2018-19

Water vole newsletter

WATER VOLE, MINK AND NON-NATIVE INVASIVE SPECIES NEWS IN HERTFORDSHIRE AND MIDDLESEX

The Wildlife Trusts Herts and Middlesex

Water vole feeding

Introduction

Welcome to the 2018 Newsletter. This is the annual end-of-year report on the situation within the Trust's area - the whole of Hertfordshire and the boroughs of Barnet, Enfield, Harrow and Hillingdon. Additionally to the regular updates, this Newsletter features contributions from Sonal Varia, Cath Patrick and Patrick McNeil.

Water vole update

At the time of writing, 85 sites were surveyed in 2018; the same number, but not necessarily the same sites as in 2017. The proportion of positive sites remains similar to previous years indicating that water vole populations are broadly stable. However, this hides changes that are taking place. The main downside in 2018 was the loss of the population based at Purwell Ninesprings in Hitchin which had been dwindling in recent years. This almost certainly means that there are no water voles left anywhere in the Hitchin area. The cause of this decline and final extinction is not known, but it could be that the population was too isolated and inbred, meaning that it was vulnerable to disease. In contrast, a new population was found at Croxley Hall Fishery located south-east of Rickmansworth close to confluence of the Chess with the Colne and the Gade with the Colne. It is likely that this population originated from populations on the Chess. Strategically, it could be very significant, as there are lots of wetlands close by and opportunities to move up the Gade and up and down the Colne.

YEAR ON YEAR WATER VOLE SURVEY RESULTS

	2018	2017	2016	2015	2014	2013	2012	2011
Number of sites surveyed	85	85	78	76	68	79	60	46
Number with water voles	34	37	24	31	27	24	19	12
% with water voles	40	44	31	40	40	30	32	26
Number with possible signs	3	4	5	8	4	7	1	0
% with possible signs	4	5	6	10	6	9	2	0
Number with no water vole signs	48	44	49	39	37	48	40	34
% with no water vole signs	56	52	63	50	54	61	66	74

Key Site Surveys

So far, seven sites across the two counties have been identified as key sites for water voles. These sites, often nature reserves, contain a complex of water bodies within a relatively small area.

Instead of surveying 500m of river, up to a dozen strips of bank, each about 100m long, are surveyed. The aim is to survey twice a year, once in the spring and once in the autumn. The results in the table below are from Thorley Wash in 2018, where water voles were reintroduced in 2015. The table shows that all the sections sampled showed evidence of water vole use confirming the success of the re-introduction. The totals in brackets are droppings of insufficient number to count as a latrine, so section 6 in 9.11.18 had seven latrines and five other places with only a small collection of droppings. The contrast between March and November is enormous. In March 2018, the UK faced the 'Beast from the East' which might explain why the water voles were less active than they would have been in milder weather.

KEY SITE SURVEY – Thorley Wash 2018

Section	Latrine		Feeding Sign		Hole	
	Spring	Autumn	Spring	Autumn	Spring	Autumn
1	4	16	1	2	7	16
2	4	9	7	7	4	21
3	7	15 (+6)	15	20	0	6
4	2	17 (+4)	4	29	0	21
5	9	18	1	1	1	6
6	8	7 (+5)	16	29	0	7
7	11	27	5	9	0	13
8	0	3	0	10	0	0
9	7	9	6	11	0	0
10	0	9	4	9	0	5
11	0	22 (+4)	3	22	0	6
Total	52	152 (+19)	62	149	12	101

Survey Training

There were three survey training sessions in 2018 at Tewinbury with a total of 24 attendees. If you would like to be trained to survey for water voles, please get in touch with Martin Ketcher.

If you are an existing surveyor but are no longer able to contribute to the surveying, please let the Trust know; there are always newly trained surveyors that need sites.

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Water Vole at Amwell

How you can help water voles

- Train as a **water vole surveyor**.
- Become a **mink raft checker**.
- If you have a **mink raft** that isn't checked as often as it should be, get in touch with the Trust.
- **As a surveyor**, if you come across a raft on a survey please check it and let the Trust know what you find, including evidence of water voles.
- **Let the Trust know** if you see water voles or mink anywhere within the county or if you come across either species killed on the road or in some other way.

