

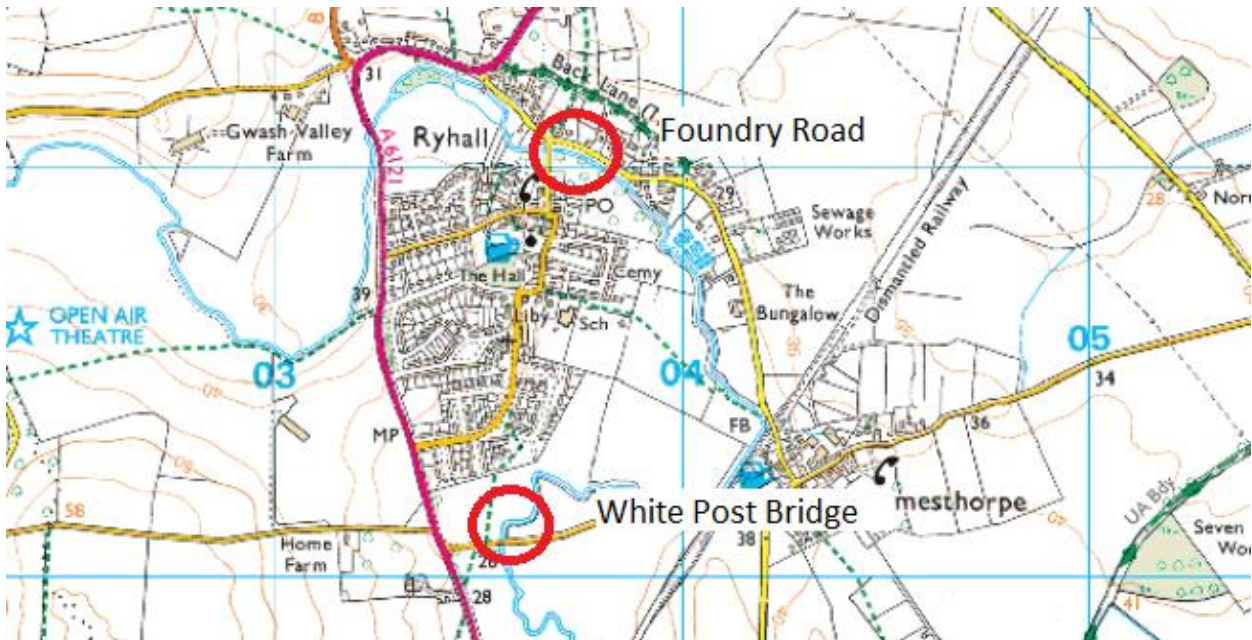
## Fish population summary report: River Gwash 2017



Gwash at Belmesthorpe Meadow.

## Summary:

- Two sites on the Gwash system at Foundry Road and White post Bridge were electric fished to assess the fish population present.
- Eleven species of fish were recorded and a total of 364 fish were captured for measurement (minor species such as stickleback etc. are recorded for the presence but not collected during surveying)
- Brown trout (209 fish) were the most numerous species followed by dace (96), grayling (25) and chub (25). Eel and perch were also present in small number.
- The largest brown trout was 354mm in length which would be a fish of over a pound in weight.
- The largest grayling caught was 310mm in length.
- Fish numbers are good compared to historical catches from the two sites dating back to the 1990's.



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Sites were fished at Foundry Road and White Post Bridge.

## Method:

Sites are isolated using stop nets at the top and bottom of the 150m survey sections. Working upstream the sites are electric fished using two anodes. Fish are collected using hand nets from the river and placed in a holding tank on the boat being towed behind the operation. The site is fished once and all the fish removed to a holding cage down river, it is then fished a second time to assess the reduction in fish to give an accurate estimate. Fish are measured to fork length and identified with the data being put onto the National Fisheries Population Database.

