | Current Site Units | Potential New Units | Notes |
|------------------------------------|--|---|---|
| 01. Arne | 4,6,7,8,10 | 1,2,5,12,13,15 | Further surveys required |
| 02. Ash To Brookwood Heaths | 13,16 | - | Distribution fairly well known |
| 03. Black Hill Heath | 1 | - | Distribution fairly well known |
| 04. Blue Pool & Norden Heaths | 3,4,11 | 2,7,12 | Further surveys required |
| 05. Bourne Valley | 1,6,8,9,11,12 | - | Distribution fairly well known |
| 06. Bramshott & Ludshott Commons | ? | ? | Further surveys required. Status and distribution on site unknown |
| 07. Brenscombe Heath | ? | 1,2,3 | Further surveys required |
| 08. Burton Common | 1,2 | ? | Further surveys required. Species has probably been lost from site, reintroduction planned if confirmed |
| 09. Canford Heath | 1,2,3,4,5,6,7,9,12,13,15,16 | - | Distribution fairly well known |
| 10. Corfe & Barrow Hills | 2,3,4,5,6,8,9 | - | Distribution fairly well known |
| 11. Cranborne Common | 1,3,11 | 2,4,5 | Further surveys required |
| 12. Ferndown Common | 1,2 | 3,4 | Further surveys required |
| 13. Ham Common | 1,3,4,5,6 | 2 | Further surveys required |
| 14. Hartland Moor | 1,2,3,4,5,9,10,11,12,17 | 6,7,8,18 | Further surveys required |
| 15. Holt & West Moors Heaths | 5,7,9,10,11,23 | 4,6,14,15,16,17,19,22,24,25 | Further surveys required |
| 16. Holton & Sandford Heaths | 7,8,14,18,20,22 | 6,11,15,16 | Further surveys required |
| 17. Hurn Common | 28,29 | - | Distribution fairly well known |
| 18. Lions Hill | 1,2 | 3 | Distribution fairly well known |
| 19. Morden Bog & Hyde Heath | 1,2,5,6,7,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,27,28,29,30,32,33,34,35,36,37,38 | 8,39,40,42 | Further surveys required |
| 20. Oakers Bog | 2,3 | - | Distribution fairly well known |
| 21. Parley Common | 5,6,11,12,14,21,22,23,27 | 4,19,20 | Further surveys required |
| 22. Poors Common | ? | ? | Further surveys required. Status and distribution on site unknown |
| 23. Povington & Grange Heaths | 1,8,11,13,27,29 | 2,10,14,15,21,22,23,24,25,26,28,30 | Further surveys required |
| 24. Puttenham & Crooksbury Commons | 6 | - | Distribution fairly well known |
| 25. Rempstone Heaths | 4,5,6,9,11,12,16,18,19,20,23,24,25 | 3,28 | Further surveys required |
| 26. Slop Bog & Uddens Heath | 1,4,7 | 5 | Further surveys required |
| 27. St Leonards & St Ives Heaths | 19,22,23,24,30,31 | 3,4,5,6,7,8,9,10,11,12,13,14,17,18,20,21,26,27,28 | Further surveys required |
| 28. Stoborough & Creech Heaths | 3,6,7,9,10,14 | 1,2,4 | Further surveys required |
| 29. Stokeford Heaths | 1,2,3,4,6,7,8,9,10,11,12,14 | 5,13 | Further surveys required |
| 30. Studland & Godlingston Heaths | 1,2,3,4,5,7,11,13,17 | - | Further surveys required |

| SSSI Name | Current Site Units | Potential New Units | Notes |
|--|--|--|---|
| 31. The New Forest | ? | ? | Further surveys required. Status and distribution very poorly known (e.g. less than 20% of the 425 km squares that support potential heathland habitat in the SSSI have been adequately surveyed) |
| 32. Thrasher's Heath | 4 | 2 | Further surveys required |
| 33. Thursley, Hankley & Frensham Commons | 3,11,12,13,16,27,28,32 | 4,6,18,26,39,44,45 | Further surveys required |
| 34. Town Common | 3,4,5,6,7,8,9,16,17,18,19,20,24,25 | 1,2,10 | Further surveys required |
| 35. Turbary & Kinson Commons | 2,3 | - | Distribution fairly well known |
| 36. Turners Puddle Heath | 3,4,5,7,11,12,13,14,17 | 1,2,6,8,9,10,16 | Further surveys required |
| 37. Upton Heath | 4,7,8,9,10,12,13,14,15,16,17,18,19,20,21,22,23 | 3,28 | Further surveys required |
| 38. Verwood Heaths | 1,2,3 | - | Distribution fairly well known |
| 39. Warmwell Heath | 4 | 1,2 | Further surveys required |
| 40. Winfrith Heath | 2,4,7,8,9,11 | 10,14 | Further surveys required |
| 41. Woolmer Forest | 20,23,27,28,31 | 12,13,16,17,22,24,25,26,29,32,33,34,35,36,37 | Further surveys required |

5.4.2. Expanding the Site Series for Range Restricted Species

5.4.2.i. Natterjack Toad

The distribution of the natterjack toad is not fully understood in the few areas (especially along the west Cumbrian and Solway coasts) where it occurs outside existing SSSIs. The potential expansions to existing sites listed in Table 20 are therefore provisional and are subject to change as new information comes to light. Some of these changes will require further detailed evidence gathering and planning and all opportunities, e.g. provided by “spreading room” along the Cumbria coastal path, should be explored.