Contact:
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American **Mink**

The main cause of the decline in water vole populations is predation by the invasive non-native American mink (*Neovison vison*), so controlling mink numbers is paramount for water vole conservation. As with the water vole, the situation with mink seems to be similar to earlier years.

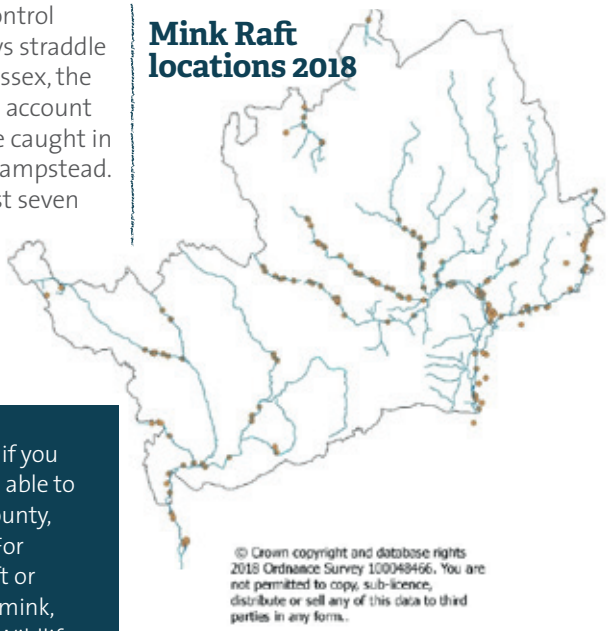
The positions of mink rafts within the county that are known to have been in use in the last five years are shown on the map below. There may be others that are still functioning but are not included on the map. If you know of any please get in touch. As you can see, there are large gaps and some rivers where there are very few rafts.

At least 18 mink were caught in 2018. As in previous years, the vast majority came from the lower Lee Valley where it is the rangers of LVRPA, coordinated by Dawn Richardson, that monitor and control mink. As the Lee and Stort Valleys straddle the border between Herts and Essex, the totals are shown separately and account for all but two mink, which were caught in Hemel Hempstead and Wheathampstead. This is the lowest total in the last seven years. Does this mean there are fewer mink about or are mink becoming more wary and trap shy?

YEAR	TOTAL	HERTS	ESSEX
2018	18	6	12
2017	27	7	20
2016	23	14	9
2015	33	14	19
2014	33	7	26
2013	40	20	20
2012	34	26	8

If you would like a new raft or if you know someone who might be able to take a raft, anywhere in the county, again please do get in touch. For guidance on the use of the raft or the safe dispatch of captured mink, please refer to the Game and Wildlife Conservation Trust's website at **gwct.org.uk.**

Mink Raft locations 2018



Invasive non-native plants

The details of the survey results of Invasive Non-native Species (INNS) are shown in the table below. Himalayan balsam (*Impatiens glandulifera*) continues to be the most abundant and widespread of all invasive non-native plants.

The Trust has made great strides at Thorley Wash to control floating pennywort (*Hydrocotyle ranunculoides*). Part of the process involved putting a temporary boom across the river where it leaves the reserve to catch pieces of floating pennywort that were dislodged by clearance works elsewhere on the reserve and prevent them from moving off downstream.

New Zealand pigmyweed or Australian swamp stonecrop (*Crassula helmsii*) invades still water bodies and is a major problem in parts of the Lee Valley and elsewhere. Read more about this from Sonal Varia to the right.

If you are a water vole surveyor, please indicate on the water vole survey form whether invasive plants were found or not. A blank INNS box makes it difficult to tell if invasive plants were looked for. Also, please use the DAFORN categories for invasive non-native species and help stop the spread of invasive plants by following the simple "**Check, Clean, Dry**" steps. More info on **nonnativespecies.org/checkcleandry**.

	PERCENTAGE OF INNS IN SURVEYED SITES					
	2018	**2017**	**2016**	**2015**	**2014**	**2013**
Himalayan Balsam	53	47	35	40	33	47
Japanese Knotweed	0	2	2	2	3	2
Giant Hogweed	0	3	6	6	8	8
Floating Pennywort	17	8	18	8	9	4
Water Weeds	0	0	5	2	2	2
Water Fern	6	0	5	2	0	2
Parrot's Feather	5	0	0	0	2	0
New Zealand Pigmyweed	6	2	0	0	0	0
Orange Balsam	0	10	n.s.	n.s.	n.s.	n.s.


