

# Are we killing the sea trout that lay the golden eggs?

Paul Kenyon explores the size of trout and the role of sea trout in Devon rivers using some historic data



The actor Sir Michael Hordern learned to fly-fish when his parents moved to Dartmoor in 1925. By the time he wrote his autobiography in 1994, anglers' aspirations had changed: *Actually catching the fish used to be of secondary interest, what really mattered being the expertise required in presenting exactly the right fly to the fish. These days an enormous amount of people have taken up fishing as a sport and all they seem to want to do is catch the biggest fish possible.*

To fulfil this need for big trout, many rivers were stocked with hatchery reared trout. The Devonshire Avon has a self-sustaining head of wild resident (brown) trout, but yearly supplementary re-stocking of 1,000 to 1,600 trout was carried out from 1949 to 1962. However, the results from a study in 1962 were disappointing. The Devon River Board released 490 tagged 8 inch (20 cm) farmed trout: 32 anglers reported catching 457 trout of which only 12 were tagged fish, and none of the remainder were captured in electro-fishing surveys that year. The Avon does have larger fish - sea trout - but the majority are caught at night, and for this reason: they are less popular with anglers. However, a new generation is discovering that sea trout can be caught on dry flies and nymphs during the day.

Figure 1 shows the numbers of trout of various sizes

caught by anglers on a West Country river in the period 2000-2006. Most of the trout were less than 8 inches (20 cm) long, relatively few trout of 10 inches (25 cm) or longer were caught, and hardly any fish of 13 inches (33 cm) or longer were taken.

Two questions spring to mind. Why were so few big fish caught? Are bigger fish 'older and wiser', and therefore less likely to be caught by anglers?

Figure 2 shows the number of trout in the range from 1 (2.5 cm) to 17 inches (43 cm). The data comes from electro-fishing surveys on the Devonshire Avon which were carried out between stop nets at nine locations from July to October 1962. The answer to the first question is straightforward; there are more fish under than over 8 inches (20 cm) in the river. Our resident trout are about three years old and around 8 inches long when they spawn for the first time. It makes sense to carefully return all small fish so that they have an opportunity to reproduce.

The larger 12 (30 cm) to 14 (36 cm) inch fish, are older; these fish have taken six years or more to reach that length. Are older fish 'wiser'? The older fish are certainly survivors. Figure 3 shows that out of 1,000 eggs shed by a female trout, only two will survive to their fourth birthday (from R Watson *The Trout: A Fisherman's Natural History*.1993.). Mortality is

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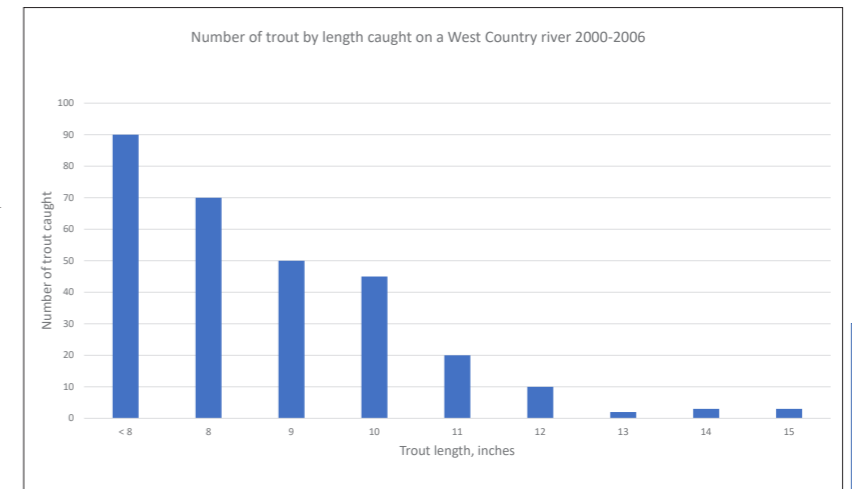


