NEW FOREST WATER NEWS

NEW FOREST CATCHMENT PARTNERSHIP NEWSLETTER

The New Forest Catchment Partnership is coordinated by the New Forest National Park Authority and Freshwater Habitats Trust who are working alongside other organisations and communities to protect and improve the special freshwater habitats of the New Forest. This newsletter showcases the work of those who are committed to improving the freshwater environment of the New Forest

Mar 18 (Issue: 5)

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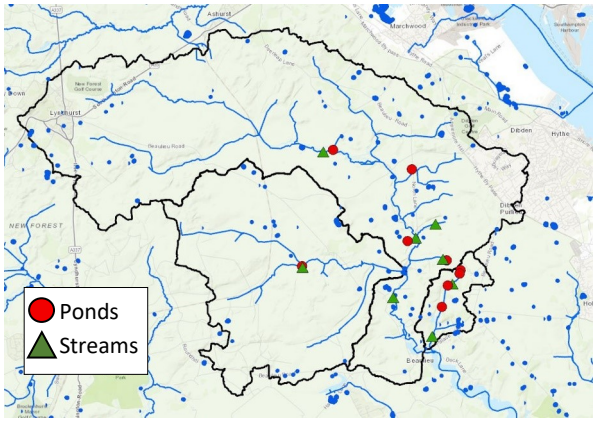
FRESHWATER WONDERS OF THE BEAULIEU CATCHMENT: RESULTS FROM SURVEYS

This September, to increase knowledge of freshwater biodiversity in the Beaulieu catchment and to provide a baseline for future monitoring, 9 ponds and 8 stream/river sites were surveyed for wetland plants and freshwater invertebrates across the catchment. This work is part of the Living Waters project and will be repeated in 2019, once all the project practical work to improve the water environment is completed.



Map of survey locations in River Beaulieu Catchment (including the Hartford Stream and Shepton Water).

The waterbodies were located in both the open Forest, in the northern part of the catchment, and on private land, in the southern part of the catchment. The open forest is known for its high quality freshwater habitats, but there is relatively little information on wetland plants and invertebrates in small waters off the open forest and on private land.

A total of 79 wetland plants were recorded across all locations. The richest running water site was the River Beaulieu at Pottern Ford in the open forest. At this site, the river margin extends into a temporary pond – providing a very diverse range of habitat for plants (see photo overleaf).

Ponds both within and outside the open forest could support diverse plant communities, depending on how acidic and how large the pond is. More acidic ponds tend to have fewer plants, but they often support more rare plants. Larger ponds tend to support a more diverse plant community, generally. More importantly, all the ponds had many more species living in them than the national average.

An outstanding 172 species of invertebrate were recorded. Clearly the New Forest is a very good place for invertebrates, but this high number is also the result of including both standing and running waters in the survey. Overall, we recorded an additional 36 invertebrate species in ponds (129)

The surveyed open forest ponds tended to be different from those on private land outside the Forest. They were much shallower, some dry out in the summer. All types of pond can support diverse and interesting plant and animal communities - as long as they are not polluted.

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compared to the Beaulieu River and tributary streams (93).

Many freshwater invertebrates tend to be a little fussy about where they live and are only found in running or in standing water bodies – they need the right flow or no flow, the right water chemistry and so on. Ponds provided a habitat for more species of beetles, dragonfly and damselfly, and bugs. Running waters tended to have more caddisflies, stoneflies and mayflies.

The number of invertebrates recorded in each individual sites varied greatly and, as with plants, both standing waters and running water supported diverse invertebrate communities. The streams and the River Beaulieu in the open forest tended to be richer than those on private land (see graph 2), which is probably related to the wider range of habitat for invertebrates in less managed watercourses.