Much simpler will be the addition of the natterjack toad as a notified feature to the 10 sites where re-introductions have taken place in recent years. Some re-introductions are not yet well established, however, so this process should be informed by continued monitoring over several more years.

Since most additional site protection for the natterjack toad feature (mainly to improve linkages and population resilience) will be provided by the extension of existing site boundaries, only three completely new SSSIs are likely to be proposed for the natterjack toad. Further details have yet to be worked out but these will probably be the natterjack site adjacent to Sellafield, Braystones and Whitbeck, which are all located in the West Cumbria Coastal Plain NCA.

Table 20: Expanding the Existing SSSI Series for the Natterjack Toad

| SSSI Name | National Character Area | Amendment Required | Reason* | Significance |
|---------------------------------------|----------------------------------|---|-------------------------------------|--|
| Annaside | 7. West Cumbria Coastal Plain | Extend SSSI boundary | Site linkage & ecological coherence | High (extend inland & north to Eskmeals) |
| Annaside & Gutterby Banks | 7. West Cumbria Coastal Plain | Add as feature & extend SSSI boundary | Site linkage & ecological coherence | High (extend south to Silecroft to include Gutterby and Summer Hill) |
| Christchurch Harbour | 135. Dorset Heaths | Add as feature | Reintroduction | Medium (county significant, well established) |
| Drigg Coast | 7. West Cumbria Coastal Plain | Extend SSSI boundary | Site linkage & ecological coherence | High (extend north to Whitriggs and south to Eskmeals MoD) |
| Duddon Estuary | 7. West Cumbria Coastal Plain | Extend SSSI boundary | Site linkage & ecological coherence | High (extend north to Silecroft) |
| Frensham Common | 120. Wealden Greensand | Add as feature | Reintroduction | High (species established?) |
| Frilford Heath, Ponds & Fens | 109. Midvale Ridge | Add as feature and extend SSSI boundary | Reintroduction | High (species established?) |
| Gibraltar Point | 42. Lincolnshire Coast & Marshes | Add as feature | Reintroduction | High (species established) |
| Minsmere-Walberswick Heaths & Marshes | 82. Suffolk Coast & Heaths | Add as feature | Reintroduction | High (species established) |
| Potton Hall Fields, Westleton | 82. Suffolk Coast & Heaths | Add as feature | Reintroduction | Low (species established?) |
| Sandwich Bay to Hacklinge Marshes | 113. North Kent Plain | Add as feature | Reintroduction | Low (species established?) |
| Sandy Warren | 90. Bedfordshire Greensand Ridge | Add as feature | Reintroduction | High (species established) |
| Silloth Dunes & Mawbray Bank | 6. Solway Basin | Extend SSSI boundary | Site linkage & ecological coherence | High (extend south to Allonby) |
| Sizewell Marshes | 82. Suffolk Coast & Heaths | Add as feature and extend SSSI boundary | Reintroduction | High (species established) |
| Woolmer Forest | 120. Wealden Greensand | Extend SSSI boundary | Site linkage & ecological coherence | Medium (improve Woolmer to Blackmoor link) |

*N.B. potential release sites where reintroductions are planned but have not yet occurred, or where the species has not become established, are not considered in this review

5.4.2.ii. Sand Lizard

Additional sand lizard features could be added fairly simply to 15 existing SSSIs where re-introductions have occurred in recent years (Table 21). Less straightforward will be the extension of existing sand lizard sites into forestry or mineral restoration areas in order to link existing sites and maintain population resilience. The amendments listed in Table 20 are therefore provisional proposals only and proceeding any further down this route would require additional planning as well as revision of the SSSI guidelines to reflect the different boundary setting requirements.

As for the natterjack toad, most of the potential expansion of the site series will be delivered by extending existing sites and very few new SSSIs are currently thought necessary (this may be subject to change in light of future survey work). These sites are Hambledon Common and Hurtwood, which are both located in the Wealden Greensand NCA, plus part of the Puddletown area in the Dorset Heaths.

Table 21: Expanding the Existing SSSI Series for the Sand Lizard

| SSSI Name | National Character Area | Amendment Required | Reason* | Priority |
|------------------------------|--------------------------|------------------------------|-------------------------------------|---|
| Ash to Brookwood Heaths | 129. Thames Basin Heaths | Add as feature (units 13,16) | Reintroduction | High (established population, large unit areas) |
| Blackheath | 120. Wealden Greensand | Add as feature | Reintroduction | High (species well established) |
| Bourne Valley | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Low (potential development mitigation area) |
| Bramshott & Ludshott Commons | 120. Wealden Greensand | Add as feature | Reintroduction | Medium (limited area at present, although good future potential) |
| Braunton Burrows | 145. Exmoor | Add as feature | Reintroduction | High (county significant, large unit area) |
| Chichester Harbour | 126. South Coast Plain | Add as feature | Reintroduction | Medium (county significant, species established, but small unit area) |
| Chobham Common | 129. Thames Basin Heaths | Add as feature | Reintroduction | High (established population, large unit areas) |
| Climping Beach | 126. South Coast Plain | Add as feature | Reintroduction | Low (small unit area, species established?) |
| Colony Bog & Bagshot Heath | 129. Thames Basin Heaths | Add as feature | Reintroduction | Low (limited unit area, population isolated) |
| Christchurch Harbour | 135. Dorset Heaths | Add as feature | Reintroduction | Low (small unit area, species established?) |
| Cranborne Common | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (Forest Design Plan area) |
| Dawlish Warren | 148. Devon Redlands | Add as feature | Reintroduction | Medium (county significant though severe erosion) |

