

CITATION

RIVER TWEED SITE OF SPECIAL SCIENTIFIC INTEREST Scottish Borders

Site code: 1366

NATIONAL GRID REFERENCE:

NT664633 – NT946529 : Whiteadder Water (reservoir outfall) to English border;
NT622543 – NT865546 : Blackadder Water (source) to confluence with Whiteadder Water;
NT052139 – NT947521 : River Tweed (source) to English border;
NT192166 – NT444273 : Yarrow Water/Little Yarrow (source) to confluence with Ettrick Water;
NT172063 – NT489323 : Ettrick Water (source) to confluence with River Tweed;
NT323027 – NT725339 : River Teviot (source) to confluence with River Tweed;
NT892195 – NT837302 : Bowmont Water (source) to English border.

OS 1:50,000 SHEET NO: Landranger Series 67, 72, 73, 74, 75, 78, 79, 80
1:25,000 SHEET NO: Explorer Series 330, 331, 336, 337, 338, 339, 345, 346, OL16

AREA / LENGTH: 2597.58 hectares / 478.84 km

NOTIFIED NATURAL FEATURES

Biological:	Freshwater habitats:	Trophic range river/stream
	Vascular plants:	Vascular plant assemblage
	Freshwater and estuarine fish:	Atlantic salmon (<i>Salmo salar</i>)
	Freshwater and estuarine fish:	Brook lamprey (<i>Lampetra planeri</i>)
	Freshwater and estuarine fish:	River lamprey (<i>Lampetra fluviatilis</i>)
	Freshwater and estuarine fish:	Sea lamprey (<i>Petromyzon marinus</i>)
	Mammals:	Otter (<i>Lutra lutra</i>)
	Invertebrates:	Beetle assemblage
	Invertebrates:	Fly assemblage

DESCRIPTION

From its source 20km north of Moffat to where it crosses the English border near Berwick-upon-Tweed, the River Tweed Site of Special Scientific Interest (SSSI) and its tributaries cover almost the entire Scottish Borders, and form the main drainage system of the eastern Southern Uplands and north-east Cheviots. The notification reflects the significance of the SSSI as a prime example of a “whole river system”, which in turn supports other notified features including: salmon, otter, rare plants, rare fish and assemblages of invertebrates.

The Tweed estuary lies within England, but from a point near its mouth, the centre line of the channel forms the border between England and Scotland for some 30km upstream, a short section of which (2.4m) is tidal. Of the four largest tributaries, three lie wholly or partly within Scotland, the exception being the River Till, which is entirely within England. The Whiteadder Water joins the Tweed below the tidal limit and along with its tributary, the Blackadder Water, it drains the southern flank of the Lammermuir Hills. The largest sub-catchment is that of the River Teviot, which joins the Tweed at Kelso. Further upstream above Galashiels, the Ettrick Water flows into the Tweed. Above this confluence, the Ettrick

and its tributary, the Yarrow Water, drain narrow steep-sided valleys running north-westwards, with St Mary's Loch lying near the head of the Yarrow Valley. Above Drumelzier, the gradient of the Tweed steepens and the main river becomes a more rapid upland watercourse, with its source being found amongst springs in the hills of Tweedsmuir to the west.

Habitat Interest

The Tweed and its tributaries are clean river systems of high conservation and ecological value. Along the length of the river, the changes in plant species reflect the changing gradient of the river from torrent to slow flowing, and the change in the geology and nutrient status from nutrient-poor (oligotrophic) to nutrient-rich (eutrophic).

The small nutrient-poor upland streams, which form the source of the Tweed and its tributaries, originate from a series of flushes rich in species of mosses and sedge *Carex* spp. Flowing across open moorland, characteristic streamside plants include mat-grass *Nardus stricta*, purple moor-grass *Molinia caerulea*, lesser spearwort *Ranunculus flammula* and water forget-me-not *Myosotis scorpioides*. Moss species including *Fontinalis antipyretica* and *Philonotis fontana* are common on boulders and bedrock. Once these streams join to form upland rivers, larger aquatic plants become more frequent, particularly stream water-crowfoot *Ranunculus penicillatus*, common water-crowfoot *Ranunculus aquatilis* and alternate-flowered water-milfoil *Myriophyllum alternifolium*. A typical invertebrate fauna is present including mayflies and stoneflies.