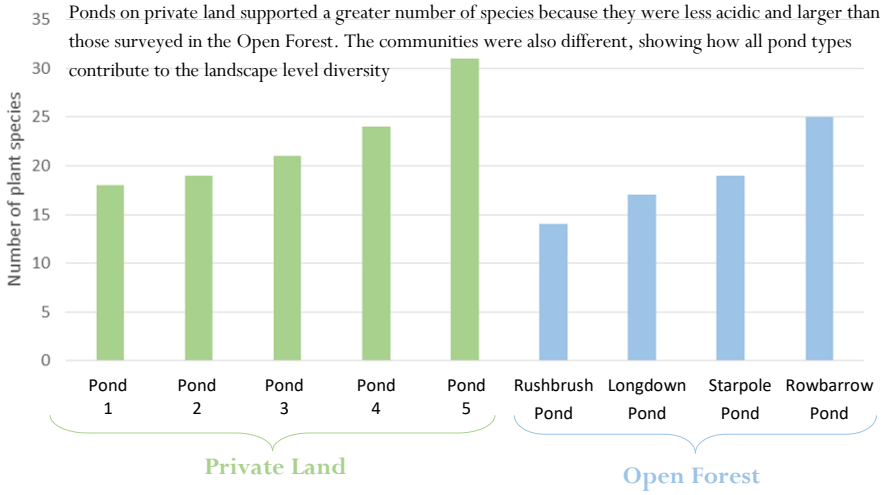
Plants and invertebrates that are considered uncommon, or which have declined significantly at the national level were recorded at all but two sites. This is a much better result than would be expected in freshwater habitats in more intensively managed landscapes! The best sites stand out and were all in the open forest: Rowbarrow Pond, Starpole Pond and Shepton Water.

Note that of the 12 species of uncommon plant recorded, only one is genuinely rare nationally, our only native water fern, Pillwort. All other plants are relatively widespread in the New Forest, but they have declined nationally so much that they are now listed as Near Threatened or Vulnerable in the English Plant Red Data Book. They are plants typical of wet heathland and bogs – habitats that have particularly suffered in England because of loss in extent or because of pollution, particularly nutrient pollution.

By Pascale Nicolet
Freshwater Habitats Trust

Graph 1: **Plants - Standing Waters: Ponds**

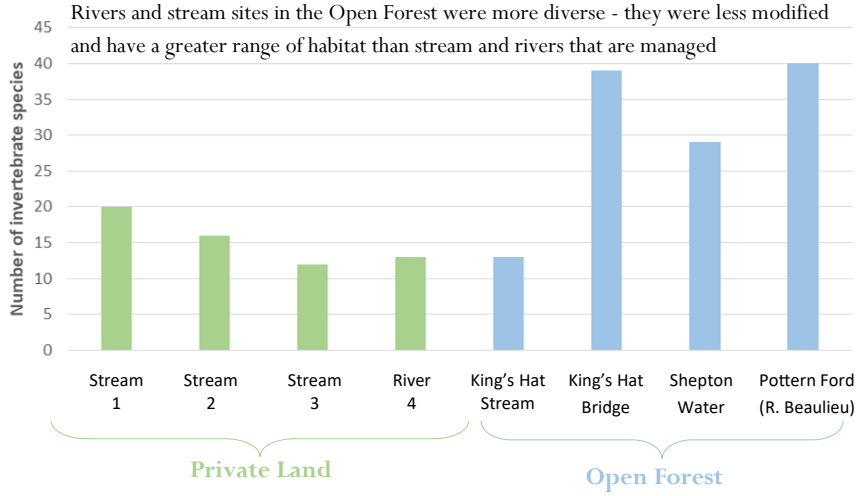
Ponds on private land supported a greater number of species because they were less acidic and larger than those surveyed in the Open Forest. The communities were also different, showing how all pond types contribute to the landscape level diversity



Pottern Ford was the richest running water for wetland plants. It's large shallow drawdown zone provides excellent habitat for wetland plants. This section of river floodplain supports a very rare aquatic fern that is typically found in ponds, Pillwort. Pillwort loves seasonally wet and poached muddy banks.

Graph 2: **Invertebrates - Running Waters: Streams and Rivers**

Rivers and stream sites in the Open Forest were more diverse - they were less modified and have a greater range of habitat than stream and rivers that are managed



The River Beaulieu at Hartford Bridge has varied habitat, including natural woody debris which is good for invertebrates.

