



# THE *Tweed* FOUNDATION

*A Tweed Foundation Paper*

## 3 THE FISHES OF THE TWEED AND THE EYE

### C.1:

### Baggie *Phoxinus phoxinus* Minnow (also called Streamers)

*“....wiggling his way upfield, like a Baggie up a Border burn”*

Bill MacLaren recalling commentating on Robert Howley, the Wales scrum-half. *The Observer Sports Monthly, March 2002*



*Photo C.1.1 : A Baggie / Minnow in normal colouration*

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Charity No. SC011055

A charitable trust established by the River Tweed Commission to promote the development of fish stocks in the Tweed River System

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The Baggie / Minnow is a small member of the Carp family, mature at 6 to 9cm (2.5 -3.5”) in length. A common and well-known species that forms dense and very obvious shoals at times. Generally rather dull in colouration, as shown in Photo C.1.1 olive-green / brown with an obvious black stripe along their flanks, the males turn bright reds and greens at spawning, developing very obvious white tubercles on their heads. The sudden appearance of shoals of such exotic-looking fish in May or June leads to reports from time to time of there being new or diseased fish in the river.

A very widespread species, it is found across virtually the whole of Europe and Asia, from the Atlantic to the Pacific. Its distribution in the UK has greatly increased in recent years. As a purely freshwater species it was originally restricted to the South-east of England, but its use as bait by anglers has led to its spread throughout the mountains and moorlands of Scotland : It is now, for instance found in Loch Skene, above the Gray Mare’s Tail. It can live in a wide variety of habitats, from small streams to large lowland rivers and from hill lochs to lowland ponds. It has almost as high an oxygen demand as Trout and so its presence is an indicator of good water quality.



*Photo C.1.2 : A Male Baggie / Minnow in Spawning Colours in June.*

Shoals, which can be very large and dense, form for the communal spawning when water temperatures reach 10° C in May or June. The eggs are sticky and released over clean gravel and

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stones, the females releasing 200 to 1000 eggs over one or two days, which hatch in 3 to 6 days. At the end of the first year of life, the typical length is 3 to 4 cm, at the end of the second, when most mature, 5 to 6 cm and after three years 6 to 8cm. Growth then continues more slowly, up to 8 years in age maximum.



*Photo C.1.3 : A spawning shoal of Baggies / Minnows*

This species may have arrived in the Tweed naturally or may have been introduced accidentally or deliberately – though a small fish, it has its uses for humans. Walton (1676) gives three: As bait, as “*excellent sport for young anglers or boys or women*” and as a fine food, when gutted, salted and fried with egg yolks, the flowers of Cowslip and Primrose and the herb Tansie.

**Baggies / Minnows on Tweed :** The earliest references to these on the Tweed found so far are in Johnston’s “*List of the Fishes of Berwickshire....*” of 1838, where they are described as “*common*” and in the New Statistical Account of the Parish of Hownam where they are reported as being in the Kale Water (Anon. 1841). A later record records them being fished for by children - “*...when I see myself with a crowd of other children, sent to fish, with crooked pins, for minnows, or ‘baggies’ as we called them, in the Ettrick.*” (Lang, 1895). Bolam (1919) referred to them as being “*Abundant in our local streams*”. A local name for them within the Tweed catchment is “*Streamers*”.

