

Policy Statement on Fish Stocking in the Inland Waters of the River Tweed District

The River Tweed Commission's policy on fish stocking

1. The policy of the River Tweed Commission (the Commission) is that the inland waters of the Tweed District¹ are to be a "wild fish fishery" for all species.² No salmon, trout or other species of fish or the spawn of any fish are to be stocked into those waters except in the circumstances described below:

- 1) In screened or secure waters, stocking may be approved if the risk to the integrity of the present communities of fish is assessed as low and in other exceptional circumstances where, in the view of the Commission, the risk is low (stocking will not be approved if the risk to those communities is assessed as high).
- 2) Subject to the results of a risk assessment by the Commission in each case
 - a. In unscreened or insecure reservoirs which have been regularly stocked with rainbow trout and which historically have retained those fish, such stocking may be continued;
 - b. Fish or eggs taken from a particular loch system, burn or small tributary may be stocked within the particular loch system, burn or small tributary.

The Commission's power to control stocking with fish

2. Under article 47 of The Scotland Act 1998(River Tweed) Order 2006, it is now an offence for any person to introduce fish, or the eggs or spawn of fish, into the inland waters of the District without the prior written consent of the Commission³. This provides the Commission with a means of implementing much of its policy.

3. The Commission does not have direct control of consent under other legislation but it informs the relevant authorities of its policy on stocking and advises them on specific applications for consent or licensing.

Implementation of the Commission's policy

4. The Commission will not give the required statutory consent under article 47 of the 2006 Order unless the proposed stocking is in accord with its policy.

5. For the purpose of assessing the risk to fish communities, the Commission will have regard to the species of fish proposed to be stocked, their source, the proposed method of stocking and the specific destination within the District. Tables have been prepared to identify "high" and "low" risks for each of these characteristics based on the best information that is available and these will be kept up to date if and when new information becomes available.

¹ As defined in The Scotland Act 1998 (River Tweed) Order 2006, articles 2 and 4; the waters include the whole of the Rivers Tweed and Eye and their tributaries

² By decision of the Council of the River Tweed Commissioners, March 2005

³ The provisions of the article do not apply to the waters of a fish farm.

Fish

6. The Commission will only grant consent to introduce fish on the basis that the applicant assumes responsibility for the fish for the duration of their life.

Stockings will be considered to be in one of two categories

A. “Put and Take”: stockings of fish which are short lived, which do not or cannot breed and which are reversible in the medium or long term e.g. rainbow trout, certified sterile fish, in which the fish caught are the same fish that have been stocked and which experience has shown do not breed in the Tweed District .

B. “Introductions” that may establish new, self-sustaining populations, with longevity or which may establish populations which are not reversible or only so with difficulty. e.g. brown trout, coarse fish or fertile fish of a single sex. The fish caught in these cases will not, after the first generation, be the same as those that were originally stocked

To comply with the Commission’s biodiversity policy and with the United Kingdom’s Non Native Species Strategy, the commission will only consent introductions of fish which are already present in the part of the District to which the stocking is proposed or are in category A. above will be given consent under most circumstances and which are

- 1) From Authorised Fish Units according to criteria laid down by national Fish Health Inspectorates from time to time
- 2) Free from certain specific diseases, that may or may not be notifiable, and as it may be specified by the Commission from time to time.
- 3) Directly for sport angling and not as a food source for other fish, animals or birds.
- 4) From areas free from alien, invasive species that might be accidentally brought in with fish or the water they are transported in. While some such species (e.g. Signal Crayfish) can, in some circumstances, be safeguarded against, others such as Zebra Mussel, which has planktonic larvae, cannot, and only prohibition of all stockings from such infected areas can prevent their transfer.

Waters

7. Subject to the exceptions at paragraph 1 the Commission will only consent to the introduction of fish:

- 1) to waters that are effectively screened or blocked in some way so as to prevent the passage of fish from them; screening mechanisms must be kept maintained and clear of debris at all times;
- 2) from waters which the Commission is satisfied are free from damaging fish, parasites, diseases and other organisms e.g. signal crayfish, and
- 3) when the Commission is satisfied that the introduction will be managed in such a way as to minimise the danger of introducing undesirable organisms into the Tweed system (this will include the requirement to avoid the discharge of transport water into any waters in the Tweed District)

Explanatory statements

8. Appendices A to E provide factual information and the arguments on which this policy and its proposed implementation are based. Thus:

- a) the fish species found in the inland waters of the Tweed District are listed in Appendix A together with some information and comment on the development of the present communities of fish; it also contains the reasons for maintaining the integrity of the present fish communities where that is reasonably possible;
- b) the principal legislative and other provisions relating to the stocking of fish in inland waters of the Tweed District are listed and briefly described in Appendix B;
- c) the risks of damage to existing fish communities from the stocking of waters with other fish, and the way in which the Commission will assess those risks, are described in Appendix C;
- d) tables and maps showing the present distribution of “alien” species in the inland water of the district are given in Appendix D; and
- e) the waters where continued stocking with rainbow trout may be permitted are listed in Appendix E.

