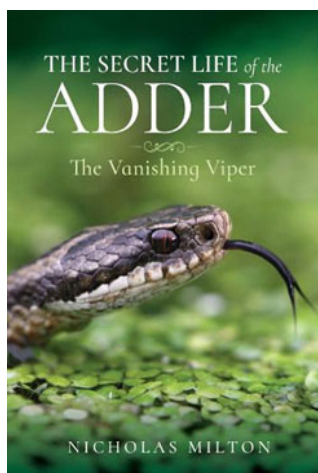


## The Secret Life of the Adder: The Vanishing Viper

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The British herpetological community is well aware that the northern viper or adder *Vipera berus* is of conservation concern. Its decline has been especially alarming since, in the past, the adder has been considered the most abundant of British snake species. A series of three ‘Vanishing Viper’ meetings, coordinated by the Amphibian and Reptile Groups of the UK (ARG UK) and ARC Trust, have

addressed the issue with contributions from other European experts culminating in a detailed report on the threats and potential conservation solutions published in *The Bulletin* (Julian & Hodges, 2019). In the spirit of that report, it is exciting to welcome a new book on these vipers that devotes over a third of its text, in two chapters, to threats and conservation, preceded by chapters on the adder’s history, decline and ecology. Attention is drawn to the fact that there are no nature reserves dedicated to the adder and that there are no SSSIs that designate adders as their principal concern. The book cites some projects that have already been designed and implemented to benefit adders, such as ‘Adders are Amazing’ and ‘Back from the Brink’; although mention could also have been made of ARG UK’s seminar series on ‘Adder and Reptile Habitat Management for Landowners and Land Managers’. But, well-intentioned short-term projects only scratch the surface; much more is needed and the author makes ten suggestions to help direct conservation effort.

The ‘Secret Life of the Adder’ will be of particular interest to naturalists and wildlife conservationists. It follows the publication in 2011 of ‘The Private Life of the Adder’ by Rodger McPhail and is very well illustrated throughout, using many of McPhail’s first rate photographs. There are pictures on most pages and there are also ten text boxes devoted to various asides and themes. The author is both an historian and a naturalist and the first chapter of the book, which is devoted to ‘The Adder through History’, benefits from this. It is very well written and makes interesting reading, even for a long standing adder enthusiast. It presents the very familiar story and photo of the eccentric new forest snake collector Brusher Mills from the nineteenth century, who did nothing for conservation, but could have benefitted from

some mention of the late Tony Phelps who subsequently left Britain due to our failures in adder conservation (O’Shea et al., 2022). Also, I was a little surprised that the children’s writer Enid Blyton is taken to task for writing about adders by “... repeating the misnomer that they are poisonous (as opposed to venomous)” when even up to the 1970s some books by herpetologists were still titled ‘poisonous snakes’. Then follows the chapter on ‘The Decline of the Adder’, which opens with an interesting account of the first survey of British snakes organised by Gerald Leighton at the end of the 19<sup>th</sup> century. From this it is clear that even at that time adders had a tendency to be localised but with more sites occupied. Subsequently, the pre and post WW2 housing booms and drastic changes in agriculture had their negative wildlife impacts but the next adder survey wasn’t initiated until 2005. This was ARG UK’s ‘Make the Adder Count’, which to date is still ongoing, but delivered a set of conclusions in 2019. It told us that while large adder sites might remain relatively stable, the majority of sites (90 %) are small, typically with ten adult adders or fewer, and that they are at risk of extirpation. Consequently, adders may well disappear from much of the countryside in the next 15 to 20 years.

The ‘Ecology of the Adder’ chapter covers a basket of subjects ranging from aspects of anatomy, markings, venom, senses, movement, reproduction, feeding, and even the law. This is good background material but Ian Spellerberg’s extraordinary ‘posturing heliotherm’ - nature’s solar panel - barely emerges from the text and an opportunity has been missed to include recent advances in our understanding based on long-term studies. There are also misleading statements that will raise the eyebrows of adder researchers. One in particular is that besides vertebrate prey “Juveniles will also eat insects, spiders and earthworms.” To the best of my knowledge there is no confirmed report of invertebrate prey being taken. Indeed, if juvenile adders do consume such prey then their food supply is more plentiful than researchers believe. However, in central and southern Europe a closely related species, *Vipera ursinii*, is well known to consume insects.

