Anglian Coast Net Limitation Order Review 2025: Fisheries Assessment Report

Report Version 2b

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Executive summary

As part of our duty to maintain, improve and develop salmon and sea trout fisheries in England, the Environment Agency has the power to licence fishing for salmon and migratory trout, and to make Orders setting limitations for the provision of net licences, known as a Net Limitation Order (NLO).

A NLO is used to secure sustainable exploitation of salmon and sea trout stocks by managing the number of net licences available to be issued to the Public to exploit salmon or sea trout within a defined geographic area where exploitation of salmon and sea trout is permitted.

This report provides a description of the current status of salmon and brown/sea trout stocks in Anglian River Basin District (RBD). Fishing activity, catches and trends in the Anglian sea trout net fishery extending between the Humber estuary and Walton on the Naze, Essex, are described and used to inform a review of the Anglian Net Limitation Order.

The net fishery currently targets sea trout only. Very few salmon are caught (between 0 and 7 individuals each year 2014-2024) and since 2019 all are required to be released. In 2024, there were 7 drift net and 3 non drift net licences granted for this fishery, which is a reduction in fishing effort from a total of 22 licences in 2014 at the last NLO renewal. In 2024, the total sea trout catch was 60 fish, a reduction from 450 fish in 2014. Catch Per Unit Effort (CPUE) using drift nets dropped substantially in 2021 and 2022 to less than 1 fish per day's effort but recovered slightly to over 1 fish per day in 2023 and 2024. CPUE using non drift nets fluctuated over the period 2014−2024 with no clear trend.

Relatively few rod and line anglers in Anglian RBD target migratory salmonids and reported rod catches of both salmon and sea trout are very low. Environment Agency fisheries surveys have occasionally recorded sea trout smolts and adult sea trout, and there is evidence of a small Anglian sea trout stock (Piper et al., 2025), although this is subject to a range of pressures and is considered 'at risk'. Anglian rivers are highly regulated and those with good breeding brown trout populations often have poor connectivity with the estuary, which is a major limiting factor for migratory fish. During their life cycle fish face many barriers to migration including weirs, sluices, tide gates and pumping stations which limit access to good spawning habitat. Further, much potential spawning habitat in the region has been impaired due to siltation and water abstraction to meet the demands of agriculture and a growing population.

The Anglian Coastal fishery exploits a 'mixed stock' of sea trout. Historic tagging studies indicate that sea trout originating from the North East of England and Scotland (including the Tweed) are caught in all parts of the net fishery. Recent genetic analyses of sea trout captured by licensees suggest that approximately 90% of the stock originates from North East rivers, 4 to 8% originates from local North Norfolk chalk streams, and a very small component is derived from further afield. Given the comparative rarity of migratory salmonid fish species in local river catchments and the genetic uniqueness of these populations, the Anglian component may be regarded as the weakest of the contributing stocks to the Anglian coastal fishery (Piper et al., 2025).

Recommendations

After careful review of the latest scientific evidence and consideration of all other factors including the socio-economic value of the fishery, we find the best balance between providing contributing fish stocks with necessary protection and allowing a fishery is achieved by Option 2: permitting those licensees currently operating to continue to do so but continuing to reduce the size of the net fishery over time. As such, our recommendation is to:

– Continue to implement a reducing NLO with identical provisions to the 2015 NLO - licences are restricted to those already operating in the net fishery, and as current licensees retire, the number of licences is reduced.

This approach is consistent with Policy 13 of the National Trout & Grayling Fisheries Strategy which states that we will continue to phase out mixed stock net fisheries for sea trout except where stocks from a small number of rivers are exploited, in which case catches will be regulated to protect the weakest stock.

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1. Introduction

The Anglian Coast (Limitation of Net Licences) Order 1994 was issued to manage the reduction of net licences issued for taking salmon and sea trout on the Lincolnshire, Norfolk, Suffolk and Essex coast. It came into operation on 1 January 1996 for a period of ten years, was renewed on 31 December 2015 and expired on 31st December 2022. From 2019 onwards, an additional requirement was placed on the fishery by byelaw to release all salmon caught.

The Environment Agency needs an active Order to control the number of fishers issued with a licence to fish with any authorised instrument (in this case a drift or non-drift net). The 2015 Order had the following provisions: Licences will only be issued to applicants who held a licence in the previous year of the same licence type being applied for in the current year.

The Order is a “reducing” NLO, which means that as existing licensees leave the fishery (for whatever reason) their licences will no longer be available. Licences are not available for new entrants.

It is essential that a replacement Order is confirmed.

The Anglian Coastal fishery targets sea trout and exploits fish originating primarily from North East and Scottish rivers (principally Tyne and Tweed) and to a lesser extent those from local rivers including the rivers Burn, Nar, Stiffkey and Glaven, and is therefore classed as a 'mixed stock' fishery. Very few salmon are caught in this fishery but need to be considered within this review.

For mixed stock fisheries, North Atlantic Salmon Conservation Organisation (NASCO) advice for salmon is that:

– Rational management of a mixed stock fishery requires knowledge of the stocks that contribute to the fishery and the status of each of those stocks.
– Where such fisheries operate, managers should have a clear policy for their management that takes account of the additional risks attributable to, among other things, the number of stocks being exploited and their size and productivity.
– Management actions should aim to protect the weakest of the contributing stocks.

This report provides an overview of the status of salmon and sea trout stocks in the Anglian NLO region, which covers three areas: Lincolnshire and Northamptonshire; Cambridgeshire and Bedfordshire; Essex, Norfolk and Suffolk. It summarises information on the commercial and recreational catches of sea trout and salmon as well as the distribution and abundance of resident brown trout in rivers and the potential for Anglian sea trout stocks.

Information on the key challenges faced by sea trout and salmon in Anglian, such as barriers to migration and low availability of suitable spawning habitat, is presented. The status of Anglian sea trout and salmon stocks are reviewed in light of the National Trout and Grayling Fisheries Strategy and Salmon and Sea Trout strategy dating from 2008 to 2021. The information will provide evidence to support decisions on a new Net Limitation Order (NLO).

1.1. Our aim and options

Our primary aim in fishery management is to protect vulnerable salmon and sea trout populations. The aim of this review is to provide a scientifically robust evidence base to inform decisions on a new NLO for the Anglian coastal net fishery. It presents and discusses a wide range of data relating to the performance of salmon and sea trout stocks in Anglian and the operation of the net fishery.

There are several options available with regard to future management of the net fishery:

Option 1

Do nothing. Allow the 2015 NLO to expire without replacement. Anyone applying for net licence would not be issued with one.

Option 2

Implement a new reducing NLO with identical provisions to the 2015 Order- licences are restricted to those already operating in the net fishery, and as current licensees retire, the number of licences is reduced.

Option 3

Introduce a fixed NLO that caps the number of licences at the current level, such that as existing licensees retire, their licences are made available to other fishers.

Option 4

Introduce an NLO which sets the number of licences available at zero, suspending all netting for sea trout.

1.2. Background

1.2.1. Area covered

The 2015 Order allowed netting in a defined area; between a line drawn bearing 0900 from point 530 34.470' North 000 06.750' East (Spurn Head Lighthouse) and a line drawn bearing 0900 from the seaward end of Walton on the Naze pier, Essex, and extending between high water mark and the seaward limit of the Agency's jurisdiction (up to six nautical miles out to sea) (Figure 1).

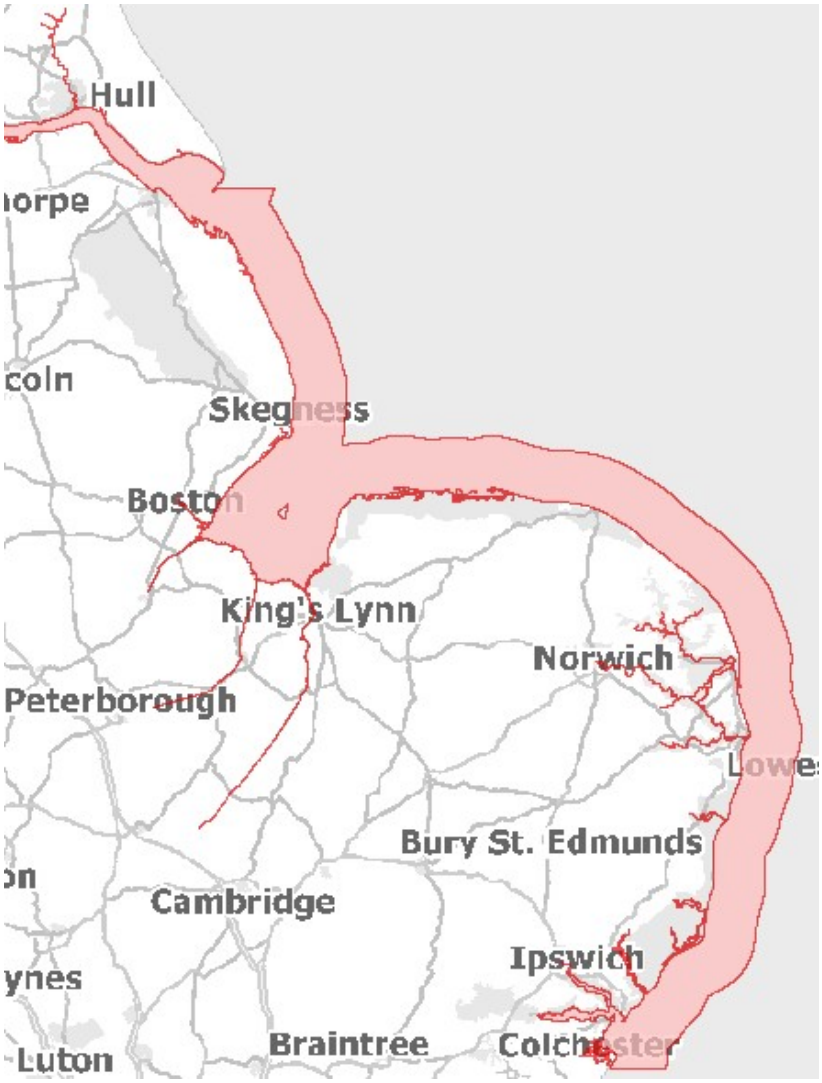

Figure 1 Area covered by the Anglian Coastal Net Limitation Order

1.2.2. Netting techniques

The proposed order will allow for both drift netting and beach seining. Both methods take place at night. During the day sea trout remain further offshore in deeper water up to 20m. During hours of darkness the sea trout move inshore, to shallower water, and it is at these times that fishers look to catch them in drift nets or beach seines.