FIGURE 1

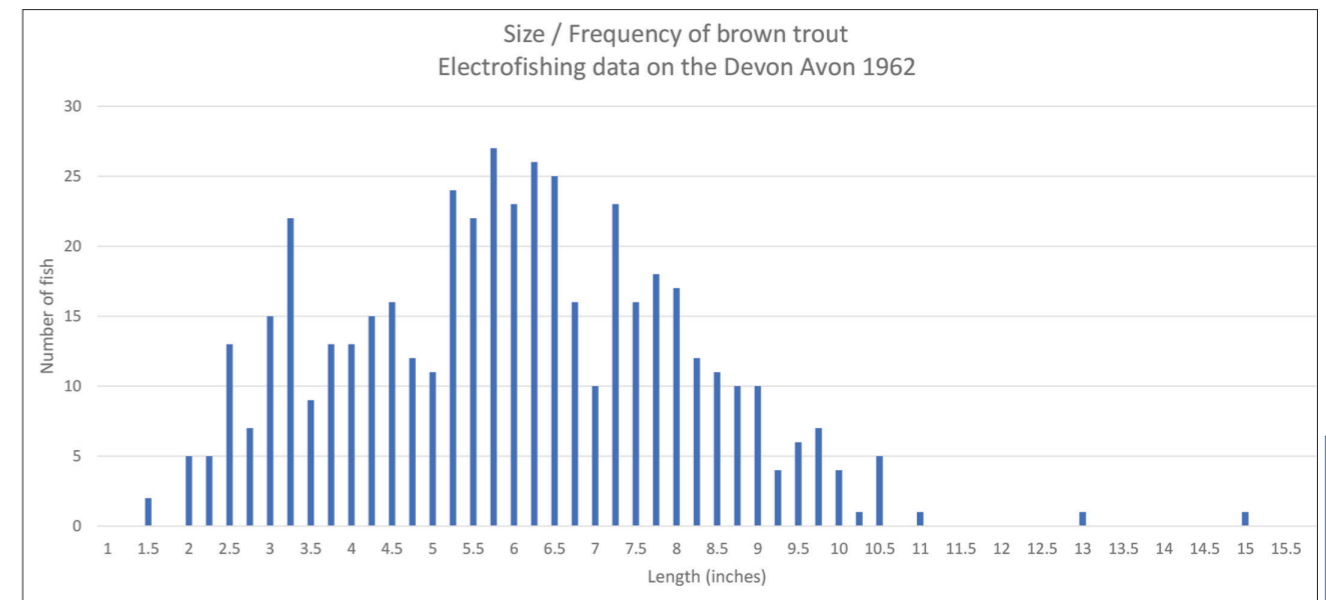


FIGURE 2

