



Monitoring Report Year 4

SEPTEMBER 2023

NatureSpace District Licensing Scheme: Monitoring Results (2019-2022)



A new pond in an arable field restored to species-rich grassland in Northamptonshire.

This is the fourth year of monitoring for the NatureSpace great crested newt District Licensing scheme. Great crested newts have been recorded in 65% of compensation sites and in 42% of ponds created or restored as part of the scheme to compensate for developer impacts. Monitoring is also providing evidence of the wider benefits of our work for wetland plants, including uncommon species.

The results of the scheme's extensive monitoring programme, even at this early stage, show that the District Licensing scheme is making a significant contribution to the conservation of great crested newt and other freshwater wildlife.

This is an interim report, and more detailed results will be presented in our 2023 monitoring report.

Introduction

This is the second monitoring report of the Newt Conservation Partnership, with summary results for the 2022 monitoring programme of the NatureSpace great crested newt District Licensing scheme.

The Newt Conservation Partnership is the delivery body of the NatureSpace great crested newt District Licensing scheme (naturespaceuk.com). We are a community-benefit society set up specifically to create or restore high quality aquatic and terrestrial habitat for great crested newts. Established in 2018, the scheme compensates for great crested newt habitat lost or degraded by development, and is an alternative to standard licensing by Natural England.

Great crested newt populations have declined primarily due to aquatic and terrestrial habitat loss and fragmentation. The Newt Conservation Partnership works to counter this by creating, restoring and managing high quality, clean water ponds, connected by terrestrial habitat and that build freshwater networks where great crested newt populations can thrive.

Our main objective is to achieve a net improvement in the conservation status of great crested newts in regions we operate in (Fig. 1). To do this we create or restore at least four high quality ponds for every great crested newt pond lost through development. We also compensate for terrestrial habitat lost or damaged because great crested newt spend

about 80% of their lifecycle on land. We set up 25-year agreements with landowners so that the management needed to maintain the habitat we create or restore is secured and funded for the long term.

The results in this summary report are based on data from our comprehensive monitoring scheme, which is vital for understanding and measuring our ecological success. We survey all habitat we have created or restored for great crested newts annually. In addition, we carry out an annual landscape-scale survey which allows us to compare compensation pond monitoring with background newt occupancy in the South Midlands.

We share our findings with landowners, local record centres and partner organisations to support wider greater crested newt conservation. We have also begun to assess wider benefits for other freshwater wildlife. We look forward to reporting on all aspects of our monitoring scheme in more detail in our 2023 report, which will mark the fifth anniversary of the scheme.

For more information about the Newt Conservation Partnership please visit:

www.newtpartnership.org.uk



Compensation Sites Progress

Between 2018 and December 2022, the Newt Conservation Partnership created 210 and 35 restored ponds ('compensation ponds', Fig. 2), across the participating planning authorities (a full list can be found at naturespaceuk.com/the-scheme/where-we-operate).

In addition to pond creation, the NatureSpace scheme compensates for terrestrial habitat degraded or lost. Up to December 2022, we have provided 845 hectares of suitable terrestrial habitat for newts.

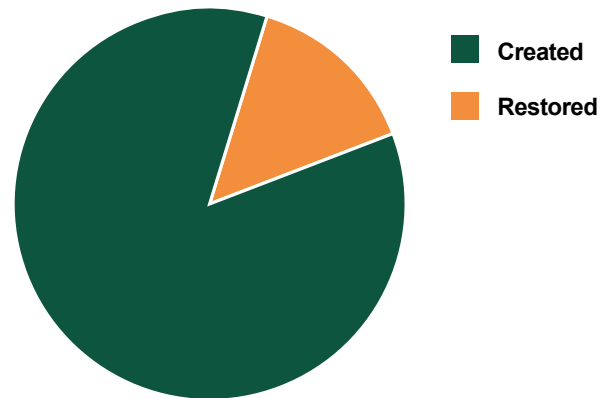


Fig. 2. The number of compensation ponds created and restored from 2018 to 2022.