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## Results:

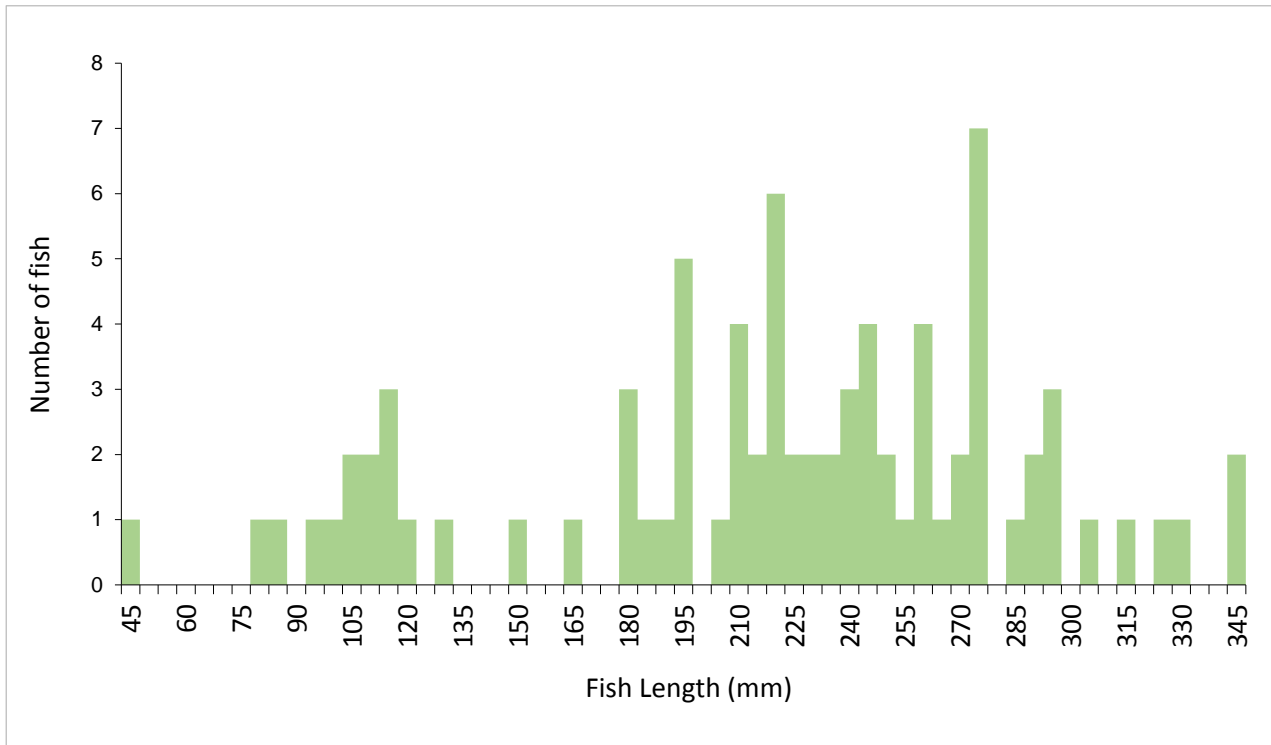
		Foundry Road	White Post Bridge
Brown Trout	Density	15.87	9.33
	Size range	123 – 354mm	47 – 347mm
Chub	Density	0.97	2.44
	Size range	152 – 224mm	176 – 264mm
Dace	Density	8.45	3
	Size range	174 – 284mm	191 - 223mm
Eel	Density	0.12	0.44
	Size range	370mm	515 - 525mm
Grayling	Density	3.15	0.11
	Size range	82 - 310mm	233mm
Perch	Density	0.24	-
	Size range	272mm	
Rainbow Trout	Density	-	0.22
	Size range	-	144mm
Present		BH, MN	3SS, BH, STL

Fish density (fish/100m<sup>-2</sup>) and size range (mm) at both sites per species.

Wild brown trout recorded the highest densities at both sites surveyed with Foundry Road containing more fish than White Post Bridge. The largest fish in both sites were of a similar length ~ 350mm but more juveniles were present at White Post Bridge, this could be attributed to the habitat works that have taken place there, creating a higher number of refuge opportunities for 0+ and 1+ year fish.

Grayling were much more prevalent at Foundry Road with 23 fish caught there, the largest being just over 30cm in length. Year old grayling were also present. Dace were caught in higher numbers at Foundry Road, they seem to like the area immediately downstream of the bridge. Low numbers of chub, eels, perch and rainbow trout were caught during surveying.