| SSSI Name | National Character Area | Amendment Required | Reason* | Priority |
|--------------------------------------|--------------------------|----------------------|-------------------------------------|--|
| Hurn Common | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Low (Forest Design Plan area) |
| Lavington Common | 120. Wealden Greensand | Add as feature | Reintroduction | Medium (county significant and established, but small unit area) |
| Leith Hill | 120. Wealden Greensand | Add as feature | Reintroduction | Low (small unit area, recent reintroduction) |
| Morden Bog & Hyde Heath* | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (Forest Design Plan and mineral restoration areas) |
| Ockham & Wisley Commons | 129. Thames Basin Heaths | Add as feature | Reintroduction | Medium (species established) |
| Rempstone Heaths | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | High (Forest Design Plan area) |
| Sandwich Bay to Hacklinge Marshes | 113. North Kent Plain | Add as feature | Reintroduction | Medium (county significant) |
| St. Leonards & St. Ives Heaths* | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (potential development mitigation area) |
| Stokeford Heaths | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (Forest Design Plan and mineral restoration areas) |
| Treose Head & Constantine Bay | 152. Cornish Killas | Add as feature | Reintroduction | Medium (county significant but small unit area) |
| Turners Puddle Heath (& Oakers Bog?) | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (Forest Design Plan and mineral restoration areas) |
| Verwood Heaths | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | High (Forest Design Plan and mineral restoration areas) |

*N.B. SSSIs where reintroductions are planned but have not yet occurred, or where the species has not become established, are not considered in this review

5.4.2.iii. Smooth Snake

Because they are features together on so many heathland sites, most of the amendments suggested for the smooth snake in Table 22, as well as the problems likely to be encountered, are similar to those for the sand lizard. Re-introductions to sites in its former range are inherently more difficult for the smooth snake so its addition as a new feature is only proposed for four existing SSSIs. There are many other sites where the presence of this species is suspected, but not yet confirmed, or where the potential for future re-introduction is being investigated. In addition, three brand new SSSIs at Hurtwood, in the Wealden Greensand NCA, and the Puddletown and Warmwell-Redbridge areas in the Dorset Heaths, should also be considered.

Table 22: Expanding the Existing SSSI Series for the Smooth Snake

| SSSI Name | National Character Area | Amendment Required | Reason* | Priority |
|--------------------------------------|--------------------------------|---------------------------|-------------------------------------|---|
| Ambersham Common | 120. Wealden Greensand | Add as feature | Reintroduction | High (county significant, species well established) |
| Blackheath | 120. Wealden Greensand | Add as feature | Reintroduction | High (species well established) |
| Bourne Valley | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Low (potential development mitigation area) |
| Chobham Common | 129. Thames Basin Heaths | Add as feature | Reintroduction | High (established population, large unit areas) |
| Cranborne Common | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (Forest Design Plan area) |
| East Devon Pebblebed Heaths | 148. Devon Redlands | Add as feature | Reintroduction | Low (small unit area, species established?) |
| Hurn Common | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Low (Forest Design Plan area) |
| Morden Bog & Hyde Heath* | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (Forest Design Plan and mineral restoration areas) |
| Rempstone Heaths | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | High (Forest Design Plan area) |
| St. Leonards & St. Ives Heaths* | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (potential development mitigation area) |
| Stokeford Heaths | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (Forest Design Plan and mineral restoration areas) |
| Turners Puddle Heath (& Oakers Bog?) | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (Forest Design Plan and mineral restoration areas) |
| Verwood Heaths | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | High (Forest Design Plan and mineral restoration areas) |
| Warmwell Heath | 135. Dorset Heaths | Extend SSSI boundary | Site linkage & ecological coherence | Medium (mineral restoration area) |