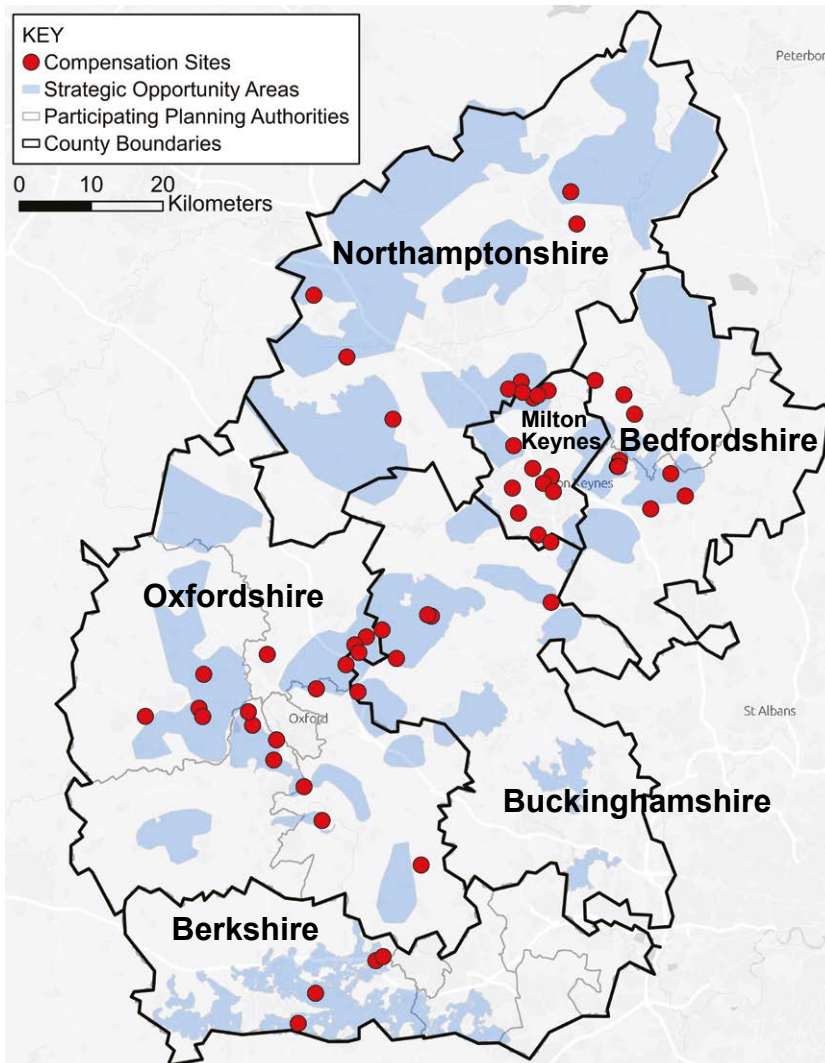
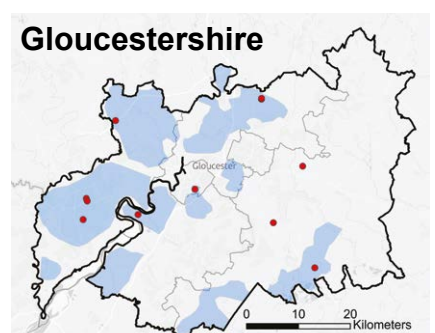
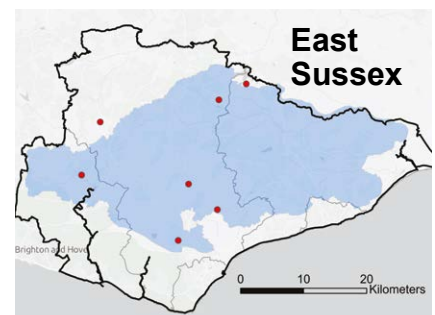
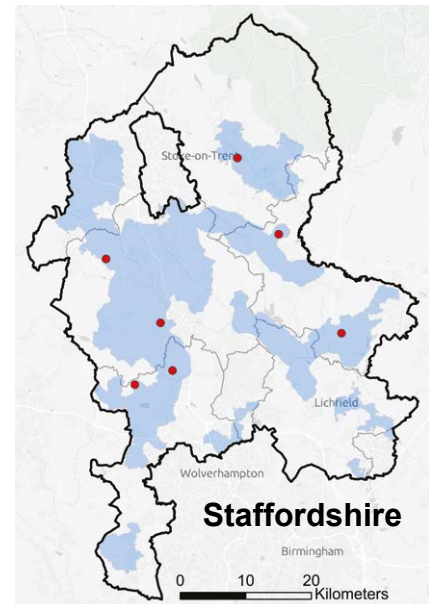


Fig. 1. Map of compensation sites created between 2018 and 2022, within participating planning authorities and Strategic Opportunity Areas (SOAs) for habitat creation. SOAs are derived from great crested newt habitat suitability modelling and expert knowledge from a range of stakeholders. Maps contain OS data © Crown copyright and database right 2023.



