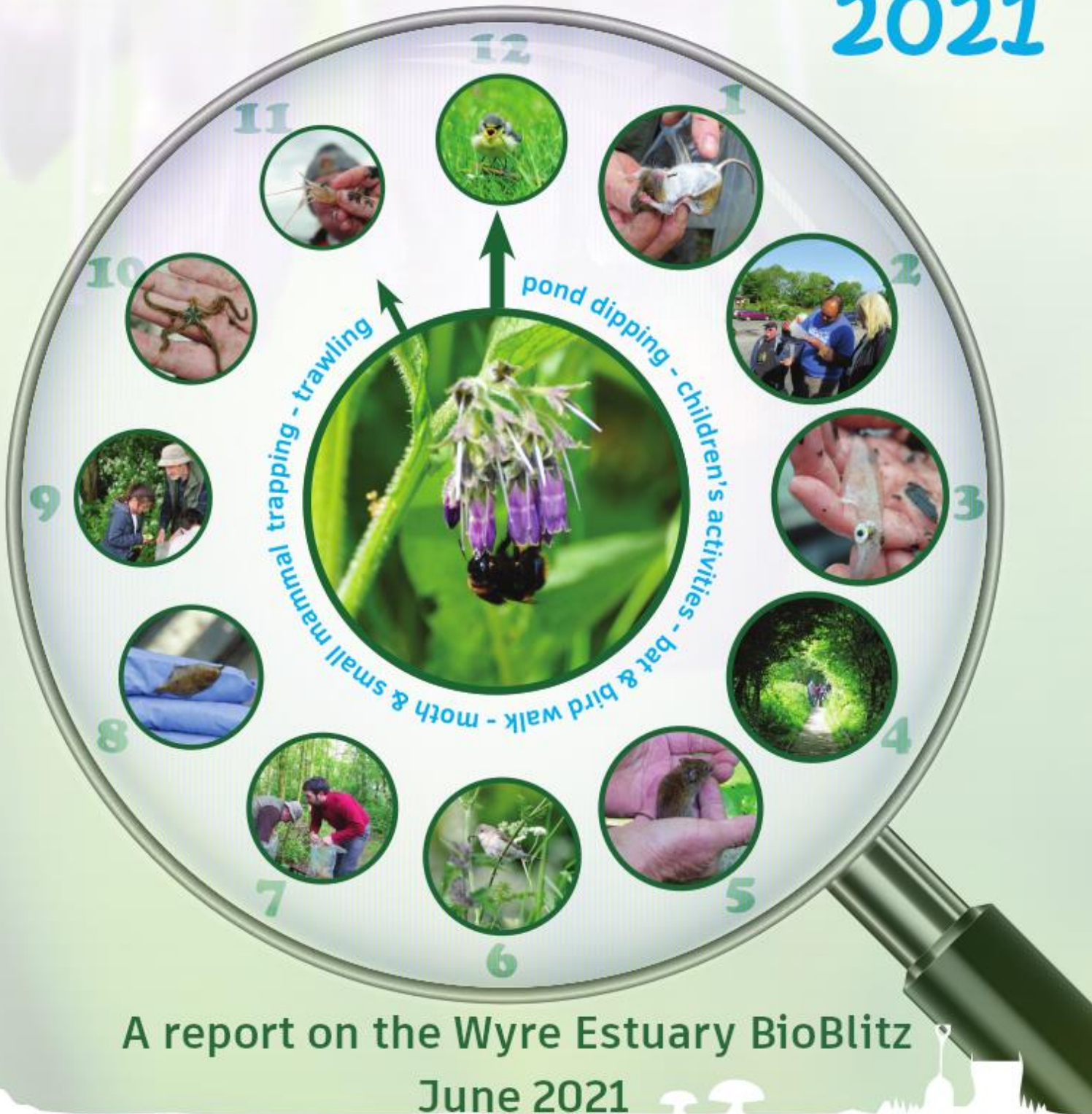


Wyre Estuary

BioBlitzed

2021



A report on the Wyre Estuary BioBlitz

June 2021

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Alan Bedford explaining the anatomy of a bank vole which was humanely trapped during a small mammal survey.

Get in touch

The partners responsible for the BioBlitz run events throughout the year. If you would like to get more involved please use the contact details below.

Royal Society of Biology

www.rsb.org.uk - @RoyalSocBio (Twitter) - Royal Society of Biology (Facebook)

Wyre Council

www.wyre.gov.uk - @wyrecouncil (Twitter) - Wyre Council (Facebook)

Wyre Rivers Trust

www.wyriverstrust.org - Wyre Rivers Trust (Facebook) - wyriverstrust (Instagram)



The 2021 Wyre Estuary BioBlitz received funding from the British Ecological Society via their Outreach 2021 Grants Programme. The funding supported the purchase of scientific equipment, materials, travel expenses for volunteers and the printing of this brochure. We are grateful to the British Ecological Society for their support and enabling the biggest and best Wyre Estuary BioBlitz yet.

The Wyre Estuary BioBlitz

What is a BioBlitz?

A BioBlitz is an organised wildlife recording event where groups of scientists, naturalists and volunteers get together to survey a designated area in an attempt to record all the living species present.

The Wyre Estuary : Where the River meets the sea.



The Wyre Estuary extends from Fleetwood and Knott End-on-Sea upstream to its tidal limit at St Michaels-on-Wyre. An estuary is a tidally influenced waterbody, where freshwater and saltwater mix to form brackish water. Specialist habitats such as saltmarsh,

mudflats and wetlands make up the tidal fringe. They provide homes for a variety of animals and plants. These complex habitats on the Wyre Estuary are described in more detail on the following pages.