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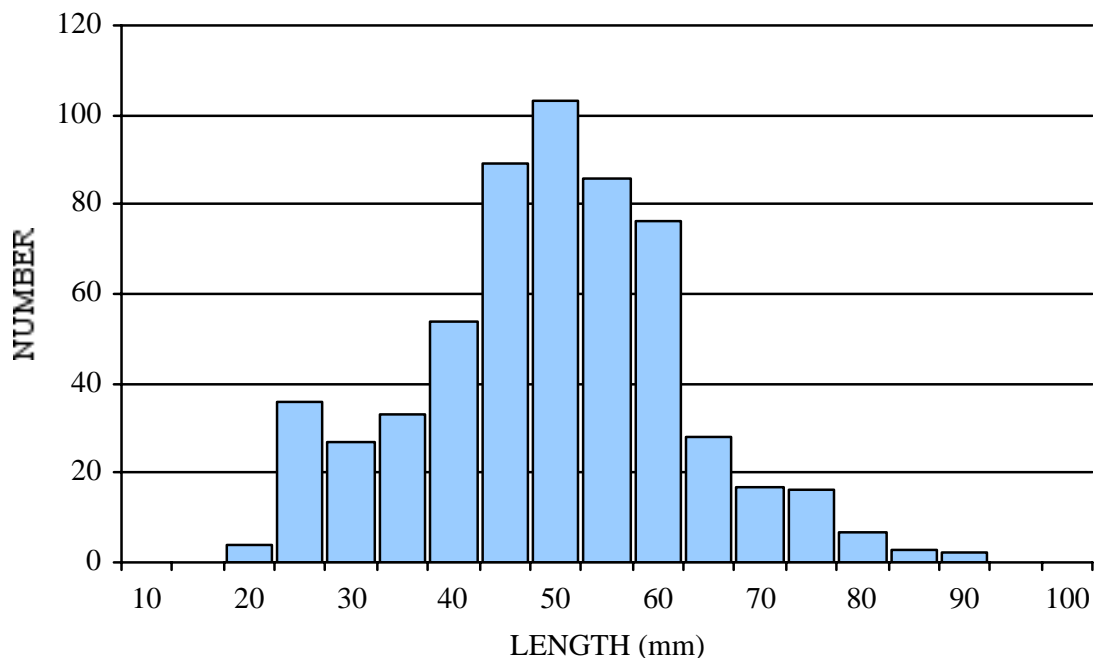


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**Sizes of Baggies / Minnows on Tweed :** Measurements were taken in a 1979 study (Curtis 1979) and during the Tweed Foundation's electric-fishing on the Ettrick, Till and Leet in 1992 and 1993. The length frequencies of all these samples combined are shown in Graph C.1.1, from which it can be seen that most are around 50mm in length, with only a few being larger than 75mm.

Graph C.1.1: Sizes of Baggies / Minnows in the Tweed catchment from the 1979 (n=270) & 1992 (n= 312) samples



The lower numbers of fish under 50mm reflect the efficiency of the sampling technique (electric-fishing) rather than any lack of smaller / younger fish. Electric-fishing is not properly effective for fish under 50mm in length.

**Ages of Baggies / Minnows on Tweed:** Curtis (1979) found that ages could be read from scales taken near the tail without great difficulty and for his samples, taken from the Talla, Lyne, Meldon, Eden and Leet found the average lengths for ages shown in Table C.1.1 :

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Table C.1.1 : The Ages and Sizes of Baggies / Minnows from five sites in the Tweed catchment (Curtis 1979)

Age	Average Length (mm)	Number found
1+	29	57
2+	57	192
3+	74	15
4+	81	6

No fish older than 4+ were found. The “+” in this notation means that the fish is four winters (and therefore four full years old) plus the summer growth following its last Winter.

**Food of Baggies / Minnows on Tweed :** Their diet was examined by Curtis (1979) who found that at three out of four sites filamentous algae was the greatest bulk of food in the “stomachs” (Carp species do not have well defined stomachs, so this study examined the front third of the gut) while at the other site (Eden), the greatest component of the diet was Midge larvae, as shown in Table C.1.2 :

Table C.1.2 : The Food of Baggies / Minnows at four sites in the Tweed catchment

<u>% Volume contents</u>	<u>Talla</u>	<u>Lyne</u>	<u>Meldon</u>	<u>Eden</u>
Snails	0.38			
Shrimps	5.6	6.6	28.5	
Stonefly nymphs			12.4	1.7
Mayfly nymphs		12.4		5
Caddis larvae	1.2	0.15	17.8	0.9
Caddis pupae		1.5		0.5
<b>Midge larvae</b>	17	23.9		<b>66</b>
Aquatic worms	15.8	0.4		
Terrestrial Insects				4.3
Plant Material	1.6	0.3		0.71
<b>Filamentous Algae</b>	<b>46.5</b>	<b>40.1</b>	<b>33.7</b>	
Grit	0.5	0.2	3.9	3.5
Other		2.8		
Unidentified	9.9	13.1	3.7	12.6

Insect nymphs and larvae and freshwater shrimps (*Gammarus*), the food of young Trout and Salmon were more eaten at the Meldon Burn site than at the others but this analysis does show there could be some competition for food between the species.

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