



Amphibian and Reptile Conservation
RESEARCH REPORT 15/03

Integrated Great Crested Newt Status Surveillance for Wales

Part 2 Report (November 2015)

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SUMMARY

Wales provides country level status information on great crested newts as part of the UK's reporting to the EU. Because of recent research in Wales, surveillance of great crested newts in Wales can be enhanced and integrated with other status estimators to provide high-quality, long-term information on status and trends which are compatible with other existing and expected schemes.

The present (Part 2) Report updates Wilkinson et al. (2015; Part 1 Report) with 2015 data, where available. Barriers to, and the way forward for, great crested newt status assessment in Wales are discussed. The most appreciable barrier to this is currently lack of standardization in the way monitoring data are submitted.

1. INTRODUCTION

The background and aims of this body of work were set out in Wilkinson et al. (2015; the Part 1 Report). Briefly, the aims of this second report are to:

- A.** Update (include 2015 data) on eight great crested newt “presence known” sites (totalling in practice 10 subsites) to contribute to long-term monitoring of the species’ status in Wales,
- B.** Gather data from an additional eight “presence unknown” control sites, from within the known range of great crested newts, to contribute to long-term monitoring of the species’ status in Wales, and to assess their suitability as “control sites”
- C.** Update and improve the suite of integrated status metrics with these data in order to demonstrate longer-term utility of this integrated approach,
- D.** Address some of the recommendations suggested in the Part 1 Report in order to further the integrated approach to monitoring great crested newts in Wales (see Appendix A).

2. METHODS

2.1. “Presence known” subsites

Each subsite as a “monitoring unit” was further defined using data from 2015 and previous years. Data for 2015 were sought from the surveyors responsible for monitoring each subsite, including through NRW/WG/Consultants for the RAF St. Athan and Ffos y Fran sites. Overall status was assessed for these sites combined using a method simplified from the Part 1 Report - (parameter decreasing) RED = -1; (parameter no change) AMBER = 0; (parameter increasing) GREEN = +1 – summing the scores from each site then gives an overall score and status assignment (see Table 3.2). Parameters assessed were: short-term (year) trend (since last data point); long-term trend (since monitoring began), subsite pond occupancy and HSI score (average score from any available for the subsite in a given year).

2.2. “Presence unknown” (control) sites

Any available data were sought from Wales Biological Records Centres (BRCs) and, where practical, visited for survey (one site).

2.3. Integrated status assessment

New data were added to the integrated status assessment for great crested newts in Wales from the Part 1 Report. Overall status assignment was carried out as per 2.1, above, for consistency.

3. RESULTS

Table 3.1. “Monitoring Unit” definitions.

Subsites Included in Long-term Monitoring	Site Status	Local Authority	Indicative Grid Reference	Subsite Includes
Newborough	SAC (Abermenai to Aberffraw Dunes)	Anglesey	SH4065	Six pond units named Dune pond, Canada pond + side scrape, Reservoir pond, Woodland pond, Crochan Llandwyn and Brown Moss Bog.
Pen-yr-Henblas	SAC (Halkyn)	Flintshire	SJ1972	13 pond units numbered 1 – 9, 15, 16, 18 and 19.
Maes y Grug Brookhill	SAC (Deeside & Buckley)	Flintshire	SJ2666 SJ2865	19 pond units numbered MG 1, 2, 2d, 12, 13, 14, 16, 17, 19 – 28 and new meadow pond. 23 pond units numbered BCC 1 – 4, 5+5a, 6 – 11, 11a and 12 – 22.
Hafod R1 Hafod R2	SAC (Johnstown)	Wrexham	SJ3046 SJ3045	15 pond units numbered SLH 1, 2, 2a, 3 – 5, 5a, 5b, 6, 6a and 7 – 11. Eight pond units numbered SLH 28 – 34 and 36.
St. Asaph Business Park	compensation site	Denbighshire	SJ0174	Six pond units within the Business Park numbered 1, 3+3a+3b, 4, 6, 9 and 20 + ditch; as well as two pond units just outside numbered 10 and 11.
Granllyn	SAC	Powys	SJ2211	Both ponds within the SAC
RAF St. Athan	compensation site	Vale of Glamorgan	ST0168	No current data
Ffos y Fran	land reclamation site	Merthyr Tydfil	SO0806	No current data

Table 3.2. Updated status data (year trend, long-term trend, pond occupancy and HSI score) from the ten “presence known” subsites currently selected for inclusion in GCN surveillance in Wales. See Methods, above, for scoring.