A place worth protecting.

The importance of the Wyre Estuary is recognised by a number of national and international designations. In part, this is due to its importance to wading birds and wildfowl as well as its saltmarshes. It also forms part of the Morecambe Bay Special Area of Conservation and is part of the Wyre-Lune Marine Conservation Zone due to its importance for European smelt (*Osmerus eperlanus*).

The Wyre Rivers Trust, Wyre Council and Royal Society of Biology join forces every three years to record as many species as possible on the Wyre Estuary so that we can monitor change, learn more about the habitats and raise awareness of the issues in the catchment.

[A full species list can be found by scanning the QR Code.](#)



Wyre Estuary BioBlitz Statistics

2015 BioBlitz
346 Species
Recorded

2018 BioBlitz
644 species
Recorded

2021 BioBlitz
987 Species
Recorded

The Partners and Experts Supporting the Wyre Estuary BioBlitz



WYRE RIVERS TRUST
"from Bowland to Bay"



Wyre Council

The council works with volunteers, agencies and partners to protect and enhance biodiversity, providing good quality services and environments for residents and visitors to Wyre.

Wyre Rivers Trust

The Wyre Rivers Trust works for an improved environment across the Wyre catchment, undertaking river restoration, monitoring and educational programmes through a range of projects.

Royal Society of Biology

The Royal Society of Biology's mission is to be the unifying voice for Biology: advising Government and influencing policy; advancing education and professional development; supporting its members and engaging and encouraging public interest in the Life Sciences.

The Experts

Many of the experts supporting the BioBlitz are enthusiastic amateur naturalists, who aim to identify species from microscopic diatoms to tall trees.

Over 20 experts undertook surveys for the event with specialisms in species such as bramble (of which there are over 350 species occurring in Britain), flies and marine plankton. The amateur naturalists have learnt their skills through years of observation and self motivation, whilst the professionals have had successful careers in nature conservation, landscape management and education.

Birds: Ian Coote, Paul Ellis, Graeme Nuttall, Malcolm Evans

Marine Invertebrates and Fish: Jean Wilson, Mark Wombs, Steve Brown, Thomas Myerscough, Barry Kaye, Barry Brigden, Dave McGrath

Plants : David & Joyce Earl, Nik Bruce, Jean Wilson, Graeme Nuttall, Alison and Trevor Cooke, Eve Mulholland, Charlie Pass

Freshwater: Chris and Jenny Gibson, Lucy Brookfield, Thomas Myerscough

Terrestrial Invertebrates: Hilary and Alan Bedford, David Shaw, Malcolm Evans, David McGrath, Mike Bloomfield, Anne Smith

Mammals: Charlie Pass, Hilary and Alan Bedford

Photography: Mike Clapham

Catering Corps - Helen Smith, Elisabeth Green, Jean Wilson

Species List Verifier - Elizabeth Cripps

Report Editors– Thomas Myerscough, Lucy Brookfield, Jean Wilson, Alison Boden

Community Engagement and the Wyre Estuary BioBlitz

Like most of the work we do, we rely on partners and volunteers to bring our ideas to life! Here are a few of the groups that we worked with during the BioBlitz.

Working with landowners

The Wyre Coast and Countryside Service are land managers of the Wyre Estuary Country Park, the perfect base for the Wyre Estuary BioBlitz. The Riverside Classroom was transformed into a more than adequate laboratory with microscopes and visualisers so that identification of some of the more challenging species could be carried out. The Outdoor Classroom, built during the COVID-19 pandemic as a



Thomas Myerscough of the Wyre Rivers Trust studies specimens in the BioBlitz laboratory

solution to limited indoor meeting space, provided the perfect space to feed our hungry experts, whilst the park itself provided hectares of wildflower meadow, woodland, grassland and ponds to survey

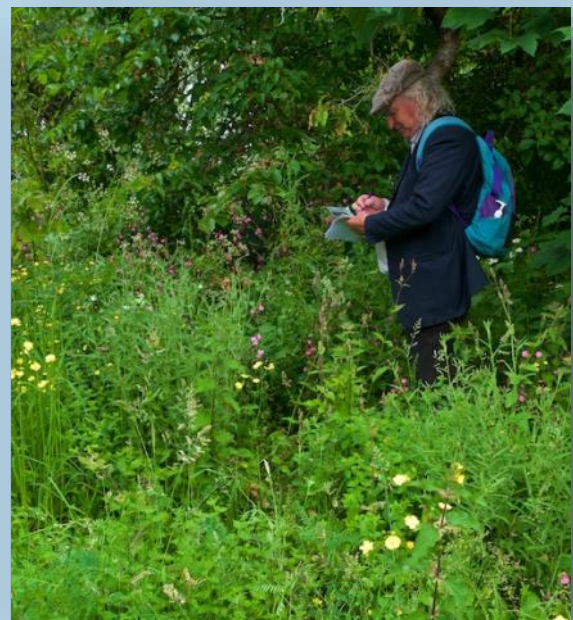
Whilst Wyre Estuary Country Park is open to visitors of all ages, much of the Wyre catchment is not accessible to the public and, therefore, we know very little about the species that live there. The BioBlitz is the perfect opportunity to address this issue.

Working with landowners, we investigated large areas of the Wyre Estuary which have not previously been surveyed.

Extensive surveys of the Hillylaid Wetland Site (see page 14 for more details) were carried out thanks to the kind permission of NPL Group who are long term partner, supporting our aims of enhancing biodiversity in the area. We also got the chance to investigate the disused railway line running from Poulton to Fleetwood.



Surveyors at the Hillylaid wetland site



The undisturbed nature of the railway has allowed a host of plant species to thrive.