Monitoring Results

After four years of monitoring, great crested newts have been recorded in 65% of compensation sites and in 42% of compensation ponds. Occupancy is greater at our compensation sites than reported for regional and national monitoring schemes. These results are really positive and shows the scheme is already providing conservation benefits.

All 147 compensation ponds created or restored up to December 2021 were surveyed for great crested newt presence in spring 2022. This was an unusual year with very hot and dry weather, and consequently 15% of compensation ponds were dry or did not have enough water to collect an eDNA sample at the time of the survey (6% in 2020 and 8% in 2021). As a result, occupancy was relatively low compared to previous years: 27% of ponds had a positive result for great crested newt presence (Fig. 3) compared to previous years (36% in 2020 and 33% in 2021). Evidence from the PondNet survey also suggests that in these dry years, newts are less likely to move in the landscape and colonise new sites.

Overall, 42% of compensation ponds and 65% of compensation sites have been occupied by great crested newt at least once over the past four years. Great crested newt presence in individual ponds can change year on year, as demonstrated by the long-running national PondNet survey, so looking at pond and site results over the 4-year monitoring period are more meaningful than annual pond or site occupancy. Note also that our compensation sites are relatively new, and so occupancy is likely to continue to increase as sites become established and the newts make use of new breeding ponds in the landscape.

In addition to occupancy data, we recorded great crested newt Habitat Suitability Index (HSI) for each pond. In 2022, 86% of the ponds surveyed had an Excellent or Good HSI score (Fig. 4). Only 2% of compensation ponds had an HSI score below average. This result reflects our high standards in terms of compensation site selection and best practice for pond creation and restoration as set by our partners Amphibian and Reptile Conservation Trust and Freshwater Habitats Trust. The few ponds which had a Moderate or Poor HSI score were either dry at the time of survey or had been created only a few months prior to the monitoring season.

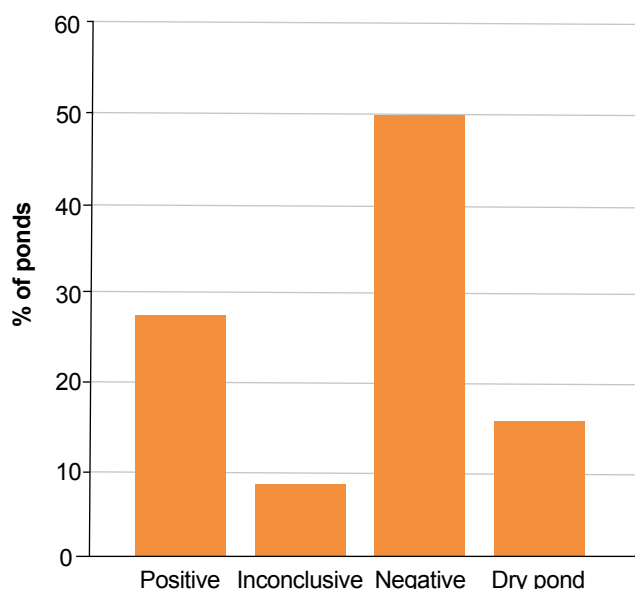


Fig. 3. Results of great crested newt occupancy surveys in compensation ponds monitored in 2022. Note the high proportion of dry ponds due to weather conditions in spring 2022.