Drift Netting

Drift nets are designed to enmesh fish and comprise a plain sheet of netting attached to a head rope with floats along the top, and to a weighted footrope along the bottom. A drift net should float and drift freely with the tide, unimpeded by any weights other than those forming the lead line. The Anglian fishermen use drift nets of up to 300 metres in length and a mesh size of 10 centimetres. Drift nets are normally set at right angles to the line of the coast. Fish are usually caught in drift nets either by swimming into a mesh and becoming wedged or by becoming snagged or tangled in the netting (Figure 2).

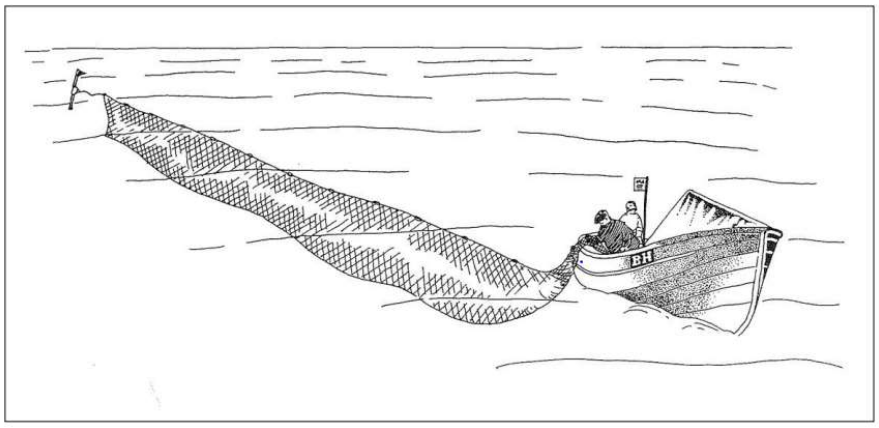

Figure 2 Diagram of a typical drift net (from Salmon Net Fisheries Report (1991) MAFF and Scottish Office)

Beach Seine Netting

Beach seine nets are operated close to the shore. The net used is of similar dimensions to a drift net, it is rowed out from the beach and set in a semi circle. The fish are encircled and captured by pulling the net carefully onto the beach (Figure 3).

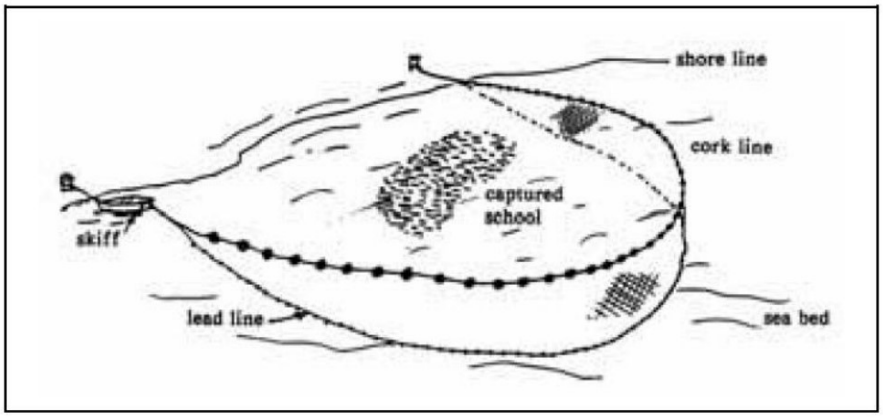

Figure 3 Schematic of a beach seine operation (FAO, Fishing Gear chapter in a review of Marine, Estuarine and Lagunar Artisanal Fisheries in the Western Mediterranean)

1.3. Sources of information

Data to inform the review have been drawn from the following sources:

Catch returns - Everyone fishing for sea trout and salmon, whether by net or rod and line, are legally required to provide a catch return to the Environment Agency each year. These returns provide information on numbers, species and sizes of fish caught, how many are killed and how many released alive, when and where fishing took place and numbers of days fished.

National Fish Population Database - data collected through routine electro fishing surveys conducted by the Environment Agency on a 3, 5 or 6 year rolling programme (dependent on site) and occasional investigative surveys (e.g. following remedial works). Survey data indicate the abundance, size distribution, and density for all species captured. Records from the period 2014 to 2024 are presented.

Anecdotal information - this includes informal records from anglers who captured salmon and sea trout while not specifically fishing for them, and observations from Environment Agency staff or other interested parties.

Published and unpublished reports - this document draws heavily on published and unpublished internal Environment Agency reports as well as published reports from relevant organisations such as The Wild Trout Trust and Cefas. Peer-reviewed literature is also used where available.

2. Catch Data

2.1. Commercial catches of salmon and sea trout (coastal netting)

The Anglian coastal fishery extends from the Humber estuary in the north to Walton on the Naze, Essex, in the South. Net fishers targeting salmonids in this fishery are required to be licensed by the Environment Agency and to submit an annual catch return detailing both fishing effort and fish captures. Licences that are issued are specified as being for either drift net or non-drift net. The 2015 Anglian NLO currently in force is a 'reducing order' which means that licences are not replaced as existing licensees leave the fishery, and licences are not available to new entrants. The total number of licences issued for the fishery in 2024 was 10; a reduction from 22 in 2014 when the NLO was last reviewed.

Catches of sea trout by drift netting declined by 89% during the period from 2014 to 2024, with a total of 41 fish captured by this method in 2024 (Figure 4). This continued the general downward trend observed in the previous decade from a peak of 1772 fish captured in 2004. Salmon catches were extremely low throughout the 2014-2024 period, with a total of 2 salmon captured by drift nets and 8 captured by non-drift netting methods (Figure 4).

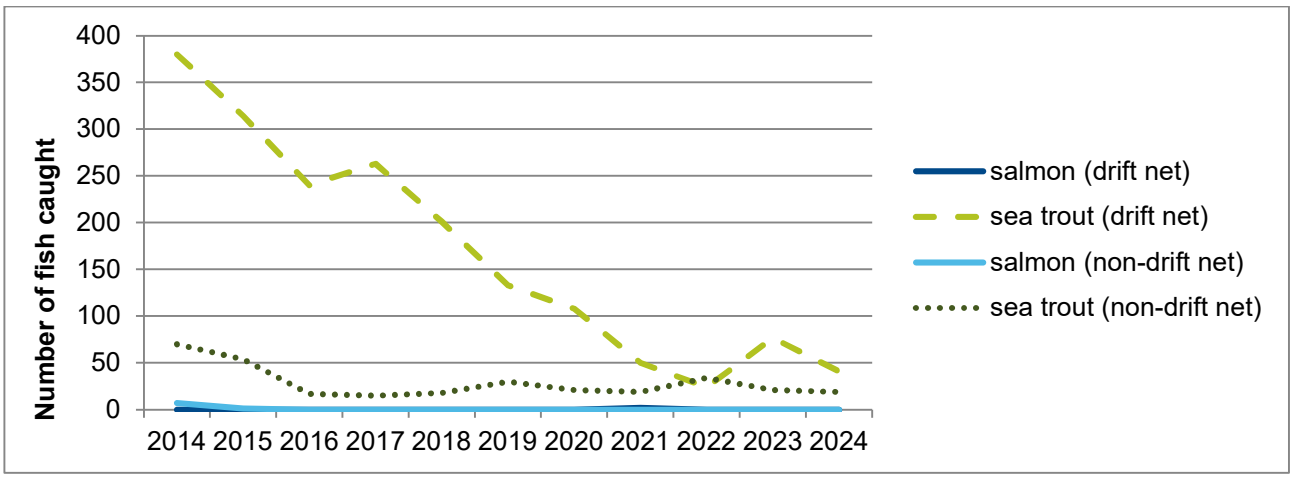

Figure 4. Number of salmon and sea trout declared in the Anglian Coast fishery 2014 to 2024.

Drift net fishing effort declined by 80% during the same period (2014 to 2024) (Figure 5). The Catch Per Unit Effort (CPUE) remained relatively consistent within the range from 1.6 to 3.2 fish per day between 2014 and 2020, dropped substantially to 0.9 and below during 2021 and 2022 but recovered slightly to over 1 fish per day in 2023 and 2024 (Figure 6).