Working with the community



The BioBlitz event is not just about gathering robust scientific data to inform future management plans but also about inspiring and informing local people, raising awareness of the issues that our local wildlife faces and encouraging people to play a part in protecting it.

With rising case numbers of COVID-19 within the community, the task of running public events seemed daunting. We wanted to make it as safe as possible for everyone whilst still offering the opportunity for the local community to get involved and come face to face with the flora and fauna present in their locality. With this in mind, we offered 17 public events for up to six people. Attendees got the chance to listen to bats echolocate as they swooped overhead, study the adaptations of saltmarsh plants to their brackish environment and hold wood mice and bank voles whilst they were sexed and weighed before being returned home. The secrets of the Wyre Channel were explored with beam trawls, seine nets and push nets revealing pipefish, plaice, smelt and shrimp,

which were all captured in our surveys. These surveys couldn't have been carried out without the support of local fishers and their expert knowledge of the Wyre Channel.

Working With Schools

Each of the BioBlitz partners works with schools and institutions throughout the year to educate children about the environment and the ways in which we can protect it. The BioBlitz was the perfect opportunity to get hands on and allow children to get up close and personal with nature within the Wyre Estuary. Children were enthusiastic in exploring the strandlines along the muddy shore of Knott End, delighting in the discovery of sand hoppers and shore crabs.



Habitats of the Wyre Estuary

Alison Boden, Coast and Countryside manager at Wyre Council discusses the wide range of habitat types in the Wyre Estuary, which make it a great place for people and wildlife.

Habitats that we have visited during the BioBlitz include:

- Saltmarshes and mudflats along both sides of the Wyre Estuary at Stanah and Knott End.
- Sand dunes and shingle at Fleetwood.
- Estuarine and coastal waters at Knott End and Fleetwood.
- Wetlands, backwaters and ponds at Stanah, Hillylaid and Thornton.
- Coastal grasslands at Fleetwood and mosaic semi natural grasslands throughout the Wyre Estuary Country Park, NPL Estate and alongside the old railway line.
- Woodland plantations in Thornton and ancient semi-natural woodlands on the edges of the Wyre Estuary at Stanah and Skippool.
- Farmland in Thornton, Fleetwood, Preesall and Hambleton which provide great habitats for breeding birds and migrants such as geese and waders such as Curlew and Lapwing.

As a land manager this wide range of habitats and landscapes and waterscapes presents great opportunities and challenges for the Coast and Countryside Service.

Our aims being: the sustainable management of these habitats including wherever possible no net loss of biodiversity. To enable access to nature for people to be able to experience and appreciate wildlife on their doorstep. To understand the Natural Capital value of our green and blue spaces so that these spaces can provide ecosystem services for the community of Wyre in

particular with regards to mitigation for climate change.

Examples of habitats that are really important for coastal defence and carbon sequestration include saltmarshes, mudflats and sand dunes, if we can understand how they we work, we can promote management and the creation of natural solutions to sea level rise. In order to achieve this we need to know what lives where and when and which activities may create areas of conflict or opportunity between people and nature. Carrying out the 3 yearly BioBlitz provides us with an amazing chance to understand the wildlife we have on our sites. The BioBlitz facilitates greater partnership working with local naturalists and experts, members of public, environmental NGOs, government organisations, businesses and landowners and users of the green and blue spaces we manage. This study of wildlife on our sites, is supplemented by annual Ecology for All workshops and Citizen Science activities with the Wyre Waters Catchment Partnership and Natural England. Opportunities to work with scientists and naturalists to help us to do this is highly valued. The Wyre Estuary Country Park at Stanah provides a unique opportunity for partners to make use of the facilities to support biodiversity surveys and design ways in which people can enjoy nature. The wider Wyre Estuary has easy access along the promenades and coastal paths at Fleetwood, Cleveleys and Knott End providing great opportunities to share knowledge of the unique wildlife of the Wyre estuary with visitors as well as local people.



The River Wyre is a relatively small river and flows from the tops of the Forest of Bowland before flowing northwards into Morecambe Bay at Fleetwood and Knott End. The estuary is defined as the downstream part of a river valley which is influenced by the tide. In the River Wyre, this extends from the tidal limit at St Michaels-on-Wyre to the mouth of the river at Fleetwood. There is a gradient of salinity from freshwater in the river to increasingly marine conditions towards the open sea.

The Wyre Estuary is a key component of Morecambe Bay along with the estuaries, the Leven, Kent, Keer and Lune. Together these form one of the largest single areas of continuous mudflats and sandflats in the UK and the best example of muddy sandflats on the west coast. Unlike many saltmarshes around the Bay which are grazed by sheep, many of those on the Wyre Estuary are not

grazed, so enabling plants to grow to full maturity and resulting in swathes of purple Sea Lavender and Sea Aster flowers in summer. It is a unique place for scientists and students to explore. A few of the habitats present on the Wyre estuary are described below:

Saltmarsh

The saltmarshes on the Wyre estuary are described as Atlantic salt meadows, where halophytic salt tolerant plants colonise the intertidal mud and sand in areas that are protected from wave action. Plants include sea lavender, sea aster, sea clubrush, sea purslane, samphire and common saltmarsh grass. Birds to be seen include teal and shelduck as well as a variety of moths and beetles. Saltmarsh plants capture carbon from the atmosphere which is stored in the soil when they decompose, making them one of the

most effective habitats at storing carbon. Saltmarshes also provide a buffer between both urban and riverine habitats. During storms they protect developments from incoming water, whilst the river is protected from pollution such as agricultural and road run-off which can be filtered out by saltmarsh plants.