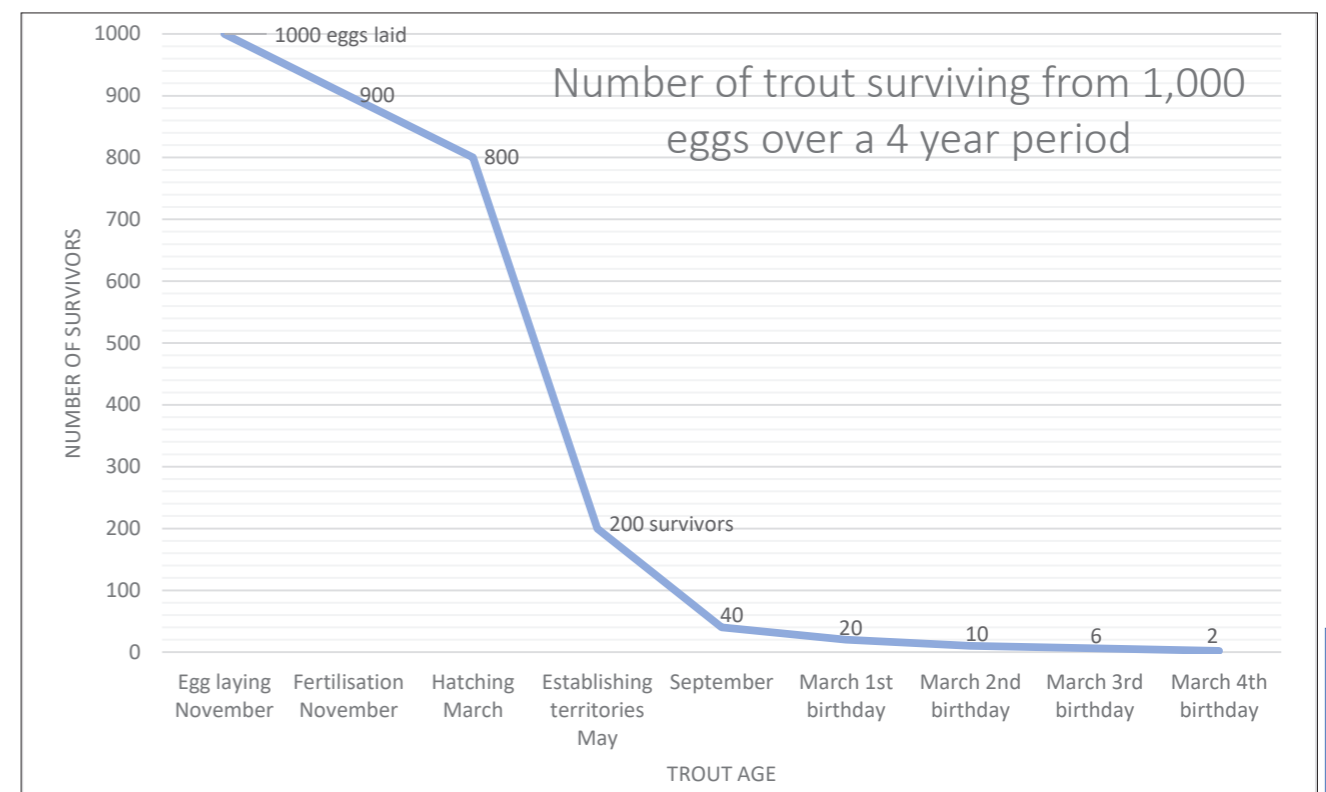
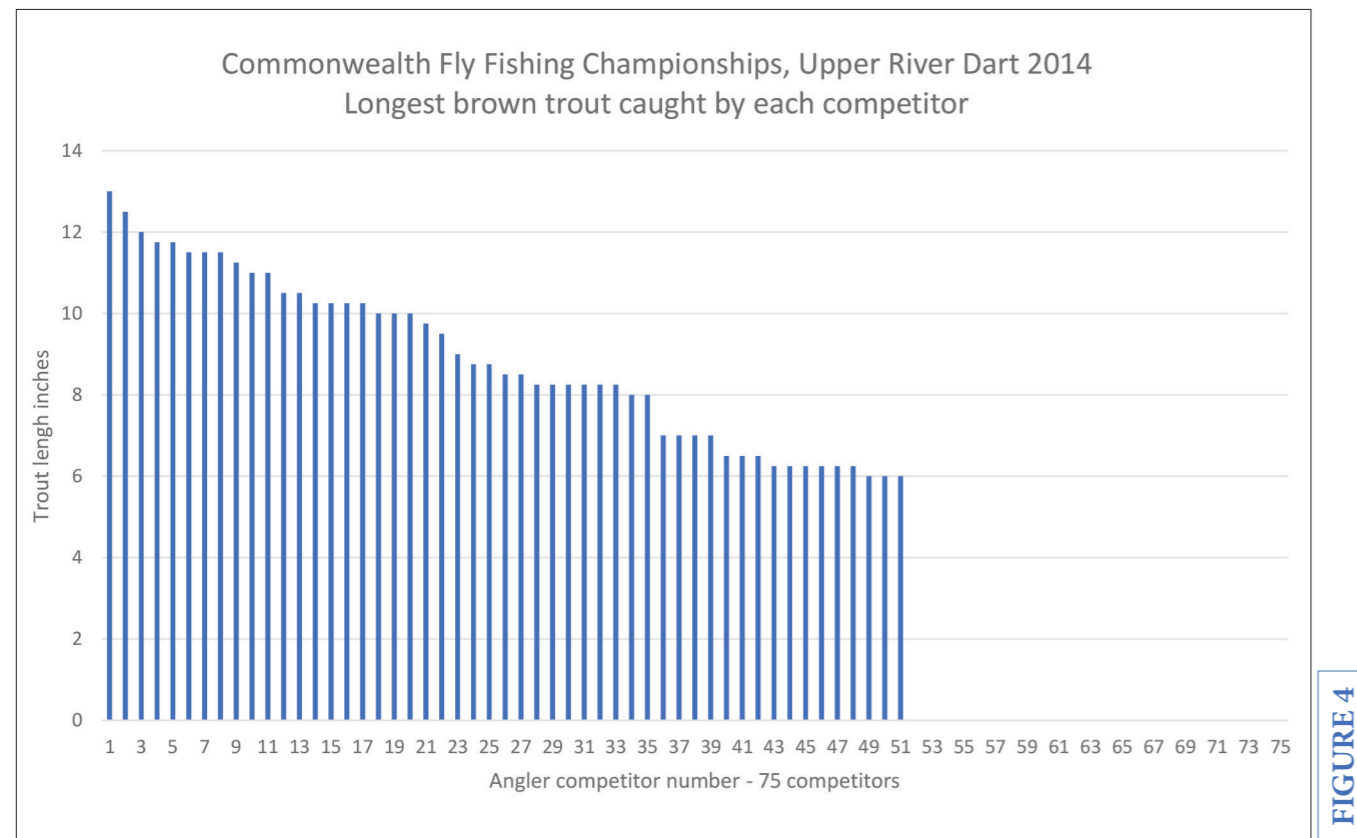