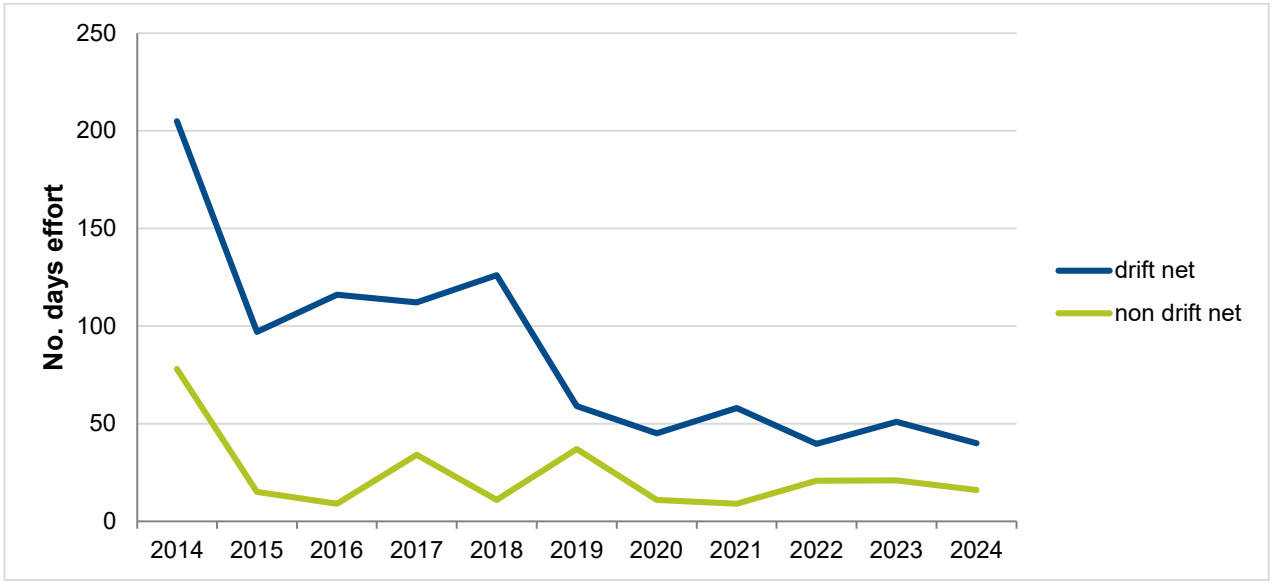

Figure 5. Total net fishing effort per year 2014 to 2024

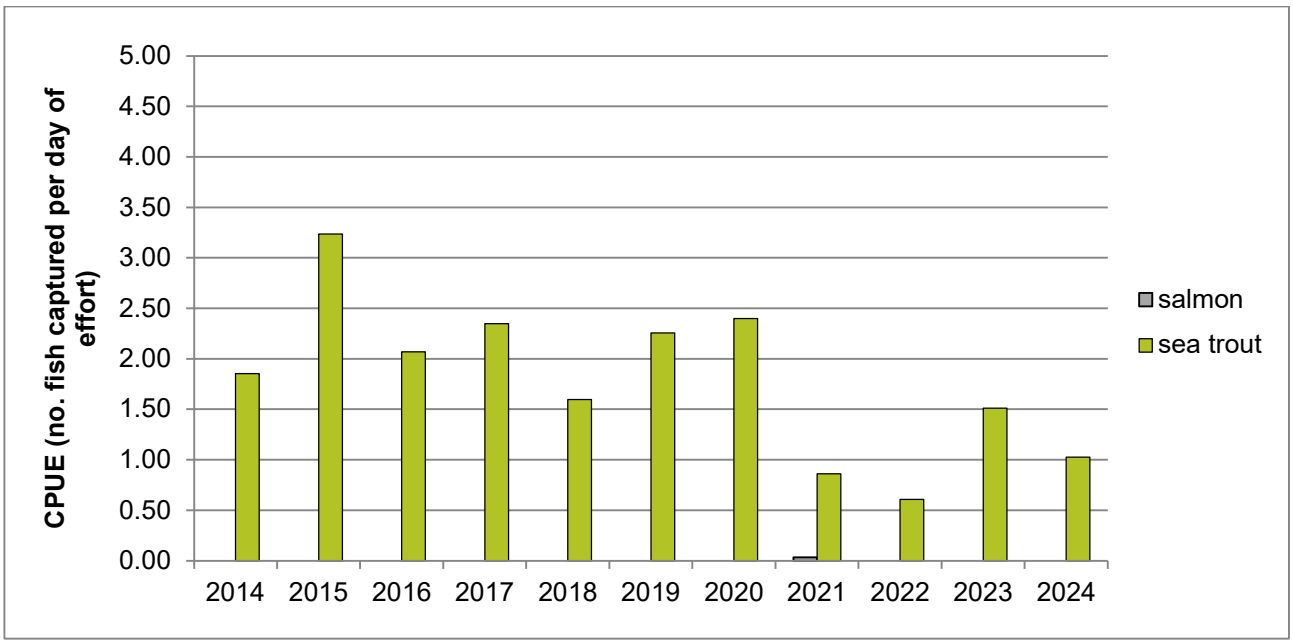

Figure 6 CPUE for drift netting during the period 2014 to 2024

The predominant fishing method was drift netting; therefore, total sea trout catches by non-drift net methods were predictably lower. A total of 70 sea trout were captured by such methods in 2014 declining to 17 in 2016, then catches remained relatively stable at between 15 and 34 fish from 2017 to 2024 (Figure 4).

The CPUE for non-drift net methods fluctuated between 0.44 and 3.60 fish per day during the period from 2014 to 2024, with no clear trend (Figure 7).

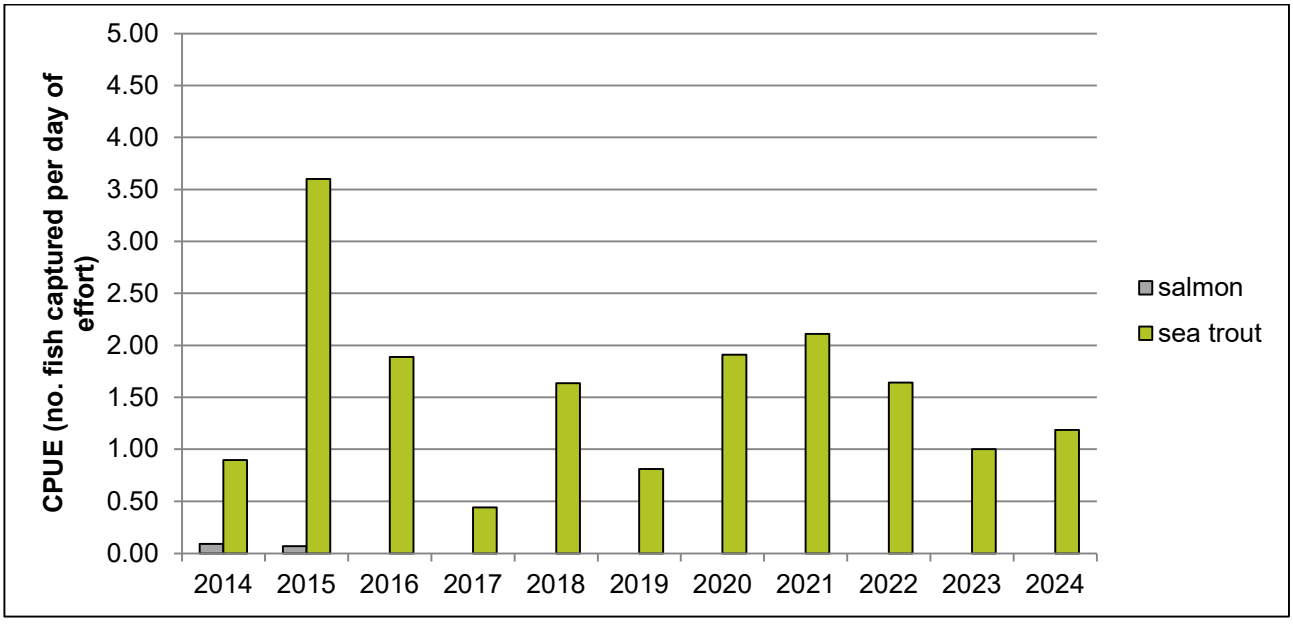

Figure 7 CPUE for non-drift netting during the period 2014 to 2024

All salmon captured within this fishery are currently required to be released. It is assumed that all captured sea trout were landed, resulting in the loss of 0.64 metric tonnes (t) (via both drift and non-drift net methods) of salmonid biomass from the fishery in 2014, falling to a low of 0.0075 t in 2022 (Figure 8).

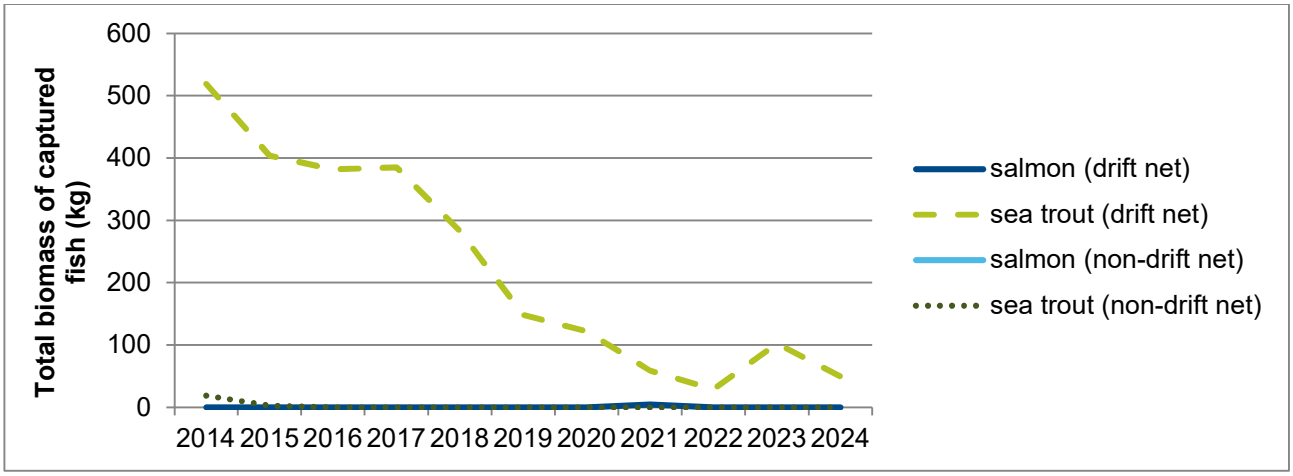

Figure 8 Total biomass (kg) of captured fish by drift nets and non-drift nets

Individual size data for captured fish are not complete but the mean mass of sea trout derived from bulk weight data indicate little annual fluctuation in capture size over time. The annual mean mass of sea trout captured using drift nets was consistently and significantly lower than sea trout captured using non-drift net methods (t= 3.39, p = 0.003, df=20) (Figure 9).