## Length Frequency:



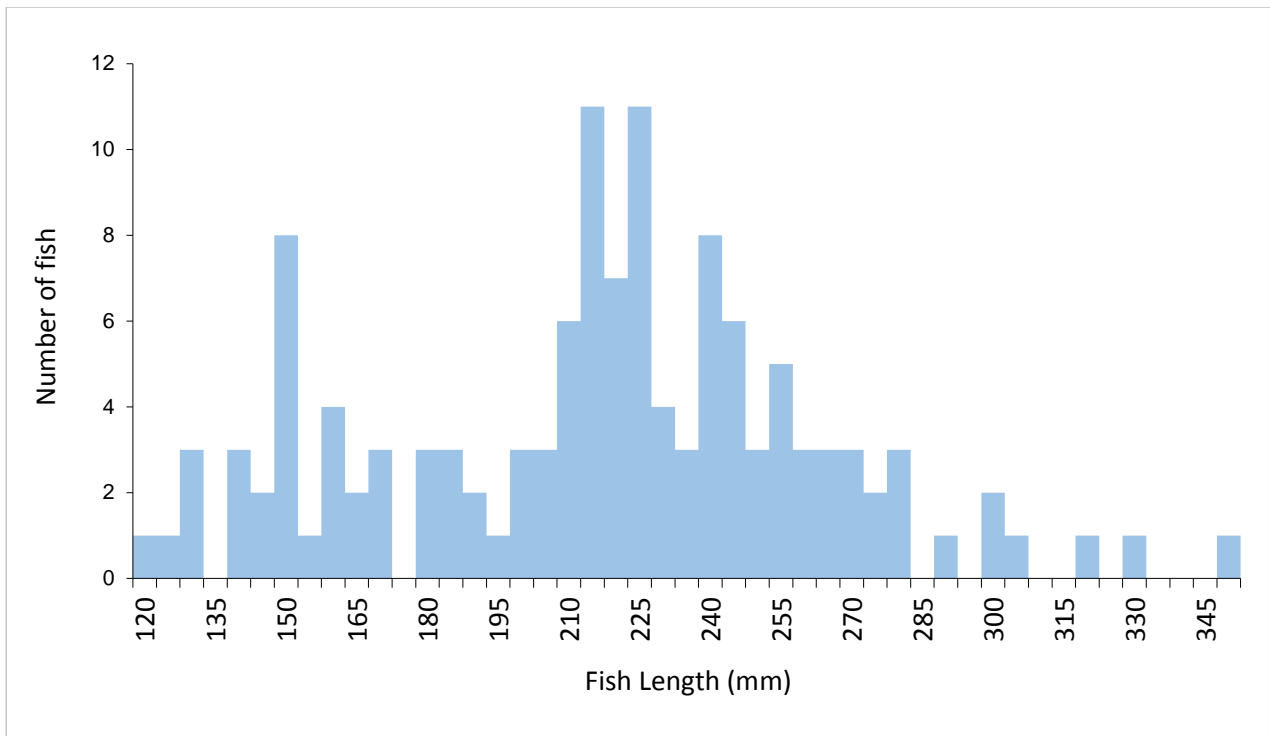
Brown Trout length frequency at White Post Bridge.

The smallest fish caught at White Post Bridge was in the 45mm size range, there were approximately 15 more fish under 120mm in length here than at Foundry Road. This is a possible indication of habitat preference by smaller fish and that the improvement works undertaken at White post Bridge is providing suitable refuge.

Small fish are difficult to catch efficiently using standard electric fishing techniques, it is highly likely that trout under 100mm in length are underrepresented in the length frequency diagram. The potential voltage difference during electric fishing over small fish can be minor, meaning they are not necessarily captured when fishing, also due to the mesh size used in capture they can sometimes evade being picked up in a survey. The lower numbers of juveniles present is also an indicator that the sections we are fishing in are where the majority of older mature adult fish reside. Trout tend to spend time as youngsters in areas of suitable habitat close to where they were spawned before moving downstream when old enough to survive in a more hostile environment but where food sources are more plentiful.

There are good numbers of fish between 20 – 30cm, with few fish in the larger sizes over 30cm. The upper size on the Gwash for trout seems to be around 35cm.



