

NORTH YORK MOORS MICROSCOPY WEEKEND

The Club, in association with the North Yorks Moors National Park, is running a microscopy weekend in the North York Moors from Friday 12th to Monday 14th July 2019. This builds on the successful meeting in 2016, and we hope it will be well supported.

The North York Moors National Park is one of Britain's outstanding areas for recreation and study, from low dale to high heathland moor, from shady forest to dramatic coast. From the Great Yorkshire Forest at Dalby, ancient wildwoods at Garbutt to the miles of dramatic coastline from Saltburn-by-Sea to Robin Hood's Bay, there is something to interest everyone.

The microscopy weekend will be based at the **North York Moors National Park Centre**, and participants will have the opportunity to study two sites over the weekend, one freshwater and one marine. Depending on numbers (and transport) the group may divide so more than one freshwater site can be covered on the Saturday. The marine site is on the coast at Runswick Bay. Alternatively, members may wish to focus on just one site for both days.

The two study days will be led by Jonathan Green (Education Officer at the National Park Centre), Oliver Mackrill (Yorkshire Wildlife Trust's Peatland Restoration Team Leader), and Jane Pottas (Whitby Naturalists Club). Jonathan has great experience of the area and is familiar with the freshwater sites which may almost be guaranteed to furnish an abundance of interesting subjects, Ollie is intimately involved with management and restoration of peat bogs, including Fen Bog, and Jane is an acknowledged expert on the algae of the north-east coast.

Study sites

Most of the water in the north of the Park flows into the River Esk which has its source high up on the moors above Westerdale and flows east to join the sea at Whitby. The Esk is the only river in Yorkshire that has a population of freshwater pearl mussels (*Margaritifera margaritifera*). Freshwater mussel populations are declining both nationally and internationally, and the Esk pearl mussels are on the verge of extinction. The National Park Authority, working alongside Natural England and the Freshwater Biological Association, is supporting work on the Esk to improve habitat for the threatened freshwater pearl mussel and salmon populations. Tributaries of the Esk, including the Murk Esk and Eller Beck, are well known for their invertebrate populations.

Visits to any of **three moorland sites** may be possible

- Darnholm, on the Eller Beck,
- Clither Beck, within walking distance of the Moors Centre,
- Fen Bog Nature Reserve, an area of valley mire, wet heath and moorland about 15 miles upstream from Danby. Fen Bog is managed by the Yorkshire Wildlife Trust.

The sites' locations are shown on the interactive map (see Accommodation, below).



All sites have some parking, little walking is required, though members can go 'off piste' if they wish. Which sites are visited will depend on numbers, availability of transport and expertise. We will probably visit one (possibly two) sites, agreed by consensus.

The second, seashore, site is at **Runswick Bay**. This unique village is an important attraction because of its rocky shore, geological interest and cultural heritage. This part of the coast is within:

- the North York Moors National Park
- the North Yorkshire and Cleveland Heritage Coast

Runswick Bay is a Site of Special Scientific Interest (SSSI) for its geology, North York Moors Special Protection Area and was designated a Marine Conservation Zone (MCZ) in 2016, as well being part of the Heritage Coast. The wave-cut platform of mudstone provides rock pools at low tide and a rich and varied lower shore community, including *Fucus serratus* and *Laminaria digitata* biotopes on bedrock and boulders. The presence of the relatively stable medium and large boulders provides additional habitats beneath and between them for a wide variety of animal



groups including sponges, anemones, bryozoans, crabs and shore fishes. The coastal cliffs and rocky shore also form one of Britain's classic localities for geological study. Here there is a sequence of Lower Jurassic rocks in which a variety of ammonite fossils has been found, now used as 'index species' for dating Jurassic rock formations elsewhere in Europe. Other valuable fossils have also been found here including ichthyosaurs and crocodiles, some of which can be seen in Whitby Museum. Of interest to microscopists will be zooplankton; phytoplankton including diatoms; forams; the cellular structure of the macroalgae from the leafy foliage of sea lettuce and laver to the spiny *Ceramium*s and the siphons of *Polysiphonia*; to the gametes of reproductive fucoids and much, much more!

The Moors Centre, Danby



The Centre is the main visitor and educational hub of the Park. A large room/lecture theatre has been organised for sole use of Club members from Friday afternoon until noon on Monday 14th July. The room has good benching, power and water. It is secure and will be locked when

members are not present, so microscopes can be left set up overnight if required. Small items (trays, nets, lamps etc. are also available).

Timetable

Members should aim to arrive at Danby between 3.00 and 5.00 p.m. on Friday July 12th. On the Saturday, we will go to the fresh water site(s), leaving the Centre at 9.30 a.m. Those wishing to spend the Saturday at Runswick will need to make their own travel arrangements. We will return to the Centre at about 1.00 p.m., and the afternoon can then be spent studying the morning's finds. On the Sunday, similar arrangements will apply in respect of Runswick Bay. The Centre has told us that the room is required for other groups on the Monday (15th) so we need to be away on the Sunday evening by 6.00 p.m.

Lunches/snacks may be obtained at the Centre (though the café may be busy), at Lealholm, Glaisdale and Runswick Bay.

Social programme

Spouses, friends and other accompanying persons may wish to visit nearby locations rather than watch the scientific investigations. There are too many possibilities to list. If there is sufficient demand (see booking form) we will organise a dinner at the Mallyan Spout Hotel, Goathland for the Saturday evening.

Accommodation

The Centre does not have overnight accommodation, but there are many venues in and around the National Park offering excellent accommodation on a bed & breakfast, or dinner, bed & breakfast basis, at a range of prices. However, since North Yorkshire is a prime tourist destination, early booking is vital to be sure of a place. A number of venues have been identified and more details are available from individual places via the interactive map at <https://www.google.com/maps/d/edit?mid=zN2Dmg1r6OX4.kmULmJxpsHT8&usp=sharing>.

Places pointed are all potential good choices. Intending participants are advised to book as early as possible.

Meals

Lunches and snacks may be purchased at or near the study sites, or at the Centre. Breakfasts will be part of individuals' accommodation. Dinner will depend on the accommodation arrangements: however, it is anticipated that a group dinner will be held on the Saturday evening, probably at the Mallyan Spout Hotel in Goathland, though this has yet to be confirmed.

Costs

The Committee has agreed to cover the costs to participants of the Moors Centre and room hire so those attending will need to pay just their own travel, meals, and accommodation.

Contact and Booking

For accommodation, please contact individual venues. For booking, please download the [booking form](#). For other queries, please contact Peter Wyn-Jones yorkshire@quekett.org, or via the [Club website programme page](#), or telephone 01347 868 558.