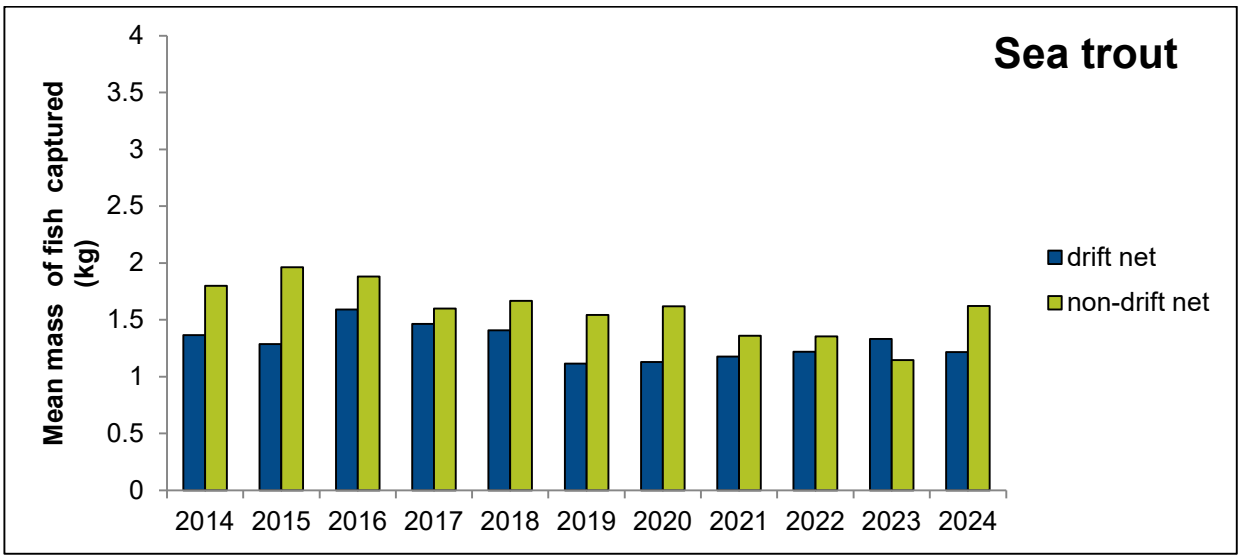

Figure 9 Mean mass (kg) of sea trout captured by drift nets and non-drift nets (derived from bulk weight data)

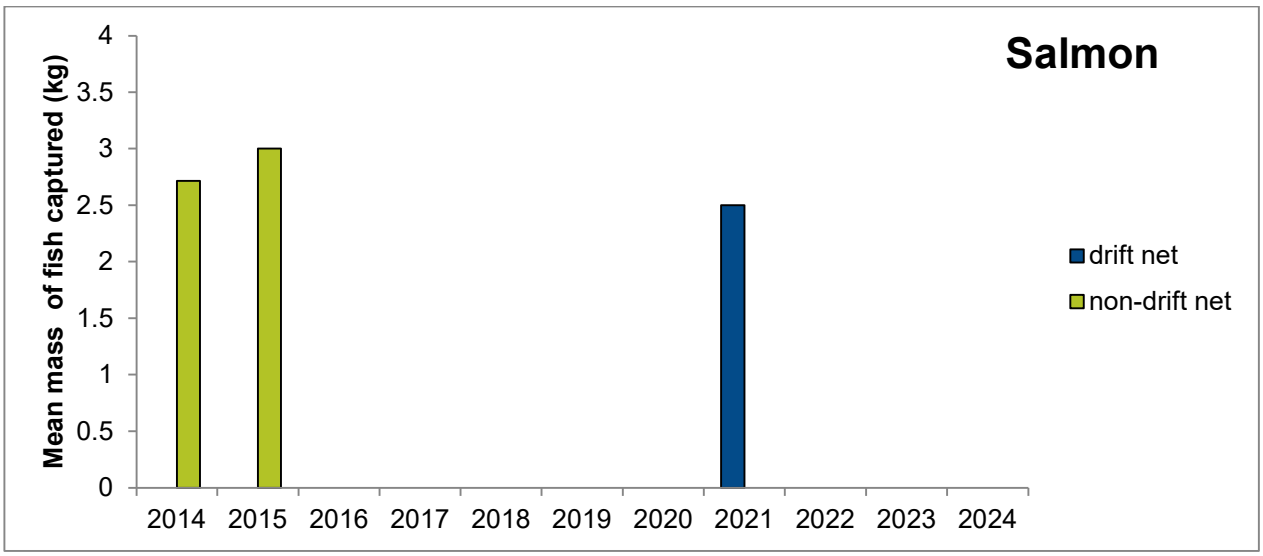

Figure 10 Mean mass (kg) of salmon captured by drift nets and non-drift nets (derived from bulk weight data)

2.2. Rod catches and status of contributing stocks

The number of anglers specifically targeting migratory salmonids in Anglian region is small. There were 20 rod-caught sea trout and no rod-caught salmon declared within the period from 2014 to 2024.

Routine fisheries monitoring surveys conducted by the Environment Agency confirm the low incidence of sea trout and salmon in freshwater but there are resident brown trout populations in many rivers (Figure 11). The North Norfolk chalk rivers (Nar, Stiffkey, Burn and Glaven) support brown trout throughout. The larger Essex rivers including the Stour and Blackwater support brown trout only in the headwaters and tributaries. This is also the case with the Rivers Great Ouse, Nene, Witham and Cam. The Rivers Wensum, Welland and Bure support consistent brown trout densities for much of their length (Figure 11).

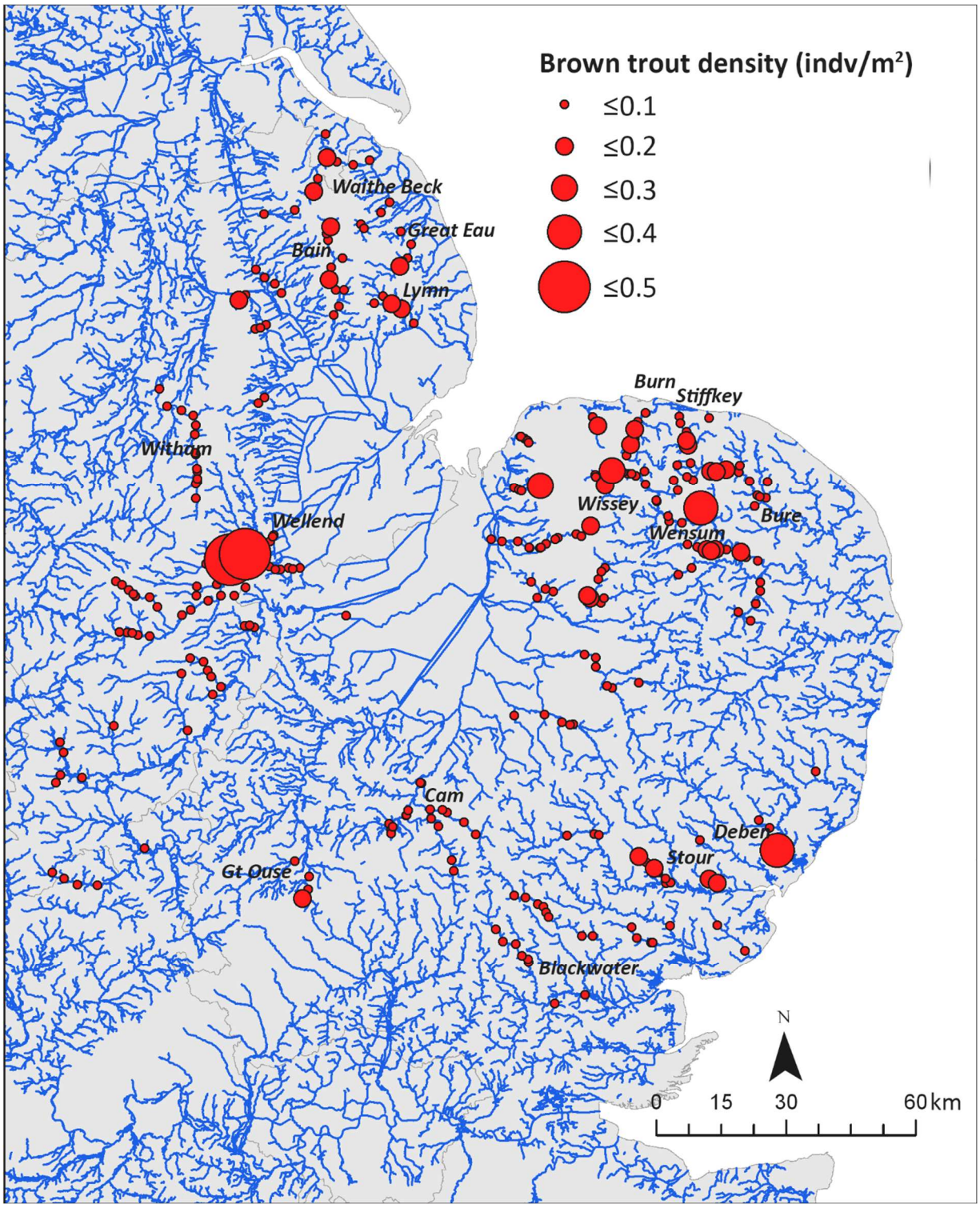

Figure 11 Locations and densities of brown trout at most recent monitoring survey in the period 2014 – 2023. Source: Environment Agency.

