Conserving Herefordshire's Ice-Age Ponds Project **HG-17-07577**

Conservation Plan

This document covers the basis and implementation plan for the conservation of Kettle Hole Ponds.

It should be read with reference to : KHP conservation strategy (Appendix 4)
And Management Plans for individual sites and ponds (Appendix 2)

Contents




1. What Makes our Kettle Hole Heritage Important

- They represent an incredible ecological and geological ecosystem which has survived for 20,000 years. KHPs preserve plant material and animal remains which are unique time capsules of that period.
- Their distribution is very restricted nationally – only found in a very few parts of the country, notably Shropshire, Cheshire (with the meres and mosses), Norfolk (pingos). It has been estimated that probably less than 2% of lowland ponds are natural and probably only 1% of these are kettle hole ponds. However, in Herefordshire this is a much higher figure (some say as much as 25%). They are therefore a nationally important resource.
- They have rich species assemblages which include rare protected species such as the Medicinal Leech *Hirudo medicinalis,* and two water beetle species, *Graphoderus cinereus (photo above)* and *Helochares obscurus*.
- Kettle hole pond density within hummocky moraine in Herefordshire was very high. At our Sturts Nature Reserve, on a small part of the hummocky moraine, there are a staggering 30 kettle hole depressions and ponds within a 1 km^2 area. This density of ponds is the perfect habitat for newts and their conservation, and our KHPs are home to all five of the county's amphibian species including the specially protected Great crested newt *Triturus cristatus.* The kettle hole ponds at Kenchester support the county's largest Great crested newt colony. Hummocky moraine commonly contains a large pond density – the pingos in Norfolk are found in similar groups.
- KHPs are endangered because, since in the last 100 - 200 years, and especially in the second half of the 20th century, demand for land for agriculture has rapidly increased, fields drained, the smaller kettle hole ponds filled in and permanent pasture in the hummocky kettle moraine ploughed up. These losses are in part due to a lack of understanding as to the value and importance of these sites. They have also received little investigation and are poorly understood by the public and the scientific community. This project seeks to address these issues.

2. How are these Habitats Used, Enjoyed, Accessed today

In Herefordshire, groups of KHPs are found on Wildlife Trust reserves, and on land with sympathetic land managers (the National Trust, The Duchy of Cornwall, Natural England) and local farmers. The general public have access to the ponds as part of their wildlife experiences on these properties. However, their special qualities have not so far been highlighted or promoted due to a lack of awareness. Additionally, due to limited resources, very little conservation management is applied to them. Nonetheless, in many of these ponds there is encouragingly good biodiversity still supported by this special habitat.
But there are many other KHPs which are in danger of being destroyed due to that lack of awareness and the financial and public pressure for more agricultural land.

3. Who Benefits/what benefits

d) The Natural Environment and its Wildlife

- Herefordshire's hummocky kettle moraine with its clusters of kettle hole ponds is a unique feature of the county. They are a defining landscape feature of the northwest of the county.
- There are rare and protected species which are special to KHPs and will be lost if KHPs are not conserved.
- The increased knowledge gained over the project will open up a whole range of prospects to advance our understanding of these valuable features.

e) The Landowners

- A new understanding and appreciation of the heritage on their land together with attractively documented information provided by the project explaining what kettle holes ponds are, their value to society and the local community,
- Landowners are key to the ongoing protection of KHPs. The project will provide guidance on how to manage and protect the ponds for future generations. This information would simultaneously be made freely available on-line.
- Landowners participating in the project will have the opportunity to have their ponds surveyed and receive site-specific management plans.
- If the project achieves its aim of having these habitats recognised as special and in need of protection nationally, there will be opportunities for Stewardship grants in the future for their ongoing protection and conservation.

f) The Local and Wider Community

- New understanding and appreciation of the natural heritage in the area
- Opportunities for schools to visit and learn about the ponds today, their history and the wildlife that used to frequent them 20,000 years ago.
- New skills based on the successful training courses
- New facilities to go and enjoy the ponds through walking/cycling trails round the ponds, provided as both paper trail leaflets and as apps on people's mobile phones, and much more information on the websites.
- Through the websites and new apps, the project will promote the Kettle Hole Ponds project area and encourage more people to come to explore and learn.

4. Guidelines on how to maintain and increase appreciation, use and access by increasing numbers of people

- Provide an up-to-date website to give information an all aspects of KHPs, where to see them, how to access them

- Provide leaflets (Ice Age Pond Trails) locally at information centres, libraries and other central locations to guide people where to go and see and enjoy the ponds. Also provide large information display boards at kettle hole pond sites.
- Provide apps for mobiles and tablets to give people 'Augmented Reality' views of the KHPs at specific special sites – including graphics showing the wildlife that might have used the ponds up to 20,000 years ag.
- Provide a KHP Support/Special Interest Group of key landowners and local community people to monitor the state of the ponds, promote them to the public, arrange for maintenance as per the management plans
- Provide and maintain education resources for schools and community groups

5. Guidelines for Kettle Hole Pond (KHP) Conservation and Management

Identify and detail methodologies for identifying KHPs in the field

The identification of kettle hole ponds can be made with increasing certainty as each of the following conditions are found to be the case (in practice funding will limit application of c) and d):

a) Form a closed depression in the landscape (beware anthropogenic alteration, e.g. check historical maps)

b) Underlying glacigenic or glacier-associated sediments (use geological maps, augering and other field observations)

c) Fine-grained sediment fill proved by augering or coring (e.g. could auger in summer areas that are water-covered in summer)

d) Discrete body of sediment underlying ponds, differing from that in adjacent areas, demonstrated by a geophysical survey (requires collaboration by University partner)

e) **Assess general pond management techniques and assess suitability for KHPs. A traffic light system is outlined below (Green is good, Red is not allowed)**

- Digging out of pond (except where removal of an alien fill is justified or where geological substrate is already damaged)
- Change to drainage within the pond catchment (wider benefit should outweigh changes to pond system)
- Change in grazing regime (avoid over-grazing; removal of grazing permits tree growth)
- Removal of pond vegetation where justifiable to change the balance of habitats or to allow the preservation of open water
- Permanent tree removal (check for roosting bats)
- Fencing to limit access by dogs or farm animals or to encourage grazing up to the pond margin
- Re-pollarding, coppicing and reduction in tree canopy overhanging ponds
- Remove any sources of pollution (e.g. animal over-stocking)

f) **Produce general guidelines for KHP conservation approaches, and the mechanisms for tailoring these for specific individual ponds**

- The first stage is a research and monitoring to identify the geological setting, the range of habitats, water quality, water level and their seasonal variation including an understanding of the hydrological evolution of the system (e.g. groundwater-fed or not)
- Presence of rare species and any legal protection issues highlighted
- Factors which limit species diversity and habitat quality are deduced (e.g. grazing and intrusion into pond by animals, excessive tree growth at margins, pollution etc.)

- Mitigations are proposed focusing on those that are most tractable and those that give most benefit

g) **Produce individual pond management plans, based on the surveys and assessment of the pond's potential**
   - A standard format to be developed covering all the aspects mentioned above

h) **Longer-term follow-up**
   - Identify local interest groups who can champion ongoing pond monitoring
   - Ongoing contact with landowner and advice, where requested
   - Keeping trails/guides and other information sources for the public up to date.
   - Designation of sites (SSSI where of national importance; otherwise Local Wildlife Sites or Local Geological Sites
   - Lobby for inclusion in Landscape Character designations and in County biodiversity guidance
   - Encourage continued research from University groups