Threats to saltmarsh habitats in the Wyre Estuary include development and sea level rise as the area in which plants can thrive is reduced. Species such as sea purslane are also particularly sensitive to trampling from people and dogs. Frequent trampling can also result in the formation of salt pans—bare depressions that retain sea water when the tide goes out and result in conditions that are too salty for many plants to grow.

Mudflats

Mudflats are created by fine silts and clays being deposited from the river as it slows its pace nearer to its mouth. They can form large parts of the inter-tidal areas of the coast. They can help to dissipate wave energy on the coast and have a high biological productivity with many invertebrates such as ragworms, lugworms, sand hoppers, cockles, shore crabs, centipedes, bugs, moths and the tiny *Hydrobia* snails. These animals provide food for internationally important populations of migrant and wintering birds in particular waders and wildfowl. If you get the chance, stand on the edge of the estuary and look out to the mudflats and the river edge you will see birds feeding patiently on the mudflats as they sift and probe in the mud for high energy food they need to survive their migration travels. Birds to see include lapwing, curlew, redshank and bar-tailed Godwit.



Sand Dunes

Sand Dunes are places of constant change and movement. Dunes are formed from sand blown inland from the beach and create small hills where visitors can experience the views of the coast in the company of wildlife such as bees, butterflies and amazing plants like sea holly. During storms, large sand dunes can shelter inland areas from coastal flooding and from winds. In Wyre, the council are working with the Dynamic Dunescapes project to help protect this wildlife and promote a greater understanding of how dunes work.



Coastal grasslands, ancient semi-natural woodlands and hedgerows also make up the patchwork of specialist habitats which can be found on the Wyre Estuary.

Information from the JNCC and the Dynamic Dunescapes project is contained within this report.

A day in the life of a BioBlitz recorder

I undertook my BioBlitz 2021 survey on Saturday 12th June, visiting two adjacent locations. The first was the Hillhouse Industrial Estate where part of a large former industrial area has been allowed to grow wild creating a superb, largely undisturbed, natural habitat, and the second was the Wyre Estuary Country Park at Stanah. The main purpose of my visit was to add hoverfly records to the overall species list, but I also recorded all butterfly, moth and bird sightings.



Little ringed plover

The conditions were not ideal for hoverfly recording with a strong gusty wind and occasional sunny intervals. Nevertheless, eleven species of hoverfly were identified including at least two which do not appear to have been recorded during the previous BioBlitz surveys. Although fewer species were recorded than in the 2018 survey, this was probably due to the weather conditions and less time spent in the field.

Amongst the butterflies was a single Small Heath at the Hillhouse site. This species has suffered a sharp population decline nationally and most, if not all, inland populations in the Fylde have long since disappeared, however, thankfully, it is still thriving in suitable habitats along the coast.

Moths recorded included yellow shell and dark-barred twin-spot carpet.

Of all the bird records, the most interesting was a pair of little ringed plovers at the Hillhouse site. The birds were uttering alarm calls and one feigned injury, a recognised distraction behaviour of breeding waders, so it is highly likely they were breeding on site.



Small heath butterfly

Malcolm Evans

Wildlife Recording

Wildlife Recording, or biological recording, helps to map the presence, abundance and distribution of living organisms. By writing down what we have seen and where, land managers and conservationists can identify rare and locally important species as well as protecting habitats from damage. When collected over long periods of time, records can help us understand how our environment is changing, for example in response to climate change or development.



The Lancashire Environmental Records Network

Each area in England has a local records centre which collates and stores biological records. The Lancashire Environment Record Network is the local environmental record centre for the county of Lancashire, holding more than 3.3 million records about the biodiversity, geodiversity and landscape



The National Biodiversity Network Atlas

The Lancashire Environmental records Network publishes data online via the National Biodiversity Network (NBN) Atlas. The NBN Atlas is the UK's largest collection of freely available biodiversity data, which gathers species records from hundreds of sources.

The Atlas holds over 200,000,000 occurrence records of over 46,000 different species. The data is available on an interactive map which you can use to explore the habitats and species of your local area.

www.nbnatlas.org



Try Your Hand at Wildlife Recording

It is easy to collect your own records– you just need to write down and share what you see!

What is a record?

- **Who** - The full name and contact details of the person who made the record.
- **What** - The name or a picture of the plant or animal seen.
- **When** - The date on which the sighting was made. Ideally this should be the day/month/year.
- **Where** - The place it was seen. Ideally a six figure grid reference (or greater precision) should also be included– you can find this using a map or an app such as OS locate. Addresses and Post Codes can also be used as locations for records.

Even records of common species are important – what is common today may not be in the future.

Wildlife Recording and wellbeing

Getting outside can be a great way to find solace and inspiration. Spending time in and around green and blue space has consistently been shown to provide health benefits such as improved mood and reduced stress, with marine and coastal margins found to rate highest for providing a sense of wellbeing and happiness.

Taking time to notice and record what we see can be an extremely mindful activity. Stop to identify the wildflowers amongst your feet in spring and you might be surprised at the diversity you find. Amongst the leaves will be a throng of insects, wriggling and crawling, each uniquely adapted to the niche which they inhabit. In turn these will provide food for mammals and birds whose song is an uplifting sound on any morning.

iNaturalist

iNaturalist is a free, easy to use app which allows you to submit records that contribute directly to the Lancashire Environmental Records Network and databases such as the National Biodiversity Network Atlas. It will even help you to identify specimens if you don't know what they are. Submissions are then checked by other users. It's a great way to learn how to identify plants and animals whilst contributing to biodiversity science.