SONAL VARIA

Close up of Crassula Helmsi

Could **mites** be the solution for **Australian swamp stonecrop?**

Sonal Varia is a Project Scientist and leader of the Crassula biocontrol project at the Centre for Agriculture and Bioscience International (CABI). She was a speaker at one of the conferences in the autumn.

Australian swamp stonecrop or New Zealand pigmyweed, as it is also known, has gradually spread through the UK to become one of our most problematic aquatic weeds. It was first introduced as a pond plant from Australia in the early 1900s and less than 50 years later, it had escaped the confines of the garden pond and was found infesting water bodies in the wild.

Australian swamp stonecrop can grow in dense mats, outgrowing less competitive plants and dominating sensitive aquatic habitats. Where Australian swamp stonecrop invades, there is the potential for negative impacts on plant biodiversity and changes in important habitat availability for species higher up the food chain to feed and survive. Its ability to tolerate extreme environmental conditions and regrow from tiny fragments means that there are limited options available to land managers tasked with controlling infestations at their sites and often infestations are left unmanaged. The water industry has also recently identified potential negative impacts the weed could have on vital water treatment processes.


SONAL VARIA

Aculus mite on Crassula bud

In 2010, CABI began to investigate an alternative method of control for Australian swamp stonecrop: classical biological control. This method involves controlling invasive non-native pests using co-evolved, highly specific natural enemies from area of origin of the pest to provide self-sustaining control, and has been used several times in the UK, most recently with the introduction of the Himalayan balsam rust. Since 2013, with funding from Defra, CABI scientists have been investigating the potential of a gall-forming mite (Aculus crassulae) as a biocontrol agent for Australian swamp stonecrop. These mites were found colonising Australian swamp stonecrop plants and causing gall formation in the emergent and terrestrial growth forms of the weed in Australia. It was found in subsequent studies in the quarantine laboratories at CABI that plants infested by these mites were found to be much smaller with less lateral growth than those which were not infested by mites. Research focussed on rigorous safety testing, with the purpose of demonstrating that the mite would only feed, survive and reproduce on its host plant, Australian swamp stonecrop.


SONAL VARIA

Crassula helmsii forming a dense covering to the exclusion of native plants

If the mite was shown to have significant negative impacts on any other important plant species, it would have been quickly rejected from further study. It was also important to determine the ability of the mites to survive under UK climatic conditions and successfully establish in the UK. Following the assessment of this research by numerous internal and external reviewers, in 2018, after five years of research, the mite was finally given approval by Defra to be released in the wild as a biocontrol agent.

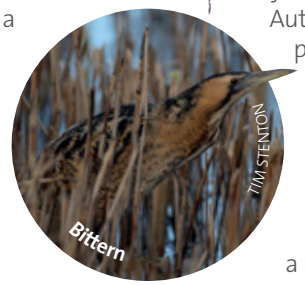
In autumn 2018, the mites were released at three trial sites in England and if the mite successfully establishes at these sites, the release programme will be rolled out to additional release sites. The introduction of these mites aims to provide land managers with another tool to manage this weed.

Glen Faba Reedbed creation

Cath Patrick is Conservation Manager at the Lee Valley Regional Park Authority and she writes about an exciting project to improve a gravel pit for wildlife including water voles.

Glen Faba Lake, owned and managed by the Lee Valley Regional Park Authority, is located adjacent to the convergence of the River Stort and the Lee Navigation. The area was dug for gravel until extraction ceased in the 1980s, making Glen Faba one of the youngest waterbodies in the Regional Park.

The gravel pit was allowed to fill with water and has become an important area for a range of species. It is now designated as a Local Wildlife Site. As with many gravel pits, the banks can be steep-sided which often mean a lack of emergent vegetation around the edges of the lake. The bare banks have been rapidly colonised by a fringe of trees, notably willow and poplar. Over the past few years, the Authority have been undertaking habitat enhancements on site to remove bankside trees, allowing light into the lake edges which has seen an increase in the marginal vegetation.



Funds from a S106 planning contribution from a development on the nearby Ratty's Lane, Hoddesdon have allowed the Authority to undertake an ambitious project to reprofile the edge of the lake. A large shallow area will be created and planted with Common Reed which will create an anticipated 0.35ha of new reedbed, a key habitat in the valley, providing important resources for a range of animals. Bittern return to the Lee Valley each year to overwinter and this new reedbed will provide additional feeding and roosting habitat; hopefully, they will eventually stay in the valley to breed. Water voles have historically been recorded on site and it is hoped that they will return to the site from nearby areas, as the habitat quality improves. As the reedbed matures, fish will start to use the area for spawning and the sheltering of fry.