Site	Previous Max GCN Count (year)	2015 Max GCN Count (year trend)	Long-term Trend	2015 Pond Occupancy (change)**	2015 HSI Score (change)	STATUS ASSIGNMENT (SCORE)
Newborough	53 (2013)	40* (decrease on 2013)	Increase	5/6 (increase)	Data pending	FAVOURABLE (+1)
Pen-yr-Henblas (Halkyn)	125 (2013)	241 (increase on 2013)	Decrease	5/13 (increase)	Not recorded	AMBER (0)
Maes y Grug (D&B)	31 (2014)	83 (increase)	Decrease	11/19 (increase)	0.71 [#] (unknown)	FAVOURABLE (+1)
Brookhill (D&B)	210 (2014)	142 (decrease)	Decrease	15/23 (decrease)	0.83 (unknown)	UNFAVOURABLE (-3)
Hafod R1 (JNS)	249 (2014)	274 (increase)	Increase	9/15 (decrease)	0.68 (unknown)	FAVOURABLE (+1)
Hafod R2 (JNS)	262 (2014)	86 (decrease)	Increase	7/8 (decrease)	0.66 (unknown)	UNFAVOURABLE (-1)
St. Asaph Business Park	63 (2014)	106 (increase)	Increase	5/8 (no change)	Not recorded	FAVOURABLE (+2)
Granllyn	146 (2014)	11 (decrease)	Increase	2/2 (no change)	Not recorded	AMBER (0)
RAF St. Athan	36 (2007)	NO DATA AVAILABLE SINCE 2007?	unknown	unknown	unknown	UNFAVOURABLE (UNKNOWN, -1) [‡]
Ffos y Fran	19 (2007)	NO DATA AVAILABLE SINCE 2007?	unknown	unknown	unknown	UNFAVOURABLE (UNKNOWN, -1) [‡]
OVERALL STATUS (THESE SUBSITES ONLY) (SCORE)					UNFAVOURABLE (-1)	

* 2015 max count at Newborough is likely an underestimate as not all ponds were visited on the same night.

** Decrease in pond occupancy will in some cases include a loss of ponds; see Monitoring Unit Definitions, above.

[#] Partial HSI score (not all factors scored).

[‡] On the basis that no data availability is an unfavourable situation, these sites were assigned a score of -1.

Table 3.3. GCN presence/absence data from control sites (presence unknown) randomly selected for inclusion in GCN surveillance in Wales. See Discussion, below.

Site Name	Local Authority	Grid Reference	Approx. Number of Ponds in Square	Search/Survey Result	GCN Presence
Henllys Golf Club	Anglesey	SH6077	9	Possibly present historically within 1km (Cofnod) but not confirmed from square SH6077. Follow up.	UNKNOWN/ POSSIBLE
Bodfari Road	Denbighshire	SJ0670	5	Present historically within 1km (Cofnod) but not confirmed from square SJ0670. Follow up.	UNKNOWN/ POSSIBLE
Nant-Lewis-Alyn	Denbighshire	SJ0967	8	No presence data held by Cofnod. Follow up.	CONSIDERED ABSENT
Llanfynydd	Flintshire	SJ2856	5	Present historically within 1km (Cofnod) but not confirmed from square SJ2856. Follow up.	UNKNOWN/ POSSIBLE
Pentre	Wrexham	SJ3141	14	No presence data held by Cofnod. Follow up.	CONSIDERED ABSENT
Brithdir	Powys	SJ1902	4	No presence data held by BIS. May be possible to survey through FHT in 2016.	UNKNOWN
Duke of York Road	Monmouthshire	SO5312	4+	No presence data held by SEWBRcC. Possibly owned by Broadstones Fisheries. Needs follow-up.	CONSIDERED ABSENT
Marcroes	Vale of Glamorgan	SS9269	2	No presence data held by SEWBRcC. Square visited by ARC volunteer May 2015: both ponds completely succeeded.	ABSENT

Table 3.4. Updated integrated status assessment for great crested newts in Wales (see Discussion).