If you don't like the idea of an app, records can be submitted to LERN on paper or spreadsheet too.



How are wildlife records used?

Lucy Brookfield, Conservation and Engagement Officer for the Wyre Rivers Trust, explains how records are used to manage sites for a wide range of benefits.

Nature conservation organisations such as the Wyre Rivers Trust analyse species records provided by Lancashire Environmental Records Network and the National Biodiversity Network Atlas when developing projects, this is to ensure that our plans will continue to support the species that are already present within the site. WRT also aim to improve habitats for other species that are known to be in the locale or for immigrant species.

The Hillylaid wetland is a good example of such practice where we have been working with the site manager to create a series of wetlands on an area of fallow ground. The main aims of the project were to:

- 1) To provide water storage, helping to alleviate the impacts of flooding on the communities of Thornton.
- 2) To improve water quality using wetland plants to filter out pollutants.

Species records indicated that great crested newt had been recorded within 500 m of the site, meaning they could easily migrate to our wetland and prosper at the site if suitable habitat was available. An additional pond was added to the design and plants

suitable for egg laying were planted to entice them onto the site.



The site was surveyed for plants, invertebrates, birds and small mammals as part of the 2021 BioBlitz

Records also indicated that Common Lizard were present in the past, so surveys were undertaken and common lizards were found to be present along the site boundary. Brash piles and banks were incorporated into the wetland design to improve habitat for reptiles on the site itself.

The site will continue to be monitored in years to come to see how species and habitats respond to the changes that have been made. The project was supported by Natural Course, the Environment Agency, Wyre Council and United Utilities.



A recording success story

European water shrews (*Neomys fodiens*) are perfectly adapted to their homes along riverbanks and in wetlands and are good at swimming, diving and climbing. For small creatures they are very noisy, and can make trills, whistles and high shrieking and shushing noises. They are rare amongst mammals in having venomous saliva which helps to stun their prey with a mild toxin. They do not hibernate, instead having dense fur to protect them through the cold and wet winter months.

Until recent surveys undertaken as a result of the BioBlitz, there were only three records of water Shrew in the Wyre Estuary area, which were either undated or recorded more than 50 years ago. These

were located in the Fylde area, with no records for Over Wyre. The secretive nature of water shrews is probably partly to blame for this; they are shy creatures that can literally be scared to death, making sightings unlikely. Water shrew populations are also thought to be declining due to habitat loss and water pollution.

During the BioBlitz, European water shrews were found at three sites across Wyre – at two sites which have been restored by the Wyre Rivers Trust and at Stalmine Woodland which is owned and managed by Stalmine with Staynall Parish Council. With continued habitat management and further surveys we hope to see more of these enigmatic little creatures in future years!



Water shrews eat caddis fly larvae and freshwater shrimp, both are aquatic species which can be very sensitive to pollution in the water, they also feed on terrestrial invertebrates including earthworms, beetles and slugs.

Flying the flag for creatures least loved

Invertebrates may be one of the most abundant groups on earth, but we know relatively little about them.

Approximately 65% of all species on the planet are invertebrates – that is, animals without a backbone like insects, worms, molluscs and jellyfish. In the UK alone, there are more than 39,000 species of invertebrates, many of which are critically endangered. Despite this, they attract very little interest from wildlife recorders.



Alan and Hilary Bedford are trying to combat this, and surveyed Wyre Estuary Country Park and NPL Estate for invertebrates during the Wyre Estuary BioBlitz. They used a range of methods in order to catch a diversity of different species. Flight interception traps are made from a piece of material that is hung from a branch, stretched between trees, or supported by poles to catch flying insects. Yellow pan traps attract nectar feeders which are looking for brightly coloured flowers. Sweep nets were also used to capture invertebrates which may be hiding in long grass.

In total, Alan and Hilary recorded over 150 different species of beetle, bug, fly, bee, wasp and sawfly across the two sites. Highlights included the fleshfly *Sarcophaga similis*, a local rarity and the first record for the northwest. True flies are very poorly recorded in the NW but this is a large and easily identifiable species that is likely to be a genuine local rarity rather than a product of limited recording.

“Insects specifically and invertebrates in general don’t attract the interest or concern of the general public that is shown to mammals, birds and amphibians. Those that do attract interest are the larger, attractive, “showy” species such as dragonflies and butterflies. This leads to a distinct lack of comparative information for most invertebrates in the UK”

Dr Alan Bedford, Royal Society of Biology

84% of all animal records on the National Biodiversity Network Atlas (the UK's largest collection of wildlife records) are birds.

Despite associations with death and disease, flies are an important part of the food chain and make valuable

pollinators; adults get their energy from nectar and in this process pick up pollen on their often hairy legs. When they get to their next nectar meal, they are very likely to pollinate this flower.

Recent studies showed that some species of blowfly produced as good a yield of leek and carrot seed as bees.

The BioBlitz results also showed that the newly created wetland at Hillhouse industrial estate is already doing its job in supporting specialist wetland species. Large numbers of the hoverfly *Anasimyia*

contracta were caught; this species is associated with marginal water plants such as those which have been planted at Hillylaid.

The housefly *Lispe tentaculata* is associated with organic sand or mud along rivers, marshy and wetland areas. This was only found to be present at the wetland site and was not living at Wyre Estuary Country Park.

The Country Park species list was dominated by house flies (Muscidae) lesser house flies (Fanniidae), dung flies (Scathophagidae), lesser dung flies (Sphaeroceridae) and blowflies (Calliphoridae), all of which have larvae that are associated with dung of various sorts. Large numbers of adult *Morellia aenescens* (Muscidae) were found and their larvae like horse dung in particular; the large numbers of dogs on the site will certainly account for a lot of the other species recorded.