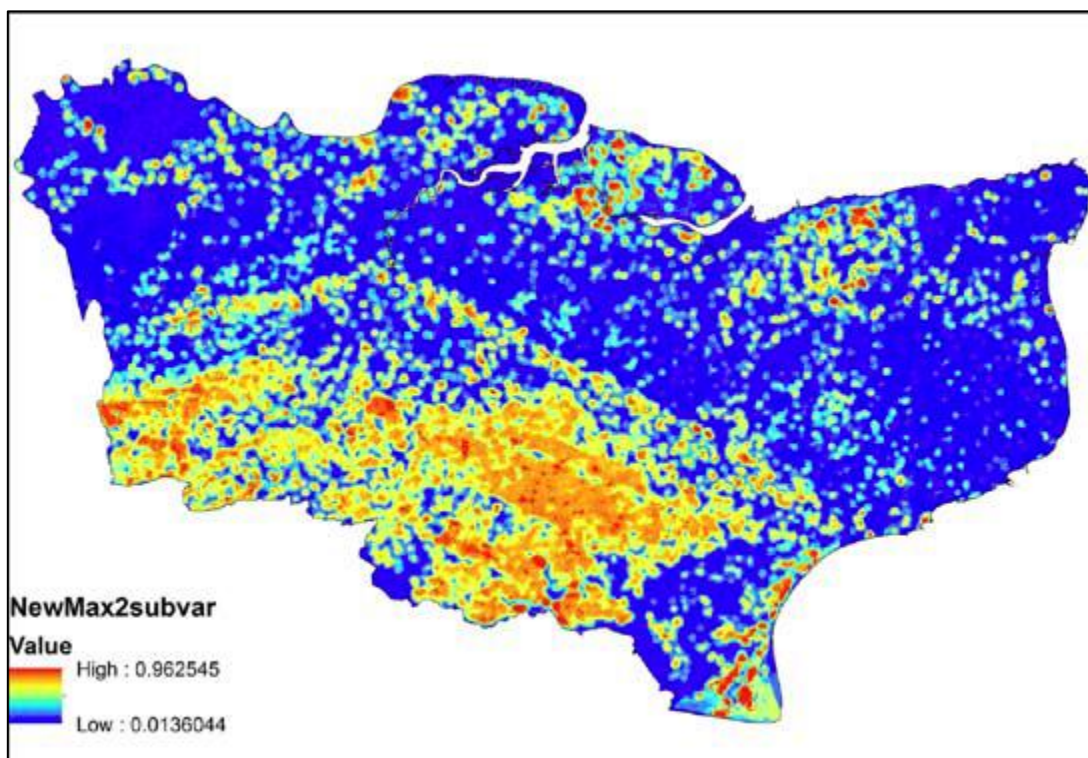
*N.B. potential release sites where reintroductions are planned but have not yet occurred, or where the species has not become established, are not considered in this review

5.4.3. Widespread Species

It is no exaggeration to state that a site series for widespread species features virtually needs to be started from scratch. However, due to a severe lack of information, it is not currently possible to identify the potential amendments and additions required to achieve this. This would first require a revision of the guidelines followed by a major data gathering exercise. Resources to obtain this evidence will obviously be severely limited for the foreseeable future, but fortunately both Amphibian & Reptile Conservation and the voluntary Amphibian and Reptile Groups (ARGs) have expressed an interest in assisting with this exercise should it proceed. Indeed, a lot of extremely useful survey data already exists among the ARGs although as Natural England stopped supporting herpetofauna volunteer engagement in 2012 this information is currently not available to inform our SSSI notification review work. The potential for supporting ARC in developing a new, volunteer based survey and monitoring programme for all native herpetofauna is therefore worth exploring further.

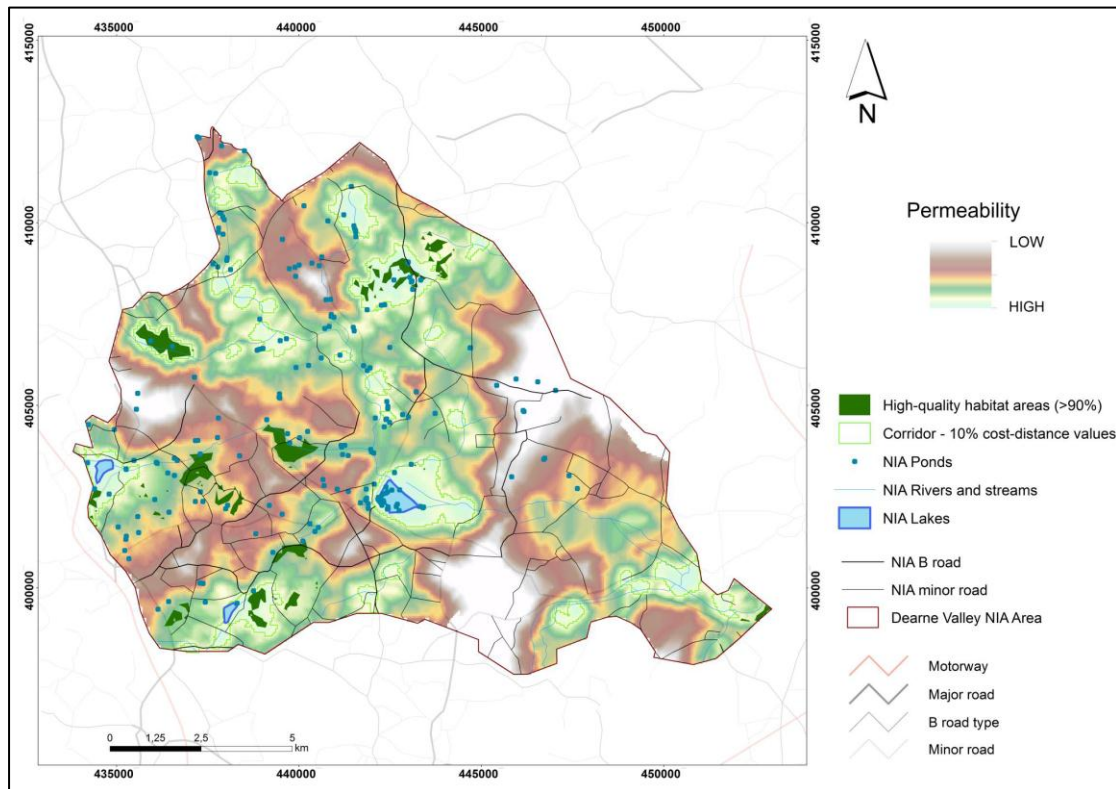
In addition to developing volunteer engagement, other cost effective solutions for improving evidence about widespread species should also be considered. While they can never replace field surveys, techniques such as remote sensing and species distribution modelling (Arnell & Wilkinson 2011) have significant potential for highlighting the best areas within NCAs and for the more effective targeting of surveys. Figures 3 and 4 illustrate typical outputs being generated in this area.