[7th September 2009]

APPENDIX A

The Fish Species found in the Tweed and Eye systems : There are, at present, 22 fish species that can be found in the river Tweed and its tributaries and nine in the Eye and its burns which are listed below: Species are marked with “F” for fresh water and “S” for salt water stages of their life cycles. Brackets have been put round the symbols if natural breeding in the rivers is unknown and a “?” if it is uncertain : “T” denotes species recorded from the Tweed catchment and “E” those from the Eye catchment:

A : NATIVE SPECIES		Scientific name	Juveniles	Adults	Breeds	Records
1	Atlantic Salmon	<i>Salmo salar</i>	F / S	F / S	F	T E
2a	Sea-trout	<i>Salmo trutta trutta</i>	F / S	F / S	F	T E
2b	Brown-trout	<i>Salmo trutta fario</i>	F	F	F	T E
3	Arctic Charr ⁽¹⁾	<i>Salvelinus alpinus</i>	F / S	F / S	F	T
4	Three-spined Stickleback	<i>Gasterosteus aculeatus</i>	F	F / S	F	T E
5	European Eel	<i>Anguilla anguilla</i>	F / S	F / S	S	T E
6	Flounder	<i>Platichthys flesus</i>	F / S	F / S	S	T E
7	Allis Shad	<i>Alosa alosa</i>	F / S	F / S	(F)	T
<i>Taxonomically not “fish” but generally included with them :</i>						
8	Brook Lamprey	<i>Lampetra planeri</i>	F	F	F	T E
9	River Lamprey	<i>Lampetra fluviatilis</i>	F / S	F / S	F	T E ?
10	Sea Lamprey	<i>Petromyzon marinus</i>	F / S	F / S	F	T E ?
B : RARE VISITORS						
11	Baltic Sturgeon	<i>Acipenser sturio</i>	F / S	F / S	F	T
12	Sparling / Smelt	<i>Osmerus eperlanus</i>	F / S	F / S	F	T
C : ARTIFICIALLY INTRODUCED						
13	Perch	<i>Perca fluviatilis</i>	F	F	F	T
14	Pike	<i>Esox lucius</i>	F	F	F	T
15	Baggie / Minnow ⁽²⁾	<i>Phoxinus phoxinus</i>	F	F	F	T E
16	Beardie / Stone Loach	<i>Barbatulus barbatulus</i>	F	F	F	T E
17	Grayling	<i>Thymallus thymallus</i>	F	F	F	T
18	Rainbow Trout	<i>Oncorhynchus mykiss</i>	F	F	F	T
19	Roach	<i>Rutilus rutilus</i>	F	F	F	T
20	Dace	<i>Leuciscus leuciscus</i>	F	F	F	T
21	Gudgeon	<i>Gobio gobio</i>	F	F	F	T
22	Bullhead	<i>Cottus gobio</i>	F	F	F	T

D : Possible Visitors

Twaite Shad : There are some records of this in nearby estuaries, but none from the Tweed estuary.

E : Escapes

Ornamental fish species such as Carp and Tench occasionally escape into the rivers

(1) Arctic Charr were originally present in St. Mary’s Loch but became extinct. They have since been re-introduced to the catchment.

(2) Possibly could have arrived by natural means

The Extinction of the Native Fish Community of the Tweed:

As is apparent from the number of non-native species now found in the Tweed, the original, native, fish species community is now extinct. Though individual populations such as the Salmon and Trout are of great conservation value in themselves, there is no such value now in the fish community as a unit. The presence of the non-native species means that the fishes of the Tweed no longer reflect the particular geographic location of the river but are simply an accidental grouping of species produced through human interference. However, some parts of the catchment have been protected from the spread of alien species by cauld or waterfalls and so maintain more natural fish communities.