As a consequence of the combined pressures to manage flood risk in this largely low-lying region and meet the water abstraction demands associated with high population densities, Anglian rivers are highly regulated. There are over 1900 in-river structures which potentially obstruct fish movement, 259 of which are considered critical (high priority) barriers (Figure 12). Many critical barriers are located on the coast, particularly in Lincolnshire and Norfolk. The majority of such structures are top or side-hung tidal flaps which close on incoming tides to protect coastal areas from flooding. The fenland Rivers Welland, Nene and Great Ouse are subject to major water control structures such as sluices and locks throughout their mid to lower reaches. In Essex, the River Stour has the highest number of major obstructions, but all the main Essex rivers are subject to at least one critical barrier (Figure 12).

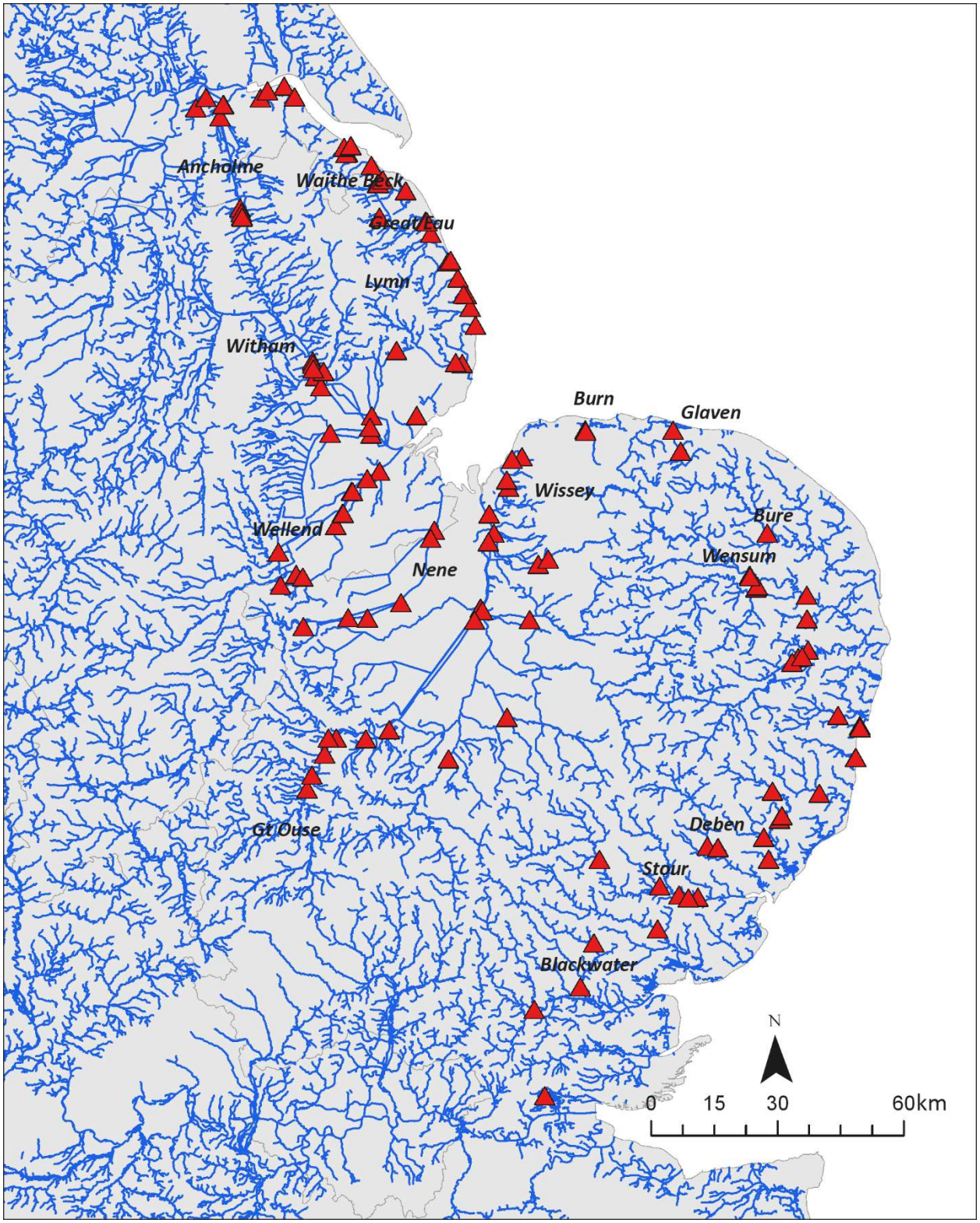

Figure 12 Locations of critical (high priority) river obstructions (triangles)

The high occurrence of major barriers to migration is considered a key factor limiting stocks of migratory salmonids. The challenges posed by obstructions and ongoing and proposed mitigation measures are outlined for each catchment in Sections 3 to 5.

3. Lincolnshire and Northamptonshire: status of stocks

3.1. Summary of catchments

3.1.1. Nene catchment

The river Nene flows northeast through Northampton, Peterborough, Wisbech and Sutton Bridge before entering The Wash. The river is navigable for 142 kilometres from Northampton to the sea. To the east of Peterborough, the Nene becomes tidal and runs through low-lying fen. There are 37 locks, with many back channels, weirs and sluices creating a mosaic of narrow, fast flowing and wider slower watercourses. The river supports a regionally important mixed coarse fishery including a range of species: roach, perch, bream, dace, chub, and tench (Table 1).

Table 1 Average density (indv./100 m^2) of the 10 most abundant fish species in the River Nene and its tributaries (2014-2023)

Species	Mean density at locations where detected	% population (by abundance)	Rank (by abundance)
Roach	6.92	41.14	1
Dace	6.53	16.87	2
Chub	3.30	11.59	3
Bleak	4.89	11.48	4
Gudgeon	3.10	7.17	5
Perch	1.31	5.31	6
Brown / sea trout	2.07	2.98	7
Common bream	1.17	1.58	8
Pike	0.28	0.64	9
Barbel	2.12	0.40	10

Brown trout was the seventh most frequently encountered species during surveys, although it was only captured in the upper reaches and headwaters where it occurred at a mean density of 2.1 individuals per 100 m^2 surveyed (Table 1). Alledge Brook and the Duston Branch of the upper Nene support the highest densities of wild brown trout and there is a well-established trout fishery on the Willow Brook, with increasing numbers of wild fish. Sea trout have occasionally been recorded from the lower river.

Passage past the multitude of locks, weirs and sluices is an important pressure on fish populations generally and is likely limiting the potential for migratory salmonids in the Nene catchment. A long-term programme of fish pass construction is underway. There is a fish pass around the tidal sluice at the Dog in a Doublet and 13 species have been identified using the pass, including barbel, zander and carp. Other passes have been built at Elton, Cotterstock, Ditchford and Northampton.

There is some good trout spawning habitat in the back channels around the locks. An Environment Agency habitat improvement scheme in the Castor Backwater increased the amount of potential spawning habitat available for barbel, and potentially trout. River restoration, including barrier mitigation and habitat enhancement through the reversal of channelisation and reduction of

sedimentation, is also a key objective within a catchment-wide programme of improvements under the Nene Valley Nature Improvement Area initiative.

3.1.2. Welland catchment

The River Welland flows North-east through the towns of Market Harborough and Stamford, becomes tidal at Spalding and subsequently enters The Wash. From the mid-nineteenth century up to the early 1970s, the Welland was subjected to multiple flood alleviation schemes. The channel was straightened and deepened resulting in habitat modification and loss of many meanders and pool-riffle systems. As a consequence, the river now runs through a gorge-like channel. The catchment is largely rural, however urban development in Market Harborough has altered the river's run-off response and there is evidence that high flows are increasing and low flows decreasing.

The mixed fishery is dominated by dace and roach, collectively comprising 68% of total abundance (Table 2). Brown trout was the third most frequently encountered species during surveys, an increase in rank and distribution since data were last reviewed for the period from 2004 to 2013. Trout were encountered at numerous locations close to Market Deeping and upstream into the headwaters.

Table 2 Average density (indv./100 m^2) of the 10 most abundant fish species in the River Welland and its tributaries (2014-2023)

Species	Mean density at locations where detected	% population (abundance)	Rank (abundance)
Dace	11.49	44.08	1
Roach	9.23	23.81	2
Brown trout	5.25	11.13	3
Perch	2.76	8.58	4
European eels > elvers	1.76	4.96	5
Chub	0.97	2.13	6
Gudgeon	1.30	1.93	7
Pike	0.78	1.73	8
Grayling	1.43	0.85	9
Ruffe	1.26	0.18	10

Sea trout have been recorded in the lower tidal stretches and anecdotal evidence suggests that they may advance as far upstream as the Gwash confluence, though flood defence structures undoubtedly limit fish passage. There is an ongoing programme to improve connectivity and as part of the "Sea Trout to Stamford Project" further remedial measures including the removal of redundant weirs, installation of fish passes and in-channel habitat improvements are planned. Other projects have delivered the restoration of wetlands at the confluence of the Rivers Wellend and Gwash, created fish refugia in channelised sections, enhanced gravel riffles and restored meanders.

3.1.3. Lincolnshire chalk streams

In its upper reaches, which are spring fed from the Lincolnshire limestone, the River Witham supports brown trout and native crayfish. Much habitat improvement work has been carried out in this area. The headwaters gradually give way to a slower, heavily modified river. Downstream of

Lincoln the Witham becomes wider and slower as it enters the Fens. Numerically, roach dominate the fish populations of these rivers, comprising 62% of the fish sampled in surveys conducted during the period from 2014 to 2023 (Table 3). Brown trout were encountered at 22 sites in the upper River Witham and the smaller Rivers Bain, Slea, Lymn, Waring and Barlings Eau with a mean density of 2.3 individuals per 100 m^2. Sea trout have been caught by anglers in the lower reaches of the River Bain where it joins the Witham and in the tidal Witham Haven.

