



Started in 2016 as a competition between Los Angeles and San Francisco in the USA, the City Nature Challenge has grown into an international event with 450+ city-regions taking part in 2023. It motivates people around the world to find and document wildlife in and around their cities with more than 1.8 million wildlife records submitted across the globe over four days! It is run internationally by the Community Science teams at the California Academy of Sciences and locally by Smriti Safaya and her team at York university.

The RFS is one of many organisations around York which will be contributing to the York City Nature Challenge from 26 – 29th April 2024.

There are several ways in which you can take part – on your own or with family and friends – or by coming along to the RFS gazebo and joining other like-minded enthusiasts in hunting for interesting wildlife. There'll be some experts around to help you identify what you find, as well as some techy people to help you with the apps if you need it.

Saturday 27th April 1030 – 1430 All Saints Church car park, Huntington

Sunday 28th April 1030 – 1430 Earswick Village/
Haxby Weir riverside path

Monday 29th April 1030 – 1430 Lockkeepers Cottage,
New Earswick

You don't need to know much about the bugs or plants you find, just take a photo and submit it via iNaturalist – we'll help you do this too! If you don't use a smartphone, then anything which takes photos can be used – again we can help you transfer your photos to iNaturalist. (This is the way everyone proves what they've seen.) We've also got some apps and some experts to help identify what you find on the day.

So, spot an animal on your way to work or walking the hound? See an insect on a plant when you are out and about? Take a few photos and contribute to the mass of recordings of biodiversity all around you. Feel free to make your own observations of animals, plants and fungi where you live, work or play during those days, as well as join any one of the many events happening around York run by different community groups.

If you can identify what you see, so much the better,

Join the York City Nature Challenge 26 to 29 April, 2024

but the advantage of iNaturalist is that it is a crowd-sourced identification programme too, so in the days following the challenge, people from all over the country will be looking

at what has been seen and identifying it. Which means that if you don't know what it is you've found, then wait a while and someone will tell you!



Crayfish are among the animals seen in the Foss - this one was at Oulston

What are we looking for?

- WILD plants, animals, birds, fungi, lichen, etc.
- Evidence of organisms such as shells, tracks, scat, feathers, etc.
- Recorded sounds can be added, especially for hard-to-photograph animals.

Why participate?

- Learn more about the biodiversity of the river Foss – you'll be surprised how much there is.
- It's fun, free, and easy to participate!
- A great way to contribute to science.
- Inform conservation efforts and protect nature right where you live.

How to get started:

- Download the iNaturalist app from Google Play or Apple App Store.
- Create an account. Check your preferred settings.
- Turn on the phone location. Get out and observe!

No smartphone? No problem! You can use normal cameras and upload pictures to the website: www.inaturalist.org/

iNaturalist is an online social network of people sharing biodiversity information to help each other learn about nature. It's a crowdsourced species identification system and an organism recording tool.

Mike Gray

Did you know that the River Foss Society is on Facebook too?



Spring and early summer

APRIL

Sat 6 April 9.00 am Riverside Litter Pick. Meet at footbridge on Foss Islands Road. Please let Barry Thomas know if you are coming. Contact: Barry Thomas.

Sat 6 April 10.00 am Walk Huntington to Strensall (4 miles). Meet at All Saints Church car park. Return by foot or by bus. Refreshments at the Ship Inn. Please let Derek Chivers know if you are coming. Contact: Derek Chivers.

Wed 17 April 7.00 pm AGM preceded by a talk by Monika Smieja, Project Officer River Restoration. 'The Foss Green Corridor'. Contact: Michael Alexander.

Thurs 25 April 7.00 pm Pint 'n a Chat. Meet at Blacksmiths Arms, Huntington. All welcome. Contact: Christine Gray.

Fri 26 April to Mon 29th April York City Nature Challenge. See article on page 1. Various meeting places. Contact: Mike Gray, Barbara Hilton, Helen Button, Christine Gray.

MAY

Sun 5 May - Mon 6 May York Walls Festival - Bank Holiday Weekend. Contact: Mike Gray.

Thur 16 May 6.00 pm Walk Oulston and Pond Head circular (4 miles). Meet at Oulston Village Green. Refreshments afterwards at pub to be chosen during the walk! Please let Derek Chivers know if you are coming. Contact: Derek Chivers.