WORKING TOGETHER FOR WATER AND WILDLIFE IN THE NEW FOREST

A celebratory event with freshwater at the top of the agenda

Last November the New Forest Catchment Partnership held a New Forest Wildlife Forum event where freshwater was top of the agenda. The event celebrated the outstanding diversity of freshwater plants and animals of the New Forest and showcased the great work the New Forest Catchment Partnership are doing to protect it. It focused on the many volunteer and citizen science projects happening across the Forest, sharing updates and results.

The event was the first of its kind in the New Forest to focus solely on the freshwater environment. The existing passion and interest was only too clear as the venue filled with eager faces. The day was a huge success with some 85 attendees – including volunteers, professionals, enthusiasts and expert naturalists. Speakers from the New Forest National Park Authority, Freshwater Habitats Trust, Wildlife Trust, Environment Agency and Forestry Commission covered a range of topics, including:

• Volunteer monitoring networks for rare wetland plants & animals • Flagship Pond Sites: best of the best • The importance of clean water for wildlife • Catchment management for freshwater wildlife • Controlling invasive non-native plants • Monitoring river restoration • Looking to the future

The projects presented on the day all demonstrated how much could be achieved through the power of volunteers and citizen science. The sheer scale of the monitoring networks in place and practical action on the ground would not have been possible without the time and energy of volunteers and the support of the local community.

Dr Naomi Ewald sharing results from volunteer monitoring networks

A recurring theme was how exceptional the New Forest freshwater environment is compared to other parts of lowland England. Across the country, freshwater wildlife is declining, particularly rare plants and animals and the availability of clean, unpolluted, water. In contrast, the New Forest is a clean water gem, and remains a stronghold for many wetland plants and animals which have now largely disappeared from much the English countryside – like Pillwort, Southern Damselfly, Fairy Shrimp, Mud Snail, Medicinal Leech to name but a few! However, the pressures on the New Forest are increasing and it faces many challenges, so complacency is not an option.

Only through partnerships and collaborative working will we be able to tackle the challenges ahead. The success of the event shows how much is already happening, with many organisations and communities across the New Forest coming together, and putting freshwater at the top of the agenda. The New Forest Catchment Partnership will continue to take this forward by harnessing the power of grass root volunteers, and by practical action on the ground. Together, we can champion and protect the freshwater environment of the New Forest.

For more information and for a summary of each talk please visit: www.freshwaterhabitats.org.uk/news/working-together-water-wildlife-new-forest/

By Hannah Worker
Freshwater Habitats Trust

Attended by professionals, volunteers, wildlife enthusiasts and nature experts.

MONITORING STREAM RESTORATION

A season of comprehensive monitoring

In the New Forest, our wetlands are faced with a worrying problem.

In a healthy watercourse the water level will rise and fall depending on the rainfall. In high rainfall, water should spill over the riverbank and saturate the floodplain. This creates and maintains precious habitat for special and rare plant and animal species.

Many of these rare wetland habitats are under threat from the conditions created by people's interventions to these streams. Up until the 1980s many of the Forest's watercourses were straightened to help agriculture. Straightening a watercourse means the stronger water flow creates deep incisions, unnatural erosion of the banks and sediment is washed downstream. When a stream loses its natural meanders and becomes a straight channel, it leads to the loss of plants, insects, and all those species which are dependent on these niche habitats.

When the artificial channels were dug the earth was thrown onto the bank top (known as spoil mounds), making the streams much deeper than nature intended. These spoil mounds are very dry habitats that run along-side the artificial drain preventing any interaction between the floodplain and the channel, which you would expect to see with a natural New Forest stream.

To put these problems right we seek to re-naturalise the watercourse by:

- Reinstating the historic meanders.
- Raising the level of the deepened stream bed to have gently graded slopes.
- Removing the spoil mounds to allow the higher flows to spread onto the surrounding land.

These measures will help to protect the bankside habitats, which lays a platform for special plants and animals to grow and thrive.

During the summer of 2017 we completed a season of comprehensive monitoring so that the Forestry Commission can tell what changes take place once restoration is complete.

Our monitoring programme consists of a variety of surveys from fixed point photography to invertebrate sampling. We also carry out plant monitoring surveys and record species that can tell us a lot about the habitat type.

Image 1: Incised stream

Plants tell a great story about the places they inhabit. They gives us an indication of the soil type, how wet or dry the ground is, and the quality of the habitat.