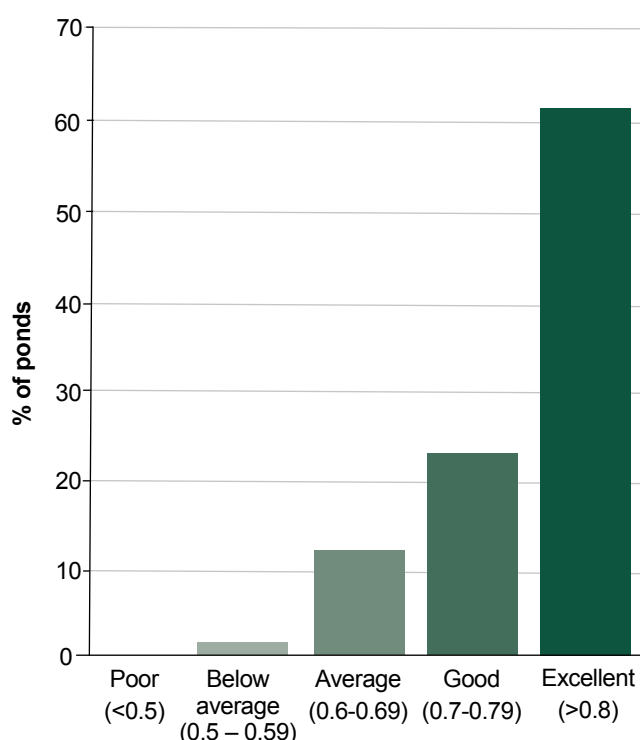


Fig. 4. HSI results for compensation site ponds monitored in 2022. The HSI is a standardised method to assess great crested newt habitat suitability. Ponds with high HSI scores provide better quality habitat than ponds with lower scores.

In addition to the great crested newt surveys, standardised plant surveys of 25 compensation ponds were conducted by Freshwater Habitats Trust to assess their ecological quality (using the PSYM method, one of the criteria for Priority Pond assessment). All the ponds surveyed were newly created, and only 2-4 years old.

Despite the dry weather in 2022 and their young age, 75% of the ponds achieved a good quality score (Fig. 5). At two sites we had some exceptional new uncommon plant records: one

for the locally rare species greater bladderwort and another for the nationally rare lesser water-plantain (see Figs. 6 and 7).

Plant diversity in ponds ranged from 5-29 species and the average was 16 species – a very good result considering wider countryside ponds support seven wetland plant species in England on average.¹ These results show how well-targeted pond creation and restoration can provide rapid benefits for freshwater wildlife other than great crested newt.

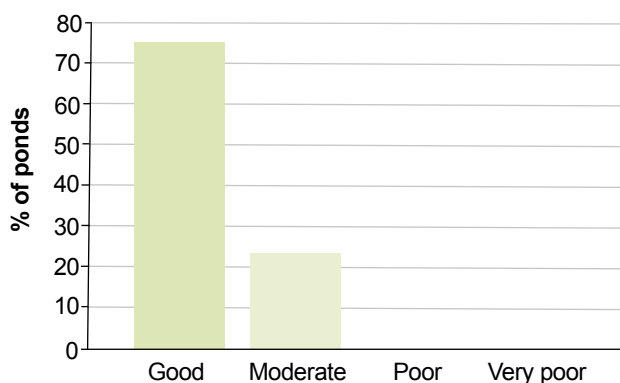


Fig. 5. PSYM score for 25 compensation ponds. The Predictive SYstem for Multimetrics (PSYM) is a reference-based method which uses diversity and rarity metrics to provide an overall ecological quality status for pond.



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Fig. 6. Lesser water-plantain (*Baldellia ranunculoides*) is an IUCN vulnerable species for England and this is the first record in the vice-county of Buckinghamshire.



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Fig. 7. First record of greater bladderwort (*Utricularia vulgaris*) in a new clean water pond in the vice-county of Bedfordshire.