Thur 23 May 7.00 pm Pint 'n a Chat Meet at the Ship Inn, Strensall. All welcome. Contact: Christine Gray.

JUNE

June/Jul Our annual programme of balsam control. Various places along the river. Contact: Mike Gray.

Sat 1 June 10.00 Walk Coxwold and Husthwaite circular (5 miles) Meet outside Coxwold Church. Refreshments after at Fauconberg Arms. Please let Derek Chivers know if you are coming. Contact: Derek Chivers.

Sat 15 June 9.00 Riverside Litter Pick. Meet at footbridge on Foss Islands Road. Please let Barry Thomas know if you are coming. Contact: Barry Thomas.

Thur 27 June 7.00 pm Pint 'n a Chat Meet at the Masons Arms, Fishergate. All welcome. Contact: Christine Gray.

CONTACTS

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Notice Board

Help Needed ...

Don't forget our AGM and talk on 17 April. We will be electing a new Chairman as Michael Alexander is standing down. Monika Smieja, Project Officer River Restoration will be speaking on 'The Foss Green Corridor'. It will be an interesting evening.

York City Nature Challenge will be happening between April 26th and 29th and promises to be an interesting and informative event, as well as an excellent way of introducing everyone of any age to the flora and fauna of the Foss and its banks. There's more to be seen than you might imagine.

Calling all kayakers! A much more effective way of looking for water voles would be from a kayak. Can we find a few willing volunteers to go out and examine the banks closely for burrows or signs of grazing? That would be a real winner! If you fancy having a go and helping us improve our surveying capability, please let Mike Gray know on events@riverfossociety.co.uk. It would be a useful and fun first.

We need more River Monitors to keep an eye on a small area. All you have to do is write to us on rivermonitors@riverfossociety.co.uk

Don't forget our website:

www.riverfossociety.co.uk

On the Foss

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Getting to know our Foss wildlife

River Foss Society is lucky to have a pair of members who live overlooking the River Foss Basin. Peter Mills has been able to share some of his photos with us. There are quite a few photos, so you'll see others on pages 4 and 6 of this newsletter and over the next few issues. It's great to see how many species are active on the Foss.

The River Foss Basin lies 250m upstream of the Blue Bridge, immediately downstream of Castle Mills bridge and lock. Although this is pretty much the centre of the city, it is surprising how many birds and mammals visit the Basin.

We live right over and have a panoramic view of the Basin so tend to be observing it a lot. All of the following pictures were taken from our balcony.

COMMONLY SEEN BIRDS

Swans

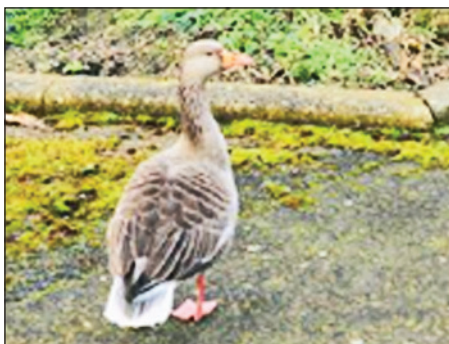
Mute swans are common visitors in winter and many years are resident while they raise their nestlings in



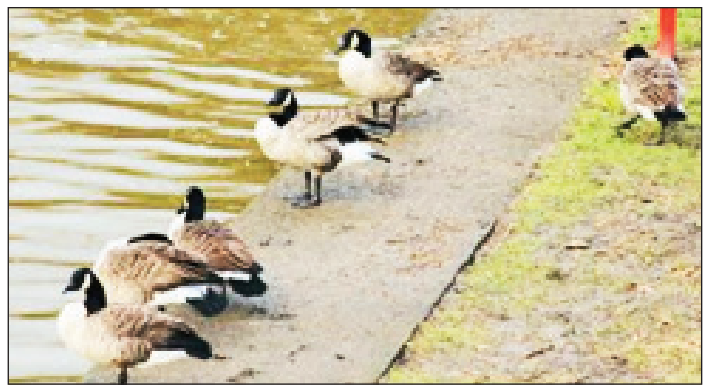
summer. They don't nest in the Basin but bring their young cygnets here to be raised, often with one riding on the pen's back. At this time the cob becomes very aggressive and will chase off other water birds, particularly other swans. For the past few years they have had a brood of five or six cygnets but have lost one before maturity. In autumn we have watched the parents instructing their fledglings how to fly, practising "bumps" of take-offs and landings when the wind is in the right direction.