Figure 3: ARC Great Crested Newt Species Distribution Model for Kent*



*This is a fine-scale (25m resolution) absolute model that gives a relative description within areas that are positively (red) and negatively (blue) correlated with great crested newt. The Wealden Claylands “Important Herpetofauna Area” for great crested newts (Table 13) can clearly be seen below the line of the North Downs and running south-east to Dungeness. Output generated by ARC Trust using MaxEnt for an ARC-Natural England Great Crested Newt MoA (2013-14)

**Figure 4: Potential Common Toad Migration Routes in the Dearne Valley NIA*
(Matos & Petrovan 2012)**



*This model shows least-cost corridors for common toad movements between high-value habitat patches (dark green) and water bodies (blue) in the Dearne Valley NIA. Permeability is also represented by a colour scale ranging from brown (low permeability) to light green (high permeability). Road location is shown, allowing modelling of potential road mortality hotspots for migrating toads, connectivity between protected sites, etc. (Froglife-Natural England contract 2012).

5.5. Revising the SSSI Guidelines

In order to achieve many of the desired outcomes of the SSSI notification review, both to ensure species resilience in the face of climate change and other threats (Dunford & Berry 2012; Russell 2012) and to reduce the likelihood of external challenge to site notifications, it is quite clear that the current guidelines (JNCC 2012) need to be revised and improved. Some changes will be minor but others would be more significant, e.g. the site selection and boundary setting criteria for great crested newts need a major rethink as they currently favour former mineral/quarry sites over other habitats. The addition of new species features also needs to be reflected in this guidance. Basically, a brand new chapter for the herpetofauna is required. We have already been working on ideas through our former MoA with ARC and various proposals for improving both the SSSI and CSM guidance have been discussed and agreed at a workshop with NRW and SNH.

6. Next Steps and Future Issues

The single most important issue is the lack of evidence. Currently, we lack the resources to even carry out condition monitoring of existing notified amphibian and reptile features, let alone fill in the very significant evidence gaps for these taxa. The next steps in improving the site series for amphibians and reptiles will therefore be dictated by the requirement to obtain significant amounts of new data and by the resources available to achieve this. Apart from supplying the missing information that has been identified for the restricted range species, sufficient evidence will also allow the design of an adequate site series for the widespread species features.

Key to resolving this issue will be the development of a cost-effective, robust and standardised (Gleed-Owen *et al* 2005; Sewell *et al* 2013) volunteer monitoring programme to obtain the information required. This will only be possible by working with NGOs – indeed this review itself could not have been produced without our former SSSI MoA work with ARC. Fortunately, amphibian and reptile monitoring is becoming increasingly popular and working in true partnership with ARC and ARG-UK in particular will enable us to harness the huge potential of citizen science and volunteer engagement.

The recommended next steps to progress the notification review for amphibians and reptiles are:

- Complete revisions to the SSSI and CSM guidelines. Final drafts of both sets of guidelines are currently being prepared and will be submitted to JNCC for external peer review in early 2016.
- Working with ARC, produce a joint costed plan for detailed site series amendments for the range restricted species features the natterjack toad, sand lizard and smooth snake (plus pool frog if added as a notifiable feature)
- Working with ARC and ARG-UK, produce a joint costed plan for the collation and analysis of existing data relevant to the notification review for the widespread amphibian and reptile species (much of this information is currently not available to Natural England)
- Working with ARC and ARG-UK, produce a joint costed plan for a long-term national volunteer monitoring programme for amphibians and reptiles, both to collect new evidence to help inform the SSSI notification review and to assist with the ongoing condition monitoring of current and future notified features. This should take other initiatives into account, e.g. the HLF Back from the Brink projects that include an element of survey within two Important Herpetofauna Areas (the Sefton Coast and Dorset Heaths)

7. Consequences and Risks

The consequences of not improving the site series for amphibians and reptiles will not be significant in the short term for the range restricted species as most populations are already included in SSSIs. However, many of the required improvements for these features are aimed at enhancing future resilience in the face of threats such as potential climate change. On the other hand, although all of the widespread species should be naturally abundant in a healthy diverse landscape, it is becoming increasingly clear that most are suffering from dramatic declines right now and that, in many cases and in many areas, their notification as SSSI features may be their best hope.