Together with Wyre Council and the Wyre Rivers Trust, the Royal Society of Biology are running a series of invertebrate identification courses, focusing on beetles, flies and freshwater invertebrates.

More details can be found on page 23.



Other invertebrate recording schemes to get involved with:

- **Bugs Matter-** Record the number of bugs that accumulate on the number plate of your vehicle to help monitor insect declines in the UK
- **RHS Cellar Slug Hunt-** Records for the Yellow Cellar Slug have been declining since the Green Cellar Slug was first recognised in the 1970's . Help find out why by submitting your slug sightings!
- **Bee-Fly Watch-** Record Bee-flies to help with research and monitoring of this amazing group
 - **National Moth Recording Scheme**
 - **Big Butterfly Count**
 - **The Anglers Riverfly Monitoring Initiative**

Moths of the Wyre Estuary

Moth trapping involves attracting moths to a light source or source of food so that you



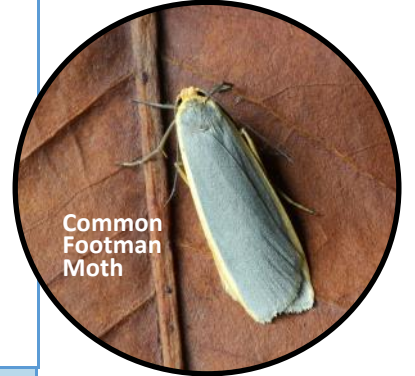
can take a closer look at them (or record the species). This can be as simple as using a torch to attract the moths to a white sheet, or can be carried out using specialised moth traps. Most moths only come out at night so it is a great way of learning about what is out there! During June, July and August volunteer wildlife recorder David Shaw studied the moths in his garden in Hambleton. Here are the species he found:

Moth Common name	Scientific Name	Count
Family <i>Sphingidae</i> (hawk-moths)		
POPLAR HAWKMOTH	<i>Lathoe populi</i>	3
EYED HAWKMOTH	<i>Smerinthus ocellatus</i>	3
LARGE ELEPHANT HAWKMOTH	<i>Deilephila elpenor</i>	3
Family <i>Noctuidae</i>		
HEART AND DART	<i>Agrotis exclamationis</i>	13
FLAME SHOULDER	<i>Ochropleura plecta</i>	2
THE FLAME	<i>Axylia putris</i>	2
DARK ARCHES	<i>Apamea monoglypha</i>	8 +
BRIGHT-LINE BROWN-EYE	<i>Lacanobia oleracea</i>	1
DOT MOTH	<i>Melanchnra persicariae</i>	13
LARGE YELLOW UNDERWING	<i>Noctua pronuba</i>	6 +
GREY DAGGER	<i>Acronicta psi</i>	1
SILVER Y	<i>Autographa gamma</i>	1
SMALL ANGLE SHADES	<i>Euplexia lucipara</i>	1
SHUTTLE-SHAPED DART	<i>Agrotis puta puta</i>	1
LESSER BROAD –BORDERED YELLOW UNDER-WING	<i>Noctua janthe</i>	1

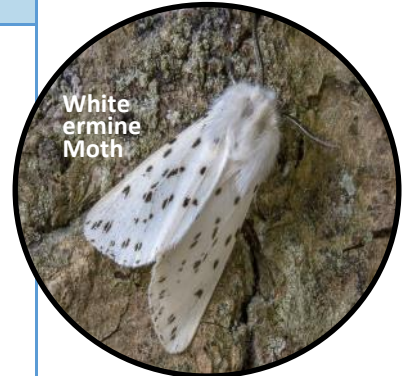
MARBLED BEAUTY	<i>Bryophila domestica</i>	1
OLD LADY	<i>Mormo maura</i>	1
Family Geometridae		
PEPPERED MOTH	<i>Biston betularia</i>	5
GARDEN CARPET	<i>Xanthorhoe fluctuata</i>	2
BRIMSTONE MOTH	<i>Opisthograptis luteolata</i>	2
LARGE EMERALD	<i>Geometra papilionaria</i>	1
SCALLOPED OAK	<i>Crocallis elinguaris</i>	2
SWALLOW-TAILED MOTH	<i>Ourapteryx sambucaria</i>	1
CANARY-SHOULDERED THORN	<i>Ennomos alniaria</i>	1
BLOOD-VEIN	<i>Timandra comae</i>	1
Family Erebidae		
BUFF ERMINE	<i>Spilosoma lutea</i>	22 +
WHITE ERMINE	<i>Spilosoma lubricipeda</i>	5
COMMON FOOTMAN	<i>Eilema lurideola</i>	3
YELLOW-TAIL	<i>Euproctis similis</i>	1
GARDEN TIGER	<i>Arctia caja</i>	1
HERALD	<i>Scoliopteryx libatrix</i>	1
GOLD SPOT	<i>Plusia festucae</i>	2
SILVER Y	<i>Autographa gamma</i>	3
Family Hepialidae		
GHOST MOTH	<i>Hepialus humuli</i>	2
Family Crambidae		
SMALL MAGPIE	<i>Anania hortulata</i>	2
Family Drepanidae		
BUFF ARCHES	<i>Habrosyne pyritoides</i>	1



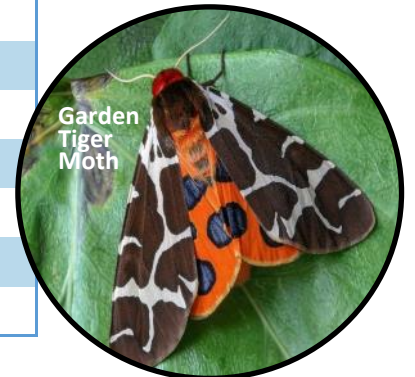
Brimstone Moth



Common Footman Moth



White ermine Moth



Garden Tiger Moth



If you visited Wyre Estuary Country Park in May or June you may have noticed these ghostly silken webs coating the hedgerows and trees. Ermine moths create these to keep their large numbers of caterpillars safe from predators. These webs and caterpillars are harmless and gradually disappear from the trees through the summer.