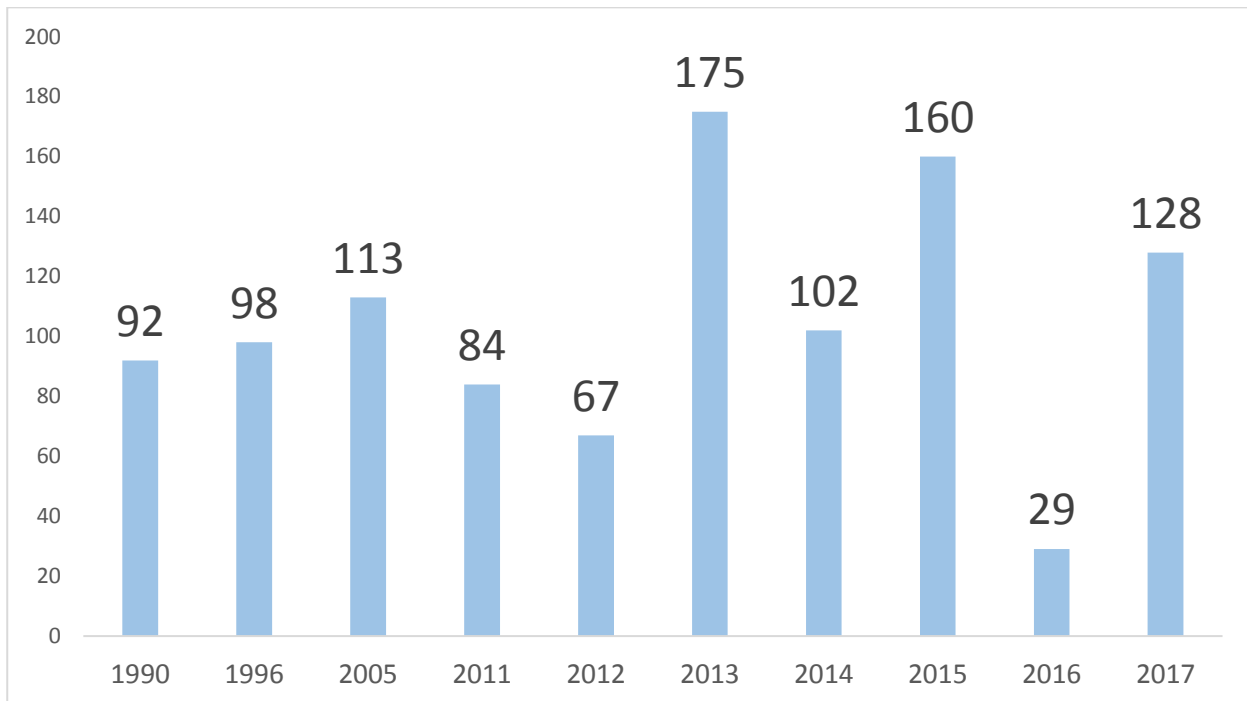


Brown Trout length frequency at Foundry Road.

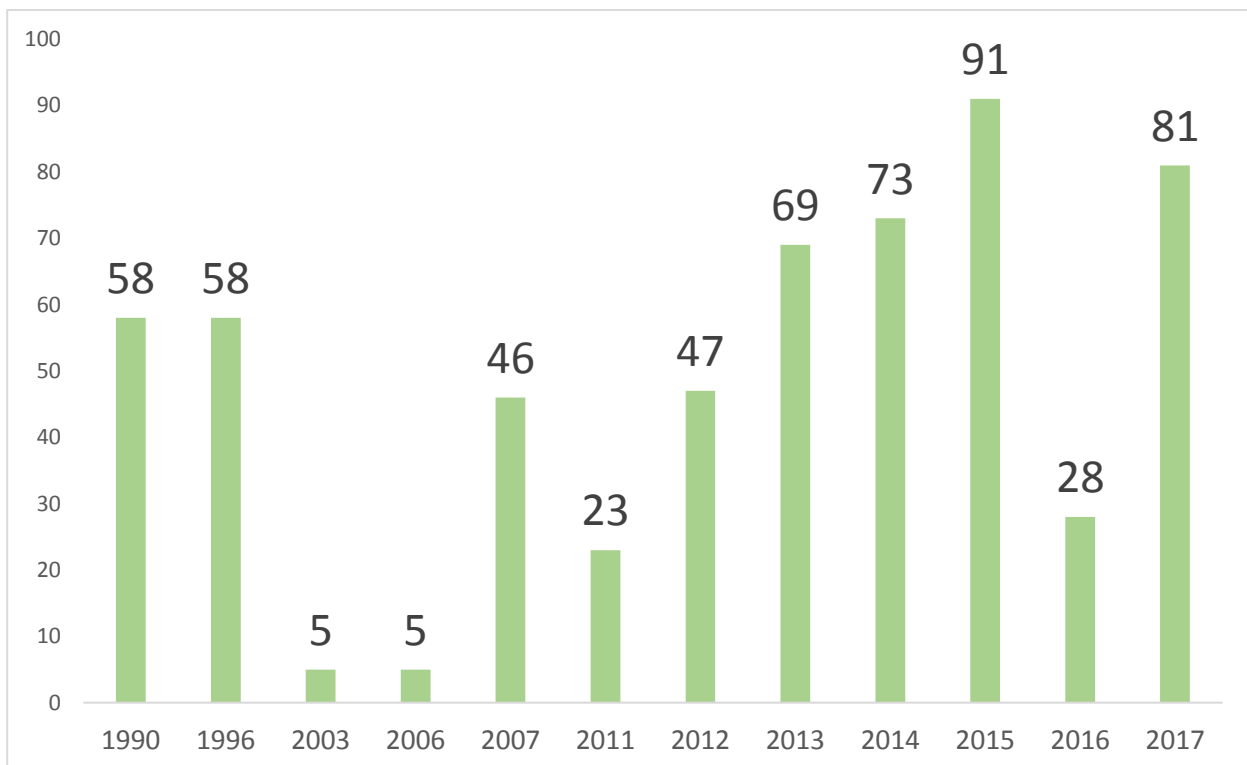
Foundry Road holds a remarkable amount of fish compared to other trout rivers surveyed when considering the available habitat there. It is straight, uniform in depth with a solid rock bed with a thin overlying sediment layer, has little in the way of woody debris or riparian cover but still consistency produces one of the largest catches of wild brown trout within the Lincolnshire & Northamptonshire area. Similar to White Post Bridge most fish reside within the 20 – 30cm bracket with occasional larger fish to well over a pound in weight. The presence of humans nearby can often produce a reduced effect from the impacts of natural predation, this is seen often in coarse fish populations where town centres offer shelter. Input of food to the system from people feeding the ducks may help to hold fish at Foundry Road.