Table 3 Average density (indv./100 m^2) of the 10 most abundant fish species in the Lincolnshire chalk streams and their tributaries (2014-2023)

Species	Mean density at locations where detected	% population (abundance)	Rank (abundance)
Roach	18.62	62.29	1
Perch	4.05	14.98	2
Common bream	4.97	9.22	3
Dace	3.97	2.95	4
Brown / sea trout	2.25	2.80	5
Ruffe	1.22	1.49	6
Bleak	1.65	1.47	7
Pike	0.44	1.10	8
Gudgeon	1.74	1.07	9
Chub	0.92	0.84	10

The River Ancholme which flows north to enter the sea at South Ferriby is heavily modified with the flow managed for both abstraction and navigation. Habitat diversity is low and the river supports very few brown trout.

Smaller watercourses such as Waithe Beck, Louth Canal and Great Eau which flow northeast to the sea support good populations of brown trout, with a density of 9.5 individuals per 100 m^2 recorded in Waithe Beck. Sea trout have been recorded from the lower reaches of the Great Eau. However, the high number of tidal sluices in place on these rivers limits their potential for sea trout stocks.

4. Cambridgeshire and Bedfordshire: status of stocks

4.1. Summary of catchments

4.1.1. Cam and Great Ouse catchment

The area is characterised by the East Anglian chalklands in the south, brecklands in the north and the South, and fenland to the west. The catchment is predominantly rural and includes high-grade agricultural land. The main urban areas are Cambridge, Royston, Saffron Walden, Newmarket, Bury St Edmunds and Ely.

Roach populations are dominant throughout, however huge shoals of bream occur in the lowland river. The chalk rivers provide strong brown trout populations with the Wissey, Lark and Cam all

supporting native populations (Figure 11) In the Cam and its tributaries, brown trout were the fourth most commonly encountered species during surveys in the period 2014 to 2023 (Table 4), with particularly high densities (7-14 indv/100 m^2) recorded on the Rivers Granta and Mel.

There are several records of adult sea trout returning to the River Wissey and occasional records from the Great Ouse relief channel. A seine net fishery which used to operate in the Great Ouse Estuary in the 1950's, with effort targeted mostly at periods of high discharge and rough weather in Wash, yielded catches of around 150-300 fish per annum. The potential for sea trout appears high, however the catchment suffers from several pressures which likely to limit stocks.

Diffuse agricultural pollution is widespread across the catchment, causing siltation and high phosphate levels. Discharges from sewage treatment works, private sewage systems and misconnections further contribute to these problems. Other issues include low flows, abstraction and flood regimes which exacerbate phosphate loadings, poor water quality and contribute to siltation.

Physical modifications in the form of land drainage and navigation modifications, along with flood defence structures, are prevalent. Fish passage options are being assessed with many schemes implemented or proposed. One feature is the 'Wissey Siphon' fish pass which allows fish to migrate from the Cut Off channel into the Wissey. It has been shown to offer effective passage for a range of species including sea trout.

Table 4 Average density (indv./100 m^2) of the 10 most abundant fish species in the River Great Ouse and its tributaries (2014-2023)

Species	Mean density at locations where detected	% population (abundance)	Rank (abundance)
Roach	7.71	44.69	1
Bitterling	4.67	4.86	2
Minnow	2.83	6.41	3
Brown / sea trout	2.69	1.87	4
Dace	2.23	9.48	5
Perch	1.81	10.59	6
Bullhead	1.52	3.47	7
Bleak	1.49	2.66	8
Gudgeon	1.27	4.35	9
Chub	0.91	2.53	10

4.1.2. Northwest Norfolk chalk streams (rivers Nar, Babingley and Heacham)

The Rivers Nar and Babingley are tributaries of the Great Ouse and both rise as spring-fed chalk streams, though their lower reaches are more typical of fenland rivers. The Nar is a SSSI and has undergone substantial improvement works such as channel realignment to reinstate meanders, catchment sensitive farming to reduce silt inputs and installation of passage facilities at barriers. There is ample and good quality habitat for trout in the upper reaches which are characterised by clear water, gravel substrate and Ranunculus beds. Access past barriers and sufficient flow to carry smolts out, and enable adults to pass obstructions during upstream migration, are considered the key limiting factors on sea trout stocks (Pawson, 2008). Adult sea trout have occasionally been recorded downstream of Narborough, having passed several structures including the tidal flaps near Kings Lynn and the A47 sluice gate.

The River Babingley generally provides good trout habitat and supports strong brown trout populations. Restoration measures such as the removal of five flow control structures (non-critical), which created ponded reaches and caused siltation and limited flow downstream, and the installation of a fish pass have improved connectivity. Following this work, sea trout were recorded migrating upriver for the first time in over 100 years. In its lower reaches the Babingley is diverted through artificial channels and flows through Wootton Marsh, meeting the Great Ouse in the tidal Lymn channel.

The River Heacham flows north-west for 6 miles, entering the North Sea at Heacham. It supports brown trout in modest numbers though suffers from historic dredging, siltation and lack of large woody debris. The tidal flaps at Heacham are considered a critical barrier to fish movement and reduce the potential for ingress by adult sea trout. There are no sea trout records from this river.

5. Essex, Norfolk & Suffolk: status of stocks

5.1. Summary of catchments

5.1.1. Chelmer and Blackwater catchments

The River Chelmer flows for approximately 45 miles from Thaxted to its tidal limit at Beeleigh weir. The long ponded section of the Chelmer and Blackwater (C&B) Canal continues to Heybridge Basin Lock. The River Blackwater and Pant flows approximately 47 miles from its source, near Saffron Walden, to its tidal limit at Beeleigh. Both catchments are mainly rural with agriculture being the main land use.

Both rivers support a mixed coarse fishery with stable and generally good fish stocks dominated by roach, dace, chub and perch (Table 5,

Table 6). The upper reaches of both rivers support some brown trout, at modest densities in the Blackwater but only at low densities in The Chelmer tributaries (Figure 11). Several adult sea trout have been recorded in the mill pool downstream of Beeleigh weir, the tidal limit of the Blackwater.

Table 5 Average density (indv./100 m^2) of the 10 most abundant fish species in the River Blackwater and its tributaries (2014-2023)

Species	Density (indv./100 m^2)	% population	Rank
Minnow	11.50	29.98	1
Roach	8.37	29.83	2
Brown / sea trout	3.28	8.97	3
Dace	3.09	6.43	4
Bullhead	2.87	6.35	5
Stone loach	2.77	3.98	6
Perch	1.75	3.39	7
Brook lamprey ammocoetes	1.27	3.11	8
Gudgeon	1.18	2.82	9
Chub	1.10	2.39	10

Table 6 Average density (indv./100 m^2) of the 10 most abundant fish species in the River Chelmer and its tributaries (2014-2023)

Species	Density (indv./100 m^2)	% population	Rank
Roach	15.27	55.68	1
Minnow	6.35	10.50	2
Dace	2.57	7.54	3
Chub	2.70	6.48	4
Bullhead	2.45	4.95	5
Gudgeon	2.37	3.90	6
Perch	1.45	3.59	7
Pike	0.82	2.28	8
European eels > elvers	1.15	1.85	9
Stone loach	0.58	1.10	10

Physical modification and barriers to migration are two of the main pressures on fish populations in these catchments. The construction of mills, weirs and sluices limit natural fish movements, and channel modifications lower habitat diversity. The presence of returning sea trout in the tidal reaches of the River Blackwater suggests potential for sea trout stocks; however, critical barriers such as Langford Sluice and Wickham Bishops Mill likely restrict access to upstream spawning grounds.

One of the most significant impacts on the river is the Ely Ouse to Essex Water Transfer Scheme EOETS. In the scheme, surplus water from the River Ouse catchment is transferred to the upper reaches of the River Stour, then transferred from the River Stour to Great Sampford and down the River Pant/Blackwater. Water is abstracted at Langford and transferred to Hanningfield Reservoir to augment capacity for public water supply. This significantly alters the natural flow regime of the river, with the enhanced flow benefitting brown trout populations in the River Pant.

5.1.2. Stour Catchment

The River Stour flows approximately 45 miles from its source, north of Haverhill, to its tidal limit at Cattawade sluice. The main tributaries are the Rivers Glem, Chad Brook, Box and Brett. The catchment is mainly rural with land use dominated by agriculture. The lower Stour valley around Dedham Vale is designated as an Area of Outstanding Natural Beauty (AONB).

The river supports a mixed coarse fishery with good stocks throughout and regular monitoring indicates that they are generally stable. Twenty six species have been caught in surveys, with roach, minnow, dace, gudgeon and chub in highest abundance (Table 7).

Brown trout are generally restricted to the upper reaches and tributaries and were the 12th most abundant species encountered in surveys from 2014 to 2023 with densities ranging from 0.04 to 14 individuals per 100 m^2. The River Box and Stratford Brook support strong brown trout populations. Unlike much of the main River Stour, these tributaries retain a pool and riffle geomorphology and offer abundant habitat for trout. An adult sea trout was captured at the confluence of Stratford Brook and the main river during an Environment Agency electro fishing survey in 2014. There are also records of adult sea trout in the tidal Cattawade South Channel, upstream of the tidal barrage.

