New Forest Catchment Partnership Newsletter

WATERNEWS SPECIAL EDITION: NEIGHBOURS OF THE NEW FOREST

In this issue, we meet the organisations and people protecting the blue halo surrounding the New Forest from the Southampton and Solent Waters in the east and south to the Hampshire Avon in the west and the river Test in the north.

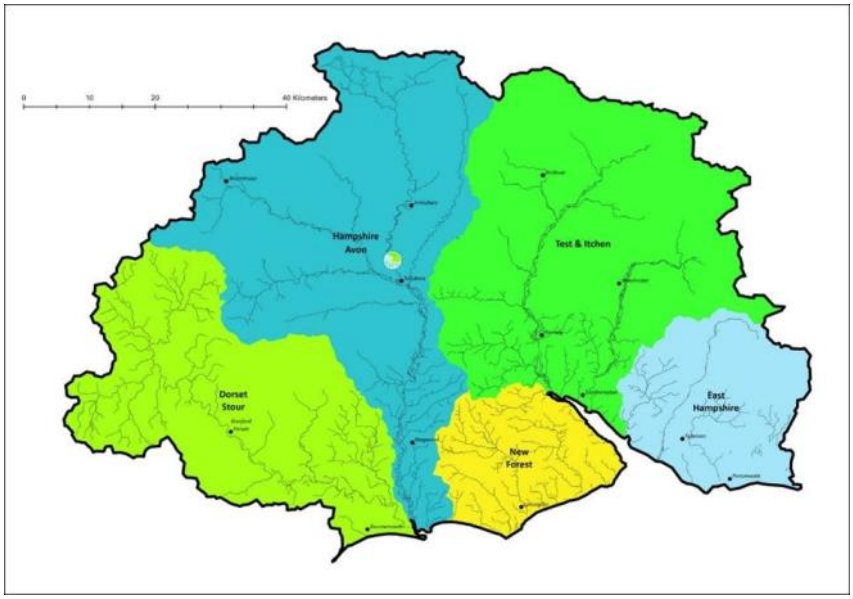
OCT 2020 - ISSUE 11

WHO ARE THE WESSEX RIVERS TRUST?

An environmental charity dedicated to the conservation of streams and rivers.

Wessex Rivers Trust is an environmental charity dedicated to the conservation of chalk streams in the Wessex region, working towards healthy rivers for wildlife and people through work within catchment partnerships and development and delivery of restoration projects. Educating the public about the importance of our rivers increases their value to people, and ultimately builds support for the future of these fragile environments.

Wessex Rivers Trust forms part of the UK's Rivers Trust movement that has been at the forefront of influencing policy and delivering catchment-wide environmental initiatives for over 20 years. This membership places us in an excellent position to shape and deliver action for these globally important and threatened habitats. Wessex Rivers Trust works across five main catchment areas, including the New Forest .



Whilst the Trust are a relative newcomer to the New Forest Catchment Partnership, we've been busy working to investigate and improve the health of two of the Forests peripheral waterbodies since 2017, the Blackwater and the Ripley Brook.

The Blackwater – the dark waters feeding a world-renowned chalk stream.

The Blackwater is the most downstream tributary on the River Test and one of the catchment's better kept secrets. The Blackwater is a small watercourse which forms amidst the surface streams and ditches in the north east of the New Forest, before joining shortly upstream of the tidal reaches of the River Test at Testwood. Whilst recognised as one of the Test catchment's most important spawning tributaries for the migratory sea trout, comparatively we know very little about this stream which borders the New Forest and chalky lands of Hampshire.

The many unmodified and naturalised reaches of the Blackwater and its smaller tributaries provide excellent habitat for a range of wildlife, including a vital spawning ground for migratory sea trout.

In autumn 2019, surveyors from the Trust undertook walkover surveys of the Blackwater catchment, comprising of the following WFD waterbody sub-catchments: the Blackwater, Whiteparish Tributary and Sherfield English Stream. Data was collected using a bespoke survey design to appraise the hydro-morphological (interaction between river flow and the physical channel form) status of the waterbodies and identify the condition of the rivers in relation to their 'natural' benchmark. In addition, due to the acknowledged importance of the Blackwater catchment to anadromous (migratory) salmonids, notably sea trout, detailed data was also captured regarding salmonid habitat suitability with specific reference to spawning, nursery and adult holding habitat. This has helped identify critical spawning and nursery reaches of the catchment for sea trout. In-channel artificial structures which may pose a risk to fish passage and the integrity of the sea trout population were also identified during the walkover surveys. Significant point and diffuse sediment sources were also identified, categorised and mapped utilising a standardised Environment Agency approach – providing an assessment of this major pressure to fish and invertebrate communities.