Then follows the chapter on ‘The Threats to the Adder’. The first and foremost threat is stated to be climate change (warming) which presents several challenges to a cold-adapted species. Second comes habitat destruction, fragmentation, degradation, and mismanagement. The adder has been particularly affected by these owing to its complex habitat requirements and vulnerability to management extremes. Disturbance from the public is listed as a problem because the adder is in competition with a wide variety of recreational land uses. Although this is tempered with the

caution that there is very little quantitative data on the effects of disturbance and that the subject needs investigation. Game birds feature as a serious threat, particularly the very high stocking density of non-native species that consume pretty well any small creatures that will fit down their throats. There is new legislation to limit game bird releases within 500 m of special areas of conservation, but doubt is cast on the effectiveness of such a narrow buffer zone. The potential for adder inbreeding is discussed but it is acknowledged that this is probably not an issue and that British adder populations are currently genetically viable. The media are taken to task for their almost relentlessly biased accounts which shape negative attitudes in people. And naturally this leads to persecution by humans, something that is believed to be frequent but goes unreported. The point is made that since the 1981 Wildlife and Countryside Act was passed, no one has been prosecuted for killing an adder.

There follows the final chapter 'Conserving Adders' with the author's ten priority suggestions (or "....action plan") –

1. Protect in law all remaining adder sites
2. Create viable adder populations in every county/region
3. Teach 'Adders are Amazing' in schools
4. Recruit a new generation of adder champions
5. Report sensational and negative adder stories to the press regulator
6. Expand the 'Back from the Brink' projects to the whole of Britain
7. Ban dogs from all sites where adders occur
8. Make it illegal to release game birds within a mile of adder colonies
9. Build a nationwide network of adder corridors by rewilding, and
10. Designate adder nature reserves and fund a new adder conservation programme.

Each suggestion is discussed and all are likely to find support from the wildlife community. At least some of the suggestions vent the frustrations of many in the wildlife community who despair at the treatment of wildlife sites as social amenities where dogs roam free and where the behaviour of some photographers is focused on obtaining trophy photographs without respect for wildlife. The way ahead will certainly not be easy and some of the conservation measures suggested are politically sensitive as they conflict with pressure groups interested in the recreational use of land that is also adder habitat. Given these difficulties it makes sense to have a high profile adder champion. The book has a foreword by the naturalist Iolo Williams, who is a great adder enthusiast, but it is suggested that we need to go further and that perhaps Prince William might like to take on the cause of the adder in the way he supports endangered wildlife abroad; the royal estates may be a good focus for adder conservation efforts.

Fittingly, the two last pages of the book are devoted to a plea for adder conservation by project controllers from ARG UK and 'Back from the Brink'. This was written in response to the deliberate killing of an adder in a small Cotswold population, the few remaining individuals of which had been

carefully studied and monitored by the local council rangers. The book is completed with a bibliography, a reference list, and an index. In the bibliography it is a pity there is no mention of Perti Viitanen's heroic study in Finland of adder behaviour in relation to seasonal movements and hibernation (Viitanen, 1967) as this a great inspiration (at least for me), and in the references the absence of the Vanishing Viper report (Julian & Hodges, 2019) seems a significant omission given that it draws together the herpetological community's thinking on adder conservation that underpins much of what is presented in this book.

A book such as this will mostly be read by those already sympathetic to the cause. But what is important is that it points the direction for those willing to devote time to securing the future of these beautiful creatures. During the final Vanishing Viper meeting, the veteran adder researcher Thomas Madsen mentioned that, in Sweden, people are very tolerant of adders and that the idea of killing them is considered to be outrageous; there is even a village that has built a 'snake wall' so that the villagers can live in proximity and harmony with adders. Our goal must be to try and reach the same kind of accommodation and ensure that the adder will remain a living icon of British wildlife. This book is a helpful step in that direction.

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