However, a major expansion of the site series for widespread species could have various risks including:

- **Political.** An increase in the number of protected sites for great crested newts will create the most potential for external objections, but including the other European Protected Species in new notifications, likely boundary changes and perceived interference with other land management activities such as forestry, will all carry risks of objections and challenge
- **Financial.** Expanding the current site series will obviously incur increased costs, especially if this expansion is ultimately substantial. Surveys to determine if populations meet SSSI selection criteria and the subsequent condition monitoring of numerous additional features will be expensive (available resources for condition monitoring of current features already falls well short of requirement), although a volunteer monitoring programme will reduce these costs considerably
- **Workload.** Although Area Teams will carry out a lot of the notification work, advisers generally don't have the capacity to organise the surveys and monitoring themselves, let alone carry them out. Realistically therefore, Natural England will require the assistance of NGO partners and voluntary groups to make a notification review of any scale or ambition a success for amphibians and reptiles

8. Implementation

The review for amphibians and reptiles is not yet at the stage where an implementation plan is possible – this should be drawn up following the revision of the SSSI guidelines (which will dictate in particular the new selection criteria and species features) and the production of costed plans and proposals aimed at obtaining the evidence required.

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Appendix 1: List of Data Sources Used to Evaluate Adequacy of Current SSSI Series for Amphibians and Reptiles

GIS Datasets (Limburn, Arnell, A.P. & Wilkinson 2012)

| GIS Dataset Name | Source |
|--|----------------------------|
| England Boundary | Ordnance Survey - OpenData |
| Sites of Special Scientific Interest (SSSIs) | Natural England |
| National Character Areas (NCA) | Natural England |
| Higher Level Stewardship (HLS) Target Areas | Natural England |
| Nature Improvement Areas (NIAs) | Natural England |
| National Nature Reserves (NNRs) | Natural England |
| Local Nature reserves (LNRs) | Natural England |

Species Datasets (Limburn, Arnell, A.P. & Wilkinson 2012) + ARC-NE SSSI MoAs

| Species Dataset Name | Source |
|--|---|
| ARC Rare Species Database and Reptile & Amphibian Dataset - all species records from 1991 to 2011 (01/01/1991 to 31/12/2011) | Amphibian & Reptile Conservation Trust |
| National Amphibian and Reptile Recording Scheme (NARRS) records 2007 - 2011 | Amphibian & Reptile Conservation Trust |
| All reptile and amphibian data from the National Biodiversity Network (NBN), not including records from above datasets | NBN Gateway |
| Cheshire Great Crested Newt Site Inventory | Cheshire <i>Triturus cristatus</i> Site Inventory Partnership |

Number of Individual Species Records (1991 to 2011) within England Used in Analysis after “Cleaning” of Dataset (Limburn, Arnell, A.P. & Wilkinson 2012)

| Species | Species Records used in Analysis of NCA and HLS Target Area Datasets (all records <1000m accuracy) | Species Records used in Analysis of SSSI, NNR and LNR Datasets (records > 100m accuracy removed) | Percentage Loss of Records Between Datasets |
|---------------------------------|--|--|---|
| Range Restricted Species | | | |
| Natterjack toad | 372 | 372 | 0 |
| Sand lizard | 24820 | 24758 | 0.3 |
| Smooth snake | 4220 | 3908 | 8.0 |
| Widespread Species | | | |
| Great crested newt | 1743 | 1289 | 26 |
| Smooth newt | 770 | 511 | 35.3 |
| Palmate newt | 465 | 301 | 35.3 |
| Common frog | 1427 | 756 | 47 |
| Common toad | 1453 | 751 | 48.3 |
| Common lizard | 9802 | 9638 | 4.4 |
| Slow worm | 6844 | 6217 | 9.2 |
| Grass snake | 2495 | 1923 | 22.9 |
| Adder | 4220 | 3907 | 7.4 |