What did we find? Highlights of the 2019 walkovers are detailed below.

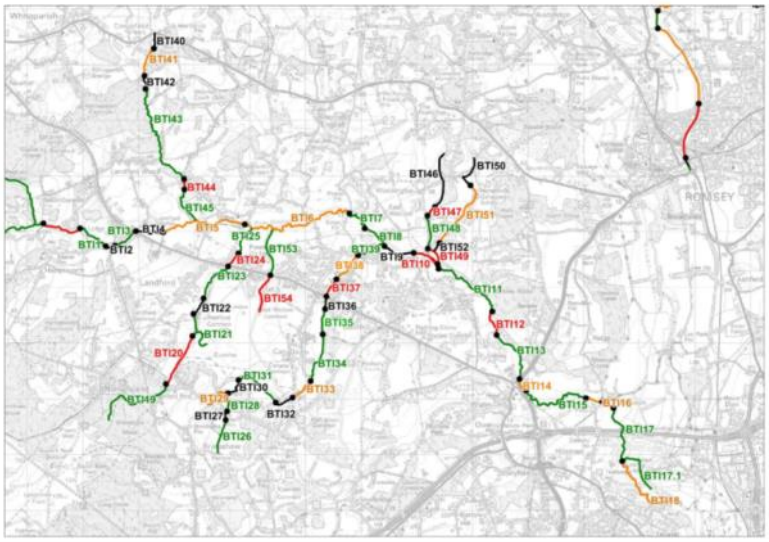
Over 50 in-channel structures were recorded and assessed within the Blackwater catchment, with varying impacts upon hydrology for example upstream impoundment and morphology, and interruption of sediment transport identified. Of these structures, 23 barriers to salmonid (Atlantic salmon and brown trout) fish passage were identified. The vast majority of these structures were previously unrecorded, and the number of structures

logged is a significant increase on the <10 structures within the pre-existing Environment Agency 'Priority Barriers' dataset. Combined with the 40km+ of hydro-morphological data collected which allowed the Trust to classify reaches based upon their suitability for salmonid spawning and nursery habitat, it is possible to prioritise barriers to fish passage based upon both the pass-ability of the structure and the quality of inaccessible habitat upstream.

Approximately 80 diffuse and point source sediment sources were recorded and categorised based on severity and a wide range of parameters recorded. Predominant sediment sources in the Blackwater catchment include heavy river bank poaching from livestock, agricultural compaction, sedimentation and run off from nearby roads and verges, wastewater treatments works, invasive non-native species including Himalayan balsam and signal crayfish.

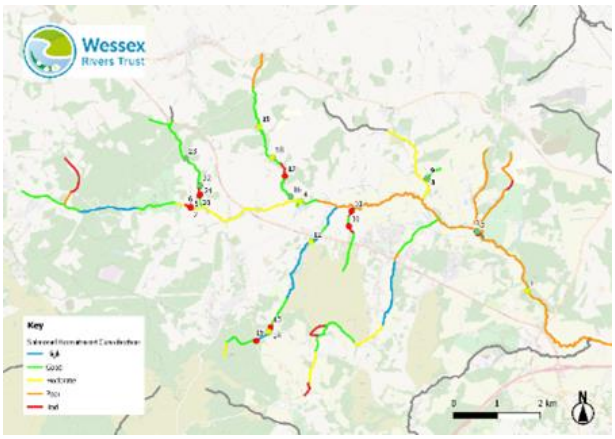
Room for improvement?

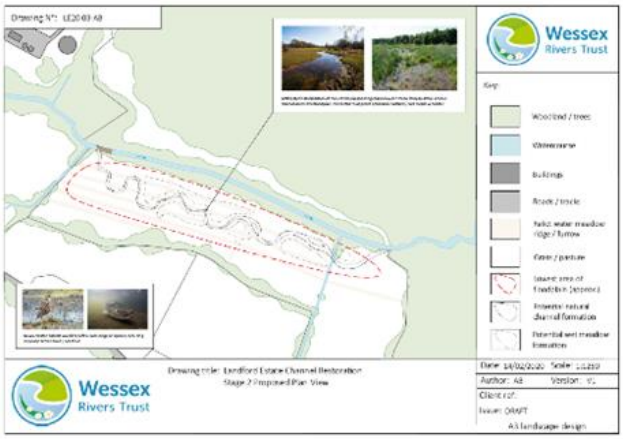
The Trust has identified a number of priority projects which aim to address pressures impacting ecology of the Blackwater catchment and is actively seeking funding to further develop and deliver these schemes. These include a feasibility and design study to further progress delivery of priority fish passage barriers, and a 'stage zero' type new channel creation project in the headwaters of the catchment.