## Historic results:

Fish numbers are very good at both sites, results from 2016 should be discounted due to equipment failure. There has been a general upward trend in catches on the Gwash since the 1990's.



Trout numbers, Foundry Road.



Trout numbers, White Post Bridge.

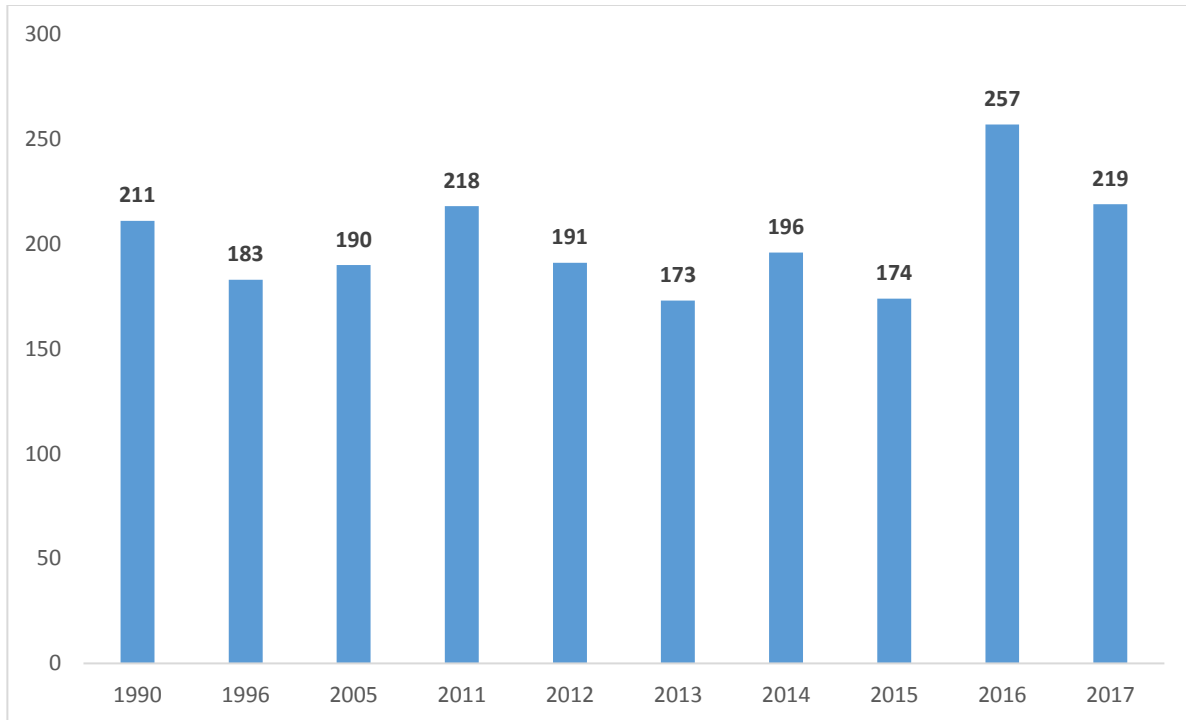
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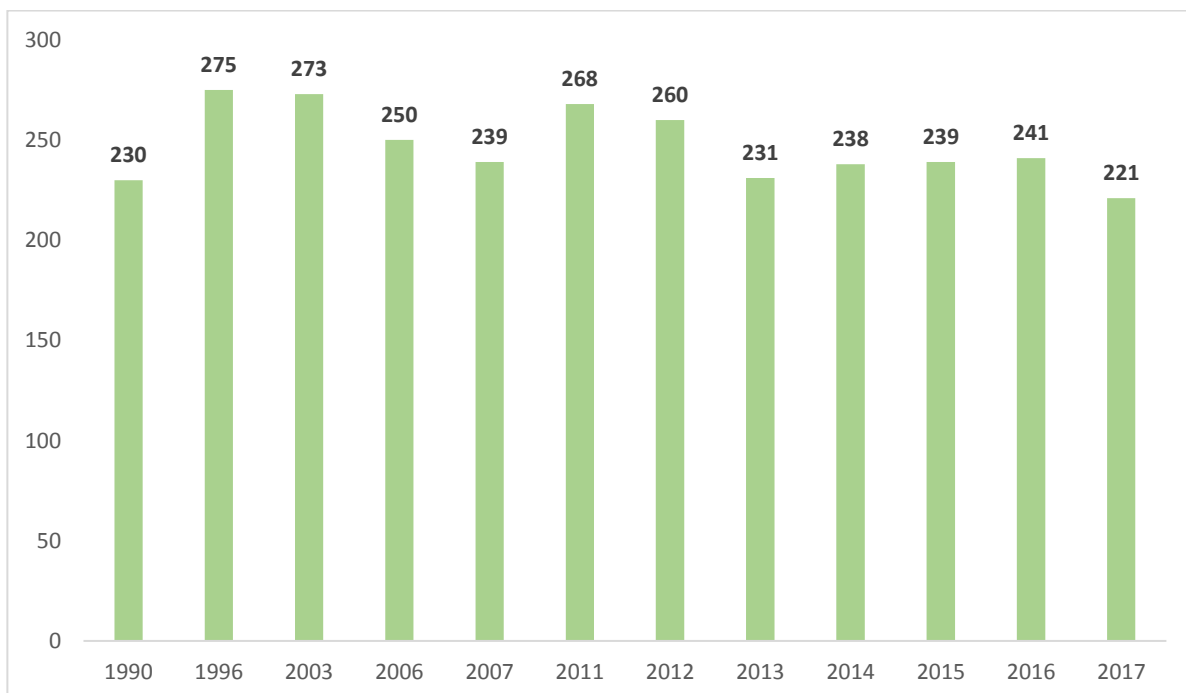
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## Average length:

Trout lengths remain steady when looking at averages over the years, results can fluctuate according to differing river conditions when surveying, a higher density of fish in general is likely to produce a smaller average size. There is nothing drastic to indicate large scale changes in the maximum sizes the fish are attaining. The size of the river, fish density and available food may all play a part.



Average Brown Trout length (mm), Foundry Road.



Average Brown Trout length (mm), White Post Bridge.

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## WFD Classification:

The Water Framework Classification using the Fisheries Classification Scheme II classes the Gwash as MODERATE for fish. This classification should be put into perspective as FCSII is expecting more lowland species to be present. This is due to the relatively low altitude the Gwash sits in compared to the rest of the country on which the model is based, however it is still one of the best wild brown trout fisheries in the Lincolnshire & Northamptonshire Area, the classification is no cause for concern locally.

## Conclusion:

The Gwash holds good densities of fish in it throughout its course. Wild brown trout continue to thrive with good numbers found at both sites surveyed for this report. Grayling appear to be doing well with over twenty fish picked up at Foundry Road. Continued habitat improvement schemes on the river combined with fish passage schemes will go some way to improving fish stocks. The densities of trout in the Gwash are the highest on the Welland system, it is likely the sea trout found in the river may be related to fish from the Gwash. Further investigation may reveal more on this.

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