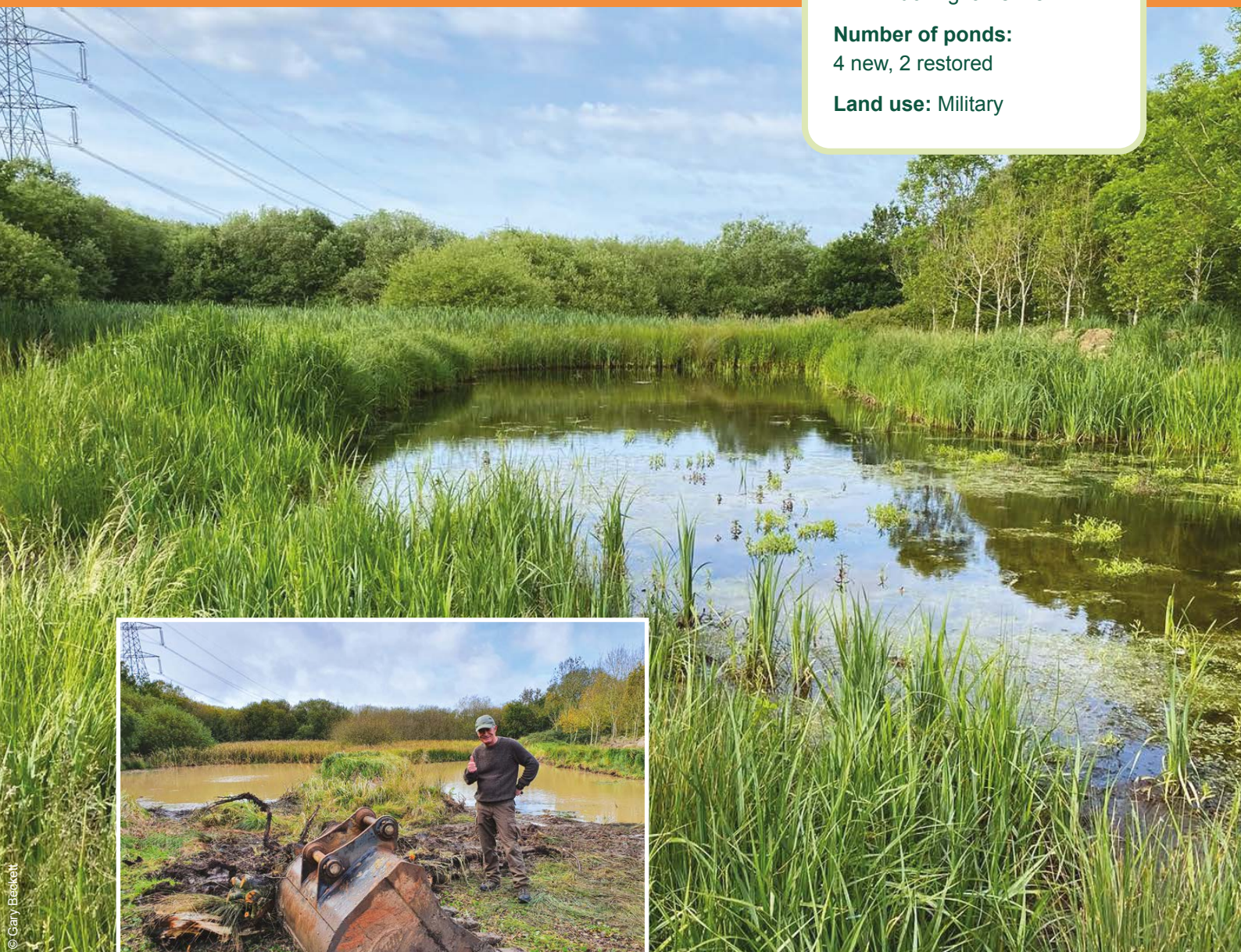
1. https://countrysidesurvey.org.uk/sites/default/files/CS_UK_2007_TR7%20-%20Ponds%20Report.pdf

CASE STUDY: Arncott MOD

LPA: Cherwell District Council
Buckinghamshire

Number of ponds:
4 new, 2 restored

Land use: Military



Bicester Garrison is a Ministry of Defence (MOD) training site set in the heart of the Oxfordshire-Buckinghamshire countryside. Due to the absence of intensive agriculture and very limited public access, nature has flourished and the site offers a mosaic of wildlife habitats including scrub, woodland and grassland.

The site and surrounding landscape is a stronghold for great crested newts but many of the already established ponds were overgrown, over-shaded, reducing the quality of their breeding habitat and threatening their long-term viability at the site. In October 2020 Project Neptune was set up to develop and implement a long-term programme of pond creation and restoration at the Garrison, working closely with the Garrison's Conservation

Officer. In its first phase, two new clean water ponds were created and two existing ponds dominated by tall emergent plants were restored. By the following spring, great crested newts were already present and breeding in all four ponds. Common toad was also reported to be breeding in two of the ponds.