The map displays the walkover survey coverage and channel classifications from the 2019 Blackwater walkover surveys. Reaches marked in red require intensive restoration to achieve a more favourable condition, whilst those marked green require the least.

Ford crossings are a common site amongst the watercourses in the New Forest, but they prevent sediment transport, pose a barrier to fish passage and impound the river upstream which negatively affects habitat quality. Larger water control structures such as weirs and culverts pictured above have a similarly detrimental effect on the ecology of the Blackwater.





Details of project proposals including a map of prioritised fish passage barriers against salmonid recruitment habitat quality (left), and an outline design proposal for a 'stage zero' type river restoration project in the headwaters of the catchment.

Working with natural processes to reduce flood risk and improve river habitats

The Ripley Brook is one of seven 'New Forest streams' entering the Hampshire Avon between Fordingbridge and Christchurch. Two thirds of the Ripley Brook catchment lie within the New Forest, where the brook starts life near Burley Street, flowing in a south-westerly direction for 11km before joining the Avon at Sopley. Historic management practices have left the brook straightened and lacking in morphological diversity, limiting the ecological health, and raising the flood risk posed by the brook.

Large sections of the brook around the village of Ripley were over-shaded by commercial forestry, rhododendron and brambles which prevents native macrophytes (aquatic plants) from flourishing. This failure at the base of the food chain limits in-stream biodiversity and the natural processes that would otherwise promote a greater diversity of habitat for fish and aquatic invertebrates. In addition, the Ripley Brook catchment responds very fast to heavy rainfall events and is known to cause nuisance flooding of downstream residences on a relatively frequent basis. Healthy river catchments store water in the landscape and slow the flow of water downstream, but our modern river landscape is very different from what nature intended. Human modification of our river channels, such as straightening, and dredging has enabled them to move water very quickly. However, this has left our rivers unable to cope with the severity of rainfall we are experiencing now and in the future through climate change, making flooding more likely to impact communities.

Working with the local landowners and Environment Agency, between 2017 and 2020 the Trust carried out a programme of works including investigations, designs and delivery of multiple natural flood management projects, and habitat enhancement.

Natural Flood Management (NFM)

In February this year, the Trust delivered our third phase of NFM work on the brook. Initially, the brook was partially connected to an old forestry ditch with the aim of encouraging the ingress of water into the ditch during times of heavy rainfall and increased flows. This would reduce the volume of water carried within the main channel of the brook during peak flows, thereby reducing the impacts of flooding downstream. Trees were felled into the newly connected ditch, with the aim of slowing the flow of water through the ditch and trapping excess sediment, resulting

in cleaner water re-entering the brook downstream – a multi benefit approach! The loss of land-based sediment, such as soil washed off surrounding land during heavy rainfall poses a significant risk to lowland rivers and streams. Sediment can smother the channel bed, including macrophytes, invertebrates and the gravel based habitats used by fish to spawn, ultimately limiting the ecological health of our rivers.

Trees were winched into the newly connected ditch to slow the flow of water and act as a filter for sediments entering the Ripley Brook

Wessex Rivers Trust Ripley Brook delivery team

A further phase involved re-routing a drainage ditch and creating a flood water attenuation pond beside the brook. The aim was to slow the rate at which water running off adjacent farmland reaches the river, reducing the impacts of peak flows on downstream communities. A sluice system was installed on the downstream edge of the attenuation pond to control the level of water retained there. The sluice system will remain open until heavy rain is forecast. Land managers will then drop the sluice boards to hold the water back, draining the pond down only once the peak flows have passed.

Top left: Ditch re-cut into field, moving it away from the track, notice the profile of the ditch is deep and narrow at this point.

Top right: Profile of ditch changed from deep and narrow to wide and shallow to allow greater conveyance of water, reduce the chances of erosion to the ditch and enable livestock and machinery movements over the area.