Geese

Geese, both greylag and Canada, are common all year round visitors. They often sit on the edge of the lock island braying and honking at each



Greylag Goose



Canada Geese

other or passersby. In summer occasionally creches of geese and goslings come into the basin. They are the most social of water fowl.

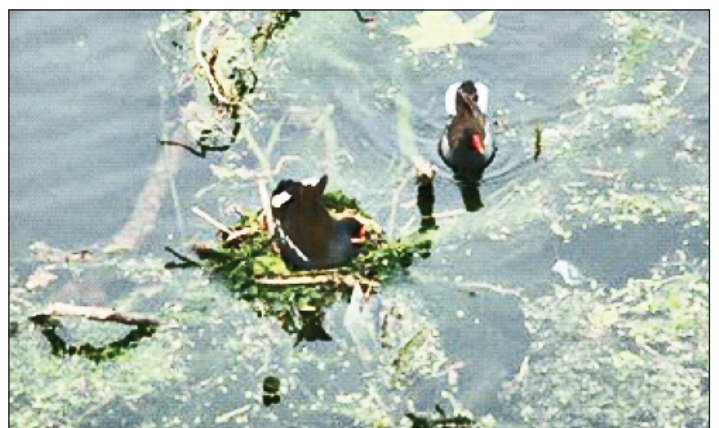
Mallard Ducks

Mallards are common visitors throughout the year and, when swans are not present, we have seen ducks raising their young in the Basin during the summer.



They can come into the Basin with up to 13 fluffy little ducklings but sadly many predators like a duckling for breakfast and their numbers dwindle every few days until only one or two are raised to be fledged.

Moorhens



Moorhens are quite common visitors, some have even tried to build nests on the flotsam that builds up in the Basin but the rafts are not stable enough and float off into the River Ouse when conditions are right.

Mayflies belong to the Order Ephemeroptera which, translated from Greek, basically means “living a day” describing the

short adult life Mayflies have, with most only living a day or two. The name ‘Mayfly’ is misleading, as different species can be seen throughout the year, although most are abundant in May and June. In May the adult Green Drake (*Ephemera danica*) is in flight, the biggest and longest-lived British Mayfly so it may be the source of the name. It’s found in the River Foss from the headwaters at Oulston down to Sheriff Hutton Bridge but downstream of this water quality deteriorates preventing them from surviving.

Mayflies were one of the first winged insects with fossils dating back over 300 million years, long before the Dinosaurs appeared. There are 51 Mayfly species in the British Isles, the adults ranging in size from 5mm to over 20mm.

Adult Mayflies time their emergence to coincide with the full moon, a timing which is vital considering their short opportunity to find a mate. Those living near bright lights might mistake a street lamp for the full moon and get their timing disastrously wrong. If all goes well, the females dance in a swarm whilst the males fly vertically up and down through it and it’s this behaviour that led to fishermen calling them ‘spinners’. The females descend to the water’s surface (some species entering the water), to lay around 8,000 eggs which slowly sink to the bottom and stick to plants or stones.

There are four stages in the Mayfly life-cycle – egg, nymph (young) and, uniquely, two adult winged stages, the sub-imago (sub-adult) and imago (adult). Depending on the species, the eggs hatch into nymphs after a few days or weeks on the bottom of a clean river, pond or lake. Nymphs then spend 1-3 years feeding on algae and other vegetable matter and undergoing 30-50 moults as they grow. Each family of Mayflies has evolved and adapted their nymphal body shape to best exploit their preferred habitat such as burrowed in silt (*Ephemera danica*); flattened on the top of stones in fast-moving water, (the Heptageniidae; or moving rapidly amongst plants, (*Baetis rhodani*, the Large Dark Olive), all found in the Foss.

After the nymphs’ final meal, the middle portion of their gut degenerates and forms a flotation device that

Marvellous Mayflies



Green Drake, (Ephemera danica). Photo: A. Polednicek, BioLab.

seconds, as the sexually immature sub-imago stage, known as ‘duns’ due to their dull yellow-brown colour and covering of unwettable hair on their bodies and fully-functioning wings. These sub-adult ‘duns’ fly to overhanging plants to shelter for a few hours whilst their sexual organs develop before moulting one



Large Dark Olive, Baetis rhodani. Photo: J. Kardacz, INPN.

final time to emerge as the sexually mature adult ‘spinners’ with crystalline wings and much longer tails than the nymph to join the mating dance over the water and start the cycle again.