Element	Detail	Metric	Value (score)
Combined status (“presence known” sites)	10 subsites	Status Assignment	UNFAVOURABLE (-1)
Combined status (“presence unknown” sites)	8 control sites	As yet undetermined	UNKNOWN* (0)
NARRS1 Surveys (NARRS Wales & Central Region)	Background occupancy rate		15%** (0)
	Background mean HSI		0.57** (0)
Spatial Status Modelling (FCS metrics) [†]	Welsh Range		7,312 km ^{2**} (0)
	Number of Welsh populations (modelled)		3,271 occupied ponds** (0)
	Habitat for the species in Wales (modelled)		2,217 km ^{2**} (0)
	Habitat quality measure for Wales (from models and NARRS1 survey data)		810 high quality ponds** (0)
	OVERALL STATUS IN WALES (SCORE)		UNFAVOURABLE (-1)

* These sites are included to add to intended PondNet data, collection of which begins in Wales in 2016. It is not yet understood how status will be assessed from PondNet data.

** NARRS has not yet completed a second cycle so directions of any changes are not yet known; Spatial Status metric values are not yet assessed against targets (i.e. FCS values) – these parameters must currently be assigned an “unknown” score (0).

[†] From French et al. (2014).

4. DISCUSSION AND RECOMMENDATIONS

The updated overall assessment of great crested newt status in Wales as slightly unfavourable (score -1) is certainly unfair as it is based, essentially, on the unavailability of data from sites chosen in good faith for inclusion in the assessment. It is, of course, at least possible that sites with missing data will prove to be in unfavourable condition once data can be accessed. Nevertheless, the only subsite of the eight for which all or most data was available that we can be highly confident is in unfavourable condition, based on existing data, is Brookhill (scoring -3; Table 3.2).

The integrated approach to status assessment can nevertheless be demonstrated; missing data, consistency of recording and data access being the biggest barriers to deriving a more informative assessment of Wales-wide status at present (discussed below). Note that “known unknowns” (control sites/PondNet, NARRS second sample and favourability of spatial status metrics) have all been scored AMBER (i.e. 0) in Table 3.4 so do not affect the current overall status score.

4.1. “Presence known” subsites

These subsites were included in integrated assessment in order to introduce an aspect of population trends into status assessment at Wales level, there being long-term data on this from commitments to monitoring in the country. 2015 data were certainly available from eight of the subsites but not all had been collated in time to include in this report and much was difficult to arrange for analysis because of differences in approach. In order for future status assessment to be effective, the following recommendations should be implemented prior to 2016 monitoring:

- A date by which monitoring results and data should be submitted needs to be established (we suggest end July in each monitoring year)
- Irrespective of the forms used for recording, and the format in which the monitoring is reported, data should be submitted in standardized spreadsheets arranged with each SURVEY VISIT as a unique ROW (N.B. JWW hopes to create this format prior to the December 2015 Wales Amphibian and Reptile Link [WARL] meeting). The current spreadsheet format used by some surveyors is not fit for this purpose, being designed to mirror a paper recording form rather than for its utility.
- Maximum counts should be carried out at all pond units in a subsite on at least two occasions each year (or the data need arranging so that counts on separate nights can be aggregated for different pond units, where these are sufficiently separated to

make double-counting unlikely), however FOUR counts per year would improve robustness of the data, where possible.

- HSI scores for at least some pond units need collecting and recording every year (ideally during May and on a daytime visit).

In addition, data from RAF St. Athan and Ffos y Fran since 2007 need locating and making available. Neither NRW nor WG officers can apparently access this at present. Indeed it cannot be confirmed whether any such surveys have been carried out. This also needs to be established to fulfil monitoring needs at these sites.