With so much emphasis given nowadays to the importance of biological “diversity” it may seem strange to say that the increased diversity of fish species now to be found in the Tweed represents a loss of biological value, but that is indeed the case. The point of real interest about the Tweed’s - and Scotland’s - original community of fish species was exactly its *lack* of diversity. Unlike the land animal community which was originally the same as continental Europe’s due the land bridges across the English Channel at the end of the Ice Age, there was never a “freshwater bridge” between Scotland and the continent, so the only fish species that could reach this country were those that could make a crossing of salt or brackish water. This made Scotland’s fish community very different from that of the South-east of England, which did have such a freshwater connection when the Thames was connected to the Rhine through the southern North Sea which was a fresh water or marsh at the end of the Ice Age. The last land link was from the north of Norfolk across to the Frisian coast which was broken around 7,500 years before present (Wingfield *et al.* 1998).

The common characteristic of the native species is, therefore, that they can, either as adults or juveniles or both, live in salt or brackish water either under present climatic conditions or those prevailing in the past: Arctic Charr are migratory north of latitude 60° N today, and similar climatic conditions would have prevailed in this area as the Ice Age ended. The only original, purely, freshwater “species”, the Brook Lamprey and the Brown-trout, are offshoots of the migratory River Lamprey and Sea-trout and are therefore derived from species with marine stages. It is just possible, however, that some of the smaller, purely freshwater fish species (Baggies / Minnows; Beardies / Stone Loach) that are very widespread in the catchment could have arrived by natural processes - eggs stuck on to the feet of water birds is an often-quoted possibility - but since even the smallest and apparently most insignificant of these have been found useful by humans in the past, there is the possibility of artificial introduction :

Some tributaries of the Tweed still only have the smaller non-native species, so when access for Salmonids is being eased, consideration is given to whether the changes being made might also allow non-native species to spread into new areas. Generally, if the obstacle is left as a “jump”, non-salmonids will not be able to gain access. The problem of introductions of new species to the Tweed has been identified as a Key Issue for concern in the “Rivers and Burns” section of the Local Biodiversity Action Plan and the recent arrival of the Bullhead shows that the danger is ever present.

There have been two lists of the fish species of the Tweed drawn up in the past, by Johnston in 1838 and Bolam in 1919 which show the progressive dilution of the native fish community over time :

<u>NATIVE</u>	Non-natives noted by:		
	<u>JOHNSTON 1838</u>	<u>BOLAM 1919</u>	<u>Since 1919</u>
Salmon	Perch	Grayling	(Bullhead)
Sea & Brown Trout	Pike	Rainbow Trout	
Arctic Charr	Baggie	Roach	
Three-spined Stickleback	Beardie	Dace	
Eel		Gudgeon	
Flounder			
(Allis Shad)			
Brook Lamprey			
River Lamprey			
Sea Lamprey			

Plant and animal communities in different parts of the world are being eroded by the escalating introductions of animal and plant species making biological communities similar and in particular, destroying the differences between islands and mainlands.

Even if an alien species does not do any obvious “damage” its mere presence means that the native, community of animals or plants no longer exists in its original form and, in fact, has become extinct. It is important to understand this point – that communities of plants or animals can become extinct just as species can.

This spread of non-native species outside their native areas is a major problem for the conservation of natural biodiversity. Introductions of alien fish species are not therefore simply a matter for fisheries authorities; they are part of a much wider process that is doing great damage to the natural heritage of many areas and causing the loss of native plant and animal communities throughout the world. This biodiversity issue is therefore one of the two basic considerations underlying this policy, the other being the practical risks involved in moving fish around such as the spread of diseases and parasites.

Historically, fish have been regarded as a resource rather than as wildlife and there is a long history of introductions of new species for food or sport or both. The northwards spread of the purely freshwater, mainly Carp species, native only to the south and east of England over the past two centuries has meant that the native Northern and Western British fish community may soon become extinct on the mainland.

[5th March 2007]