In the middle reaches as the gradient reduces and depth increases, the nutrient level of the river becomes richer, particularly where the bedrock changes to sandstone. Within the channel, water-crowfoot species become more abundant, forming large beds in shallower sections. Curled pondweed *Potamogeton crispus* is another characteristic species within the channel. Marginal emergent vegetation becomes more of a feature, with branched bur-reed *Sparganium erectum* and particularly reed canary-grass *Phalaris arundinacea* forming a narrow fringe to the river. Invertebrate species become more numerous with stoneflies and mayflies still the most abundant, but with increasing numbers of caddisflies.

The lower sections of the Teviot and also the Tweed, downstream of Kelso (below the confluence with the Teviot), are deeper and slower with a higher degree of deposition. The nutrient status of these sections is naturally high, reflecting the geology. Plants growing within the river increase in diversity but not abundance, possibly being limited by light penetration. Species such as fennel pondweed *Potamogeton pectinatus*, shining pondweed *Potamogeton lucens* and spiked water-milfoil *Myriophyllum spicatum*, which are characteristic of the high nutrient status waters, are present but stream water-crowfoot *Ranunculus penicillatus* and river water-crowfoot *Ranunculus fluitans* dominate. Reed canary grass and branched bur-reed are still characteristic species of the fringes of the river. Mayflies and stoneflies become less dominant in this stretch of the Tweed, with beetle species becoming more numerous.

Species Interest

Within the water-crowfoot *Ranunculus* spp. beds mentioned above are the nationally scarce Kelso water-crowfoot *Ranunculus x kelchoensis*, a hybrid water-crowfoot *Ranunculus fluitans x circinatus* known only from the Blackadder Water and stream water-crowfoot *Ranunculus penicillatus* subspecies *pseudofluitans*, growing here at its northernmost limit. There are also a number of other interbreeding hybrids.

Of ten species of pondweeds *Potamogeton* spp., the hybrids Cooper's pondweed *Potamogeton x cooperi*, graceful pondweed *Potamogeton x olivaceus* and Swedish

pondweed *Potamogeton x suecicus* are nationally scarce. Willow-leaved pondweed *Potamogeton x salicifolius* is also found here, at its main (of three) Scottish location.

On stony stream margins of the upper rivers, the nationally scarce hairy stonecrop *Sedum villosum* and pale forget-me-not *Myosotis stolonifera* occur, while the same status is accorded to the scarce water figwort *Scrophularia umbrosa* on lower margins, and maiden pink *Dianthus deltoides* on the more basic soils of the middle river. Flowering rush *Butomus umbellatus*, unusual this far north, grows on the lower third of the Whiteadder Water and appears to be native here. In addition to these, there are over 40 species of locally rare vascular plants occurring within the site.

The nationally scarce lichen *Verrucaria praetermissa* is recorded from submerged siliceous rocks within the river. The rare (Red Data List) moss *Thamnobryum alopecurum* is recorded, while nationally scarce moss species occurring are *Fontinalis antipyretica* var. *gracilis*, *Philonotis caespitosa*, and *Sphagnum angustifolium*. There are, in addition, fifteen moss species recorded as being of only local abundance, for the Scottish Borders.

The Tweed supports nationally important populations of Atlantic salmon *Salmo salar*, with a strong run of salmon in the autumn and a smaller spring run mainly into the Whiteadder Water and Ettrick Water. River lamprey *Lampetra fluviatilis*, brook lamprey *Lampetra planeri* and sea lamprey *Petromyzon marinus* all occur within the Tweed as breeding species of special interest. Suitable gravel bed spawning habitat is widespread for both salmon and lamprey spp. The rare allis shad *Alosa alosa* is known to occur but its breeding status is as yet unknown.