Bottom: Sluice system installed to allow drainage to be managed. This means the field can be utilised during the dry months and used to store water when required.

HURST SPIT TO LYMINGTON PROJECT

ADAPTING TO FUTURE CHALLENGES IN A SUSTAINABLE WAY

The Environment Agency in partnership with New Forest District Council, Hampshire County Council and Natural England with expert support from JBA Consulting are exploring a sustainable future for the coastal frontage between Hurst Spit and Lymington in relation to flood and coastal erosion risk management.

This project aims to investigate if and how to respond to the significant challenges facing this area of coastline now and into the future, and how to fund any potential works.

This coastal frontage is located within the New Forest and extends from Milford-on-Sea in the west, encompasses Keyhaven and Pennington Marshes extending up the Lymington River to the east.

The Hurst Spit to Lymington coastline is characterised by large areas of low-lying coastal habitats, including mudflats, saltmarsh and vegetated shingle. The existing defences, as well as protecting local communities, protects large areas of coastal grazing marsh and coastal lagoons. The habitats and the species which can be found along this section of coast are of international importance. The rich biodiversity creates the stunning landscape, which is accompanied by cultural and historical heritage of significant status. For these reasons the area attracts substantial visitor numbers and is enjoyed by a range of recreational users, for activities such as walking, sailing and fishing. These factors along with natural coastal processes will need to be carefully considered as the project develops.

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The predominant flood risk is from the sea; however risk of river flooding is also present, as well as surface water flood risk in the more built up areas.

Challenges facing this coastal frontage: What is the problem?

With the climate crisis hitting the news and as sea levels are expected to rise over 1m along the south coast in the next 100 years, being able to respond to these challenges will be key for safeguarding our coastal communities and environments for the future.

This coastline is a highly dynamic environment and change is a common occurrence. However, climate change is predicted to lead to impacts that are detrimental to both local communities and the environment.

As sea levels rise, not only will flood risk increase to properties, infrastructure and low-lying land, but it will also increase the impact on the designated habitats and the species they support.

View of Hurst Spit looking back towards the mainland.

Presently both Hurst Spit and the flood embankments are managed as coastal defences by New Forest District Council and the Environment Agency respectively.

By dissipating wave energy, Hurst Spit shingle bank currently offers protection to both the flood embankments and the low-lying designated habitats behind it. Hurst Spit however is becoming increasingly vulnerable to damage due to the net loss of shingle. On occasions, emergency repair works have been required, such as following the Valentine's Day Storm in 2014. The vulnerability of the spit puts the flood embankments and the habitats and species which it protects at risk.

The situation is further complicated by the fact that the flood embankments combined with sea level rise are causing a process called coastal squeeze. The presence of the hard defence, prevents costal habitats moving inland as sea levels rise. Where this natural retreat of habitats is prevented, this results in the loss of coastal habitats, in this instance saltmarsh. The loss of large areas of this important habitat will have significant consequences for wildlife and local communities. Saltmarsh is known to act as a natural flood defence through stabilising the coastline and dissipating wave energy. The decline of these valuable habitats has already begun and will only continue if opportunities cannot be identified.

In time (and without further recharge), the protection offered by Hurst Spit is likely to change, potentially exposing the intertidal habitats and flood embankments to higher wave energy. In relation to the embankments this could lead to a decline in their condition making them more susceptible from the sea. Although maintained regularly and functioning effectively at present, some long-term deterioration is beginning to show.

With the change in climate, more intense rainfall events are expected which will affect the rivers that drain out along this coast, increasing the risk of larger and more frequent flood events. Surface water flooding is also likely to occur on a greater scale than currently experienced.

What if we just continue as we are?

If the current status quo were to continue, it will get harder to maintain the existing Hurst Spit and embankments. Hurst Spit will need external sources of shingle in order to maintain its current profile. This can be both expensive and time consuming to source, especially during emergency works. At present there are 54 properties at risk from flooding along this frontage. This number is low in relation to the length of coastline and therefore does not justify significant funding from central government under current funding rules.

Intense rainfall events are expected which will affect the rivers that drain out along this coast, increasing the risk of larger and more frequent flood events

If the embankment and sea wall were maintained in their current alignment, this will cause further loss of saltmarsh due to coastal squeeze. As the condition of the embankments deteriorate, the coastal grazing marsh, lagoons and inland habitats are at ever increasing risk. The Habitats Directive places obligations on the UK Government to protect the network of protected sites and therefore the project partners will need to explore potential options to do so.