APPENDIX B

Legislation

- 1: By decision of The Tweed Council of March 2005, the Tweed is to be a “wild fish fishery” for all species. No artificially reared Salmon, Trout or other species are to be stocked into the Tweed or its tributaries or the Eye Water and its tributaries.
- 2: Under Article 47 of The Scotland Act 1998 (River Tweed Order) 2006, the River Tweed Commission (RTC) have the responsibility of regulating the stocking of fish into all waters, still or running, within the Tweed and Eye Fisheries District. Anyone introducing any fish or the eggs of fish into inland waters in the Tweed District is required to obtain the prior, written permission of the RTC. Offences may be tried in Scottish or English courts depending upon where the alleged offence is committed.
- 3 The Diseases of Fish Act 1937: makes provision for the restriction on importation of live fish and eggs of fish, the designation of infected areas, describes preliminary precautions of suspected places and the powers of fishery boards. Further outlines the powers and duties of Ministers and others in respect to the control of fish diseases.
- 4 The Import of Live Fish (Scotland) Act 1978: Prohibits the keeping or release in Scotland of any live fish of species specified by schedule, unless under license granted by Scottish Ministers.
- 5 The Prohibition of Keeping or Release of Live Fish (Specified Species) (Scotland) Order 2003 [made under provisions of 1978 Act]: Prohibits the keeping or release in Scotland of any live fish of species specified by schedule, unless under licence granted by Scottish Ministers.
- 6 The Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003: Provisions on introduction of salmon only but provides bailiffs (outside Tweed) with legal powers to enforce in both Board waters and their boundary waters
- 7 The Wildlife and Countryside Act 1981: consolidates and amends pre-existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)
- 8 The “GB Strategy for non-Native Species” which is at present being formulated by DEFRA follows the International Convention on Biodiversity to which the UK is a signatory, in including the principle that species should not be spread outwith their native range.

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APPENDIX C

Risks and Risk Assessment of Fish Stockings

The Risks involved in fish movements and stocking are:-

- a) Establishment of alien fish species in the wild, due either to deliberate introduction or unintentionally as “passengers” with other fish. “Alien” here means all fish species not native to the catchment, even if native to other parts of the British Isles. Strains of native fish such as Trout and Salmon from outside the catchment are also classed as “alien”.
- b) Introduction of other aquatic animals (such as Crayfish) or plants as “passengers” with stocked fish
- c) Spread of diseases and parasites

It follows from these that different species and different sources and methods of stocking have different risk levels as do different areas of the catchments. Those parts of the catchments where an alien species is not already established are at risk from stocking with that species while those parts where it is already established are not. The type of water being stocked – whether **Open** to the rest of the river system (i.e. connected by a stream); **Secure** (where the connection to the river system has screens or other apparatus to prevent fish movement) or **Isolated** from the system (i.e. has no physical connection with it) is also a consideration. It should be noted that these definitions only apply to where adult, non-breeding fish are being stocked. The spread of breeding fish that produce tiny larvae cannot be controlled by screens or any other system, so there are only two types of water where these are concerned – Open and Isolated.

	High Risk	Low Risk
Sources	Fish farms / ponds outside the catchment without health certification. Fish farms within areas of the catchment where unwanted species such as Signal Crayfish are already established.	Fish farms / ponds with health certification or within areas of the catchment where there are no undesirable species established.
	Fish farms / ponds in areas with fish or other aquatic species unwanted here (e.g. Crayfish, Bullheads) and that could come in as “passengers” with stockings	Fish farms / ponds in areas without unwanted species that could come in as passengers
Methods	Emptying water that fish have been transported in, into ponds or streams here	Netting out fish from the water in which they have been transported into tubs of local water from which they are netted out again into the receiving water & disposing of the transport water to land
Species	Those that would breed in the wild here (Rudd, Barbel, Zander, Ruffe, Bream, Chub etc.) and which are not present in the catchment	Species that would be very unlikely to breed in the wild here: (Carp, Tench, Rainbow Trout - this list could change with climate warming) and are already in the catchment.
	Species that breed in the wild here but are still absent from some parts of the catchment (Grayling, Roach, Gudgeon, Dace, Pike, Perch etc.) in those areas	These same species are Low-risk for stocking into open ponds / lochs in areas where they are already in streams / rivers or open ponds / lochs. If present only in Isolated waters, then are Low-risk only for other Isolated waters and High-risk for Open / Secure waters.
	Alien strains of Salmon and Trout, even if reared within the catchment.	Triploid or otherwise sterile trout or native fish from the same locality

Destinations (see Tables)	All lochs / ponds (open, secure or isolated) in sub-catchments where a potentially breeding species is not already present	All lochs / ponds in sub-catchments where a species is already present.
	Open lochs and ponds: These are effectively parts of the river system.	Isolated lochs / ponds and those approved as secure for non-breeding species
	All lochs / ponds upstream of impassable waterfalls where trout could be of genetic interest and where even small alien species such as Baggies and Beardies unlikely to be present or there are no fish species at all.	Waters not upstream of impassable waterfalls

The RTC policy on stockings is that no “High Risk” actions in any of the above categories will be allowed.