Appendix 2: All SSSIs with Notified Amphibian and Reptile Features

| SSSI Name | Date Notified | National Character Area | Notified Herp Features |
|---------------------------------------|---------------|---|------------------------|
| 01. Ambersham Common | 24.10.1986 | 120. Wealden Greensand | Sand Lizard |
| 02. Annaside | 30.08.1989 | 7. West Cumbria Coastal Plain | Natterjack Toad |
| 03. Annesley Woodhouse Quarries | 22.06.2010 | 30. Southern Magnesian Limestone | Amphibian Assemblage |
| | | | Great Crested Newt |
| 04. Arne | 30.07.1986 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 05. Ash To Brookwood Heaths | 19.11.1993 | 129. Thames Basin Heaths | Smooth Snake |
| 06. Beeding Hill to Newtimber Hill | 10.11.1986 | 125. South Downs | Great Crested Newt |
| 07. Bee's Nest & Green Clay Pits | 18.07.1990 | 52. White Peak | Great Crested Newt |
| 08. Bewick & Beanley Moors | 30.06.2010 | 2. Northumberland Sandstone Hills | Amphibian Assemblage |
| 09. Bickerton Hill | 13.12.1999 | 62. Cheshire Sandstone Ridge | Reptile Assemblage |
| 10. Black Hill Heath | 15.12.1989 | 134. Dorset Downs & Cranborne Chase | Smooth Snake |
| 11. Blue Pool & Norden Heaths | 01.03.1985 | 135. Dorset Heaths | Great Crested Newt |
| | | | Sand Lizard |
| | | | Smooth Snake |
| 12. Bourne Valley | 14.03.1995 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 13. Bramshott & Ludshott Commons | 26.10.1984 | 120. Wealden Greensand | Smooth Snake |
| 14. Brenscombe Heath | 07.11.1985 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 15. Broxhead And Kingsley Commons | 15.10.1993 | 120. Wealden Greensand | Sand Lizard |
| 16. Burton Common | 26.10.1984 | 131. New Forest | Sand Lizard |
| | | | Smooth Snake |
| 17. Canford Heath | 12.06.1985 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 18. Chanctonbury Hill | 08.03.1985 | 125. South Downs | Great Crested Newt |
| 19. Clints Quarry, Moota | 03.02.1997 | 8. Cumbria High Fells | Great Crested Newt |
| 20. Cockerham Marsh | 16.12.1985 | 31. Morecambe Coast & Lune Estuary | Natterjack Toad |
| 21. Corfe & Barrow Hills | 10.03.1986 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 22. Cranborne Common | 23.08.1985 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 23. Crookhill Brick Pit | 25.11.2003 | 138. Weymouth Lowlands | Great Crested Newt |
| 24. Denby Grange Colliery Ponds | 29.09.1997 | 38. Nottinghamshire, Derbyshire & Yorkshire Coalfield | Amphibian Assemblage |
| | | | Great Crested Newt |
| 25. Dew's Ponds | 18.08.2000 | 83. South Norfolk & High Suffolk Claylands | Great Crested Newt |
| 26. Drewton Lane Pits | 28.05.1993 | 27. Yorkshire Wolds | Amphibian Assemblage |
| | | | Great Crested Newt |
| 27. Drigg Coast | 02.05.1986 | 7. West Cumbria Coastal Plain | Amphibian Assemblage |
| | | | Natterjack Toad |
| 28. Duddon Estuary | 27.02.1991 | 7. West Cumbria Coastal Plain | Natterjack Toad |
| 29. Dungeness, Romney Marsh & Rye Bay | 16.08.2006 | 123. Romney Marshes | Great Crested Newt |

| SSSI Name | Date Notified | National Character Area | Notified Herp Features |
|---|----------------------|---|--|
| 30. Epping Forest | 05.03.1990 | 111. Northern Thames Basin | Amphibian Assemblage |
| 31. Fens Pools | 27.09.1989 | 67. Cannock Chase & Cank Wood | Amphibian Assemblage Great Crested Newt |
| 32. Ferndown Common | 21.09.1984 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 33. Fritton Common | 01.10.1985 | 83. South Norfolk & High Suffolk Claylands | Great Crested Newt |
| 34. Gibside | 01.06.1989 | 16. Durham Coalfield Pennine Fringe | Amphibian Assemblage Reptile Assemblage |
| 35. Gong Hill | 01.11.1988 | 120. Wealden Greensand | Sand Lizard |
| 36. Ham Common | 11.11.1987 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 37. Hartland Moor | 02.05.1986 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 38. Hesketh Golf Links | 18.12.1989 | 57. Sefton Coast | Sand Lizard |
| 39. Hockering Wood | 01.09.1984 | 84. Mid Norfolk | Great Crested Newt |
| 40. Holnest | 03.02.2004 | 133. Blackmoor Vale & Vale of Wardour | Great Crested Newt |
| 41. Holt & West Moors Heaths | 10.07.1988 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 42. Holton & Sandford Heaths | 26.06.1997 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 43. Horton Common | 24.02.1984 | 135. Dorset Heaths | Sand Lizard |
| 44. Houghton Regis Marl Lakes | 01.06.1988 | 110. Chilterns | Great Crested Newt |
| 45. Hurn Common | 17.12.1986 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 46. Kirk Deighton | 16.08.2000 | 30. Southern Magnesian Limestone | Great Crested Newt |
| 47. Lions Hill | 03.05.1985 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 48. Little Wittenham | 16.08.2000 | 108. Upper Thames Clay Vales | Great Crested Newt |
| 49. Luscombe Valley | 12.03.1996 | 135. Dorset Heaths | Sand Lizard |
| 50. Lyppard Grange Ponds | 16.08.2000 | 106. Severn & Avon Vales | Great Crested Newt |
| 51. Morden Bog & Hyde Heath | 19.02.1996 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 52. New Hartley Ponds | 01.01.1985 | 13. South East Northumberland Coastal Plain | Amphibian Assemblage Great Crested Newt |
| 53. North Norfolk Coast | 01.02.1986 | 77. North Norfolk Coast | Natterjack Toad |
| 54. Oakers Bog | 29.06.1988 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 55. Offham Marshes | 21.03.1989 | 121. Low Weald | Amphibian Assemblage |
| 56. Orton Pit | 23.03.2004 | 88. Bedfordshire & Cambridgeshire Claylands | Great Crested Newt |
| 57. Parley Common | 24.02.1984 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 58. Peter's Pit | 16.08.2000 | 119. North Downs | Great Crested Newt |
| 59. Pockerley Farm Pond | 01.11.1984 | 16. Durham Coalfield Pennine Fringe | Amphibian Assemblage |
| 60. Poole Bay Cliffs | 06.12.1989 | 135. Dorset Heaths | Sand Lizard |
| 61. Poole Harbour | 07.12.1990 | 135. Dorset Heaths | Sand Lizard |
| 62. Poors Common | 30.01.1992 | 131. New Forest | Smooth Snake |
| 63. Povington & Grange Heaths | 24.02.1984 | 135. Dorset Heaths | Sand Lizard Smooth Snake |
| 64. Powerstock Common & Wytherston Farm | 25.02.2000 | 139. Marshwood & Powerstock Vales | Great Crested Newt |