Mayflies are an important part of the food chain both in and above the water and they are also good indicators of water quality but their numbers are decreasing. Many famous Trout and Salmon rivers no longer have millions of Mayflies dancing over the water in May and June, but instead only a few. Numerous reasons for this huge decline include water abstraction, which creates reduced water flow; pesticide and industrial pollution; increased siltation of rivers from agricultural land and septic tank overflows, which suffocate the riverbed and increase nutrient levels; and removal of bankside vegetation needed by the sub-adults to moult. Only Olives (*Baetidae*) are found at all bar two of the River Foss sites sampled so far as they are the most tolerant of pollution.

Barbara Hilton

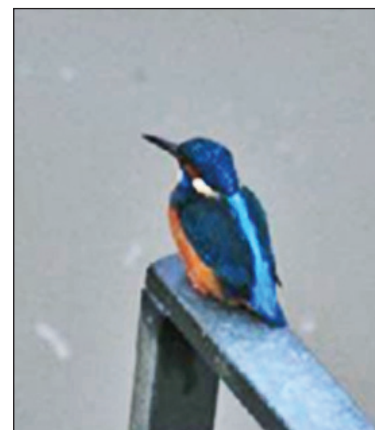


Flat-bodied stone clinger Heptageniidae. Photo: David Nicholls, Nature Spot.

More Foss wildlife ...

Kingfishers

Kingfishers are very common but, despite their iridescent orange and blue colour, are very hard to spot at rest. We normally notice them when in flight, straight like an arrow, then watch where they have landed. They are remarkably patient awaiting fish which usually results in a catch after a brief plunge.



Putting the Science in Citizen Science

ing activities over to citizen scientists (us!). One of the longest running examples of successful citizen science is the British Trust for Ornithology (BTO), cofounded by Max Nicholson in the 1930s to gather data from amateur birdwatchers, to be used by ornithologists.

The BTO had the advantage of being a single organisation which set the rules and gathered, held and treated the data. Move on 90 years and in the field of aquatic monitoring we have a myriad of local groups all using different methods in different ways to gather data which is generally not compatible and cannot be assimilated nationally or even regionally. As a result, bodies such as the EA and the many action groups that have sprung up, often cannot use the data available as a basis for legal or group action.

Fortunately, one of the results of all this publicity is that several university departments have started projects to improve citizen science and make it useable, and to hold malefactors to account. The RFS was invited to join one such group led by Dr John Wilkinson of the Department of Environment and Geography at York University. John's group is putting together a competitive bid for £1m funding over four years, which, if successful, aims to improve the status and effectiveness of citizen science using Yorkshire as a case study.

In brief, the aims are:

1. Monitoring: Seek out and prove affordable novel methods of monitoring pollutants, whether chemical or microbiological, which can be used by suitably trained citizen scientists.
2. Education: Work up appropriate training

Citizen science is not new, though it has gathered a lot of publicity lately – not least because the Environment Agency (EA) has been so starved of money by the government that it has been trying to pass a lot of its monitor-

programmes, and ensure that there are quality control procedures in place to make sure that data is robust.

3. Communication: Set up data hubs which will collect, evaluate and disseminate the information gathered.
4. Policy and Lobbying: Create a network to ensure that problems are highlighted and allow issues of concern to be brought to the attention of regulatory and licensing bodies, and ultimately to persuade government to take action in areas of concern.



River Foss Society operates a regular programme of water testing on the river



Another regular activity is scientific kick testing of river water

An example of new technology that will aid us in monitoring the river, is adapting the lateral flow kits which used to be so familiar to measure caffeine. As you might imagine, sewage contains a fair bit of caffeine, but pretty much any sewage treatment process removes it, so if it is present in the river, there is raw sewage getting in. As well as highlighting the (often legal) failings of water treatment companies, this would be useful in hunting down faulty or poorly maintained septic tanks.

Rapid and relatively cheap methods of estimating the bacterial load of river water are also starting to appear, and some prototypes were used by several of our members as part of the work to build the bid for funding.