Marine Surveys (Creatures of the Bay)

Jean Wilson MBE explains the complex food webs of Morecambe Bay

Species should be considered as part of communities within an ecosystem. The interdependence of species within an ecosystem can be analysed by compiling a food web. It should be noted that the data collected during the BioBlitz provides only a snapshot of the potential biodiversity within the ecosystems surveyed; examples of limitations could be the season or time of day or the amount of time available for the surveys due to the tidal cycles.

Text book food webs begin with green plants, the producers, photosynthetic organisms that are able to build organic molecules such as glucose from carbon dioxide and water using the energy of sunlight. This is not generally the situation in the areas we surveyed as the majority of species are ultimately dependent on detritus (dead and decaying organic matter).

The origin of the large quantities of dissolved or suspended organic material which makes up the detritus is imported from the several rivers that flow into Morecambe Bay. When dead and decaying animals and plants fall into the river they become a rich source of food for species such as *Crangon crangon*, the Morecambe Bay shrimp which is a scavenger or *Cerastoderma edule*, the edible cockle which is a filter feeder. The organic

material also becomes embedded in the sediment on the sea floor. This source of nutrition is exploited by the bottom-dwelling species such as *Arenicola marina* (lugworm), a deposit feeder. The energy held within the bodies of species is transferred along the food chains which make up the food web, ending with the top consumers such as fish or seabirds.

Although the two food webs illustrated appear to be separate sites, they are in fact both part of the Wyre Channel. Perch Scar on the right bank of the Wyre Channel was surveyed using a Seine net at Low Water, the Wyre Channel was beam trawled in deeper waters.

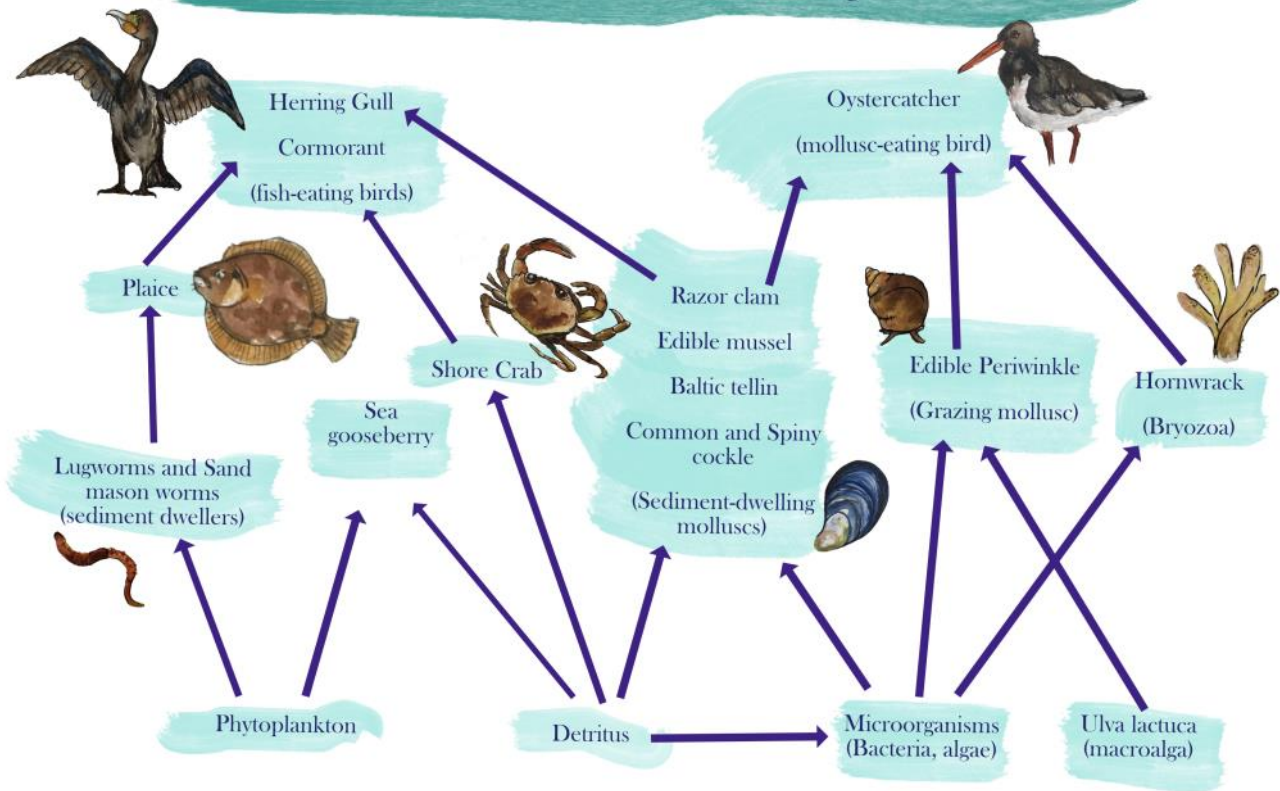
Therefore, both webs could be combined and this would add to the biodiversity and also increase complexity, but it would give a more realistic picture of the interactions between the species of the Wyre estuary.