In a second phase of Project Neptune, a new nature reserve was created at the Garrison on an unused playing field to benefit both biodiversity and MOD staff wellbeing. This included two new clean water ponds, planting of 30 native species of trees/shrubs and the restoration of grassland. The project won the Environmental Enhancement Award at the MOD Sanctuary Awards 2022 (naturespaceuk.com/newt-conservation-partnership-wins-mod-sanctuary-award/).

CASE STUDY: Dymock Wood

LPA: Forest of Dean
District Council

Number of ponds: 1 restored

Land use: Forestry



Dymock Wood Site of Special Scientific Interest (SSSI) is a large area of broadleaf woodland which is home to nationally important populations of wild daffodil, butterflies and moths. The site is owned by Forestry England and managed for the benefit of both forestry and biodiversity. The wider landscape offers excellent habitat for great crested newt, but there are relatively few ponds in the woods and few are adequate for newt breeding because of fish or disturbance. Working closely with Forestry England, we investigated the potential to create and/or restore ponds across the woods. Space for new ponds was limited so we focused on the restoration of a pond fed by a small clean water stream. We repaired the dam

to restore the pond's hydrology, removed 75% of the silt and coppiced the surrounding trees to provide more light for wetland plants. The cut brash and branches were used to create habitat piles for newts and other wildlife. Works were completed in winter 2019 and it took a few years for great crested newt to be recorded in the pond – our first positive record was in 2022. Retaining some sediment meant that vegetation colonised quickly from the seedbank, providing plenty of places for newts to hide and lay eggs. In future, we hope to work with the surrounding landowners to create and restore other ponds in this area, enhancing the network of ponds suitable for newt breeding around Dymock Wood.

Landscape-scale Monitoring

As part of the NatureSpace scheme, landscape-scale monitoring is carried out annually in 40 x 1 km grid squares across the original NatureSpace scheme region in the South Midlands. The aim of the programme is to understand how well compensation ponds perform against landscape-scale occupancy in the South Midlands region and against national monitoring data.

The 1 km squares were selected randomly to provide a representative sample of newt occupancy in the South Midlands area. Ponds in these squares are surveyed using eDNA and the HSI for each pond is also recorded.

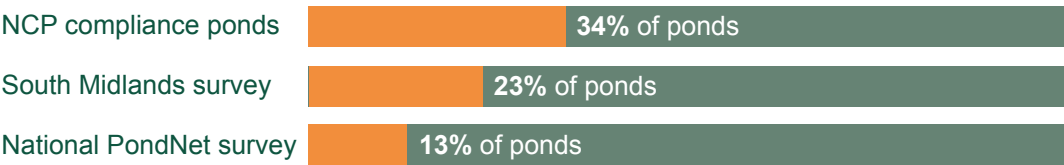
Great crested newt occupancy of compensation ponds was greater than both the national and the regional averages (Fig. 8). The average occupancy in compensation ponds was 34% compared to 23% for the South Midlands region

and 13% at national level. Clearly the South Midlands is a hotspot for great crested newt, but in the compensation ponds created by NCP great crested newt occupancy is even higher.

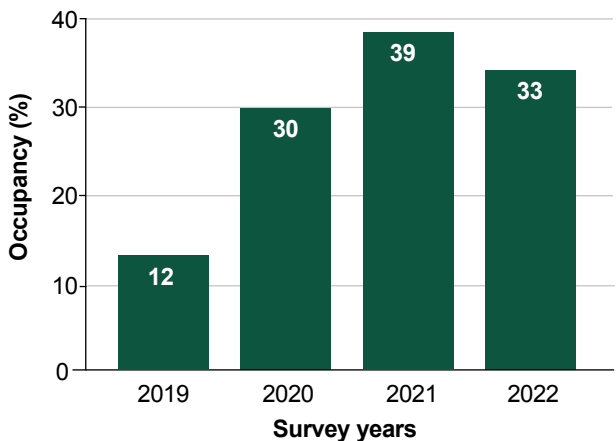
The annual results show that occupancy at landscape-scale is very variable year on year (Fig. 8), largely due to weather conditions. This emphasises the value of long-term monitoring at the local, regional and national levels to provide a good understanding of the benefits of the scheme for great crested newt conservation.

Ongoing monitoring of the NatureSpace scheme in future years will increasingly provide essential information about great crested newt conservation status, and about the effectiveness of district licensing in providing significant biodiversity benefits for great crested newt.