It's not too fanciful to imagine (affordable) solar powered floats carrying several hi-tech miniaturised sensors, many of which are at an advanced stage of development, giving continuous read-outs via a wireless connection. This would allow us to follow the trends of phosphate, nitrate, ammonia, sediment, dissolved solids and maybe even some pharmaceuticals. This would allow real-time data to be gathered at several points along the river and so allow us to work out exactly where any pollution is entering the watercourse.

All this is already happening, but perhaps the most difficult part of the process will be items 3 and 4 above where the information gathered is collated and used to make real changes. That will take some doing in the face of government indifference and commercial resistance from polluters.

Mike Gray

Professor Stephen Levett, a lawyer, leads a module on the climate crisis at the University of York. In this module he gets his students, working together as groups, to think how they can influence “issues” at a national level; he thought the mismanagement of rivers would be a topical study. He believes that the River Foss is ideal for a case study as it is short, lying in one county and having an active society knowledgeable about the problems it faces.

With this in mind he invited the River Foss Society – the aforementioned active society – to be represented at a Global Day of Action in November last year where his students would be connected by Zoom to a number of activists from various parts of the country and the world. Roger Button, Peter and Lynette Mills represented the RFS; Lynette presented a summary of RFS activities to the meeting. During the talk an interesting concept emerged: of rivers having legal rights equivalent to that of a human being. There are rivers in New Zealand, Canada and India that have been given these rights.

After this seminar Professor Levett asked if a meeting between his students and the RFS could be organised to learn more about the River Foss and to further explore the possibilities of identifying areas where his students could possibly help. This was duly arranged in February between Alastair Fitter, Mike Gray, Peter and Lynette Mills representing the RFS and 12 students (three groups).

Alastair and Mike discussed the problems facing the Foss while Peter gave a slide show showing some of the

bird and animal life in the Foss we love to see and pollution, litter and a mass die-off of fish we don't want to see. The students are now considering their projects and will further liaise with the RFS when their topics have been chosen. Additionally Lynette provided some guidance to the students about who they could engage with for their project, ranging from local authorities to national governing bodies.

An offshoot of the initial meeting with Professor Levett was that he put us in contact with Kate Harper, Community Engaged Learning Manager (ESAY Sustainability Clinic) at York University. Mike Gray, Peter and Lynette Mills met up with her in January. She wanted some background on the River Foss and

also ideas as how her students can be given a project that will highlight some of the problems facing the RFS. Mike Gray suggested one of the ways which might bring more exposure and maybe positive changes was in the education system, e.g. visiting schools and talking to children about various ways they could help with improving their local river. Kate's project will only take place in September this year and hopefully she will come back to us later on to discuss it in more detail.

So a small brief about the River Foss has expanded into two interesting projects working with York University. This is quite exciting from many points of view as it involves a large number of people coming from different angles and hopefully in the end something amazing might happen.

Lynette Mills

Looking Forward



What we do not want to see on the Foss – this grey heron was swamped with rubbish and pollution

More Foss wildlife ...

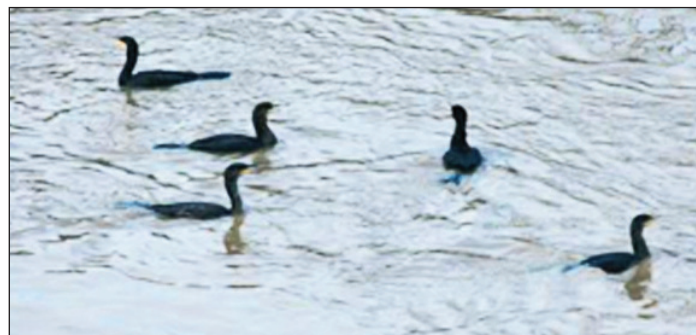
Gulls and Herons (no pictures)

Black headed gulls are very common in the winter as are herring gulls and common gulls in the summer. Lesser black-backed gulls are less frequent visitors. About once a year for a couple of weeks a grey heron will come visiting. It will stand very patiently, completely still, staring down into the water until its prey is within striking distance.

OCCASIONAL VISITING BIRDS

Cormorant

We usually see one or two cormorant for a few days each winter but this year has been exceptional with up to five visiting multiple times each day. They appear



to particularly like the Basin when the flood barrier is down which it has been a lot this past winter. These diving birds are very good at catching fish; one time I was observing them four out of five dives were successful. Having these birds visiting the Basin throughout the winter attests to the quantity of fish in the Basin.