The project is in its very early stages and it will take several years of working with local residents, users and stakeholders to develop ideas and options through to consultation before any final scheme is proposed.

However this is the start of what should be a very forward-looking project that we hope will provide opportunities to protect, strengthen and enhance the environment in this area for future generations.

Aerial view of Hurst Spit and Lymington - Keyhaven Marshes Nature Reserve. Photo © Andrew Colenutt

For further information please contact: HurstSpit2Lymington@environment-agency.gov.uk

THE SOLENT FORUM

INTRODUCING THE SOLENT FORUM, THE COASTAL PARTNERSHIP FOR THE SOLENT

The Solent Forum is the Coastal Partnership that covers the Solent waterbody and its surrounding coasts. It is one of many such partnerships around the coast of the UK. Its area of work includes the New Forest coastline as far west as Hurst Spit, ranging to Selsey Bill in the east and the north coast of the Isle of Wight. Established in 1992, the partnership works with numerous bodies and organisations that manage the Solent to address environmental, social and economic strategic issues. Its primary goal is to collate and share information and resources on coastal issues to facilitate management.

Hosted by Hampshire County Council, The Forum, has a steering group of funding partners, with an independent Chair and two staff.

Its work is split into two main strands, core member services and project work. It also manages the Solent European Marine Sites Management Scheme, which coordinates relevant Authority management responses to issues arising from activities that take place across the Solent's designated sites. New Forest District Council and the New Forest Park Authority are members of this Scheme and the Solent Forum.

Core services offered to members include a biannual members half day conference, a biannual newsletter, a monthly email newsletter, opportunity workshops, for example on accessing funding streams, and the opportunity to use the Forum's wide network for consultation, publicising work and identifying partners for projects.

Recently the Forum has been involved with the Rivers Trust on a national project called 'Wholescape Approach to Marine Management (WAAM)'. This is seeking to bring coastal and catchment partnerships more closely together to ensure that water issues are addressed from source to sea. The Forum had an opportunity to meet with catchment partners at a WAAM conference in London earlier this year and present on our work. Following this, we are seeking to build closer links with Catchment Partnership colleagues for the catchments that drain into the Solent, including the New Forest Catchment Partnership.

Two ongoing projects that the Forum is currently working on are 'Clean Solent Shores and Seas (CSSS)' and 'Building Biodiversity in the Solent (BBS)'. CSSS is a web based resource hub to collate and share water quality resources and initiatives, to help improve awareness and influence behaviour in the Solent. It covers the following sectors: microplastics, nutrient enrichment (diffuse and point source), polluting contaminants, oil pollution, non-native species, hydrographic and hydromorphological changes and acidification.

The hub is still under development but can be accessed by clicking here: www.solentforum.org

For the BBS hub, the Forum is working with partners to develop an information resource to share knowledge and best practice on building biodiversity into coastal infrastructure. The Solent waterside has long been used by industry and, along with dense centres of population and high levels of recreational participation, this has led to extensive coastal infrastructure.

Clean Solent Shores and Seas litter sculpture

As a precursor to the BBS hub, the Forum did some opportunity mapping in the Solent that reviewed where and how infrastructure could be improved, this included the New Forest coast. This work can be accessed by clicking here: www.solentforum.org

BBS seeks to promote the use of 'nature based solutions,' such as the use of eco concrete or attaching vertipools (artificial rock pools) onto new or existing coastal infrastructure to increase its biodiversity. This work will become increasingly important when biological net gain is mandated in the forthcoming Environment Bill. Please see more by clicking here: at: www.solentforum.org

A further project, that the Forum is leading on, that will be piloted at Lymington, is 'Beneficial use of Dredging's in the Solent (BUDS)'. This seeks to use marine dredging's to build up the eroding saltmarsh at Lymington to preserve this habitat and its natural flood defence capability. Currently most dredged material from the Solent is disposed of at sea at the Nab Tower off the Isle of Wight. More information is available by clicking here: www.solentforum.org

Pilot project: Beneficial use of Dredging's, Lymington. Photo courtesy of ABPmer

To keep up to date with the work of the Forum, you can subscribe to our free monthly e-newsletter by emailing your details to: info@solentforum.org

PARTNER PROFILE: KEITH CALDER

ENVIRONMENT AGENCY DORSET & HAMPSHIRE AVON CATCHMENT COORDINATOR

I am a 40-year environmental management veteran. I was over 11 years in my previous position as a catchment coordinator working for a city council. In that role I was responsible for developing, and then implementing, a strategy to "clean-up" a neglected local estuary/harbour and the urbanised catchments. This was a multi-disciplinary and multi-agency project involving central, regional and local government, NGO's and community groups.