Several mammal species occur within the riparian corridor, of which otter *Lutra lutra* and water vole *Arvicola amphibius* stand out as being typical for the habitat. Otters in particular are significant, as populations have been increasing for several years. The Tweed is now regarded as the most significant stronghold for this species in lowland Scotland.

The invertebrate fauna of the Tweed is diverse and contains many species of limited distribution. The most important invertebrates are the beetles *Coleoptera*, especially those which live in the marginal shoals of silt, gravel and shingle. The Tweed system has been known for some time as an important location for this species group, containing a number of nationally important sites on the Yarrow Water and tributaries. The mayfly *Ephemeroptera* list contains over half the British species and the caddisflies *Trichoptera* have a list of 53, which is one quarter of the UK total. Other groups with species of restricted distribution include stoneflies *Plecoptera*, soldier flies *Stratiomyidae*, long-legged flies *Dolichopodidae*, craneflies *Tipulidae*, and dance flies *Empididae*. In total, 13 invertebrate species listed on the Red Data List and 45 invertebrate species classed as notable (occurring in less than 100 of the 10km squares of the national grid) are recorded from the Tweed.

NOTIFICATION HISTORY

First notified under the 1949 Act: 1976 as Tweed River SSSI; and
1971, 1975 as Putts Pool SSSI (de-notified in 1986).

Re-notified under the 1981 Act: 2 March 2001 with amended boundary
(Notification confirmed 23 November 2001 with a 77ha decrease in area).

Notification reviewed under the 2004 Act: 28 March 2011

REMARKS

Measured area of site corrected (from 2597.6 ha).

Parts of the adjacent Tweed River SSSI are still notified under the 1949 Act for the feature: Trophic range river/stream.

The River Tweed SSSI is part of the River Tweed special area of conservation (SAC) designated for the European habitat and species listed below:

Habitat: Rivers with floating vegetation often dominated by water-crowfoot

Species: Otter (*Lutra lutra*)
Atlantic salmon (*Salmo salar*)
Brook lamprey (*Lampetra planeri*)
River lamprey (*Lampetra fluviatilis*)
Sea lamprey (*Petromyzon marinus*)

Part of the River Tweed SSSI is designated as part of the Whiteadder Water SSSI, which is notified for the Palaeontology feature: Palaeozoic Palaeobotany

Part of the River Tweed SSSI is designated as part of Lennel, Charley's Brae SSSI, which is notified for the Palaeontology feature: Palaeozoic Palaeobotany

Part of the River Tweed SSSI is designated as part of Lintmill Railway Cutting SSSI, which is notified for the Igneous petrology feature: Carboniferous – Permian Igneous

Part of the River Tweed SSSI is designated as part of Kirkhope Linns SSSI, which is notified for the habitat: Upland mixed ash woodland

Part of the River Tweed SSSI is designated as part of St Mary's Loch SSSI, which is notified for the habitat: Oligo-mesotrophic loch

Part of the River Tweed SSSI is designated as part of Riskinhope SSSI, which is notified for the habitat: Flood-plain fen

Part of the River Tweed SSSI is designated as part of Makerstoun - Corbie Craigs to Trows' Craigs SSSI, which is notified for the habitat: Lowland neutral grassland

Part of the River Tweed SSSI is designated as part of Abbey St Bathans Woodlands SSSI, which is notified for the habitat: Upland oak woodland and its Lichen assemblage

Part of the River Tweed SSSI is designated as part of Newtown St Boswells Woods SSSI, which is notified for the habitat: Upland mixed ash woodland

Part of the River Tweed SSSI is designated as part of Tweedwood - Gateheugh SSSI, which is notified for the habitat: Upland oak woodland and its Beetle assemblage

The River Tweed SSSI is contiguous with the River Till SSSI and the River Tweed-Whiteadder SSSI in England.