| SSSI Name | Date Notified | National Character Area | Notified Herp Features |
|---|----------------------|---|-------------------------------|
| 65. Priddy Pools | 21.04.1986 | 141. Mendip Hills | Amphibian Assemblage |
| 66. Puttenham & Crooksbury Commons | 31.07.1986 | 120. Wealden Greensand | Sand Lizard |
| | | | Smooth Snake |
| 67. Red Rocks | 01.11.1983 | 59. Wirral | Natterjack Toad |
| 68. Rempstone Heaths | 20.02.1987 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 69. Ripon Parks | 01.02.1983 | 30. Southern Magnesian Limestone | Great Crested Newt |
| 70. Rixton Clay Pits | 12.12.1990 | 60. Mersey Valley | Great Crested Newt |
| 71. Saltfleetby-Theddlethorpe Dunes | 01.05.1988 | 42. Lincolnshire Coast & Marshes | Natterjack Toad |
| 72. Salisbury Plain | 29.01.1993 | 132. Salisbury Plain & West Wiltshire Downs | Great Crested Newt |
| 73. Sefton Coast | 16.08.2000 | 57. Sefton Coast | Great Crested Newt |
| | | | Natterjack Toad |
| | | | Sand Lizard |
| 74. Silloth Dunes & Mawbray Bank | 30.01.1991 | 6. Solway Basin | Great Crested Newt |
| | | | Natterjack Toad |
| 75. Slop Bog & Uddens Heath | 23.08.1985 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 76. Southampton Common | 24.02.1987 | 128. South Hampshire Lowlands | Amphibian Assemblage |
| | | | Great Crested Newt |
| 77. St Leonards & St Ives Heaths | 03.11.1999 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 78. Stoborough & Creech Heaths | 07.02.1986 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 79. Stokeford Heaths | 24.03.1995 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 80. Stones Road Pond | 20.06.1985 | 114. Thames Basin Lowlands | Great Crested Newt |
| 81. Studland & Godlingston Heaths | 07.10.1986 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 82. Subberthwaite, Blawith & Torver Low Commons | 29.09.1994 | 19. South Cumbria Low Fells | Natterjack Toad |
| 83. Sundon Chalk Quarry | 01.05.1989 | 110. Chilterns | Great Crested Newt |
| 84. Swannington Ugate Common | 01.12.1985 | 78. Central North Norfolk | Great Crested Newt |
| 85. Syderstone Common | 10.01.1984 | 76. North West Norfolk | Natterjack Toad |
| 86. The New Forest | 28.02.1996 | 131. New Forest | Amphibian Assemblage |
| | | | Great Crested Newt |
| | | | Reptile Assemblage |
| | | | Sand Lizard |
| | | | Smooth Snake |
| 87. Thompson Water, Carr & Common | 01.10.1988 | 85. The Brecks | Amphibian Assemblage |
| | | | Great Crested Newt |
| 88. Thrasher's Heath | 31.03.1984 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 89. Thursley, Hankley & Frensham Commons | 23.08.1991 | 120. Wealden Greensand | Sand Lizard |
| | | | Smooth Snake |
| 90. Town Common | 31.03.1994 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 91. Turbary & Kinson Commons | 08.07.1988 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 92. Turners Puddle Heath | 15.06.1990 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 93. Upper Solway Flats & Marshes | 06.06.1988 | 6. Solway Basin | Natterjack Toad |

| SSSI Name | Date Notified | National Character Area | Notified Herp Features |
|---------------------------------|----------------------|----------------------------------|-------------------------------|
| 94. Upton Heath | 12.04.1990 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 95. Verwood Heaths | 08.05.1985 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 96. Warmwell Heath | 12.06.1987 | 135. Dorset Heaths | Smooth Snake |
| 97. Wilsford & Rauceby Warrens | 01.05.1986 | 47. Southern Lincolnshire Edge | Great Crested Newt |
| 98. Winfrith Heath | 05.12.1996 | 135. Dorset Heaths | Sand Lizard |
| | | | Smooth Snake |
| 99. Winterton-Horseley Dunes | 01.03.1989 | 80. The Broads | Natterjack Toad |
| 100. Woolbeding & Pound Commons | 22.09.1998 | 120. Wealden Greensand | Reptile Assemblage |
| 101. Woolmer Forest | 28.06.1994 | 120. Wealden Greensand | Natterjack Toad |
| | | | Reptile Assemblage |
| | | | Sand Lizard |
| | | | Smooth Snake |
| 102. Worgret Heath | 18.11.1987 | 135. Dorset Heaths | Sand Lizard |
| 103. Wyre Forest | 08.04.1998 | 66. Mid Severn Sandstone Plateau | Reptile Assemblage |
| 104. Yardley Chase | 26.07.1984 | 91. Yardley Whittlewood Ridge | Great Crested Newt |