One of the roles of the Environment Agency Catchment Coordinators is to facilitate and coordinate work by teams within the Environment Agency and with external partners.

I am a 64 years old, married to Janet, with three grown-up children. I am from Wellington, New Zealand and started work for EA on 23 March – the day Boris announced the lockdown and also Janet's birthday. Janet was going to join me in September. That is not happening now because of Covid, and we will see what evolves and consider when a next suitable and sensible time for her to travel is.

As most of you know, New Zealand is a beautiful part of the World. And through my work history I have had the privilege of seeing much of it. Roles have included hydrology technician, geology technician, water and soil conservation scientist/planner, policy analyst, strategic planner and educator, national park community liaison, and then manager of a wildlife sanctuary. Looking back, it all seems an extraordinary adventure that has whizzed-by so quickly! Clearly I have had an affinity for the outdoors and the environment. And, to quote Thomas the Tank Engine, wanted to be a "useful little engine" and to make a difference where ever I worked. For me, all of my 'roles' have been more than simply 'jobs'.

A tuatara: an ancient type of reptile. It is endemic to New Zealand and the only member of this Order of reptile surviving to modern times.

I have had the enormous privilege of seeing or holding some of New Zealand's (and the World's) rarest species, including kiwi and tuatara. These have been the richest and most memorable rewards of my career.

On my time-off I have enjoyed playing football, rugby and tennis. In later years, Janet and I have taken up tramping (hiking), including multi-day treks of renowned Milford Track, Routeburn Track and the Tongariro Crossing which are all sub-alpine walks.

My luggage for the UK included my light one-man tent, self-inflating mattress, sleeping bag and my boots, with the intent of enjoying some of Britain's tracks while here [as Covid allows].

I have a habit of looking for opportunities and new ways of thinking and working. For example, my post-grad thesis looked at the principles of landscape ecology and their application to the New Zealand planning context. In my new role, I am exploring something new for the Wessex EA, and currently piloting a strategic approach to catchment planning for one of the Dorset rivers – the River Stour.

One of the consistent themes of my life has been the ability to link with and maintain positive and effective relationships with people – individuals, groups, agencies and communities. I offer time and conversation. Relationship and journeying together is how we get 'stuff done'! Of course, this approach can have its dangers and drawbacks, most of which I am aware of, but it is just how I am 'wired'.

The role of catchment coordinator (CaCo) brings together my interest in the environment and in people. Many of the environmental issues we confront in New Zealand are very similar to here in the South-west. The statutory and structural framework and how things are done here, are very different, and this is where my abilities are most challenged.

So, what's a 64 year old doing here in Dorset, and for how long? The official retirement age in NZ is 65. I am fortunate in not feeling like 64 – though I don't know what it is supposed to feel like, since I've never been 64 before! But I did feel that it would be a waste to let my experiences and expertise simply die at 65. Ageism is very much alive in NZ (despite being illegal) in a way it is not here in England [Hah!]. The Agency interviewed me and employed me on merit, for which I am very grateful. Not only is this an opportunity for me to share, but to also carry on learning.

Now, a couple of final matters I need to come clean about. Firstly, I was born in Scotland. My parents were both Scots and I spent my first seven years in my birthplace, Perth. We emigrated to NZ in 1963 and I have lived there ever since. I hold dual citizenship – UK & NZ. Secondly, there was another motive for coming to work in the UK: a belated OE! Once here it is much easier and cheaper to move around Britain and Europe. Or at least that was the plan… until Covid-19 arrived. And, of course, Brexit too!

But, I am here in this 'CaCo' position, long term - as long as I feel I can make a positive contribution. Janet will, eventually, join me.

The New Forest Catchment Partnership is looking forward to working with Keith to improve communication and cooperation between catchments, because so many of the streams that rise on the New Forest flow down to the Hampshire Avon.

Motto: Life is an adventure… especially when you're running out of time!

Keith Calder, Dorset & Hampshire Avon Catchment Coordinator, Environment Agency

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: ***GSTRIDE@FRESHWATERHABITATS.ORG.UK***

KEY PARTNERS INCLUDE:

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THE wildlife TRUSTS Hampshire & Isle of Wight Wildlife Trust

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