Great crested newt average occupancy



NCP compensation site ponds



South Midlands survey

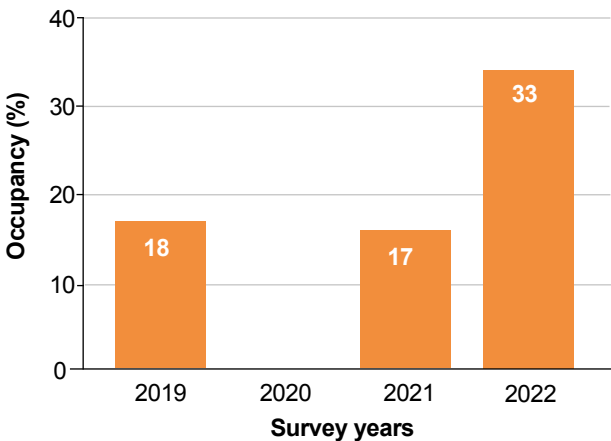
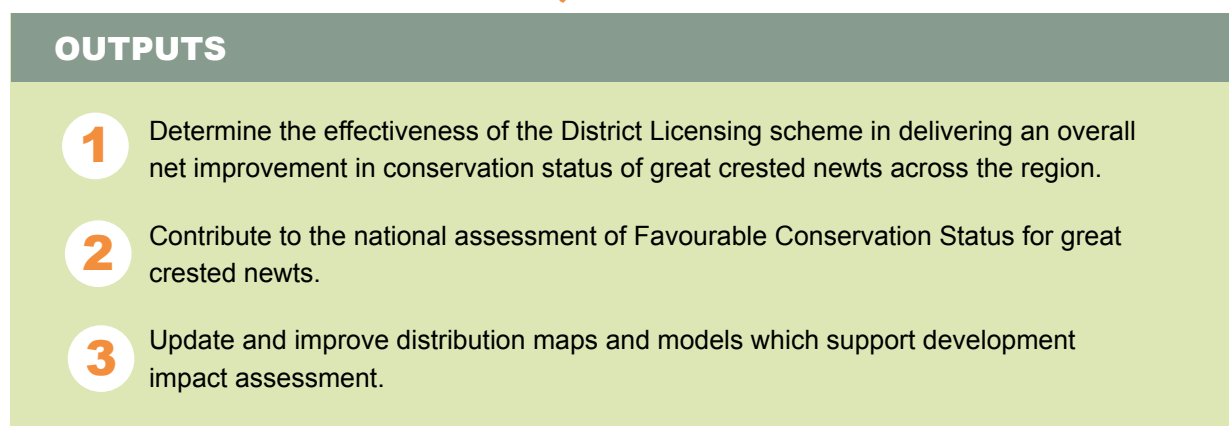
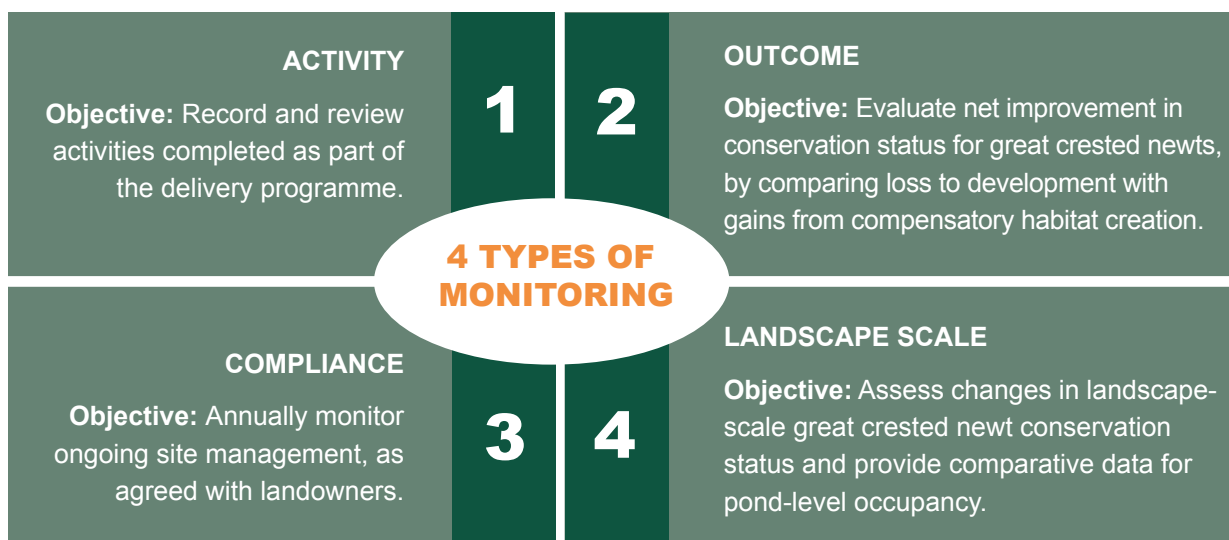
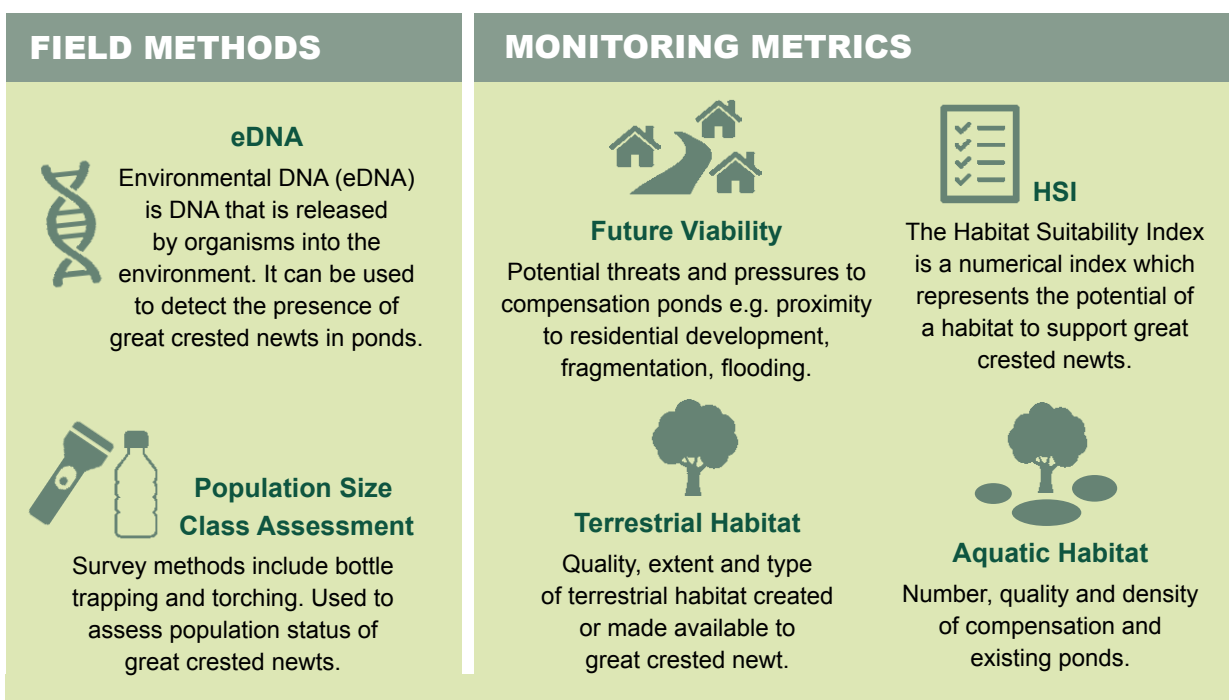


Fig. 8. Great crested newt occupancy in compensation ponds and in randomly selected ponds in the South Midlands landscape-scale survey from 2019 to 2022. Note cluster bias has been removed and the data stratified according to the zones of the NatureSpace habitat suitability model to ensure comparability of results. The South Midlands survey did not take place in 2020 because of the COVID-19 pandemic.

Monitoring Programme Overview





The NatureSpace District Licensing Scheme is in operation across: Berkshire, Bedfordshire, Buckinghamshire, East Sussex, Gloucestershire, Hampshire, Milton Keynes, Northamptonshire, Oxfordshire, Staffordshire, Surrey and West Sussex.

naturespaceuk.com/district-licensing/where-we-operate/



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