FIGURE 3



especially high in the period between hatching from the egg to establishing a territory with only 20 fish from 1,000 eggs reaching their first birthday.

Are larger surviving fish necessarily ‘smarter’ and more difficult to catch than smaller younger fish? They are likely to be better at avoiding predators and may be more easily ‘scared’ by unfamiliar shadows, sights and vibrations than non-survivors. Trout have evolved to deal with their natural enemies, not necessarily angler’s flies. Provided you can present an appropriate fly in such a way that you do not scare the fish, there is no reason why you should not be successful.

How do you catch the bigger fish? The electro-fishing survey (Figure 2) shows that there are simply fewer bigger resident trout. The more fish you can catch then the greater the chance that one of them will be big. Or you can target bigger fish based by understanding of where they live and how they behave (see Paul Procter’s article in *Salmo Trutta* Volume 24, 2021)

There is a well-known saying that ‘10% of the anglers catch 90% of the fish’. In June 2014, Dartmoor was the venue for the Commonwealth Fly Fishing Competition. Seventy-five experienced anglers representing nine countries each fished the East or West Dart for three hours.

Even experienced anglers find Dartmoor challenging. Nearly a third (32%) of competitors failed to catch any fish that qualified under FIPS-Mouche competition rules.

Figure 4 shows the size of fish that the competition anglers caught and demonstrates that the rivers on Dartmoor are home to relatively small fish. Bigger fish are present; two 13 inch (33 cm) fish were caught, and a further 18 fish over 10 inches (25 cm) were taken across the three days of competition.

The American author John Gierach has a refreshing approach to the increasing tendency to equate fishing quality with the size of the fish caught. He makes this suggestion: ‘Let me introduce an idea, just something to kick around. Maybe your stature as a fly fisherman isn’t determined by how big a trout you catch, but by how small a trout you can catch without being disappointed. And of course without losing the faith that there’s a bigger trout in there’.