Plant surveys are carried out at fixed points along a transect. These fixed points are called quadrats which are 2x2m² in size. The quadrats are placed along the transect which runs across the channel and out onto either side of the floodplain.

Within these quadrats we record the plants that tell us the most about the habitat. We also record bare ground, leaf litter and water cover, all building a real picture about the habitat in its current state.

From the surveys we have already carried out across some of our key restoration sites the results are starting to tell a story. For instance if we focus in on the bank top where the spoil mounds are preventing water from leaving the channel, bramble is present in 52% of these quadrats, gorse and bracken is present in 30%. These species have a preference for dry conditions. There is also a

Image 2: Stream with shallow drawdown zone

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lack of special wetland plants across our pre restored sites with an average of one plant species per quadrat, suggesting the habitat is mainly dry and of poor quality. This is not what we would expect in an area renowned nationally for its unique wetland environment.

If we take one of the sites, Ferny Crofts for instance, a tributary of the Beaulieu River, we can see from the two images how marginal vegetation is affected by the size and shape of the channel.

Image one (see previous page) shows a steep sided, incised channel with spoil mounds where only dry vegetation such as bracken and bramble dominate.

Image two (see previous page) is the upstream end of this same site and is functioning in a much more natural way for the benefit of the wetland habitat. There is a very gradual slope creating varying niche habitats for specialist wetland plants to grow such as Marsh St John's wort (*Hypericum elodes)*, Bog pimpernel (A*nagallis tenella)*, and Bog pondweed *(Potamogeton polygonifolius)*. The shallow gradient also allows water to spill out onto the floodplain in high flows creating seasonally wet areas. This process prevents unnatural erosion due to the slower flow and therefore helps to conserve the specialist species that make the New Forest such an exceptional place for wildlife

As we embark upon a new survey season we are going back to the restored sites to check on how they are recovering. Repeat surveys will be carried out and what we should see is a marked change in the vegetation growing in the stream margin and bank top now that the dimensions have been returned to a more natural state.

By Gemma Stride
Forestry Commission

YELLOW FISH

A scheme to raise awareness about sources of water pollution

Yellow fish may be appearing in the New Forest and waterside areas in the future but there's no need for alarm, these aren't a strange species or a sign there's been a release of pollution, but the result of community engagement to help raise awareness of water pollution. The Yellow Fish Programme was conceived in Canada where it has become the nation's key educational initiative to engage communities with water pollution issues. Amongst other measures, the programme works with community groups and schools to highlight road drains that connect to rivers and streams using a yellow fish stencil to support wider public engagement.

The approach has been used successfully elsewhere in the UK, where it is promoted by the Environment Agency. Examples include the River Chelmer in Chelmsford by Groundwork.

Catchments across the Hampshire area are working with Southern Water to explore how the initiative can be best used locally to raise awareness and support engagement across a range of water issues including 'the unflushables' as well as water quality in local waterbodies. We're conscious of the need to respect the special landscape and heritage of the New Forest and so will seek views on the best use of the yellow fish.

An initial meeting was recently held and work will continue to assess the best approach and plan activity for later this year. If you've got ideas or think your organisation would like to help please contact us.

For more information please visit: www.bit.ly/2Gl2SBO

By Ian Barker
New Forest
National Park Authority

'Images: Only rain down the drain' - yellow fish used to demonstrate that road drains goes straight to the local streams and rivers.