It was hoped to include population trend data from additional subsites where monitoring is carried out annually in this assessment. Unfortunately this has not been possible within the timeframe of this Part 2 report, plus these data suffer from the same consistency/utility issues identified for the subsites currently included. It may be possible to identify such subsites for inclusion through WARL – above recommendations will need to be implemented for these sites also.

Individual subsite assessment was simplified and standardized from the Part 1 report. Using the trend (up or down) from the previous year (or last data point) for “short-term trend” decreases subjectivity in the assessment, as does using trend since monitoring began for “long-term trend”. The latter, however, may be best served using (e.g) ten-year trend or similar – this is simply a decision that needs to be made.

4.2. “Presence unknown” sites

These sites were included in integrated assessment in particular to be compatible with anticipated PondNet approaches. It is not yet known how these future data will be analysed in order to assess status change (through number of occupied ponds in the designated 1km square). Nevertheless, BRC data suggest that the sites currently identified (randomly chosen from within the range of great crested newts in Wales) are suitable for this purpose and for surveys to establish presence/absence in each pond in 2016. The one site where a survey visit was possible (by an ARC volunteer) proved to have completely succeeded ponds and it may be most pragmatic to identify an alternative square for the present needs.

4.3. Conclusions

Monitoring of Wales’ great crested newt sites that will enable status assessment at country level is in advance of parallel initiatives in both Scotland and England. Nevertheless, time spent mining the data required due to poor formatting etc. is presently a barrier to achieving

this. Recommendations must be discussed and implemented urgently so that the excellent data (which at least exists even if difficult to use) is optimized. As well as a data submission spreadsheet to enable analyses, the establishment of an on-line system to which data can be uploaded will greatly facilitate this.

It is also important that Spatial Status metrics derived from ARC's consistent, repeatable modelling approach (see French et al., 2014) are assessed against favourability criteria so that they can be included in integrated status assessment.

Please also refer to other recommendations from the Part 1 report, repeated in Appendix A.

5. REFERENCES

French, G.C.A., Wilkinson, J.W., Fletcher, D.H. & Arnell, A.P. (2014) *Quantifying the Status of Great Crested Newts in Wales*. NRW Science Report Series. Report 31.

Wilkinson, J.W., Starnes, T. & Ellis, M.A.R. (2015) Integrated Great Crested Newt Status Surveillance for Wales. Part 1 Report (March 2015). *ARC Research Report 15/02*.

6. APPENDIX A

RECOMMENDATIONS FROM PART 1 REPORT

- Linkage with the Wales Reptile and Amphibian Surveillance Strategy (WRASS)
- HSI scores should be routinely recorded, on an annual basis, as part of existing SAC and other monitoring (at all subsites).
- Surveillance of “presence unknown” sites identified in this report (Table 2) should commence in 2015 and be added to future status assessment suites. This may be achieved at least partly by existing (NARRS, ARG and other) volunteers.
- Further SAC subsites should be added to long-term datasets, and those data recorded consistently, to increase the body of available data describing status. This can, however, be an ongoing *post hoc* process.
- Data structures (possibly including a standard on-line form etc.) should be erected in order to promote consistency (e.g. use of the NARRS2 methodology that includes HSI recording).
- The number of both NARRS1 and NARRS2 squares in Wales should be increased, again to increase the body of consistent data but also to enable comparisons of changes in background and site-specific occupancy rates and HSI scores.
- Data from *PondNet* (being rolled out in Wales 2015 – 2017) should be added to future assessment suites once available.
- Data from gully pot incidental killings at sites such as Stryt Las ar Hafod should be incorporated into status assessments long term as an assessment of negative population influences.
- The feasibility of incorporating derogation/mitigation data into the status assessment suite should be explored. This would generate long-term data at limited cost to the exchequer. It therefore represents one of the most sustainable approaches to implementing long term surveillance
- More detailed exploration should be made of population fluctuations and trends at long-term monitoring sites: whether, for example, population peaks and troughs occur in the same years and with the same periodicity at different sites. Some of these data are already available and will be discussed in the Part 2 report.