While Isolated lochs or ponds – those with no stream joining them to the catchment and beyond any flood water – might seem low risk destinations that could have high-risk species stocked into them, stocking species not already established in the catchment into such waters would breach the GB Strategy on non-Native Species which has, as one of its aims, that British species should not be spread beyond their native range. Their presence, even in isolated waters would also be a constant source of risk that they would be spread into other locations in the catchment. It is, after all, much easier to move fish from one nearby pond to another than to bring them in from the other side of the country.

Waters upstream of naturally impassable waterfalls could have distinctive genetic strains of trout in them and in such cases, trout from within the catchment, even from just below the waterfall will be regarded as “alien” and therefore High Risk until proved genetically not to be so. Where there are no fish of any sort upstream of an impassable waterfall, all fish species are High Risk - such waters could have aquatic insect communities of biodiversity interest.

The High Risk areas for any species can be found in the Tables and Maps in Appendix D

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APPENDIX D

Risk Assessment

Known Distribution of Breeding Alien Species in Tweed sub-catchments:

Some of the Tweed's sub-catchments have access into them from downstream restricted by caulds (fish passes usable by Salmonids, which can jump, are often unusable by other fish species which cannot). Where these exist, they are taken as unit dividers between the lower reaches of a tributary and the main channel. Where such caulds do not exist, it can be assumed that fish from the main channel will penetrate upstream into tributaries until their habitat becomes unsuitable (too steep, fast etc.). There are also caulds or natural waterfalls on sub-tributaries that also act as boundaries and the areas upstream of these are therefore listed separately as well, as further sub-divisions. This is done as such caulds or waterfalls should restrict access further upstream even if alien species become (or are already) established in the tributary downstream of them.

The purpose of these tables is to show where stocking a species would be "High Risk" i.e. into an area where they are not already established and free to move. If an alien species that breeds is present only in an Isolated water in an area, any further introduction into that area can only be into another Isolated water. If such a species is already present in an open water, however, it would be Low Risk and Open water in this situation will include Secure waters as there is no possible way of stopping fish fry from getting out (unless drainage out is onto land).

Definitions of Types of Water:

Open waters are part of, or have streams connecting them to, the river system and include those that are reached by flood water from streams and larger channels, even though they might have no actual burn or channel connecting them to the wider river system.

Secure waters are connected to the wider river system by water courses large or small which are screened to a standard of design, construction and maintenance approved by the RTC or have some mechanical design that prevents the movement of fish. (Note that this category does not apply to fish species that will breed in the catchment as there is no possible secure way of stopping fish fry).

Isolated waters are those with no streams, ditches or any other sort of channel connecting them to the wider river system and are located high enough above any running water not to be reached by any flood water and which, even in very wet weather, do not fill and overflow into any running water or into any water body or wetland which connects with the wider river system.

(Data will be updated below, keeping these tables up to date so that the High and Low Risk areas can be defined for different species)

1: Sub-catchment LOWER TWEED			
In open waters		In closed waters	In fish-farms
Running	Still		
<i>Grayling</i>	<i>Pike</i>		
<i>Roach</i>			
<i>Dace</i>			
<i>Gudgeon</i>			

2a: Sub-catchment MIDDLE TWEED u/s Kelso Cauld			
In open waters		In closed waters	In fish-farms
Running	Still		
<i>Grayling</i>	<i>Pike</i>		
<i>Roach</i>	<i>Rainbow T</i>		
<i>Gudgeon</i>			

2b: Sub-catchment MIDDLE TWEED u/s Bowden Burn cauld			
In open waters		In closed waters	In fish-farms
Running	Still		

3a: Sub-catchment UPPER TWEED			
In open waters		In closed waters	In fish-farms
Running	Still		
<i>Grayling</i>	<i>Pike</i>	<i>Rainbow T</i>	
	<i>Perch</i>		
	<i>Rainbow T</i>		

10: Sub-catchment GALA u/s Skinworks Cauld			
In open waters		In closed waters	In fish-farms
Running	Still		
			<i>Rainbow T</i>

11: Sub-catchment ETTRICK u/s Philiphaugh Cauld			
In open waters		In closed waters	In fish-farms
Running	Still		
<i>Grayling</i>		<i>Roach</i>	<i>Rainbow T</i>
		<i>(Ashkirk ponds)</i>	

12: THE EYE WATER			
In open waters		In closed waters	In fish-farms
Running	Still		

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APPENDIX 3

The waters where continued stocking with rainbow trout will be permitted are:

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