In south Devon, the bigger fish tend to be sea trout. They are difficult, but not impossible, to catch in daylight using the same methods that catch resident trout. It has taken a long time to appreciate that sea trout can provide an important element in the wild trout daytime fly-fishing experience. ►



## The importance of sea trout for trout populations

It is now accepted that sea trout and river resident (brown) trout are the same species, *Salmo trutta*, although it was not always so. Writing in 1948 about attitudes held by Devonshire anglers, Jeffery Bluett reported ‘There were for many years two distinct schools of thought - one claimed that the sea trout was a distinct species, and the other held that it was simply a variant of the brown trout’. This belief had an unfortunate consequence.

In the first half of the last century some anglers viewed large trout as a piscivorous pest that should be removed. These so-called ‘cannibals’ were probably sea trout.

The 2020 Tweed Foundation quiz highlighted the difficulty distinguishing between resident trout and sea trout. After they have spent time back in the river they lose their silvery appearance and look very like resident trout, only bigger. Timing does not help either, as arrival and return-to-sea dates for sea trout vary. Some arrive in April or May and can return to sea shortly after spawning. The majority may overwinter in freshwater and return to sea in March and April. A few may stay in the river until May.

Joyce (1948) described a 27 inch (69 cm), 7.25 lb (3.3 kg) trout removed as a ‘cannibal’ from a South Devon river in these terms: ‘Placing the value of live (farmed) trout at five pounds per hundred, calculate what it cost to produce this creature.’ Removal of ‘cannibals’ up to 4lbs (1.8 kg) in weight in the weeks before the river was re-stocked resumed on the Devonshire Avon in 1947. In addition, a venerable local angler blamed the perceived decline in resident trout numbers on an increase in sea trout that over-cut resident trout redds.

However, recent research shows the importance of sea trout for the health of our trout populations. In a ground-breaking study of trout genetics, Goodwin et al. (2016) examined the reproductive success of 78 female resident trout, and 18 female sea trout. They found that 76% of juvenile trout (fry) were the offspring of just 6 of these female sea trout. This raises the possibility that a small number of female sea trout may play a crucial role in maintaining the stock of resident and sea trout in a river. There is a stark message from the research: Any female sea trout removed from a river might be one of the small group that is responsible for the majority ►

of trout in that river. Of course, this research needs to be replicated and extended to check that the conclusions apply to other rivers. But for the moment it would be wise to adopt the 'precautionary principle' and encourage catch and release for sea trout as well as resident trout.

Sea trout do not inevitably die after spawning; around 75% return to sea and may return to spawn again. The Devonshire Avon held an interesting record in 1996: 'a 15 lb (6.8 kg) fish from the Avon (Devon) spawned eight times ... this appears to be the greatest number of repeat spawnings recorded for English ... sea trout.' (Harris & Morgan 1996). The impact of removing a sea trout may be particularly detrimental if she is a potential repeat spawner. In the past, Devon anglers have been more willing to release resident brown trout than sea trout. In a local association, from 2005 to 2021 anglers released an average of 98% of the brown trout they caught, but only 68% of the sea trout.

This is not unique to Devon. It has proved difficult to persuade some anglers to return sea trout on other rivers. For example, in 2006 the River Annan Trust 'asked for all sea trout to be returned through a voluntary code of practice but unfortunately not all anglers and proprietors abided by this'. The Trust then asked anglers to return all fish over 3lb (1.4 kg) and retain no more than two fish per day. Not surprisingly the latter may have encouraged anglers to take a brace of fish per visit - not the desired outcome!

## Perhaps if more brown trout anglers were introduced to ways of catching sea trout during the day on dry flies and nymphs it would be in their interest to champion sea trout as well as brown trout conservation



It is interesting that none of those in favour of the proposal to introduce compulsory catch and release of sea trout did so because of the benefit this would have for resident trout numbers.

