



CHARLES RANGEL-WILSON

What do trout eat?

By Denise Ashton

One of the central skills of fishing for trout is to understand what they eat. If you find a feeding fish, you are a good way down the road to catching it. Dry and 'damp' fly anglers know that trout eat flies on and in the surface. Nymph anglers know they eat invertebrates below the surface and especially close to the river-bed. Streamer anglers know they eat small fish, leeches and might (if you are lucky) aggressively attack something that looks like nothing they will have ever eaten. The trout fishing calendar is full of iconic (sometimes seemingly mythical) trout feeding events starting with LDOs (large dark olives) and March browns, mayfly time, BWO (blue winged olive) spinner

falls, flying ants and daddy long legs. As a fully paid-up member of the trout fan club, I think the variability of trout diet and feeding behaviours is yet more evidence of their remarkable adaptability. This article is a short summary of that huge variation in diet and behaviour of river resident trout. An article on feeding habits in lakes and in the sea is for another newsletter.

Aquatic invertebrates

We'll start with the obvious - aquatic invertebrates, the staple diet of many trout and most fly anglers' fly boxes. The various upwing flies, caddis flies, midges, stoneflies etc are commonly eaten by trout on the river-bed, in

the water column, and either in or on the surface film as failed hatches or adults. Some important food items such as *Gammarus* live on the river-bed all their lives; many more hatch into flying insects. How much of the trout's diet is from the surface and how much sub surface? A widely accepted generalisation is that trout mainly feed below the surface. Peter Hayes and Don Stazicker, in their e-book 'Trout and Flies - Getting Closer' do their best to debunk the mythology (or 'woozle effect' whereby repetition of information not based on evidence becomes accepted as 'true') - but still conclude that in most places, most of the time, most trout seem to get most of their food from below the surface.

Terrestrials

However, in some habitats (particularly those poor in nutrients), terrestrial prey landing on the water

surface can contribute 50-90% of trout diets during summer. Research using stable isotopes, which tracks the flow of energy through the food web, shows that almost all trout everywhere are at least 50% terrestrial in biomass composition.

Terrestrial prey tend to be bigger than aquatic invertebrates - earthworms, daddies, moths, grasshoppers - so perhaps it is not surprising that trout get fat on these food items. Trees and shrubs on the river bank provide more insects than grassland. Another example of trees on river banks being good for trout.

The ecological term for this supply of nutrient from outside the aquatic realm is *allochthonous* - as opposed to *autochthonous*, nutrient supplied from within the river. Another good (and easier to pronounce) term is 'subsidy'. The aquatic food web is subsidised by food webs in the riparian zone. That's everything from a maggoty dead sheep in the river to an aphid falling from a sycamore leaf. Which leads us to the Allen Paradox.

A study by Allen (1951) showed that the aquatic invertebrate production in the Horokiwi stream in New Zealand appeared to be insufficient to sustain its brown trout population. There were more



A rather greedy trout, apparently choked on its prey

trout in the river than the available food would suggest was possible. This is the Allen Paradox. Hunt (1975) suggested that it is extra food provided by terrestrial invertebrates that explains the paradox. Ergo, more trees on the river bank might mean more, perhaps bigger, trout.

Piscivory

What about fish eating trout in rivers? The received wisdom (more wozzles?) seems to be that once fish get over a certain size, they become piscivorous. What trout eat is partly a function of their 'gape' - what they can get into their mouths, so it stands to reason that bigger fish are able to eat bigger prey. And if they eat bigger prey, they can grow

larger. This can be true, but not all large trout are piscivorous all the time. They may be opportunistic and feed on fry when they are easily available, but on invertebrates most of the time. Huge numbers of small prey can lead to bigger trout too. The trout in the River Laxa Myvatynssveit in Iceland swim in fly soup for three months of the year, eating tiny blackflies (*Simuliidae*) and midges (*Chironomidae*), plus the occasional terrestrial. They regularly reach 7 to 10lbs.

Other food

Examples of other sources of food that allow trout to grow large include mice (the fabled 'mouse years' in New Zealand where plagues of mice are a feast for trout) and, less spectacularly, signal crayfish. The huge numbers of this invasive crayfish in some of our rivers can provide a protein boost and result in surprisingly large trout.

Members who have been reading these newsletter articles about trout will spot a theme here. The answer to most questions about trout is not simple because they are remarkably adaptable, live in a very wide range of habitats and can eat a very wide range of things. The answer to questions about trout is very often 'it depends'.

A little 'stocking filler' book from the WTT

In the Spring 2021 newsletter, we asked members to write some 'very short stories' about their wildlife experiences whilst fishing. The response was tremendous, and we have now published them in a 'little book' along with lots of bite sized facts about wildlife and trout. The book is called 'Not Really Fishing - A Little Book of Riverside Moments'.

If this little book is successful, we may produce another volume for Christmas next year. If you feel inspired to write a short story of 160 words or so, please send to Denise Ashton dashton@wildtrout.org.

Copies of the book are available now to buy from the WTT website shop or from Amazon. (We make more profit from sales via the web shop, whilst our stocks last).

The price is £5.99 plus £1.60 postage if ordered via our website. Profits will go to support our work in making river habitat better for fish and all wildlife.

Please share widely, and order in bulk to give to friends or sell at your fishing club AGM!

Not Really Fishing

A little book of riverside moments



Edited by Denise Ashton and Theo Pike