Push nets, and Seine nets (above) were used to collect specimens at various points along the estuary.

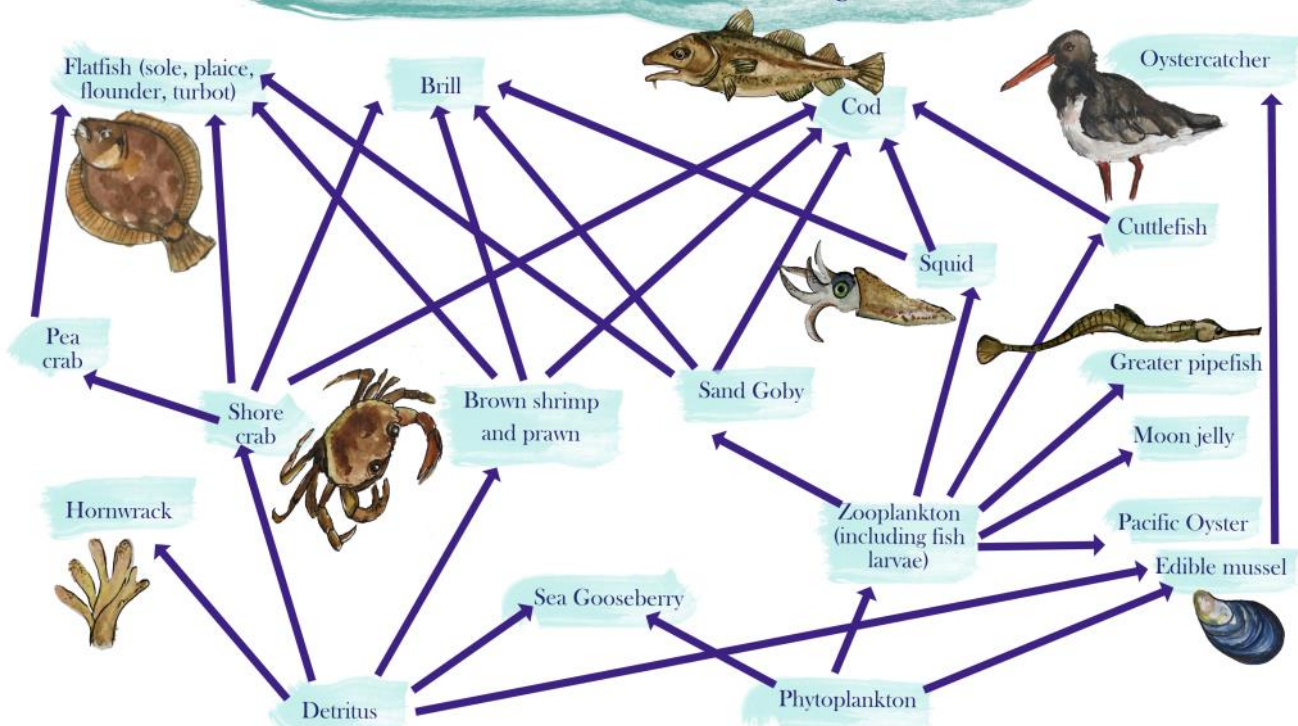
Food Web for Perch Scar

based on the data collected on 9th June 2021



Food Web for Wyre Channel

based on the data collected on 6th June 2021



Ecology for All



After the 2015 BioBlitz it was decided to trial a number of one day courses aimed at the volunteer recorders who wanted to improve their skill base. The courses were conducted at Knott End Beach and Fleetwood Sand Dunes and considered observation, use of keys, identification, use of GPS and recording. The courses were well-received and so the Royal Society of Biology North West committee and in particular Dr Alan Bedford, set about planning a series of one day courses to be held at the Wyre Estuary Country Park. The courses were to concentrate on invertebrates, with each of the days to be devoted to one specific Order or Sub-Phylum, for instance, Order Diptera...The Flies!

Our plans came to a halt when the COVID-19 pandemic struck. Undeterred and respecting the Government regulations, we employed a professional group of cameramen and set about creating film stars!! It was our answer to 'A Bug's Life'!! The stars, of course were the invertebrates! The videos cover methods

of collection, macro- and microscopy, macrophotography, anatomy, use of keys, recording results on local and national databases, the Order Diptera and the Order Coleoptera. The videos are available on the Royal Society of Biology website and YouTube.

There are more videos available which have been funded by the Wyre Coast and Countryside Service and include the Order Hemiptera (the bugs) and the Sub-Phylum Crustacea (arthropods).

There is, however, really no substitute for a hands-on experience and so our plans are to resurrect the initial idea of one day courses to be held at Wyre Estuary Country Park. The content of the courses will be more intense and critical in enabling attendees to be able to identify down to species level under the expert guidance of retired University lecturers and professionals in their field.

Jean Wilson, Royal Society of Biology





Every three years the Wyre Rivers Trust, Wyre Council and Royal Society of Biology collaborate with partners and volunteers to organize a wildlife recording event on the Wyre Estuary in Lancashire. With the help of the British Ecological Society, the 2021 BioBlitz was the biggest recording event to date in the Wyre catchment and resulted in a species list of over 800 animals, plants, fungi and algae. The event took place over a week, with 17 public survey events and many more surveys carried out by our expert recorders. Members of the public were able to work with experts in their field to help record the wildlife that is present in the Wyre estuary, whilst gaining an understanding of its ecology and appreciation of its importance in the wider area. Four school workshops surveying five different habitats also took place during the week.

This booklet details what was found as well as providing hints and tips for you to do your own wildlife recording in the Wyre catchment.

**Our next BioBlitz will be taking place in 2024.
We hope to see you then!**