In my opinion, there is a lack of joined-up thinking between conservation measures introduced to protect resident and migratory trout. This is not the place to explore the causes in detail, but the taxonomic relationship - this genetic 'golden thread' - that connects sea and resident trout may not be widely understood by anglers. This artificial separation is reinforced, especially for new anglers, by having different licences for resident trout and sea trout in England and Wales, as well as the legal obligation to submit catch returns for sea trout, but not for resident trout.

Perhaps if more brown trout anglers were introduced to ways of catching sea trout during the day on dry flies and nymphs it would be in their interest to champion sea trout as well as brown trout conservation.

One 19th century local author is worth revisiting because his fly-fishing techniques were developed for conditions in Devon rivers that are very different from those on chalk streams. Originally described in a long-forgotten book published in 1847, they found a new lease of life when they were independently rediscovered and used for fly-fishing for sea trout in daylight.

In 1847 G.W. Soltau published *Trout Flies of Devon and Cornwall and How and When to Use Them*, which describes the methods he developed on rivers around Plymouth, including the River Yealm.

He cast upstream with two flies, a dry fly above a wet fly, in an arrangement now reinvented and referred to by various names: Dry-Dropper, 'Klink and Dink', Duo Method, or New Zealand style.

Soltau also moved his dry fly to mimic the behaviour of the natural insect on the surface. The importance of dry fly movement was rediscovered by the once controversial, now celebrated, American fly-fishing author Leonard M. Wright in the 1970s. Soltau's approach was passed on locally through word of mouth.

Soltau's Dry-Dropper technique is ideally suited for catching resident brown trout as well as sea trout during the day on south Devon rivers.

Consider this advice on catching sea trout during the day from Roy Buckingham, chief instructor from 1969 to 2008 at the Arundell Arms in Lifton, Devon, when



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it was run by Anne and Conrad Voss Bark: 'If you do not like going out at night it is perfectly possible to catch sea trout during the day. Sometimes you will see them feeding on surface flies, but they can be taken on dry fly even when you do not see any rising. It is always a great advantage if you can see the fish, because if a dry fly is cast well upstream and allowed to drift over the fish, I have found this much less effective than casting into the sea trout's window of vision, which can sometimes create an immediate response.'

Buckingham continues with another piece of advice strictly at odds with the Halfordian maxim to avoid drag when casting a dry fly to trout on a chalk stream: 'If after two or three casts the fly is refused, cast a little further upstream and retrieve the line a little faster than the current to create a wake on the surface. This will often produce a fish when all else fails'.

To catch sea trout in the daytime, Buckingham also used small weighted wet flies or nymphs, cast upstream or up and across, allowed to sink before retrieving slightly faster than the current, or using the induced take method if there was little or no current.

A new generation of fly-fishing guides and expert anglers, including Nick Hart and Pete Tyjas, are discovering for themselves that sea trout can be caught

during the day on Devon rivers. Their techniques: Dry-Dropper, inducing a sub-surface take, and twitching a dry fly would have been familiar to Soltau in 1847.

In each of the years 1948 and 2021, a 7.25 lb (3.3 kg) trout was caught and killed on a south Devon river; the only difference being that the 1948 trout was described as a 'cannibal'. At the start of this article, I posed the question 'Are we still killing the sea trout that lays the golden eggs?'. It is certainly happening less often now than in the past. However, there is still a need for increased awareness of the effects of killing large sea trout on the adaptive fitness and populations of wild *Salmo trutta*. If the egotism alluded to by Sir Michael Hordern persists, legislation may be necessary □

NOTES: This article is based on *The Heuristic Trout*, a collection of essays available online at [www.flyfishingdevon.co.uk](http://www.flyfishingdevon.co.uk). A reprint of G.W. Soltau's seminal book *Trout Flies of Devon and Cornwall and How and When to Use Them* is due for publication by the Medlar Press in 2022.

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