SOMETHING INTRIGUING IN THE WATERS

Fish surveys along two beautiful streams

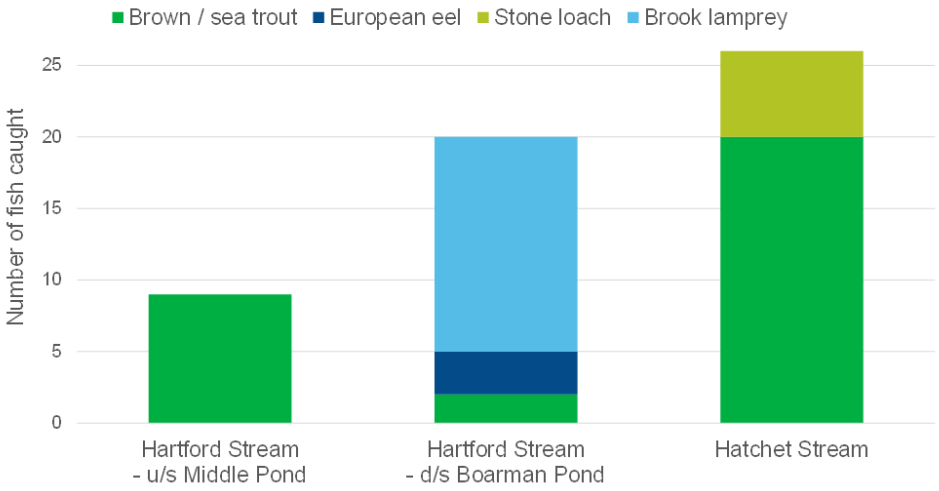
Through the Heritage Lottery Funded 'Living Waters' Project, Freshwater Habitats Trust and the Beaulieu Estate plan to improve eel passage along a series of medieval fish ponds on the Hartford Stream. To assess which fish species are present in the streams, project partner, the Environment Agency, kindly offered to conduct electric fishing surveys at three sites across the Hartford and Hatchet Streams, both tributaries of the River Beaulieu.

Wild brown trout were found to be present at all three sites, but they were most abundant on the Hatchet Stream. The population was dominated by juvenile fish, as a large proportion of the adult wild brown trout migrate out to sea. European eel and brook lamprey were also caught on the Hartford Stream, however only downstream at the Boarman Pond site. This could indicate a barrier to their migration upstream.

The sites had not been previously surveyed for fish and the results indicate that both streams have lots of potential and therefore it is well worth improving fish passage and habitat where appropriate.

By Georgina Busst & Dominic Longley
Environment Agency

Hatchet Stream. Brown trout found to be most abundant here.



Above: *The catch included juvenile brown trout brook lamprey and European eel.*

Below: *Narrow stretch of Hartford Stream.*

NEXT INSTALLMENT - MONITORING WETLAND PLANTS

Next video instalment is now ready

The New Forest Higher Level Stewardship scheme is restoring miles of straightened streams to their natural meanders. Tune into monitoring officer Gemma Stride's VLOG (video blog) to find out how these large river restoration project are monitored to ensure they are working well for wildlife.

W: www.bit.ly/2rPLceo

VOLUNTEERING OPPORTUNITIES

Stop the spread of non-native plants (Wildlife Trust)

Join a work party to help to stop the spread of Himalayan Balsam. For more information please contact Catherine Chatters.

E: Catherine.Chatters@hiwwt.org.uk

Our Past, Our Future (New Forest National Park Authority)

Volunteer for a variety of activities across the National Park, including wildlife surveys and practical conservation tasks.

W: https://goo.gl/HWRxTS
E: richard.austin@newforestnpa.gov.uk

EVENTS

31/03/18 - 2/04/18 (13:30-15:30) - Canoe Easter Egg Hunt (New Forest Activities)

Enjoy a fun filled paddle along the Beaulieu River in stable 'Canadian style' canoes.

W: www.newforestnpa.gov.uk/events/start/31-03-2018/end/31-03-2018/year/2018/month/3

River Beaulieu

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SEND IN YOUR NEWS

Do you have some news we should know about? Is your work benefiting the freshwater landscape of the New Forest?

To subscribe or send in your news please email Hannah at hworker@freshwaterhabitats.org.uk

THE NEW FOREST CATCHMENT PARTNERSHIP

The partnership is a group of organisations that are working with local communities to protect and improve the outstanding freshwater environment of the New Forest.

W: freshwaterhabitats.org.uk/projects/catchment-projects

E: hworker@freshwaterhabitats.org.uk

Key partners include:

Freshwater Habitats Trust

SUPPORTED BY

NEW FOREST NATIONAL PARK

Environment Agency

THE wildlife TRUSTS Hampshire & Isle of Wight Wildlife Trust

Catchment Based Approach Partnerships for Action

Forestry Commission

Southern Water

NATURAL ENGLAND

Beaulieu Estate

Friends of the New Forest NEW FOREST ASSOCIATION