The scheme has been designed by the Wildfowl and Wetlands Trust consultancy team. It is anticipated that work will commence on site in summer 2019.

Protecting the riverbanks of the Upper Lea

Patrick McNeill is the volunteer River Champion for a part of the Upper Lea between Harpenden and Lemsford. He writes about a project to improve the river through Wheathampstead.

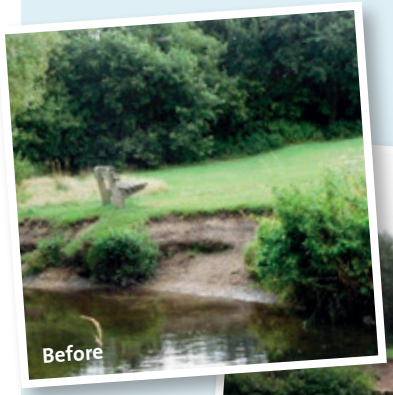
The River Lea flows through a public open space in Wheathampstead known as The Meads, a popular spot for families in the summer and for dog-walkers throughout the year. Children enjoy paddling in the river and dog owners encourage their pets to chase balls and sticks thrown into the river. This results in erosion of the river bank.

In consultation with the Trust and the Environment Agency and with the full support of the land-owner, Wheathampstead Parish Council, we decided to create designated entry points, allowing the public to use the river while protecting the worst-eroded stretches of the bank totalling around 80 metres.

We made sure to communicate the purpose and timings of the work via the parish magazine and notice boards at the river beforehand to encourage the public to use the designated entry points.

A grant from the Wild Trout Trust funded parts of the project. Water vole and riverfly surveys were undertaken, the former turned out negative, as expected, and the latter was supposed to give us a benchmark for the works. After Maydencroft had constructed the five entry points according to the specification by the Environment Agency, 26 volunteers dedicated more than 270 hours' work to complete the project. The eroded stretches of the river were stabilised by willow spiling which is created by driving stakes into the river bed and interweaving the willow branches. A big thanks to their dedication!

The project has been very successful. The Meads were even more popular than usual during the long hot summer of 2018 and the entry points have been well used. The spiling is working well, although some sections have needed minor repairs or improvement. We have had many positive comments and no complaints.



Water Vole, Mink and Invasive Species **Conference**

There were two conferences in 2018. Both conferences were introduced and chaired by Tim Hill, Conservation Manager at the Trust. Both included a water vole, mink and INNS update.

SEPTEMBER 2018

FOCUS ON COLNE CATCHMENT

Dr Djami Djeddour, CABI
Update on research towards finding biological controls for INNS

Tony Booker, Colne Valley Fisheries Consultative (CVFC)
The initiative and aspirations of the CVFC

Tom White, Groundwork South
ColneCAN and the Colne Valley Landscape Partnership

Allen Beechey, Chilterns Chalk Streams Project Officer
Work done by BBOWT on the River Misbourne

NOVEMBER 2018

FOCUS ON LEE CATCHMENT

Thanks to Affinity Water for kindly hosting this conference. Their continuing support provided to the Wildlife Trust, especially from Alister Leggatt, is very much appreciated.

Sonal Varia, CABI
Biological control of Australian swamp stonecrop

Cath Patrick, Lee Valley Regional Park Authority & Frances Dismore, Stonebridge Lock Coalition
Working for Water Voles in the Lee Valley

Bob Reed, Living Rivers Champion for the River Stort
Top 40 invasive plants and animals in the Stort Valley

Editor: **Martin Ketcher,** Water Vole Conservation and Invasive Non-native Species Officer

Thank you

The conservation of water vole in Hertfordshire is dependent on the efforts of volunteers, so whether you are a water vole surveyor or check a mink raft, thank you very much for everything you have done.

Thanks are due to the Environment Agency and the Lea Valley Regional Park Authority for their continued funding for the Water Vole Conservation & Non-native Invasive Species Officer post in 2018/19 at Herts & Middlesex Wildlife Trust.

Lee Valley Regional Park Authority

Environment Agency

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