Table 7 Average density (indv./100 m^2) of the 10 most abundant fish species in the River Stour and its tributaries (2014-2023)

Species	Density (indv./100m^2)	% population	Rank
Roach	17.47	49.36	1
Minnow	5.85	9.65	2
Dace	3.09	6.95	3
Gudgeon	3.81	6.29	4
Chub	2.75	5.51	5
Bleak	4.50	4.93	6
Perch	1.44	3.60	7
Bullhead	1.67	2.34	8
Pike	0.91	2.30	9
Stone loach	1.95	2.18	10

The River Stour faces pressures from factors such as point and diffuse pollution, physical modification of the channel, and exploitation of its water for public supply. One of the most significant impacts on the river is the EOETS which results in significant modifications to the natural flow regime. The reaches above Wixoe suffer from high velocities associated with the transfer discharges and also reduced habitat diversity due to channel modification to increase capacity. The lower reaches below Stratford St. Mary experience some problems linked to abstraction although measures to implement a more sympathetic approach to flow augmentation to minimise impacts on fish populations have been adopted.

5.1.3. Wensum catchment

The River Wensum flows south-west on calcareous geology from its source near Whissonsett to its tidal limit at New Mills in the centre of Norwich. It joins the River Yare at Whitlingham and subsequently flows out to sea at Great Yarmouth. The entire river is a nationally important SSSI and SAC on the basis of its being an enriched, calcareous lowland river with over 100 species of plants, a rich invertebrate fauna and a relatively natural corridor. The catchment is predominantly rural with much of the surrounding land traditionally managed for hay and grazing. The main urban area is the city of Norwich at the river's lowest reaches.

Brown trout are present throughout the catchment and were the second most common fish encountered during routine surveys conducted 2014-2023 (Table 8). Trout dominate the fishery in the upper reaches while the mid and lower reaches are dominated by roach and dace. The Wensum was formerly a high-profile roach fishery, though this status has declined over the last four decades due to reduced growth rates as a consequence of phosphate stripping and associated water quality improvements (Beardsley & Britton, 2012). Barbel are abundant in a few locations due to historic stocking and much restoration work including silt management and the construction of riffles has been undertaken to improve spawning habitat.

Table 8 Average density (indv./100 m^2) of the 10 most abundant fish species in the River Wensum and its tributaries (2014-2023)

Species	Density (indv./100 m^2)	% population	Rank
Minnow	13.22	30.47	1
Brown / sea trout	7.58	15.92	2
Bullhead	7.98	13.47	3
Roach	2.18	8.59	4
Dace	1.65	6.30	5
Gudgeon	1.79	5.83	6
Stone loach	2.40	5.39	7
Chub	1.59	4.44	8
3-spined stickleback	2.73	2.91	9
Perch	1.01	1.98	10

After several decades of decline, water quality in the River Wensum has improved substantially. Key remaining pressures include siltation and barriers to migration, with over 67% of the river impounded. The many historic mills along its course concurrently reduce flow velocities causing sediment to settle out and hinder fish movements. Flows are further reduced by abstraction. As part of a 19-year project, the River Wensum Restoration Strategy, there is an ongoing programme of river rehabilitation including channel realignment, habitat creation, catchment sensitive farming and restoration and maintenance of spawning gravels.

Despite strong brown trout populations there are few records of sea trout in the River Wensum. In 2006 a specimen sea trout of 23lb 6 oz (10.6 kg) was caught by an angler less than 1 km downstream of the tidal limit in Norwich. New Mills Sluice at the tidal limit is a critical barrier and severely limits the opportunity for sea trout to access upstream habitat. Given the high availability of suitable trout habitat and ongoing improvements to reduce siltation and restore spawning gravels, the River Wensum has high potential for sea trout if connectivity can be restored.

5.1.4. North Norfolk rivers (Burn, Glaven, Stiffkey)

The catchments of these chalkstreams comprise a relatively narrow strip of land along the North Norfolk coast and are predominantly rural with the largest towns being Mundesley, Cromer, Sheringham, Holt and Wells-next-the-Sea. The principal land use is arable agriculture, with some animal husbandry and horticulture. The landscape value of North Norfolk is recognised in its designation as part of the Norfolk Coast AONB.

Fisheries in the Rivers Burn, Glaven and Stiffkey are dominated by wild brown trout, which comprise 9% of the fish population numerically (Table 9). The mean fork length of trout captured during surveys was 145 mm (ranged from 42 to 370 mm) (Figure 13). Sea trout smolts (152 to 204 mm fork length) have been detected migrating downstream in the mid reaches of the River Stiffkey and returning adults have been caught by anglers and targeted surveys in the lower reaches of all three rivers.

Table 9 Average density (indv./100 m^2) of the 10 most abundant fish species in the Rivers Burn, Glaven and Stiffkey (2014-2023)

Species	Density (indv./100 m^2)	% population	Rank
10-spined stickleback	26.11	42.35	1
3-spined stickleback	12.06	15.35	2
Brook lamprey > ammocoete	7.79	14.79	3
Brook lamprey ammocoetes	7.75	10.13	4
Brown / sea trout	4.54	9.35	5
Bullhead	6.75	6.18	6
European eels > elvers	0.59	0.44	7
European elvers	8.86	0.41	8
Flounder	2.08	0.31	9
Gudgeon	0.53	0.26	10

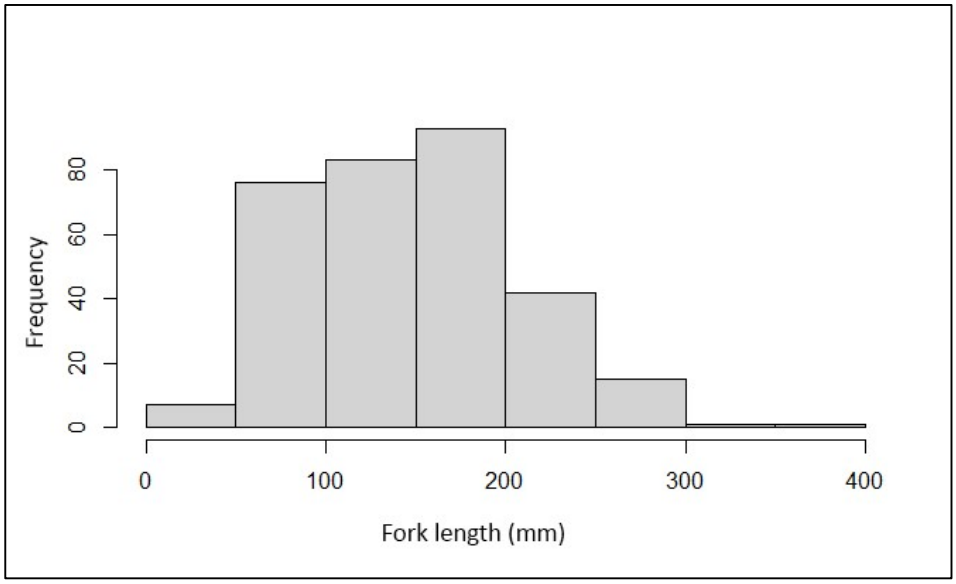

Figure 13 Length frequency distribution of brown trout captured in the Rivers Burn, Glaven and Stiffkey during 2014-2023 routine monitoring surveys by the Environment Agency.

There are a number of pressures on fish populations in the catchment. Historic channel engineering for land drainage and flood defence purposes has resulted in poor habitat and lack of flow diversity which limits fish recruitment and survival in some reaches. All catchments, particularly the River Stiffkey, suffer from diffuse agricultural pollution which causes sediment input to the channel and high phosphate levels. High levels of catchment-derived sediments and insufficient flows limit gravel turnover in the Stiffkey leading to high levels of siltation with associated negative impacts on fish populations, for example the smothering of spawning gravels (Mitchell, 2016). There are also localised impacts from water quality, such as discharges from sewage treatment works. These problems are further compounded at times by low flows which affect the River Burn in particular. Barriers such as sluices and mill structures limit the upstream migration of fish, in particular sea trout. Adult sea trout have been recorded in numbers in the pool below Burnham Mill on the River Burn, however, sluices at the mill are controlled by the owner and

are generally kept closed to maintain water levels upstream. This structure therefore presents a major barrier to upstream migration, preventing migrants accessing good spawning habitat in the upstream reaches.

The River Glaven has benefitted from the work of the River Glaven Conservation Society which has undertaken habitat improvement schemes to tackle historic problems such as straightened channels and over-deepening. Siltation of spawning gravels remains a key problem though there is sufficient habitat to support good brown trout populations. Automatic tidal gates at Cley New Cut have been modified to incorporate a side hung gate to increase opportunity for fish to access the lower river.

A multi-partner project was conducted from 2016 to 2021 with the aim to assess the status of sea trout in the Rivers Stiffkey and Glaven, which support a genetically distinct natal population (Bekkevold et al., 2021). Despite extensive twice-annual sampling in the mid and lower reaches of both rivers, only 30 anadromous fish were captured. Acoustic tracking data revealed that the majority of sea trout (60%) were near migrants, not venturing beyond the estuary (Blakeney Pit), and while in the marine environment their activity was focussed on the vicinity the tidal outfalls (Piper et al., 2025). Thirteen of the tracked sea trout made upstream migrations in the Autumn spawning period and passage data indicated that the key cross-channel structures studied posed no substantial delay to migrating adult trout. However, Letheringsett Mill was not investigated and could limit access to the headwaters of the River Glaven. Since completion of the study, the former top-hung tide gate at the principal tidal outfall of the River Stiffkey has been replaced with pointer gates, a design which enables passage over longer a longer proportion of each tidal cycle. No fry sampled in the study were found to be the offspring of far-migrant anadromous mothers, which was not unexpected given the extremely low incidence of sea trout in these rivers.

6. Stock identity

Historically, several mark-recapture and tagging studies were conducted within the period from 1949 to 1997 with the aim to investigate the origins and movement patterns of sea trout within the North-East, Anglian Coastal fisheries and wider North Sea region. Over 57,000 out-migrating smolts from the Rivers Coquet and Tweed were externally tagged during the period 1951−1954, with 1% recaptured. In the first year, before a sea winter, 85% of smolt recaptures were in the Anglian coastal fishery whereas most post-smolt recaptures after a sea winter were made on the North-East coast or back in their home rivers (Pawson, 2008). A subsequent tagging study on kelts in the River Coquet revealed high fidelity to the North East coast, with only 3% recaptured in the Anglian coastal fishery.

A further large-scale micro-tagging programme was initiated by Cefas (formerly MAFF Directorate of fisheries research) in 1983. Within this, over 76,000 smolts were tagged on the rivers Coquet, Wear and Yorkshire Esk. A total of 3,101 tagged fish were recovered, with only 26 caught in the Anglian coastal fishery. It must be noted however that tag recovery from the Anglian coastal fishery relied on voluntary notification by fishers (incentivised by a reward scheme) and therefore likely reduced recapture rate in the region, whereas tag-screening at fish merchants was conducted in the North East (Pawson, 2008). These data indicate that several rivers in the North East contribute to stocks off the Anglian coast, providing initial evidence for designation of the Anglian coastal fishery as a 'mixed stock' fishery.

Most recently, genetic techniques have confirmed the mixed stock designation assigned to the Anglian Coastal fishery. A wide-ranging project employed single nucleotide polymorphism (SNP) genotyping to characterise the origins of fish captured off the British North Sea coast (Bekkevold et al., 2021). Of the 52 fish analysed from the Anglian Coastal fishery, 92% originated in North-east and Scottish rivers, principally the Tweed, Tees, Tyne, Esk and Coquet, two fish (4%) were of local origin (Stiffkey, Glaven, Burn or Nar) and two fish were from further afield (English Channel and European continent) (Bekkevold et al., 2021). SNP analysis of a further 42 fish from the Anglian

Coastal fishery yielded similar results with 90% assigned to North East rivers, one fish assigned to the River Adur in English Channel and the remaining 8% of fish were of local East Anglian strains (Piper et al., 2025).

6.1. Status of salmon and sea trout in North East rivers

The five principal salmon rivers in northeast England − the rivers Coquet, Tyne, Wear, Tees and Esk − along with the River Tweed (and potentially others) in Scotland contribute to stocks in the Anglian coastal fishery (Piper et al., 2025).

The rivers Coquet, Tyne and Wear meet their current conservation limits for salmon and are considered either 'Not At Risk' (Coquet and Tyne) or 'Probably Not At Risk' (Wear). The rivers Tees and Esk are currently considered 'At Risk'. The projected compliance against the management objective for these rivers is either to remain in the same category (Coquet remains Not at Risk, Wear remains Probably Not At Risk, Tees and Esk remain At Risk) or to decline into a lower category (Tyne declines to Probably Not At Risk) by 2029.

Rod catches of sea trout from North East rivers suggest a generally declining trend in sea trout stocks over the last decade. The River Tyne is the largest salmon and sea trout fishery in England and Wales and had shown a strong recovery from historic pollution and resultant fish population declines with rod catches increasing steadily since the 1960s for salmon and 1980s for sea trout, reaching a record in 2010 with 5,115 salmon and 2,687 sea trout. However, since 2018 the salmon rod catch has not exceeded 3,000 annually. The maximum sea trout catch since 2012 was 1,615 in 2020 and in the remaining years it fluctuated within the region of 700−1,200 fish.

The net fishery operating off the North East coast exploits mixed stocks of both salmon and sea trout originating from Scottish rivers as well as rivers in the north east of England. The drift net fishery was closed completely from 2019 through National Salmon and Sea Trout Protection bylaws and there is mandatory release of all salmon in the remaining coastal T and J nets. The fishery is subject to a reducing Net Limitation Order and fishing effort is declining accordingly. The total number of salmon and sea trout taken in the whole net fishery has fallen by 95% since 2014. In 2024, the total sea trout catch was 1,698 fish, a decline from 37,167 in 2014. The salmon catch declined from 3,826 fish in 2014 to 24 in 2024, all of which were released.

7. Fisheries Management Options

Options for the management of the Anglian coastal net fishery are considered below, in the context of the mixed stock nature of the fishery, the status of the relevant salmon and sea trout stocks and the current level of fishing activity and catches.

Option 1 - Do nothing

Do not replace the expiring time-limited regulations. Anyone applying for net licence would be issued with one.

This option creates the possibility that fishing effort could increase, through not defining a limit on the number of available fishing licences. Under this scenario, anyone applying for a licence would be issued with one, albeit they would still be bound by current or future byelaw definitions of where and when they could fish. This option could lead to an increase in the exploitation of salmon and sea trout and would not be consistent with our stated policy of phasing out mixed stock fisheries.

Option 2 - New Reducing Order

Implement a new reducing NLO with identical provisions to the 2015 Order - licences are restricted to those already operating in the net fishery, and as current licensees retire, the number of licences is reduced.

This option allows those currently operating in the fishery to continue to do so. As and when these licensees retire from the fishery, then their licences would not be made available for re-issue to

new applicants. This allows current licensees to retire voluntarily, rather than be forced out of the fishery by closing it. This option would be unlikely to lead to an increase in exploitation of salmon or sea trout and would be consistent with our stated policy of phasing out mixed stock fisheries.

Option 3 - New Fixed Order

Introduce a fixed NLO that caps the number of licences at the current level, such that as existing licensees retire, their licences are made available to other fishers.

This option would at least maintain the current level of fishing activity and catch, but would not be consistent with our stated policy of phasing out mixed stock fisheries.

Option 4 - New Zero Order

Introduce an NLO which sets the number of licences available at zero, thereby suspending all netting for sea trout.

This option would immediately stop the fishing activity, and therefore immediately reduce the exploitation of salmon and sea trout to zero. This would protect stocks and comply with our stated policy of phasing out mixed stock fisheries, but would seem draconian given the declining level of fishing activity and catch.

8. Conservation designations and Habitat Regulation Assessment

Assessment under the Habitats Regulations requires consideration of all European sites that have potential to be impacted by a proposed Net Limitation Order. Sites have been considered relevant if:

- the location of the activity falls within or immediately adjacent to a European Site; and / or
- a European Site could be impacted because of impact on migratory species or species which use areas outside of the designated site for feeding / breeding
- and there is some relevant hazard.

Full details of the assessment are provided in a separate report (Habitats Regulations Assessment of the Anglian Coastal Net Limitation Order 2024). In summary, it was concluded that the possibility of in combination effects from netting activities is extremely remote. This, coupled with the diminishing scale of the Anglian NLO means that there is no likely significant effect.

9. Discussion

Anglian RBD is generally not thought of as a salmonid region and the associated coastal fishery is small. Under the 2015 NLO, which is a 'reducing Order' (i.e. does not re-issue licences after a licensee retires from the fishery), coastal fishing effort declined substantially, with a reduction from 22 licences issued in 2014 to 10 in 2024. Sea trout catches declined by 87% over the same period, falling from 450 captured in 2014 to 60 in 2024. Few salmon are caught in the fishery and all are legally required to be released following implementation of the Salmon and Sea Trout Protection Byelaws 2018.

Evidence from several tagging studies and most recently genetic techniques indicates that migrants from the North-east and Scottish rivers (e.g. Tyne, Coquet and Tweed) comprise the majority (approximately 90%) of the Anglian stock (Bekkevold et al., 2021; Piper et al., 2025). The

North Norfolk chalk streams have a small but locally important sea trout population which has a distinct genetic signature. Such fish contribute in the region of 4-8% of the Anglian coastal stock (Bekkevold et al., 2021; Piper et al., 2025).

There are breeding brown trout populations in most catchments throughout the Anglian RBD and there are also occasional reports (mostly rod catches) of adult returning sea trout in several rivers, most notably the Welland, Wissey, Great Ouse and Norfolk chalk streams. However, there remains an absence of significant migratory salmonid 'runs' in all Anglian rivers, indicating that production is at a low level and/or that the stimulus for seaward migration among trout in the region's rivers is low.

The pressures on Anglian rivers identified by WFD assessments include sedimentation, barriers to migration and lack of habitat diversity. These impact the potential to have abundant salmon and sea trout stocks. Barriers to migration are being addressed with the construction of fish passes and alternative barrier mitigation measures such as the opening of tidal sluices at key migration periods. The contribution of Anglian RBD stock to the fishery is likely to increase if a programme of improving connectivity and habitat diversity continues.

10. Conclusion

The Anglian coastal fishery exploits mixed stocks of salmon and sea trout that originate mostly from North East rivers (e.g. Tyne, Coquet and Tweed) and to a lesser extent from rivers in the Anglian RBD. A very small proportion of fish caught in the fishery originate from further afield (e.g. Southern England). With regard to mixed stock salmon fisheries, NASCO advises that management actions should aim to protect the weakest of the contributing stocks. Policy 13 of the National Trout & Grayling Fisheries Strategy states that we will continue to phase out mixed stock net fisheries for sea trout except where stocks from a small number of rivers are exploited, in which case catches will be regulated to protect the weakest stock. Data presented in this report indicate low levels of salmon and sea trout production within Anglian rivers, with populations facing several pressures including barriers to migration, sedimentation and lack of spawning habitat. Further, recent studies indicate that the local component of the Anglian coastal sea trout stock is genetically distinct, originating from just a few small chalk streams on the North Norfolk coast. Given the comparative rarity of anadromous local origin fish, depletion even at a low rate has potential to disproportionality impact the local sea trout population. On this basis, it is considered that the proportion of the stock originating in the Anglian RBD are most at risk and therefore should be targeted for protection measures. It is therefore concluded that Option 2 is most appropriate: the implementation of a reducing NLO in the same format as the 2015 Order for both drift and non-drift netting.

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